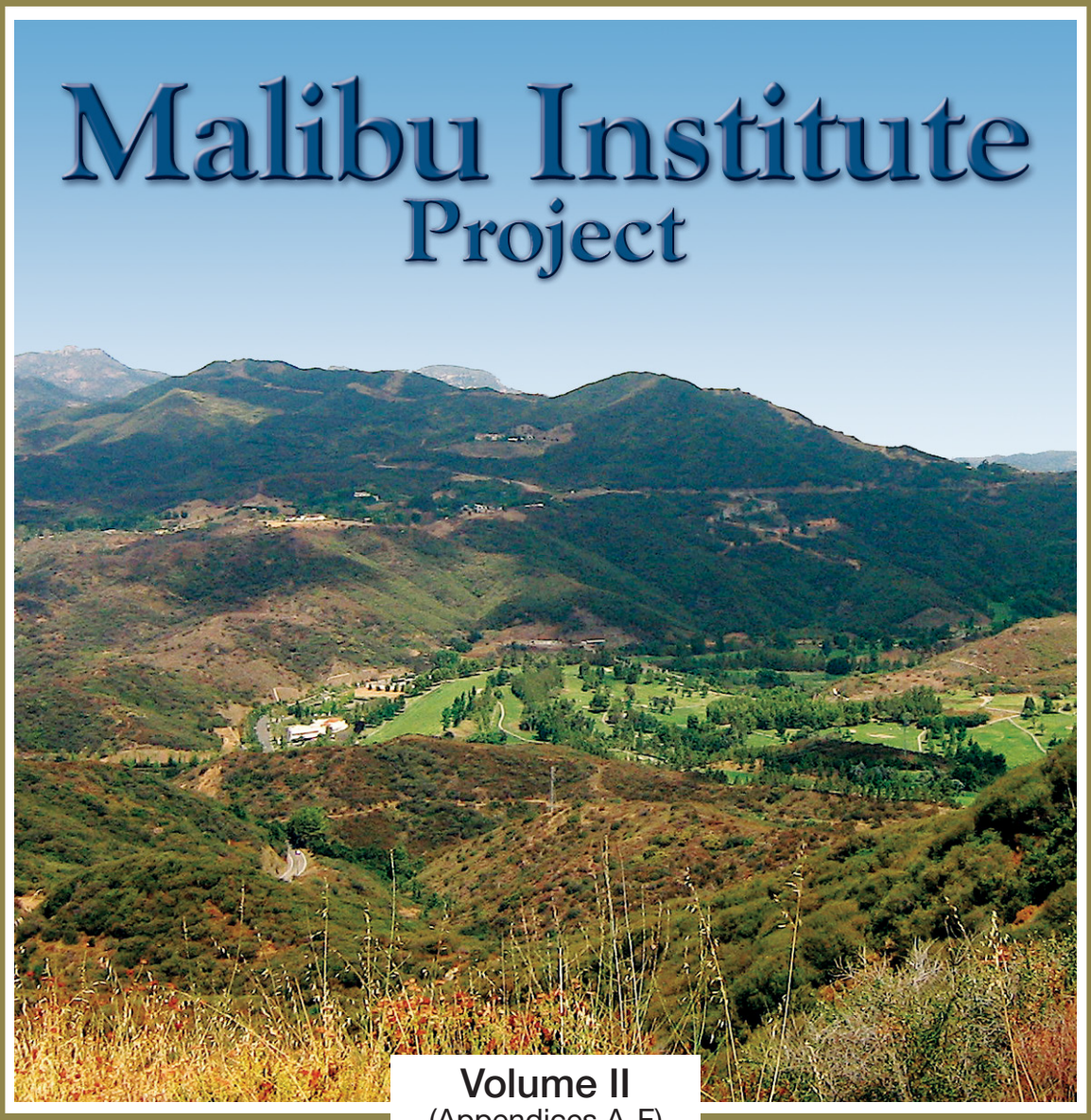
Draft Environmental Impact Report

State Clearinghouse No. 2012111068



Volume II
(Appendices A-F)

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Appendix E: Geotechnical Investigation of The Malibu Institute and Proposed Renovations and Expansion of the Malibu Golf Course (Sladden Engineering, July 16, 2012, Responses to Comments February 25, 2013, July 22, 2013)
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Appendix A

Notice of Preparation and Initial Study

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

NOTICE OF PREPARATION
AND
NOTICE OF SCOPING MEETING

DATE: November 19, 2012

PROJECT TITLE: The Malibu Institute – Project No. TR071735
Vesting Tentative Tract Map No. 071735
Conditional Use Permit No. 201100122
Parking Permit No. 201100005
Environmental Review No. 201100192

PROJECT ADDRESS: 901 Encinal Canyon Road
Malibu, California 90265

PROJECT APPLICANT: The Malibu Institute
901 Encinal Canyon Road
Malibu, California 90265

CEQA LEAD AGENCY: County of Los Angeles
Department of Regional Planning
320 West Temple Street, Room 1348
Los Angeles, California 90012

The County of Los Angeles is the lead agency and will prepare an Environmental Impact Report (EIR) for the Project identified below. In compliance with Section 15082 of the California Environmental Quality Act (CEQA) Guidelines, the County of Los Angeles is sending this Notice of Preparation (NOP) to each responsible agency, interested parties and federal agencies involved in approving the Project and to trustee agencies responsible for natural resources affected by the Project. Within 30 days after receiving the Notice of Preparation, each agency shall provide the County of Los Angeles with specific details about the scope and content of the environmental information related to that agency's area of statutory responsibility.

The purpose of this NOP is to solicit the views of your agency as to the scope and content of the environmental information germane to your agency's statutory authority with respect to the Project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the Project.

PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Project site is located at 901 Encinal Canyon Road, within the unincorporated Malibu area of Los Angeles County. Regionally, the site is located in the western portion of the Santa Monica Mountains approximately forty-five miles west of downtown Los Angeles. Locally, the Project site is situated northwest of the city of Malibu, and south of the cities of Thousand Oaks and Westlake Village in a rural area of the Santa Monica Mountains lying south of the primary east-west ridgeline. Portions of the Project site located south of Mulholland Highway also fall within the Coastal Zone as defined by the California Coastal Act.

Adjacent land uses are primarily undeveloped private and public lands with large lot rural residential development common along the northern and western boundaries.

The Project site is comprised of an irregularly shaped assemblage of 29 irregularly shaped parcels that total approximately 650 acres, spanning from Encinal Canyon Road on the south to the intersection of Mulholland Drive and Westlake Boulevard on the north.

Existing development on the Project site consists of the Malibu Golf Club, a public 18-hole golf course with supporting amenities constructed in the early 1970s. Other facilities on the Project site include a clubhouse, restaurant/bar, snack shop, pro-shop, maintenance facilities, and two surface parking lots and associated driveways, which are all located in the central and southern regions of the Project site. Much of the golf course area is planted with non-native and ornamental plant species. The remainder of the Project site consists of areas of native vegetation. Several areas adjacent to the golf course have been graded in the past in connection with various development phases of the golf course.

PROJECT SUMMARY

The Malibu Institute (Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course on a 650-acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The Project would provide for the development of educational and meeting facilities (48,164 square feet), along with visitor-serving overnight accommodations consisting of 40 bungalow structures (109,140 square feet), a clubhouse (30,147 square feet), golf pro shop and grill (12,104 square feet), and support facilities including a maintenance building (10,500 square feet), warehouse (4,623 square feet), a golf cart storage barn (9,162 square feet), and a security/information building (447 square feet), all located within the previously disturbed area of the Malibu Golf Club. The Project would include 224,287 square feet of structures, which would include the reuse and remodel of the existing 12,475 square foot clubhouse and cart barn as part of the Institute building and the removal of 11,160 square feet of existing structures, for a total increase of 200,652 square feet of structures on the Project site. An existing 875 square foot guesthouse located on the northern portion of the property would be retained by the proposed Project for use as a caretakers' residence. The Malibu Institute would be open year-round for education-oriented conferences, and with overnight accommodations would operate 24 hours per day; however, meetings would take place predominantly during regular business hours. The redesigned golf course would continue to operate as a public golf facility, as well as being available to guests of the Malibu Institute.

Project Development

All construction activity would occur within the area previously disturbed during development of the Malibu Golf Club in the 1970s. The Project would remodel the existing 18-hole public golf course using an environmentally sensitive design, including sand-capping the fairways, a "smart" irrigation system, and new generation drought-tolerant grasses. These measures would reduce water consumption for irrigation of the golf course by approximately 35%. The 18-hole golf course layout would be reconfigured using the acreage of 17 of the existing holes on approximately 107 acres of the existing 118-acre existing golf course, with the turf area reduced to approximately 62 acres. The Applicant would remove approximately 1,590 non-native species of trees planted during the original construction of the golf course, and would re-vegetate areas surrounding the golf course with drought-tolerant, native species of grasses, shrubs, and trees, including oaks and sycamores, that would require no irrigation and would create a landscape pallet more consistent with the character and habitat of the Santa Monica Mountains. The Project does not propose to remove any protected oak trees or encroach into any oak tree protection zones. By clustering development of the buildings and accommodations on approximately 20 acres and the remodeled golf course on 107 acres in the southern portion of the 650-acre property, over 450 acres of native coastal scrub and chaparral, including oak woodland forest, would be left undisturbed and become permanently dedicated open space. Grading for buildout of the Project would consist of approximately 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced onsite. No import or export of fill material would be required.

Green Building Features

The Project would incorporate many "green" features. The Institute building, which would contain the educational and meeting facilities, would use the building footprint, foundation and infrastructure of the existing clubhouse and cart barn. The Project would replace over 185,000 square feet of existing non-pervious parking lots and cart paths with pervious material to allow infiltration of storm water and improve water quality. The buildings and accommodations would incorporate sustainable and green design with the goal of achieving LEED™ Platinum certification (or equivalent) for all buildings on the property. Design features also would include green roofs on many of the Project buildings, the use of color and shade structures to reduce the heat island effect, charging stations for electric vehicles, the use of highly efficient geothermal HVAC equipment, and the use of native, drought-tolerant landscaping, and the use of a shuttle van or bus service for larger groups visiting the Project. Water conservation and design features would include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems. The Project would use photovoltaic panels over shade structures in the expanded surface parking area to generate most of the energy needs for the Project and would replace existing outdoor overhead parking lot lighting, which currently can be seen from off-site, with lighting complying with Dark Skies initiatives and the County's Rural Lighting Outdoor Lighting District Ordinance. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought Tolerant Landscaping Ordinance. Finally, the Project would remove multiple septic tanks throughout the property and install an on-site wastewater treatment and recycling system, providing effluent treatment meeting Title 22 standards for reuse as irrigation for the remodeled golf course.

Access, Circulation & Parking Facilities

The Project would include modification and construction of existing and new roadways and parking areas and visitor circulation improvements on the Project site to provide access to each of the Project components. Primary access to the Institute would continue to be from Encinal Canyon Road via Clubhouse Drive. Internally, Trancas Lakes Drive would provide access to the guest parking area located in close proximity to all of the proposed facilities, and a network of internal walkways and paths would promote circulation among the various facilities of the Malibu Institute by foot or electric cart. Externally, the Malibu Institute would generate approximately 314 Average Daily Trips (ADT) on area roadways, including 11 A.M peak hour trips and 18 P.M. peak hour trips, as estimated by a traffic study prepared for the Project. These trips would be predominantly distributed along Kanan Road to the north and south, from Encinal Canyon Road, with some minor increases associated with Decker Canyon Road. Additional study will determine if the Level of Service of any affected roadways or intersections would be significantly impacted based on County standards. The Project would provide shuttle service from neighboring airports, including Los Angeles International Airport and Burbank Airport, which would reduce the ADT on area roads as well as reduce the Project's parking demands.

To ensure there is ample parking, and to comply with County development standards, the Project would provide 387 parking spaces, which would be more than the 378 total parking spaces required by the Los Angeles County Code based on the proposed uses. Although the Malibu Institute would satisfy Code-required parking for the entire Project, in order to cluster the buildings in the southern portion of the 650-acre property and allow the dedication of over 450 acres of permanent open space, the Project cannot satisfy Code-required parking on each respective lot, and, instead would provide centralized parking to be shared between lots. Pursuant to Los Angles County Zoning Code section 22.56.990, projects proposing a parking arrangement different than the parking requirements of County Code section 22.52 require a parking permit. Therefore, the Applicant is requesting a parking permit to authorize the use of shared parking between lots on the property. No tandem or compact spaces are proposed to meet Code-required parking.

ENTITLEMENT REQUIREMENTS AND DISCRETIONARY APPROVALS

The following is a list of applicable discretionary approvals required for development and use of the Project site:

- Certification of an Environmental Impact Report;
- Approval of a Vesting Tentative Tract Map No. 71735 with 28 lots with 5 lots containing the Project development and 23 lots dedicated as permanent open space;
- Approval of Conditional Use Permit No. 201100122 to authorize the following: (1) development of the Malibu Institute project, and operation of a sports-oriented educational retreat affiliated with the University of Southern California, on a 650-acre property currently operated as the 18-hole Malibu Golf Club. The Project would consist of educational and meeting facilities, overnight visitor-serving accommodations in 40 bungalows, a restaurant/lounge, a warehouse, a cart storage building, a clubhouse with a spa and pool, a pro shop, and a maintenance building. The Project would allow the remodeling and continued use of the property for operation of the public 18-hole golf course; (2) the continued sale of alcoholic beverages for on-site consumption; (3) on-site grading of 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced on-site with no import or export of fill material; (4) the continued use and operation of a helipad (to be relocated) in the R-R zone; (5) a caretaker residence in the R-R-1 zone and (6) the construction and use of a new water tank and associated water line to replace the existing 100,000 gallon water tank on the Project site.
- Approval of a Parking Permit to authorize the use of shared parking of 387 parking spaces on-site.
- Approval of a Fuel Modification Plan from the Los Angeles County Fire Department;
- Approval of a Coastal Development Permit from the California Coastal Commission for development of the Project in the California Coastal Zone;
- Issuance of a Streambed Alteration Agreement from the California Department of Fish and Game pursuant to Fish and Game Code Section 1603;
- Issuance of a U.S. Army Corps of Engineers Nationwide Permit pursuant to Clean Water Act Section 404;
- Issuance of a Water Quality Certification from the Regional Water Quality Control Board pursuant to Clean Water Act Section 401;
- Issuance of Waste Discharge Requirements and Waste Reclamation Requirements from the Regional Water Quality Control Board for operation of an onsite wastewater system;
- Approval by the Los Angeles County Local Agency Formation Commission (LAFCO) of a community services district to maintain the onsite wastewater system and the permanently dedicated open space.
- Additional County and other governmental actions as may be determined necessary.

AREAS OF POTENTIAL ENVIRONMENTAL IMPACTS TO BE ANALYZED IN THE EIR

The Department of Regional Planning has determined by way of an Initial Study (see attached Initial Study) that an Environmental Impact Report (EIR) is necessary for the Project. The areas of potential environmental impact to be addressed in the EIR will include at least the following (see attached Initial Study):

Potential Hazards

- Geotechnical Hazards
- Flood Hazards
- Fire Hazards
- Noise Hazards

Potential Impacts to Resources

- Water Quality
- Air Quality
- Greenhouse Gas Emissions
- Biota
- Cultural Resources
- Visual Resources

Potential Impacts on Services

- Traffic/Access
- Sewage Disposal
- Fire/Sheriff Services
- Utilities

Other Potential Impacts

- Environmental Safety
- Land Use
- Population/Housing/Employment/Recreation
- Mandatory Findings

To provide a complete record of the County's environmental decision-making, environmental issues that do not rise to the level of significant impacts will be addressed in the EIR in a separate section entitled "Impacts Found to be Less than Significant"

In addition to evaluating the potential effects of the Project, the EIR will analyze a full range of Project alternatives, including, but not necessarily restricted to a "no Project" alternative and an alternative site plan.

NOTICE OF PREPARATION REVIEW AND COMMENTS

The review period for the NOP will be from November 21, 2012 to December 24, 2012.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date, but not later than December 24, 2012. Please direct all written comments to the following address. In your written response, please include the name of a contact person in your agency.

Carolina Blengini
Regional Planner
Special Projects Section
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012
Tel: 213-974-1522
Fax: 213-626-0434
Email: cblengini@planning.lacounty.gov

SCOPING MEETING

To assist in local participation, a Scoping Meeting will be held to present the Project and to solicit suggestions from the public and responsible agencies on the content of the draft EIR. This meeting will be held at the Malibu Golf Club, located at 901 Encinal Canyon Road, Malibu, CA 90265 on Monday, December 10, 2012 from 2:00 p.m. and ending after the last testifier or 4:30 p.m., whichever comes first (see meeting location map below).

REVIEW MATERIALS

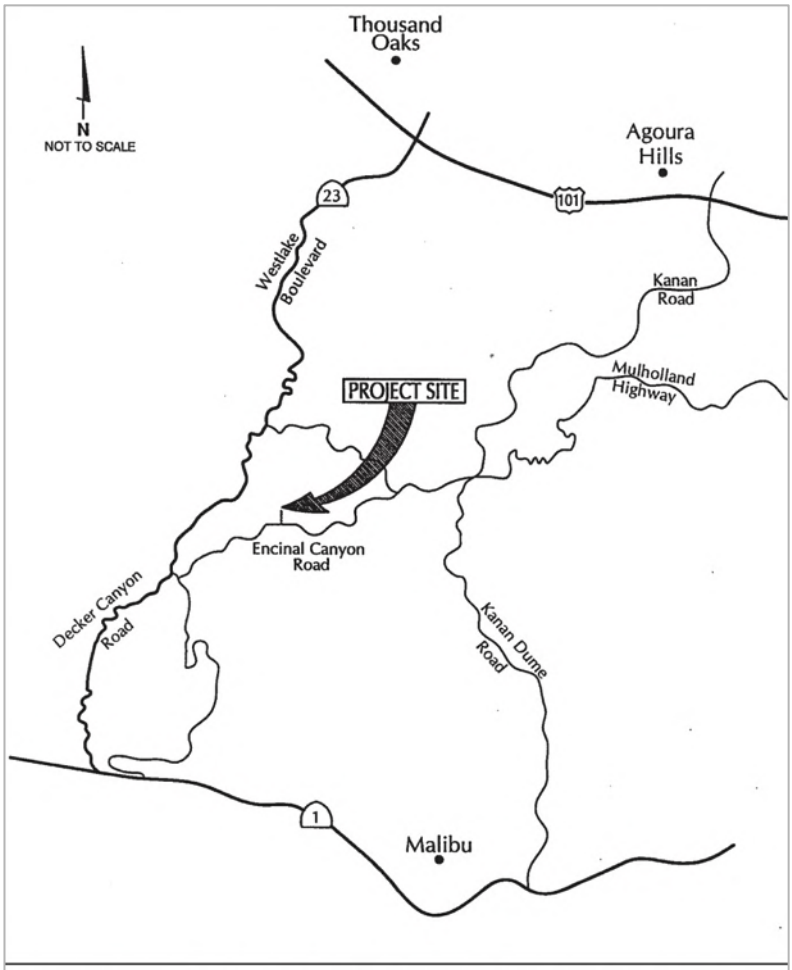
The County of Los Angeles Department of Regional Planning is soliciting input based on your views and opinions concerning the scope of the EIR for the Project. To facilitate your review, the following materials are attached:

- Expanded Project Description;
- Los Angeles County Initial Study; and
- 500-foot Radius Land Use Map. Additional copies of the NOP are available for public review on the Department of Regional Planning website http://planning.co.la.ca.us/case.htm as well as at the following libraries:

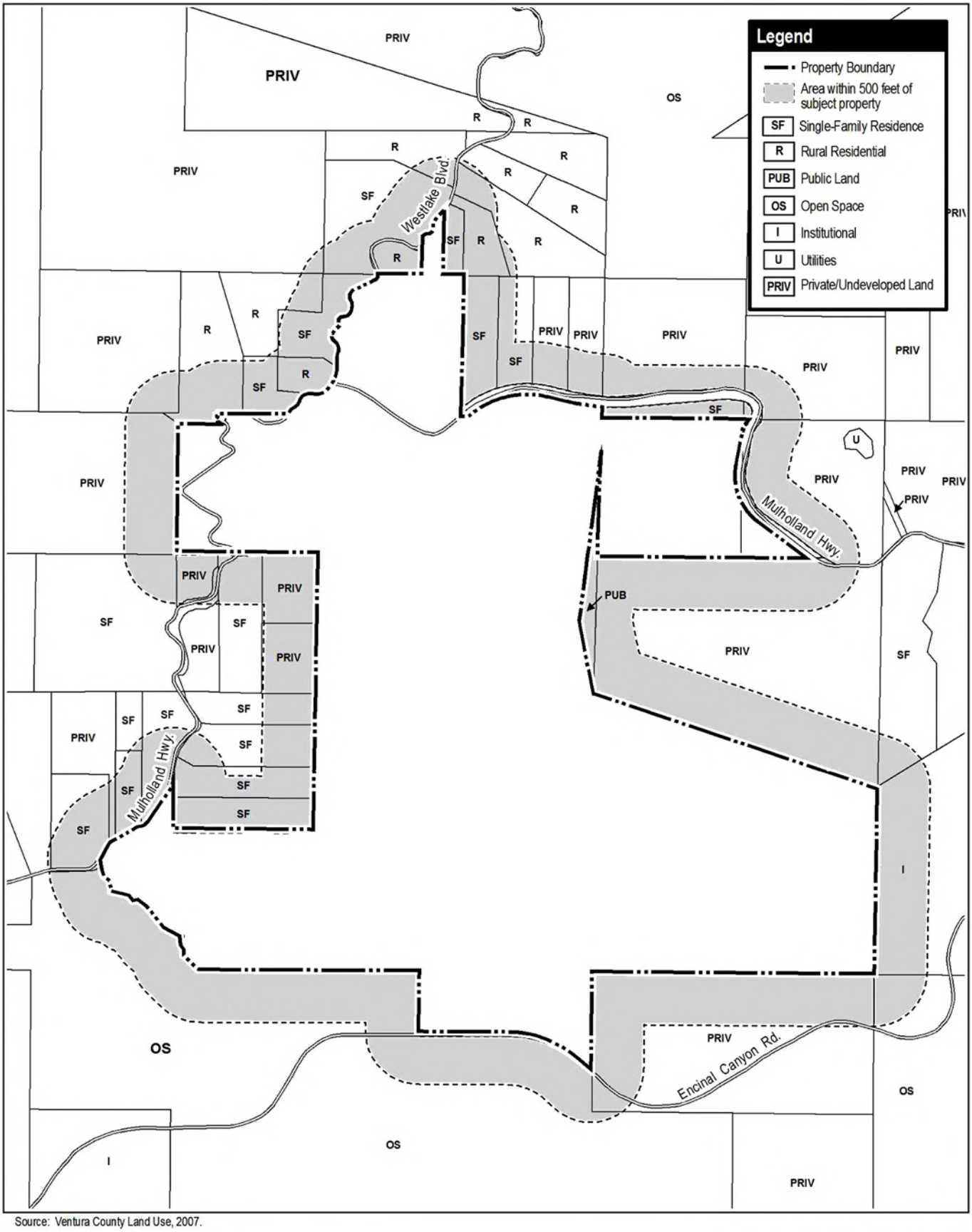
Malibu County Library
23519 W. Civic Center Way
Malibu, CA 90265-4804
Environmental Documents
Phone: (310) 456-6438

Las Virgenes/Agoura Hills County Library
29901 Ladyface Court
Agoura Hills, CA 91301
Environmental Documents
Phone: (818) 889-2278

Westlake Village Library
31220 Oak Crest Drive
Westlake Village, CA 91361



THE MALIBU INSTITUTE PROJECT – SCOPING MEETING LOCATION



Source: Ventura County Land Use, 2007.

ENVICOM CORPORATION

MALIBU INSTITUTE PROJECT

500-Foot Land Use Radius Map

0 700 1,400 Feet

Environmental Checklist Form (Initial Study)

County of Los Angeles, Department of Regional Planning

Project title: The Malibu Institute Project No. TR071735/VTTM No. 071735/CUP No. 201100122/Parking Permit No. 201100005/Environmental Review No. 201100192

Lead agency name and address: County of Los Angeles, Department of Regional Planning, 320 West Temple Street, Los Angeles, CA 90012

Contact Person and phone number: Carolina Blengini, 213-974-1522

Project sponsor's name and address: The Malibu Institute, 901 Encinal Canyon Road, Malibu, California 90265

Project location: 901 Encinal Canyon Road, Malibu, California
APNs: 2058-015-003, 2058-015-013, 2058-015-037, 2058-015-045, 2058-015-046, 4471-001-028, 4471-001-029, 4471-001-032, 4471-001-033, 4471-001-034, 4471-001-035, 4471-001-036, 4471-001-037, 4471-001-039, 4471-001-041, 4471-001-042, 4471-001-043, 4471-002-010, 4471-002-011, 4471-002-026, 4471-002-027, 4471-003-010, 4471-003-011, 4471-003-030, 4471-003-031, 4471-003-032, 4471-021-028, 4471-021-033, 4471-021-034

USGS Quad: Point Dume, CA

Gross Acreage: 650 acres

General plan designation: N/A (Malibu Land Use Plan).

Community/Area wide Plan designation: Malibu Land Use Plan (LUP): M2 (Mountain Land – 1 DU / 20 AC), 3 (Rural Land – 1 DU / 10 AC), 4 (Rural Land – 1 DU / 5 AC), and 5 (Rural Land – 1 DU / 2 AC)

Zoning: R-R-1 (Resort and Recreation, 1-acre minimum lot size), A-1-1 (Light Agriculture, 1-acre minimum lot size), A-1-20 (Light Agriculture, 20-acre minimum lot size), and RPD-5-0.2-DP (Residential Planned Development)

Description of project: The Malibu Institute (Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course on a 650-acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The Project would provide for the development of educational and meeting facilities (48,164 square feet), along with visitor-serving overnight accommodations consisting of 40 bungalow structures (109,140 square feet), a restaurant/lounge, a clubhouse (30,147 square feet), golf pro shop and grill (12,104 square feet), and support facilities including a maintenance building (10,500 square feet), warehouse (4,623 square feet), golf cart storage barn (9,162 square feet), and a security/information building (447 square feet), all located within the previously disturbed area of the Malibu Golf Club. The Project would include 224,287 square feet of structures, which would include the reuse and remodel of the existing 12,475 square foot clubhouse and cart barn as part of the Institute building and the removal of 11,160 square feet of existing structures, for a total increase of 200,652 square feet of structures on the Project site.

An existing 875 square foot guesthouse located on the northern portion of the property would be retained by the proposed Project for use as a caretakers' residence. The Malibu Institute would be open year-round for education-oriented conferences, and with overnight accommodations would operate 24 hours per day; however, meetings would take place predominantly during regular business hours. The redesigned golf course would continue to operate as a public golf facility, as well as being available to guests of the Malibu Institute.

All construction activity would occur within the area previously disturbed during development of the Malibu Golf Club in the 1970s. The Project would remodel the existing 18-hole public golf course using an environmentally sensitive design, including sand-capping the fairways, a "smart" irrigation system, and new generation drought-tolerant grasses. These measures would reduce water consumption for irrigation of the golf course by approximately 35%. The 18-hole golf course layout would be reconfigured using the acreage of 17 of the existing holes on approximately 107 acres of the existing 118-acre existing golf course, with the turf area reduced to approximately 62 acres. The Applicant would remove approximately 1,590 non-native species of trees planted during the original construction of the golf course, and would re-vegetate areas surrounding the golf course with drought-tolerant, native species of grasses, shrubs, and trees, including oaks and sycamores, that would require no irrigation and would create a landscape pallet more consistent with the character and habitat of the Santa Monica Mountains. The Project does not propose to remove any protected oak trees or encroach into any oak tree protection zones. By clustering development of the buildings and accommodations on approximately 20 acres and the remodeled golf course on 107 acres in the southern portion of the 650-acre property, over 450 acres of native coastal scrub and chaparral, including oak woodland forest, would be left undisturbed and become permanently dedicated open space. Grading for buildout of the Project would consist of approximately 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced onsite. No import or export of fill material would be required.

The Project would incorporate many "green" features. The Institute building, which would contain the educational and meeting facilities, would use the building footprint, foundation and infrastructure of the existing clubhouse and cart barn. The Project would replace over 185,000 square feet of existing non-pervious parking lots and cart paths with pervious material to allow infiltration of storm water and improve water quality. The buildings and accommodations would incorporate sustainable and green design with the goal of achieving LEED™ Platinum certification (or equivalent) for all buildings on the property. Design features also would include green roofs on many of the Project buildings, the use of color and shade structures to reduce the heat island effect, charging stations for electric vehicles, the use of highly efficient geothermal HVAC equipment, and the use of native, drought-tolerant landscaping, and the use of a shuttle van or bus service for larger groups visiting the Project. Water conservation and design features would include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems. The Project would use photovoltaic panels over shade structures in the expanded surface parking area to generate most of the energy needs for the Project and would replace existing outdoor overhead parking lot lighting, which currently can be seen from off-site, with lighting complying with Dark Skies initiatives and the County's Rural Lighting Outdoor Lighting District Ordinance. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought Tolerant Landscaping Ordinance. Finally, the Project would remove multiple septic tanks throughout the property and install an on-site wastewater treatment and recycling system, providing effluent treatment meeting Title 22 standards for reuse as irrigation for the remodeled golf course.

Surrounding land uses and setting: The property is located approximately 4.5 miles south of U.S. Highway 101 and is bounded by private property on the west, north, and northeast. The majority of the surrounding area is generally comprised of naturally vegetated landscapes interspersed with a variety of low-density residential and institutional uses. Large lot residential properties are located along Decker Canyon Road to the west and along Mulholland Highway to the north. Residences north of Mulholland Highway commonly have incorporated equestrian facilities and/or agricultural development. A State-owned parcel

straddles Encinal Canyon Road where it abuts the southeastern corner of the property. The interior portion of the State property lying north of Encinal Canyon Road contains two youth offender correctional facilities (Camps Miller and Kilpatrick). From the southeastern corner of the property to the southwest (a straight-line distance of approximately 1.4 miles), most of the southern boundary of the property fronts land in public ownership. The Backbone Trail stretches along the crests of ridges that are aligned east/west mostly on public land to the south of Encinal Canyon Road. County of Los Angeles Fire Camp #13 occupies a site on State-owned property that is situated on Encinal Canyon Road approximately 3,000 feet southwest of the entry road (Clubhouse Drive) to the golf course.

Other public agencies whose approval may be required (e.g., permits, financing approval, or participation agreement):

Public Agency	*Approval Required*
Los Angeles County	• Certification of an Environmental Impact Report • Vesting Tentative Tract Map • Conditional Use Permit • Parking Permit
California Coastal Commission	Coastal Development Permit
California Department of Fish and Game	Section 1603 Streambed Alteration Agreement
Army Corps of Engineers	Clean Water Act Section 404 permit
Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification, Waste Discharge Requirements and Waste Reclamation Requirements
Los Angeles County Local Agency Formation Commission	Formation of Community Services District
Las Virgenes Municipal Water District	Water Supply Assessment

Major projects in the area:

Project/Case No.	*Description and Status*
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Reviewing Agencies:

Responsible Agencies

- ☐ None

Regional Water Quality Control Board:

- ☒ Los Angeles Region
- ☐ Lahontan Region

- ☒ Coastal Commission
- ☒ Army Corps of Engineers

Special Reviewing Agencies

- ☐ None
- ☒ Santa Monica Mountains Conservancy
- ☒ National Parks
- ☐ National Forest
- ☐ Edwards Air Force Base
- ☒ Resource Conservation District of Santa Monica Mountains Area
- ☐

Regional Significance

- ☐ None
- ☐ SCAG Criteria
- ☐ Air Quality
- ☐ Water Resources
- ☒ Santa Monica Mtns. Area

Trustee Agencies

- ☐ None
- ☒ State Dept. of Fish and Game
- ☒ State Dept. of Parks and Recreation
- ☐ State Lands Commission
- ☐ University of California (Natural Land and Water Reserves System)

County Reviewing Agencies

- ☒ DPW:
  - Land Development Division (Grading & Drainage)
  - Geotechnical & Materials Engineering Division
  - Watershed Management Division (NPDES)
  - Traffic and Lighting Division
  - Environmental Programs Division
- ☒ Fire Department
  - Forestry, Environmental Division
  - Planning Division
  - Land Development Unit
  - Health Hazmat
- ☐ Sanitation District
- ☒ Public Health/Environmental Health Division: Land Use Program (OWTS), Drinking Water Program (Private Wells), Toxics Epidemiology Program (Noise)
- ☒ Sheriff Department
- ☒ Parks and Recreation
- ☒ Subdivision Committee

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project.

☒ Aesthetics	☒ Greenhouse Gas Emissions	☐ Population/Housing
☐ Agriculture/Forest	☒ Hazards/Hazardous Materials	☒ Public Services
☒ Air Quality	☒ Hydrology/Water Quality	☒ Recreation
☒ Biological Resources	☒ Land Use/Planning	☒ Transportation/Traffic
☒ Cultural Resources	☐ Mineral Resources	☒ Utilities/Services
☒ Energy	☒ Noise	☒ Mandatory Findings of Significance
☒ Geology/Soils		

DETERMINATION: (To be completed by the Lead Department.)
On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature (Prepared by) — Date: 11/15/12

Signature (Approved by) — Date: 11/15/12

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources the Lead Department cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the Lead Department has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level. (Mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced.)

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA processes, an effect has been adequately analyzed in an earlier EIR or negative declaration. (State CEQA Guidelines § 15063(c)(3)(D).) In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

7) The explanation of each issue should identify: the significance threshold, if any, used to evaluate each question, and; mitigation measures identified, if any, to reduce the impact to less than significance. Sources of thresholds include the County General Plan, other County planning documents, and County ordinances. Some thresholds are unique to geographical locations.

8) Climate Change Impacts: When determining whether a project's impacts are significant, the analysis should consider, when relevant, the effects of future climate change on : 1) worsening hazardous conditions that pose risks to the project's inhabitants and structures (e.g., floods and wildfires), and 2) worsening the project's impacts on the environment (e.g., impacts on special status species and public health).

1. AESTHETICS

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐

Mulholland Highway, which traverses the far northern portion of the property, is designated as a scenic highway. Portions of the Project would be visible from Mulholland Highway, however, the Project would be constructed on currently disturbed areas and would be designed to be compatible with the environment and blend with the natural color palette of the area.

b) Be visible from or obstruct views from a regional riding or hiking trail?	☒	☐	☐	☐

Existing regional hiking and riding trails within the Santa Monica Mountains that are located in proximity to The Malibu Institute property include portions of the Backbone Trail, which crosses Encinal Canyon Road approximately 0.3 to 0.4 miles to the west of the property. While the development area of the property is entirely screened from the northern extension of this trail by an intervening ridgeline, there is the potential that the southern extension of the trail could provide elevations where the proposed development area on the property would be visible. However, the proposed buildings would be constructed on currently disturbed land and would not appear substantially different when viewed from this distance as the existing golf course fairways and facilities. No trails are located within the property.

c) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☒	☐	☐

Project development would occur on areas that have previously been developed or disturbed and that do not contain unique aesthetic features. The existing golf course contains native and non-native trees some of which would be removed with Project development. Proposed landscaping would include planting of native grasses, trees, and shrubs, which would be more consistent with the visual character of the surrounding open space habitats as compared to the existing conditions.

d) Substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features?	☐	☒	☐	☐

As is the case for visibility of the existing Malibu Golf Club, The Malibu Institute also would be visible from Encinal Canyon Road, from portions of Mulholland Highway, and to various degrees from selected private residences that occupy elevated locations with direct lines of sight to the proposed facilities from the surrounding hillsides. However, the Project would be designed and constructed to be compatible with the surrounding rural area, and would be located within the lower elevations of the property which would minimize the visibility of the Project from surrounding areas.

e) Create a new source of substantial shadows, light, or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

The Project's structural features would be located within natural canyons generally out-of-view from public highways where they otherwise could contribute to daytime glare. Any buildings that would potentially be in view of the development area on the property would be located at higher elevations than the highest extent of proposed structures and therefore would not be subject to Project-related shading impacts. The Project's lighting plans would comply with Dark Sky protocols regarding lighting, would include the removal of the existing parking lot lighting that currently can be seen from off-site locations, and would provide parking lot down-lighting which would be shielded to comply with Dark Sky protocols as well as the Los Angeles County Rural Outdoor Lighting District Ordinance. No night golfing will be permitted, consistent with current operating conditions.

2. AGRICULTURE / FOREST

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

The property does not include any existing agricultural or farming uses. The existing golf course is primarily located in an area zoned Resort and Recreation (R-R-1) with a small portion zoned for Light Agriculture (A-1-1). The land uses proposed for the portion zoned A-1-1, i.e., golf course, are permissible subject to procurement of a conditional use permit. Areas of the property not proposed for development are zoned A-1-1, R-R-1, Light Agriculture A-1-20, and RPD-5-0.2-DP. This issue does not warrant further study.

b) Conflict with existing zoning for agricultural use, with a designated Agricultural Opportunity Area, or with a Williamson Act contract?	☐	☐	☐	☒

Although a small portion of the property is zoned for Light Agriculture (A-1-1), the proposed Project would not conflict with the underlying zoning, nor would it impact any lands under a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code § 12220 (g)), timberland (as defined in Public Resources Code § 4526), or timberland zoned Timberland Production (as defined in Government Code § 51104(g))?	☐	☐	☐	☒

Timber production is not practiced on the property, nor is any commercial forestry use practiced near enough to the property to be adversely impacted by the Project. This issue does not warrant further study.

d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

See the response to question c. above. This issue does not warrant further study.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Agricultural uses are not practiced on the property, nor is any commercial agriculture use practiced near enough to the property to be adversely impacted by the Project. This issue does not warrant further study.

3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Conflict with or obstruct implementation of applicable air quality plans of either the South Coast AQMD (SCAQMD) or the Antelope Valley AQMD (AVAQMD)?	☒	☐	☐	☐

An Air Quality Study will be conducted and will address this issue and identify any necessary mitigation measures.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐

An Air Quality Study will be conducted and will address this issue and identify any necessary mitigation measures associated with construction or operation of the Project.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐

An Air Quality Study will be conducted and will address this issue and identify any necessary mitigation measures associated with construction or operation of the Project.

d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒

The Project is not located near a freeway or areas containing heavy industrial uses.

e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

The Project is an educational retreat and would not create objectionable odors.

4. BIOLOGICAL RESOURCES

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS)?	☒	☐	☐	☐

The Project development would be located within the previously disturbed envelope of the Malibu Golf Club. The undeveloped portions of the property contain natural vegetation communities that are relatively intact and undisturbed. Similarly, undeveloped private properties and portions of developed properties that abut the property are still characterized by contiguous tracts of native vegetation. The undeveloped portions of the property, including areas along the southern property line are in relatively undisturbed condition and connect with areas of equivalent chaparral habitat lying across the boundaries of the property. The property and surrounding habitat areas support a diversity of wildlife species, including sensitive species, and facilitate movement of species between larger habitat areas. As such, further wildlife studies will be required in accordance with all state and federal regulations and statutes.

b) Have a substantial adverse effect on any sensitive natural communities (e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, regulations or by CDFG or USFWS?	☒	☐	☐	☐

The majority of the property is located within the coastal zone. Much of the property surrounding the Project development area on the property would be considered ESHA. Further, a very small portion of the northeastern part of the property is located within SEA Buffer 3A. The Project would not develop portions of the property on or near the SEA Buffer or within ESHA. Additional analysis of this issue is required to document and accurately delineate areas where exactly the Significant Ecological Areas (SEA), SEA Buffers, or coastal Sensitive Environmental Resources (ESHA, etc.) exist and identify existing regulations and required mitigation measures aimed at protecting these areas. See responses a, c, and e for additional information.

c) Have a substantial adverse effect on federally or state protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, and drainages) or waters of the United States, as defined by § 404 of the federal Clean Water Act or California Fish & Game code § 1600, et seq. through direct removal, filling, hydrological interruption, or other means?

☒ ☐ ☐ ☐

The property is drained by Trancas Creek (an intermittent USGS blueline stream), which basically trends north to south across the property. In a dendritic fashion, numerous tributaries converge on the main stem of the creek in southeasterly and southwesterly directions. Several of these tributaries are also USGS-designated intermittent blue-line streams, but most tributaries are ephemeral in nature. Natural conditions along Trancas Creek were altered during construction of the golf course in the 1970s. In particular, the course of Trancas Creek was altered with portions of the channel being straightened and diverted into underground and aboveground culverts. Further, two perennial water impoundments (man-made ponds) were created within the footprint of the developed golf course.

Additional analysis is required, including a U.S. Army Corps of Engineers jurisdictional delineation pursuant to the Clean Water Act, identification of streambed under the jurisdiction of the California Department of Fish and Game, and development of any required mitigation measures.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

☒ ☐ ☐ ☐

Undeveloped slopes on the Project site provide habitat for wildlife and cover, nesting, and foraging habitat for a variety of species. Wildlife can move freely from the undeveloped open areas of the Project site to the ridgelines that surround most of the site. This habitat continues beyond the Project boundaries on all sides, interrupted only by scattered residences, and Encinal Canyon Road to the south and Mulholland Highway to the north. The wildlife inhabiting the Project site would be expected to be typical of the Santa Monica Mountain region, which includes various species of reptiles, amphibians, birds, and mammals. Based on a preliminary query of the California Department of Fish and Game's Natural Diversity Database, using the Rarefind 3 application for sensitive "elements" within three coastal USGS quadrangles (Point Dume, Malibu Beach and Topanga), there is the potential for the occurrence of sensitive wildlife species at this Site. As such, further wildlife studies will be required in accordance with all state and federal regulations and statutes.

e) Convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5 inch in diameter measured at 4.5 feet above mean natural grade) or otherwise contain oak or other unique native trees (junipers, Joshuas, southern California black walnut, etc.)? ☒ ☐ ☐ ☐

The Project site includes some oak woodland forest areas, including numerous coast live oaks (Quercus agrifolia). The Project does not propose the removal of any protected native oak or sycamore trees, or encroachment into protected zones by construction activities. Additional analysis of the Project's avoidance of oak tree impacts is required. Proposed landscaping of the site would include planting of native oak trees and western sycamore trees in some of the areas surrounding the redesigned golf course where non-native trees are to be removed.

f) Conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36), the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16), the Significant Ecological Areas (SEAs) (L.A. County Code, Title 22, § 22.56.215), and Sensitive Environmental Resource Areas (SERAs) (L.A. County Code, Title 22, Ch. 22.44, Part 6)? ☒ ☐ ☐ ☐

The construction of the Project would occur on previously disturbed areas of the property. However, the proposed re-configuration of the golf course and construction of the proposed facilities may impact native vegetation. Additional analysis of this issue is required to document areas where vegetation impacts may occur and to identify existing regulations and required mitigation measures. The Project does not propose to remove any protected native oak trees, or to encroach into protected zones of oaks by construction activities.

g) Conflict with the provisions of an adopted state, regional, or local habitat conservation plan? ☒ ☐ ☐ ☐

The additional study of the Project's potential conflict with local policies and ordinances discussed in response f. would also include a thorough investigation to determine if there are any adopted state, regional or local habitat conservation plans for areas in the vicinity of the Project site, and whether implementation of the proposed Project would pose a conflict with such a plan.

5. CULTURAL RESOURCES

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines § 15064.5?	☒	☐	☐	☐

Two cultural sites appear to lie within the property boundaries: CA-LAN-527 and CA-LAN-528 with a third unrecorded site also present. The suspected location of one of the sites (CA-LAN-527) is within the developed and artificial fill-covered portions of the existing golf course. The suspected location is completely covered with turf grass, associated landscaping and cart paths. The actual site boundaries are unknown. Since no precise site location or other qualitative records exist, it is unknown whether this site is prehistoric or historic. The actual size, depth or age of the site is unknown. It is also unknown whether testing or excavation of the site occurred prior to its apparent covering with artificial fill during the construction of the golf course.

The second site (CA-LAN-528) is an unoccupied hunting lodge overlooking the golf club that was built in 1928. The hunting lodge consisted of a 16-room redwood-frame structure that subsequently had a stucco finish applied sometime during the 1980s. This structure has been abandoned for many years and is in a state of disrepair. For safety and security reasons, the Project would remove this structure.

An unrecorded residential structure, dating from sometime between 1900 and 1939, is located at 32926 Mulholland Highway, roughly 2,000 feet northwest of CA-LAN-528. The original 720 sq. ft. structure is currently inhabited, and it was upgraded during the 1980s. The Project would retain this structure as a caretaker's residence.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines § 15064.5?	☒	☐	☐	☐

Cultural site CA-LAN-527 is suspected to be located within the developed and artificial fill-covered portions of the existing golf course. Since no precise site location or other qualitative records exist, it is unknown whether this site is prehistoric or historic. See response a.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or contain rock formations indicating potential paleontological resources?	☐	☐	☒	☐

The Project would be constructed within the footprint of the existing golf course development. These areas are in the flatter portions of the interior valley of the property and do not contain caves or rock formations that might contain markings of cultural origins. Peak locations of the property with exposed rock formations that might contain cultural markings are over 2,000 feet from the area proposed for development.

d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Human remains are not known to exist on the property, however, cultural site CA-LAN-527, which has not been excavated, is suspected to be located within the developed and artificial fill-covered portions of the existing golf course.

6. ENERGY

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Conflict with Los Angeles County Green Building Ordinance (L.A. County Code Title 22, Ch. 22.52, Part 20 and Title 21, § 21.24.440) or Drought Tolerant Landscaping Ordinance (L.A. County Code, Title 21, § 21.24.430 and Title 22, Ch. 22.52, Part 21)?	☐	☒	☐	☐

The Project's buildings and accommodations would incorporate sustainable and green design features with the goal of achieving LEED™ Platinum certification (or equivalent) for all buildings within the Project. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought-Tolerant Landscaping Ordinance.

b) Involve the inefficient use of energy resources (see Appendix F of the CEQA Guidelines)?	☐	☒	☐	☐

The project would incorporate mitigation measures featured in Appendix F of the CEQA Guidelines, where necessary and applicable.

7. GEOLOGY AND SOILS

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known active fault trace? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐

The property is not located within an Alquist-Priolo Earthquake Fault Zone (APEFZ), and no active or potentially active faults have been mapped or are known to cross the property. The nearest known active faults are the Anacapa – Dume and the Malibu Coast Faults, each located approximately 1.3 miles from the Project site as reported in the Geotechnical Investigation (Sladden Engineering, 2012) prepared for the Project.

ii) Strong seismic ground shaking?	☒	☐	☐	☐

The potential for strong ground shaking at the site is similar to that of adjacent sites in Los Angeles County. The active faults that are capable of producing the strongest ground shaking at the site are the Malibu Coast and Anacapa-Dume Faults, which are both located approximately 1.3 miles from the Project site as reported in the Geotechnical Investigation (Sladden Engineering, 2012) prepared for the Project. The San Andreas Fault can also produce relatively strong ground shaking, which could influence the Project site.

iii) Seismic-related ground failure, including liquefaction and lateral spreading?	☒	☐	☐	☐

The property does not lie in a zone that has been identified by the California Geological Survey as susceptible to liquefaction. The materials underlying the Project site are considered to be a "low to medium" expansion potential; however, measures for foundations, grading, and structural design can be implemented to address conditions that might be encountered. Whereas subsidence can occur in a variety of substrates, sedimentary and groundwater conditions contributing to liquefaction are generally not thought to be present so as to constitute potentially significant hazards. The Geotechnical Investigation (Sladden Engineering, 2012) prepared for the Project addresses these issues and identifies any necessary recommendations to mitigate potential risks.

iv) Landslides? ☒ ☐ ☐ ☐

According to the Seismic Hazard Zones Map for the Point Dume Quadrangle published by the California Geologic Survey, portions of the steep side slopes of the valleys containing the developed portions of the property may be susceptible to seismically induced landslides have been identified or have been previously mapped on the property. Feasible mitigation measures regarding the placement of proposed structures can be implemented to avoid potential hazards and site grading and preparation of engineered manufactures slopes can address any such hazards as may be encountered.

b) Result in substantial soil erosion or the loss of topsoil? ☐ ☒ ☐ ☐

Construction of the Project would require grading and alteration of some natural and manufactured topography. Recently graded slopes would be subject to soil erosion; however, best management practices would be employed to reduce this potential.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? ☒ ☐ ☐ ☐

The Project development components primarily consist of redevelopment or intensification of uses on previously graded sites; however, it is expected grading would be necessary which may result in slope instability if conducted at the toes of slopes. As such, slope investigations will be conducted as part of the geotechnical analysis to determine the Project's effects on slope stability and to identify any required mitigation measures. Refer to answer a(iv) for additional information regarding slope instability.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? ☒ ☐ ☐ ☐

The materials underlying the Project site are considered to be a "low to medium" expansion potential; however, appropriate mitigation measures for foundations, grading, and structural design would be implemented to address conditions that might be encountered. The Geotechnical Investigation (Sladden Engineering, 2012) prepared for the Project addresses these issues and identifies any necessary recommendations to mitigate potential risks.

e) Have soils incapable of adequately supporting the use of onsite wastewater treatment systems where sewers are not available for the disposal of wastewater? ☒ ☐ ☐ ☐

The Project proposes a below-ground treatment facility. Site specific soils analysis is required.

f) Conflict with the Hillside Management Area Ordinance (L.A. County Code, Title 22, § 22.56.215) or hillside design standards in the County General Plan Conservation and Open Space Element?	☐	☐	☒	☐

The Project would re-use an existing developed site within a valley offset from surrounding areas by steep slopes. These slopes exceed 25% and would be subject to Hillside Management criteria. However, since the development is located on the valley floor, the Project would not conflict with Hillside Management criteria nor conflict with the County General Plan Conservation and Open Space Element.

8. GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Generate greenhouse gas (GHGs) emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐

The Project would generate additional GHGs due to increased energy usage from stationary and mobile sources. The Project's EIR will include an air quality impact report to estimate the Project's emissions, using the CalEEmod emission modeling program, and an evaluation regarding the significance based on the latest regulations and guidance from the County, the South Coast Air Quality Management District and the State. The Project's EIR also will evaluate potential reductions in GHG emissions from mobile sources due to the anticipated use of private shuttles to be provided by the Malibu Institute or USC to transport overnight guests of the Malibu Institute from the university or area airports.

b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐

The Project would incorporate applicable design features mandated by the County to reduce GHG emissions and comply with applicable regulations regarding the implementation of AB 32. All proposed new buildings on the site would be constructed with the goal of achieving a LEED™ Platinum certification level (or equivalent) of energy efficiency. To achieve this level of efficiency and sustainability, the Project would provide efficiency features such as internal site circulation via electric vehicles or pedestrian walkways, installation of photovoltaic panels above shade structures in the surface parking area. To reduce mobile source emissions of GHGs, the Project would provide a shuttle service to area airports for the transport of overnight guests of the Malibu Institute.

9. HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials?	☐	☐	☒	☐

While the majority of the Project would not produce, handle, or store hazardous materials, implementation of the Project would involve the use of common hazardous materials (paint thinners, solvents, etc.) during Project construction and operation. Maintenance of the proposed facilities would require on-site storage of flammable substances such as diesel or gasoline fuels for maintenance equipment. Federal, State, and local regulations and statutes regulate the use of all such hazardous and/or flammable materials.

Pressurized air tanks are used at the golf course maintenance equipment facilities to fill tires or operate power tools. Propane tanks are also used on-site, and would continue to be used by the proposed Project, however, the Project would relocate propane storage to a small tank farm area to be located near the onsite wastewater treatment facility.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment?	☐	☐	☒	☐

The storage of common hazardous materials such as gasoline and diesel fuels is not anticipated to be substantially greater than under existing conditions, and the handling and storage of these materials would continue to be regulated by Federal, State, and local regulations and statutes.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of sensitive land uses?	☐	☐	☐	☒

There are no residences, hospitals, or schools located within 500 feet of the development areas.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

The Project is not located on a site that is listed as containing hazardous materials (as per Government Code Section 65962.5), and as such does not pose a significant hazard to the public or to the environment. Further analysis of this issue is not warranted.

e) For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? ☐ ☐ ☐ ☒

The Project site is not located within an airport land use plan area, nor is it located within two miles of a public use airport. Further analysis of this issue is not warranted.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? ☐ ☐ ☐ ☒

The Project site is not located within the vicinity of a private airstrip. Further analysis of this issue is not warranted.

g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan? ☐ ☒ ☐ ☐

The Project would not physically interfere with, nor impair the implementation of, an adopted emergency response or emergency evacuation plan, and would relocate an existing helipad to another location on the property as preferred by the Los Angeles County Fire Department. Therefore, the Project would result in less than significant impacts with the adoption of an emergency evacuation plan approved by the County Fire Department.

h) Expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located:

i) within a Very High Fire Hazard Severity Zones (Zone 4)? ☒ ☐ ☐ ☐

The property is located in Fire Zone 4. Analysis of the potential fire hazards faced by the Project must be undertaken to identify any necessary mitigation measures.

ii) within a high fire hazard area with inadequate access? ☒ ☐ ☐ ☐

The Project's developed areas would be adequately accessible to emergency vehicles in terms of street widths, lengths, surface materials, turnarounds and grades. However, implementation of the Project may increase traffic on Encinal Canyon Road and nearby intersections that could potentially impact emergency service access. Additional analysis must be undertaken to identify site access during times of wildfire to appropriately identify required codes, standards and other mitigation measures. The Applicant is also requesting a conditional use permit pursuant to County Code section 22.40.220 for the continued use and operation of a helipad in a R-R zone, which may be used by the Los Angeles County Fire Department for emergency access. As part of the Project, the existing helipad would be relocated to another area on-site, as preferred by the Los Angeles County Fire Department for better access during emergencies.

iii) within an area with inadequate water and pressure to meet fire flow standards?	☒	☐	☐	☐

Analysis is required to ensure adequate water and pressure would be provided to meet fire flow standards. This will entail documentation including identification of the water provider and distribution facilities, as well as the Project's compliance with applicable fire codes, standards, and other possible mitigation measures that may be required.

iv) within proximity to land uses that have the potential for dangerous fire hazard?	☐	☐	☒	☐

The Project is not located in close proximity to any heavy industrial uses, refineries, or uses known to use flammables or manufacture explosives. However, flammable substances, such as gas or diesel fuel are currently stored on the Project site, primarily for use in golf course maintenance equipment. Such fuels would be expected to continue to be stored on-site in a manner consistent with Federal, State and local requirements.

i) Does the proposed use constitute a potentially dangerous fire hazard?	☐	☐	☒	☐

The Project does not constitute a potentially dangerous fire hazard. However, flammable substances, such as gas or diesel fuel are currently stored on site, primarily for use in golf course maintenance equipment. Such fuels would be expected to continue to be stored on-site in a manner consistent with Federal, State and local requirements.

10. HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐

Without proper mitigation, the Project could contribute to the degradation of existing surface water quality conditions, primarily due to: 1) potential erosion and sedimentation during grading phases; 2) automobile/street-generated pollutants (i.e., oil and grease, tire wear, etc.); 3) fertilizers and pesticides used in landscaping and golf course maintenance; and 4) particulate matter from dirt and dust generated on-site. Additional analysis is required in order to document the Project's potential to degrade water quality during grading/construction and operational phases of the Project. The additional analysis also will document existing water quality regulations and standards (National Pollutant Discharge Elimination System-NPDES requirements), agency permits required (i.e. CDFG), BMPs, and any required mitigation measures.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐

The Project would receive potable water from the Los Virgenes Municipal Water District. The golf course currently uses six private wells located onsite for potable water and for irrigation. These private wells would continue to be used to meet a portion of the landscape irrigation needs. The Project's re-designed golf course would use approximately 35% less water than the existing course by utilizing more efficient irrigation equipment, as well as replacing some trees and vegetation with native drought-resistant trees and shrubs. The Project proposes to install a Recycled Water Treatment System that will utilize a combination of aeration, ultra-filtration, and disinfection to treat effluent to a standard suitable for unrestricted, non-potable reuse onsite as landscape irrigation.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? ☐ ☒ ☐ ☐

The Project would not substantially alter the existing drainage pattern of the property and the surrounding area. Additional studies are necessary to document potential increases in runoff and required drainage infrastructure as well as to identify any appropriate mitigation measures.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? ☐ ☒ ☐ ☐

The Project would not substantially alter the existing drainage pattern of the property and the surrounding area. Additional studies are necessary to document potential increases in runoff and required drainage infrastructure as well as to identify any appropriate mitigation measures.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? ☒ ☐ ☐ ☐

See response a.

f) Generate construction or post-construction runoff that would violate applicable stormwater NPDES permits or otherwise significantly affect surface water or groundwater quality? ☒ ☐ ☐ ☐

See response a.

g) Conflict with the Los Angeles County Low Impact Development Ordinance (L.A. County Code, Title 12, Ch. 12.84 and Title 22, Ch. 22.52)? ☐ ☒ ☐ ☐

The Project would incorporate best management practices for water retention and treatment in compliance with Low Impact Development ordinance requirements.

h) Result in point or nonpoint source pollutant discharges into State Water Resources Control Board-designated Areas of Special Biological Significance? ☒ ☐ ☐ ☐

The ocean from Mugu Lagoon to Latigo Point is Area of Special Biological Significance (ASBS) No. 24. Trancas Creek ultimately flows into the ocean in this area.

i) Use onsite wastewater treatment systems in areas with known geological limitations (e.g. high groundwater) or in close proximity to surface water (including, but not limited to, streams, lakes, and drainage course)? ☒ ☐ ☐ ☐

The Project proposes an onsite, below-ground treatment facility. Site specific soils analysis is required.

j) Otherwise substantially degrade water quality? ☒ ☐ ☐ ☐

The Project may impact runoff through the alteration of surface conditions such as increasing the site's impervious surfaces. Additional analysis is required to document the Project's potential to degrade water quality during the operational phases of the Project. The additional analysis will also document regulations and standards (NPDES requirements) for runoff emanating from the Project, BMPs, and any required mitigation measures.

k) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or within a floodway or floodplain? ☐ ☐ ☒ ☐

The Project does not propose housing. Additionally, the FEMA flood map viewer identifies the property as located within Flood Hazard Zone D. The Zone D designation is used for areas where there are possible but undetermined flood hazards. In areas designated as Zone D, no analysis of flood hazards has been conducted. A Drainage Concept will be developed for the Project, which will include an analysis of flood hazards.

l) Place structures, which would impede or redirect flood flows, within a 100-year flood hazard area, floodway, or floodplain? ☒ ☐ ☐ ☐

The FEMA flood map viewer identifies the property as located within Flood Hazard Zone D. The Zone D designation is used for areas where there are possible but undetermined flood hazards. In areas designated as Zone D, no analysis of flood hazards have been conducted. A Drainage Concept will be developed for the Project, which will include an analysis of flood hazards.

m) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? ☐ ☐ ☒ ☐

The Project is not located downstream of a levee or dam.

n) Place structures in areas subject to inundation by seiche, tsunami, or mudflow? ☒ ☐ ☐ ☐

The Project site is situated adjacent to steep natural terrain that could, following periods of heavy precipitation and/or following fire events, result in the generation of mudflows. Additional analysis of this issue is required, including the identification of required mitigation measures.

11. LAND USE AND PLANNING

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒

The Project would re-use an existing developed site within a valley offset from surrounding areas by steep slopes. The Project site is not adjacent to any established community.

b) Be inconsistent with the applicable County plans for the subject property including, but not limited to, the General Plan, specific plans, local coastal plans, area plans, and community/neighborhood plans?	☐	☐	☒	☐

The Project is designed to be consistent with the existing Los Angeles County General Plan and Malibu Land Use Plan, and accordingly, does not require any plan amendments.

c) Be inconsistent with the County zoning ordinance as applicable to the subject property?	☐	☐	☒	☐

The majority of the Project's development footprint is zoned for Resort and Recreation (R-R-1) and as such the Project is consistent with zoning.

d) Conflict with Hillside Management criteria, Significant Ecological Areas conformance criteria, or other applicable land use criteria?	☐	☐	☒	☐

The Project would re-use an existing developed site within a valley offset from surrounding areas by steep slopes. These slopes exceed 25% and would be subject to Hillside Management criteria. However, since the development is located on the valley floor, the Project itself would not conflict with Hillside Management criteria, and impacts would be less than significant. None of the areas to be disturbed by construction of this Project would be located within a SEA.

12. MINERAL RESOURCES

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

No mineral resources have been identified on the property and none of economic value would be likely to occur. As such, the issue warrants no further study.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

No mineral resource designations appear on either Los Angeles County General Plan maps or Local Coastal Plan Maps as occurring either on or in the vicinity of the property. As such, the issue warrants no further study.

13. NOISE

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project result in:				
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the County General Plan or noise ordinance (Los Angeles County Code, Title 12, Chapter 12.08), or applicable standards of other agencies?	☒	☐	☐	☐

The primary source of noise affecting the property results from vehicular traffic along Encinal Canyon Road. The traffic volumes along Encinal Canyon Road do not expose the property to high background noise levels. Therefore, the Project uses, including a conference center, meeting rooms, bungalows, and clubhouse with dining facilities, in addition to the 18-hole golf course and associated amenities, would not expose persons to noise levels in excess of County standards. Project construction activities may generate noise levels in excess of established standards.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐

Specific sources of groundborne vibration or groundborne noise levels are unknown at this time. Upon completion of the construction phase, operation of the proposed facilities is anticipated to result in noise levels consistent with the existing uses. Additional analysis is required that would document the locations and sources of groundborne vibration and groundborne noise levels, and whether there are sensitive receptors that would be impacted.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, including noise from parking areas?	☒	☐	☐	☐

Specific sources and noise levels are unknown at this time. Upon completion of the construction phase, operation of the proposed facilities is anticipated to result in ambient noise conditions consistent with the existing uses. Additional analysis is required that would document the locations and types of noise sensitive receptors, existing ambient noise levels, and Project-related noise levels.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, including noise from amplified sound systems? ☒ ☐ ☐ ☐

Short-term construction noise would be generated on the southern and central portions of the property in connection with site preparation and construction of the development. If the Project would conduct outdoor events that would utilize a public address system, it could potentially result in increased ambient noise levels. Additional analysis is required that would document noise sensitive receptors, existing ambient noise levels, and Project-related impacts of noise levels stemming from sources such as parking areas or use of outdoor amplified sound systems, if the Project operations would include use of such a system. The analysis would include identification of required mitigation measures aimed towards attenuating noise impacts, if any.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? ☐ ☐ ☐ ☒

The Project is not located within two miles of a public airport or public use airport.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? ☐ ☐ ☐ ☒

The Project is not located within the vicinity of a private airstrip.

14. POPULATION AND HOUSING

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

The Project site is currently developed with a golf club facility and associated infrastructure. The Project would not induce substantial growth, as it would not provide additional access to infrastructure that does not already exist. This issue does not warrant further analysis.

b) Displace substantial numbers of existing housing, especially affordable housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

There is currently no housing development on the Project site. This issue does not warrant further analysis.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

There is currently no housing development on the Project site. This issue does not warrant further analysis.

d) Cumulatively exceed official regional or local population projections?	☐	☐	☐	☒

The Project would not provide residences that would increase the local population. This issue does not warrant further analysis.

15. PUBLIC SERVICES

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☒	☐	☐	☐
Implementation of the Project could result in increased demands for fire protection and suppression services. Additionally, the Project is located within a known high fire hazard zone (Fire Zone #4). Additional analysis is required to determine if this increase in demand will result in the need to supplement existing staffing levels, if it would affect current response times, and if any mitigation measures are required.				
Sheriff protection?	☒	☐	☐	☐
Implementation of the Project could result in increased demands for sheriff's services. Additional analysis is required to determine if this increase in demand will result in the need to supplement existing staffing levels, if it would affect current response times, and if any mitigation measures are required.				
Schools?	☐	☐	☐	☒
The Project would not add housing to the site. Additional analysis of this issue is not warranted.				
Parks?	☐	☐	☒	☐
The Project would provide recreational facilities onsite and would not result in a substantial increase demand for existing parks. Therefore, the Project would not result in the need for new or altered government facilities and impacts would be less than significant.				
Libraries?	☐	☐	☐	☒
The Project would not add housing to the site. The Project would include a private library as part of the Malibu Institute for the use of guests of the educational retreat. Additional analysis of this issue is not warranted.				
Other public facilities?	☐	☐	☐	☒

16. RECREATION

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☒	☐	☐	☐

The Project would provide recreational facilities for visitors to the Malibu Institute, including golf, swimming, and a clubhouse, while not increasing the residential population. The redesigned and reconfigured 18-hole golf course would continue to be operated as a public golf facility, however, during construction, the Project may result in an increase in the use of other nearby golf courses.

b) Does the project include neighborhood and regional parks or other recreational facilities or require the construction or expansion of such facilities which might have an adverse physical effect on the environment?	☒	☐	☐	☐

The Project proposes recreational facilities. As discussed in this initial study, these facilities may result in adverse physical effects and require further study. Any impacts related to the construction or operation of the recreational facilities will be indentified and analyzed in the relevant sections of the EIR.

c) Would the project interfere with regional open space connectivity?	☐	☐	☐	☒

The undeveloped portions of the property connect with areas of open space located on adjacent properties. The Project would leave these areas (over 450 acres) undeveloped. A recreational multi-use trail that connects open space areas across most the Santa Monica Mountains (Backbone Trail) traverses open space areas to the south of the Project site and would not be interfered with by Project construction or operation.

17. TRANSPORTATION/TRAFFIC

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒

The Project area is not served by regular bus service or other modes of public transportation, and the site's remote location from large-scale urban centers would preclude convenient bicycle access for the majority of the population who may use the proposed facilities. However, electric carts would be provided on-site for circulation between the various facilities on the property. As such, the Project would present no impediments to the implementation of adopted policies, plans, or programs supporting alternative transportation.

b) Conflict with an applicable congestion management program (CMP), including, but not limited to, level of service standards and travel demand measures, or other standards established by the CMP for designated roads or highways?	☐	☒	☐	☐

A traffic analysis for the Project documenting existing and projected future traffic volumes on CMP links (including the Project's contribution to these volumes) and any necessary mitigation measures is required. All analyses required by the County Congestion Management Plan will be conducted.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

The Project does not propose any use which could affect air traffic patterns.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐

The Project would use the same access road connection to Encinal Canyon Road as the existing development. Changes made to the internal circulation would not result in hazardous conditions.

e) Result in inadequate emergency access? ☒ ☐ ☐ ☐

Additional analysis of this issue is required to document any impediment to potential emergency service access and to identify mitigation measures that may be necessary.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? ☐ ☐ ☒ ☐

The Project would present no impediments to the implementation of adopted policies, plans, or programs supporting alternative transportation, General Plan elements or alternative land uses.

18. UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Exceed wastewater treatment requirements of either the Los Angeles or Lahontan Regional Water Quality Control Boards?	☒	☐	☐	☐

The wastewater capacity will be met through an onsite wastewater treatment facility. As such, impacts resulting from exceeding treatment requirements at this facility would be identified and analyzed in the relevant sections of the EIR.

b) Create water or wastewater system capacity problems, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐

The Project would require additional water and wastewater system capacity. The wastewater capacity will be met through an onsite wastewater treatment facility. As such, impacts from construction of this facility would be identified and analyzed in the relevant sections of the EIR. The Project would not require potable water in volumes requiring construction of new facilities or expansion of existing off-site facilities, and golf course irrigation demands would decrease by 30% by use of more efficient controls, and replacement of existing turf grass with a variety that requires less water to maintain.

c) Create drainage system capacity problems, or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐

Additional studies are necessary to document potential increases in runoff and required drainage infrastructure as well as to identify any appropriate mitigation measures.

d) Have sufficient reliable water supplies available to serve the project demands from existing entitlements and resources, considering existing and projected water demands from other land uses? ☐ ☒ ☐ ☐

The Las Virgenes Municipal Water District supplies domestic water to the Project site. Domestic water supply is adequate to meet the existing Malibu Golf Club's demand. Development of the Project would result in an increase in demand for domestic water for human consumption and indoor use. However, the Project proposes to make use of recycled water and on-site wells for irrigation of the golf course and landscaping, which would have an offsetting effect. The Project also proposes to provide more efficient irrigation controls along with more drought-tolerant grasses for the re-designed golf course to reduce the amount of irrigation water required for the maintenance of the course turf and landscaping. As a result, additional analysis of this issue is required, including verification of the availability of adequate quantities of recycled water, and the identification of applicable water conservation regulations and mitigation measures, if required.

e) Create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ☐ ☐ ☒ ☐

The Project site is currently provided electricity by Southern California Edison. The existing facility also uses propane, which is stored in onsite tanks. The proposed Project would continue to use propane, which would be stored at a new tank farm to be located near the proposed onsite wastewater treatment facility, and Southern California Edison will continue to provide electricity to the site through existing transmission lines. The proposed Project would not be expected to require significantly greater supplies of energy resources that would result in capacity problems, or require construction or expansion of energy utility facilities. Additionally, the proposed Project would provide photovoltaic panels over the expanded parking area with the goal of providing for the majority of operational electricity needs for the Project, reducing the need to rely on offsite energy sources.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? ☒ ☐ ☐ ☐

Implementation of the Project would result in an increase in solid waste that would be generated on a daily basis. Due to the limited amount of landfill space in Los Angeles County, this issue requires additional analysis, including the identification of landfills that accept solid waste from the Project area, the existing and planned future capacity of each landfill, the daily amount of solid waste that would be generated by the Project, the landfill(s) that would accept waste from the Project, existing recycling regulations, and required mitigation measures.

g) Comply with federal, state, and local statutes and regulations related to solid waste? ☐ ☐ ☒ ☐

The Project does not propose uses that would be unable to comply with all federal, state, and local statutes and regulations related to solid waste.

19. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
Final findings to be based on the EIR analyses.				
b) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	☒	☐	☐	☐
Final findings to be based on the EIR analyses.				
c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
Final findings to be based on the EIR analyses.				
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐
Final findings to be based on the EIR analyses.				

1.0 PROJECT DESCRIPTION

The Malibu Institute (the Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course on a 650-acre Project site currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The Project would provide for the development of educational and meeting facilities, along with visitor-serving overnight accommodations consisting of 40 bungalow structures, a clubhouse with fitness and spa facilities, a restaurant and lounge, a swimming pool, a golf pro-shop and grill, and associated support facilities including a maintenance building, a golf cart storage barn, a warehouse, and a security/information building. The Project would include 224,287 square feet of structures, which would include the reuse and remodel of the existing 12,475 square foot clubhouse and cart barn as part of the Institute building and the removal of 11,160 square feet of existing structures, for a total increase of 200,652 square feet of structures on the Project site. An existing 875 square foot guesthouse located on the northern portion of the property would be retained by the proposed Project for use as a caretakers' residence. The Project also would redesign the existing public golf course to incorporate new "green" features, including a smart irrigation system, drought-tolerant grass, and native vegetation. All of the proposed improvements would be constructed within the previously disturbed area of the Malibu Golf Club, and all of the proposed structures would be clustered within a 20-acre development area in the southern portion of the Project site. The reconfigured 18-hole golf course would be redesigned using the acreage of 17 of the existing holes on the golf course, allowing the proposed facilities, including the redesigned golf course, to be constructed within previously disturbed areas. Over 450 acres of native coastal scrub and chaparral, including oak woodland forest, would be left undisturbed and would become permanently dedicated open space.

The educational facilities would be operated in conjunction with the University of Southern California. The facilities would provide a location for educational conferences, seminars, and lectures, and would also be available for use by other organizations including charitable foundations. The Malibu Institute would be open year-round for educational oriented conferences, and would operate 24 hours per day with overnight accommodations provided on-site; however, meetings would take place predominantly during regular business hours.

Green Building Features

The Project would incorporate many "green" features. The Institute building, which would contain the educational and meeting facilities, would use the building footprint, foundation and infrastructure of the existing clubhouse and cart barn. The Project would replace over 185,000 square feet of existing non-pervious parking lots and cart paths with pervious material to allow infiltration of storm water and improve water quality. The buildings and accommodations would incorporate sustainable and green design with the goal of achieving LEED™ Platinum certification (or equivalent) for all buildings on the Project site. Design features also would include green roofs on many of the Project buildings, the use of color and shade structures to reduce the heat island effect, charging stations for electric vehicles, the use of highly efficient geothermal HVAC equipment, the use of native, drought-tolerant landscaping, and the use of a shuttle van or bus service for larger groups visiting the Project. Water conservation and design features would include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems. The Project would use photovoltaic panels over shade structures in the expanded surface parking area to generate most of the energy needs for the Project and would replace existing outdoor overhead parking lot lighting, which currently can be seen from off-site, with lighting complying with Dark Skies initiatives and the County's Rural Lighting Outdoor Lighting District Ordinance. The Project would remove 1,590 non-native trees, including palm trees, which were introduced with development of the existing golf course, and provide landscaping with native, drought-tolerant species, to reduce irrigation demands and to provide habitat features and a color palette more consistent with that of

the Santa Monica Mountains. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought Tolerant Landscaping Ordinance. Finally, the Project would remove multiple septic tanks throughout the Project site and install an on-site wastewater treatment and recycling system, providing effluent treatment meeting Title 22 standards for reuse as irrigation for the remodeled golf course.

1.1 PROJECT LOCATION

The Project site is located at 901 Encinal Canyon Road, within an unincorporated Malibu area of Los Angeles County. Regionally, the site is located in the western portion of the Santa Monica Mountains approximately forty-five miles west of downtown Los Angeles (**Figure 1**). Locally, the project site is situated northwest of the City of Malibu, and south of the Cities of Thousand Oaks and Westlake Village in a rural area of the Santa Monica Mountains lying south of the primary east-west ridgeline. Portions of the site located south of Mulholland Highway also fall within the Coastal Zone as defined by the California Coastal Act. Adjacent land uses are primarily undeveloped private and public lands with large lot rural residential development common along the northern and western boundaries.

1.2 PROJECT SITE

The Project site is comprised of an irregularly shaped assemblage of 29 parcels that total approximately 650 acres, spanning from Encinal Canyon Road on the south to the intersection of Mulholland Drive and Westlake Boulevard on the north as shown in **Figure 2**. The majority of the Project site is zoned R-R-1 (Resort and Recreation), with the portions to the north, east, southeast and south on the periphery of the Project site zoned either A-1-1 (Light Agriculture – 1 Dwelling Unit per Acre) or A-1-20 (Light Agriculture – 1 Dwelling Unit per 20 Acres). Small portions of the Project site north of Mulholland Drive and the northeast area of the Project site are zoned RPD-5-0.2U-DP (Residential Planned Development).

As mapped on the "Point Dume" USGS 7.5 minute topographic quadrangle (in portions of Sections 2, 3 10, 11 and 15, of T.1S, R.19W), the majority of the Project site falls within the upper watershed area of Trancas Canyon with the exception of a small, northerly extension of the Project site that spans the drainage divide and falls into the upper watershed of an unnamed tributary to the Carlisle Canyon watershed. Topographically, the site is situated in a bowl created by the crest of the Upper Trancas Canyon drainage basin. The on-site topography ranges in elevation from peaks that reach 1,900 feet to 2,300 feet above mean sea level (MSL) in the northeast and northwest, to valley bottom elevations that fall to approximately 1,300 feet above MSL. To the southeast, adjacent mountain ridges range from 1,400 feet to 1,900 feet above MSL. Landforms southwest of the site have gentler slopes and range from 1,400 feet to 1,700 feet above MSL. The overall elevation differences between the Project site and the surrounding mountains generally contribute to the formation of a centralized water drainage pattern with branching tributaries. A series of man-made lakes retain water on-site as elements within the existing golf course.

Existing development on the site consists of the Malibu Golf Club, an 18-hole public golf course with supporting amenities constructed in the early 1970s. Other facilities on the site include a clubhouse, restaurant/bar, snack shop, pro-shop, maintenance facilities, and two surface parking lots and associated driveways, which are all located in the central and southern regions of the Project site. **Figure 3** provides an aerial photo depicting the existing conditions of the site. Much of the golf course area is planted with non-native and ornamental plant species. The remainder of the site consists of lands with native vegetation. Several areas adjacent to the golf course have been graded in the past in connection with various development phases of the golf course.

THE MALIBU INSTITUTE PROJECT EIR

ENVICOM CORPORATION

Project Location

MILES 0 4 8

FIGURE 1

Source: USDA FSA Aerial Photography, 2005.

ENVICOM CORPORATION

THE MALIBU INSTITUTE

Vicinity Map

0 0.5 1 Miles

FIGURE 2

Source: USDA FSA Aerial Photography, 2005.

ENVICOM CORPORATION

THE MALIBU INSTITUTE PROJECT EIR

Existing Conditions

0 600 1,200 Feet

FIGURE 3

1.3 PROJECT OBJECTIVES AND GOALS

The following is a list of the objectives and goals of the Project.

- Establish a financially viable sports-oriented educational retreat, which invigorates the local economy and provides educational, research and employment opportunities.
- Provide a comfortable, relaxing and inspiring environment in which educational institutions, governmental organizations, non-governmental organizations, business leaders and the public can conduct meetings and conferences.
- Introduce a pattern of compatible land use that improves the social, environmental and economic well-being of guests and the public.
- Protect environmentally sensitive native plant and animal species by dedicating open space areas on the Project site that contain sensitive habitat and other native habitats.
- Preserve and enhance the scenic beauty of the Santa Monica Mountains.
- Protect and expand open space recreational opportunities and resources, including incorporation of sustainable visitor-serving accommodations.
- Design and construct a state-of-the-art 18-hole golf course to set the standard for sustainable coexistence between golf and nature.
- Implement land uses that reflect and are compatible with existing environmental resources and community character.
- Protect paleontological, archaeological and historic resources.
- Protect the unique cultural and social characteristics of the region's rural residential communities.
- Recognize and avoid natural hazards.

1.4 PROJECT COMPONENTS

The Project would develop all of the proposed components of the Malibu Institute within the previously disturbed areas of the existing golf course facilities located in the southern portion of the Project site as shown in **Figure 4**. The structural components of the Malibu Institute and support facilities would be clustered in the southwest portion of the previously developed area as depicted in a detail of the site plans shown in **Figure 5**. The Project would include 224,287 square feet of structures, which would include the reuse and remodel of the existing 12,475 square foot clubhouse and cart barn as part of the Institute building and the removal of 11,160 square feet of existing structures, for a total increase of 200,652 square feet of structures on the Project site. An existing 875 square foot guesthouse located on the northern portion of the property would be retained by the proposed Project for use as a caretakers' residence.

1.4.1 The Malibu Institute

The Malibu Institute would provide educational and meeting facilities designed in an ecologically sensitive manner. This would include the construction of all proposed buildings with sustainable and green design features incorporated with the goal of achieving LEED™ Platinum certification (or equivalent). The Malibu Institute educational facilities would consist of a conference and event center featuring a large meeting room, several smaller meeting rooms and classrooms of various sizes, a cafeteria with a kitchen facility, a restaurant and a lounge. This conference center would be constructed on the site of the existing clubhouse, and would total 48,164 square feet. Refer to **Table 1** for a summary of all proposed components and associated square footage.

Source: LRS Architects, July 25, 2012.

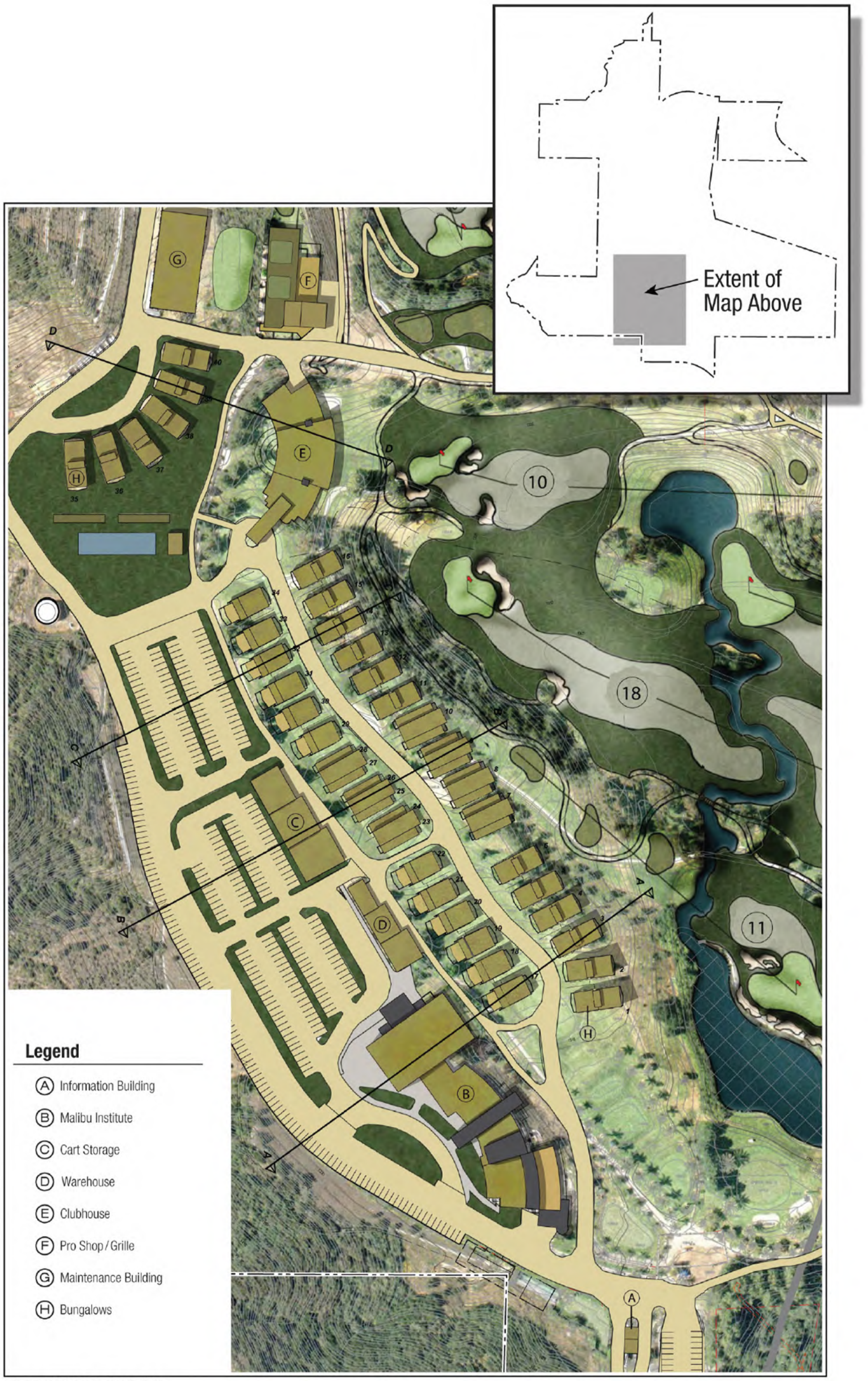
THE MALIBU INSTITUTE

ENVICOM CORPORATION

Site Plan

FEET 0 200 400

FIGURE 4



Source: LRS Architects, July 25, 2012.

THE MALIBU INSTITUTE

ENVICOM CORPORATION

Site Plan Detail

FEET 0 75 150

FIGURE 5

1.4.2 The Malibu Institute Guest Accommodations

The Project would provide overnight accommodations for conference attendees and the general public in 40 sustainable bungalows totaling 109,140 square feet. The bungalows would be clustered within the southern and western portions of the site and would be constructed on an area that is currently used as a fairway for the existing golf course and a helipad. The proposed reconfiguration of the golf course and the relocation of the existing helipad would allow the proposed bungalows to be constructed with minimal grading, and without encroaching into undisturbed areas of the Project site. The helipad would be re-located to an existing cleared pad adjacent to the golf course, which is a site preferred by the Los Angeles County Fire Department.

1.4.3 Recreational Facilities

The proposed recreational facilities would include:

- A golf-oriented clubhouse with a dining facility, spa and fitness center, and locker rooms (30,147 square feet);
- An outdoor swimming pool;
- A new pro shop/grill with a computerized indoor driving range (12,104 square feet);
- A golf cart storage building (9,162 square feet);
- A warehouse facility for storage of materials and equipment for the Institute and the bungalows (4,623 square feet);
- A maintenance building to serve the golf course (10,500 square feet); and
- A new security/information building to be constructed at the main entrance (447 square feet).

As stated above, all proposed buildings would be constructed with sustainable and green design features incorporated with the goal of achieving LEED™ Platinum certification (or equivalent).

1.4.4 Golf Course Redesign

The existing 18-hole public golf course covers 118 acres, largely comprised of turf grass and introduced native and non-native vegetation. As proposed, the golf course would be reconfigured to reduce the overall footprint of the course to 107 acres so the proposed 18 holes would fit within the footprint of 17 of the existing 18 holes. The reduced acreage of the golf course would allow for other elements of the Project to be constructed within the existing area of disturbance. The remodeled 18-hole golf course would be constructed using state-of-the-art technologies, methodologies, and materials intended to create a sustainable, low impact golf facility.

To provide an environmentally sensitive golf course design, sustainability features proposed to be provided for the remodeled course include installation of a "smart" irrigation system, a reduction in the amount of turf area from approximately 85 acres to 62 acres, the use of drought-tolerant grasses for the turf areas, and the removal of non-native landscaping from areas surrounding the golf course playing area, which would be re-vegetated with drought-tolerant native trees and shrubs. The water saving features to be provided with the remodeled golf course would reduce water consumption for irrigation by approximately 35% compared to the existing golf course facility.

The grading associated with the remodeled golf course would take place within the previously graded areas of the fairways, tee boxes and greens and would not require the removal of native oak or sycamore trees. By retaining existing native trees, in addition to planting new native oaks and sycamores, and by removing approximately 1,590 trees of non-native species, including palm trees, which were planted

during the original construction of the golf course, the proposed landscape pallet would be more consistent with the surrounding open space areas of the Santa Monica Mountains.

The environmentally sensitive design of the remodeled golf course would include sand-capping of the fairways to promote infiltration of stormwater, and the use of Best Management Practices (BMPs) in order to reduce the rate of stormwater runoff, and improve the water quality of runoff that exits the Project site. Additionally, the existing impervious asphalt cart paths would be removed, and a non-continuous cart path would be provided consisting of a living pervious material, further enhancing infiltration and improving water quality. The remodeled golf course would continue to be operated as a public golf course.

Table 1
Summary of Proposed Project Components

Components	Proposed Development (sf)
Educational Facilities	
Malibu Institute	48,164
Subtotal	**48,164**
Overnight Visitor Accommodations	
Guest Bungalows (40 Units)	109,140
Subtotal	**109,140**
Support Facilities	
Security/Information Building	447
Golf Pro Shop/Grill	12,104
Cart Barn	9,162
Clubhouse	30,147
Maintenance Building	10,500
Warehouse	4,623
Subtotal	**66,983**
TOTAL	**224,287**

1.4.5 Access, Circulation and Parking Facilities

The Project would include onsite improvements and construction of existing and new roadways and parking areas, as well as walkways and cart paths for guest circulation between various proposed facilities of the Malibu Institute. Currently, the existing golf course facilities are accessed from Encinal Canyon Road, through a main entrance via Clubhouse Drive. This main entrance would continue to serve as the site access for the Project's guests and employees. Externally, the Malibu Institute would generate approximately 314 Average Daily Trips (ADT) on area roadways, including 11 A.M peak hour trips and 18 P.M. peak hour trips. These trips would be predominantly distributed along Kanan Road to the north and south from Encinal Canyon Road, with some minor increases associated with Decker Canyon Road. The Project would provide shuttle service from neighboring airports, including Los Angeles International Airport and Burbank Airport, which would reduce the ADT on area roads as well as reduce the Project's parking demands.

Internal circulation within the Project site would be improved to provide access to each of the Project components. Stemming from the primary access from Encinal Canyon Road and Clubhouse Drive, Trancas Lakes Drive would provide access to the expanded parking area located in close proximity to all of the proposed facilities, and a network of internal walkways and paths would promote circulation among the various facilities of the Malibu Institute by foot or electric cart.

Existing parking facilities are currently provided via two surface parking lots and street parking located to the south and west of the existing clubhouse facilities. To ensure there is ample parking and to comply with County development standards, the Project would provide 387 parking spaces, which would be more than the 378 total parking spaces required by the Los Angeles County Code based on the proposed uses. These parking spaces would be provided by remodeled surface parking lot facilities located in the same areas as the existing parking lots. The Project would repave the existing southern parking facility and provide landscaping to visually screen the surface lot from Encinal Canyon Road. The western surface parking lot would be expanded and existing non-pervious asphalt paving would be removed and replaced with pervious paving materials to facilitate stormwater infiltration and improve water quality, and would feature a sub-drain collection system to detain stormwater runoff, which could then be used for irrigation of the golf course or landscape areas. The expanded western parking area would be visually screened from Encinal Canyon Road by topographical features, and the new parking stalls would be covered by shade structures with photovoltaic panels installed on top of the structures. The photovoltaic panels would be provided with the goal of supplying the majority of the Project's electricity needs. In addition, existing outdoor overhead lighting at both parking lots, which currently can be seen from off-site, would be replaced with shielded down-lighting, designed to comply with Dark Skies initiatives and the County's Rural Outdoor Lighting District Ordinance.

Although the Malibu Institute would satisfy Code-required parking for the entire Project, in order to cluster the buildings in the southern portion of the 650-acre Project site and allow the dedication of over 450 acres of permanent open space, the Project cannot satisfy Code-required parking on each respective lot, and, instead would provide centralized parking to be shared between lots. Pursuant to Los Angeles County Zoning Code section 22.56.990, projects proposing a parking arrangement different than the parking requirements of County Code section 22.52 require a parking permit. Therefore, the Applicant is requesting a parking permit to authorize the use of shared parking between lots on the Project site. No tandem or compact spaces are proposed to meet Code-required parking.

1.4.6 Drainage Facilities and Stormwater Treatment

The proposed grading and drainage plans would include stormwater runoff control and treatment for each of the Project components and include bioswales and other features to facilitate infiltration, or to capture runoff to be reused for on-site irrigation. A total of 185,000 square feet of non-pervious parking lot and cart path paving would be removed and replaced with pervious materials to increase infiltration and reduce stormwater runoff from the proposed development area. Project-related stormwater leaving the site would be released at a rate that would not exceed existing conditions. Maintenance of storm drain lines and appurtenances on the Project site would be the responsibility of the site owner.

1.4.7 Grading

Grading for buildout of the Project would occur within previously disturbed areas and would require approximately 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced on-site. No soil import or export is proposed.

1.4.8 Water and Wastewater Services

The Las Virgenes Municipal Water District currently provides potable water service to the existing golf course facilities. Additionally, the golf course uses six private wells located onsite for irrigation water. Upon completion of the Project, the District would continue to provide potable water to the Project; however, the redesigned golf course would be constructed with water conservation features to reduce irrigation demands by approximately 35 percent, and would be irrigated using reclaimed water from the Project's proposed Onsite Wastewater Recycling System, augmented by water obtained from the existing onsite private wells.

An Onsite Wastewater System (OWS) currently serves the existing golf course facilities. The Project proposes to abandon the existing OWS in its entirety, and construct an onsite Wastewater Recycling System. The proposed wastewater system would consist of a network of underground, decentralized Primary Tanks located as close to the point of wastewater generation as feasible. The Primary Tanks would retain solids in the wastewater, with a design pump-out interval of ten to twelve years. The filtered, liquid primary-treated effluent portion of the wastewater would be discharged to a low pressure Effluent Sewer System that would feed into the Recycled Water Treatment System. The Recycled Water Treatment System would use a combination of aeration, ultrafiltration, and disinfection that treats the effluent to a standard suitable for unrestricted, non-potable reuse onsite as landscape and golf course irrigation.

1.4.9 Energy Usage

Central to the development concept for the Project are sustainability features that would minimize the consumption of gas and other carbon-based fuels and their associated green house gas emissions. All proposed new buildings on the site would be constructed with the goal of achieving a LEED™ Platinum certification level (or equivalent) of energy efficiency. To achieve this level of efficiency, and sustainability, the Project would provide features to minimize the use of internal combustion powered vehicles and reliance on electricity generated off-site. Such features would include internal site circulation via electric vehicles or pedestrian walkways, and installation of photovoltaic panels above shade structures in the surface parking area. Additional efficiency design features may include green walls, the use of color and shade structures to reduce the heat island effect, enhanced environmental control systems, high efficiency geothermal HVAC equipment, and the use of native, drought-tolerant landscaping. Water conservation and design features may include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought-Tolerant Landscaping Ordinance. In particular, the majority of the proposed buildings, including the conference center, would achieve LEED™ Platinum Certification (or equivalent). The Project would also minimize off-site energy use by mobile sources by providing a shuttle service to area airports for the transport of guests of the Malibu Institute.

1.5 APPLICABLE PLANS/ ENTITLEMENTS REQUESTED

The following is a list of applicable County Plans that guide development in the region occupied by the subject Project site, and entitlements requested for development of the proposed land uses on the Project site:

Plans and Policies

- Los Angeles County General Plan;
- Malibu Land Use Plan (1986);
- Santa Monica Mountains North Area Plan; and

Requested Lead Agency Approvals

- Certification of an Environmental Impact Report;
- Approval of a Vesting Tentative Tract Map No. 71735 with 28 lots with 5 lots containing the Project development and 23 lots dedicated as permanent open space;
- Approval of Conditional Use Permit No. 201100122 to authorize the following: (1) development of the Malibu Institute project, and operation of a sports-oriented educational retreat affiliated with the University of Southern California, on a 650-acre Project site currently operated as the 18-hole Malibu Golf Club. The Project would consist of educational and meeting facilities, overnight visitor-serving accommodations in 40 bungalows, a restaurant/lounge, a warehouse, a cart storage building, a clubhouse with a spa and pool, a pro shop, and a maintenance building. The Project would allow the remodeling and continued use of the Project site for operation of the public 18-hole golf course; (2) the continued sale of alcoholic beverages for on-site consumption; (3) on-site grading of 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced on-site with no import or export of fill material; (4) the continued use and operation of a helipad (to be relocated) in the R-R zone; (5) a caretaker residence in the R-R zone and (6) the construction and use of a new water tank and associated water line to replace the existing 100,000 gallon water tank on the Project site;
- Approval of a Parking Permit to authorize the use of shared parking of 387 parking spaces on-site;
- Approval of a Fuel Modification Plan from the Los Angeles County Fire Department; and
- Additional County and other governmental actions as may be determined necessary.

Responsible Agencies' Approvals, including but not limited to:

- Approval of a Coastal Development Permit from the California Coastal Commission for development of the Project in the California Coastal Zone;
- Issuance of a Streambed Alteration Agreement from the California Department of Fish and Game pursuant to Fish and Game Code Section 1603;
- Issuance of a U.S. Army Corps of Engineers Nationwide Permit pursuant to Clean Water Act Section 404;
- Issuance of a Water Quality Certification from the Regional Water Quality Control Board pursuant to Clean Water Act Section 401;
- Issuance of Waste Discharge Requirements and Waste Reclamation Requirements from the Regional Water Quality Control Board for operation of an onsite wastewater system; and
- Approval by the Los Angeles County Local Agency Formation Commission (LAFCO) of a community services district to maintain the onsite wastewater system and the permanently dedicated open space

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

NOTICE OF PREPARATION*

* Asterisk denotes changes made from previous notice

THIS NOTICE OF PREPARATION (NOP) IS BEING RECIRCULATED FOR THIS PROJECT DUE TO AN EXTENSION OF THE REVIEW AND COMMENTS PERIOD

DATE:	December 11, 2012*
PROJECT TITLE:	The Malibu Institute – Project No. TR071735 Vesting Tentative Tract Map No. 071735 Conditional Use Permit No. 201100122 Parking Permit No. 201100005 Environmental Review No. 201100192
PROJECT ADDRESS:	901 Encinal Canyon Road Malibu, California 90265
PROJECT APPLICANT:	The Malibu Institute 901 Encinal Canyon Road Malibu, California 90265
CEQA LEAD AGENCY:	County of Los Angeles Department of Regional Planning 320 West Temple Street, Room 1348 Los Angeles, California 90012

The County of Los Angeles is the lead agency and will prepare an Environmental Impact Report (EIR) for the Project identified below. In compliance with Section 15082 of the California Environmental Quality Act (CEQA) Guidelines, the County of Los Angeles is sending this Notice of Preparation (NOP) to each responsible agency, interested parties and federal agencies involved in approving the Project and to trustee agencies responsible for natural resources affected by the Project. Within 30 days after receiving the Notice of Preparation, each agency shall provide the County of Los Angeles with specific details about the scope and content of the environmental information related to that agency's area of statutory responsibility.

The purpose of this NOP is to solicit the views of your agency as to the scope and content of the environmental information germane to your agency's statutory authority with respect to the Project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the Project.

PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Project site is located at 901 Encinal Canyon Road, within the unincorporated Malibu area of Los Angeles County. Regionally, the site is located in the western portion of the Santa Monica Mountains approximately forty-five miles west of downtown Los Angeles. Locally, the Project site is situated northwest of the city of Malibu, and south of the cities of Thousand Oaks and Westlake Village in a rural area of the Santa Monica Mountains lying south of the primary east-west ridgeline. Portions of the Project site located

south of Mulholland Highway also fall within the Coastal Zone as defined by the California Coastal Act. Adjacent land uses are primarily undeveloped private and public lands with large lot rural residential development common along the northern and western boundaries.

The Project site is comprised of an irregularly shaped assemblage of 29 irregularly shaped parcels that total approximately 650 acres, spanning from Encinal Canyon Road on the south to the intersection of Mulholland Drive and Westlake Boulevard on the north.

Existing development on the Project site consists of the Malibu Golf Club, a public 18-hole golf course with supporting amenities constructed in the early 1970s. Other facilities on the Project site include a clubhouse, restaurant/bar, snack shop, pro-shop, maintenance facilities, and two surface parking lots and associated driveways, which are all located in the central and southern regions of the Project site. Much of the golf course area is planted with non-native and ornamental plant species. The remainder of the Project site consists of areas of native vegetation. Several areas adjacent to the golf course have been graded in the past in connection with various development phases of the golf course.

PROJECT SUMMARY

The Malibu Institute (Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course on a 650-acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The Project would provide for the development of educational and meeting facilities (48,164 square feet), along with visitor-serving overnight accommodations consisting of 40 bungalow structures (109,140 square feet), a clubhouse (30,147 square feet), golf pro shop and grill (12,104 square feet), and support facilities including a maintenance building (10,500 square feet), warehouse (4,623 square feet), a golf cart storage barn (9,162 square feet), and a security/information building (447 square feet), all located within the previously disturbed area of the Malibu Golf Club. The Project would include 224,287 square feet of structures, which would include the reuse and remodel of the existing 12,475 square foot clubhouse and cart barn as part of the Institute building and the removal of 11,160 square feet of existing structures, for a total increase of 200,652 square feet of structures on the Project site. An existing 875 square foot guesthouse located on the northern portion of the property would be retained by the proposed Project for use as a caretakers' residence. The Malibu Institute would be open year-round for education-oriented conferences, and with overnight accommodations would operate 24 hours per day; however, meetings would take place predominantly during regular business hours. The redesigned golf course would continue to operate as a public golf facility, as well as being available to guests of the Malibu Institute.

Project Development

All construction activity would occur within the area previously disturbed during development of the Malibu Golf Club in the 1970s. The Project would remodel the existing 18-hole public golf course using an environmentally sensitive design, including sand-capping the fairways, a "smart" irrigation system, and new generation drought-tolerant grasses. These measures would reduce water consumption for irrigation of the golf course by approximately 35%. The 18-hole golf course layout would be reconfigured using the acreage of 17 of the existing holes on approximately 107 acres of the existing 118-acre existing golf course, with the turf area reduced to approximately 62 acres. The Applicant would remove approximately 1,590 non-native species of trees planted during the original construction of the golf course, and would re-vegetate areas surrounding the golf course with drought-tolerant, native species of grasses, shrubs, and trees, including oaks and sycamores, that would require no irrigation and would create a landscape pallet more consistent with the character and habitat of the Santa Monica Mountains. The Project does not propose to remove any protected oak trees or encroach into any oak tree protection zones. By clustering development of the buildings and accommodations on approximately 20 acres and the remodeled golf course on 107 acres in the southern portion of the 650-acre property, over 450 acres of native coastal scrub and chaparral, including oak woodland forest, would be left undisturbed and become permanently dedicated open space. Grading for buildout of the Project would consist of approximately 120,000 cubic yards of cut and 120,000 cubic yards of

fill, which would be balanced onsite. No import or export of fill material would be required.

Green Building Features

The Project would incorporate many "green" features. The Institute building, which would contain the educational and meeting facilities, would use the building footprint, foundation and infrastructure of the existing clubhouse and cart barn. The Project would replace over 185,000 square feet of existing non-pervious parking lots and cart paths with pervious material to allow infiltration of storm water and improve water quality. The buildings and accommodations would incorporate sustainable and green design with the goal of achieving LEED™ Platinum certification (or equivalent) for all buildings on the property. Design features also would include green roofs on many of the Project buildings, the use of color and shade structures to reduce the heat island effect, charging stations for electric vehicles, the use of highly efficient geothermal HVAC equipment, and the use of native, drought-tolerant landscaping, and the use of a shuttle van or bus service for larger groups visiting the Project. Water conservation and design features would include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems. The Project would use photovoltaic panels over shade structures in the expanded surface parking area to generate most of the energy needs for the Project and would replace existing outdoor overhead parking lot lighting, which currently can be seen from off-site, with lighting complying with Dark Skies initiatives and the County's Rural Lighting Outdoor Lighting District Ordinance. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought Tolerant Landscaping Ordinance. Finally, the Project would remove multiple septic tanks throughout the property and install an on-site wastewater treatment and recycling system, providing effluent treatment meeting Title 22 standards for reuse as irrigation for the remodeled golf course.

Access, Circulation & Parking Facilities

The Project would include modification and construction of existing and new roadways and parking areas and visitor circulation improvements on the Project site to provide access to each of the Project components. Primary access to the Institute would continue to be from Encinal Canyon Road via Clubhouse Drive. Internally, Trancas Lakes Drive would provide access to the guest parking area located in close proximity to all of the proposed facilities, and a network of internal walkways and paths would promote circulation among the various facilities of the Malibu Institute by foot or electric cart. Externally, the Malibu Institute would generate approximately 314 Average Daily Trips (ADT) on area roadways, including 11 A.M peak hour trips and 18 P.M. peak hour trips, as estimated by a traffic study prepared for the Project. These trips would be predominantly distributed along Kanan Road to the north and south, from Encinal Canyon Road, with some minor increases associated with Decker Canyon Road. Additional study will determine if the Level of Service of any affected roadways or intersections would be significantly impacted based on County standards. The Project would provide shuttle service from neighboring airports, including Los Angeles International Airport and Burbank Airport, which would reduce the ADT on area roads as well as reduce the Project's parking demands.

To ensure there is ample parking, and to comply with County development standards, the Project would provide 387 parking spaces, which would be more than the 378 total parking spaces required by the Los Angeles County Code based on the proposed uses. Although the Malibu Institute would satisfy Code-required parking for the entire Project, in order to cluster the buildings in the southern portion of the 650-acre property and allow the dedication of over 450 acres of permanent open space, the Project cannot satisfy Code-required parking on each respective lot, and, instead would provide centralized parking to be shared between lots. Pursuant to Los Angles County Zoning Code section 22.56.990, projects proposing a parking arrangement different than the parking requirements of County Code section 22.52 require a parking permit. Therefore, the Applicant is requesting a parking permit to authorize the use of shared parking between lots on the property. No tandem or compact spaces are proposed to meet Code-required parking.

ENTITLEMENT REQUIREMENTS AND DISCRETIONARY APPROVALS

The following is a list of applicable discretionary approvals required for development and use of the Project site:

- Certification of an Environmental Impact Report;
- Approval of a Vesting Tentative Tract Map No. 71735 with 28 lots with 5 lots containing the Project development and 23 lots dedicated as permanent open space;
- Approval of Conditional Use Permit No. 201100122 to authorize the following: (1) development of the Malibu Institute project, and operation of a sports-oriented educational retreat affiliated with the University of Southern California, on a 650-acre property currently operated as the 18-hole Malibu Golf Club. The Project would consist of educational and meeting facilities, overnight visitor-serving accommodations in 40 bungalows, a restaurant/lounge, a warehouse, a cart storage building, a clubhouse with a spa and pool, a pro shop, and a maintenance building. The Project would allow the remodeling and continued use of the property for operation of the public 18-hole golf course; (2) the continued sale of alcoholic beverages for on-site consumption; (3) on-site grading of 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced on-site with no import or export of fill material; (4) the continued use and operation of a helipad (to be relocated) in the R-R zone; (5) a caretaker residence in the R-R-1 zone and (6) the construction and use of a new water tank and associated water line to replace the existing 100,000 gallon water tank on the Project site.
- Approval of a Parking Permit to authorize the use of shared parking of 387 parking spaces on-site.
- Approval of a Fuel Modification Plan from the Los Angeles County Fire Department;
- Approval of a Coastal Development Permit from the California Coastal Commission for development of the Project in the California Coastal Zone;
- Issuance of a Streambed Alteration Agreement from the California Department of Fish and Game pursuant to Fish and Game Code Section 1603;
- Issuance of a U.S. Army Corps of Engineers Nationwide Permit pursuant to Clean Water Act Section 404;
- Issuance of a Water Quality Certification from the Regional Water Quality Control Board pursuant to Clean Water Act Section 401;
- Issuance of Waste Discharge Requirements and Waste Reclamation Requirements from the Regional Water Quality Control Board for operation of an onsite wastewater system;
- Approval by the Los Angeles County Local Agency Formation Commission (LAFCO) of a community services district to maintain the onsite wastewater system and the permanently dedicated open space.
- Additional County and other governmental actions as may be determined necessary.

AREAS OF POTENTIAL ENVIRONMENTAL IMPACTS TO BE ANALYZED IN THE EIR

The Department of Regional Planning has determined by way of an Initial Study that an Environmental Impact Report (EIR) is necessary for the Project. The areas of potential environmental impact to be addressed in the EIR will include at least the following:

Potential Hazards

- Geotechnical Hazards
- Flood Hazards
- Fire Hazards
- Noise Hazards

Potential Impacts to Resources

- Water Quality
- Air Quality
- Greenhouse Gas Emissions
- Biota
- Cultural Resources
- Visual Resources

Potential Impacts on Services

- Traffic/Access
- Sewage Disposal
- Fire/Sheriff Services
- Utilities

Other Potential Impacts

- Environmental Safety
- Land Use
- Population/Housing/Employment/Recreation
- Mandatory Findings

To provide a complete record of the County's environmental decision-making, environmental issues that do not rise to the level of significant impacts will be addressed in the EIR in a separate section entitled "Impacts Found to be Less than Significant"

In addition to evaluating the potential effects of the Project, the EIR will analyze a full range of Project alternatives, including, but not necessarily restricted to a "no Project" alternative and an alternative site plan.

NOTICE OF PREPARATION REVIEW AND COMMENTS

The review period for the NOP will be from November 21, 2012 to January 21, 2013 (extended from December 24, 2012)*.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date, but not later than January 21, 2013. Please direct all written comments to the following address. In your written response, please include the name of a contact person in your agency.

Carolina Blengini
Regional Planner
Special Projects Section
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012
Tel: 213-974-1522
Fax: 213-626-0434
Email: cblengini@planning.lacounty.gov

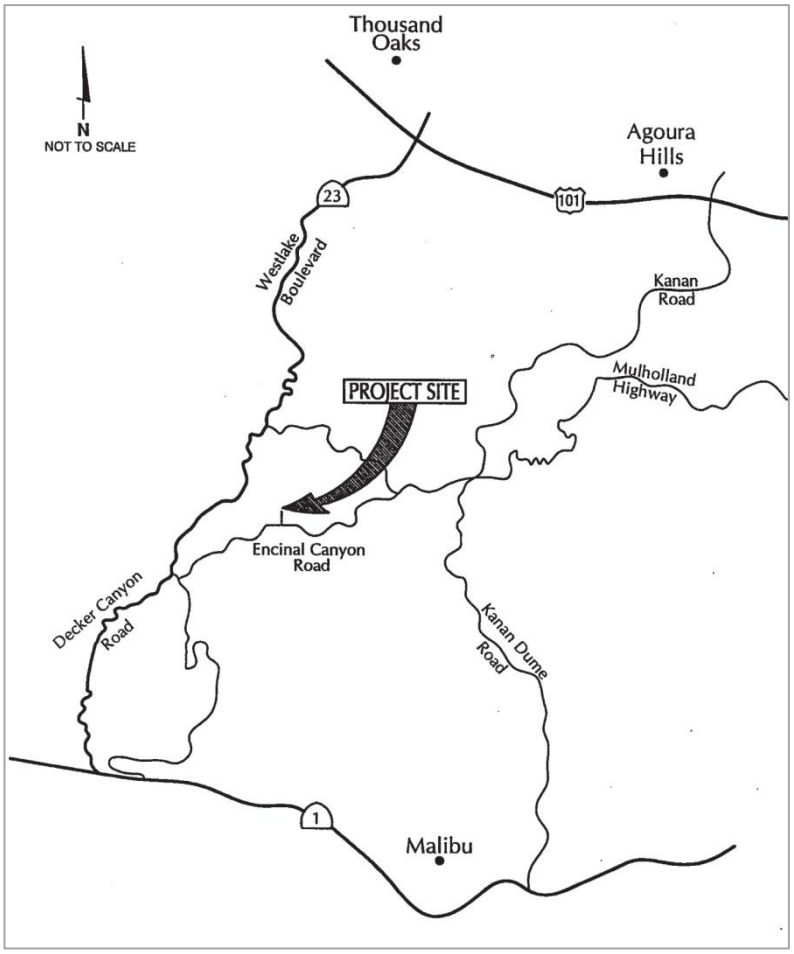
REVIEW MATERIALS

The County of Los Angeles Department of Regional Planning is soliciting input based on your views and opinions concerning the scope of the EIR for the Project. Additional material including an expanded project description, Initial Study and maps are available for public review on the Department of Regional Planning website http://planning.lacounty.gov/case/view/tr071735-3/ as well as at the following libraries:

Malibu County Library
23519 W. Civic Center Way
Malibu, CA 90265-4804
Environmental Documents
Phone: (310) 456-6438

Westlake Village Library
31220 Oak Crest Drive
Westlake Village, CA 91361

Las Virgenes/Agoura Hills County Library
29901 Ladyface Court
Agoura Hills, CA 91301
Environmental Documents
Phone: (818) 889-2278



April 23, 2013

TO: Samuel Dea
Special Projects Section
Department of Regional Planning

Attention Carolina Blengini

FROM: Steve Burger
Land Development Division
Department of Public Works

INITIAL STUDY (IS)/NOTICE OF PREPARATION (NOP)
VESTING TENTATIVE TRACT MAP NO. 071735
CONDITIONAL USE PERMIT NO. 201100122
THE MALIBU INSTITUTE
901 ENCINAL CANYON ROAD
COUNTY OF LOS ANGELES UNINCORPORATED AREA OF MALIBU

Thank you for the opportunity to review the IS/NOP for Vesting Tentative Tract Map 071735, the Malibu Institute. The project is to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course on a 650-acre property. The Project would provide for the development of educational and meeting facilities (48,164 square feet), along with visitor-serving overnight accommodations consisting of 40 bungalow structures (109,140 square feet), a clubhouse (30,147 square feet), golf pro shop and grill (12,104 square feet), and support facilities including a maintenance building (10,500 square feet), warehouse (4,623 square feet), a golf cart storage barn (9,162 square feet), and a security/information building (447 square feet), all located within the previously disturbed area of the Malibu Golf Club. The project site is located at 901 Encinal Canyon Road, in the County of Los Angeles, unincorporated area of Malibu.

The following are County of Los Angeles, Department of Public Works comments and are for your consideration and relate to the environmental document only:

Geology and Soils

1. All geotechnical issues discussed in the NOP and Initial Study shall be addressed in the Environmental Impact Report (EIR). Geotechnical reports should be included in the EIR as necessary.

   If you have any questions regarding the Geology and Soils comment number 1, please contact Mr. Jeremy Wan of Geotechnical and Materials Engineering Division at (626) 458-4925 or jwan@dpw.lacounty.gov.

2. Section 1.4, Project Components, subsection 1.4.7, Grading, Page 1-11; The disclosed grading quantities must coincide with all other project materials (i.e. the application, tentative map, grading plan, etc.). The NOP states: "*approximately 120,000 cubic yards of cut and 120,000 cubic yards of fill which would be balanced on-site. No soil import or export is proposed."* However, previously a denial comment for the revised tentative map dated October, 31, 2012 indicated that there was a discrepancy for the earthwork quantities that were being shown. Sheet T-1 of the revised map showed two separate quantities; 120,000 cubic yards and 26,798 cubic yards. Reconcile.

   If you have any questions regarding the Geology and Soils comment number 2, please contact Mr. Tony Hui of Land Development Engineering Division at (626) 458-4925 or thui@dpw.lacounty.gov.

Hydrology/Water Quality

1. To adequately assess and address the drainage and water quality concerns in the NOP, a Drainage Concept/Hydrology Report and a Low Impact Development (LID)/Water Quality Plan should be submitted for review and approval by Public Works. Furthermore, the drainage concept should address the changes in drainage including but not limited to: increases in runoff, any change in drainage patterns, and the capacity of existing storm drain facilities.

   a. A LID/Water Quality report is required when one or more of the following conditions exist: one acre or more of impervious surface in industrial/commercial development; parking lot with 5,000 square feet or more of surface area or with 25 or more parking spaces; redevelopment project (creation, addition, or replacement of 5,000 square feet or impervious surface area).

b. As part of the development proposed by this project, there could be a change in drainage patterns. This change could cause diversion of flows or impact downstream sites and storm drains. County approval is necessary should any of these impacts occur. The best way to obtain this approval is through a Drainage Concept/Hydrology Report.

If you have any questions regarding flood/water quality comment, please contact Mr. Andrew Ross from Land Development Division at (626) 458-4921 or aross@dpw.lacounty.gov.

Transportation/Traffic

1. The project has the potential to significantly impact County intersections in the area. The project is required to submit a traffic impact analysis to Public Works' Traffic and Lighting Division for review and approval. The County's methodology shall be used when evaluating the County intersections. A copy of the County's Traffic Impact Analysis Report guidelines may be obtained on Public Works' website at http://dpw.lacounty.gov/traffic.

   If you have any questions regarding transportation/traffic comment number 1, please contact Mr. Jeff Pletyak from Traffic and Lighting Division at (626) 300-4721 or aplety@dpw.lacounty.gov.

2. The EIR should mention and fully disclose the dedication of road right-of-way and the offer of slope and drainage easements along the property frontage for the followings streets:

   a. Encinal Canyon Road.

   b. Westlake Boulevard.

   c. Mulholland Highway.

   If you have any questions regarding transportation/traffic comment number 2, please contact Mr. Tony Hui from Land Development Division at (626) 458-4921 or thui@dpw.lacounty.gov.

Utilities/Service System

1. The EIR should discuss the collection and disposal of wastewater that would be generated within the project area and discuss the potential impact on the

capacity of the proposed on-site wastewater recycling system for both peak dry and wet weather flows pursuant to the Statewide General Waste Discharge Requirement (Order No. 2006-003)

If you have any questions regarding the Utilities/Service System comment, please contact Ms. Anna-Marie Gilmore of Sewer Maintenance Division at (626) 458-3360 or agilmore@dpw.lacounty.gov.

2. The impacts on the existing water system cannot be verified until a will serve letter from the local water company is submitted to Land Development Division, Sewer and Water/Landscaping Section for review and approval. The water mitigations and impacts addressed in the will serve letter should be included in the EIR.

3. The EIR should disclose all potential significant impacts on the proposed wastewater treatment and recycling system to provide effluent treatment for reuse as irrigation for the remolded golf course.

If you have any questions regarding the Utilities and Services comments, please contact Mr. Jae Kim of Land Development Division at (626) 458-4921 or jakim@dpw.lacounty.gov.

General Comments

The following comment is not related to the environmental document review, and is only a preliminary condition of the project:

1. Submit building plans to Building and Safety Division, Calabasas District Office for review and permit issuance.

If you have any questions regarding the general comment, please contact Mr. Clint Lee of Building and Safety Division at (626) 458-3154 or cllee@dpw.lacounty.gov.

If you have any other questions or require additional information, please contact Ruben Cruz of Land Development Division at (626) 458-4921 or rcruz@dpw.lacounty.gov.

RC:tb
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United States Department of the Interior

NATIONAL PARK SERVICE
Santa Monica Mountains National Recreation Area
401 West Hillcrest Drive
Thousand Oaks, California 91360-4207

In reply refer to:
L76 (SAMO/123-55)

December 12, 2005

Mr. Kim K. Szalay, Zoning Permits I
Los Angeles County Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Dear Mr. Szalay:

The National Park Service has reviewed materials pertaining to a request by Malibu Country Club (MCC) for modifications to their Conditional Use Permit (CUP) No. 98-059-(3). The CUP is for operation of MCC's golf course. The documents include annual reports, water quality monitoring data; the USDA, Natural Resource Conservation Service's (NRCS) Conservation Plan; CUP-related correspondence; and MCC's proposed modifications to the CUP. The proposed modifications address water quality monitoring and conditions requiring communication with the National Park Service.

The National Park Service appreciates the opportunity for continued participation in the public review process for the Malibu Country Club CUP for the golf course. We provide comments on the effects of private and public land development in the Santa Monica Mountains at the invitation of state and local units of government with authority to prevent or minimize adverse uses. We respect the rights of landowners to develop and manage their properties consistent with federal, state, and local laws. In providing comments, we assume a neutral position and do not support or oppose land development. To this end, we offer the following comments on the proposed CUP modifications. Our comments first summarize the Trancas Creek setting, then review the annual reports, water quality monitoring results, NRCS Conservation Plan, and finally, address the proposed CUP modifications.

Trancas Creek: Setting and Stream Condition

The golf course is located at the top of the 6,500-acre Trancas Creek Watershed. Forty-five percent of the watershed is public parkland. Waters from the golf course drain directly into the watershed's main tributary, Trancas Creek. The creek then flows 3.5 linear miles across National Park Service property. Trancas Canyon was acquired for parkland within the Santa Monica Mountains National Recreation Areato preserve and protect superlative resource values for public appreciation and enjoyment. As such, the National Park Service strives to preserve the parkland in a manner that upholds the ecosystem's native flora and fauna. The aquatic portions of the ecosystem should be supported by the natural, historic water regime of

Trancas Creek, and water quality should meet established natural background standards for waters in the Santa Monica Mountains.

Development in the watershed features scattered residential development. There are seven single family residences at elevations that drain into the golf course ([see attached map]). Two of the residences are owned by the permittee. The seven properties all are at least 300 feet from three blue line streams that converge on the golf course. The widely spaced residential development throughout the watershed is typical of other similar sized watersheds throughout the Santa Monica Mountains. The golf course represents a land use not found in other similar watersheds.

Since 2000, the National Park Service has conducted stream condition assessments of 30 streams throughout the national recreation area, including Trancas Creek. Streams in Arroyo Sequit Watershed, Ramirez Canyon, and Serrano Canyon feature settings similar to Trancas Creek, in terms of natural setting and percent cover of development. Several streams in the study are in areas affected more heavily by urbanization, such as Malibu Creek and Medea Creek. The streams in settings similar to Trancas Canyon were found to host thriving populations of native species, including the California newt *(Taricha torosa)*, Pacific tree frogs (*Hyla regilla*), California treefrogs (*H. cadaverina*), and western toads (*Bufo boreas*). The similar watersheds did not have non-native predatory species, including crayfish (*Procambarus clarkii*).

Trancas Creek, however, exhibits reduced populations of native species that are in decline. Trancas Creek also is the only creek in the less-developed areas where non-native crayfish were found, as well as non-native fishes (bluegill and big-mouth bass). In regard to non-native species presence, Trancas Creek is similar to streams in areas associated with higher development coverage. Another similarity Trancas Creek has with streams in more developed watersheds is the perennial flow caused by imported water. Scientists from National Park Service, Pepperdine University, and U.S. Geological Service correlated non-natural perennial streamflow with reduced native species presence (Riley, et al., *Conservation Biology*, 2005). Water quantity shares importance with water quality when assessing stream health. Through the stream assessments, the National Park Service has concluded that Trancas Creek is degraded compared to similar creeks within the national recreation area. Thus, the National Park Service has a strong desire to identify and mitigate impacts affecting Trancas Creek and to work woth other agencies and partners to restore the creek to more natural conditions.

Annual Reports

Annual reports have been very cursory and do not adequately describe implementation of the CUP conditions. The reports include raw data and general statements of implementation without specific descriptions of changes or lack of changes in management procedures. Units of measurement are missing on tables intended to quantify annual water consumption and chemical application. Water quality data were not organized in a format that reveals patterns. Reports on conditions addressing pesticide/insecticide use are vague. We recommend the reports provide more analysis of the raw information. For example, if the golf course wishes

to demonstrate that MCC fertilizer application rates on putting greens, tees, and fairways are consistent with U.S. Golf Association (USGA) recommendations (pg. 3, Waller letter to Regional Planning, dated December 16, 2002), the annual reports should accurately describe the amounts of fertilizer MCC used in the specified areas.

Water Quality Monitoring Reports

Identification of the sources of impact to Trancas Creek is an important first step toward reversing degradation. The CUP conditions for water quality monitoring are of great value to both MCC and the National Park Service. We appreciate the County's leadership in requiring water quality as part of the CUP. We also appreciate MCC's work implementing the CUP. General findings from the nearly five years of water quality testing include the following points.

Total Nitrogen and Phosphate

- Twenty-one sampling events were reported in the MCC CUP review materials. Data sampling occurred each time at the golf course exit point. Samples were collected at water flow entry points during only 12 sampling events.

- Overall, total nitrogen and phosphate levels at the golf course exit point exceed CUP thresholds the majority of the time.

  a) Levels of total nitrogen as the water exits the golf course exceed the CUP threshold of 1.0 mg/L during 15 out of 21 sampling events (71%). The six events when total nitrogen values were under the threshold occurred during the non-storm sampling events. Total nitrogen values, however, exceeded the threshold during all non-storm sampling events during the 2001-2002 rainy season, known to be a particularly dry year.

  b) Phosphate levels exceeded the CUP threshold of 0.1 mg/L in 20 out of 21 sampling events (95%). Phosphate levels were exceedingly high during three of four "first flush" sampling events.

- Total nitrogen levels are comparatively high when measured against Heal the Bay Stream Team water quality monitoring results for similar watersheds (*www.healthebay/streamteam*). The locations with values higher than the MCC data represent major "outlet" sites associated with streams that drain large developed areas, including parts of Calabasas, Agoura Hills, and Westlake Village. Values for similar, less-developed watersheds, such as Cold Creek, Solstice, and Arroyo Sequit feature total nitrogen values significantly less than 1.0 mg/L.

- Phosphate levels are also high compared to the Heal the Bay Stream Team data for similar settings. However, data from "first flush" storm events at MCC are very high in phosphate compared to the Stream Team data.

- The water quality results indicate both land use above the golf course and the golf course are sources of nitrogenous and phosphate compounds in the water. When taking into account the difference in values between incoming water and exiting water, the following statistics result.

  a) The golf course contributes more than 1.0 mg/L total nitrogen above the input total nitrogen in six out of 21 samplings (29%)—mostly during non-storm sampling events, and down from 15 occurrences when entry point input is not considered. The excessive contributions tend to occur during storm event samplings.

  b) The golf course contributes more than 0.1 mg/L phosphate above the entry value in 13 of 21 samplings (62%), down from 20 occurrences when entry point input is not considered. During "first flush" storm sampling events, the majority of phosphate is contributed by the golf course.

In conclusion, water quality entering Trancas Creek from the golf course differs from water quality in similar watersheds in that it contains elevated levels of total nitrogen and phosphate compounds. It is important to consider entry point levels of nitrogen and phosphate. After taking into account entry and exit water quality data, MCC contributes total nitrogen in excess of the CUP threshold primarily during non-storm event samplings. MCC contributes phosphate in excess of the CUP threshold during both storm event and non-storm event samplings, and is the major source of phosphate contribution during first flush storm events. Overall, the findings lead us to not concur with MCC's conclusion that "adequate data now exists to support the position that the golf course is not the source of elevated nitrogen and phosphate levels..." (pg. 19, Waller letter, dated September 28, 2005). MCC, as well as the upstream land uses, are contributing to the elevated values. Turf management in the coming years should address the causes of increased phosphate runoff at all times of the year, and the cause of increased nitrogen input particularly during the dry season.

Insecticide/Fungicide Monitoring

We wish to note that the focus has been on nitrogen and phosphate values. More analysis should be provided for the non-fertilizer turf management chemicals, such as the insecticides and fungicides. Such chemicals, in extremely minute quantities, can have profoundly negative impacts on aquatic fauna. We suggest the following items to improve understanding of insecticide and fungicide potential presence in Trancas Creek.

- We would appreciate clarification of the MCC's chemical product list found in Exhibit H in the binder. It is not clear what is meant by "Quantity" and "Amount." Additionally, the reported water, fertilizer, and pesticide/insecticide usage (pg. 8, Waller letter, September 28, 2005), had no units associated with the figures. Thus, the report could not be interpreted.

- There is no information that clarifies what primary chemicals and derivatives from chemical breakdown are found in each "brand name" product. We understand the

information may be found on the internet, but it would be more efficient to have an information table in MCC's annual report. The information would facilitate an understanding of what chemicals tested by Los Angeles County Environmental Toxicology Lab (ETL) originate from which brand name product the golf course is using.

- The CUP-required annual reports do not adequately describe implementation of Condition 25.6. The condition requires selecting and testing water for the three highest volume—or alternatively, the most toxic—water-soluble pesticides, herbicides, and/or fungicides. We would like to be informed on which three chemicals were selected.

- ETL limits of detection may be too high to register presence of chemicals in levels that seriously impact aquatic fauna. For example, the ETL's detection limit for dieldrin is 0.1 micrograms/liter, yet the U.S. National Recommended Water Quality Criteria (NRWQ) maximum level for aquatic community continuous exposure without adverse effects is 0.06 micrograms/liter. Additionally, dieldrin is a banned chemical in the United States. There may be no need to test for dieldrin if MCC's reports to the U.S. Environmental Protection Agency indicate no products using this chemical are used.

  To make the CUP insecticide testing requirements meaningful for evaluating natural ecosystem conditions, federal and state guidelines that specify thresholds for maximum continuous exposure of natural aquatic communities to each chemical should be applied. Using a testing lab with the ability to measure small amounts of chemicals is critical to successful implementation of the water quality monitoring conditions. If the ETL cannot detect chemicals at the recommended thresholds, another lab should be used to perform the tests.

NRCS Conservation Plan

We thank MCC for meeting with NRCS and for providing our office with a copy of the Conservation Plan. We were surprised to find the report contains only generalized information and journal articles, both of which are of value but may have limited application at MCC. Information and recommendations specific to the MCC golf course are absent, other than brief, factual information on the soils found on the golf course property. There is no indication of how to apply the soils information to MCC golf course management. We would like to know if a section of the report is missing, or whether more follow-up was needed to customize recommendations for golf course management. For example, the NRCS cover letter for the plan suggested a landscape auditor who has worked with golf courses in San Diego County in respect to improved watering techniques and nutrient management. In MCC's annual report for 2005, it would be helpful to have a section describing actions MCC is taking based on the NRCS Conservation Plan and/or the on-site meeting(s) with NRCS.

Proposed CUP Modifications

Conditions 19.b, 19.c, and 20: The applicant requests to remove the provision to reduce by 50% within three years pesticide, herbicide, and fertilizer application on the golf course. We

understand that arbitrarily reducing chemical use by 50% over such a short term could compromise the health of golf course turf and worsen chemical runoff. However, a target percent reduction can be a useful goal in turf management, especially when used in conjunction with water quality monitoring and golf course landscaping. The current wording of the subject conditions is not practical, however, and should be amended. A discussion follows on why the 50% reduction target is useful.

Setting a percent reduction goal for chemical application can be valuable when used in conjunction with water quality monitoring. There are now almost five years of water quality monitoring data that, as described earlier in this letter, indicate MCC is not meeting target goals for nitrogen 29% of the time, and not meeting the phosphate goal 62% of the time, even after subtracting upstream inputs. At the same time, interpretation of the limited information in the annual report on quantities of chemical applications indicates no overall reduction in application levels, other than to adjust for drier versus wetter years. The water quality testing has provided baseline information upon which to make turf management adjustments to increase attainment of CUP target water quality goals. It would be useful to correlate changes in water quality results with percent changes in chemical use. Such information requires time to accumulate water quality data and adjust chemical application to find the right balance.

The 50% reduction in application levels could also be correlated with the results of Condition 21, requiring a 50% increase in native landscape coverage on the golf course. Reduced chemical application could be achieved through creating a "links" style golf course. Water consumption would also be reduced. Again, we understand time would be needed to implement landscape changes and subsequently measure reductions in chemical application—longer than the three-year timeframe specified by the CUP.

Therefore, we recommend retaining the 50% provision, but in the context of a more practical implementation strategy. The National Park Service wishes to see natural background water quality conditions attained in Trancas Creek through good turf management with measurable indicators that progress is being made. The 50% provision should be eliminated from the language for Conditions 19.b and 19.c. Condition 20 should be revised significantly to incorporate a more manageable timeframe for implementing the reduction and working in conjunction with Conditions 21, 25, and 26. Suggested language follows for Conditions 19.b and 19.c. Strike-through means remove the language, underlining indicates suggested language.

19.b: (Annual reports shall include...) "Progress on implementing an integrated pest management program. Reports shall include comparative information on which turf management procedures have changed, such as reduced application of particular pesticides/insecticides (reported as a percent reduction over the previous year and over the initial levels prior to CUP approval in 1998), or which chemicals have been eliminated and/or replaced with less toxic treatments."

19.c: (Annual Reports shall include...) "Water quality monitoring and testing results to assure ~~compliance~~ consistency with standards established by Los Angeles County

Environmental Toxicology Laboratory (ETL), U.S. Environmental Protection Agency, and State Regional Water Quality Control Board for natural ecosystem standards, rather than drinking water standards, applicable to Trancas Creek."

Conditions 24.7 and 24.8: We concur with the permittee's requested amendments to these conditions that define water testing times and locations.

Condition 25: We concur with the permittee's requested amendment to this condition that describes which water quality parameters to test at entry points to the golf course.

Condition 25.1: The current language presents a target goal of 1.0 mg/L total nitrogen in water exiting the golf course. The language does not provide for recognizing nitrogen input from land uses above the golf course. The water quality monitoring data indicate that, indeed, upstream land uses are contributing nitrogen to the water before it reaches the golf course. The permittee requests amending the condition to a) increase the target goal to 1.5 mg/L and b) allow the exiting nitrogen value to be "1.5 mg/L more than the weighted average total combined nitrogen entering the property..." (December 16, 2002 Waller letter to Regional Planning).

The National Park Service is a non-regulatory agency except on parkland owned by the agency. We must refer the County to the water quality regulating agencies for guidance on allowing or denying changes to water quality targets. The agencies' decision should be in accordance with U.S. Environmental Protection Agency and State Regional Water Quality Control Board rules and regulations as they pertain to waterways of the Santa Monica Mountains. Our primary concern is that water quality in Trancas Creek should represent established findings for background water quality of streams in geographic settings similar to Trancas Canyon. In the Santa Monica Mountains, a background value of less than 1.0 mg/L total nitrogen is the established natural condition.

We understand the permittee's issue with being held accountable for total nitrogen input from upstream land uses. Again, we refer the County to the water quality regulating agencies to approve or deny the proposed CUP modification language that would account for upstream pollutant input to the golf course. Our recommendation is that, if upstream pollution sources are identified, the water quality regulatory agencies should take steps to correct the polluting upstream land use. If there is any role the National Park Service may play in addressing the upstream pollution, we would be glad to assist.

Condition 25.2: Similar to Condition 25.1, the permittee requests amending the condition to reflect upstream input of total phosphate, with the target water quality goal remaining unchanged, at 0.1 mg/L. Our comments on Condition 25.1 regarding upstream input apply to Condition 25.2.

Condition 25.3: We do not concur with the proposed wording for this condition and recommend the condition remain unchanged, except for some needed minor editing (see below). Pesticides, herbicides, and fungicides may have lower thresholds for causing adverse

impacts on aquatic communities compared to the testing thresholds of the Los Angeles County Environmental Toxicology Lab. Earlier in this letter the example of Dieldrin was given.

"No presence of pesticides, fungicides, ~~nor~~ or herbicides. Presence of pesticides, fungicides, and herbicides will be ~~by pesticides~~ determined through screening for organochlorines, nitrogen/phosphorus containing pesticides, carbamates, synthetic pyrethroids, triazines, 2,4-D, 2,4,5-TP, and glyphosate."

Conditions 30 and 31: The subject conditions address communication and cooperation between MCC and the National Park Service. We find it acceptable to delete Condition 31 and combine it with Condition 30. The permittee's proposed language for Condition 30 needs to reflect willingness of MCC to not only allow the National Park Service permission to monitor biodiversity on MCC property, but also to facilitate projects to address threats to biodiversity in Trancas Creek. We understand the condition does not require the golf course to fund any projects or to allow such projects to interfere with golf course operation.

"The permittee shall meet annually with NPS to discuss watershed management concerns, riparian area protection, water quality and erosion control strategies and provide the Director of Planning with documentation of such meetings. Furthermore, MCC agrees to allow the NPS reasonable access to the property to monitor the biodiversity of Trancas Creek and implement projects that address threats to biodiversity. Access and project work is subject to the following stipulations: 1) Monitoring or restoration projects shall be designed cooperatively by NPS and MCC, 2) MCC is not obligated to contribute funding to NPS monitoring or restoration projects associated with access to the property, 3) NPS shall give MCC at least two (2) business days' advance notice before entering the property, and 4) NPS presence or activities shall not interfere with MCC's operation of the property."

Thank you for the opportunity to comment. If you have questions, please call Ray Sauvajot at (805)370-2339.

Sincerely,

for Woody Smeck
Superintendent

cc: Vivian Rescalvo, Planning Deputy, Los Angeles County 3rd Supervisorial District
Melinda Becker, Los Angeles Regional Water Quality Control Board
Ron Schafer, Superintendent, Angeles District, State Dept. of Parks and Recreation
Dan Preece, District Manager, Resource Conservation District of the Santa Monica Mtns.

Enclosure: Map of Upstream Land Use, dated December 12, 2005

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

JAN - 8 2012

January 3, 2012

Carolina Blengini, Regional Planner
Special Projects Section, Department of Regional Planning
County of Los Angeles
320 West Temple Street, Room 1348
Los Angeles, CA 90012

Notice of Preparation of a CEQA Document for the
Malibu Institute Project

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. The lead agency may wish to consider using land use emissions estimating software such as the recently released CalEEMod. This model is available on the SCAQMD Website at: http://www.aqmd.gov/ceqa/models.html.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD staff is available to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
LAC110325-01
Control Number

State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
http://www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

RECEIVED
DEC 19 2012

December 15, 2012

Ms. Carolina Blengini, Regional Planner
Los Angeles County Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012
cblengini@planning.lacounty.gov

Subject: Notice of Preparation for a Draft Environmental Impact Report for The Malibu Institute – Project No. TR071735, SCH 2012111068, Los Angeles County

Dear Ms. Blengini:

The Department of Fish and Game (Department) has reviewed the Initial Study and Notice of Preparation for the proposed Malibu Institute Project No. TR071735 (project). The Malibu Institute (Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole public golf course on a 650-acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The project would provide for the development of educational and meeting facilities along with visitor-serving overnight accommodations. The project would include the reuse and remodel of existing facilities and the addition of new facilities. The project redesign of the golf course would remove approximately 1,590 non-native species of trees planted during the original construction of the golf course and would re-vegetate areas surrounding the golf course with drought-tolerant native species of grasses, shrubs, and trees, including oaks and sycamores, that would require no irrigation and would create a landscape pallet more consistent with the character and habitat of the Santa Monica Mountains. The project includes several other environmental sensitive design concepts including cluster development on 20 acres and remodel of golf course on 107 acres, while permanently conserving over 450 acres of native coastal scrub, chaparral, and oak woodlands.

The California Wildlife Action Plan, a recent Department guidance document, identified the following stressors affecting wildlife and habitats within the project area: 1) growth and development; 2) water management conflicts and degradation of aquatic ecosystems; 3) invasive species; 4) altered fire regimes; and 5) recreational pressures. With these stressors in mind, the Department looks forward to working with the County of Los Angeles in recommending conservation and protective measures for biological and botanical resources.

The Department is California's Trustee Agency for fish and wildlife resources, holding these resources in trust for the People of the State pursuant to various provisions of the California Fish and Game Code. (Fish & G. Code, §§ 711.7, subd. (a), 1802.) The Department submits these comments in that capacity under the California Environmental Quality Act (CEQA). (See generally Pub. Resources Code, §§ 21070; 21080.4.) Given its related permitting authority under the California Endangered Species Act (CESA) and Fish and Game Code section 1600 *et seq.*, the Department also submits these comments likely as a Responsible Agency for the project under CEQA. (*Id.*, § 21069.)

The Department supports the concepts of using native plant species in landscape designs and recommends the use of local plant propagules to help maintain local genetic stock and to further facilitate planting success. The Department also recommends that during golf course design, consideration be made to reduce or eliminate the need for fertilizers and pesticides during construction and long-term maintenance of the course property.

To enable Department staff to adequately review and comment on the proposed project we recommend the following information, where applicable, be included in the DEIR:

1. A complete, recent assessment of flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats including:

    a. A thorough recent assessment of rare plants and rare natural communities, following the Department's Guidelines for Assessing Impacts to Rare Plants and Rare Natural Communities. (See Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities at: http://www.dfg.ca.gov/habcon/plant/).

    b. A complete, recent assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use within the project area should also be addressed. Recent, focused, species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required.

    c. Endangered, rare, and threatened species to address should include all those species which meet the related definition under the CEQA Guidelines. (See Cal. Code Regs., tit. 14, § 15380).

    d. The Department's Biogeographic Data Branch in Sacramento should be contacted at (916) 322-2493 (www.dfg.ca.gov/biogeodata) to obtain current information on any previously reported sensitive species and habitats, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code. Also, any Significant Ecological Areas (SEAs) or Environmentally Sensitive Habitats (ESHs) or any areas that are considered sensitive by the local jurisdiction that are located in or adjacent to the project area must be addressed.

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. This discussion should focus on maximizing avoidance, and minimizing impacts.

    a. CEQA Guidelines, Section 15125(a), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

    b. Project impacts including deposition of debris should also be analyzed relative to their effects on off-site habitats and populations. Specifically, this should include nearby public lands, open space, natural habitats, and riparian ecosystems. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas are of concern to the Department and should be fully evaluated and provided. The analysis should also include a discussion of the potential for impacts

resulting from such effects as increased vehicle traffic, outdoor artificial lighting, noise and vibration and pest management.

c. A cumulative effects analysis should be developed as described under CEQA Guidelines, Section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

d. Impacts to migratory wildlife affected by the project should be fully evaluated including proposals to remove/disturb native and ornamental landscaping and other nesting habitat for native birds. Impact evaluation may also include such elements as migratory butterfly roost sites and neo-tropical bird and waterfowl stop-over and staging sites. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of birds and their active nests, including raptors and other migratory nongame birds as listed under the MBTA.

e. Impacts from project activities (including but not limited to, staging and disturbances to native and non native vegetation, structures, and substrates) should occur outside of the avian breeding season which generally runs from March 1-August 31 (as early as January 1 for some raptors) to avoid take of birds or their eggs. If project activities cannot avoid the avian breeding season, nest surveys should be conducted and active nests should be avoided and provided with a minimum buffer as determined by a biological monitor (the Department generally recommends a minimum 300 foot nest avoidance buffer or 500 feet for all active raptor nests).

f. Proposed impacts to all habitats from City or County required Fuel Modification Zones (FMZ). Areas slated as mitigation for loss of habitat shall not occur within the FMZ.

g. Impacts from project activities which may result in injury or death to bats. Bats may reside within trees or man made structures that may be impacted during project implementation. The removal of trees and/or structures that may provide maternity roost habitat (e.g., in cavities or under loose bark) should occur between October 1 and February 28.

3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives which avoid or otherwise minimize impacts to sensitive biological resources including wetlands/riparian habitats, alluvial scrub, coastal sage scrub, should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

   a. Mitigation measures for project impacts to sensitive plants, animals, and habitats should emphasize evaluation and selection of alternatives which avoid or otherwise minimize project impacts. Compensation for unavoidable impacts through acquisition and protection of high quality habitat elsewhere should be addressed with off-site mitigation locations clearly identified.

   b. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment).

c. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

4. An Incidental Take Permit (ITP) from the Department may be required if the project, project construction, or any project-related activity during the life of the project will result in "take" as defined by the Fish and Game Code of any species protected by CESA. (Fish & G. Code, §§86, 2080, 2081, subd. (b), (c).) Early consultation with Department regarding potential permitting obligations under CESA with respect to the project is encouraged. (Cal. Code Regs., tit. 14, § 783.2, subd. (b).). It is imperative with these potential permitting obligations that the draft environmental document prepared by the Lead Agency includes a thorough and robust analysis of the potentially significant impacts to endangered, rare, and threatened species, and their habitat, that may occur as a result of the proposed project. For any such potentially significant impacts the Lead Agency should also analyze and describe specific, potentially feasible mitigation measures to avoid or substantially lessen any such impacts as required by CEQA and, if an ITP is necessary, as required by the relevant permitting criteria prescribed by Fish and Game Code section 2081, subdivisions (b) and (c). The failure to include this analysis in an environmental document could preclude the Department from relying on the Lead Agency's analysis to issue an ITP without the Department first conducting its own, separate Lead Agency subsequent or supplemental analysis for the project. (See, e.g., Cal. Code Regs., tit. 14, § 15096, subd. (f).) For these reasons, the following information is requested:

   a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

   b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

5. The Department opposes the elimination of watercourses (including concrete channels, blue line streams and other watercourses not designated as blue line streams on USGS maps) and/or the channelization of natural and manmade drainages or conversion to subsurface drains. All wetlands and watercourses, whether intermittent, ephemeral, or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic habitat values and maintain their value to on-site and off-site wildlife populations. The Department recommends a minimum natural buffer of 100 feet from the outside edge of the riparian zone on each side of drainage.

   a. The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource. For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) or a river or stream or use material from a streambed, the project applicant (or "entity") must provide written notification to the Department pursuant to Section 1602 of the Fish and Game Code. Based on this notification and other information, the Department then determines whether a Lake and Streambed Alteration (LSA) Agreement is required. The Department's issuance of an LSA Agreement is a project subject to CEQA. To facilitate issuance of a LSA Agreement, if necessary, the environmental document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance,

mitigation, monitoring and reporting commitments for issuance of the LSA Agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. Again, the failure to include this analysis in the project's environmental document could preclude the Department from relying on the Lead Agency's analysis to issue a LSA Agreement without the Department first conducting its own, separate Lead Agency subsequent or supplemental analysis for the project.

Thank you for this opportunity to provide comments. Please contact Mr. Daniel Blankenship, Staff Environmental Scientist, at (661) 259-3750 if you should have any questions and for further coordination on the proposed project.

Sincerely,

Betty J Courtney

Betty Courtney
Acting Environmental Program Manager
South Coast Region

Attachment

cc: Mr. Dan Blankenship, CDFG, Santa Clarita
Mr. Brock Warmuth, CDFG, Camarillo
State Clearinghouse, Sacramento

Sensitivity of Top Priority Rare Natural Communities in Southern California

Sensitivity rankings are determined by the Department of Fish and Game, California Natural Diversity Data Base and based on either number of known occurrences (locations) and/or amount of habitat remaining (acreage). The three rankings used for these top priority rare natural communities are as follows:

S1.# Fewer than 6 known locations and/or on fewer than 2,000 acres of habitat remaining.

S2.# Occurs in 6-20 known locations and/or 2,000-10,000 acres of habitat remaining.

S3.# Occurs in 21-100-known locations and/or 10,000-50,000 acres of habitat remaining.

The number to the right of the decimal point after the ranking refers to the degree of threat posed to that natural community regardless of the ranking. For example:

S1.1 = very threatened
S2.2 = threatened
S3.3 = no current threats known

Sensitivity Rankings (February 1992)

Rank	Community Name
S1.1	Mojave Riparian Forest
	Sonoran Cottonwood Willow Riparian
	Mesquite Bosque
	Elephant Tree Woodland
	Crucifixion Thorn Woodland
	Allthorn Woodland
	Arizonan Woodland
	Southern California Walnut Forest
	Mainland Cherry Forest
	Southern Bishop Pine Forest
	Torrey Pine Forest
	Desert Mountain White Fir Forest
	Southern Dune Scrub
	Southern Coastal Bluff Scrub
	Maritime Succulent Scrub
	Riversidean Alluvial Fan Sage Scrub
	Southern Maritime Chaparral
	Valley Needlegrass Grassland
	Great Basin Grassland
	Mojave Desert Grassland
	Pebble Plains
	Southern Sedge Bog
	Cismontane Alkali Marsh

S1.2	Southern Foredunes Mono Pumice Flat Southern Interior Basalt Flow Vernal Pool
S2.1	Venturan Coastal Sage Scrub Diegan Coastal Sage Scrub Riversidean Upland Coastal Sage Scrub Riversidean Desert Sage Scrub Sagebrush Steppe Desert Sink Scrub Mafic Southern Mixed Chaparral San Diego Mesa Hardpan Vernal Pool San Diego Mesa Claypan Vernal Pool Alkali Meadow Southern Coastal Salt Marsh Coastal Brackish Marsh Transmontane Alkali Marsh Coastal and Valley Freshwater Marsh Southern Arroyo Willow Riparian Forest Southern Willow Scrub Modoc-Great Basin Cottonwood Willow Riparian Modoc-Great Basin Riparian Scrub Mojave Desert Wash Scrub Engelmann Oak Woodland Open Engelmann Oak Woodland Closed Engelmann Oak Woodland Island Oak Woodland California Walnut Woodland Island Ironwood Forest Island Cherry Forest Southern Interior Cypress Forest Bigcone Spruce-Canyon Oak Forest
S2.2	Active Coastal Dunes Active Desert Dunes Stabilized and Partially Stabilized Desert Dunes Stabilized and Partially Stabilized Desert Sandfield Mojave Mixed Steppe Transmontane Freshwater Marsh Coulter Pine Forest Southern California Fellfield White Mountains Fellfield
S2.3	Bristlecone Pine Forest Limber Pine Forest

City of Malibu

23825 Stuart Ranch Road · Malibu, California · 90265-4861
(310) 456-2489 · fax (310) 456-7650 · www.malibucity.org

December 11, 2012

Carolina Blengini
Regional Planner
Special Projects Section - Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

RE: **Notice of Preparation**
The Malibu Institute – Project No. TR071735

Dear Ms. Blengini:

The City of Malibu has reviewed the Notice of Preparation (NOP) and associated Initial Study prepared for The Malibu Institute project located at 901 Encinal Canyon Road, Malibu, CA 90265. The project site is located approximately 2.5 miles north of the Malibu city limits.

The City has the following comments on the project:

Uses Onsite

1. No information given related to the total number of people who could be staying overnight at once. How many people can each bungalow house? How long will guests be staying at a time? Will they be limited to transient stays (30 days or less)?

2. Detailed project description includes a mention of fitness and spa facilities onsite. How will the use of these facilities be monitored? Will the use of the facilities be limited to Institute guests or will they be open to the public? Will there be a maximum capacity imposed?

3. Describe purpose of helipad and how often it is anticipated to be used. What would the path of travel be?

4. Project description does not discuss sizing or purpose of the new water tank which will replace an old tank onsite.

5. Use of only electric golf carts onsite should be included as a condition of approval of the project (discussed on pg. 35 of initial study).

6. The project includes a conditional use permit to allow the continued sale of alcoholic beverages. Will the license be amended as part of this project? Will sales be expanded to the new facility? Does the application plan to extend the hours when alcohol may be served?

Traffic

7. The NOP indicates that the project is anticipated to generate approximately 314 average daily trips (ADT) on area roadways. It further states that the trips will be distributed along Kanan Dume Road to the north and south with minor increases associated with Decker Canyon Road (State Route 23). Kanan Dume / Pacific Coast Highway and Decker Canyon / Pacific Coast Highway are both CMP intersections within the City of Malibu. The EIR needs to include an analysis per Initial Study Section 17(b) (pg. 35) of the traffic impacts to these intersections.

8. The EIR should discuss impacts to Encinal Canyon Road as well, as this street provides direct access from Pacific Coast Highway to the project site.

9. What would a worst case scenario involve? What if there is a conference starting (necessitating vehicles and shuttles arriving within close proximity) and a golf tournament on the same day? Traffic impacts caused by onsite events held between Memorial Day and Labor Day could have the potential of limiting access to coastal visitors along Pacific Coast Highway.

10. The traffic analysis should include the projected percentages of guests of the Institute and golf course that will travel through the City of Malibu versus come to the property from the north.

11. What would the shuttle route be from the Institute to area airports? How often would this shuttle run?

12. The construction of this project will require numerous truck trips. The project should be conditioned so that hauling routes do not run through the City of Malibu. Per the law, trucks over three axles are not permitted on PCH except for local delivery. In addition to prohibiting construction truck trips through the City, hauling routes to take garbage to a landfill and normal deliveries should not occur due to safety concerns related to the steep grade along Kanan Dume Road.

13. The traffic analysis prepared for the project should clarify how the spa and fitness facilities will be used and how the uses will augment the ADT.

Water Quality

14. Impacts resulting from runoff of fertilizers and pesticides used for golf course maintenance should be scrutinized in the EIR. The analysis should specifically include any impacts that are anticipated within the City of Malibu.

15. The EIR should discuss the potential impacts to the Area of Special Biological Significance (ASBS) as well as Trancas Creek that will be caused by the proposed project.

Other

16. Why is a streambed alteration permit required? Are there alternatives to hydromodification?

17. Pg. 22 of the initial study states that there are no sensitive receptors within 500 feet of the project. The question in 9(c) asks about receptors within ¼ mile (1,320 feet), not 500 feet of the site. Using the correct measurement, will receptors be affected?

18. The EIR should include a more in-depth discussion of the proposed tentative tract map. Why are so many individual lots being created as part of this project? It is unclear what is being proposed.

Public Notice

19. In order to afford better public review of this project, the City requests that public notice be provided to all property owners and applicants located within 1,000 feet of the subject project site, rather than 500 feet, in compliance with public noticing requirements found within the Malibu Municipal Code.

20. The City requests that public notice of any future hearings on this project be placed in a local newspaper that circulates within Malibu.

If you have further questions, please do not hesitate to contact Stephanie Danner, Senior Planner, at (310) 456-2489, extension 276 or sdanner@malibucity.org. Please add the City of Malibu, Attn. Stephanie Danner, Senior Planner, to the interested parties list to receive all future notices related to this project.

Sincerely,

Joyce Parker-Bozylinski, AICP
Planning Director

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

RECEIVED
DEC 10 2012

December 4, 2012

Carolina Blengini, Regional Planner
Special Projects Section
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Notice of Preparation of a CEQA Document for
The Malibu Institute

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. The lead agency may wish to consider using land use emissions estimating software such as the recently released CalEEMod. This model is available on the SCAQMD Website at: http://www.aqmd.gov/ceqa/models.html.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD staff is available to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
LAC121127-03
Control Number

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

RECEIVED
NOV 29 2012

November 21, 2012

To: Reviewing Agencies

Re: The Malibu Institute - Project No. TR071735
SCH# 2012111068

Attached for your review and comment is the Notice of Preparation (NOP) for the The Malibu Institute - Project No. TR071735 draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Carolina Blengini
Los Angeles County Department of Regional Planning
320 West Temple Street, Room 1348
Los Angeles, CA 90012

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2012111068
Project Title The Malibu Institute - Project No. TR071735
Lead Agency Los Angeles County

Type NOP Notice of Preparation

Description The Malibu Institute (applicant) proposes to create a sports-oriented educational retreat to complement a remodeled 18-hole golf course on a 650 acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The Project would provide for the development of educational and meeting facilities (48,164 sf), along with visitor-serving overnight accommodations consisting of 40 bungalow structures (109,140 sf), a clubhouse (30,147 sf) golf pro shop and grill (12,104 sf), and support facilities including a maintenance building, warehouse, a golf cart storage barn, and a security/information building, all located within the previously disturbed area of the Malibu Golf Club.

Lead Agency Contact

Name Carolina Blengini
Agency Los Angeles County Department of Regional Planning
Phone (213) 974-1522 **Fax**
email
Address 320 West Temple Street, Room 1348
City Los Angeles **State** CA **Zip** 90012

Project Location

County Los Angeles
City Malibu
Region
Cross Streets Encinal Canyon Road at Clubhouse Drive
Lat / Long 34° 05' 23" N / 118° 51' 21" W
Parcel No. 2058-015-003, 013, 037, 045
Township 1S **Range** 19W **Section** 2,3, **Base**

Proximity to:

Highways Hwy 23
Airports
Railways
Waterways
Schools
Land Use R-R-1, A-1-1, A-1-20, and RPD-5-0.2-DP

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Coastal Zone; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Public Services; Recreation/Parks; Septic System; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; California Coastal Commission; Cal Fire; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 5; Native American Heritage Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 7; Air Resources Board, Major Industrial Projects; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 4; Santa Monica Mountains Conservancy

Date Received 11/21/2012 **Start of Review** 11/21/2012 **End of Review** 12/20/2012

NOP Distribution List

County: LOS ANGELES

SCH# 2012111068

Resources Agency

- [x] Resources Agency
  Nadell Gayou
- [ ] Dept. of Boating & Waterways
  Nicole Wong
- [x] California Coastal Commission
  Elizabeth A. Fuchs
- [ ] Colorado River Board
  Gerald R. Zimmerman
- [ ] Dept. of Conservation
  Elizabeth Carpenter
- [ ] California Energy Commission
  Eric Knight
- [x] Cal Fire
  Dan Foster
- [ ] Central Valley Flood Protection Board
  James Herota
- [ ] Office of Historic Preservation
  Ron Parsons
- [x] Dept of Parks & Recreation
  Environmental Stewardship Section
- [ ] California Department of Resources, Recycling & Recovery
  Sue O'Leary
- [ ] S.F. Bay Conservation & Dev't. Comm.
  Steve McAdam
- [x] Dept. of Water Resources Resources Agency
  Nadell Gayou

Fish and Game

- [ ] Depart. of Fish & Game
  Scott Flint
  Environmental Services Division
- [ ] Fish & Game Region 1
  Donald Koch
- [ ] Fish & Game Region 1E
  Laurie Harnsberger
- [ ] Fish & Game Region 2
  Jeff Drongesen
- [ ] Fish & Game Region 3
  Charles Armor
- [ ] Fish & Game Region 4
  Julie Vance
- [x] Fish & Game Region 5
  Leslie Newton Reed
  Habitat Conservation Program
- [ ] Fish & Game Region 6
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] Fish & Game Region 6 I/M
  Brad Henderson
  Inyo/Mono, Habital Conservation Program
- [ ] Dept. of Fish & Game M
  George Isaac
  Marine Region

Other Departments

- [ ] Food & Agriculture
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] Depart. of General Services
  Public School Construction
- [ ] Dept. of General Services
  Anna Garbeff
  Environmental Services Section
- [ ] Dept. of Public Health
  Jeffery Worth
  Dept. of Health/Drinking Water
- [ ] Delta Stewardship Council
  Kevan Samsam

Independent Commissions,Boards

- [ ] Delta Protection Commission
  Michael Machado
- [ ] Cal EMA (Emergency Management Agency)
  Dennis Castrillo
- [x] Native American Heritage Comm.
  Debbie Treadway
- [ ] Public Utilities Commission
  Leo Wong
- [ ] Santa Monica Bay Restoration
  Guangyu Wang
- [ ] State Lands Commission
  Jennifer Deleong
- [ ] Tahoe Regional Planning Agency (TRPA)
  Cherry Jacques

Business, Trans & Housing

- [x] Caltrans - Division of Aeronautics
  Philip Crimmins
- [ ] Caltrans - Planning
  Terri Pencovic
- [x] California Highway Patrol
  Suzann Ikeuchi
  Office of Special Projects
- [ ] Housing & Community Development
  CEQA Coordinator
  Housing Policy Division

Dept. of Transportation

- [ ] Caltrans, District 1
  Rex Jackman
- [ ] Caltrans, District 2
  Marcelino Gonzalez
- [ ] Caltrans, District 3
  Gary Arnold
- [ ] Caltrans, District 4
  Erik Alm
- [ ] Caltrans, District 5
  David Murray
- [ ] Caltrans, District 6
  Michael Navarro
- [x] Caltrans, District 7
  Dianna Watson
- [ ] Caltrans, District 8
  Dan Kopulsky
- [ ] Caltrans, District 9
  Gayle Rosander
- [ ] Caltrans, District 10
  Tom Dumas
- [ ] Caltrans, District 11
  Jacob Armstrong
- [ ] Caltrans, District 12
  Marlon Regisford

Cal EPA

Air Resources Board

- [ ] Airport/Energy Projects
  Jim Lerner
- [ ] Transportation Projects
  Douglas Ito
- [x] Industrial Projects
  Mike Tollstrup
- [ ] State Water Resources Control Board
  Regional Programs Unit
  Division of Financial Assistance
- [ ] State Water Resources Control Board
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] State Water Resouces Control Board
  Phil Crader
  Division of Water Rights
- [x] Dept. of Toxic Substances Control
  CEQA Tracking Center
- [ ] Department of Pesticide Regulation
  CEQA Coordinator

Regional Water Quality Co Board (RWQCB)

- [ ] RWQCB 1
  Cathleen Hudson
  North Coast Region (1)
- [ ] RWQCB 2
  Environmental Document Coordinator
  San Francisco Bay Region (
- [ ] RWQCB 3
  Central Coast Region (3)
- [x] RWQCB 4
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] RWQCB 5S
  Central Valley Region (5)
- [ ] RWQCB 5F
  Central Valley Region (Fresno Branch Office
- [ ] RWQCB 5R
  Central Valley Region (Redding Branch Office
- [ ] RWQCB 6
  Lahontan Region (6)
- [ ] RWQCB 6V
  Lahontan Region (6) Victorville Branch Offic
- [ ] RWQCB 7
  Colorado River Basin Regio
- [ ] RWQCB 8
  Santa Ana Region (8)
- [ ] RWQCB 9
  San Diego Region (9)

- [ ] Other _____

- [x] Santa Monica MTN Conservancy

Last Updated 8/14/2012

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

Notice of Preparation

RECEIVED
DEC 24 2012

December 19, 2012

To: Reviewing Agencies

Re: The Malibu Institute - Project No. TR071735
SCH# 2012111068

Attached for your review and comment is the Notice of Preparation (NOP) for the The Malibu Institute - Project No. TR071735 draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Carolina Blengini
Los Angeles County Department of Regional Planning
320 West Temple Street, Room 1348
Los Angeles, CA 90012

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

south of Mulholland Highway also fall within the Coastal Zone as defined by the California Coastal Act. Adjacent land uses are primarily undeveloped private and public lands with large lot rural residential development common along the northern and western boundaries.

The Project site is comprised of an irregularly shaped assemblage of 29 irregularly shaped parcels that total approximately 650 acres, spanning from Encinal Canyon Road on the south to the intersection of Mulholland Drive and Westlake Boulevard on the north.

Existing development on the Project site consists of the Malibu Golf Club, a public 18-hole golf course with supporting amenities constructed in the early 1970s. Other facilities on the Project site include a clubhouse, restaurant/bar, snack shop, pro-shop, maintenance facilities, and two surface parking lots and associated driveways, which are all located in the central and southern regions of the Project site. Much of the golf course area is planted with non-native and ornamental plant species. The remainder of the Project site consists of areas of native vegetation. Several areas adjacent to the golf course have been graded in the past in connection with various development phases of the golf course.

PROJECT SUMMARY

The Malibu Institute (Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course on a 650-acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The Project would provide for the development of educational and meeting facilities (48,164 square feet), along with visitor-serving overnight accommodations consisting of 40 bungalow structures (109,140 square feet), a clubhouse (30,147 square feet), golf pro shop and grill (12,104 square feet), and support facilities including a maintenance building (10,500 square feet), warehouse (4,623 square feet), a golf cart storage barn (9,162 square feet), and a security/information building (447 square feet), all located within the previously disturbed area of the Malibu Golf Club. The Project would include 224,287 square feet of structures, which would include the reuse and remodel of the existing 12,475 square foot clubhouse and cart barn as part of the institute building and the removal of 11,160 square feet of existing structures, for a total increase of 200,652 square feet of structures on the Project site. An existing 875 square foot guesthouse located on the northern portion of the property would be retained by the proposed Project for use as a caretakers' residence. The Malibu Institute would be open year-round for education-oriented conferences, and with overnight accommodations would operate 24 hours per day; however, meetings would take place predominantly during regular business hours. The redesigned golf course would continue to operate as a public golf facility, as well as being available to guests of the Malibu Institute.

oject Development

construction activity would occur within the area previously disturbed during development of the Malibu lf Club in the 1970s. The Project would remodel the existing 18-hole public golf course using an ironmentally sensitive design, including sand-capping the fairways, a "smart" irrigation system, and new eration drought-tolerant grasses. These measures would reduce water consumption for irrigation of the f course by approximately 35%. The 18-hole golf course layout would be reconfigured using the acreage 7 of the existing holes on approximately 107 acres of the existing 118-acre existing golf course, with the area reduced to approximately 62 acres. The Applicant would remove approximately 1,590 non-native ies of trees planted during the original construction of the golf course, and would re-vegetate areas ounding the golf course with drought-tolerant, native species of grasses, shrubs, and trees, including oaks sycamores, that would require no irrigation and would create a landscape pallet more consistent with the acter and habitat of the Santa Monica Mountains. The Project does not propose to remove any protected trees or encroach into any oak tree protection zones. By clustering development of the buildings and mmodations on approximately 20 acres and the remodeled golf course on 107 acres in the southern on of the 650-acre property, over 450 acres of native coastal scrub and chaparral, including oak lland forest, would be left undisturbed and become permanently dedicated open space. Grading for out of the Project would consist of approximately 120,000 cubic yards of cut and 120,000 cubic yards of

fill, which would be balanced onsite. No import or export of fill material would be required.

Green Building Features

The Project would incorporate many "green" features. The Institute building, which would contain the educational and meeting facilities, would use the building footprint, foundation and infrastructure of the existing clubhouse and cart barn. The Project would replace over 185,000 square feet of existing non-pervious parking lots and cart paths with pervious material to allow infiltration of storm water and improve water quality. The buildings and accommodations would incorporate sustainable and green design with the goal of achieving LEED™ Platinum certification (or equivalent) for all buildings on the property. Design features also would include green roofs on many of the Project buildings, the use of color and shade structures to reduce the heat island effect, charging stations for electric vehicles, the use of highly efficient geothermal HVAC equipment, and the use of native, drought-tolerant landscaping, and the use of a shuttle van or bus service for larger groups visiting the Project. Water conservation and design features would include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems. The Project would use photovoltaic panels over shade structures in the expanded surface parking area to generate most of the energy needs for the Project and would replace existing outdoor overhead parking lot lighting, which currently can be seen from off-site, with lighting complying with Dark Skies initiatives and the County's Rural Lighting Outdoor Lighting District Ordinance. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought Tolerant Landscaping Ordinance. Finally, the Project would remove multiple septic tanks throughout the property and install an on-site wastewater treatment and recycling system, providing effluent treatment meeting Title 22 standards for reuse as irrigation for the remodeled golf course.

Access, Circulation & Parking Facilities

The Project would include modification and construction of existing and new roadways and parking areas and visitor circulation improvements on the Project site to provide access to each of the Project components. Primary access to the Institute would continue to be from Encinal Canyon Road via Clubhouse Drive. Internally, Trancas Lakes Drive would provide access to the guest parking area located in close proximity to all of the proposed facilities, and a network of internal walkways and paths would promote circulation among the various facilities of the Malibu Institute by foot or electric cart. Externally, the Malibu Institute would generate approximately 314 Average Daily Trips (ADT) on area roadways, including 11 A.M peak hour trips and 18 P.M. peak hour trips, as estimated by a traffic study prepared for the Project. These trips would be predominantly distributed along Kanan Road to the north and south, from Encinal Canyon Road, with some minor increases associated with Decker Canyon Road. Additional study will determine if the Level of Service of any affected roadways or intersections would be significantly impacted based on County standards. The Project would provide shuttle service from neighboring airports, including Los Angeles International Airport and Burbank Airport, which would reduce the ADT on area roads as well as reduce the Project's parking demands.

To ensure there is ample parking, and to comply with County development standards, the Project would provide 387 parking spaces, which would be more than the 378 total parking spaces required by the Los Angeles County Code based on the proposed uses. Although the Malibu Institute would satisfy Code-required parking for the entire Project, in order to cluster the buildings in the southern portion of the 650-acre property and allow the dedication of over 450 acres of permanent open space, the Project cannot satisfy Code-required parking on each respective lot, and, instead would provide centralized parking to be shared between lots. Pursuant to Los Angles County Zoning Code section 22.56.990, projects proposing a parking arrangement different than the parking requirements of County Code section 22.52 require a parking permit. Therefore, the Applicant is requesting a parking permit to authorize the use of shared parking between lots on the property. No tandem or compact spaces are proposed to meet Code-required parking.

ENTITLEMENT REQUIREMENTS AND DISCRETIONARY APPROVALS

The following is a list of applicable discretionary approvals required for development and use of the Project site:

- Certification of an Environmental Impact Report;
- Approval of a Vesting Tentative Tract Map No. 71735 with 28 lots with 5 lots containing the Project development and 23 lots dedicated as permanent open space;
- Approval of Conditional Use Permit No. 201100122 to authorize the following: (1) development of the Malibu Institute project, and operation of a sports-oriented educational retreat affiliated with the University of Southern California, on a 650-acre property currently operated as the 18-hole Malibu Golf Club. The Project would consist of educational and meeting facilities, overnight visitor-serving accommodations in 40 bungalows, a restaurant/lounge, a warehouse, a cart storage building, a clubhouse with a spa and pool, a pro shop, and a maintenance building. The Project would allow the remodeling and continued use of the property for operation of the public 18-hole golf course; (2) the continued sale of alcoholic beverages for on-site consumption; (3) on-site grading of 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced on-site with no import or export of fill material; (4) the continued use and operation of a helipad (to be relocated) in the R-R zone; (5) a caretaker residence in the R-R-1 zone and (6) the construction and use of a new water tank and associated water line to replace the existing 100,000 gallon water tank on the Project site.
- Approval of a Parking Permit to authorize the use of shared parking of 387 parking spaces on-site.
- Approval of a Fuel Modification Plan from the Los Angeles County Fire Department;
- Approval of a Coastal Development Permit from the California Coastal Commission for development of the Project in the California Coastal Zone;
- Issuance of a Streambed Alteration Agreement from the California Department of Fish and Game pursuant to Fish and Game Code Section 1603;
- Issuance of a U.S. Army Corps of Engineers Nationwide Permit pursuant to Clean Water Act Section 404;
- Issuance of a Water Quality Certification from the Regional Water Quality Control Board pursuant to Clean Water Act Section 401;
- Issuance of Waste Discharge Requirements and Waste Reclamation Requirements from the Regional Water Quality Control Board for operation of an onsite wastewater system;
- Approval by the Los Angeles County Local Agency Formation Commission (LAFCO) of a community services district to maintain the onsite wastewater system and the permanently dedicated open space.
- Additional County and other governmental actions as may be determined necessary.

AREAS OF POTENTIAL ENVIRONMENTAL IMPACTS TO BE ANALYZED IN THE EIR

The Department of Regional Planning has determined by way of an Initial Study that an Environmental Impact Report (EIR) is necessary for the Project. The areas of potential environmental impact to be addressed in the EIR will include at least the following:

Potential Hazards

- Geotechnical Hazards
- Flood Hazards
- Fire Hazards
- Noise Hazards

Potential Impacts to Resources

- Water Quality
- Air Quality
- Greenhouse Gas Emissions
- Biota
- Cultural Resources
- Visual Resources

Potential Impacts on Services

- Traffic/Access
- Sewage Disposal
- Fire/Sheriff Services
- Utilities

Other Potential Impacts

- Environmental Safety
- Land Use
- Population/Housing/Employment/Recreation
- Mandatory Findings

To provide a complete record of the County's environmental decision-making, environmental issues that do not rise to the level of significant impacts will be addressed in the EIR in a separate section entitled "Impacts Found to be Less than Significant"

In addition to evaluating the potential effects of the Project, the EIR will analyze a full range of Project alternatives, including, but not necessarily restricted to a "no Project" alternative and an alternative site plan.

NOTICE OF PREPARATION REVIEW AND COMMENTS

The review period for the NOP will be from November 21, 2012 to January 21, 2013 (extended from December 24, 2012)*.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date, but not later than January 21, 2013. Please direct all written comments to the following address. In your written response, please include the name of a contact person in your agency.

Carolina Blengini
Regional Planner
Special Projects Section
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012
Tel: 213-974-1522
Fax: 213-626-0434
Email: cblengini@planning.lacounty.gov

REVIEW MATERIALS

The County of Los Angeles Department of Regional Planning is soliciting input based on your views and opinions concerning the scope of the EIR for the Project. Additional material including an expanded project description, Initial Study and maps are available for public review on the Department of Regional Planning website http://planning.lacounty.gov/case/view/tr071735-3/ as well as at the following libraries:

Malibu County Library
23519 W. Civic Center Way
Malibu, CA 90265-4804
Environmental Documents
Phone: (310) 456-6438

Westlake Village Library
31220 Oak Crest Drive
Westlake Village, CA 91361

Las Virgenes/Agoura Hills County Library
29901 Ladyface Court
Agoura Hills, CA 91301
Environmental Documents
Phone: (818) 889-2278

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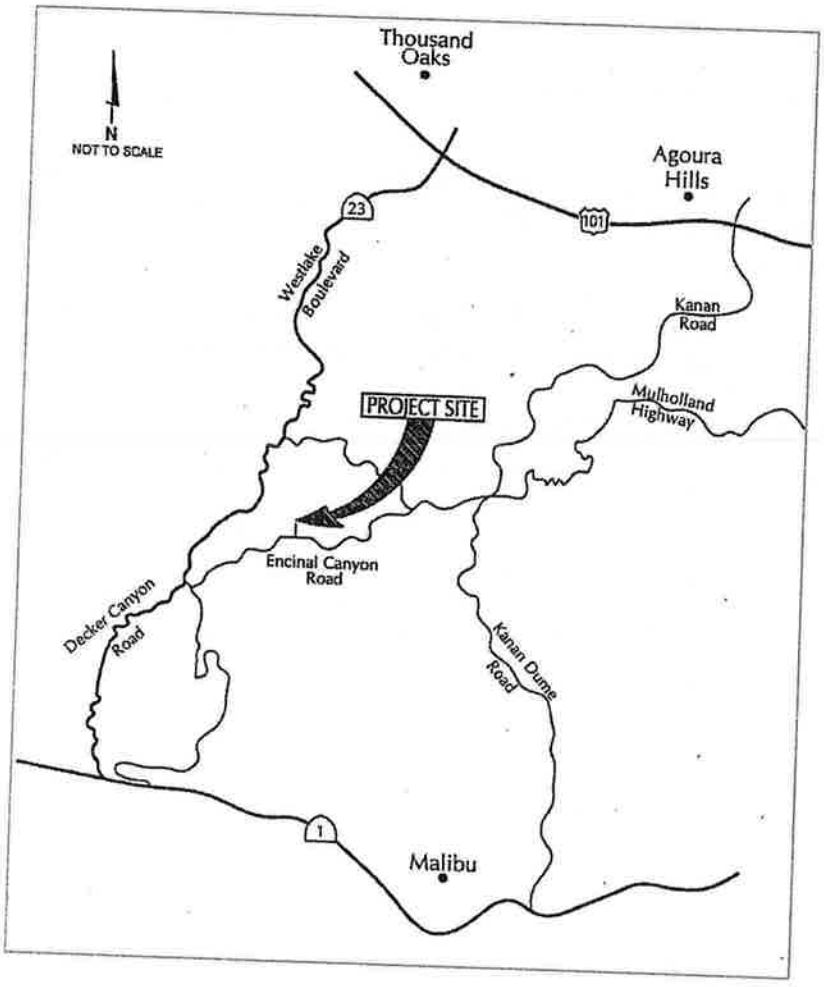
STATE CLEARING HOUSE



County of Los Angeles
Sheriff's Department Headquarters
4700 Ramona Boulevard
Monterey Park, California 91754-2169

Leroy D. Baca, Sheriff

December 26, 2012

JAN - 2 2012

Richard Bruckner, Director
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

Attention: Carolina Blengini

Dear Mr. Bruckner:

REVIEW COMMENTS
INITIAL STUDY AND NOTICE OF PREPARATION
THE MALIBU INSTITUTE; PROJECT NO. TR071735
901 ENCINAL CANYON ROAD
SHERIFF'S FACILITIES PLANNING BUREAU PROJECT NUMBER E12-071

The Los Angeles County Sheriff's Department (Department) submits the following review comments on the Initial Study (IS), dated November 15, 2012, and Notice of Preparation (NOP) of a Draft Environmental Impact Report, dated December 11, 2012, for the Malibu Project (Project). The proposed Project will create a sports-oriented educational retreat to complement a remodeled golf course operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The proposed Project will include 224,287 square feet of structures, including educational and meeting facilities, bungalows for overnight visitors, golf clubhouse/pro shop, restaurant, maintenance building, golf cart storage barn, and other support facilities.

The IS/NOP for the proposed Project was reviewed by the Department's Malibu/Lost Hills Station (see attached correspondence, dated December 12, 2012, from Captain Joseph H. Stephen, Jr.). In summary, the proposed Project, as it is described in the IS/NOP, is not expected to have a significant impact on the Department's resources or operations. However, due to the relatively remote location of the Project site, extended response times for calls for service to the Station can be expected. As such, close attention must be afforded to emergency management preparations at the Project site.

Thank you for including the Department in the environmental review process for the proposed Project. Should you have any questions regarding this matter, please contact Lester Miyoshi, of my staff, at (626) 300-3012, and refer to Facilities Planning Bureau Project No. E12-071. You may also contact Mr. Miyoshi, via e-mail, at Lhmiyosh@lasd.org.

Sincerely,

LEROY D. BACA, SHERIFF

Gary T.K. Tse, Director
Facilities Planning Bureau

COUNTY OF LOS ANGELES

SHERIFF'S DEPARTMENT

"A Tradition of Service"

DATE: December 12, 2012

OFFICE CORRESPONDENCE

FROM: JOSEPH H. STEPHEN JR., CAPTAIN
MALIBU/LOST HILLS STATION

TO: GARY T. K. TSE, DIRECTOR
FACILITIES PLANNING BUREAU

SUBJECT: **MALIBU INSTITUTE – PROJECT NO. TR071735**

The Malibu Institute (Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course on a 650-acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County.

While this facility will not have a significant impact on law enforcement services requiring modification to the current sheriff station, this facility is in a sparsely populated area of the Santa Monica Mountains and the response time even for emergency calls will most likely be in excess of ten minutes.

The most important aspect of this project with relation to emergency services will be the preparation and implantation of a fire evacuation plan. Whether the facility design allows for shelter in place, or requires immediate evacuation, the likelihood that visitors will be unfamiliar with the area must be taken into account. Historically, fire evacuations from this area will be via the Pacific Coast Highway to the north, which will take visitors into areas they may not be familiar with. The evacuation plan should be comprehensive and prominently displayed for visitors at the facility.

Should you have any additional questions regarding this matter, please contact Sergeant Philip D. Brooks at (818) 878-5555, or by e-mail at pdbrooks@lasd.org.

JHS:pb

United States Department of the Interior

NATIONAL PARK SERVICE
Santa Monica Mountains National Recreation Area
401 West Hillcrest Drive
Thousand Oaks, California 91360-4207

In reply refer to:
L76 / SAMO 123-55

January 21, 2013

Carolina Blengini, Regional Planner
Special Projects Section
Los Angeles County Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Dear Ms. Blengini:

The National Park Service (NPS) has reviewed Los Angeles County's Notice of Preparation (NOP) of an Environmental Impact Report (EIS) and Initial Study (IS) for The Malibu Institute, Project No. TR071735, Vesting Tentative Tract Map No. 071735, Conditional Use Permit No. 201100122, Parking Permit No. 201100005, Environmental Review No. 201100192. The applicant, The Malibu Institute, proposes a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course. The project site is located at 901 Encinal Canyon Road, comprising 29 parcels covering approximately 650 acres where the Malibu Golf Club currently operates. Project structural development would remain limited to the current 20-acre development footprint. There would be 224,287 square feet of structures, an increase of 200,652 square feet over the present structural square footage. Forty new bungalows for overnight accommodations covering 109,140 square feet are part of the expanded facilities. Many green building features would be incorporated to achieve LEED™ Platinum certification. The existing golf course would be remodeled to a 107-acre footprint, down from the current 118 acres. Green features would be incorporated to decrease turf and water use and replace non-native landscaping with native grasses, shrubs, and trees. Grading would consist of 120,000 cubic yards (cy) cut and 120,000 cy fill balanced on site. Over 450 acres of native habitat would become permanently dedicated open space.

The National Park Service appreciates the opportunity to comment on the NOP and associated IS. In general, we provide comments on the effects of private and public land development in the Santa Monica Mountains at the invitation of state and local units of government with authority to prevent or minimize adverse effects on national parkland. We assume a neutral position and do not support or oppose land development. Overall, we concur with the Initial Study's Mandatory Findings of Significance and the recommendation to prepare an Environmental Impact Report (EIR). We offer the following suggestions for inclusion in the draft EIR.

Project Location and Setting

The proposed project lies within the Santa Monica Mountains National Recreation Area (SMMNRA), a unit of the National Park System. The project site is at the top of Trancas Canyon Watershed, a 6,540-acre watershed that drains into northern Santa Monica Bay. Permitting and construction of the existing golf course was underway at the time SMMNRA was established in November 1978. At that time, land in Trancas Canyon south of Encinal Canyon Road was privately owned open space, except for the Malibu West community just north of Pacific Coast Highway. Federal acquisition occurred in the early to mid-1980s. Today, 49.5 percent of Trancas Canyon Watershed—3,241 acres—is owned by the National Park Service, including nearly four linear miles of Trancas Creek. The headwaters of the creek originate at the project site.

The existing golf course was initially permitted in 1979, approximately one year after Congress established SMMNRA. The initial conditional use permit (CUP No. 1453-(4)) did not address the environmentally toxic effects of fertilizers, pesticides, and herbicides typically applied to golf courses at that time. In 1999, the County approved CUP No. 98-059, authorizing continued operation of the golf course for another 20 years. In recognition of the change in ownership to federal parkland in the watershed below the golf course, the County's CUP included several conditions for water quality monitoring, native revegetation, and requirements for the golf course owners and NPS to jointly monitor biodiversity in Trancas Creek Watershed. All such conditions were initially poorly implemented, and then the owners sought to amend the conditions (see attached letter dated December 12, 2005).

NPS, therefore, welcomes the opportunity to revisit the use of the property. NPS would like to see a use of the property that would be compatible with the setting at the top of a watershed mostly owned by NPS and would offer visitor-serving facilities for the general public.

Project Description - Range of Alternatives

As required under CEQA, we request a full range of alternatives be explored in the draft EIR. We also ask that the scale of the project be revisited when crafting the project description for the preferred alternative.

NPS is encouraged by the numerous proposed green building features and environmentally sensitive golf course design measures. The proposed limit of the new facilities to the existing development footprint is welcomed, along with permanent open space dedication of 450 acres. We also appreciate that the golf course would remain open to the general public as a recreational resource. Such measures would be compatible with NPS goals and objectives for development in this part of SMMNRA (See below, Land Use and Planning).

We wish to express concern over the large increase in facility square footage—200,652 square feet over the current structural development. The total proposed square footage of 224,287 square feet would present a large structural development in an interior area of SMMNRA. The project description notes that 109,140 square feet would be devoted to the 40 bungalows, equating to 2,728 square feet per bungalow. The EIR should provide detail on the

how the bungalows would be used and the number of guests each would accommodate. Similarly, the EIR should clarify the use for several other large facilities described in the project description. A range of alternatives may include reduced-scale options in terms of structural square footage.

Aesthetics

NPS finds that both Items (a) and (d) should be assessed at "potentially significant impact". Item (a) finds the project may have a "potentially significant impact" on a scenic vista. Item (d) finds the project may have a "less than significant impact with mitigation incorporated" regarding the project's potential to substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features. The IS justification for Item (d)'s finding is that the project would be designed and constructed to be compatible with the surrounding rural area. However, the proposed 224,287 square feet is approximately ten times greater than the current 24,000 square feet of structural development. At such a development differential from the surrounding single family residences and the nearby public detention facilities, the proposed facility may be outstandingly visible. We ask that draft EIR preparers consider the impacts of the change in scale and mass from current to proposed levels and how it would fit with the existing rural residential development.

We thank the County for acknowledging the presence of the Backbone Trail and for considering impacts to views from the trail. The draft EIR should include a visual analysis from points along the Backbone Trail, Mulholland Highway, and other popular recreational routes in the vicinity. The golf course is visible from popular spur trails off the Backbone Trail across Trancas Canyon, where people seek higher points for sweeping views. Additionally, given the scale of the proposed project, the visual analysis should include views from high elevation points along Zuma Ridge Motorway, another popular recreational route.

Biological Resources

NPS concurs with the IS findings of "potentially significant impacts" for each of the biological resource topics. We ask consideration in the draft EIR of the following issues.

The project's Site Plan in the NOP appears to not include "daylighting" Trancas Creek. The creek was buried when the golf course was originally constructed in the 1970s, leaving only two ponds. The proposed reconstruction of the site provides an opportunity to restore the creek and the riparian habitat. The proposed replacement of non-native trees with native oaks and sycamores would be compatible with stream restoration. Visitors to the Santa Monica Mountains value both the immersion in the native landscape, and find the visit enhanced when they observe wildlife in the natural setting. The NPS's *SMMNRA Recreational Trail Survey*, prepared in 2002 by the USC Sustainable Cities Program, asked participants why SMMNRA should be protected. Results showed that 75% desired the protection of habitat, with or without also providing recreation. We anticipate that restoration of the creek and riparian corridor across the property would bring great benefit to wildlife habitat as well as enjoyment

to the retreat's visitors. Therefore, we suggest the project include a creek restoration component as part of the preferred alternative, or at minimum, as part of other project alternatives.

We thank the applicant for proposing to remove non-native trees and other vegetation and to replace it with native plants, shrubs, and trees. While restoration of the area to native habitat is welcomed and is consistent with efforts by NPS to restore native habitat, consideration should be given in the draft EIR to the use of the existing non-native habitat by native fauna. Tree removals and habitat revegetation might be implemented in phases to reduce impacts from mass removal of existing habitat used by nesting birds or as shelter by mammals or reptiles.

The proposed use of new-generation drought-tolerant grasses for the golf course is welcome as a means to reduce imported water irrigation. The draft EIR should review whether the drought-tolerant grasses may have the potential to invade or hybridize with native grasses in the surrounding habitat. The EIR preparers should also study the site's hydrology to determine whether the water table is shallow enough to support sycamores where proposed for planting.

We recommend the draft EIR address off-site impacts to riparian habitat and associated aquatic fauna. Since 2000, NPS has performed annual "rapid stream surveys" to inventory presence of native and non-native species in 32 streams throughout SMMNRA (see attached letter dated December 12, 2005). Trancas Creek is one of the surveyed streams. Trancas Creek exhibits degraded fauna conditions similar to urban streams, in spite of the predominantly natural setting similar to other nearby watersheds. Trancas Creek hosts non-native crayfish, fishes, and bullfrogs that, when present, are accompanied by a reduction in the abundance of native species, including Pacific tree frogs, California tree frogs, and California newts.

NPS strives to maintain and restore native habitat that supports native terrestrial and aquatic fauna. To that end, we suggest the preparers of the EIR assess the presence of crayfish, non-native fishes, and bullfrogs in the ponds on the project site and include non-native aquatic fauna eradication as a mitigation measure. While NPS may implement non-native eradication programs on federal parkland, non-native species must also be eradicated from the project site to avoid continued migration of the non-natives downstream onto NPS property.

NPS recommends the EIR preparers analyze potential impacts on dark skies. The proposed retreat would introduce additional structural development and new nighttime activity associated with operation of overnight accommodations or evening events at the retreat. The site is mostly dark at night, at present, and is compatible with the darkness provided by the large area of NPS parkland in Zuma and Trancas Canyons.

<u>Cultural Resources</u>

We concur with the IS findings for potential impacts to archaeological resources. SMMNRA has the highest density of archaeological resources in the National Park System. We suggest the draft EIR include a mitigation measure to monitor ground excavation that may unearth both in situ and disturbed subterranean archaeological resources.

Energy & Greenhouse Gas Emissions

We commend the applicant for proposing structural features that reduce consumption of materials and energy. NPS uses LEED™ standards to help make new construction more environmentally friendly. Our new visitor center for SMMNRA at King Gillette Ranch received LEED™ Platinum certification when opened in June, 2012.

We remain concerned, however, about the scale of the project in terms of energy consumption. Larger structures equate to additional trips for construction material deliveries and construction workers. The EIR should clarify the need for the size of the structures proposed in the project description. A range of alternatives should be analyzed for the levels of energy use and gas emissions to accomplish construction and provide for ongoing operation and maintenance.

Hydrology & Water Quality

NPS concurs with the IS findings for potentially significant impacts to water quality. Hydrology and water quality are extremely important topics to review in the draft EIR. Water quality in Trancas Creek is degraded, as indicated by water quality testing that was done in the first years after the golf course CUP was renewed in 1999 (see attached letter dated December 12, 2005). Degraded water quality, the absence of native aquatic fauna, and the presence of non-native aquatic fauna are typical of urban creeks; Trancas Creek's profile is confounding in spite of the predominantly natural setting similar to other nearby watersheds.

Under Item (h) in the IS, County staff correctly notes that "the ocean from Mugu Lagoon to Latigo Point is Area of Special Biological Significance (ASBS) No. 24. Trancas Creek ultimately flows into the ocean in this area" (Pg. 26/39). The draft EIR should include in its summary of other projects within the vicinity of the project the NPS's joint efforts with the Resource Conservation District of the Santa Monica Mountains (RCDSMM) to restore Trancas Lagoon. The agencies are currently working with the landowner to secure a conservation easement and proceed with restoration feasibility studies. Background water quality typical of creeks in the Santa Monica Mountains and restoration of native biodiversity in the creek throughout the watershed is integral to successful lagoon restoration at the bottom of the watershed and protection of water quality in Santa Monica Bay.

The project description states that 120,000 cy cut and 120,000 cy fill, balanced on site, are anticipated. The proposed envelope of 20 acres for the structural improvements equates to 12,000 cy grading per acre. We appreciate that no import or export of soils has been proposed, with its associated environmental impacts. The scale of grading, nevertheless, is large, with the potential consequences of erosion and downstream sedimentation. We

appreciate the applicant's proposed golf course design features that could reduce water usage by 35%. However, intensification of use at the site may lead to more treated wastewater input into the creek and non-point source pollution, in addition to existing fertilizer runoff and other golf course treatment chemicals. The draft EIS should include an analysis of the current total water usage and pollutant sources compared to the proposed total water usage and pollutant sources, with their potential to affect the hydrology and water quality of Trancas Creek.

Land Use and Planning

Item (b) asks: "Would the project be inconsistent with the applicable County plans for the subject property including, but not limited to, the General Plan, specific plans, local coastal plans, area, and community/neighborhood plans?" Although the IS addresses County planning documents, we request that preparers of the draft EIR consider NPS's long-range planning for SMMNRA. Congress envisioned management of SMMNRA as a cooperative effort by the NPS, California State Parks, the Santa Monica Mountains Conservancy, as well as city and county governments and private landowners (SMMNRA General Management Plan, 2003). Therefore, we offer the following summary of planning goals and objectives for the project site for consideration when drafting the EIR.

Shortly after SMMNRA was established, NPS prepared the 1984 Land Protection Plan (LPP). The LPP has been used since that time to identify land protection methods to accomplish permanent protection of the natural, cultural, and scenic resources present by SMMNRA. Methods of protection range from fee acquisition by NPS to cooperative planning, meaning protection is accomplished through state and local agencies' resource protection policies applicable to local landowners. The LPP also recognized existing private visitor-serving recreational venues under the category of "Compatible Private Recreation Land." The LPP designates the golf course property under this category. The NPS desires the continued use of the project property as a private recreation provider, with the understanding that site development and ongoing operation should avoid impacts to the surrounding environment.

The NPS's 2003 SMMNRA General Management Plan (GMP) and Environmental Impact Statement (EIS) prescribes management zones that blanket SMMNRA. The management zones offer only advisement for lands not in NPS ownership. The project site is within the "Moderate Intensity Zone" and calls for the following summary of desired conditions:

> "Emphasis would be predominantly on the natural environment, but there would also be a sense of being near the familiarity, comforts, and convenience of 'civilization.' Facility development would harmonize with the natural setting and be based on the principles of sustainable development as described under the parkwide goals. Hiking, biking, and horseback riding on designated trails, low-impact camping, and self-guided and guided interpretive walks would be acceptable activities. Moderate use areas would act as an insulating buffer around urban development" (SMMNRA GMP EIS, Figure 6: Preferred Alternative, and SMMNRA GMP, Figure 4: The Plan).

Public Services

The Public Services section of the IS states the project would provide on-site recreational facilities and would not result in a substantial increase in demand on existing parks or for new public parks, and would, therefore, have a less than significant impact on parks. Please note that NPS is responsible for maintenance of the Backbone Trail as it traverses the vicinity of the proposed project. The EIR should describe the estimated number of visitors to the proposed retreat and consider their possible desire to access the Backbone Trail for walks during their stay at the retreat. An unofficial trail across from the current entrance to the Malibu Golf Club connects to the Backbone Trail. NPS has not maintained this trail that was constructed by Camp 13 inmates as an exercise circuit. We ask the preparers of the EIR to consider impacts to NPS trail management that may be created by visitors' use of this unofficial trail on federal parkland. If appropriate, NPS would consider officially opening the trail to the public.

Recreation

The Recreation section notes the project would have no impact related to interference with regional open space connectivity (in terms of trails, not habitat). The physical construction of the Backbone Trail through Trancas Canyon is complete. We understand the purpose of an IS is to evaluate potential negative impacts and not to discuss potential missed opportunities. However, for consideration when preparing the EIR, the NPS offers the following discussion of the opportunity to expand recreational access for multi-day outings over the 65-mile Backbone Trail.

NPS appreciates the County's recognition of the Backbone Trail as a public recreational facility near the proposed project. Additionally, much of the scenic viewshed is a national park site within SMMNRA: Zuma and Trancas Canyons. As noted above in the Public Services comments, the proposed retreat location is connected to the Backbone Trail by a one-half mile existing unofficial trail. In light of the project site's outstanding location for public recreation-oriented visitor-serving facilities and the proposed overnight accommodations, the project should be designed to harmonize with the scenic, natural setting and to fully support access by the general public to nearby recreational opportunities—in this case, the Backbone Trail. Per the SMMNRA GMP visitor experience goals, the NPS would welcome additional overnight accommodations within SMMNRA if compatible with the existing greater protected open space and trail setting:

> "Encourage private enterprise to provide many of the necessary services and recreational developments to support visitor enjoyment of the national recreation area. Encourage *compatible* (emphasis added) recreational, educational, research, and other facilities on appropriate private lands as a part of and adjacent to the national recreation area." *General Management Plan, Santa Monica Mountains National Recreation Area*, 2003, pg. 38.

We wish to emphasize the long-standing desire of the public to have a continuous recreational trip over the 65-mile Backbone Trail without having to leave the trail for overnight accommodations. In response to repeated input from the public (1984 SMMNRA GMP EIS, updated GMP in 2003, 1997 Santa Monica Mountains Area Recreational Trails Report), a string of backcountry camps that would allow a continuous trek have been proposed. However, not all visitors wish to camp. To the end of providing overnight accommodations other than camping, we ask the applicant and the County to consider in the EIR the accommodation of Backbone Trail users in the proposed bungalows. We would be glad to explore this proposal with the County and the applicant.

Overall, NPS would welcome the proposed retreat's visitors' use of the Backbone Trail and their enjoyment of spectacular views and wildlife sightings along the way.

Thank you for the opportunity to comment. If you have questions, please call Melanie Beck, Outdoor Recreation Planner, at (805)370-2346.

Sincerely,

David M. Szymanski

David Szymanski
Superintendent

cc: Joe Edmiston, Executive Director, Santa Monica Mountains Conservancy
Craig Sap, Superintendent, Angeles District, State Department of Parks and Recreation
Clark Stevens, District Manager, Resource Conservation District of the Santa Monica Mountains

Enc: NPS Letter to L.A. County Dept. of Regional Planning, December 12, 2005

State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
http://www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

December 15, 2012

Ms. Carolina Blengini, Regional Planner
Los Angeles County Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012
cblengini@planning.lacounty.gov

Subject: Notice of Preparation for a Draft Environmental Impact Report for The Malibu Institute – Project No. TR071735, SCH 2012111068, Los Angeles County

Dear Ms. Blengini:

The Department of Fish and Game (Department) has reviewed the Initial Study and Notice of Preparation for the proposed Malibu Institute Project No. TR071735 (project). The Malibu Institute (Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole public golf course on a 650-acre property currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. The project would provide for the development of educational and meeting facilities along with visitor-serving overnight accommodations. The project would include the reuse and remodel of existing facilities and the addition of new facilities. The project redesign of the golf course would remove approximately 1,590 non-native species of trees planted during the original construction of the golf course and would re-vegetate areas surrounding the golf course with drought-tolerant native species of grasses, shrubs, and trees, including oaks and sycamores, that would require no irrigation and would create a landscape pallet more consistent with the character and habitat of the Santa Monica Mountains. The project includes several other environmental sensitive design concepts including cluster development on 20 acres and remodel of golf course on 107 acres, while permanently conserving over 450 acres of native coastal scrub, chaparral, and oak woodlands.

The California Wildlife Action Plan, a recent Department guidance document, identified the following stressors affecting wildlife and habitats within the project area: 1) growth and development; 2) water management conflicts and degradation of aquatic ecosystems; 3) invasive species; 4) altered fire regimes; and 5) recreational pressures. With these stressors in mind, the Department looks forward to working with the County of Los Angeles in recommending conservation and protective measures for biological and botanical resources.

The Department is California's Trustee Agency for fish and wildlife resources, holding these resources in trust for the People of the State pursuant to various provisions of the California Fish and Game Code. (Fish & G. Code, §§ 711.7, subd. (a), 1802.) The Department submits these comments in that capacity under the California Environmental Quality Act (CEQA). (See generally Pub. Resources Code, §§ 21070; 21080.4.) Given its related permitting authority under the California Endangered Species Act (CESA) and Fish and Game Code section 1600 *et seq.*, the Department also submits these comments likely as a Responsible Agency for the project under CEQA. (*Id.*, § 21069.)

The Department supports the concepts of using native plant species in landscape designs and recommends the use of local plant propagules to help maintain local genetic stock and to further facilitate planting success. The Department also recommends that during golf course design, consideration be made to reduce or eliminate the need for fertilizers and pesticides during construction and long-term maintenance of the course property.

To enable Department staff to adequately review and comment on the proposed project we recommend the following information, where applicable, be included in the DEIR:

1. A complete, recent assessment of flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats including:

    a. A thorough recent assessment of rare plants and rare natural communities, following the Department's Guidelines for Assessing Impacts to Rare Plants and Rare Natural Communities. (See Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities at: http://www.dfg.ca.gov/habcon/plant/).

    b. A complete, recent assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use within the project area should also be addressed. Recent, focused, species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required.

    c. Endangered, rare, and threatened species to address should include all those species which meet the related definition under the CEQA Guidelines. (See Cal. Code Regs., tit. 14, § 15380).

    d. The Department's Biogeographic Data Branch in Sacramento should be contacted at (916) 322-2493 (www.dfg.ca.gov/biogeodata) to obtain current information on any previously reported sensitive species and habitats, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code. Also, any Significant Ecological Areas (SEAs) or Environmentally Sensitive Habitats (ESHs) or any areas that are considered sensitive by the local jurisdiction that are located in or adjacent to the project area must be addressed.

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. This discussion should focus on maximizing avoidance, and minimizing impacts.

    a. CEQA Guidelines, Section 15125(a), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

    b. Project impacts including deposition of debris should also be analyzed relative to their effects on off-site habitats and populations. Specifically, this should include nearby public lands, open space, natural habitats, and riparian ecosystems. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas are of concern to the Department and should be fully evaluated and provided. The analysis should also include a discussion of the potential for impacts

resulting from such effects as increased vehicle traffic, outdoor artificial lighting, noise and vibration and pest management.

c. A cumulative effects analysis should be developed as described under CEQA Guidelines, Section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

d. Impacts to migratory wildlife affected by the project should be fully evaluated including proposals to remove/disturb native and ornamental landscaping and other nesting habitat for native birds. Impact evaluation may also include such elements as migratory butterfly roost sites and neo-tropical bird and waterfowl stop-over and staging sites. All migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of birds and their active nests, including raptors and other migratory nongame birds as listed under the MBTA.

e. Impacts from project activities (including but not limited to, staging and disturbances to native and non native vegetation, structures, and substrates) should occur outside of the avian breeding season which generally runs from March 1-August 31 (as early as January 1 for some raptors) to avoid take of birds or their eggs. If project activities cannot avoid the avian breeding season, nest surveys should be conducted and active nests should be avoided and provided with a minimum buffer as determined by a biological monitor (the Department generally recommends a minimum 300 foot nest avoidance buffer or 500 feet for all active raptor nests).

f. Proposed impacts to all habitats from City or County required Fuel Modification Zones (FMZ). Areas slated as mitigation for loss of habitat shall not occur within the FMZ.

g. Impacts from project activities which may result in injury or death to bats. Bats may reside within trees or man made structures that may be impacted during project implementation. The removal of trees and/or structures that may provide maternity roost habitat (e.g., in cavities or under loose bark) should occur between October 1 and February 28.

3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives which avoid or otherwise minimize impacts to sensitive biological resources including wetlands/riparian habitats, alluvial scrub, coastal sage scrub, should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

   a. Mitigation measures for project impacts to sensitive plants, animals, and habitats should emphasize evaluation and selection of alternatives which avoid or otherwise minimize project impacts. Compensation for unavoidable impacts through acquisition and protection of high quality habitat elsewhere should be addressed with off-site mitigation locations clearly identified.

   b. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment).

c. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

4. An Incidental Take Permit (ITP) from the Department may be required if the project, project construction, or any project-related activity during the life of the project will result in "take" as defined by the Fish and Game Code of any species protected by CESA. (Fish & G. Code, §§86, 2080, 2081, subd. (b), (c).) Early consultation with Department regarding potential permitting obligations under CESA with respect to the project is encouraged. (Cal. Code Regs., tit. 14, § 783.2, subd. (b).). It is imperative with these potential permitting obligations that the draft environmental document prepared by the Lead Agency includes a thorough and robust analysis of the potentially significant impacts to endangered, rare, and threatened species, and their habitat, that may occur as a result of the proposed project. For any such potentially significant impacts the Lead Agency should also analyze and describe specific, potentially feasible mitigation measures to avoid or substantially lessen any such impacts as required by CEQA and, if an ITP is necessary, as required by the relevant permitting criteria prescribed by Fish and Game Code section 2081, subdivisions (b) and (c). The failure to include this analysis in an environmental document could preclude the Department from relying on the Lead Agency's analysis to issue an ITP without the Department first conducting its own, separate Lead Agency subsequent or supplemental analysis for the project. (See, e.g., Cal. Code Regs., tit. 14, § 15096, subd. (f).) For these reasons, the following information is requested:

   a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

   b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

5. The Department opposes the elimination of watercourses (including concrete channels, blue line streams and other watercourses not designated as blue line streams on USGS maps) and/or the channelization of natural and manmade drainages or conversion to subsurface drains. All wetlands and watercourses, whether intermittent, ephemeral, or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic habitat values and maintain their value to on-site and off-site wildlife populations. The Department recommends a minimum natural buffer of 100 feet from the outside edge of the riparian zone on each side of drainage.

   a. The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource. For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) or a river or stream or use material from a streambed, the project applicant (or "entity") must provide written notification to the Department pursuant to Section 1602 of the Fish and Game Code. Based on this notification and other information, the Department then determines whether a Lake and Streambed Alteration (LSA) Agreement is required. The Department's issuance of an LSA Agreement is a project subject to CEQA. To facilitate issuance of a LSA Agreement, if necessary, the environmental document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance,

mitigation, monitoring and reporting commitments for issuance of the LSA Agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. Again, the failure to include this analysis in the project's environmental document could preclude the Department from relying on the Lead Agency's analysis to issue a LSA Agreement without the Department first conducting its own, separate Lead Agency subsequent or supplemental analysis for the project.

Thank you for this opportunity to provide comments. Please contact Mr. Daniel Blankenship, Staff Environmental Scientist, at (661) 259-3750 if you should have any questions and for further coordination on the proposed project.

Sincerely,

Betty J Courtney

Betty Courtney
Acting Environmental Program Manager
South Coast Region

Attachment

cc: Mr. Dan Blankenship, CDFG, Santa Clarita
Mr. Brock Warmuth, CDFG, Camarillo
State Clearinghouse, Sacramento

Sensitivity of Top Priority Rare Natural Communities in Southern California

Sensitivity rankings are determined by the Department of Fish and Game, California Natural Diversity Data Base and based on either number of known occurrences (locations) and/or amount of habitat remaining (acreage). The three rankings used for these top priority rare natural communities are as follows:

S1.# Fewer than 6 known locations and/or on fewer than 2,000 acres of habitat remaining.

S2.# Occurs in 6-20 known locations and/or 2,000-10,000 acres of habitat remaining.

S3.# Occurs in 21-100-known locations and/or 10,000-50,000 acres of habitat remaining.

The number to the right of the decimal point after the ranking refers to the degree of threat posed to that natural community regardless of the ranking. For example:

S1.1 = very threatened
S2.2 = threatened
S3.3 = no current threats known

Sensitivity Rankings (February 1992)

Rank	Community Name
S1.1	Mojave Riparian Forest
	Sonoran Cottonwood Willow Riparian
	Mesquite Bosque
	Elephant Tree Woodland
	Crucifixion Thorn Woodland
	Allthorn Woodland
	Arizonan Woodland
	Southern California Walnut Forest
	Mainland Cherry Forest
	Southern Bishop Pine Forest
	Torrey Pine Forest
	Desert Mountain White Fir Forest
	Southern Dune Scrub
	Southern Coastal Bluff Scrub
	Maritime Succulent Scrub
	Riversidean Alluvial Fan Sage Scrub
	Southern Maritime Chaparral
	Valley Needlegrass Grassland
	Great Basin Grassland
	Mojave Desert Grassland
	Pebble Plains
	Southern Sedge Bog
	Cismontane Alkali Marsh

S1.2	Southern Foredunes
	Mono Pumice Flat
	Southern Interior Basalt Flow Vernal Pool
S2.1	Venturan Coastal Sage Scrub
	Diegan Coastal Sage Scrub
	Riversidean Upland Coastal Sage Scrub
	Riversidean Desert Sage Scrub
	Sagebrush Steppe
	Desert Sink Scrub
	Mafic Southern Mixed Chaparral
	San Diego Mesa Hardpan Vernal Pool
	San Diego Mesa Claypan Vernal Pool
	Alkali Meadow
	Southern Coastal Salt Marsh
	Coastal Brackish Marsh
	Transmontane Alkali Marsh
	Coastal and Valley Freshwater Marsh
	Southern Arroyo Willow Riparian Forest
	Southern Willow Scrub
	Modoc-Great Basin Cottonwood Willow Riparian
	Modoc-Great Basin Riparian Scrub
	Mojave Desert Wash Scrub
	Engelmann Oak Woodland
	Open Engelmann Oak Woodland
	Closed Engelmann Oak Woodland
	Island Oak Woodland
	California Walnut Woodland
	Island Ironwood Forest
	Island Cherry Forest
	Southern Interior Cypress Forest
	Bigcone Spruce-Canyon Oak Forest
S2.2	Active Coastal Dunes
	Active Desert Dunes
	Stabilized and Partially Stabilized Desert Dunes
	Stabilized and Partially Stabilized Desert Sandfield
	Mojave Mixed Steppe
	Transmontane Freshwater Marsh
	Coulter Pine Forest
	Southern California Fellfield
	White Mountains Fellfield
S2.3	Bristlecone Pine Forest
	Limber Pine Forest

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

RECEIVED
DEC 31 2012

December 11, 2012

Carolina Blengini, Regional Planner
Special Projects Section
Department of Regional Planning
320 West Temple Street, Room 1348
Los Angeles, CA 90012

Dear Ms. Blengini:

NOTICE OF PREPARATION, NOTICE OF PREPARATION/SCOPING MEETING, PROJECT NO. TR071735, CONDITIONAL USE PERMIT NO. 201100122, ENVIRONMENTAL REVIEW NO. 201100192, THE MALIBU INSTITUTE, PROPOSES TO CREATE A SPORTS-ORIENTED EDUCATIONAL RETREAT AFFILIATED WITH THE UNIVERSITY OF SOUTHERN CALIFORNIA, 901 ENCINAL CANYON ROAD, MALIBU (FFER #201200169)

The Notice of Preparation has been reviewed by the Planning Division, Land Development Unit, Forestry Division and Health Hazardous Materials Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION:

1. Fire protection and emergency medical services for the project site are provided by the Los Angeles County Fire Department (LACFD). Fire Station 72 is the jurisdictional fire station (1st-due) for this project; it is located at 1832 Decker Canyon Road in Malibu, approximately 1.9 miles southwest of the site. The LACFD also maintains a fire suppression camp in the project vicinity. Camp 13, located at 1252 Encinal Canyon Road, is located approximately 1 mile from the project site.

   Fire Station 72 is estimated to have an emergency response time of 6 minutes, which is well within the Fire Department's response goals for suburban/rural areas.

   Fire protection serving the area appears to be adequate for the existing development/land use; however, each additional development creates greater demands on existing resources.

In the absence of cumulative impact, this project is expected to have a less than significant impact on our services.

LAND DEVELOPMENT UNIT:

1. The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows and fire hydrants.

2. This property is located within the area described by the Forester and Fire Warden as Very High Fire Hazard Severity Zone (VHFHSZ). All applicable fire code and ordinance requirements for brush clearance and fuel modification plans shall be met.

3. Every building constructed shall be accessible to Fire Department apparatus by way of access roadways, with an all-weather surface of not less than 26 feet in width. The roadway shall be extended to within 150 feet of all portions of the exterior walls when measured by an unobstructed route around the exterior of the building.

4. Every building constructed with a height of 35 feet or greater shall be accessible to Fire Department apparatus by way of access roadways, with an all-weather surface of not less than 28 feet in width. The centerline of the access roadway shall be located parallel to and within 30 feet of an exterior wall on the longest side of the proposed building. The roadway shall be extended to within 150 feet of all portions of the exterior walls when measured by an unobstructed route around the exterior of the building.

5. The maximum allowable grade shall not exceed 15% except where topography makes it impractical to keep within such grade. In such cases, an absolute maximum of 20% will be allowed for up to 150 feet in distance. The average maximum allowed grade, including topographical difficulties, shall be no more than 17%. Grade breaks shall not exceed 10% in ten feet.

6. Turning radii shall not be less than 32 feet. This measurement shall be determined at the centerline of the road. A Fire Department approved turning area shall be provided for all driveways exceeding 150 feet in-length.

7. The raised median divided entrance to the project shall provide access roadways with an all-weather access surface of not less than 20 feet on each side of the raised median.

8. The development may require fire flows up to 5,000 gallons per minute at 20 pounds per square inch residual pressure for up to a five-hour duration. Final fire flows will be based on the size of the buildings and types of construction used. Buildings equipped with an approved fire sprinkler system will qualify for a 50% reduction of the required fire flow.

9. This project will require public fire hydrants to be served by Las Virgenes Municipal Water District. The fire hydrants spacing shall be 300 feet adjacent to the approved fire apparatus roadway. No portion of a building shall exceed 400 feet via vehicular access from a properly spaced fire hydrant. Specific location of the required fire hydrants will be determined during the plan review process of the Tentative Tract Map by the Fire Department.

10. An approved fire sprinkler system will be required in all buildings. The system shall be in compliance with applicable sections of the Fire and Building Codes.

11. The Fire Department's Land Development Unit has provided specific comments and requirements for this project during the review process of the Tentative Tract Map, TR 71735. Attached is a copy of the latest report provided during the Subdivision Committee Meeting.

12. The County of Los Angeles Fire Department, Land Development Unit, appreciates the opportunity to comment on this project. Should any questions arise, please contact Juan Padilla, at (323) 890-4243 or Juan.Padilla@fire.lacounty.gov.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

1. The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed in the Draft Environmental Impact Report.

HEALTH HAZARDOUS MATERIALS DIVISION:

1. The Health Hazardous Materials Division has no objection to the proposed project.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

Frank Vidales

FRANK VIDALES, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

FV:ij

Enclosure

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

5823 Rickenbacker Road
Commerce, California 90040

CONDITIONS OF APPROVAL FOR SUBDIVISION - UNINCORPORATED

Subdivision No: TR 71735 Map Date: October 31, 2012

C.U.P. _____ Vicinity _____

☐ **FIRE DEPARTMENT HOLD** on the tentative map shall remain until verification from the Los Angeles County Fire Dept. Planning Section is received, stating adequacy of service. Contact (323) 881–2404.

☒ Access shall comply with Title 21 (County of Los Angeles Subdivision Code) and Section 503 of the Fire Code, which requires all weather access. All weather access may require paving.

☒ Fire Department access shall be extended to within 150 feet distance of any exterior portion of all structures.

☒ Where driveways extend further than 150 feet and are of single access design, turnarounds suitable for fire protection equipment use shall be provided and shown on the final map. Turnarounds shall be designed, constructed and maintained to insure their integrity for Fire Department use. Where topography dictates, turnarounds shall be provided for driveways that extend over 150 feet in length.

☒ The private driveways shall be indicated on the final map as "Private Driveway and Firelane" with the widths clearly depicted. Driveways shall be maintained in accordance with the Fire Code.

☒ Vehicular access must be provided and maintained serviceable throughout construction to all required fire hydrants. All required fire hydrants shall be installed, tested and accepted prior to construction.

☒ This property is located within the area described by the Fire Department as "Very High Fire Hazard Severity Zone" (formerly Fire Zone 4). A "Fuel Modification Plan" shall be submitted and approved prior to Tentative Map clearance. (Contact: Fuel Modification Unit, Fire Station #32, 605 North Angeleno Avenue, Azusa, CA 91702-2904, Phone (626) 969-5205 for details).

☒ Provide Fire Department or City approved street signs and building access numbers prior to occupancy.

☐ Additional fire protection systems shall be installed in lieu of suitable access and/or fire protection water.

☐ The final concept map, which has been submitted to this department for review, has fulfilled the conditions of approval recommended by this department for access only.

☐ These conditions must be secured by a C.U.P. and/or Covenant and Agreement approved by the County of Los Angeles Fire Department prior to final map clearance.

☐ The Fire Department has no additional requirements for this division of land.

Comments: **The Fire Department does NOT recommend approval of this project as presently submitted. See additional sheet for specific holds and requirements.**

By Inspector: Juan C. Padilla Date August 23, 2012

Land Development Unit – Fire Prevention Division – (323) 890-4243, Fax (323) 890-9783

COUNTY OF LOS ANGELES
FIRE DEPARTMENT

5823 Rickenbacker Road
Commerce, California 90040

WATER SYSTEM REQUIREMENTS - UNICORPORATED

Subdivision No: TR 71735 Map Date: October 31, 2012

Revised Report _____

☐ The County Forester and Fire Warden is prohibited from setting requirements for water mains, fire hydrants and fire flows as a condition of approval for this division of land as presently zoned and/or submitted. However, water requirements may be necessary at the time of building permit issuance.

☒ The required fire flow for public fire hydrants at this location is **3000** gallons per minute at 20 psi for a duration of 3 hours, over and above maximum daily domestic demand. 2 Hydrant(s) flowing simultaneously may be used to achieve the required fire flow.

☐ The required fire flow for private on-site hydrants is ____ gallons per minute at 20 psi. Each private on-site hydrant must be capable of flowing ____ gallons per minute at 20 psi with two hydrants flowing simultaneously, one of which must be the furthest from the public water source.

☒ Fire hydrant requirements are as follows:

Install **TBD** public fire hydrant(s). Upgrade / Verify existing 1 public fire hydrant(s).

Install ____ private on-site fire hydrant(s).

☒ All hydrants shall measure 6"x 4"x 2-1/2" brass or bronze, conforming to current AWWA standard C503 or approved equal. All on-site hydrants shall be installed a minimum of 25' feet from a structure or protected by a two (2) hour rated firewall.
- ☒ Location: As per map on file with the office.
- ☐ Other location: ____

☒ All required fire hydrants shall be installed, tested and accepted or bonded for prior to Final Map approval. Vehicular access shall be provided and maintained serviceable throughout construction.

☐ The County of Los Angeles Fire Department is not setting requirements for water mains, fire hydrants and fire flows as a condition of approval for this division of land as presently zoned and/or submitted.

☒ Additional water system requirements will be required when this land is further subdivided and/or during the building permit process.

☐ Hydrants and fire flows are adequate to meet current Fire Department requirements.

☒ Fire hydrant upgrade is not necessary, if existing hydrant(s) meet(s) fire flow requirements. Submit original water availability form to our office.

Comments: **Additional fire hydrants will be required, location to be determined upon approved access. The required fire flow maybe reduced once information on the buildings square footage and the construction types is provided.**

All hydrants shall be installed in conformance with Title 20, County of Los Angeles Government Code and County of Los Angeles Fire Code, or appropriate city regulations. This shall include minimum six-inch diameter mains. Arrangements to meet these requirements must be made with the water purveyor serving the area.

By Inspector Juan C. Padilla Date November 28, 2012

Land Development Unit – Fire Prevention Division – (323) 890-4243, Fax (323) 890-9783

COUNTY OF LOS ANGELES
FIRE DEPARTMENT

5823 Rickenbacker Road
Commerce, California 90040

LAND DEVELOPMENT UNIT REQUIREMENTS
ADDITIONAL PAGE

Subdivision No: TR 71735 **Map Date:** October 31, 2012

TENTATIVE MAP HOLDS

1 An approved Fire Department access shall be extended to within 150ft to all exterior walls of all structures. Indicate compliance on the Tentative/Exhibit Map for the following proposed structures: Malibu Institute and Clubhouse.

2 Provide a minimum unobstructed width of 28 feet, clear to the sky, Private Driveway and Fire Lane for the proposed Clubhouse and Pro Shop structures. Indicate compliance on the Tentative/Exhibit Map.

3 All approved fire apparatus turnarounds shall provide a maximum slope of 5% with a maximum cross slope of 2%. Indicate compliance on the Tentative/Exhibit Map.

4 Submit a copy of the water availability study from the Las Virgenes Municipal Water Company for review prior to Tentative Map clearance. The required fire flow will be determined based on the total square footage of the largest proposed structure and construction type.

5 The phasing map shall be reviewed and accepted by the Fire Department prior to Tentative Map clearance.

TENTATIVE MAP – CONDITIONS OF APPROVAL

1 The proposed new Helipad location has been approved by the Fire Department. Prior to construction and operation of the Helipad, contact the Fire Department's Air and Wildland Division at (818) 890-5780 for requirements and maintenance procedures.

2 Submit the construction plans for the proposed Solar Shade Structures within the parking lot to the Fire Department's Engineering Building Plan Check Unit for review and approval prior to installation.

3 The proposed Roof Gardens/Landscaping shall comply with the Los Angeles County Fire Code Section 504.5 and Appendix K. Compliance required during the architectural plan review process prior to building permit issuance.

4 All approved Fire Department apparatus access shall provide an all weather access surface, pavers will be accepted if the weight capacity will support a live load of 75,000 pounds. Submit information or structural specifications of the proposed pervious pavers for this development to the Fire Department's Engineering Building Plan Check Unit for review and approval prior to installation.

5 All approved Fire Department apparatus access shall be clearly delineated with approved signage and/or stripping prior to occupancy.

By Inspector: Juan C. Padilla Date: November 28, 2012

Land Development Unit – Fire Prevention Division – (323) 890-4243, Fax (323) 890-9783

Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead

Richard J. Bruckner
Director

Public Input Form
Scoping Meeting – December 10, 2012

Project No. TR071735: Conditional Use Permit No. 201100122;
Vesting Tentative Tract Map No. 071735; Parking Permit No. 201100005; Environmental Review No. 201100192

Required Approvals:

1) Conditional Use Permit to remodel and continue using an existing 18-hole golf course, along with development and operation of a sports-oriented educational retreat on 650 acres. The Project includes educational and meeting facilities, overnight visitor-serving accommodations; a restaurant/lounge, warehouse, cart storage building, clubhouse with a spa and pool, pro shop, and a maintenance building. The CUP also authorizes the continued sale of alcoholic beverages for on-site consumption; on-site grading of 120,000 cubic yards; continued use and operation of a helipad (to be relocated); caretaker residence; and construction/use of a new water tank and associated water line to replace the existing 100,000 gallon water tank on the Project site.
2) Parking Permit to authorize use of shared parking of 387 parking spaces onsite.
3) 28-lot Vesting Tentative Tract Map (5 lots for project development and 23 open space lots).
4) Coastal Development Permit for development in the coastal zone.
5) Approval by Los Angeles County Local Agency Formation Commission (LAFCO) to form a community services district to maintain the onsite wastewater system and permanently dedicated open space.

DEC 19 2012

This form allows you to make comments on what you believe should be addressed in the Draft Environmental Impact Report. You may submit your comments at this scoping meeting or mail to the Department of Regional Planning. Written comments on the Notice of Preparation (NOP) for the Environmental Impact Report will be accepted until **December 24, 2012 at 5:00 PM.**

Comments: ① define sports oriented ~~retreat~~ educational retreat. Please tell us what types of education will take place at retreat. ~~How~~ What is exact relationship between University + resort. ~~How long~~
② How many trips from resort to restaurants, shopping, beach etc will be generated when everyone isn't playing golf.
③ How many golf tournaments will take place each year with how many participants and attendees
④ Will water quality in Arroyo Creek be enhanced or diminished. on site and downstream? If so How
⑤ Include lighting plan in EIR
⑥ Describe plants for restoration of Arroyo Creek

You may also indicate if you would like to receive notices for hearings on the project. If you wish to receive a notice, please be sure to include your name and full address. The EIR will be available at local libraries and the County Regional Planning office in Downtown Los Angeles. The document, when made public, will also be accessible on the internet for review at http://planning.lacounty.gov/ under **Project No. TR071735** under the Case & Hearing menu. For a charge, individual copies may be obtained through a bonded blueprinter.

Name: Patt Healy on behalf of Malibu Coalition For Slow Growth

Address: 482 San Vicente Blvd

City/State/ZIP: Santa Monica CA 90402

PATRICIA A. HEALY
ATTORNEY AT LAW
482 SAN VICENTE BOULEVARD
SANTA MONICA, CALIFORNIA 90402
310-393-1813
FAX: 310-395-4454

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

November 27, 2012

Ms. Carolina Blengini, Regional Planner – Special Projects Section
Los Angeles County Department of Regional Planning
320 West Temple Street, Room 1348
Los Angles, CA 90012

Re: SCH#2012111068; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the **"The Malibu Institute – Project No. TR071735, CUP No. 201100122; Environmental Review No. 201100192 Project;"** located in Malibu; Los Angeles County, California

Dear Ms. Blengini:

The NAHC is the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties or resources of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendment s effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC advises the Lead Agency to request a Sacred Lands File search of the NAHC if one has not been done for the 'area of potential effect' or APE previously.

The NAHC "Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests cooperation from other public agencies in order that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties, including archaeological studies. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and California Public Resources Code Section 21083.2 (Archaeological Resources) that requires documentation, data recovery of cultural resources, construction to avoid sites and the possible use of covenant easements to protect sites.

Furthermore, the NAHC if the proposed project is under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

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Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for inadvertent discovery of human remains mandate the processes to be followed in the event of a discovery of human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

Finally, when Native American cultural sites and/or Native American burial sites are prevalent within the project site, the NAHC recommends 'avoidance' of the site as referenced by CEQA Guidelines Section 15370(a).

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

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November 27, 2012

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This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2012111068; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Malibu Institute 0 Project No. TR071735; located in Malibu; Los Angeles County, California.

Native American Contacts
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November 27, 2012

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NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

RECEIVED
JAN 22 2013

January 16, 2013

Ms. Carolina Blengini, Regional Planner
Los Angeles County Department of Regional Planning
Special Projects Section
320 West Temple Street
Los Angeles, CA 90012

Re: SCH#2012111068; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the **"THE MALIBU INSTITUTE;"** located in the City of Malibu; Los Angeles County, California

Dear Ms. Blengini:

The California Native American Heritage Commission (NAHC) is the State of California 'trustee agency' for the preservation and protection of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties or resources of religious and cultural significance to American Indian tribes law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendment s effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC advises the Lead Agency to request a Sacred Lands File search of the NAHC if one has not been done for the 'area of potential effect' or APE previously.

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If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Cc: State Clearinghouse

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Los Angeles County
January 16, 2013

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Los Angeles County
January 16, 2013

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805-649-2743 (Home)

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United States Department of the Interior

NATIONAL PARK SERVICE
Santa Monica Mountains National Recreation Area
401 West Hillcrest Drive
Thousand Oaks, California 91360-4207

In reply refer to:
L76 / SAMO 123-55

January 21, 2013

Carolina Blengini, Regional Planner
Special Projects Section
Los Angeles County Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Dear Ms. Blengini:

The National Park Service (NPS) has reviewed Los Angeles County's Notice of Preparation (NOP) of an Environmental Impact Report (EIS) and Initial Study (IS) for The Malibu Institute, Project No. TR071735, Vesting Tentative Tract Map No. 071735, Conditional Use Permit No. 201100122, Parking Permit No. 201100005, Environmental Review No. 201100192. The applicant, The Malibu Institute, proposes a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course. The project site is located at 901 Encinal Canyon Road, comprising 29 parcels covering approximately 650 acres where the Malibu Golf Club currently operates. Project structural development would remain limited to the current 20-acre development footprint. There would be 224,287 square feet of structures, an increase of 200,652 square feet over the present structural square footage. Forty new bungalows for overnight accommodations covering 109,140 square feet are part of the expanded facilities. Many green building features would be incorporated to achieve LEED™ Platinum certification. The existing golf course would be remodeled to a 107-acre footprint, down from the current 118 acres. Green features would be incorporated to decrease turf and water use and replace non-native landscaping with native grasses, shrubs, and trees. Grading would consist of 120,000 cubic yards (cy) cut and 120,000 cy fill balanced on site. Over 450 acres of native habitat would become permanently dedicated open space.

The National Park Service appreciates the opportunity to comment on the NOP and associated IS. In general, we provide comments on the effects of private and public land development in the Santa Monica Mountains at the invitation of state and local units of government with authority to prevent or minimize adverse effects on national parkland. We assume a neutral position and do not support or oppose land development. Overall, we concur with the Initial Study's Mandatory Findings of Significance and the recommendation to prepare an Environmental Impact Report (EIR). We offer the following suggestions for inclusion in the draft EIR.

how the bungalows would be used and the number of guests each would accommodate. Similarly, the EIR should clarify the use for several other large facilities described in the project description. A range of alternatives may include reduced-scale options in terms of structural square footage.

Aesthetics

NPS finds that both Items (a) and (d) should be assessed at "potentially significant impact". Item (a) finds the project may have a "potentially significant impact" on a scenic vista. Item (d) finds the project may have a "less than significant impact with mitigation incorporated" regarding the project's potential to substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features. The IS justification for Item (d)'s finding is that the project would be designed and constructed to be compatible with the surrounding rural area. However, the proposed 224,287 square feet is approximately ten times greater than the current 24,000 square feet of structural development. At such a development differential from the surrounding single family residences and the nearby public detention facilities, the proposed facility may be outstandingly visible. We ask that draft EIR preparers consider the impacts of the change in scale and mass from current to proposed levels and how it would fit with the existing rural residential development.

We thank the County for acknowledging the presence of the Backbone Trail and for considering impacts to views from the trail. The draft EIR should include a visual analysis from points along the Backbone Trail, Mulholland Highway, and other popular recreational routes in the vicinity. The golf course is visible from popular spur trails off the Backbone Trail across Trancas Canyon, where people seek higher points for sweeping views. Additionally, given the scale of the proposed project, the visual analysis should include views from high elevation points along Zuma Ridge Motorway, another popular recreational route.

Biological Resources

NPS concurs with the IS findings of "potentially significant impacts" for each of the biological resource topics. We ask consideration in the draft EIR of the following issues.

The project's Site Plan in the NOP appears to not include "daylighting" Trancas Creek. The creek was buried when the golf course was originally constructed in the 1970s, leaving only two ponds. The proposed reconstruction of the site provides an opportunity to restore the creek and the riparian habitat. The proposed replacement of non-native trees with native oaks and sycamores would be compatible with stream restoration. Visitors to the Santa Monica Mountains value both the immersion in the native landscape, and find the visit enhanced when they observe wildlife in the natural setting. The NPS's *SMMNRA Recreational Trail Survey*, prepared in 2002 by the USC Sustainable Cities Program, asked participants why SMMNRA should be protected. Results showed that 75% desired the protection of habitat, with or without also providing recreation. We anticipate that restoration of the creek and riparian corridor across the property would bring great benefit to wildlife habitat as well as enjoyment

We concur with the IS findings for potential impacts to archaeological resources. SMMNRA has the highest density of archaeological resources in the National Park System. We suggest the draft EIR include a mitigation measure to monitor ground excavation that may unearth both in situ and disturbed subterranean archaeological resources.

Energy & Greenhouse Gas Emissions

We commend the applicant for proposing structural features that reduce consumption of materials and energy. NPS uses LEED™ standards to help make new construction more environmentally friendly. Our new visitor center for SMMNRA at King Gillette Ranch received LEED™ Platinum certification when opened in June, 2012.

We remain concerned, however, about the scale of the project in terms of energy consumption. Larger structures equate to additional trips for construction material deliveries and construction workers. The EIR should clarify the need for the size of the structures proposed in the project description. A range of alternatives should be analyzed for the levels of energy use and gas emissions to accomplish construction and provide for ongoing operation and maintenance.

Hydrology & Water Quality

NPS concurs with the IS findings for potentially significant impacts to water quality. Hydrology and water quality are extremely important topics to review in the draft EIR. Water quality in Trancas Creek is degraded, as indicated by water quality testing that was done in the first years after the golf course CUP was renewed in 1999 (see attached letter dated December 12, 2005). Degraded water quality, the absence of native aquatic fauna, and the presence of non-native aquatic fauna are typical of urban creeks; Trancas Creek's profile is confounding in spite of the predominantly natural setting similar to other nearby watersheds.

Under Item (h) in the IS, County staff correctly notes that "the ocean from Mugu Lagoon to Latigo Point is Area of Special Biological Significance (ASBS) No. 24. Trancas Creek ultimately flows into the ocean in this area" (Pg. 26/39). The draft EIR should include in its summary of other projects within the vicinity of the project the NPS's joint efforts with the Resource Conservation District of the Santa Monica Mountains (RCDSMM) to restore Trancas Lagoon. The agencies are currently working with the landowner to secure a conservation easement and proceed with restoration feasibility studies. Background water quality typical of creeks in the Santa Monica Mountains and restoration of native biodiversity in the creek throughout the watershed is integral to successful lagoon restoration at the bottom of the watershed and protection of water quality in Santa Monica Bay.

The project description states that 120,000 cy cut and 120,000 cy fill, balanced on site, are anticipated. The proposed envelope of 20 acres for the structural improvements equates to 12,000 cy grading per acre. We appreciate that no import or export of soils has been proposed, with its associated environmental impacts. The scale of grading, nevertheless, is large, with the potential consequences of erosion and downstream sedimentation. We

Public Services

The Public Services section of the IS states the project would provide on-site recreational facilities and would not result in a substantial increase in demand on existing parks or for new public parks, and would, therefore, have a less than significant impact on parks. Please note that NPS is responsible for maintenance of the Backbone Trail as it traverses the vicinity of the proposed project. The EIR should describe the estimated number of visitors to the proposed retreat and consider their possible desire to access the Backbone Trail for walks during their stay at the retreat. An unofficial trail across from the current entrance to the Malibu Golf Club connects to the Backbone Trail. NPS has not maintained this trail that was constructed by Camp 13 inmates as an exercise circuit. We ask the preparers of the EIR to consider impacts to NPS trail management that may be created by visitors' use of this unofficial trail on federal parkland. If appropriate, NPS would consider officially opening the trail to the public.

Recreation

The Recreation section notes the project would have no impact related to interference with regional open space connectivity (in terms of trails, not habitat). The physical construction of the Backbone Trail through Trancas Canyon is complete. We understand the purpose of an IS is to evaluate potential negative impacts and not to discuss potential missed opportunities. However, for consideration when preparing the EIR, the NPS offers the following discussion of the opportunity to expand recreational access for multi-day outings over the 65-mile Backbone Trail.

NPS appreciates the County's recognition of the Backbone Trail as a public recreational facility near the proposed project. Additionally, much of the scenic viewshed is a national park site within SMMNRA: Zuma and Trancas Canyons. As noted above in the Public Services comments, the proposed retreat location is connected to the Backbone Trail by a one-half mile existing unofficial trail. In light of the project site's outstanding location for public recreation-oriented visitor-serving facilities and the proposed overnight accommodations, the project should be designed to harmonize with the scenic, natural setting and to fully support access by the general public to nearby recreational opportunities—in this case, the Backbone Trail. Per the SMMNRA GMP visitor experience goals, the NPS would welcome additional overnight accommodations within SMMNRA if compatible with the existing greater protected open space and trail setting:

> "Encourage private enterprise to provide many of the necessary services and recreational developments to support visitor enjoyment of the national recreation area. Encourage *compatible* (emphasis added) recreational, educational, research, and other facilities on appropriate private lands as a part of and adjacent to the national recreation area." *General Management Plan, Santa Monica Mountains National Recreation Area*, 2003, pg. 38.

United States Department of the Interior

NATIONAL PARK SERVICE
Santa Monica Mountains National Recreation Area
401 West Hillcrest Drive
Thousand Oaks, California 91360-4207

In reply refer to:
L76 (SAMO/123-55)

December 12, 2005

Mr. Kim K. Szalay, Zoning Permits I
Los Angeles County Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Dear Mr. Szalay:

The National Park Service has reviewed materials pertaining to a request by Malibu Country Club (MCC) for modifications to their Conditional Use Permit (CUP) No. 98-059-(3). The CUP is for operation of MCC's golf course. The documents include annual reports, water quality monitoring data; the USDA, Natural Resource Conservation Service's (NRCS) Conservation Plan; CUP-related correspondence; and MCC's proposed modifications to the CUP. The proposed modifications address water quality monitoring and conditions requiring communication with the National Park Service.

The National Park Service appreciates the opportunity for continued participation in the public review process for the Malibu Country Club CUP for the golf course. We provide comments on the effects of private and public land development in the Santa Monica Mountains at the invitation of state and local units of government with authority to prevent or minimize adverse uses. We respect the rights of landowners to develop and manage their properties consistent with federal, state, and local laws. In providing comments, we assume a neutral position and do not support or oppose land development. To this end, we offer the following comments on the proposed CUP modifications. Our comments first summarize the Trancas Creek setting, then review the annual reports, water quality monitoring results, NRCS Conservation Plan, and finally, address the proposed CUP modifications.

Trancas Creek: Setting and Stream Condition

The golf course is located at the top of the 6,500-acre Trancas Creek Watershed. Forty-five percent of the watershed is public parkland. Waters from the golf course drain directly into the watershed's main tributary, Trancas Creek. The creek then flows 3.5 linear miles across National Park Service property. Trancas Canyon was acquired for parkland within the Santa Monica Mountains National Recreation Areato preserve and protect superlative resource values for public appreciation and enjoyment. As such, the National Park Service strives to preserve the parkland in a manner that upholds the ecosystem's native flora and fauna. The aquatic portions of the ecosystem should be supported by the natural, historic water regime of

to demonstrate that MCC fertilizer application rates on putting greens, tees, and fairways are consistent with U.S. Golf Association (USGA) recommendations (pg. 3, Waller letter to Regional Planning, dated December 16, 2002), the annual reports should accurately describe the amounts of fertilizer MCC used in the specified areas.

Water Quality Monitoring Reports

Identification of the sources of impact to Trancas Creek is an important first step toward reversing degradation. The CUP conditions for water quality monitoring are of great value to both MCC and the National Park Service. We appreciate the County's leadership in requiring water quality as part of the CUP. We also appreciate MCC's work implementing the CUP. General findings from the nearly five years of water quality testing include the following points.

Total Nitrogen and Phosphate

- Twenty-one sampling events were reported in the MCC CUP review materials. Data sampling occurred each time at the golf course exit point. Samples were collected at water flow entry points during only 12 sampling events.

- Overall, total nitrogen and phosphate levels at the golf course exit point exceed CUP thresholds the majority of the time.

  a) Levels of total nitrogen as the water exits the golf course exceed the CUP threshold of 1.0 mg/L during 15 out of 21 sampling events (71%). The six events when total nitrogen values were under the threshold occurred during the non-storm sampling events. Total nitrogen values, however, exceeded the threshold during all non-storm sampling events during the 2001-2002 rainy season, known to be a particularly dry year.

  b) Phosphate levels exceeded the CUP threshold of 0.1 mg/L in 20 out of 21 sampling events (95%). Phosphate levels were exceedingly high during three of four "first flush" sampling events.

- Total nitrogen levels are comparatively high when measured against Heal the Bay Stream Team water quality monitoring results for similar watersheds (*www.healthebay/streamteam*). The locations with values higher than the MCC data represent major "outlet" sites associated with streams that drain large developed areas, including parts of Calabasas, Agoura Hills, and Westlake Village. Values for similar, less-developed watersheds, such as Cold Creek, Solstice, and Arroyo Sequit feature total nitrogen values significantly less than 1.0 mg/L.

- Phosphate levels are also high compared to the Heal the Bay Stream Team data for similar settings. However, data from "first flush" storm events at MCC are very high in phosphate compared to the Stream Team data.

information may be found on the internet, but it would be more efficient to have an information table in MCC's annual report. The information would facilitate an understanding of what chemicals tested by Los Angeles County Environmental Toxicology Lab (ETL) originate from which brand name product the golf course is using.

- The CUP-required annual reports do not adequately describe implementation of Condition 25.6. The condition requires selecting and testing water for the three highest volume—or alternatively, the most toxic—water-soluble pesticides, herbicides, and/or fungicides. We would like to be informed on which three chemicals were selected.

- ETL limits of detection may be too high to register presence of chemicals in levels that seriously impact aquatic fauna. For example, the ETL's detection limit for dieldrin is 0.1 micrograms/liter, yet the U.S. National Recommended Water Quality Criteria (NRWQ) maximum level for aquatic community continuous exposure without adverse effects is 0.06 micrograms/liter. Additionally, dieldrin is a banned chemical in the United States. There may be no need to test for dieldrin if MCC's reports to the U.S. Environmental Protection Agency indicate no products using this chemical are used.

  To make the CUP insecticide testing requirements meaningful for evaluating natural ecosystem conditions, federal and state guidelines that specify thresholds for maximum continuous exposure of natural aquatic communities to each chemical should be applied. Using a testing lab with the ability to measure small amounts of chemicals is critical to successful implementation of the water quality monitoring conditions. If the ETL cannot detect chemicals at the recommended thresholds, another lab should be used to perform the tests.

NRCS Conservation Plan

We thank MCC for meeting with NRCS and for providing our office with a copy of the Conservation Plan. We were surprised to find the report contains only generalized information and journal articles, both of which are of value but may have limited application at MCC. Information and recommendations specific to the MCC golf course are absent, other than brief, factual information on the soils found on the golf course property. There is no indication of how to apply the soils information to MCC golf course management. We would like to know if a section of the report is missing, or whether more follow-up was needed to customize recommendations for golf course management. For example, the NRCS cover letter for the plan suggested a landscape auditor who has worked with golf courses in San Diego County in respect to improved watering techniques and nutrient management. In MCC's annual report for 2005, it would be helpful to have a section describing actions MCC is taking based on the NRCS Conservation Plan and/or the on-site meeting(s) with NRCS.

Proposed CUP Modifications

Conditions 19.b, 19.c, and 20: The applicant requests to remove the provision to reduce by 50% within three years pesticide, herbicide, and fertilizer application on the golf course. We

Environmental Toxicology Laboratory (ETL), U.S. Environmental Protection Agency, and State Regional Water Quality Control Board for natural ecosystem standards, rather than drinking water standards, applicable to Trancas Creek."

Conditions 24.7 and 24.8: We concur with the permittee's requested amendments to these conditions that define water testing times and locations.

Condition 25: We concur with the permittee's requested amendment to this condition that describes which water quality parameters to test at entry points to the golf course.

Condition 25.1: The current language presents a target goal of 1.0 mg/L total nitrogen in water exiting the golf course. The language does not provide for recognizing nitrogen input from land uses above the golf course. The water quality monitoring data indicate that, indeed, upstream land uses are contributing nitrogen to the water before it reaches the golf course. The permittee requests amending the condition to a) increase the target goal to 1.5 mg/L and b) allow the exiting nitrogen value to be "1.5 mg/L more than the weighted average total combined nitrogen entering the property..." (December 16, 2002 Waller letter to Regional Planning).

The National Park Service is a non-regulatory agency except on parkland owned by the agency. We must refer the County to the water quality regulating agencies for guidance on allowing or denying changes to water quality targets. The agencies' decision should be in accordance with U.S. Environmental Protection Agency and State Regional Water Quality Control Board rules and regulations as they pertain to waterways of the Santa Monica Mountains. Our primary concern is that water quality in Trancas Creek should represent established findings for background water quality of streams in geographic settings similar to Trancas Canyon. In the Santa Monica Mountains, a background value of less than 1.0 mg/L total nitrogen is the established natural condition.

We understand the permittee's issue with being held accountable for total nitrogen input from upstream land uses. Again, we refer the County to the water quality regulating agencies to approve or deny the proposed CUP modification language that would account for upstream pollutant input to the golf course. Our recommendation is that, if upstream pollution sources are identified, the water quality regulatory agencies should take steps to correct the polluting upstream land use. If there is any role the National Park Service may play in addressing the upstream pollution, we would be glad to assist.

Condition 25.2: Similar to Condition 25.1, the permittee requests amending the condition to reflect upstream input of total phosphate, with the target water quality goal remaining unchanged, at 0.1 mg/L. Our comments on Condition 25.1 regarding upstream input apply to Condition 25.2.

Condition 25.3: We do not concur with the proposed wording for this condition and recommend the condition remain unchanged, except for some needed minor editing (see below). Pesticides, herbicides, and fungicides may have lower thresholds for causing adverse

RESOURCE
CONSERVATION DISTRICT
OF THE
SANTA MONICA MOUNTAINS

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20 December 2012

RECEIVED
DEC 24 2012

Carolina Blengini
Regional Planner, Special Projects Section
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Re: Malibu Institute NOP

Dear Carolina Blengini,

The Resource Conservation District of the Santa Monica Mountains (RCDSMM) appreciates the opportunity to comment on the NOP phase of the proposed Malibu Institute Project. As a reviewing and resource agency in the Santa Monica Mountains, the RCDSMM is actively involved in monitoring sensitive species and local restoration and education efforts. We are presently working with the National Park Service and the landowner of the seven acre parcel containing the remnant Trancas Lagoon north of Pacific Coast Highway to conduct a feasibility study to direct lagoon restoration. Previously, we have completed several studies on abundance and distribution patterns, present and historic, for the endangered southern steelhead trout (*Oncorhynchus mykiss*) (Dagit, Meyer and Drill 2005) and southwestern pond turtle (*Actinemys marmorata*) (Dagit and Albers 2009). Both of these species were historically present in Trancas Creek, and the southwestern pond turtle is currently present. No records for steelhead trout are found in Trancas or Zuma since the 1980's.

Most of our specific comments were provided as part of the scoping meeting held at the Malibu Golf Course on 10 December 2012. In addition to those comments, we would like to formally request that the EIR include an alternative that includes a) reduction of the overall built footprint to a configuration more compatable with the ecological and relatively undeveloped context of the site, and b) that includes restoration of a functional stream and riparian corridor through the proposed golf course.

The headwaters of Trancas Creek were buried when the golf course was built in the 1970's and the loss of habitat for several aquatic sensitive and now endangered species, as well as degradation of water quality downstream has been the 40 year legacy of that action.

The re-designed golf course has a rare opportunity to not only improve water quallity downstream but also restore functionality and habitat to a significant reach of Trancas Creek. While this may require additional grading to remove some of the fill that currently buries the creek channel, we suggest that the added public benefit of having a functional creek within the golf course outweighs the restorative grading impacts. Analsyis of this alternative should be considered.

A recurring theme at the scoping meeting was that the current users place high value on the wildness of the surrounding open space, commenting on how much they appreciate the opportunity to both play golf AND experience the local wildlife. Restoring a functional stream channel within the golf course would exponentially increase this unique opportunity.

Intense effort is being expended to restore migratory passage opportunities for southern steelhead trout at the mouth of Trancas Creek. The majority of the watershed is public open space within the Santa Monica Mountains National Recreation Area. Developing a public golf course that is integrated with the surrounding natural ecosystem and restores access for the trout and other aquatic species to the headwaters of Trancas Creek could achieve multiple benefits and set a model for integrataed recreational and ecological compatibility.

We greatly appreciate the thoughtful concerns and efforts on the part of the Malibu Institute to move in this direction. Including an alterantive in the EIR that clearly outlines a path to more integrated restoration will provide decision makers with the opportunity to examine a viable restoration not only of the public golf course, but also Trancas Creek.

We look forward to the opportunity to review and comment on the EIR when it is available.

Sincerely,

Rosi Dagit

Rosi Dagit
Senior Conservation Biologist

Appendix B

Air Quality Impact Calculations – CalEEMod Report, April 12 and 16, 2013

Maliby Institute Existing Golf Course

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Golf Course	118	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use - 118 acre golf course

Construction Phase - Operational Only

Off-road Equipment - Operational GHG Impacts

Vehicle Trips - No trips, GHG Water and Energy Emissions Only

Water Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	0.00	0.00	0.00		

Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Golf Course	8.90	13.30	7.40	33.00	48.00	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Maliby Institute Existing Golf Course

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Golf Course	118	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use - 118 acre golf course

Construction Phase - Operational Only

Off-road Equipment - Operational GHG Impacts

Vehicle Trips - No trips, GHG Water and Energy Emissions Only

Water Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	22.28	0.00	22.28	1.32	0.00	49.92
Water						0.00	0.00		0.00	0.00	0.00	454.34	454.34	0.02	0.01	457.19
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**22.28**	**454.34**	**476.62**	**1.34**	**0.01**	**507.11**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	22.28	0.00	22.28	1.32	0.00	49.92
Water						0.00	0.00		0.00	0.00	0.00	454.34	454.34	0.02	0.01	457.19
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**22.28**	**454.34**	**476.62**	**1.34**	**0.01**	**507.11**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Golf Course	8.90	13.30	7.40	33.00	48.00	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Golf Course	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Golf Course	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					454.34	0.02	0.01	457.19
Unmitigated					454.34	0.02	0.01	457.19
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Golf Course	0 / 140.595					454.34	0.02	0.01	457.19
Total						**454.34**	**0.02**	**0.01**	**457.19**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Golf Course	0 / 140.595					454.34	0.02	0.01	457.19
Total						**454.34**	**0.02**	**0.01**	**457.19**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					22.28	1.32	0.00	49.92
Unmitigated					22.28	1.32	0.00	49.92
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Golf Course	109.74					22.28	1.32	0.00	49.92
Total						**22.28**	**1.32**	**0.00**	**49.92**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Golf Course	109.74					22.28	1.32	0.00	49.92
Total						**22.28**	**1.32**	**0.00**	**49.92**

9.0 Vegetation

Malbu Beach Institute

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Office Park	37.64	1000sqft
Library	48.16	1000sqft
Golf Course	107	Acre
Quality Restaurant	30.15	1000sqft
Condo/Townhouse	40	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use - 48,160 Education Bldg (Library), 107 Acre Golf Course, 30,147 sf Restaurant, 40 Bungalows (Condo/Townhome) with 109,140 sf, 37,636 sf Office Park for maintenance bldg, golf cart storate, warehouse, etc.

Construction Phase - Prep 6 months, Grade 6 months, Construction 2 year, Pave 2 Months
Change default start year to 2014 from 2011

Off-road Equipment - Construction: 1 Crane, 3 Forklifts, 3 Loader/Backhoes, 1 Gen Set, 1 Welder

Off-road Equipment - Grading: 1 Dozer, 2 Loader/Backhoes, 3 Scrapers, 1 Excavator, 1 Grader
Load factors reduced 33%

Off-road Equipment - Paving: 2 Pavers, 2 Rollers, 2 Paving Equipment

Off-road Equipment - Prep: 3 Dozers, 4 Loader/Backhoes
Load factor reduced by 33% per CARB

Vehicle Trips - 998 trips per day

Energy Use -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation - Reduce water consumption by 48% w recycled water and on-site wells, Low flow faucets and toilets

Waste Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	8.63	70.34	37.76	0.08	18.30	3.10	20.75	9.93	3.10	12.38	0.00	8,596.63	0.00	0.78	0.00	8,612.91
2015	4.04	25.64	23.70	0.05	1.26	1.53	2.79	0.02	1.52	1.54	0.00	4,480.22	0.00	0.36	0.00	4,487.77
2016	64.07	23.44	23.09	0.05	1.26	1.82	2.62	0.02	1.82	1.82	0.00	4,468.69	0.00	0.33	0.00	4,475.60
2017	64.03	2.24	2.62	0.00	0.21	0.18	0.39	0.00	0.18	0.18	0.00	440.10	0.00	0.04	0.00	440.88
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	8.63	70.34	37.76	0.08	7.28	3.10	9.73	3.88	3.10	6.32	0.00	8,596.63	0.00	0.78	0.00	8,612.91
2015	4.04	25.64	23.70	0.05	1.26	1.53	2.79	0.02	1.52	1.54	0.00	4,480.22	0.00	0.36	0.00	4,487.77
2016	64.07	23.44	23.09	0.05	1.26	1.82	2.62	0.02	1.82	1.82	0.00	4,468.69	0.00	0.33	0.00	4,475.60
2017	64.03	2.24	2.62	0.00	0.21	0.18	0.39	0.00	0.18	0.18	0.00	440.10	0.00	0.04	0.00	440.88
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	10.10	0.23	16.61	0.03		0.00	2.13		0.00	2.13	282.27	726.01		1.12	0.02	1,037.23
Energy	0.31	2.84	2.27	0.02		0.00	0.22		0.00	0.22		3,428.64		0.07	0.06	3,449.51
Mobile	4.36	9.89	41.56	0.09	9.38	0.49	9.87	0.13	0.47	0.61		8,224.93		0.31		8,231.51
Total	**14.77**	**12.96**	**60.44**	**0.14**	**9.38**	**0.49**	**12.22**	**0.13**	**0.47**	**2.96**	**282.27**	**12,379.58**		**1.50**	**0.08**	**12,718.25**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.92	0.04	3.38	0.00		0.00	0.07		0.00	0.07	0.00	768.37		0.02	0.01	773.13
Energy	0.31	2.84	2.27	0.02		0.00	0.22		0.00	0.22		3,428.64		0.07	0.06	3,449.51
Mobile	4.36	9.89	41.56	0.09	9.38	0.49	9.87	0.13	0.47	0.61		8,224.93		0.31		8,231.51
Total	**10.59**	**12.77**	**47.21**	**0.11**	**9.38**	**0.49**	**10.16**	**0.13**	**0.47**	**0.90**	**0.00**	**12,421.94**		**0.40**	**0.07**	**12,454.15**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.07	0.00	18.07	9.93	0.00	9.93						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44		5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**18.07**	**2.44**	**20.51**	**9.93**	**2.44**	**12.37**		**5,413.51**		**0.57**		**5,425.43**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.07	0.00	0.23	0.01	0.24	0.00	0.01	0.01		189.72		0.01		189.94
Total	**0.09**	**0.09**	**1.07**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**189.72**		**0.01**		**189.94**

3.2 Site Preparation - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.05	0.00	7.05	3.87	0.00	3.87						0.00
Off-Road	6.34	50.69	29.13	0.05		2.44	2.44		2.44	2.44	0.00	5,413.51		0.57		5,425.43
Total	**6.34**	**50.69**	**29.13**	**0.05**	**7.05**	**2.44**	**9.49**	**3.87**	**2.44**	**6.31**	**0.00**	**5,413.51**		**0.57**		**5,425.43**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.09	1.07	0.00	0.23	0.01	0.24	0.00	0.01	0.01		189.72		0.01		189.94
Total	**0.09**	**0.09**	**1.07**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**189.72**		**0.01**		**189.94**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.87	0.00	12.87	3.31	0.00	3.31						0.00
Off-Road	8.53	70.24	36.57	0.08		3.09	3.09		3.09	3.09		8,385.83		0.76		8,401.86
Total	**8.53**	**70.24**	**36.57**	**0.08**	**12.87**	**3.09**	**15.96**	**3.31**	**3.09**	**6.40**		**8,385.83**		**0.76**		**8,401.86**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.10	1.19	0.00	0.26	0.01	0.27	0.00	0.01	0.01		210.80		0.01		211.05
Total	**0.10**	**0.10**	**1.19**	**0.00**	**0.26**	**0.01**	**0.27**	**0.00**	**0.01**	**0.01**		**210.80**		**0.01**		**211.05**

3.3 Grading - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.02	0.00	5.02	1.29	0.00	1.29						0.00
Off-Road	8.53	70.24	36.57	0.08		3.09	3.09		3.09	3.09	0.00	8,385.83		0.76		8,401.86
Total	**8.53**	**70.24**	**36.57**	**0.08**	**5.02**	**3.09**	**8.11**	**1.29**	**3.09**	**4.38**	**0.00**	**8,385.83**		**0.76**		**8,401.86**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.10	1.19	0.00	0.26	0.01	0.27	0.00	0.01	0.01		210.80		0.01		211.05
Total	**0.10**	**0.10**	**1.19**	**0.00**	**0.26**	**0.01**	**0.27**	**0.00**	**0.01**	**0.01**		**210.80**		**0.01**		**211.05**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.67	24.00	17.51	0.03		1.55	1.55		1.55	1.55		2,982.97		0.33		2,989.86
Total	**3.67**	**24.00**	**17.51**	**0.03**		**1.55**	**1.55**		**1.55**	**1.55**		**2,982.97**		**0.33**		**2,989.86**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.34	3.72	2.26	0.01	0.23	0.13	0.36	0.01	0.12	0.12		680.85		0.02		681.20
Worker	0.41	0.40	4.69	0.01	1.03	0.03	1.07	0.01	0.03	0.05		832.67		0.05		833.64
Total	**0.75**	**4.12**	**6.95**	**0.02**	**1.26**	**0.16**	**1.43**	**0.02**	**0.15**	**0.17**		**1,513.52**		**0.07**		**1,514.84**

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.67	24.00	17.51	0.03		1.55	1.55		1.55	1.55	0.00	2,982.97		0.33		2,989.86
Total	**3.67**	**24.00**	**17.51**	**0.03**		**1.55**	**1.55**		**1.55**	**1.55**	**0.00**	**2,982.97**		**0.33**		**2,989.86**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.34	3.72	2.26	0.01	0.23	0.13	0.36	0.01	0.12	0.12		680.85		0.02		681.20
Worker	0.41	0.40	4.69	0.01	1.03	0.03	1.07	0.01	0.03	0.05		832.67		0.05		833.64
Total	**0.75**	**4.12**	**6.95**	**0.02**	**1.26**	**0.16**	**1.43**	**0.02**	**0.15**	**0.17**		**1,513.52**		**0.07**		**1,514.84**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.35	21.89	17.33	0.03		1.38	1.38		1.38	1.38		2,982.97		0.30		2,989.30
Total	**3.35**	**21.89**	**17.33**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**		**2,982.97**		**0.30**		**2,989.30**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.31	3.38	2.05	0.01	0.23	0.11	0.34	0.01	0.10	0.11		682.34		0.02		682.66
Worker	0.38	0.36	4.32	0.01	1.03	0.04	1.07	0.01	0.03	0.05		814.91		0.04		815.81
Total	**0.69**	**3.74**	**6.37**	**0.02**	**1.26**	**0.15**	**1.41**	**0.02**	**0.13**	**0.16**		**1,497.25**		**0.06**		**1,498.47**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.35	21.89	17.33	0.03		1.38	1.38		1.38	1.38	0.00	2,982.97		0.30		2,989.30
Total	**3.35**	**21.89**	**17.33**	**0.03**		**1.38**	**1.38**		**1.38**	**1.38**	**0.00**	**2,982.97**		**0.30**		**2,989.30**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.31	3.38	2.05	0.01	0.23	0.11	0.34	0.01	0.10	0.11		682.34		0.02		682.66
Worker	0.38	0.36	4.32	0.01	1.03	0.04	1.07	0.01	0.03	0.05		814.91		0.04		815.81
Total	**0.69**	**3.74**	**6.37**	**0.02**	**1.26**	**0.15**	**1.41**	**0.02**	**0.13**	**0.16**		**1,497.25**		**0.06**		**1,498.47**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.07	19.98	17.18	0.03		1.22	1.22		1.22	1.22		2,982.97		0.27		2,988.74
Total	**3.07**	**19.98**	**17.18**	**0.03**		**1.22**	**1.22**		**1.22**	**1.22**		**2,982.97**		**0.27**		**2,988.74**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.28	3.13	1.90	0.01	0.23	0.10	0.33	0.01	0.09	0.10		684.35		0.01		684.64
Worker	0.36	0.33	4.01	0.01	1.03	0.04	1.07	0.01	0.03	0.05		801.37		0.04		802.22
Total	**0.64**	**3.46**	**5.91**	**0.02**	**1.26**	**0.14**	**1.40**	**0.02**	**0.12**	**0.15**		**1,485.72**		**0.05**		**1,486.86**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.07	19.98	17.18	0.03		1.22	1.22		1.22	1.22	0.00	2,982.97		0.27		2,988.74
Total	**3.07**	**19.98**	**17.18**	**0.03**		**1.22**	**1.22**		**1.22**	**1.22**	**0.00**	**2,982.97**		**0.27**		**2,988.74**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.28	3.13	1.90	0.01	0.23	0.10	0.33	0.01	0.09	0.10		684.35		0.01		684.64
Worker	0.36	0.33	4.01	0.01	1.03	0.04	1.07	0.01	0.03	0.05		801.37		0.04		802.22
Total	**0.64**	**3.46**	**5.91**	**0.02**	**1.26**	**0.14**	**1.40**	**0.02**	**0.12**	**0.15**		**1,485.72**		**0.05**		**1,486.86**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.52	21.76	15.86	0.02		1.81	1.81		1.81	1.81		2,281.96		0.32		2,288.60
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.52**	**21.76**	**15.86**	**0.02**		**1.81**	**1.81**		**1.81**	**1.81**		**2,281.96**		**0.32**		**2,288.60**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.06	0.76	0.00	0.20	0.01	0.20	0.00	0.01	0.01		152.16		0.01		152.32
Total	**0.07**	**0.06**	**0.76**	**0.00**	**0.20**	**0.01**	**0.20**	**0.00**	**0.01**	**0.01**		**152.16**		**0.01**		**152.32**

3.5 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.52	21.76	15.86	0.02		1.81	1.81		1.81	1.81	0.00	2,281.96		0.32		2,288.60
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.52**	**21.76**	**15.86**	**0.02**		**1.81**	**1.81**		**1.81**	**1.81**	**0.00**	**2,281.96**		**0.32**		**2,288.60**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.06	0.76	0.00	0.20	0.01	0.20	0.00	0.01	0.01		152.16		0.01		152.32
Total	**0.07**	**0.06**	**0.76**	**0.00**	**0.20**	**0.01**	**0.20**	**0.00**	**0.01**	**0.01**		**152.16**		**0.01**		**152.32**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	63.63					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	**64.00**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**		**281.19**		**0.03**		**281.89**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.07	0.81	0.00	0.21	0.01	0.22	0.00	0.01	0.01		162.30		0.01		162.48
Total	**0.07**	**0.07**	**0.81**	**0.00**	**0.21**	**0.01**	**0.22**	**0.00**	**0.01**	**0.01**		**162.30**		**0.01**		**162.48**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	63.63					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	**64.00**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**281.19**		**0.03**		**281.89**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.07	0.81	0.00	0.21	0.01	0.22	0.00	0.01	0.01		162.30		0.01		162.48
Total	**0.07**	**0.07**	**0.81**	**0.00**	**0.21**	**0.01**	**0.22**	**0.00**	**0.01**	**0.01**		**162.30**		**0.01**		**162.48**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	63.63					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17		281.19		0.03		281.81
Total	**63.96**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**		**281.19**		**0.03**		**281.81**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.06	0.75	0.00	0.21	0.01	0.22	0.00	0.01	0.01		158.91		0.01		159.07
Total	**0.07**	**0.06**	**0.75**	**0.00**	**0.21**	**0.01**	**0.22**	**0.00**	**0.01**	**0.01**		**158.91**		**0.01**		**159.07**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	63.63					0.00	0.00		0.00	0.00						0.00
Off-Road	0.33	2.18	1.87	0.00		0.17	0.17		0.17	0.17	0.00	281.19		0.03		281.81
Total	**63.96**	**2.18**	**1.87**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**281.19**		**0.03**		**281.81**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.06	0.75	0.00	0.21	0.01	0.22	0.00	0.01	0.01		158.91		0.01		159.07
Total	**0.07**	**0.06**	**0.75**	**0.00**	**0.21**	**0.01**	**0.22**	**0.00**	**0.01**	**0.01**		**158.91**		**0.01**		**159.07**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.36	9.89	41.56	0.09	9.38	0.49	9.87	0.13	0.47	0.61		8,224.93		0.31		8,231.51
Unmitigated	4.36	9.89	41.56	0.09	9.38	0.49	9.87	0.13	0.47	0.61		8,224.93		0.31		8,231.51
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	998.00	998.00	998.00	2,834,440	2,834,440
Golf Course	0.00	0.00	0.00		
Library	0.00	0.00	0.00		
Office Park	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Total	998.00	998.00	998.00	2,834,440	2,834,440

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Condo/Townhouse	10.80	7.30	7.50	40.20	19.20	40.60
Golf Course	9.50	7.30	7.30	33.00	48.00	19.00
Library	9.50	7.30	7.30	52.00	43.00	5.00
Office Park	9.50	7.30	7.30	33.00	48.00	19.00
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.31	2.84	2.27	0.02		0.00	0.22		0.00	0.22		3,428.64		0.07	0.06	3,449.51
NaturalGas Unmitigated	0.31	2.84	2.27	0.02		0.00	0.22		0.00	0.22		3,428.64		0.07	0.06	3,449.51
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Condo/Townhouse	2991.24	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02		351.91		0.01	0.01	354.05
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Library	2916.23	0.03	0.29	0.24	0.00		0.00	0.02		0.00	0.02		343.09		0.01	0.01	345.17
Office Park	1393.05	0.02	0.14	0.11	0.00		0.00	0.01		0.00	0.01		163.89		0.00	0.00	164.89
Quality Restaurant	21842.9	0.24	2.14	1.80	0.01		0.00	0.16		0.00	0.16		2,569.76		0.05	0.05	2,585.40
Total		**0.32**	**2.85**	**2.27**	**0.01**		**0.00**	**0.21**		**0.00**	**0.21**		**3,428.65**		**0.07**	**0.07**	**3,449.51**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Condo/Townhouse	2.99124	0.03	0.28	0.12	0.00		0.00	0.02		0.00	0.02		351.91		0.01	0.01	354.05
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Library	2.91623	0.03	0.29	0.24	0.00		0.00	0.02		0.00	0.02		343.09		0.01	0.01	345.17
Office Park	1.39305	0.02	0.14	0.11	0.00		0.00	0.01		0.00	0.01		163.89		0.00	0.00	164.89
Quality Restaurant	21.8429	0.24	2.14	1.80	0.01		0.00	0.16		0.00	0.16		2,569.76		0.05	0.05	2,585.40
Total		**0.32**	**2.85**	**2.27**	**0.01**		**0.00**	**0.21**		**0.00**	**0.21**		**3,428.65**		**0.07**	**0.07**	**3,449.51**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.92	0.04	3.38	0.00		0.00	0.07		0.00	0.07	0.00	768.37		0.02	0.01	773.13
Unmitigated	10.10	0.23	16.61	0.03		0.00	2.13		0.00	2.13	282.27	726.01		1.12	0.02	1,037.23
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.05					0.00	0.00		0.00	0.00						0.00
Consumer Products	4.70					0.00	0.00		0.00	0.00						0.00
Hearth	4.26	0.20	13.24	0.03		0.00	2.12		0.00	2.11	282.27	720.00		1.12	0.02	1,031.09
Landscaping	0.11	0.04	3.37	0.00		0.00	0.02		0.00	0.02		6.01		0.01		6.14
Total	**10.12**	**0.24**	**16.61**	**0.03**		**0.00**	**2.14**		**0.00**	**2.13**	**282.27**	**726.01**		**1.13**	**0.02**	**1,037.23**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.05					0.00	0.00		0.00	0.00						0.00
Consumer Products	4.70					0.00	0.00		0.00	0.00						0.00
Hearth	0.07	0.00	0.00	0.00		0.00	0.05		0.00	0.05	0.00	762.35		0.01	0.01	766.99
Landscaping	0.11	0.04	3.37	0.00		0.00	0.02		0.00	0.02		6.01		0.01		6.14
Total	**5.93**	**0.04**	**3.37**	**0.00**		**0.00**	**0.07**		**0.00**	**0.07**	**0.00**	**768.36**		**0.02**	**0.01**	**773.13**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Malbu Beach Institute

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Office Park	37.64	1000sqft
Library	48.16	1000sqft
Golf Course	107	Acre
Quality Restaurant	30.15	1000sqft
Condo/Townhouse	40	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics -

Land Use - 48,160 Education Bldg (Library), 107 Acre Golf Course, 30,147 sf Restaurant, 40 Bungalows (Condo/Townhome) with 109,140 sf, 37,636 sf Office Park for maintenance bldg, golf cart storate, warehouse, etc.

Construction Phase - Prep 6 months, Grade 6 months, Construction 2 year, Pave 2 Months
Change default start year to 2014 from 2011

Off-road Equipment - Construction: 1 Crane, 3 Forklifts, 3 Loader/Backhoes, 1 Gen Set, 1 Welder

Off-road Equipment - Grading: 1 Dozer, 2 Loader/Backhoes, 3 Scrapers, 1 Excavator, 1 Grader
Load factors reduced 33%

Off-road Equipment - Paving: 2 Pavers, 2 Rollers, 2 Paving Equipment

Off-road Equipment - Prep: 3 Dozers, 4 Loader/Backhoes
Load factor reduced by 33% per CARB

Vehicle Trips - 998 trips per day

Energy Use -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation - Reduce water consumption by 48% w recycled water and on-site wells, Low flow faucets and toilets

Waste Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.95	7.54	4.31	0.01	1.89	0.35	2.24	0.83	0.35	1.18	0.00	811.24	811.24	0.08	0.00	812.86
2015	0.53	3.35	3.09	0.01	0.15	0.20	0.35	0.00	0.20	0.20	0.00	524.40	524.40	0.04	0.00	525.29
2016	0.57	2.99	2.85	0.01	0.13	0.18	0.31	0.00	0.18	0.19	0.00	481.51	481.51	0.04	0.00	482.31
2017	1.82	0.06	0.07	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	11.14	11.14	0.00	0.00	11.16
Total	**3.87**	**13.94**	**10.32**	**0.03**	**2.18**	**0.74**	**2.91**	**0.83**	**0.74**	**1.58**	**0.00**	**1,828.29**	**1,828.29**	**0.16**	**0.00**	**1,831.62**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.95	7.54	4.31	0.01	0.76	0.35	1.11	0.33	0.35	0.68	0.00	811.24	811.24	0.08	0.00	812.86
2015	0.53	3.35	3.09	0.01	0.15	0.20	0.35	0.00	0.20	0.20	0.00	524.40	524.40	0.04	0.00	525.29
2016	0.57	2.99	2.85	0.01	0.13	0.18	0.31	0.00	0.18	0.19	0.00	481.51	481.51	0.04	0.00	482.31
2017	1.82	0.06	0.07	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	11.14	11.14	0.00	0.00	11.16
Total	**3.87**	**13.94**	**10.32**	**0.03**	**1.05**	**0.74**	**1.78**	**0.33**	**0.74**	**1.08**	**0.00**	**1,828.29**	**1,828.29**	**0.16**	**0.00**	**1,831.62**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.20	0.01	0.87	0.00		0.00	0.04		0.00	0.04	4.25	25.49	29.74	0.01	0.00	30.21
Energy	0.06	0.52	0.41	0.00		0.00	0.04		0.00	0.04	0.00	1,305.45	1,305.45	0.04	0.02	1,313.53
Mobile	0.77	1.83	7.47	0.02	1.54	0.09	1.63	0.02	0.09	0.11	0.00	1,293.35	1,293.35	0.05	0.00	1,294.44
Waste						0.00	0.00		0.00	0.00	45.63	0.00	45.63	2.70	0.00	102.26
Water						0.00	0.00		0.00	0.00	0.00	515.85	515.85	0.63	0.02	536.56
Total	**2.03**	**2.36**	**8.75**	**0.02**	**1.54**	**0.09**	**1.71**	**0.02**	**0.09**	**0.19**	**49.88**	**3,140.14**	**3,190.02**	**3.43**	**0.04**	**3,277.00**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.07	0.01	0.62	0.00		0.00	0.01		0.00	0.01	0.00	26.93	26.93	0.00	0.00	27.11
Energy	0.06	0.52	0.41	0.00		0.00	0.04		0.00	0.04	0.00	936.55	936.55	0.03	0.02	942.31
Mobile	0.77	1.83	7.47	0.02	1.54	0.09	1.63	0.02	0.09	0.11	0.00	1,293.35	1,293.35	0.05	0.00	1,294.44
Waste						0.00	0.00		0.00	0.00	45.63	0.00	45.63	2.70	0.00	102.26
Water						0.00	0.00		0.00	0.00	0.00	268.24	268.24	0.33	0.01	279.01
Total	**1.90**	**2.36**	**8.50**	**0.02**	**1.54**	**0.09**	**1.68**	**0.02**	**0.09**	**0.16**	**45.63**	**2,525.07**	**2,570.70**	**3.11**	**0.03**	**2,645.13**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.07	0.00	1.07	0.59	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.38	3.02	1.73	0.00		0.15	0.15		0.15	0.15	0.00	292.13	292.13	0.03	0.00	292.77
Total	**0.38**	**3.02**	**1.73**	**0.00**	**1.07**	**0.15**	**1.22**	**0.59**	**0.15**	**0.74**	**0.00**	**292.13**	**292.13**	**0.03**	**0.00**	**292.77**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.64	9.64	0.00	0.00	9.65
Total	**0.01**	**0.01**	**0.06**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**9.64**	**9.64**	**0.00**	**0.00**	**9.65**

3.2 Site Preparation - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.42	0.00	0.42	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.38	3.02	1.73	0.00		0.15	0.15		0.15	0.15	0.00	292.13	292.13	0.03	0.00	292.77
Total	**0.38**	**3.02**	**1.73**	**0.00**	**0.42**	**0.15**	**0.57**	**0.23**	**0.15**	**0.38**	**0.00**	**292.13**	**292.13**	**0.03**	**0.00**	**292.77**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.64	9.64	0.00	0.00	9.65
Total	**0.01**	**0.01**	**0.06**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**9.64**	**9.64**	**0.00**	**0.00**	**9.65**

3.3 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.77	0.00	0.77	0.24	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.51	4.21	2.19	0.00		0.19	0.19		0.19	0.19	0.00	456.33	456.33	0.04	0.00	457.20
Total	**0.51**	**4.21**	**2.19**	**0.00**	**0.77**	**0.19**	**0.96**	**0.24**	**0.19**	**0.43**	**0.00**	**456.33**	**456.33**	**0.04**	**0.00**	**457.20**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.80	10.80	0.00	0.00	10.82
Total	**0.01**	**0.01**	**0.07**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**10.80**	**10.80**	**0.00**	**0.00**	**10.82**

3.3 Grading - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.30	0.00	0.30	0.09	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.51	4.21	2.19	0.00		0.19	0.19		0.19	0.19	0.00	456.33	456.33	0.04	0.00	457.20
Total	**0.51**	**4.21**	**2.19**	**0.00**	**0.30**	**0.19**	**0.49**	**0.09**	**0.19**	**0.28**	**0.00**	**456.33**	**456.33**	**0.04**	**0.00**	**457.20**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.80	10.80	0.00	0.00	10.82
Total	**0.01**	**0.01**	**0.07**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**10.80**	**10.80**	**0.00**	**0.00**	**10.82**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.25	0.18	0.00		0.02	0.02		0.02	0.02	0.00	28.41	28.41	0.00	0.00	28.47
Total	**0.04**	**0.25**	**0.18**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**28.41**	**28.41**	**0.00**	**0.00**	**28.47**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.46	6.46	0.00	0.00	6.47
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.47	7.47	0.00	0.00	7.48
Total	**0.00**	**0.04**	**0.08**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**13.93**	**13.93**	**0.00**	**0.00**	**13.95**

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.25	0.18	0.00		0.02	0.02		0.02	0.02	0.00	28.41	28.41	0.00	0.00	28.47
Total	**0.04**	**0.25**	**0.18**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**28.41**	**28.41**	**0.00**	**0.00**	**28.47**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.46	6.46	0.00	0.00	6.47
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.47	7.47	0.00	0.00	7.48
Total	**0.00**	**0.04**	**0.08**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**13.93**	**13.93**	**0.00**	**0.00**	**13.95**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.86	2.26	0.00		0.18	0.18		0.18	0.18	0.00	353.05	353.05	0.04	0.00	353.80
Total	**0.44**	**2.86**	**2.26**	**0.00**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**353.05**	**353.05**	**0.04**	**0.00**	**353.80**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.04	0.44	0.29	0.00	0.03	0.01	0.04	0.00	0.01	0.01	0.00	80.52	80.52	0.00	0.00	80.56
Worker	0.05	0.05	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01	0.00	90.83	90.83	0.00	0.00	90.93
Total	**0.09**	**0.49**	**0.83**	**0.00**	**0.15**	**0.01**	**0.17**	**0.00**	**0.01**	**0.02**	**0.00**	**171.35**	**171.35**	**0.00**	**0.00**	**171.49**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.44	2.86	2.26	0.00		0.18	0.18		0.18	0.18	0.00	353.05	353.05	0.04	0.00	353.80
Total	**0.44**	**2.86**	**2.26**	**0.00**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**353.05**	**353.05**	**0.04**	**0.00**	**353.80**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.04	0.44	0.29	0.00	0.03	0.01	0.04	0.00	0.01	0.01	0.00	80.52	80.52	0.00	0.00	80.56
Worker	0.05	0.05	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01	0.00	90.83	90.83	0.00	0.00	90.93
Total	**0.09**	**0.49**	**0.83**	**0.00**	**0.15**	**0.01**	**0.17**	**0.00**	**0.01**	**0.02**	**0.00**	**171.35**	**171.35**	**0.00**	**0.00**	**171.49**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.33	2.18	1.87	0.00		0.13	0.13		0.13	0.13	0.00	294.89	294.89	0.03	0.00	295.46
Total	**0.33**	**2.18**	**1.87**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**294.89**	**294.89**	**0.03**	**0.00**	**295.46**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.03	0.34	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01	0.00	67.45	67.45	0.00	0.00	67.48
Worker	0.04	0.04	0.42	0.00	0.10	0.00	0.11	0.00	0.00	0.01	0.00	74.60	74.60	0.00	0.00	74.68
Total	**0.07**	**0.38**	**0.65**	**0.00**	**0.12**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**	**0.00**	**142.05**	**142.05**	**0.00**	**0.00**	**142.16**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.33	2.18	1.87	0.00		0.13	0.13		0.13	0.13	0.00	294.89	294.89	0.03	0.00	295.46
Total	**0.33**	**2.18**	**1.87**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**294.89**	**294.89**	**0.03**	**0.00**	**295.46**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.03	0.34	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01	0.00	67.45	67.45	0.00	0.00	67.48
Worker	0.04	0.04	0.42	0.00	0.10	0.00	0.11	0.00	0.00	0.01	0.00	74.60	74.60	0.00	0.00	74.68
Total	**0.07**	**0.38**	**0.65**	**0.00**	**0.12**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**	**0.00**	**142.05**	**142.05**	**0.00**	**0.00**	**142.16**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.07	0.44	0.32	0.00		0.04	0.04		0.04	0.04	0.00	41.39	41.39	0.01	0.00	41.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.07**	**0.44**	**0.32**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**41.39**	**41.39**	**0.01**	**0.00**	**41.51**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	2.60	0.00	0.00	2.60
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.60**	**2.60**	**0.00**	**0.00**	**2.60**

3.5 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.07	0.44	0.32	0.00		0.04	0.04		0.04	0.04	0.00	41.39	41.39	0.01	0.00	41.51
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.07**	**0.44**	**0.32**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**41.39**	**41.39**	**0.01**	**0.00**	**41.51**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	2.60	0.00	0.00	2.60
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.60**	**2.60**	**0.00**	**0.00**	**2.60**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.10					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.38
Total	**0.10**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.38**	**0.38**	**0.00**	**0.00**	**0.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.00	0.00	0.21
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.21**	**0.21**	**0.00**	**0.00**	**0.21**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.10					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.38
Total	**0.10**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.38**	**0.38**	**0.00**	**0.00**	**0.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.00	0.00	0.21
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.21**	**0.21**	**0.00**	**0.00**	**0.21**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.81					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	0.00	7.27	7.27	0.00	0.00	7.28
Total	**1.82**	**0.06**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**7.27**	**7.27**	**0.00**	**0.00**	**7.28**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.87	3.87	0.00	0.00	3.87
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.87**	**3.87**	**0.00**	**0.00**	**3.87**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.81					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	0.00	7.27	7.27	0.00	0.00	7.28
Total	**1.82**	**0.06**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**7.27**	**7.27**	**0.00**	**0.00**	**7.28**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.87	3.87	0.00	0.00	3.87
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.87**	**3.87**	**0.00**	**0.00**	**3.87**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.77	1.83	7.47	0.02	1.54	0.09	1.63	0.02	0.09	0.11	0.00	1,293.35	1,293.35	0.05	0.00	1,294.44
Unmitigated	0.77	1.83	7.47	0.02	1.54	0.09	1.63	0.02	0.09	0.11	0.00	1,293.35	1,293.35	0.05	0.00	1,294.44
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	998.00	998.00	998.00	2,834,440	2,834,440
Golf Course	0.00	0.00	0.00		
Library	0.00	0.00	0.00		
Office Park	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Total	998.00	998.00	998.00	2,834,440	2,834,440

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Condo/Townhouse	10.80	7.30	7.50	40.20	19.20	40.60
Golf Course	9.50	7.30	7.30	33.00	48.00	19.00
Library	9.50	7.30	7.30	52.00	43.00	5.00
Office Park	9.50	7.30	7.30	33.00	48.00	19.00
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	368.90	368.90	0.02	0.01	371.21
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	737.80	737.80	0.03	0.01	742.42
NaturalGas Mitigated	0.06	0.52	0.41	0.00		0.00	0.04		0.00	0.04	0.00	567.65	567.65	0.01	0.01	571.10
NaturalGas Unmitigated	0.06	0.52	0.41	0.00		0.00	0.04		0.00	0.04	0.00	567.65	567.65	0.01	0.01	571.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Condo/Townhouse	1.0918e+006	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00	0.00	58.26	58.26	0.00	0.00	58.62
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Library	1.06442e+006	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	56.80	56.80	0.00	0.00	57.15
Office Park	508462	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	27.13	27.13	0.00	0.00	27.30
Quality Restaurant	7.97268e+006	0.04	0.39	0.33	0.00		0.00	0.03		0.00	0.03	0.00	425.45	425.45	0.01	0.01	428.04
Total		**0.06**	**0.51**	**0.41**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**567.64**	**567.64**	**0.01**	**0.01**	**571.11**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Condo/Townhouse	1.0918e+006	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00	0.00	58.26	58.26	0.00	0.00	58.62
Golf Course	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Library	1.06442e+006	0.01	0.05	0.04	0.00		0.00	0.00		0.00	0.00	0.00	56.80	56.80	0.00	0.00	57.15
Office Park	508462	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	27.13	27.13	0.00	0.00	27.30
Quality Restaurant	7.97268e+006	0.04	0.39	0.33	0.00		0.00	0.03		0.00	0.03	0.00	425.45	425.45	0.01	0.01	428.04
Total		**0.06**	**0.51**	**0.41**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**567.64**	**567.64**	**0.01**	**0.01**	**571.11**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Condo/Townhouse	172042					50.04	0.00	0.00	50.36
Golf Course	0					0.00	0.00	0.00	0.00
Library	464783					135.19	0.01	0.00	136.04
Office Park	676319					196.72	0.01	0.00	197.95
Quality Restaurant	1.22337e+006					355.84	0.02	0.01	358.07
Total						**737.79**	**0.04**	**0.01**	**742.42**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Condo/Townhouse	86021.2					25.02	0.00	0.00	25.18
Golf Course	0					0.00	0.00	0.00	0.00
Library	232391					67.60	0.00	0.00	68.02
Office Park	338159					98.36	0.00	0.00	98.98
Quality Restaurant	611683					177.92	0.01	0.00	179.04
Total						**368.90**	**0.01**	**0.00**	**371.22**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.07	0.01	0.62	0.00		0.00	0.01		0.00	0.01	0.00	26.93	26.93	0.00	0.00	27.11
Unmitigated	1.20	0.01	0.87	0.00		0.00	0.04		0.00	0.04	4.25	25.49	29.74	0.01	0.00	30.21
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.19					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.86					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.13	0.00	0.25	0.00		0.00	0.04		0.00	0.04	4.25	24.49	28.74	0.01	0.00	29.20
Landscaping	0.02	0.01	0.62	0.00		0.00	0.00		0.00	0.00	0.00	0.99	0.99	0.00	0.00	1.02
Total	**1.20**	**0.01**	**0.87**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**4.25**	**25.48**	**29.73**	**0.01**	**0.00**	**30.22**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.19					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.86					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	25.93	25.93	0.00	0.00	26.09
Landscaping	0.02	0.01	0.62	0.00		0.00	0.00		0.00	0.00	0.00	0.99	0.99	0.00	0.00	1.02
Total	**1.07**	**0.01**	**0.62**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**26.92**	**26.92**	**0.00**	**0.00**	**27.11**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					268.24	0.33	0.01	279.01
Unmitigated					515.85	0.63	0.02	536.56
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Condo/Townhouse	2.60616 / 1.64301					15.21	0.08	0.00	17.59
Golf Course	0 / 127.489					411.99	0.02	0.01	414.57
Library	1.50687 / 2.35691					13.34	0.05	0.00	14.74
Office Park	6.6899 / 4.10026					38.66	0.21	0.01	44.76
Quality Restaurant	9.15154 / 0.584141					36.65	0.28	0.01	44.89
Total						**515.85**	**0.64**	**0.03**	**536.55**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Condo/Townhouse	1.3552 / 0.854368					7.91	0.04	0.00	9.15
Golf Course	0 / 66.294					214.23	0.01	0.00	215.58
Library	0.783574 / 1.22559					6.94	0.02	0.00	7.67
Office Park	3.47875 / 2.13214					20.10	0.11	0.00	23.28
Quality Restaurant	4.7588 / 0.303753					19.06	0.15	0.00	23.34
Total						**268.24**	**0.33**	**0.00**	**279.02**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					45.63	2.70	0.00	102.26
Unmitigated					45.63	2.70	0.00	102.26
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Condo/Townhouse	18.4					3.74	0.22	0.00	8.37
Golf Course	99.51					20.20	1.19	0.00	45.27
Library	44.35					9.00	0.53	0.00	20.18
Office Park	35.01					7.11	0.42	0.00	15.93
Quality Restaurant	27.51					5.58	0.33	0.00	12.51
Total						**45.63**	**2.69**	**0.00**	**102.26**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Condo/Townhouse	18.4					3.74	0.22	0.00	8.37
Golf Course	99.51					20.20	1.19	0.00	45.27
Library	44.35					9.00	0.53	0.00	20.18
Office Park	35.01					7.11	0.42	0.00	15.93
Quality Restaurant	27.51					5.58	0.33	0.00	12.51
Total						**45.63**	**2.69**	**0.00**	**102.26**

9.0 Vegetation

Appendix C

Phase I Cultural Resources Evaluation (H.E.A.R.T.), January, 2013

A Phase 1 Cultural Resources Evaluation for The Malibu Institute Project County of Los Angeles, California

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January 15, 2013

Summary of Findings

At the request of **Envicom Corporation**, Agoura Hills, California, an updated Phase 1 Cultural Resources Evaluation was prepared for the proposed development of the Malibu Institute on a 650-acre property located at 901 Encinal Canyon Road in the unincorporated area of Malibu currently operated as the Malibu Golf Club. This evaluation is intended to assist the client in achieving compliance with the California Environmental Quality Act (CEQA), California Public Resources Code section 21000, et seq., and guidelines, policies and procedures pertaining to the completion of Phase 1 Cultural Resource Studies within the County of Los Angeles. The scope of work consisted of:

1. performing a records search at the South Central Coastal Information Center, California State University Fullerton;
2. contacting the Native American Heritage Commission (NAHC) in Sacramento for input on sacred land and sensitive Native American issues within the project area;
3. conducting an on-foot surface reconnaissance of the entire proposed development area on the project site; and
4. preparing a report summarizing the results of the records search and field phases.

Regionally, the site is located in the western portion of the Santa Monica Mountains approximately forty-five miles west of downtown Los Angeles. Locally, the project site is situated northwest of the City of Malibu, and south of the Cities of Thousand Oaks and Westlake Village in a rural area of the Santa Monica Mountains lying south of the primary east-west ridgeline. Portions of the site located south of Mulholland Highway also fall within the Coastal Zone as defined by the California Coastal Act. Adjacent land uses are primarily undeveloped private and public lands with large lot rural residential development common along the northern and western boundaries. The project site is comprised of an irregularly shaped assemblage of 29 parcels that total approximately 650 acres, spanning from Encinal Canyon Road on the south to the intersection of Mulholland Drive and Westlake Boulevard on the north (Figure 1). More specifically, the project site is depicted on the Point Dume 7.5-minute USGS topographic map (1995) within portions of Sections 2, 3, 10, 11 and 15 of Township 1 South, Range 19 West (Rancho Topanga Malibu Sequit (Figure 2). The majority of the falls within the upper watershed area of Trancas Canyon with the exception of a small, northerly extension of the project site that spans the drainage divide and falls into the upper watershed of an unnamed tributary to the Carlisle Canyon watershed. Topographically, the site is situated in a bowl created by the crest of the Upper Trancas Canyon drainage basin. The on-site topography ranges in elevation from peaks that reach 1,900 feet to 2,300 feet above mean sea level (MSL) in the northeast and northwest, to valley bottom elevations that fall to approximately 1,300 feet above MSL. To the southeast, adjacent mountain ridges range from 1,400 feet to 1,900 feet above MSL. Landforms southwest of the site have gentler slopes and range from 1,400 feet to 1,700 feet above MSL. The overall elevation differences between the project site and the surrounding mountains generally contribute to the formation of a centralized water drainage pattern with branching tributaries. A series of man-made lakes retain water on site as water features within the existing golf course (Figure 3).

The Malibu Institute (the Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course within the boundaries of the 650-acre project site. The project would provide for the development of educational and meeting facilities, visitor-serving overnight accommodations consisting of 40 bungalow structures, a clubhouse with fitness and spa facilities, a restaurant and lounge, a swimming pool, a golf pro-shop and grill, and associated support facilities including a maintenance building, a golf cart storage barn, a warehouse, and a security/information building. The project also would redesign the existing public golf course to incorporate new “green” features, including a smart irrigation system, drought-tolerant grass, and native vegetation (Figure 4). All of the proposed improvements would be constructed within the previously disturbed area of the Malibu Golf Club, and all of the proposed structures would be clustered within a 20-acre development area in the southern portion of the project site. The reconfigured 18-hole golf course would be redesigned using the acreage of 17 of the existing holes on the golf course, allowing the proposed facilities, including the redesigned golf course, to be constructed within previously disturbed areas. Over 450 acres of native coastal scrub and chaparral, including oak woodland forest, would be left undisturbed and would become permanently dedicated open space.

Existing development on the site consists of the Malibu Golf Club, constructed in the early 1970s, consisting of an 18-hole public golf course with supporting amenities, two surface parking lots, and associated driveways, all located in the central and southern regions of the site (Figure 5).

Based on the U.S. Department of Agriculture (1967), soils on the property belong to the following series: **Hambright Series**, which are shallow, well drained, moderately steep to very steep residual soils occurring on volcanic rocks; **Gazos Series**, which are moderately deep-to-deep, well drained residual soils developed on moderately sloping to very steep shales; **Gilroy Series**, which are moderately deep to deep, well-drained residual soils developed on gently rolling to steep uplands on basic igneous rock; **Gullied Land** which contains gullies that are essentially barren, very shallow, very steep, highly erosive soils material in soft sediments, and very steep escarpments, primarily road cuts along Pacific Coast Highway; **Igneous Rock Land**, which consists of steep to very steep, essentially barren mountainous uplands; and, **Vina Series**, which are very deep, well-drained soils developed on gently to moderately sloping fans and valley floors in alluvium derived from sedimentary rocks.

A record search conducted by professional archaeologist, Wayne Bonner, at the South Central Coastal Information Center, California State University Fullerton on October 1, 2012, indicated the following information for a ¼-mile radius of the project site:

- Two archaeological sites lie within the site boundaries: CA-LAN-527, and CA-LAN-528. Site records for both resources were not located during the record search phase. The SCCIC did not have active files for either resource;
- Two archaeological sites lie outside the northernmost project area boundaries: CA-LAN-864 and CA-LAN-865;
- Five studies encompass portions of the site: McKenna 1990, 2001, 2002; Greenwood & Foster 1985; and Wlodarski 2005;
- One study (Wlodarski 2006) encompassed the entire project site;
- No National Register of Historic Places resources area was identified (1979-2010 and supplements to date);
- No resources on the California Register of Historic Resources exist (1992, with supplemental information to date);
- No listed California Historical Landmarks exist on the site (1995, with supplemental information to date);
- No California Points of Historical Interest are noted for the site (1992, with supplemental information to date);
- No State Historic Resources Commission issues are presented regarding the site (1980-present - minutes from quarterly meeting);
- No Historic Resource Inventory properties are noted regarding the site; and
- The Native American Heritage Commission (NAHC) was contacted regarding Sacred Lands issues and/or Native American concerns pertaining to the project area. A letter response from the NAHC is attached as Appendix A.

Historic maps on file at the Geography Department Map Reference Center, California State University Northridge (CSUN), and City of Los Angeles, Bureau of Engineering, were consulted as follows:

- 1853-1897 Township-Range Plat Survey Maps;
- 1869 Map of Private Grants and Public Lands Adjacent to Los Angeles and San Diego California (Clinton Day);
- 1871 Plat Survey Map of Rancho Topanga Malibu Sequit (granted to Matthew Keller);
- 1881 Map of the County of Los Angeles, California - Stevenson);
- 1888 Map of the County of Los Angeles, California - Rowan);
- 1891 Map of the Reservoir Lands in the County of Los Angeles - Seebold);
- Inspection of the Camulos (1901) and Triunfo Pass (1921/1943) 15-minute USGS topographic maps indicated that by 1900 the region was largely undeveloped. There were only a few dirt roads and scattered structures in place at this time. Pacific Coast Highway appears as an unimproved road with Mulholland Highway, Trancas Canyon, Lechuza Canyon and Nicholas Canyon clearly delineated. Encinal Canyon Road is unmarked with a dirt road trending north up the canyon in 1900. By 1929, Pacific Coast Highway was paved and operational and a few structures appear near and within the project area along unimproved Mulholland Highway. By the 1940s, U.S. Route 101, Mulholland Highway, Decker Canyon Road and Encinal Canyon Road are constructed and several structures exist near the project area. Two structures in particular are denoted on the historic maps within the project site boundaries dating to 1900-1939. One structure is a 1920s residence, while the other house is related to early homesteading in the area (dating to about 1928); and
- 1920s-1970s Fairchild and Spence aerial photographs of the general area.

The scope and primary purpose of this evaluation was to update the records search data on file at the SCCIC-CSUF and contact the NAHC regarding any new issues or concerns it may have pertaining to this project. A prior survey of the entire project site had been conducted by the author, serving as the principal investigator, with the aid of Matthew Conrad serving as the Project Director, and Wayne and Diane Bonner serving as Survey Archaeologists on January 27, and January 28, 2006. The pedestrian survey took roughly 50 person-hours to complete.

The following field observations were made during the 2006 field inspection:

- Access to the golf course and clubhouse is via the main entrance at 901 Encinal Canyon Road. Additional surveying was performed using selected access points off Mulholland Highway and Decker Canyon Road.
- A majority of the landscape within the project site shows signs of having been impacted by man-made activities since the construction of the gold course during the 1970s. The disturbances include:
  - Fairway, bunkers, water hazards and green construction for 18 holes of the golf course designed by golf course architect William Francis Bell, Jr.
  - Generally, the project site contains roughly 118 acres of developed golf course features and roughly 27 acres of associated golf course features inclusive of an entry road, visitor parking, a clubhouse, paved and dirt access roads that traverse the golf course, greens, fairways, bunkers, paved golf cart paths, lakes, small streams and flood control features, utilities, sprinkler systems, fencing, storage and maintenance sheds, cleared vegetation adjacent to the course, and extensive, mature landscaping features.
  - The remaining portions of the site are dominated my modified mesas and knolls, undisturbed moderate-to-steep sloping hillsides, narrow canyons with dense natural vegetation coverage, and other undisturbed open space elements.
  - The project site slopes from north to south, with the northernmost portion of the site along Mulholland Highway and Decker Canyon Road representing the steepest and most rugged portion of the survey area.
  - The western portion of the project site contains steep east-trending hills, terraces, knolls and ridgelines with dense sage-chaparral vegetation coverage.
  - The middle and southern portions of the site are for the most part dominated by valley bottomlands, narrow drainages, small lakes within the golf course complex, mesa tops, and low-lying knolls and hills.
  - The lower-lying areas of the site already have been disturbed extensively in the past due to activities associated with the construction and maintenance of the golf club. The remaining terrain is rocky, mountainous, and steep, and contains dense natural vegetation coverage.

All exposed surface terrain and fortuitous exposures such as rodent burrows, stream cuts, excavated holes and landscaped or cleared areas were thoroughly inspected for signs of cultural resources. The results of the record search phase and pedestrian survey of the project area included:

- Using GPS equipment and archaeological base maps on file at the South Central Coastal Information Center, California State University Fullerton (SCCIC-CSUF), the suspected location of CA-LAN-527 was plotted within 100 feet of the 18th green within the fairway. Since this area was completely covered in grass, landscaping and cart trails, the actual site boundaries could not be substantiated. Since no site record exists, it is unclear the type of resource (prehistoric or historic) at this location, and whether testing had occurred prior to the construction of the golf course. To be conservative, this evaluation assumes the site (CA-LAN-527) or portions of it still exist under the current fairway/green for the 18th hole. Mitigation measures are provided in the mitigation section of this evaluation
- Using GPS equipment, a residence dating to the 1920s was discovered in an area where archaeological site CA-LAN-528 was originally recorded. Since the original site record is missing from the SCCIC-CSUF, the assumption was that this resource was originally recorded as a prehistoric resource, otherwise the letter "H" would have followed the trinomial (i.e., CA-LAN-528-H). Based on that assumption, the field investigation was unable to relocate any prehistoric remains and instead of creating a new trinomial for the historic resource (residence) the trinomial was utilized for the existing structure. A subsequent title search of ownership records for the existing residence located south of Mulholland Highway (CA-LAN-528) revealed the following: 1904 – Fred Theodore Coulter; 1917 - L.M. Moore; 1917 – L.M. Moore to Ellen Moore; 1917 – Ellen Moore to George B. Gay and then George B. Gay and Elizabeth A. Gay to J.L. Flanagan; 1921 – Florence May Flanagan to J.L. Flanagan; 1926 – John L. Flanagan to Henry Chamberlain; 1926 Henry Chamberlain and Catherine Chamberlain to C.E. Hoffman and Blanche C. Hoffman; 10/6/1937 – death of C.E. Hoffman; 1938 – Blanche C. Hoffman to George O'Brien and Marguerite Churchill O'Brien; 1945 - George O'Brien and Marguerite Churchill O'Brien to Gloria J. Brammer; 1948 – Gloria J. Brammer to Beulah M. Brookins; 1951 – Gloria J. Brammer to Beulah M. Brookins; 1951 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Paul G. Davidson and Elsa A. Davidson, and Francis J. Griffin to Grace M. Griffin; 1959 – death of joint tenant to descendent, Paul Glenn Davidson; 1961 - Grace M. Griffin to Beulah M. Brookins; 1972 - Beulah M. Brookins to Church of Perfect Liberty; 1975 - Church of Perfect Liberty to California Fuji

- International, Inc.; 2006 - California Fuji International, Inc. to Malibu Associates, LLC. This structure has been described as a hunting lodge in previous reports associated with this Project site, however, subsequent research

conducted as part of this investigation has not revealed conclusive evidence that the residence was ever used for such purposes. No archaeological component was found on the property. It was probably destroyed by prior owners during modifications to the landscape or was a resource without a subsurface component. Often, prehistoric sites in the Santa Monica Mountains represent small (under 100 sq. meters) lithic or shellfish scatters, hunting encampments or special use activity areas. These resources are usually fragile in nature and face destruction through minor ground disturbing activities such as ground clearance, weed abatement programs and fire suppression activities. Because they are usually surface in nature, they can be recorded one year and then be destroyed through minor man-made disturbances. The prehistoric component that may have originally received the trinomial, CA-LAN-528 appears to have been destroyed in this manner.

- A residence (originally thought to be a hunting lodge) dating to circa 1920, was noted at 32926 Mulholland Highway. Preliminary data indicates homesteaders named the Kesters built and occupied this structure (720 sq. ft.) until 1968 when Mrs. Kester died in a car accident. The Romppanen family then lived in the house from 1968 until 1988 when the Church of Perfect Liberty (CPL) purchased the land with ownership subsequently transferred to California Fuji International, Inc. The residence was upgraded during the 1980s and is currently occupied by a caretaker for the Malibu Golf Club.

No other evidence of prehistoric or historic archaeological resources was noted within the project site. These findings are consistent with prior studies that overlapped the project area. Selected photographs taken of the property appear following the reference section.

Resource Significance

As a means of evaluating the potential significance of a heritage resource, eligibility criteria have been established. The criteria are aimed at examining and documenting such broad behavioral patterns as: ethnicity, acculturation and interaction; the organization and utilization of space by individuals or groups; changing land use patterns; the length and duration of occupation; technological advances and contributions; and, specialized activities and occurrences. Key variables in the determination are site integrity, which takes into account the sense of location, design, setting, materials, workmanship, feeling, or association, and how a potential resource fits into research designs formulated to derive cultural information about how humans utilized a particular area.

CA-LAN-527

This cultural resource is recorded underneath a portion of Fairway 18 and the 18th green. There is no available data concerning this site, so mitigation measures are provided under the assumption this resource may still lie intact below the existing ground surface in the area of the 18th green. With this in mind, the following alternatives will provide direction for the client to proceed with the project under the assumption CA-LAN-527 is a significant resource under CEQA. According to CEQA, mitigating the loss of archaeological resources that may be impacted by a proposed project can be achieved through: (1) avoidance of the site area; (2) the salvage of data from the resource; or (3) a combination of both avoidance and salvage. Avoidance can be accomplished by:

a) Planning construction to miss the site;
b) Planning parks, greenspace, or other open space elements, which would incorporate the archaeological site into the development plans;
c) "Capping" or covering archaeological sites with a layer of soil if; the soils chosen for coverage will not suffer serious compaction; the covering materials are not chemically active; the site is one in which the natural processes of deterioration have been effectively arrested; and, the site has been recorded and the boundaries delineated; or
d) Deeding the site into a permanent conservation easement. In some cases, the boundaries of the cultural resource are unclear, most often this is the case with regard to prehistoric cultural remains where remains are no longer visible or only partially visible as in the case of significant features which remain buried and undetected.

In order to mitigate potential impacts on CA-LAN-527, the project should implement the following mitigation measures:

- Any proposed development within the 18th green and within the 100 feet by 50 feet area east, northeast and southeast of the 18th green shall be avoided by leaving the green and fairway intact (see Figure 5).

- If modifications are proposed for the area demarcated as sensitive on Figure 5, any project development shall be limited to the disturbed soil zone (i.e., where the green and green-related compacted subsoils exist) with capping of

the 18th green and within the 100 feet by 50 feet area east, northeast and southeast of the 18th green prior to any disturbance. If modifications will impact native soils below the disturbed soil zone, then archaeological monitoring shall be required. A monitoring agreement shall be in place and approved by the County of Los Angeles Department of Regional Planning, qualified archaeologist and the Applicant prior to ground disturbing activities.

CA-LAN-528

This cultural resource (formerly considered a hunting lodge) is an abandoned residential structure dating to the 1920s. A title search revealed the following: 1904 – Fred Theodore Coulter; 1917 - L.M. Moore; 1917 – L.M. Moore to Ellen Moore; 1917 – Ellen Moore to George B. Gay and then George B. Gay and Elizabeth A. Gay to J.L. Flanagan; 1921 – Florence May Flanagan to J.L. Flanagan; 1926 – John L. Flanagan to Henry Chamberlain; 1926 Henry Chamberlain and Catherine Chamberlain to C.E. Hoffman and Blanche C. Hoffman; 10/6/1937 – death of C.E. Hoffman; 1938 – Blanche C. Hoffman to George O'Brien and Marguerite Churchill O'Brien; 1945 - George O'Brien and Marguerite Churchill O'Brien to Gloria J. Brammer; 1948 – Gloria J. Brammer to Beulah M. Brookins; 1951 – Gloria J. Brammer to Beulah M. Brookins; 1951 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Paul G. Davidson and Elsa A. Davidson, and Francis J. Griffin to Grace M. Griffin; 1959 – death of joint tenant to descendent, Paul Glenn Davidson; 1961 - Grace M. Griffin to Beulah M. Brookins; 1972 - Beulah M. Brookins to Church of Perfect Liberty; 1975 - Church of Perfect Liberty to California Fuji International, Inc.; 2006 - California Fuji International, Inc. to Malibu Associates, LLC. The title search indicates no one of historic importance owned this residence. Although previous reports regarding this structure have referred to it as a hunting lodge, no evidence was found during the research phase indicating that the building had been used as such. No archaeological component was found on the property based on two thorough inspections of the area surrounding the residence. Prior owners probably destroyed it during modifications to the landscape. Based on information obtained through title research and a field investigation, CA-LAN-528 is not considered significant under CEQA. Because there is no prehistoric component, and there is a lack of historical value and structural integrity associated with the existing residence, no additional archaeological work is warranted for this resource.

The Kester House/Caretakers House - 32926 Mulholland Highway

A residence dating to 1900-1939 was noted at 32926 Mulholland Highway. Preliminary data indicates homesteaders named the Kesters built and occupied this structure (720 sq. ft.) until 1968 when Mrs. Kester died in a car accident. The Romppanen family then lived in the house from 1968 until 1988 when the CPL bought the land. Ultimately, Fuji Corporation purchased the house. It was upgraded during the 1980s and currently serves as a caretaker's residence for the Malibu Golf Club. Due to lack of historical association and structural integrity associated with the existing residence, this structure is not considered significant under CEQA evaluation criteria, and no further archaeological work is required. This house will be retained as part of the Project as a caretaker's residence, so there would be no impact to this building in any event.

No other evidence of prehistoric or historic archaeological resources was noted within the property boundaries. These findings are consistent with prior studies that overlapped the project area. Selected photographs taken of the property are provided.

No additional cultural resource concerns regarding the project site were noted beyond those mentioned above. Any proposed improvements or modifications to the project site must first consider the cultural resource issues addressed in this report. The nature of a walkover can only confidently assess the potential for encountering surface cultural resource remains; therefore, customary caution is advised in developing within the project area. Should unanticipated cultural resource remains be encountered during land modification activities, work must cease, and the County of Los Angeles Department of Regional Planning contacted immediately to determine appropriate measures to mitigate adverse impacts to the discovered resources. Cultural resource remains may include artifacts, shell, bone, features, altered soils, foundations, trash pits and privies, etc. In the event unknown archaeological resources are discovered during Project construction, all ground-disturbing activities within the vicinity of the find shall cease until a qualified archaeological or paleontological monitor inspects the resources, identifies appropriate treatment, and documents the resource as necessary. The archaeologist shall record all recovered archaeological resources on the appropriate California Department of Parks and Recreation Site Forms to be filed with the California Historical Resources

Information System–South Central Coastal Information Center, evaluate the significance of the find, and if significant, determine and implement the appropriate mitigation in accordance with the U.S. Secretary of the Interior and

California Office of Historic Preservation guidelines, including but not limited to a Phase III data recovery and associated documentation. The archaeologist shall prepare a final report about the find to be filed with the Applicant, the County of Los Angeles Department of Regional Planning, and the California Historical Resources Information System–South Central Coastal Information Center, as required by the California Office of Historic Preservation. The report shall include documentation of the resources recovered, a full evaluation of the eligibility with respect to the California Register of Historical Resources, and treatment of the resources recovered. In the event of a find, archaeological and Native American monitoring shall be provided thereafter for any ground-disturbing activities within the boundary of the archaeological site.

In the event human remains are encountered during construction activities, all ground-disturbing activities within the area of the human remains shall cease and the County coroner shall be notified. In the event the remains are determined to be of Native American descent, the coroner shall notify the California Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person(s) thought to be the Most Likely Descendant of the deceased Native American, who shall have 48 hours from notification by the Native American Heritage Commission to inspect the site of the discovery of Native American remains and to recommend to the Applicant or landowner means for the treatment and disposition of the human remains and any associated grave goods. The Applicant or landowner shall reinter the remains and associated grave goods with appropriate dignity on the property in a location not subject to further disturbance. In the event Native American remains are found, Native American monitoring shall be provided thereafter for any ground-disturbing activities in the area of the remains.

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I. Introduction

1.1 Purpose and Scope of the Project

At the request of **Envicom Corporation**, Agoura Hills, California, an updated Phase 1 Cultural Resources Evaluation was prepared for the proposed development of the Malibu Institute on a 650-acre property located at 901 Encinal Canyon Road in the unincorporated area of Malibu currently operated as the Malibu Golf Club. This evaluation is intended to assist the client in achieving compliance with the California Environmental Quality Act (CEQA), California Public Resources section 21000, et seq., and guidelines, policies and procedures pertaining to the completion of Phase 1 Cultural Resource Studies within the County of Los Angeles. The scope of work consisted of:

1. performing a records search at the South Central Coastal Information Center, California State University Fullerton;
2. contacting the Native American Heritage Commission (NAHC) in Sacrament for input on sacred land and sensitive Native American issues within the project area;
3. conducting an on-foot surface reconnaissance of the entire proposed development area on the project site; and
4. preparing a report summarizing the results of the records search and field phases.

1.2 Location and Description of the Project

The project site is located at 901 Encinal Canyon Road, within an unincorporated Malibu area of Los Angeles County. Regionally, the site is located in the western portion of the Santa Monica Mountains approximately forty-five miles west of downtown Los Angeles. Locally, the project site is situated northwest of the City of Malibu, and south of the Cities of Thousand Oaks and Westlake Village (Figure 1). More specifically, the project site is depicted on the Point Dume 7.5-minute USGS topographic map (1995) within portions of Sections 2, 3, 10, 11 and 15 of Township 1 South, Range 19 West (Figure 2) in a rural area of the Santa Monica Mountains lying south of the primary east-west ridgeline. The project site is comprised of an irregularly shaped assemblage of 29 parcels that total approximately 650 acres, spanning from Encinal Canyon Road on the south to the intersection of Mulholland Drive and Westlake Boulevard on the north. Portions of the site located south of Mulholland Highway also fall within the Coastal Zone as defined by the California Coastal Act. Adjacent land uses are primarily undeveloped private and public lands with large lot rural residential development common along the northern and western boundaries.

Figure 1: Regional Map

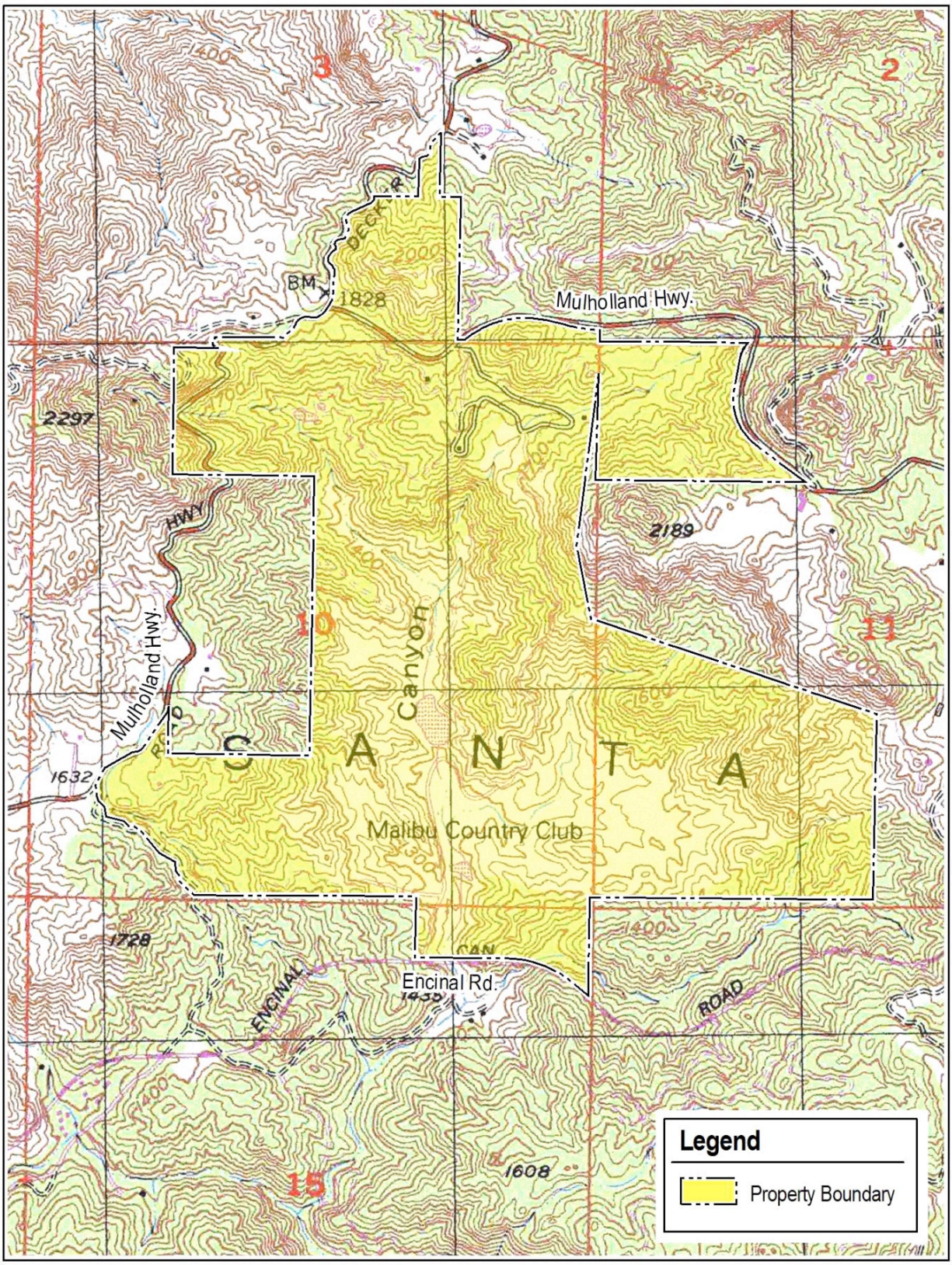

Figure 2: Location of the Survey

The majority of the project site falls within the upper watershed area of Trancas Canyon with the exception of a small, northerly extension of the project site that spans the drainage divide and falls into the upper watershed of an unnamed tributary to the Carlisle Canyon watershed. Topographically, the site is situated in a bowl created by the crest of the Upper Trancas Canyon drainage basin. The on-site topography ranges in elevation from peaks that reach 1,900 feet to 2,300 feet above mean sea level (MSL) in the northeast and northwest, to valley bottom elevations that fall to about 1,300 feet above MSL. To the southeast, adjacent mountain ridges range from 1,400 feet to 1,900 feet above MSL. Landforms southwest of the site have gentler slopes and range from 1,400 feet to 1,700 feet above MSL. The overall elevation differences between the project site and the surrounding mountains generally contribute to the formation of a centralized water drainage pattern with branching tributaries. A series of man-made lakes retain water on-site as water features within the existing golf course (Figure 3).

Figure 3: A Topographic Map of the Project Development Area

The Malibu Institute (the Applicant) proposes to create a sports-oriented educational retreat affiliated with the University of Southern California to complement a remodeled 18-hole golf course within the boundaries of the 650-acre project site. The project would provide for the development of educational and meeting facilities, visitor-serving overnight accommodations consisting of 40 bungalow structures, a clubhouse with fitness and spa facilities, a restaurant and lounge, a swimming pool, a golf pro-shop and grill, and associated support facilities including a maintenance building, a golf cart storage barn, a warehouse, and a security/information building. The project also would redesign the existing public golf course to incorporate new "green" features, including a smart irrigation system, drought-tolerant grass, and native vegetation (Figure 4).

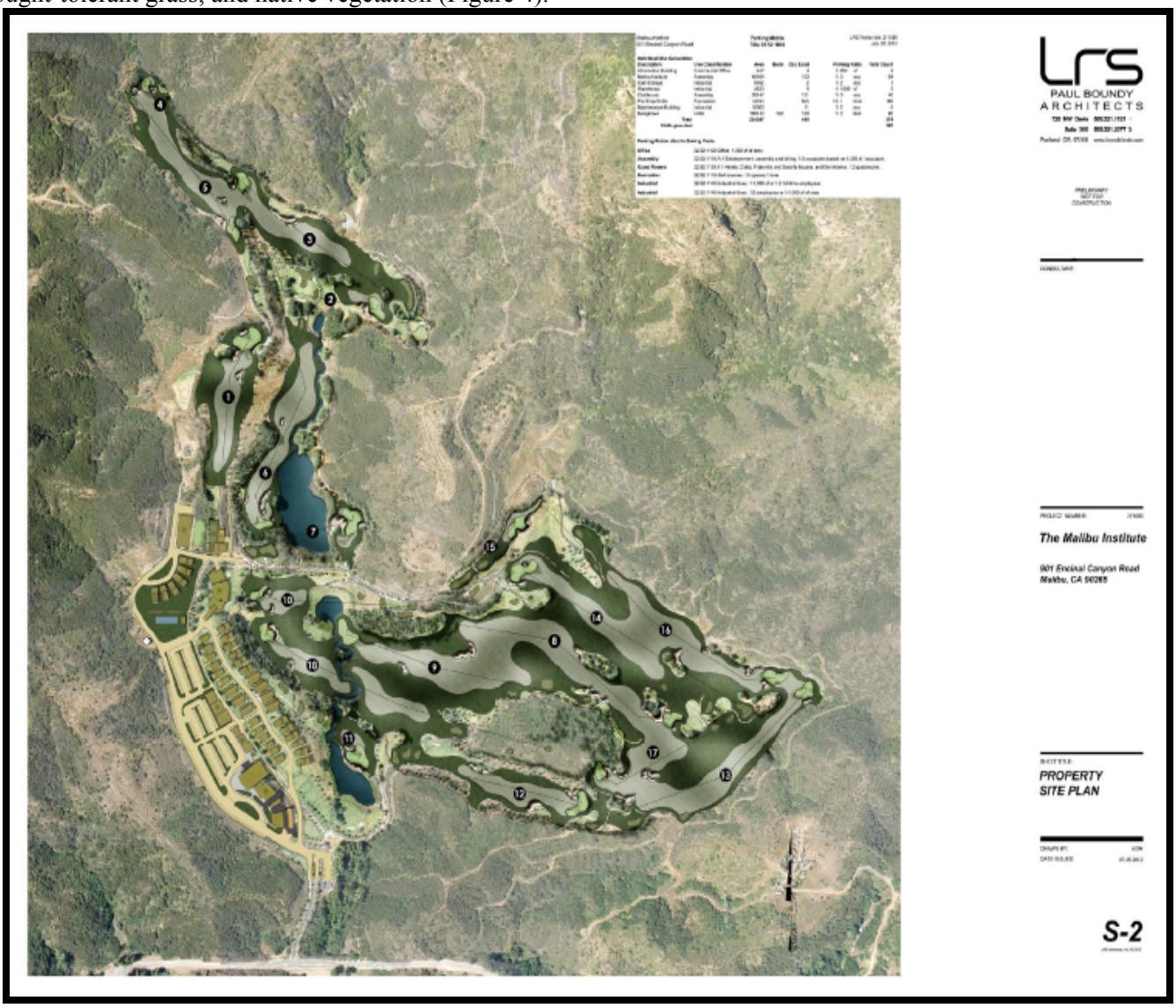

Figure 4: Aerial View of the Project Development Area

All proposed improvements would be constructed within the previously disturbed area of the Malibu Golf Club, and all of the proposed structures would be clustered within a 20-acre development area in the southern portion of the project site. The reconfigured 18-hole golf course would be redesigned using the acreage of 17 of the existing holes on the golf course, allowing the proposed facilities, including the redesigned golf course, to be constructed within previously disturbed areas. Over 450 acres of native coastal scrub and chaparral, including oak woodland forest, would be left undisturbed and would become permanently dedicated open space.

Existing development on the site consists of the Malibu Golf Club, constructed in the early 1970s, consisting of an 18-hole public golf course with supporting amenities, two surface parking lots, and associated driveways, all located in the central and southern regions of the project site (Figure 5).

Figure 5: Existing Conditions

II. Environmental Information

2.1 Geology/Topography

The project area lies on the southern slope of the Santa Monica Mountains, which is part of the Transverse Range geologic province. Primary stratigraphic units in the general area include Pleistocene Marine Deposits and Marine Terrace Deposits consisting of sand and silt; Upper Miocene Marine Sedimentary Rocks consisting of shale, sandstone, siltstone and conglomerate; and Miocene Volcanic Rocks (State of California, 1969) consisting of basalt, rhyolite, andesite and flow breccias. Volcanic materials inclusive of large outcrops dominate a majority of the geology for the project site. A portion of Trancas Canyon trends north to south through the site. An active golf course occupies a majority of the bottomland to gently sloping land in the central, southeastern and south central portions of the site. The land surrounding the landscaped golf course is hilly to mountainous, and unaltered except for a few firebreaks, old dirt trails and scattered structures. Maximum elevation in the northmost portion of the site exceeds more than 2000 feet above sea level, while elevation near the southern entrance is roughly 1300 feet above sea leavel. The central portion of the site varies between 1300-1500 feet above MSL.

2.2 Soils

Based on the U.S. Department of Agriculture (1967), soils on the site belong to the following series:

- **Hambright Series**, which are shallow, well drained, moderately steep to very steep residual soils occurring on volcanic rocks. They are characterized by very thin dark grayish brown, medium textured, granular, mildly alkaline surface soils, brown gravelly moderately fine textured subangular blocky, mildly alkaline subsoils over basalt and volcanic breccia at depths of 8-10 inches (20 cm-25 cm);
- **Gazos Series**, which are moderately deep-to-deep, well drained residual soils developed on moderately sloping to very steep shales. They have dark gray, granular, slightly acid, moderately fine textured surface soils, grayish brown angular blocky, neutral, moderately fine textured subsoils over banded shale and mudstone at depths of 20-46 inches (51 cm - 117 cm);
- **Gilroy Series**, which are moderately deep to deep, well-drained residual soils developed on gently rolling to steep uplands on basic igneous rock. They are characterized by dark grayish brown, medium to moderately fine textured granular, slightly acid surface soils, brown moderately fine textured angular blocky, medium acid subsoils resting on fractured basalt and volcanic breccia at 22-40 inches;
- **Gullied Land** which contains three kinds of surface features: Deep gullies that are essentially barren; very shallow, very steep, highly erosive soils material in soft sediments; and very steep escarpments, primarily road cuts along Pacific Coast Highway;
- **Igneous Rock Land** is a miscellaneous land type consisting of steep to very steep, essentially barren mountainous uplands. There is over 20% exposed tock outcrops. The soils are very shallow and relatively stable and are low producers of silt and debris. The major rocks include basalt, andesite, rhyolite and volcanic breccias; and
- **Vina Series** are very deep, well-drained soils developed on gently to moderately sloping fans and valley floors in alluvium derived from sedimentary rocks. The soils are characterized by dark grayish brown medium to moderately fine-textured, granular, neutral surface layers and brown medium to moderately fine textured, massive, mildly alkaline subsoils.

2.3 Climate

The region is classified as Mediterranean warm, and lies between the dry climate of the Mojave Desert, and the humid mesothermal climate of the Pacific Coast. It is characterized by warm, dry summers, and mild, moderately wet winters. Temperatures range from about 100 degrees in summer, to the low 30s in winter.

2.4 Flora and Wildlife

The region supports several major plant communities including: riparian with species of sycamore, willow, alder and mulefat; sage/chaparral, with species of white, black, purple and coastal sage, buckwheat, yerba santa, sumac, lemonadeberry; and manzanita, chamise, yucca, scrub oak, and toyon. Regional wildlife consists of seasonally fluctuating populations of quail, rabbit, rodents, deer, lizards, snakes, and numerous species of birds. Combined with nearby, abundant marine life, the area provided an extensive resource base for the prehistoric inhabitants.

III. Cultural Overview

3.1 Prehistory/Protohistory

At Spanish contact, the region was occupied by the Chumash, a diverse population who settled along the California coast from Malibu Creek on the southeast, Estero Bay to the north, Tejon Pass and the Cuyama River inland, and the islands of San Miguel, Santa Rosa, and Santa Cruz. Wallace (1955) and Warren (1968) developed chronologies for the region, and King (1982) proposed sequences based on changes in ornaments, beads and other artifacts. After A.D. 1000, changes in bead types suggest the operation of a highly complex economic system by the time the Spanish arrived. Following the 1542 Cabrillo voyage, many small Chumash settlements were abandoned, and some of the largest historic towns were founded. This population shift is attributed to growth in importance of trade centers and the development of more integrated political confederations. The Chumash economic system enabled them to make efficient use of diverse environments within their territory. Acorns and seeds were traded between the islands, mainland and interior populations who lacked marine resources traded with coastal populations for fish and other seafood. Most religious ceremonies had their roots in the Early Period when objects similar to those used historically were placed in mortuary associations or owned by religious leaders. References include: Carrico & Wlodarski (1983), Dillon & Boxt (1989), Grant (1978), Hudson et al. (1977), Hudson & Underhay (1978), Hudson (1979), Hudson & Blackburn (1979-87), C. King (1994, 2000), Kroeber (1925), Landberg (1965), Leonard (1971), Miller (1988), Gibson (1991), and the Santa Barbara Museum of Natural History (1986, 1991).

3.2 Ethnographic Information

The Spanish viewed the Chumash as unique among California Indians due to their knowledge of the sea, canoe building expertise, ceremonial organization, their interest in acquiring and displaying possessions, willingness to work, and their extensive trade networks. According to C. King (1982) the protohistoric Chumash maintained the most complex bead money system in the world. Information from Schumacher & Bowers (1880s), Rogers (1920s), Harrington (1930s), and Woodward & Van Valkenburgh (1920s & 1930s), suggests the Chumash were divided into political provinces, with each containing a capital where villages now exist. Based on C. King (1975), and Applegate (1974, 1975) the following placenames exist in the region:

Alqilko'wi	"white of the eye" - Village in Little Sycamore Canyon, west of Point Dume
Humaliwu	"[The surf] sounds loudly"? - Village at what is now Malibu
Lisiqishi	A village at Arroyo Sequit, west of Point Dume
Lojostohni	A village located at the mouth of Trancas Canyon at the PCH
Muwu	"beach" - Village at what is now the mouth of Mugu Lagoon
Niko	"water?" - in Malibu, east of Point Dume
Seq'is	"beachworm" - now Arroyo Sequit
Shuwalahsho	"sycamore" - Village in Big Sycamore Canyon
Sumo	"abundance" - village at mouth of what is now Zuma Canyon

3.3 History

From the voyages of Cabrillo in 1542 and Vizcaino in 1602, to the land expeditions of Portola in 1769 and Anza from 1773-1776, there was little interference from white men in the Chumash region. The Mission Period followed the Spanish Period when 21 missions were established between 1769 and 1823. All of the missions were located a day's ride from one another along the Camino Real which connected San Diego with Solano. Native Americans were slowly assimilated into the mission system through recruitment, and moved from their villages and the islands to help sustain the missions. During this period, many introduced diseases contributed to the decimation of Native Americans. After the decline of the mission system, large land grants became ranchos including Las Virgenes, El Conejo and Topanga Malibu-Sequit. During this time, land was primarily used for cattle grazing, agriculture, and ranching.

The first European settlers in the Malibu area were Felipe Santiago Tapia and his family. Jose Bartolome, Tapia's eldest son, eventually received a permit to graze cattle on the future rancho lands and in the late 1700s applied for formal possession of the land. Around 1802-1804, Tapia was granted most of the coastal land extending from the Ventura County line near Point Mugu to Las Flores Canyon on the east as grazing area for his livestock. The only access at the time was by muleback or boat. The land passed from Tapia to Bartolome and then to his son Tiburcio, and continued to be used for cattle and agriculture (Greene 1980). Eventually, Leon Victor Prudhomme, a Frenchman obtained title from Tapia's widow in 1848 by marrying a daughter of Tiburcio Tapia. Problems during the Land Commission hearings forced Prudhomme to sell to Matthew Keller. The 13,315-acre land grant was surveyed as Rancho Topanga Malibu Sequit and patented on August 29, 1873 to Keller.

The rancho was eventually sold to Frederick Hastings Rindge in 1891. As one of the last, intact, Spanish land grants, it served as a country home for the Rindge family, who kept a tight watch on their private domain. Frederick's widow, Rhoda May Rindge, tried for years to keep the Southern Pacific Railroad, the state and homesteaders from encroaching on her land. After 17 years of litigation, the State of California was victorious and the Roosevelt Highway (now the Pacific Coast Highway) was opened to the public between Santa Monica and Oxnard in June 1929. The court costs forced May Rindge to begin leasing and then selling property north of the mouth of Malibu Creek. Malibu Colony, a haven for the rich and famous, was subdivided and opened for sale in the 1930's. During this time, May's daughter, Rhoda Agatha, married Merritt Huntley Adamson and they built a summer home on Vaquero Hill (in Malibu Lagoon State Park) and another home in Serra Retreat (which opened as a private retreat in 1943). In order to provide tiles for the two homes, May Rindge brought in the finest craftsmen and established the Malibu Tile Works.

Since the 1900s, and thanks in part to the movie industry, and the construction of the Pacific Coast Highway and main arterial roads through the Santa Monica Mountains, Malibu has become one of the most desirable areas to own real estate in the United States. Land use in the region has been under the jurisdiction of the California Coastal Commission, which has limited development in the area since the 1970s. Additionally, large portions of the region have been set aside as part of the Santa Monica Mountains National Recreation Area for the enjoyment of all.

The Trancas Country Club was constructed in the 1970s as a fully functioning 18-hole golf course, and is now operated as the Malibu Golf Club. Prior to that time, the area was often referred to as Trancas Lakes and during the late 1920s a residential structure was built along Mulholland Highway to the north of the current golf club. This structure had reportedly been used as a hunting lodge, however, subsequent investigations were not able to confirm this use. This lodge/residence still exists on the bluffs overlooking the golf club and was given a permanent trinomial (CA-LAN-528) designating it as a potential resource in the State of California by indicating that the building may have been associated with the lives of persons important to California history, although it is currently abandoned. The following reference material is recommended for the Malibu area: Greenberg (1980); Doyle, et al. (1985); Rindge (1985); Rindge et al. (1988); Dowey (1995); Myrick (1996); Hall (2005); and, Stotsenberg (2005).

IV. Background Research Synthesis

A record search conducted by professional archaeologist, Wayne Bonner, at the South Central Coastal Information Center, California State University Fullerton (SCCIC-CSUF) on October 1, 2012, indicated the following results for a ¼-mile radius of the project site:

- Two archaeological sites lie within the project site boundaries: CA-LAN-527, and CA-LAN-528. Site records for both resources were unable to be located during the record search phase. The SCCIC-CSUF did not have active files for either resource;
- Two archaeological sites lie outside the northernmost project area boundaries: CA-LAN-864 and CA-LAN-865;
- Five studies have been conducted that encompass portions of the subject property: McKenna 1990, 2001, 2002; Greenwood & Foster 1985; and Wlodarski 2005;
- One study (Wlodarski 2006) encompassed the entire project site;
- No National Register of Historic Places resources area were identified on the project site (1979-2010 and supplements to date);
- No resources listed on the California Register of Historic Resources exist on the project site (1992, with supplemental information to date);
- No listed California Historical Landmarks exist on the project site (1995, with supplemental information to date);
- No California Points of Historical Interest are noted for the project site (1992, with supplemental information to date);
- No State Historic Resources Commission issues are presented for the project site (1980-present - minutes from quarterly meeting);
- No Historic Resource Inventory properties are noted for the project site; and
- The Native American Heritage Commission (NAHC) was contacted regarding Sacred Lands issues and/or Native American concerns directly pertaining to the project area. A letter response from the NAHC is attached as Appendix A.

Historic maps on file at the Geography Department Map Reference Center, California State University Northridge (CSUN), and City of Los Angeles, Bureau of Engineering, were consulted as follows:

- 1853-1897 Township-Range Plat Survey Maps;
- 1869 Map of Private Grants and Public Lands Adjacent to Los Angeles and San Diego California (Clinton Day);
- 1871 Plat Survey Map of Rancho Topanga Malibu Sequit (granted to Matthew Keller);
- 1881 Map of the County of Los Angeles, California - Stevenson);
- 1888 Map of the County of Los Angeles, California - Rowan);
- 1891 Map of the Reservoir Lands in the County of Los Angeles - Seebold);
- Inspection of the Camulos (1901) and Triunfo Pass (1921/1943) 15-minute USGS topographic maps indicated by 1900 the region was largely undeveloped. There were only a few dirt roads and scattered structures in place at this time. Pacific Coast Highway appears as an unimproved road with Mulholland Highway, Trancas Canyon, Lechuza Canyon and Nicholas Canyon clearly delineated. Encinal Canyon Road is unmarked with a dirt road trending north up the canyon in 1900. By 1929, Pacific Coast Highway was paved and operational and a few structures appear near and within the project site along unimproved Mulholland Highway. By the 1940s, U.S. Route 101, Mulholland Highway, Decker Canyon Road and Encinal Canyon Road are constructed and several structures exist near the project site. Two structures are denoted on the historic maps within the project site dating to circa 1920s. One structure is a 1928 residence, while the other structure, built in the 1920s, was related to early homesteading in the area; and
- 1920-1970 Fairchild and Spence aerial photographs of the general area.

V. Field Reconnaissance Program

5.1 Methodology

A pedestrian survey entailing the inspection of the proposed development area on the project site was performed on January 27-28, 2006, with a follow-up spot inspection on November 7, 2012. The entire process required 56 person-hours to complete.

5.2 Crew

The survey crew consisted of the following individuals:

- Principal Investigator, ***Robert Wlodarski,*** who has a B.A. in History and Anthropology, a M.A. in Anthropology from California State University Northridge (CSUN), forty years of professional experience in California archaeology with over 1600 projects completed to date, certification in field archaeology and theoretical/ archival research by the Register of Professional Archaeologists [RPA]; and is a registered California historian by the California Committee for the Promotion of History [CCPH]
- Project Director, ***Matthew Conrad***, who has an B.A. in Anthropology from CSUN, completed his B.A. requirements at CSUN and his M.A., in Architecture at California State Poly Pomona while working for Robert Lopez; the USDA Forest Service, C.A.R.E, H.E.A.R.T., MBA, and WH Bonner and Associates; and
- Survey Archaeologist, ***Wayne Bonner***, with over forty years of experience in southern California
- Archaeology, a M.A. in Anthropology from California State University Long Beach, and is certified in field archaeology by the RPA; and
- Survey Archaeologist, ***Diane Bonner***, with a M.S. in Geology, thirty years of experience in geology, twenty-four years of experience in geoarchaeology, and is a member of the Geological Society of America.

5.3 Results

The following field observations were made during the 2006 field inspection:

- Access to the golf course and clubhouse is via the main entrance at 901 Encinal Canyon Road. Additional surveying was performed using selected access points off Mulholland Highway and Decker Canyon Road.
- A majority of the landscape within the project site shows signs of having been impacted by man-made activities since the construction of the gold course during the 1970s. The disturbances include:
  - Fairway, bunkers, water hazards and green construction for 18 holes of the golf course designed by golf course architect William Francis Bell, Jr.
  - Generally, the project site contains roughly 118 acres of developed golf course features and roughly 27 acres of associated golf course features inclusive of an entry road, visitor parking, a clubhouse, paved and dirt access roads that traverse the golf course, greens, fairways, bunkers, paved golf cart paths, lakes, small streams and flood control features, utilities, sprinkler systems, fencing, storage and maintenance sheds, cleared vegetation adjacent to the course, and extensive, mature landscaping features.
  - The remaining portions of the site are dominated my modified mesas and knolls, undisturbed moderate-to-steep sloping hillsides, narrow canyons with dense natural vegetation coverage, and other undisturbed open space elements.
  - The project site slopes from north to south, with the northernmost portion of the site along Mulholland Highway and Decker Canyon Road representing the steepest and most rugged portion of the survey area.
  - The western portion of the project site contains steep east-trending hills, terraces, knolls and ridgelines with dense sage-chaparral vegetation coverage.
  - The middle and southern portions of the site are for the most part dominated by valley bottomlands, narrow drainages, small lakes within the golf course complex, mesa tops, and low-lying knolls and hills.
  - The lower-lying areas of the site already have been disturbed extensively in the past due to activities associated with the construction and maintenance of the golf club. The remaining terrain is rocky, mountainous, and steep, and contains dense natural vegetation coverage.

All exposed surface terrain and fortuitous exposures such as rodent burrows, stream cuts, excavated holes and landscaped or cleared areas were thoroughly inspected for signs of cultural resources. Figure 6 (strictly confidential in nature and is to be used solely for planning purposes and not for public distribution) illustrates the results. The results of the pedestrian survey follow.

5.3.1 CA-LAN-527

Using GPS equipment and archaeological base maps on file at the SCCIC-CSUF, the suspected location of CA-LAN-527 was plotted within 100 feet of the 18th green within the fairway. Since this area was completely covered in grass, landscaping and cart trails, the actual site boundaries could not be substantiated. Since no site record exists, the type of resource (prehistoric or historic) on this site and whether testing or excavation had occurred prior to the construction of the golf course could not be confirmed. To be conservative, this evaluation assumes the site or portions of the site still exist under the current fairway/green for the 18th hole. Mitigation measures are provided in the mitigation section.

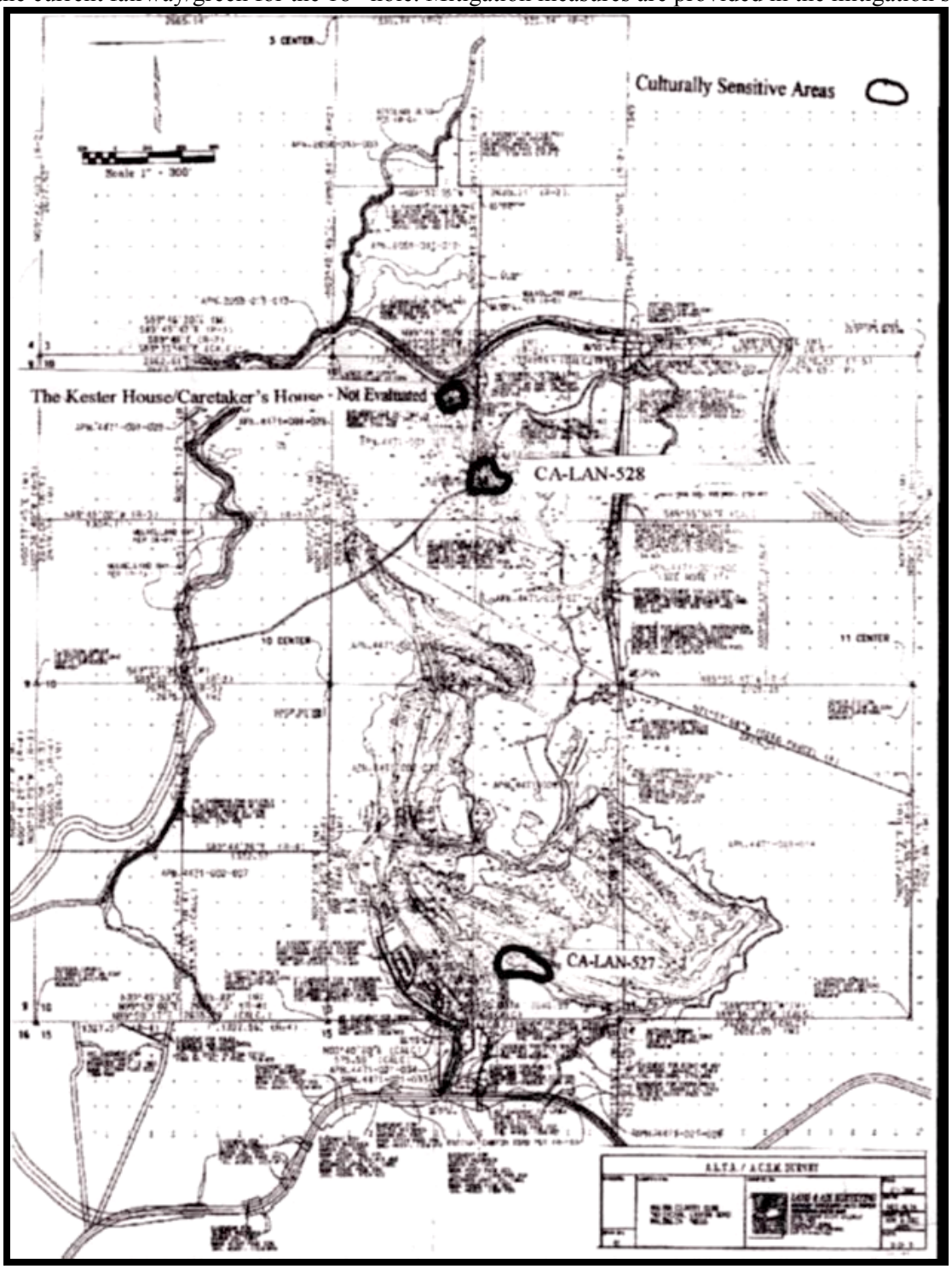

Figure 6: Cultural Resource Sensitivity Map of the Project Area
(Confidential – Not for public distribution)

Looking west toward the 18th Fairway & green, (CA-LAN-527 recorded in this area)

5.3.2 CA-LAN-528

This cultural resource (formerly considered a hunting lodge) is an abandoned residential structure dating to the 1920s. A title search revealed the following: 1904 – Fred Theodore Coulter; 1917 - L.M. Moore; 1917 – L.M. Moore to Ellen Moore; 1917 – Ellen Moore to George B. Gay and then George B. Gay and Elizabeth A. Gay to J.L. Flanagan; 1921 – Florence May Flanagan to J.L. Flanagan; 1926 – John L. Flanagan to Henry Chamberlain; 1926 Henry Chamberlain and Catherine Chamberlain to C.E. Hoffman and Blanche C. Hoffman; 10/6/1937 – death of C.E. Hoffman; 1938 – Blanche C. Hoffman to George O'Brien and Marguerite Churchill O'Brien; 1945 - George O'Brien and Marguerite Churchill O'Brien to Gloria J. Brammer; 1948 – Gloria J. Brammer to Beulah M. Brookins; 1951 – Gloria J. Brammer to Beulah M. Brookins; 1951 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Paul G. Davidson and Elsa A. Davidson, and Francis J. Griffin to Grace M. Griffin; 1959 – death of joint tenant to descendent, Paul Glenn Davidson; 1961 - Grace M. Griffin to Beulah M. Brookins; 1972 - Beulah M. Brookins to Church of Perfect Liberty; 1975 - Church of Perfect Liberty to California Fuji International, Inc.; 2006 - California Fuji International, Inc. to Malibu Associates, LLC. The title search indicates no one of historic importance owned this residence. Although previous reports regarding this structure have referred to it as a hunting lodge, no evidence was found during the research phase indicating that the building had been used as such. No archaeological component was found on the property based on two thorough inspections of the area surrounding the residence. Prior owners probably destroyed it during modifications to the landscape. Based on information obtained through title research and a field investigation, CA-LAN-528 is not considered significant under CEQA. Because there is no prehistoric component, and there is a lack of historical value and structural integrity associated with the existing residence, no additional archaeological work is warranted for this resource.

L/C/R: Front of the bluff structure facing southwest; back of structure facing northeast

5.3.3 The Kester House/Caretakers House - 32926 Mulholland Highway

A residence dating to 1900-1939 was noted at 32926 Mulholland Highway. Preliminary data indicates homesteaders named the Kesters built and occupied this structure (720 sq. ft.) until 1968 when Mrs. Kester died in a car accident. The Romppanen family then lived in the house from 1968 until 1988 when the CPL bought the land. Ultimately, Fuji Corporation purchased the house. It was upgraded during the 1980s and currently serves as a caretaker's residence for the Malibu Golf Club. Due to lack of historical association and structural integrity associated with the existing residence, this structure is not considered significant under CEQA evaluation criteria, and no further archaeological work is required. This house will be retained as part of the Project as a caretaker's residence, so there would be no impact to this building in any event.

L/R: View of the Kester House, now the caretaker's residence circa 1960s

No other evidence of prehistoric or historic archaeological resources was noted within the project site. These findings are consistent with prior studies that overlapped the project site. Selected photographs taken of the property following as Plate 1.

Plate 1: Selected Photographs of the Project Area

L/C/R: Pre-1975 view of the golf course; Southeast towards the Golf Club; South toward the Golf Club; northern project area

L/C/R: Southeast portion of the golf course; Looking south toward the clubhouse; Facing south (disturbed western project area)

L/C/R: Looking SW towards golf course; Looking south toward the clubhouse; View of mesa looking North towards Mulholland

L/C/R: Looking east from lower mesa, mid-way through the golf course; Looking south from lower mesa

5.4 Cultural Resource Significance

As a means of evaluating the potential significance of a heritage resource, eligibility criteria have been established. The criteria are aimed at examining and documenting such broad behavioral patterns as: ethnicity, acculturation and interaction; the organization and utilization of space by individuals or groups; changing land use patterns; the length and duration of occupation; technological advances and contributions; and specialized activities and occurrences. Key variables in the determination are site integrity which takes into account the sense of location, design, setting, materials, workmanship, feeling, or association, and how a potential resource fits into research designs formulated to derive cultural information about how humans utilized a particular area.

5.4.1 CA-LAN-527

This cultural resource is recorded underneath a portion of Fairway 18 and the 18th green. There is no available data concerning this site, so mitigation measures are provided under the assumption this resource may still lie intact below the existing ground surface in the area of the 18th green. With this in mind, the following alternatives will provide direction for the client to proceed with the project under the assumption CA-LAN-527 is a significant resource under CEQA. According to CEQA, mitigating the loss of archaeological resources that may be impacted by a proposed project can be achieved through: (1) avoidance of the site area; (2) the salvage of data from the resource; or (3) a combination of both avoidance and salvage. Avoidance can be accomplished by:

a) Planning construction to miss the site;
b) Planning parks, greenspace, or other open space elements, which would incorporate the archaeological site into the development plans;
c) "Capping" or covering archaeological sites with a layer of soil if; the soils chosen for coverage will not suffer serious compaction; the covering materials are not chemically active; the site is one in which the natural processes of deterioration have been effectively arrested; and, the site has been recorded and the boundaries delineated; or
d) Deeding the site into a permanent conservation easement. In some cases, the boundaries of the cultural resource are unclear, most often this is the case with regard to prehistoric cultural remains where remains are no longer visible or only partially visible as in the case of significant features which remain buried and undetected.

In order to mitigate potential impacts on CA-LAN-527, the following mitigation measures should be implemented:

- Any proposed development within the 18th green and within the 100 feet by 50 feet area east, northeast and southeast of the 18th green shall be avoided by leaving the green and fairway intact (see Figure 5).
- If modifications are proposed for the area demarcated as sensitive on Figure 5, any project development shall be limited to the disturbed soil zone (i.e., where the green and green-related compacted subsoils exist) with capping of the 18th green and within the 100 feet by 50 feet area east, northeast and southeast of the 18th green prior to any disturbance. If modifications will impact native soils below the disturbed soil zone, then archaeological monitoring shall be required. A monitoring agreement shall be in place and approved by the County of Los Angeles Department of Regional Planning, qualified archaeologist and the Applicant prior to ground disturbing activities.

5.4.2 CA-LAN-528

This cultural resource (formerly considered a hunting lodge) is an abandoned residential structure dating to the 1920s. A title search revealed the following: 1904 – Fred Theodore Coulter; 1917 - L.M. Moore; 1917 – L.M. Moore to Ellen Moore; 1917 – Ellen Moore to George B. Gay and then George B. Gay and Elizabeth A. Gay to J.L. Flanagan; 1921 – Florence May Flanagan to J.L. Flanagan; 1926 – John L. Flanagan to Henry Chamberlain; 1926 Henry Chamberlain and Catherine Chamberlain to C.E. Hoffman and Blanche C. Hoffman; 10/6/1937 – death of C.E. Hoffman; 1938 – Blanche C. Hoffman to George O'Brien and Marguerite Churchill O'Brien; 1945 - George O'Brien and Marguerite Churchill O'Brien to Gloria J. Brammer; 1948 – Gloria J. Brammer to Beulah M. Brookins; 1951 – Gloria J. Brammer to Beulah M. Brookins; 1951 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Beulah M. Brookins to Paul G. Davidson and Elsa A. Davidson; 1954 - Paul G. Davidson and Elsa A. Davidson, and Francis J. Griffin to Grace M. Griffin; 1959 – death of joint tenant to descendent, Paul Glenn Davidson; 1961 - Grace M. Griffin to Beulah M. Brookins; 1972 - Beulah M. Brookins to Church of Perfect Liberty; 1975 - Church of Perfect Liberty to California Fuji International, Inc.; 2006 - California Fuji International, Inc. to Malibu Associates, LLC. The title search indicates no one of historic importance owned this residence. Although previous reports regarding this structure have referred to it as a hunting lodge, no evidence was found during the research phase indicating that the building had been used as such. This abandoned residence is a 4,749-square foot, two-story redwood-frame structure constructed around 1928. Although originally constructed of redwood, stucco was added in the 1980s along with new windows, doors, a composite roof, and a garage. A round, brick fountain in the courtyard made of Malibu tile was destroyed in the 1980s. The abandoned residence is in poor condition with graffiti and evidence of rat infestation. As a result, it has lost much of its integrity to be identifiable as an early twentieth-century hunting lodge in terms of location, design, setting, materials, and workmanship. Due to substantial alterations and its state of decay, the abandoned residence does not convey its historic context. Thus, this abandoned residence is not potentially eligible as a historic resource and therefore the "historical component" ascribed to CA-LAN-528 is not considered a significant historic resource under CEQA. No archaeological component was found on the property based on two thorough inspections of the area surrounding the residence. Prior owners probably destroyed it during modifications to the landscape. Based on information obtained through title research and a field investigation, CA-LAN-528 is not considered significant under CEQA. Because there is no prehistoric component, and there is a lack of historical value and structural integrity associated with the existing residence, no additional archaeological work is warranted for this resource.

5.4.3 The Kester House/Caretaker's House - 32926 Mulholland Highway

A residence dating to 1900-1939 was noted at 32926 Mulholland Highway. Preliminary data indicates that the Kesters built and occupied this structure until 1968 when Mrs. Kester died in a car accident. The Romppanen family then lived in the house from 1968 until 1988 when the CPL bought the land. Ultimately, Fuji Corporation purchased the house. It was upgraded during the 1980s and currently serves as a caretaker's residence for the Malibu Golf Club. Due to lack of historical association and structural integrity associated with the existing residence, this structure is not considered significant under CEQA evaluation criteria, and no further archaeological work is required. This house will be retained as part of the Project as a caretaker's residence, so there would be no impact to this building in any event.

5.5 Additional Concerns

No additional cultural resource concerns regarding the project site are noted beyond those mentioned above. Any proposed improvements or modifications to the project site must first consider the cultural resource issues addressed in this report. The nature of a walkover can only confidently assess the potential for encountering surface cultural resource remains; therefore, customary caution is advised in developing within the project site. Should unanticipated cultural resources be encountered during land modification activities, work must cease, and the County of Los Angeles

Department of Regional Planning or the appropriate lead agency, contacted immediately to determine appropriate measures to mitigate adverse impacts to the discovered resources. Cultural resources may include artifacts, shell, bone, features, altered soils, foundations, trash pits and privies, etc. If human remains are discovered during construction-related activities within the boundaries of the project site, then the procedures described in Section 7050.5 of the California Health and Safety Code shall be followed. These procedures require notification of the County Coroner. If the County Coroner determines that the discovered remains are those of Native American ancestry, then the Native American Heritage Commission must be notified by telephone within 24 hours. Sections 5097.94 and 5097.98 of the Public Resources Code describe the procedures to be followed after the notification of the Native American Heritage Commission.

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Appendix A
Response from the Native American Heritage Commission

STATE OF CALIFORNIA — Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

September 27, 2012

Mr. Rob Wlodarski, Principal
H.E.A.R.T.
8701 Lava Place
West Hills, CA 91304

Sent by FAX to: 818-340-6676
No. of Pages: 5

Re: Sacred Lands File Search and Native American Contacts list for the proposed Sacred Lands File Search and Native American Contacts list for the proposed **"Malibu Institute Project;"** located on 627-acres on Point Dume in the City of Malibu; Los Angeles County, California

Dear Mr. Wlodarski:

The Native American Heritage Commission (NAHC) conducted a Sacred Lands search based on the data provided and **Native American cultural resource sites were not identified** within one-half mile of the project site, the 'area of potential effect' (e.g. APE): you specified, However, there are Native American cultural resources in close proximity to the APE. Also the absence of archaeological fixtures and other cultural resource items does not preclude their existence at the subsurface level. In addition, please note; the NAHC Sacred Lands Inventory is not exhaustive and does not preclude the discovery of cultural resources during any project groundbreaking activity.

California Public Resources Code §§5097.94 (a) and 5097.96 authorize the NAHC to establish a Sacred Land Inventory to record Native American sacred sites and burial sites. These records are exempt from the provisions of the California Public Records Act pursuant to. California Government Code §6254 (r). The purpose of this code is to protect such sites from vandalism, theft and destruction.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites

The California Environmental Quality Act (CEQA – CA Public Resources Code §§ 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess

whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. CA Government Code §65040.12(e) defines "environmental justice" provisions and is applicable to the environmental review processes. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and California Public Resources Code Section 21083.2 (Archaeological Resources) that requires documentation, data recovery of cultural resources, construction to avoid sites and the possible use of covenant easements to protect sites.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Local Native Americans may have knowledge of the religious and cultural significance of the historic properties of the proposed project for the area (e.g. APE). Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). We urge consultation with those tribes and interested Native Americans on the list that the NAHC has provided in order to see if your proposed project might impact Native American cultural resources. Lead agencies should consider avoidance as defined in §15370 of the CEQA Guidelines when significant cultural resources as defined by the CEQA Guidelines §15064.5 (b)(c)(f) may be affected by a proposed project. If so, Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "substantial," and Section 2183.2 which requires documentation, data recovery of cultural resources.

The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Partnering with local tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 4(f), Section 110 and (k) of the federal NHPA (16 U.S.C. 470 *et seq*), Section 4(f) of the Department of Transportation Act of 1966 (23 CFR 774); 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq*. and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The NAHC remains concerned about the limitations and methods employed for NHPA Section 106 Consultation.

Also, California Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery', another important reason to have Native American Monitors on board with the project.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. An excellent way to reinforce the relationship between a project and local tribes is to employ Native American Monitors in all phases of proposed projects including the planning phases.

Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton

Attachment: Native American Contact List

Native American Contacts
Los Angeles County
September 27, 2012

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362
folkes@msn.com
805 492-7255
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Chumash
Tataviam
Fernandeño

Owl Clan
Qur-tan Shup
48825 Sapaque Road
Bradley , CA 93426
mupaka@gmail.com
(805) 472-9536 phone/fax
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Appendix D.1

Malibu Institute Project Biota Report, Envicom Corporation 2013

BIOTA REPORT

Malibu Institute Project

Malibu, California

Project # TR071735

Prepared For:

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November 26, 2013

BIOTA REPORT

MALIBU INSTITUTE PROJECT

Project #TR071735

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I. INTRODUCTION

This report has been prepared pursuant to the County of Los Angeles' Department of Regional Planning Biota Report Guidelines. These guidelines specify the form and content of the report, and we have adhered to the required structural organization to the greatest extent possible, with only minor variance. This report has been prepared directly by Mr. Jim Anderson, Senior Biologist of Envicom Corporation and Mr. Carl Wishner, former Principal Biologist of Envicom Corporation. Mr. Anderson has more than nine years experience in the environmental field, and holds a master degree in environmental science with an emphasis in ecology and conservation planning from the University of California, Santa Barbara. Mr. Wishner has been a consulting biologist for 28 years, and previously served on SEATAC for the County of Los Angeles for over ten years. Mr. Wishner holds baccalaureate and master's degrees in botany and biology from Humboldt State University.

For purposes of this report, "Project site" refers to the entire 650-acre property, while "disturbance limits" refer to the limits of the proposed future buildings, golf course, associated infrastructure, and fuel modification areas.

II. PROJECT DESCRIPTION

The Project would create a sports-oriented educational retreat affiliated with the University of Southern California (USC) to complement a remodeled 18-hole golf course on a 650-acre Project site currently operated as the Malibu Golf Club in the unincorporated Malibu area of Los Angeles County. In addition to providing a remodeled golf course, the Project would include development of the Malibu Institute building consisting of educational and meeting facilities in which educational institutions, businesses, or other organizations could conduct seminars, conferences, and other events. The Project also would develop visitor-serving overnight accommodations to facilitate multi-day programs that may be held onsite. The overnight accommodations would consist of 40 bungalow units with four bedrooms per unit, for a total of 160 bedrooms with a maximum occupancy of two persons per room or 320 overnight guests. Other facilities to be provided for guests would include a clubhouse featuring dining and lounge facilities as well as a fitness and wellness center, an outdoor swimming pool with a poolside shower and changing room, and a golf pro-shop and grill/snack shop. The dining facility and golf-related amenities would be available to the visiting public as well as those staying in overnight accommodations. The Project also would develop associated support facilities necessary for upkeep of the Project, including a maintenance building, a golf cart storage barn, a warehouse, and a security/information building. In total, the Project proposes to construct a combined 224,760 square feet of structures, which would reuse the building footprint, and where feasible, the foundation of the existing 12,475-square foot clubhouse and cart barn for the proposed educational and meeting facilities of the Malibu Institute building, and also remove 11,160 square feet of existing structures, including maintenance sheds associated with the Malibu Golf Club and an abandoned residence located in the northern portion of the Project site. The Project would also include associated infrastructure improvements, including replacing existing septic tanks with an onsite underground wastewater treatment/water recycling facility, domestic use water supply pressure reducing valve improvements to provide adequate water pressure, and relocating an existing, unpaved, emergency use helicopter landing pad to a more central portion of the golf course as approved by the Los Angeles County Fire Department. The relocated helicopter landing pad would be provided with a water hydrant for filling firefighting helicopters, and would be on a relatively flat area that would not be graded or otherwise disturbed, with the exception of occasional mowing for maintenance. An existing 875-square foot guesthouse located on the northern portion of the property along Mulholland Highway would be retained by the Project for use as a caretakers' residence. At completion, the Project would result in a total net increase of 201,125 square feet of structures on the Project site.

The reconfigured 18-hole golf course would be redesigned using the acreage of 17 of the existing holes on the golf course, allowing the proposed facilities, including the redesigned golf course, to be constructed within previously disturbed areas. The redesigned golf course would incorporate features to minimize demand for water resources and maximize efficiency. The Project's water conservation features would include installation of an onsite wastewater recycling system that would replace existing septic tanks within the proposed development area, treating effluent generated onsite to a standard suitable for use as landscape irrigation on the golf course, to offset a substantial portion of the existing golf course's potable water use. The proposed improvements would be constructed completely within the previously disturbed area of the Malibu Golf Club, with the exception of the removal of an abandoned residence that would not be rebuilt or replaced. All of the proposed structures to be constructed would be clustered within a 20-acre development area in the southern portion of the Project site along Encinal Canyon Road. The development footprint would occupy the lower elevations of the Project site, and proposed structures would be nestled into sloped areas and would conform to the existing contours of the existing conditions. The Project would require grading of 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced onsite. To protect the scenic beauty and environmentally sensitive native plant and animal species of the Santa Monica Mountains, the Project would avoid and preserve over 450 acres of native coastal scrub and chaparral, including oak woodland forest, which would be left undisturbed and would become permanently dedicated open space.

1. OPERATIONAL SUMMARY

The Project would provide meeting rooms, classroom facilities, and administrative offices within a 48,164-square foot conference building to be used for educational retreats held by USC and other universities/educational organizations, emphasizing programs for collegiate and professional athletes and wellness and recreational programs. Programming for these activities would consist of educational conferences, seminars, and lectures, and would be available for use by educational institutions and other organizations including charitable foundations. This facility also could host seminars, banquets, or receptions for other organizations. USC would participate in collaboration with the Malibu Institute on sports-oriented research projects, academic conferences and symposia, and would offer advice on development of a professional and/or continuing education curriculum related to the pursuit or enhancement of careers in sports. In addition to the educational facilities, the Malibu Institute building would include a cafeteria and lounge area. The proposed facilities would be operated year-round, and, by providing overnight accommodations onsite to event participants and the general public, the overall Project would operate 24 hours per day, although the classes, meetings and seminars to be held in the conference building likely would conclude by 10:00 p.m.

The Project would provide overnight guest accommodations in 40 bungalow units to be constructed in 37 individual structures. Three of these structures would contain two bungalow units. The bungalow structures generally would be two-stories (four would be single-story), with floor areas ranging from 2,610 square feet to 2,885 square feet for the single bungalow units, and 5,310 square feet for structures with two bungalow units, for a total of 109,140 square feet of bungalows. Each bungalow unit would include four private bedroom/bathroom facilities and a common lounging area, for a total of 160 bedrooms provided onsite. The bungalows would not include kitchen facilities. Guests staying in the bungalows would be provided with room services typical of resort hotels, such as meal delivery on request and a daily cleaning service.

A golf-oriented clubhouse would be constructed in a 30,147-square foot building providing a dining facility, lounge, fitness and wellness center, and locker rooms. While the clubhouse dining room and lounge would be open to the general public similar to the existing dining facility of the Malibu Golf Club,

the fitness center/spa facilities would be provided as an amenity for use by overnight guests. The clubhouse facilities would allow overnight guests to remain on-site for dining and fitness activities that would otherwise require leaving the site. This facility also would be available for hosting banquet and receptions events to be held either indoors or in an outdoor courtyard. The dining facility would be permitted to serve guests and visitors until 11:00 p.m. for outdoor banquet or reception events, and indoor events, dining, and lounge service would be concluded by midnight.

A golf pro-shop and grill/snack shop would provide retail space for golf-related merchandise, a snack bar, and eight indoor computerized driving range bays within a 12,104-square foot building. This facility would serve golfers that are day-use visitors of the site as well as overnight guests of the Malibu Institute. As an amenity for overnight guests, the Project would include an outdoor swimming pool with an associated 800-square foot poolside shower/changing room located to the west of the clubhouse facility.

Other proposed facilities would be provided to support the Malibu Institute and golf course operations. These would include a 9,162-square foot golf cart storage building, a 4,623-square foot warehouse to store supplies, a 10,500-square foot maintenance building, and a 120-square foot security/information building.

The remodeled golf course would continue to offer an 18-hole public-use course, which would be available to day-use visitors of the site as well as overnight guests of the Project. The golf course would not include an outdoor driving range, as the proposed pro shop would feature an indoor computerized practice facility. All outdoor golf activities would be prohibited at night as under existing conditions and no outdoor lighting would be provided for golf activities. Two existing restroom facilities located on the golf course would be removed, and replaced with modular restroom facilities that may be serviced by a mobile pump truck, or replaced as needed. The golf course would continue to be available as a practice facility for area high school and university golf programs that currently use the existing Malibu Golf Club. The golf course also would continue to provide a venue for charitable organizations and corporations to hold tournaments for fundraising or team-building purposes. Such tournaments would be participatory in nature by invited guests and would not involve on-course spectator access or grandstand facilities. Tournament participants may include guests of the on-site overnight accommodations and players arriving from off-site.

2. PROJECT GREEN FEATURES

The Project would incorporate many “green” features. The Institute building, which would contain the educational and meeting facilities, would use building footprint, and where feasible, the foundation of the existing clubhouse and cart barn. The buildings and accommodations would incorporate sustainable and green design with the goal of achieving LEED™ Platinum certification (or equivalent) for all buildings on the Project site. As a sustainability strategy, the Project would attempt to reuse as much of the existing clubhouse facility as feasible to minimize disposal of demolition and construction debris and reduce associated energy use and air quality impacts, however, the degree to which this goal may be achieved would be dependent on the ability of the existing structure and materials to attain LEED™ Platinum certification (or equivalent) for construction. Should existing materials or construction be a limiting factor in achieving the desired level of efficiency for sustainability, the existing building would be replaced in its entirety; as such, impacts discussed in this document assume the entire structure would be demolished and reconstructed, however, the proposed structure would make use of the existing building footprint and the foundation where feasible. Design features also would include green roofs on many of the Project buildings, the use of color and shade structures to reduce the heat island effect, charging stations for electric vehicles, the use of highly efficient geothermal HVAC equipment, and the use of

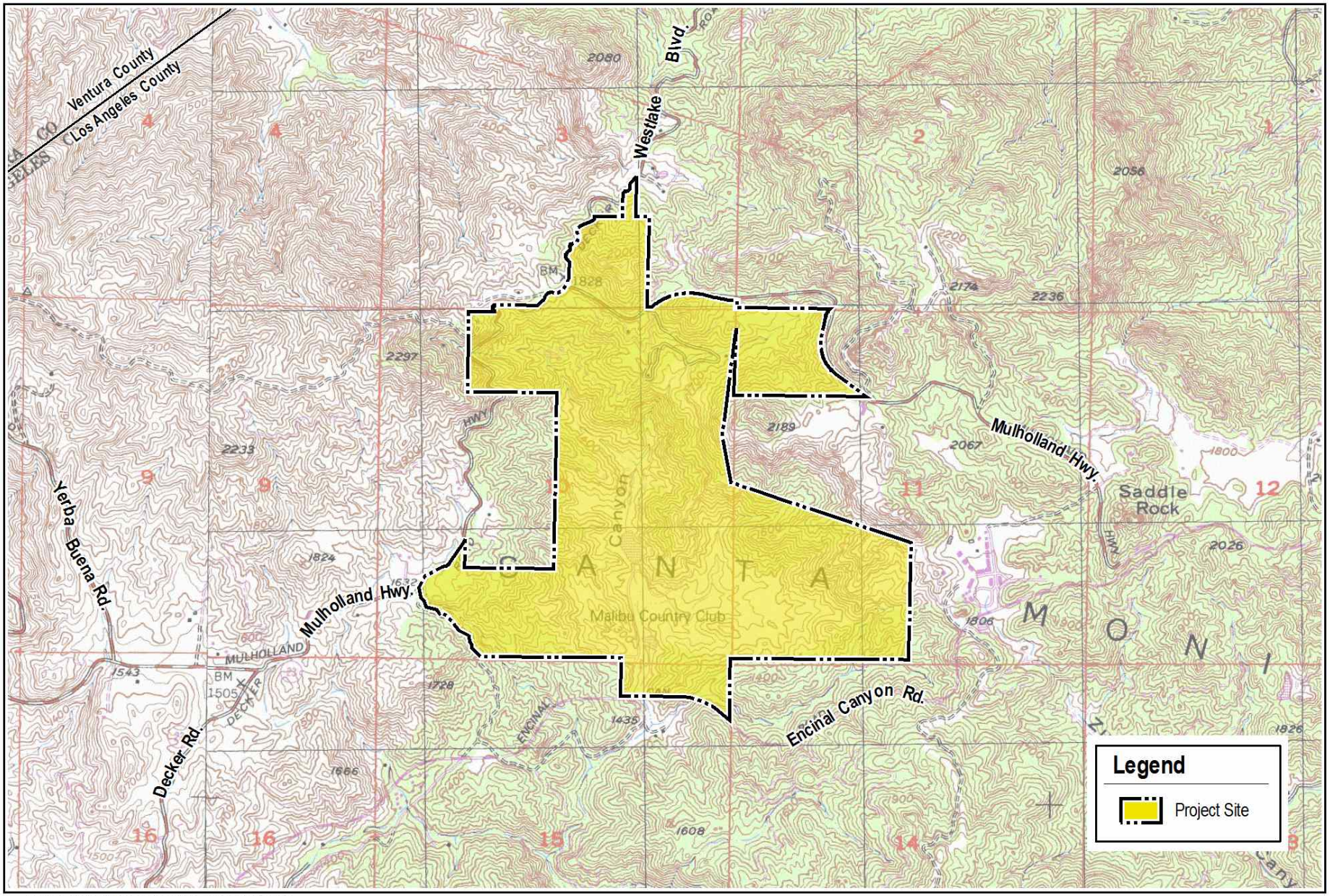
native, drought-tolerant landscaping. The Project would replace over 185,000 square feet of existing non-pervious parking lots and cart paths with pervious material to allow infiltration of storm water and improve water quality. The Project also would provide a shuttle van service for individuals or groups of overnight guests arriving or departing from area airports, universities, or other facilities in the region where groups attending a retreat or conference may originate. The shuttle service would be provided at times and locations as requested on a reservation basis. Water conservation and design features would include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems with features such as moisture sensors, drought-resistant turf and landscaping. The Project would remove multiple septic tanks throughout the Project site and install an on-site wastewater treatment system with effluent meeting Title 22 standards for reuse as irrigation for the remodeled golf course and landscaping. The Project would use photovoltaic panels over shade structures in the expanded surface parking area and on some proposed rooftops to generate most of the energy needs for the Project. The Project would remove 1,590 non-native trees, including palm trees, which were introduced with development of the existing golf course, and provide landscaping with native, drought-tolerant species, to reduce irrigation demands and to provide habitat features and a color palette more consistent with that of the Santa Monica Mountains. The Project would incorporate a recycling program by providing separate collection bins for recyclable materials generated by guests and employees to divert those materials from landfill disposal, and by composting green waste generated by and used by onsite landscaping maintenance. Finally, as part of its operations, the Project would incorporate sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought Tolerant Landscaping Ordinance.

3. PROJECT LOCATION

The Project site is located at 901 Encinal Canyon Road, within the unincorporated Malibu area of Los Angeles County (**Figure 1**). Regionally, the site is located in the western portion of the Santa Monica Mountains approximately forty-five miles west of downtown Los Angeles. Locally, the Project site is situated northwest of the City of Malibu, and south of the Cities of Agoura Hills, Calabasas, Thousand Oaks and Westlake Village in a rural area of the Santa Monica Mountains lying south of the primary east-west ridgeline. Portions of the site located south of Mulholland Highway also fall within the Coastal Zone as defined by the California Coastal Act. Adjacent land uses are primarily undeveloped private and public lands, much of which is open space, with some large lot rural residential development along the northern and western boundaries. A youth detention facility operated by the Los Angeles County Probation Department (Camp Kilpatrick) is located to the east of the Project site.

4. PROJECT SITE

The Project site is comprised of an irregularly shaped assemblage of 29 parcels that total approximately 650 acres, spanning from Encinal Canyon Road on the south to the intersection of Mulholland Drive and Westlake Boulevard on the north. Development of the Project would occur only on six of the 29 parcels that make up the Project site, and would include APNs 4471-001-034, -035, 4471-002-010, -011, 4471-021-034, and 4471-003-030. As part of the Project, the existing 29 parcels would be consolidated into 9 lots of a tract map with 4 of those lots (456.16 acres) being dedicated as permanent open space. The majority of the Project site is zoned R-R-1 (Resort and Recreation), with the portions to the north, east, southeast and south on the periphery of the Project site zoned either A-1-1 (Light Agriculture – 1 acre minimum lot size) or A-1-20 (Light Agriculture – 20 acres minimum lot size). Small portions of the Project site north of Mulholland Drive and the northeast area of the Project site are zoned RPD-5-0.2U-DP (Residential Planned Development – 5 acres minimum lot size – 0.2 dwelling units per acre – Development Program).



Source: USGS 7.5' Topographic Quadrangle, Point Dume.

ENVICOM CORPORATION

Project Location

0 1,000 2,000 Feet

FIGURE 1

5. EXISTING CONDITIONS

Existing development on the site consists of the Malibu Golf Club, constructed in the early 1970s, consisting of an 18-hole public golf course with supporting amenities, two surface parking lots, and associated driveways, all located in the central and southern regions of the Project site. **Figure 2** provides an aerial photo depicting the existing conditions of the site including onsite structures, parking lots, and driveways. Structural facilities that exist on the Project site as part of the Malibu Golf Club a 12,475-square foot golf clubhouse with a restaurant and lounge. An associated maintenance structure and shed provide an additional 7,000 square feet of onsite development. There are also two structures on the Project site beyond the limits of the proposed development area, consisting of a guest house used as a caretaker's residence for the Malibu Golf Club, and an abandoned residence structure (approximately 875 square feet and 4,160 square feet, respectively), for a total of 24,510 square feet of existing structural development on the property. The Project would retain the guest house as a caretaker's residence. The remainder of existing structural development would be removed or replaced by components of the Project. The abandoned residence is in a state of disrepair and poses a potential hazard to trespassers from collapse or from biological risks associated with rodent infestation, and, as such, the Project would remove the structure due to safety and security concerns. An existing 100,000-gallon water tank that provides storage for irrigation water provided by onsite groundwater wells would remain and continue to serve the same purpose.

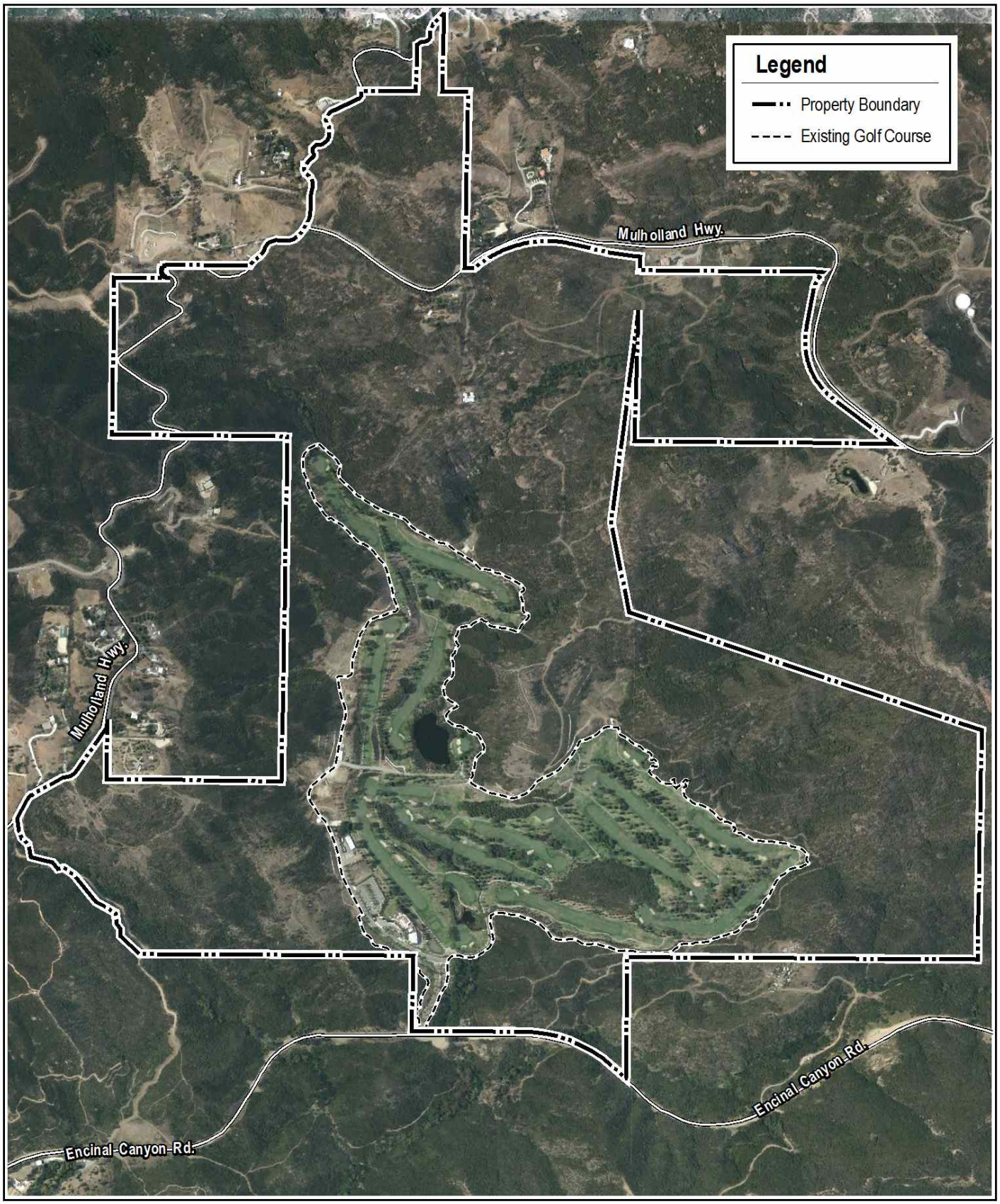
The existing development is provided potable water from Las Virgenes Municipal Water District (LVMWD) for domestic use and for irrigation of the golf course. The golf course irrigation is supplemented by six existing onsite wells. Wastewater treatment for the existing development is provided by onsite septic tanks.

Much of the golf course area is planted with non-native and ornamental plant species. The remainder of the Project site consists of lands with native vegetation on generally steeply sloped terrain to the north, east, and west. Several areas adjacent to the golf course have been graded in the past in connection with various development phases of the golf course.

6. PROJECT OBJECTIVES AND GOALS

The underlying purpose of the Project is to provide an environmentally sustainable golf course and sports-oriented educational retreat of superior quality and design within the Santa Monica Mountains. The following is a list of the objectives and goals of the Project.

- Establish a financially viable sports-oriented educational retreat, which provides educational, research and employment opportunities, and invigorates the local economy of unincorporated western Los Angeles County.
- Provide a comfortable, relaxing and inspiring environment in which educational institutions, governmental organizations, non-governmental organizations, business leaders and the public can conduct meetings and conferences.
- Provide visitor-serving overnight accommodations within individual bungalow units that would include common areas within each unit to provide a casual meeting space for discussion or study groups of Project guests that would be attending conferences or on-site functions together.
- Introduce a pattern of land uses compatible with existing environmental resources and community character, while improving the social, environmental and economic well-being of overnight guests, visitors, and the community.



Source: GoogleEarth Pro, 2008.

ENVICOM CORPORATION

Aerial Photograph of Project Site

0 500 1,000 Feet

FIGURE 2

- Incorporate sustainable and green design features with the goal of achieving LEED™ Platinum certification (or equivalent) for all new buildings on the Project site.
- Protect environmentally sensitive native plant and animal species by dedicating open space areas on the Project site that contain sensitive and native habitat.
- Preserve and enhance the scenic beauty of the Santa Monica Mountains.
- Protect and expand access to open space recreational opportunities and resources, including incorporation of sustainable visitor-serving accommodations, which would be available for visitors of the Santa Monica Mountains National Recreation Area.
- Protect a unique public recreational resource of unincorporated western Los Angeles County consisting of an 18-hole golf course located within the Santa Monica Mountains and in the vicinity of the Santa Monica Mountains National Recreation Area.
- Construct proposed site improvements within a clustered area to minimize off-site view impacts while locating visitor-serving facilities including overnight accommodations in a manner that maximizes guests' views of the remodeled golf course and natural areas of the Santa Monica Mountains and provides separation between bungalow structures as feasible within the development area.
- Provide an all-inclusive retreat destination in the Santa Monica Mountains with visitor-serving components connected by a network of paths for pedestrian or electric cart use, so guests could access those Project features without the need for personal vehicle use.
- Design and construct a state-of-the-art 18-hole golf course using features and standards that will minimize impacts to the existing environment for sustainable coexistence between golf and nature.
- Recognize and avoid natural hazards, and protect paleontological, archaeological and historic resources.
- Protect the unique cultural and social characteristics of the region's rural residential communities.
- Eradicate non-native aquatic species in the man-made ponds onsite.
- Improve water quality in the portion of Trancas Canyon Creek leaving the Project site.

7. PROJECT COMPONENTS

The Project would develop all of the proposed components of the Malibu Institute within the previously disturbed areas of the existing golf course facilities located in the southern portion of the Project site. The structural components of the Malibu Institute and support facilities would be clustered in the southwest portion of the previously developed area as depicted in a detail of the site plans shown in **Appendices 5 and 6**. All of the proposed buildings would be constructed with similar architectural design features, materials and color palette, making use of stone and wood surfaces. In total, the Project proposes a combined 224,760 square feet of structures, which would include the reuse and remodel of the existing 12,475-square foot clubhouse and cart barn as part of the Institute building, and the removal of 11,160 square feet of existing structures, for a total increase of 201,125 square feet of structures on the Project site. Building heights and sizes for specific Project components are discussed in the following subsections.

7.1 The Malibu Institute

The Malibu Institute would provide educational and meeting facilities designed using features and standards that will minimize impacts to the existing environment. This would include the construction of all proposed buildings with sustainable and green design features incorporated with the goal of achieving

LEED™ Platinum certification (or equivalent). The Malibu Institute educational facilities would consist of a 48,164-square foot conference center, featuring a large meeting room, several smaller meeting rooms and classrooms of various sizes, a cafeteria with a kitchen facility, and a lounge. This building would have a maximum roof height of 32 feet above grade, with two vent risers to a maximum of 50 feet above grade. The educational conference center would be constructed using the building footprint and foundation of the existing clubhouse and cart barn. Refer to **Table 1** for a summary of all proposed components and associated square footage.

Table 1
Summary of Proposed Project Components

Components	Proposed Development (sf)
Educational Facilities	
Malibu Institute	48,164
Subtotal	**48,164**
Overnight Visitor Accommodations	
Guest Bungalows (40 Units)	109,140
Subtotal	**109,140**
Support Facilities	
Security/Information Building	120
Golf Pro Shop/Grill	12,104
Cart Barn	9,162
Clubhouse	30,147
Maintenance Building	10,500
Warehouse	4,623
Shower/Changing Building	800
Subtotal	**67,456**
TOTAL	**224,760**

7.2 The Malibu Institute Guest Accommodations

The Project would provide overnight accommodations for conference participants and the general public in 40 bungalows. The overnight accommodations and associated amenities would enhance the Project's sustainability by allowing participants of multi-day programs to remain onsite, minimizing vehicle trips by eliminating the need for guests to leave the site for lodging, dining, or recreation. The 40 bungalows that comprise the Project's accommodation facilities would consist of 37 individual buildings totaling 109,140 square feet. A total of 34 overnight accommodation buildings would consist of a single bungalow unit, and three of the buildings would contain two bungalow units. The 40 bungalow units would each feature four separate bedrooms, for a total of 160 bedrooms provided by the Project, with one bed each. As discussed above, all Project buildings, including the bungalow structures, would incorporate sustainable and green design features with the goal of achieving LEED™ Platinum certification (or equivalent). Typically, full occupancy of the bungalows would be 160 guests, however, the maximum occupancy of the bungalows would be 320 guests (two guests per bedroom). The bungalows would

provide short term (typically less than seven days) accommodations for conference participants and the general public. Three of the bungalow structures would consist of two individual four-bedroom bungalow units, with building heights approximately 30 feet above grade. The bungalows would be clustered within the southern and western portions of the site and would be constructed on an area that is currently used as a fairway for the existing golf course, and on an existing graded area currently designated as a helipad for emergency use by Los Angeles County Fire Department (LACFD). The proposed reconfiguration of the golf course and the relocation of the existing helipad would allow the proposed bungalows to be constructed with minimal grading, and without encroaching into undisturbed areas of the Project site. The helipad would be relocated to an existing cleared pad adjacent to the eastern side of the golf course, which is a site preferred by the LACFD, and would be exclusively for emergency use for public safety and fire fighting purposes by LACFD.

The Project would provide overnight accommodations for conference attendees and the general public in 40 bungalows. The overnight accommodations and associated amenities would enhance the Project's sustainability by allowing attendees of multi-day programs to remain onsite, minimizing vehicle trips by eliminating the need for guests to leave the site for lodging, dining, or recreation. The bungalows would consist of 37 individual structures totaling 109,140 square feet, with each bungalow unit featuring four separate bedrooms for a total of 160 bedrooms with one bed in each bedroom. As discussed above, all Project buildings, including the bungalow structures, would incorporate sustainable and green design features with the goal of achieving LEED™ Platinum certification (or equivalent). Typically, full occupancy of the bungalows would be 160 guests, however, the maximum occupancy of the bungalows would be 320 guests (two guests per bedroom). The bungalows would provide short term (typically less than seven days) accommodations for conference attendees and the general public. The heights of the majority of these units ranging from 18 feet to 26 feet above grade because the bungalows would be nestled into the surrounding slopes. Three of the bungalow structures would consist of two individual four-bedroom bungalow units, with building heights approximately 30 feet above grade. The bungalows would be clustered within the southern and western portions of the site and would be constructed on an area that is currently used as a fairway for the existing golf course, and on an existing graded area currently designated as a helipad for emergency use by Los Angeles County Fire Department (LACFD). The proposed reconfiguration of the golf course and the relocation of the existing helipad would allow the proposed bungalows to be constructed with minimal grading, and without encroaching into undisturbed areas of the Project site. The helipad would be relocated to an existing cleared pad adjacent to the golf course, which is a site preferred by the LACFD, and would be exclusively for emergency use for public safety and fire fighting purposes by LACFD.

7.3 Recreational Related Facilities

The proposed recreational facilities and associated support facilities would include:

- A golf-oriented clubhouse with a dining facility, spa and fitness center, and locker rooms (30,147 square feet);
- An outdoor swimming pool with a shower/changing room building (800 square feet);
- A new pro shop/grill with a computerized indoor driving range (12,104 square feet);
- A golf cart storage building (9,162 square feet);
- A warehouse facility for storage of materials and equipment for the Institute and the bungalows (4,623 square feet);
- A maintenance building to serve the golf course (10,500 square feet); and
- A new security/information building to be constructed at the main entrance (447 square feet).

As stated above, all proposed buildings would be located within the existing development footprint and clustered within an approximately 20-acre area along with the other structural components of the Project. As with all proposed construction associated with this Project, these facilities would be built with sustainable and green design features incorporated with the goal of achieving LEED™ Platinum certification (or equivalent). The building heights of the proposed clubhouse and pro-shop/grill facilities would be 35 feet above grade (not including vent risers on the Clubhouse). The remaining proposed facilities would have building heights ranging from approximately 17 to 19 feet above grade.

7.4 Golf Course Redesign

The existing 18-hole public golf course covers approximately 118 acres, largely comprised of turf grass and introduced native and non-native vegetation. The Project would reconfigure the golf course to reduce the overall footprint of the course to approximately 107 acres so the proposed 18 holes would fit within the footprint of 17 of the existing 18 holes. The reduced acreage of the golf course would allow for other elements of the Project to be constructed within the existing area of disturbance. The remodeled 18-hole golf course would be constructed using state-of-the-art technology, methodology, and materials intended to create a sustainable, low impact golf facility, while still providing an aesthetically pleasing and athletically challenging course.

To provide an environmentally superior golf course design, proposed sustainability features include installation of a "smart" irrigation system, a reduction in the amount of turf area from approximately 85 acres to 62 acres, the use of turf grasses that exhibit drought-resistant properties to reduce irrigation demand, sand-capping the course for optimum growing conditions and filtration, and the removal of non-native landscaping from areas surrounding the golf course playing area, which would be re-vegetated with drought-tolerant native trees and shrubs. The water saving features to be provided with the remodeled golf course would reduce water consumption for irrigation by approximately 35 percent compared to the existing golf course facility.

The grading associated with the remodeled golf course would take place within the previously graded areas of the fairways, tee boxes and greens and would not require the removal of native oak or sycamore trees. By retaining existing native trees, in addition to planting new native oaks and sycamores, and by removing approximately 1,590 trees of non-native species, including palm trees, which were planted during the original construction of the golf course, the proposed landscape pallet would be more consistent with the surrounding open space areas of the Santa Monica Mountains.

8. PROJECT CHARACTERISTICS

8.1 Access, Circulation and Parking Facilities

The Project would include onsite improvements and construction of existing and new roadways and parking areas, as well as walkways and cart paths for guest circulation between various proposed facilities of the Malibu Institute. Currently, the existing golf course facilities are accessed from Encinal Canyon Road, through a main entrance via Clubhouse Drive. This main entrance would continue to serve as the site access for the Project's guests and employees. Externally, the Project would generate approximately 314 Average Daily Trips (ADT) on area roadways, including 11 A.M. peak hour trips and 18 P.M. peak hour trips. These trips would be predominantly distributed along Kanan Road to the north and south from Encinal Canyon Road, with some minor increases associated with Decker Canyon Road. The Project would provide a van shuttle service by reservation for overnight guests arriving or departing from neighboring airports, including Los Angeles International Airport and Burbank Airport, or other regional locations such as universities or schools. As the overnight accommodations would consist of four-

bedroom bungalows that would not provide rooms on an individual basis, it is anticipated that groups of guests sharing a one or more bungalow units would arrive together, and would not result in a demand for shuttle use by individuals. By providing a means for groups of guests to access the site without individual vehicles, the van shuttle service would reduce the Project's estimated ADT on area roads as well as reduce the Project's parking demands.

Internal circulation within the Project site would provide access to each of the Project components. Stemming from the primary access from Encinal Canyon Road and Clubhouse Drive, Trancas Lakes Drive would provide access to the expanded parking area located in close proximity to all of the proposed facilities, and a network of internal walkways and paths would promote circulation among the various facilities of the Project by foot or electric cart.

Existing parking facilities are provided in two surface parking lots and street parking located to the south and west of the existing clubhouse facilities. To ensure there is ample parking and to comply with County development standards, the Project would retain the southern parking lot and expand the western parking lot to increase the Project site's total parking availability to 387 parking spaces, which would exceed the 378 total parking spaces required by the Los Angeles County Code based on the proposed uses. See Section 5.13 Traffic and Access of the Malibu Institiute Project DEIR for detailed discussion of the parking ratios for proposed uses in relation to County standards. The Project would repave the existing southern parking facility and provide landscaping to visually screen the surface lot from Encinal Canyon Road. The western surface parking lot would be expanded and existing non-pervious asphalt paving would be removed and replaced with pervious paving materials to facilitate stormwater infiltration and improve water quality, and would feature a sub-drain collection system to detain stormwater runoff, which could then be used for irrigation of the golf course or landscape areas. The expanded western parking area would be visually screened from Encinal Canyon Road near the site entrance by topographical features, as it is under existing conditions. The new parking stalls would be covered by shade structures with photovoltaic panels installed on top of the structures to be provided with the goal of supplying the majority of the Project's electricity needs. See Section 5.14.4 of the Malibu Institute Project DEIR for more discussion of the Project's electricity needs and proposed photovoltaic panels. In addition, existing outdoor overhead lighting at both parking lots, which currently can be seen from off-site, would be replaced with shielded down-lighting, designed to comply with the County's Rural Outdoor Lighting District Ordinance.

Although the Project would satisfy Code-required parking for the proposed land uses, to cluster the buildings in the southern portion of the 650-acre Project site and allow the dedication of over 450 acres of permanent open space, the Project cannot satisfy Code-required parking on each respective lot as shown on the Tentative Tract Map, and instead would provide centralized parking to be shared between lots. Pursuant to Los Angeles County Zoning Code section 22.56.990, projects proposing a parking arrangement different than the parking requirements of County Code section 22.52 require a parking permit. Therefore, the Applicant is requesting a parking permit to authorize the use of shared parking between lots on the Project site. No tandem or compact spaces are proposed to meet Code-required parking.

8.2 Drainage Facilities and Stormwater Treatment

The proposed grading and drainage plans would include stormwater runoff control and treatment for each of the Project components and include bioswales and other features to facilitate infiltration, or to capture runoff to be reused for on-site irrigation. A total of 185,000 square feet of non-pervious parking lot and cart path paving would be removed and replaced with pervious materials to increase infiltration and

reduce stormwater runoff from the proposed development area. Project-related stormwater leaving the site would be released at a rate that would not exceed existing conditions. Maintenance of storm drain lines and appurtenances on the Project site would be the responsibility of the property owner.

Onsite ponds that exist within the golf course would be retained by the Project, however, during construction, the Project would drain and clean out the basins of the onsite water retention ponds to eradicate non-native aquatic species in the ponds to reduce the occurrence of such species within the watershed. The Project proposes to add pumps to the two larger ponds on the golf course to circulate the water by conveying it upgradient from each pond approximately 700 feet, to be released within meandering channels that would be created to direct the flows back to each respective retention pond. By providing circulation within these water features, the Project would increase dissolved oxygen levels in the water and reduce stagnation to improve water quality and habitat onsite as well as offsite when flows leave the site and enter the Trancas Canyon Creek mainstem.

8.3 Grading

Grading for buildout of the Project would occur within previously disturbed areas and would require approximately 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced on-site. No soil import or export is proposed. Project construction activities are expected to take place over a 24-month period. The existing golf facilities will be closed during Project construction. **Table 2** provides Project grading quantities for the remodeled golf course and the structural development area components.

Table 2
Project Grading Quantities

Component	Cut (cubic yards)	Fill (cubic yards)	Net (cubic yards)
Remodeled Golf Course	53,318	81,116	26,798
Structural Development Area	65,682	38,884	26,798

8.4 Water and Wastewater Services

LVMWD currently provides potable water service to the existing Malibu Golf Club, and would continue to provide potable water for the Project. Additional irrigation water for the golf course is supplied by six private wells located onsite, which would continue to be used by the Project to supplement imported water supplies to meet irrigation demands. Irrigation water produced by the onsite wells is stored in an existing 100,000-gallon tank located on the western perimeter of the development area, which would remain and continue to serve this purpose with implementation of the Project. The Malibu Golf Club currently consumes an average of 93,597,240 gallons per year of potable water from LVMWD for domestic use and irrigation. The redesigned golf course would be constructed with water conservation features to reduce irrigation demands by approximately 33 percent, and would be irrigated by a combination of potable water provided by LVMWD, well water from onsite private wells, and reclaimed water from the Project's proposed Onsite Wastewater Recycling System.

Based on a Water System Design Report provided by LVMWD for the Project, existing water supplies and off-site infrastructure could serve the Project for daily needs and for emergency fire flow purposes, while maintaining adequate service for surrounding properties. A new water line would be installed to the relocated helipad where a hydrant would allow filling of helicopter water tanks for wildfire fighting. The new waterline would be placed within existing dirt roads that are primarily within an easement for

use by Southern California Edison to access power lines and support towers that cross the eastern portion of the Project site. A 150-foot segment of the existing LVMWD 10-inch pipeline that serves the Project site is currently located beneath a fairway portion of the golf course at a depth of 10 feet or more below ground surface. To facilitate future maintenance or other service activities, under the direction of LVMWD the Project would abandon this deep portion of the pipeline, and provide a replacement pipeline at a standard burial depth of 36 inches below ground surface.

An Onsite Wastewater System (OWS) consisting of buried septic tanks currently serves the existing golf course facilities. The Project proposes to abandon the existing OWS and construct a below-ground Onsite Wastewater Recycling System (OWRS) to provide wastewater treatment of effluent to Title 22 standards for reuse as landscape irrigation. The proposed OWRS would consist of a sewer network gravity draining to the below ground OWRS. The OWRS would use a combination of aeration, ultrafiltration, and disinfection that treats the effluent to a standard suitable for unrestricted, non-potable reuse onsite as landscape and golf course irrigation. The OWRS would be operated as a private treatment facility, serving only the development area on the Project site. The existing guest house along Mulholland Drive, which would be retained as a caretaker's residence, would continue to be served by an underground septic system located near that structure. Two existing remote restroom facilities and associated individual septic tanks that are located in the northern and northeastern areas of the golf course would be abandoned. These restrooms would be removed and may be replaced with modular restroom facilities, periodically serviced by mobile pump-out vehicle, or haul-away and replacement as needed to ensure guests enjoy golfing at the remodeled golf course.

8.5 Energy Usage

Central to the development concept for the Project are sustainability features that would minimize the consumption of gasoline and other carbon-based fuels and their associated greenhouse gas emissions. All proposed new buildings on the site would be constructed with the goal of achieving a LEED™ Platinum certification (or equivalent) of energy efficiency. To achieve this level of efficiency and sustainability, the Project would provide features to minimize the use of internal combustion powered vehicles and reliance on electricity generated off-site. Such features would include internal site circulation via electric vehicles or pedestrian walkways and installation of photovoltaic panels above shade structures in the surface parking area. Additional efficiency design features may include green walls, the use of color and shade structures to reduce the heat island effect, enhanced environmental control systems, high efficiency geothermal HVAC equipment, and the use of native, drought-tolerant landscaping. Water conservation and design features may include low flow/ultra low-flow fixtures, energy star appliances, and the use of drip irrigation systems. The Project would incorporate a recycling program as part of its operations as well as additional sustainability features from the County's Green Building Ordinance, Low Impact Development Ordinance, and Drought-Tolerant Landscaping Ordinance. The Project would also minimize off-site energy use by mobile sources by providing a shuttle service to area airports for the transport of guests of the Malibu Institute.

9. APPLICABLE PLANS/ ENTITLEMENTS REQUESTED

The following is a list of applicable County Plans that guide development in the region occupied by the subject Project site, and entitlements requested for development of the proposed land uses on the Project site:

9.1 Plans and Policies

The following is a list of applicable County Plans:

- Los Angeles County General Plan;
- Malibu Local Coastal Program Land Use Plan (1986); and
- Santa Monica Mountains North Area Plan

9.2 Requested Lead Agency Approvals

The following is a list of approvals requested from the Lead Agency:

- Certification of an Environmental Impact Report;
- Vesting Tentative Tract Map No. 71735 to reconfigure lot lines of 29 existing lots to create 4 lots containing the Project development over the 650-acre Project site and approximately 5 lots dedicated as permanent open space, including the caretaker's residence.
- Conditional Use Permit No. 201100122 to authorize the following: (1) development of the Malibu Institute project and operation of a sports-oriented educational retreat facility on a 650-acre Project site containing an 18-hole golf course, educational and meeting facilities with a cafeteria and lounge, overnight visitor-serving accommodations for a maximum of 320 guests, a clubhouse with a restaurant/lounge and fitness/wellness center, an outdoor pool with associated shower/changing room, warehouse, a cart storage building, a pro shop, and a maintenance building; (2) the continued sale of alcoholic beverages for on-site consumption; (3) on-site accessory live entertainment in the clubhouse and conference facility; (4) on-site grading of 120,000 cubic yards of cut and 120,000 cubic yards of fill, which would be balanced on-site with no import or export of fill material; (5) the relocation of a helipad in the R-R zone for emergency use by LACFD; and (6) the continued use of a caretaker's residence in the R-R zone.
- Parking Permit to authorize shared use of 387 parking spaces for guests, visitors, and employees associated with proposed development on 4 lots within the Project boundary;
- Fuel Modification Plan from the Los Angeles County Fire Department; and
- Additional County and other governmental actions as may be determined necessary.

9.3 Requested Responsible Agency Approvals

The following is a list of approvals potentially required approvals from Responsible Agencies, including but not limited to:

- Coastal Development Permit from the California Coastal Commission for development of the Project in the California Coastal Zone;
- Streambed Alteration Agreement from the California Department of Fish and Wildlife pursuant to Fish and Game Code Section 1603 to drain and clean out the basins of the onsite water retention ponds in the golf course to eradicate the non-native aquatic species population in the ponds and to improve water quality leaving the Project site;
- U.S. Army Corps of Engineers Nationwide Permit pursuant to Clean Water Act Section 404 to drain and clean out the basins of the onsite water retention ponds in the golf course to eradicate the non-native aquatic species population in the ponds and to improve water quality leaving the Project site;

- Water Quality Certification from the Regional Water Quality Control Board pursuant to Clean Water Act Section 401 to drain and clean out the basins of the onsite water retention ponds in the golf course to eradicate the non-native crayfish population in the ponds and to improve water quality leaving the Project site; and
- Waste Discharge Requirements and Waste Reclamation Requirements from the Regional Water Quality Control Board for operation of an onsite wastewater system.

III. SUMMARY OF SIGNIFICANT IMPACTS

The Project would result in the following significant or potentially significant, but mitigable, impacts to biological resources:

1. Plummer's Mariposa Lily (Calochortus plummerae)

Construction of a proposed tee box and the proposed pathway to the tee box would intersect approximately 0.02 acres of native chaparral habitat containing the Plummer's mariposa lily (*Calochortus plummerae*), which is a County of Los Angeles locally sensitive plant species. Construction of the tee box and pathway would potentially result in loss or injury to a relatively small but unknown number of individuals of this species, loss of a portion of the seed bank, and loss of suitable Plummer's mariposa lily habitat, which would be a significant, but mitigable impact.

2. Special-Status Wildlife Species (Ground Disturbance to Chaparral, Disturbed Coastal Sage Scrub, and Landscaped Habitats)

Proposed ground and vegetation disturbing activities necessary to construct a tee box, a pathway to the tee box, and to maintain the helipad, as well as fuel modification along the western margin of the disturbance limits would impact chaparral and disturbed coastal sage scrub, which could result in direct mortality or injury to potentially occurring special-status species and special animals (with varying probabilities ranging from high to very low depending on the species), including the Trask shoulderband snail, Santa Monica grasshopper, coastal whiptail, coast horned lizard, western pond turtle, San Bernarndino ringneck snake, and coast patch nosed snake. Also, ground and vegetation disturbing activities necessary to construct the modified golf course, including the removal and installation of turf and landscaping could result in direct mortality or injury to western pond turtles. Direct impacts to any one of these species would be a significant, but mitigable impact.

3. Special-Status Wildlife Species (Grading and Maintenance of Golf Course Ponds)

The proposed grading and maintenance, i.e., sediment and vegetation removal, of the golf course ponds would impact aquatic, wetland, and riparian habitats, which could result in direct mortality or injury to potentially occurring special-status species (with varying probabilities ranging from high to very low depending on the species), including the California legless lizard, two-striped garter snake, California mountain kingsnake, western pond turtle, and tree roosting bats, which would be a significant, but mitigable impact.

4. Special-Status Wildlife Species (Dewatering and Drying of Golf Course Ponds)

The proposed dewatering and drying of the golf course ponds and the removal of vegetation from the ponds could have a significant adverse effect on the resident population of the western pond turtle, as well as a population of the two-striped garter snake, if the two-striped gartner snake is present at the site. The dewatering and drying of the ponds would result in the temporary removal and modification of requisite habitat for foraging, cover, and reproduction for these species, which would be a significant, but mitigable impact.

5. Special-Status Bats

Special-status bats could potentially roost, hibernate, or form maternity colonies in trees or man-made structures within the limits of disturbance, such as in culverts, vacant or unoccupied buildings, tree cavities, crevices, exfoliating bark, or by hanging pendant from bark or tree branches. The Project would include demolition of a vacant residence and maintenance sheds, and the removal of 1,590 non-native trees and palms, including many large trees that could potentially contain roosting, hibernating, or breeding bats. Trees supporting bats may also be removed or disturbed by vegetation removal at the golf course ponds. The demolition of uninhabited structures and the felling of trees, particularly larger trees, could result in direct morality, injury, or disturbance to roosting bats, including hibernating bats or bats raising young, which would be a significant, but mitigable impact.

6. Nesting Birds

Project activities including but not limited to grading, tree and vegetation removal, maintenance of the golf course ponds, demolition of structures, and fuel modification conducted during the nesting bird season (February 1 through September 15), could potentially impact nesting birds protected under the Federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (Sections 3503, 3503.5, 3511, 3513 and 3800), which would be a significant, but mitigable impact.

7. Environmentally Sensitive Habitat Area (ESHA)

Development activities along the margins of the golf course would occur in close proximity to ESHAs, which could be degraded by inadvertent encroachment of construction activities or by excessive levels of construction noise, dust, or lighting, which could have adverse effects on native flora and fauna within those habitats. Although impacts would be temporary, Project development is anticipated to last for two years and a relatively large area would be subject to ground disturbance to create the remodeled golf course. Impacts to ESHAs adjacent to the limits of disturbance that could result from development of the Project would therefore be potentially significant, but mitigable.

8. Introduction of Non-native Invasive Plant Species

Ground disturbance associated with Project development, including grading, landscaping, pond maintenance, tree removals, and construction activities, could facilitate the introduction and/or spread of non-native, invasive plant species. Also, invasive plant species could be introducted to the Project site if used in Project landscaping, or in bio-swales or bio-detention basins. Invasive plant species at the Project site could be dispersed by stormwater, wind, or wildlife, or by various other means to native habitats in the surrounding area, including sensitive habitats in Significant Ecological Areas (SEAs), the Trancas Canyon Significant Watershed Area, ESHAs, and significant riparian woodland and oak woodland habitats downstream from the site, which would be a significant, but mitigable impact.

9. Discharge of Pollutants to Trancas Creek

Pollutants could be discharged to Trancas Creek during grading, landscaping, and construction activities during the construction phase of the Project, or during routine activities such as golf course maintenance during the operational phase of the Project. Pollutants discharged to offsite habitats within the Trancas Canyon Watershed could have substantial adverse effects on riparian habitat, conflict with local Malibu Local Coastal Plan (LCP) policies protecting ESHAs, and have substantial adverse effects directly and through habitat modifications on special-status species identified by the United States Fish and Wildlife Service (USFWS) and CDFW. These impacts are significant, but mitigable.

10. Pesticides, Herbicides, and Fertilizers and Pest and Rodent Control

Pesticides, herbicides, fungicides, toxic chemicals, fertilizers (nutrients), and poisons used for pest and rodent control used at the Project site could be released to the environment, including aquatic and terrestrial systems. These substances could have substantial adverse effects on riparian habitats and sensitive natural communities identified by the CDFW and special-status species identified by the CDFW and USFWS, either directly or through habitat modifications, and conflict with local policies protecting biological resources (Significant Watershed Areas, ESHAs), which would be a significant, but mitigable impact.

11. Jurisdictional Wetlands, Waters, and Habitat

Grading to construct the redesigned golf course would permanently impact a man-made drainage on the golf course grounds. The removal of the drainage would permanently impact a total of 0.032 acres of jurisdictional area, which would be a significant, but mitigable impact. Of the 0.032 acres, 0.002 acres are USACE wetland "waters of the United States" [coincident with 0.002 acres of CDFW jurisdictional habitat] and 0.03 acres are USACE non-wetland "waters of the United States" [also coincident with 0.03 acres of CDFW jurisdictional habitat].

Grading to construct the redesigned golf course would temporarily impact wetland "waters of the United States," CDFW jurisdictional habitat, and CCC single-parameter wetlands at three of the four ponds (Pond 1, Pond 2, and Pond 3) on the golf course grounds. Also, the proposed temporary de-watering and drying of the golf course ponds, as well as removal of sediment and vegetation from the ponds would temporarily impact wetland "waters of the United States", non-wetland "waters of the United States", CDFW jurisdictional habitat, and CCC single-parameter wetlands at all four of the ponds on the golf course grounds (Pond 1, Pond 2, Pond 3, and Pond 4). The purpose of the de-watering, drying, and removal of sediment and vegetation at the golf course ponds is to restore the habitat and water quality of the ponds by eradicating exotic crayfish and other invasive animals and by removing potentially occurring toxins associated with prior management activities of the golf course that may have accumulated in bottom sediments. The eradication of invasive animals and removal of bottom sediments from the ponds also would prevent degradation of habitats downstream from the Project site.

The grading of portions of Pond 1, Pond 2, and Pond 3, as well as the dewatering and removal of vegetation and sediment from Pond 1, Pond 2, Pond 3, and Pond 4 would temporarily impact a total of 4.42 acres of jurisdictional area. Of the 4.42 acres, 2.19 acres are USACE wetland "waters of the United States" [coincident with 2.19 acres of CDFW jurisdictional habitat] and 1.63 acres are USACE non-wetland "waters of the United States" [also coincident with 1.63 acres of CDFW jurisdictional habitat]. Also, of the 4.42 acres, 4.10 acres meet the single-parameter wetlands definition used by the CCC [coincident with 2.19 acres of wetland "waters of the United States", 1.63 acres of non-wetland "waters of the United States", and 0.28 acres of CDFW riparian habitat], and 0.32 acres are solely under the jurisdiction of the CDFW. Temporary impacts to USACE "waters of the U.S.", CDFW jurisdictional habitat, and CCC single-parameter wetlands would be significant, but mitigable.

IV. METHODS

1. FIELD SURVEYS

Biological field surveys were conducted from late summer through late fall of 2007 and annually in the spring from 2009 through 2013 by Envicom Corporation biologists C. Wishner, J. Anderson, T. Barns, and/or S. Jones. All surveys were conducted on foot. The surveys involved a search for protected and regulated biological resources, including rare, threatened, and endangered plant and wildlife species,

special habitats, sensitive natural communities, and other protected resources, and evaluation of the importance of the site for wildlife movement. Surveys were performed by walking roads and trails that traverse the site, as well as exploring areas where vegetation was penetrable, which allowed visual access to all but the densest areas of chaparral. Survey technique was random and consisted of transects of convenience, thus some areas were surveyed more intensely than others due to accessibility limitations. Access to the site was determined by terrain, vegetation density, fencing, and adjoining private properties. The survey methodology resulted in an investigation of all plant communities and habitat types throughout the Project site, e.g., chaparral, riparian woodlands, coastal scrub, rock outcrops, disturbed sites, roadside vegetation, and ponds.

An inventory of the vascular plants and wildlife observed at the site was recorded and all species were identified to the taxonomic level necessary to determine their status. Vascular plant species determinations were made using The Jepson Manual: Vascular Plants of California, 2nd edition. Vertebrate wildlife species observed were identified by direct observation, sign (e.g., tracks, scat, or burrows), or vocalization. Wildlife species identification typically relied upon Reid (2006), Sibley (2009), and Stebbins (2003). With the exception of a butterfly survey conducted in 2009, surveys of invertebrates were not performed. Butterflies were captured with a net, when possible, to ensure proper identification.

Areas of interest, or areas containing significant species or natural communities, were mapped and geo-referenced using a handheld GPS unit. Photographs depicting existing conditions were taken from vantage points to illustrate general vegetation coverage and type. Additional field photographs were taken of significant species when deemed necessary or when such documentation could prove valuable. These photographs have been archived, but are not provided in this report.

A delineation of jurisdictional waters, wetlands, and riparian habitat for areas within the Project limits of disturbance and areas approximately 100 feet from the Project limits was conducted in October 2012 and December 2012 by Envicom Corporation, using the methods described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (September 2008) and definitions and protocols described by the CDFW for identifying and classifying jurisdictional streambed and riparian habitats. A delineation of areas meeting the single-parameter wetland definition used by the CCC also was performed.

The dates and times of fieldwork, brief description of the weather[1] (temperature, sky, wind, precipitation), and methods or focus of the survey for the date are given below:

2007

- August 8, 8:00AM to 4:30PM, clear skies, 67-75ºF, calm to light winds. This was an initial reconnaissance site visit by Mr. Wishner, with Mr. Tyler Barns, Staff Biologist. The purpose was to perform general botanical and wildlife observations throughout, and to obtain site photographs from off-site locations.
- September 14, 8:00AM to 4:00PM, clear skies, 75-92ºF, light winds. Overall site survey by Mr. Wishner with Mr. Steve Jones, Senior Biologist. Purpose was to continue to perform general botanical and wildlife observations, and assess conditions for establishment of ESHA boundaries per Coastal Commission Standards.

[1] Meteorological observations were not recorded for the surveys during the years 2009-2011. Weather data for those years reflect conditions at Point Mugu, CA, the nearest reporting station to the project site as recorded by Weather Underground, Inc. (http://www.wunderground.com/). Weather conditions for surveys conducted in 2012 and 2013 were estimated in the field.

- September 18, 12:00AM to 5:00PM, clear skies, 62-71ºF, light winds. Mr. Wishner surveyed the site alone, with purpose to examine conditions over historically degraded areas located in the southwestern and central portions of the property, and continue to perform general botanical and wildlife observations.
- September 19, 8:00AM to 4:30PM, clear skies, 60-68ºF, light to moderate winds. Mr. Wishner surveyed the site alone, with purpose to examine conditions at several locations where the Applicant was proposing to conduct geotechnical investigations, and continue to perform general botanical and wildlife observations.
- November 5, 7:30AM to 4:00PM; clear skies, 57-59ºF, light winds. Mr. Wishner and Mr. Tyler Barns continued general botanical and wildlife observation throughout northern portion of property.
- November 6, 7:00AM to 10:00AM; clear skies, 54-62ºF, light winds. Mr. Wishner and Mr. Tyler Barns continued general botanical and wildlife observation throughout northern portion of property.
- November 28, 8:00AM to 4:00PM; cloudy skies, 60-72ºF, light to moderate winds (8:00AM-2:00PM; 0-10 mph), moderate to high winds (2:00-4:00PM; 15-25 mph with gusts up to 40 mph). General botanical and wildlife observation throughout isolated locations within the property.

2009

- April 14, mid-morning through late afternoon, overcast to partly cloudy skies, 53-60ºF, wind speed 9 mph. General botanical and wildlife observations by Mr. Carl Wishner and Mr. Jim Anderson.
- April 15, mid-morning through late afternoon, partly cloudy skies, 49-58ºF, wind speed 18 mph. General botanical and wildlife observations as well as a focused butterfly survey by Mr. Carl Wishner and Mr. Jim Anderson.
- April 16, mid-morning through late afternoon, clear to partly cloudy skies, 45-61ºF, wind speed 6 mph. General botanical and wildlife observations by Mr. Carl Wishner and Mr. Jim Anderson.
- April 17, mid-morning through late afternoon, clear to partly cloudy skies, 47-62ºF, wind speed 4 mph. General botanical and wildlife observations by Mr. Carl Wishner and Mr. Jim Anderson.

2010

- April 14, mid-morning through late afternoon, mostly cloudy skies, 50-62ºF, wind speed 5 mph. General botanical and wildlife observations by Mr. Carl Wishner and Mr. Jim Anderson.
- April 15, mid-morning through late afternoon, mostly cloudy skies, 50-63ºF, wind speed 5 mph. General botanical and wildlife observations by Mr. Carl Wishner and Mr. Jim Anderson.
- April 16, mid-morning through late afternoon, partly cloudy to clear skies, 54-63ºF, wind speed 4 mph. General botanical and wildlife observations by Mr. Carl Wishner and Mr. Jim Anderson.

2011

- May 11, mid-morning through late afternoon, scattered clouds to partly cloudy skies, 55-64ºF, wind speed 5 mph. General botanical and wildlife observations by Mr. Carl Wishner.
- May 12, mid-morning through late afternoon, clear to partly cloudy skies, 56-65ºF, wind speed 4 mph. General botanical and wildlife observations by Mr. Carl Wishner.

- May 13, mid-morning through late afternoon, mostly cloudy to scattered clouds, 59-63ºF, wind speed 4 mph. General botanical and wildlife observations by Mr. Carl Wishner.

2012

- May 22, morning through late afternoon, clear, 70s to mid-80s °F, no wind. General botanical and wildlife observations by Mr. Jim Anderson.
- May 23, morning through late afternoon, clear, 70s to mid-80s °F, wind 5 to 10 mph. General botanical and wildlife observations by Mr. Jim Anderson.
- May 29, noon through late afternoon, clear, 80s °F, no wind. General botanical and wildlife observations by Mr. Jim Anderson.
- May 30, mid-afternoon through late afternoon, clear, low 80s °F, no wind. General botanical and wildlife observations by Mr. Jim Anderson.
- May 31, early afternoon to mid-afternoon, clear, 80s °F, no wind. General botanical and wildlife observations by Mr. Jim Anderson.
- October 17, 18, 22, 23, and 31 and December 4, 5, and 20. Jurisdictional delineation of USACE, CDFW, RWQCB, and CCC jurisdictional areas by Mr. Jim Anderson.

2013

- April 9, morning through late afternoon, clear, low-70s °F, wind 5 to 15 mph. General botanical and wildlife observations within the proposed limits of development by Mr. Jim Anderson.

Focused surveys for the California newt (*Taricha torosa*) were conducted on March 26 and June 3, 2013 by and under the supervision of Dr. L. Kats of Pepperdine University. The surveys were conducted within the on-site stream course that is most likely to be breeding habitat, as well as at the golf course ponds and within upland habitats near the headwaters of Trancas Creek. The methods and results of the surveys are provided in *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area – A Report on California Newt and Western Pond Turtle Surveys -- 2013* by Dr. L. Kats (See Appendix 6).

Focused surveys for the western pond turtle (*Emys marmorata*) were conducted at the three largest golf course ponds between June 13 and June 22 and again between mid-July to mid-August, 2013 by and under the supervision of Dr. L. Kats of Pepperdine University. The surveys involved the daily inspection of baited collapsible mesh traps as well as visual surveys on two days in June. All turtles captured were released back into the ponds. The methods and results of the surveys are provided in *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area – A Report on California Newt and Western Pond Turtle Surveys -- 2013* by Dr. L. Kats (See Appendix 6).

TERACOR biologists collected field data during multi-season surveys from May 2006 to 2007. Field surveys were conducted on foot within accessible habitat throughout the Project site. Steep cliffs and extremely dense brush were generally avoided for safety reasons. TERACOR field personnel conducted focused surveys for flora and performed a delineation of areas under USACE and CDFW jurisdiction. Surveys for TERACOR were performed by Samuel Reed, Principal, assisted by T. Searl, F. Perez, J.

Reed, N. Bruennel, N. Albers, and C. Perez. Dates, times, conditions were not specified in their report, and statements of qualifications of observers were not provided.

TERACOR biologists S. Reed, T. Searl, J. Reed, and F. Perez conducted protocol surveys for the federally Endangered least Bell's vireo (*Vireo bellii pusillus*) and other riparian nesters (avifauna) at eight locations throughout the golf course and surrounding areas in compliance with the *Least Bell's Vireo Survey Guidelines* issued by the USFWS, dated January 19, 2001. Surveys were conducted on May 13, May 23, June 5, June 15, June 25, and July 5, July 15, and July 26, 2006 between the hours of 6:00 a.m. and 11:00 a.m. No least Bell's vireos were detected during the surveys.

2. LITERATURE REVIEW

The literature review included information available in standard biological references (e.g., Baldwin, et al. 2012; Sawyer, Keeler-Wolf, and Evens 2009; Reid 2006; Stebbins 2003; and Raven, Thompson, Prigge 1986), peer reviewed journals, and relevant lists and databases maintained by CDFW,[2] and other resource agencies pertaining to the status and known occurrences of sensitive and special-status biological resources. Other sources of information included aerial photographs, topographic maps, soil survey maps, climatic data, relevant policy and planning documents, and site-specific and non-site-specific biological studies of the site.

An appropriate and required literature search of the California Department of Fish and Wildlife's Natural Diversity Database Rarefind (CDFW 2012) was conducted. Because of the site's location with respect to the Pacific Ocean, a nine-quad search was not needed. Instead, a six-quad search of the Triunfo Pass, Point Dume, Malibu Beach, Newbury Park, Thousand Oaks, and Calabasas Quadrangles were queried for known sensitive Elements of Occurrence of natural communities, plants and animals, using the commercial computer application RAREFIND 3. This information is often helpful in determining which elements might be present and should be looked for, or perhaps at least expected to occur.

The following sources were among those reviewed or consulted during preparation of this report (for a complete list see the references section):

- *California Natural Diversity Database (CNDDB) Rarefind 3 Element Occurrence Report for Triunfo Pass, Point Dume, Malibu Beach, Newbury Park, Thousand Oaks, and Calabasas Quadrangles*, CDFW, data as of September 2012;
- *List of Special Vascular Plants, Bryophytes, and Lichens,* CDFW*,* October 2012;
- *Special Animals*, CDFW, January 2011;
- *California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California report for the 7.5' USGS Triunfo Pass, Point Dume, Malibu Beach, Newbury Park, Thousand Oaks, and Calabasas Quadrangles*, CNPS, data as of September 2012;
- *FWS Critical Habitat Mapper for Threatened and Endangered Species*, U.S. Fish and Wildlife Service (USFWS), data as of September 2012;
- *Biogeographic Information and Observation System (BIOS),* CDFW, data as of September 2012;
- *List of Vegetation Alliances and Associations (Natural Communities List)*, CDFW, September 2010;
- *A Manual of California Vegetation, 2nd ed*., Sawyer, J.O., et al., 2009;

[2] Formerly known as the California Department of Fish and Game (CDFG).

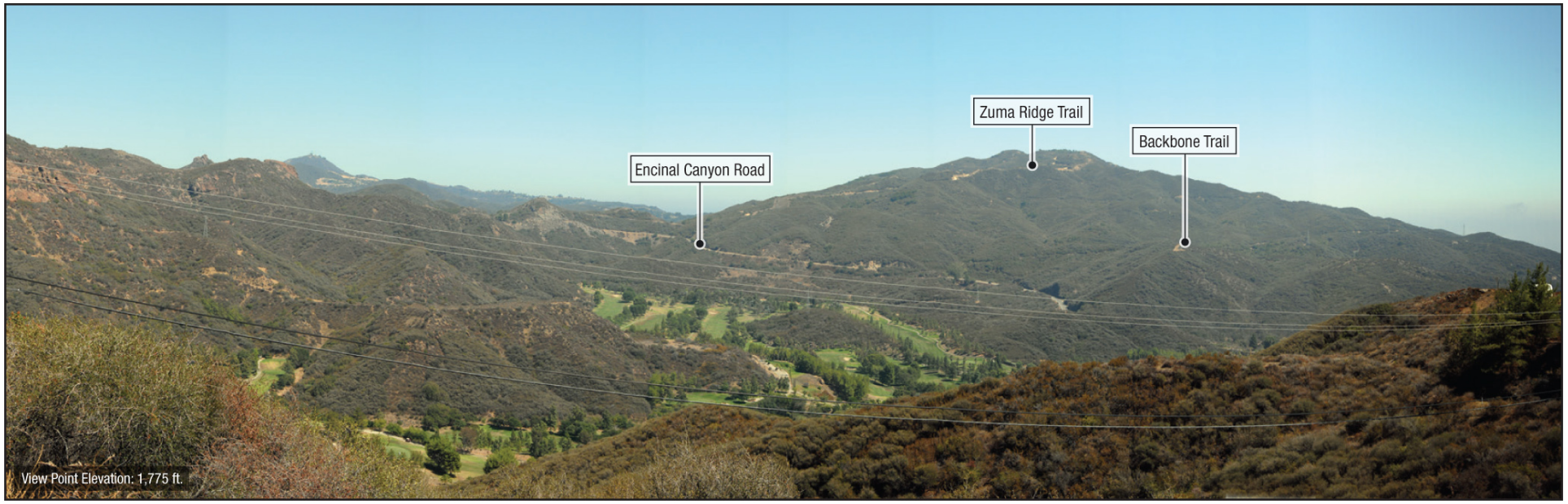
- *Malibu Local Coastal Plan*, Los Angeles County, 1982;
- *County of Los Angeles General Plan Conservation and Open Space Element,* County of Los Angeles, November 25, 1980;
- *Draft Los Angeles County Plan 2035 Conservation and Natural Resources Element,* County of Los Angeles, May 2012;
- *National Park Service Santa Monica Mountains National Recreation Area Land Protection Plan*, National Park Service, 1998;
- *Malibu Institute Project Jurisdictional Delineation,* Envicom Corporation, 2013;
- *Malibu Institute Oak Tree Report,* TREES, Etc., July 20, 2012;
- *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area,* Dr. Lee B. Kats, 2013;
- *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area. A Report on California Newt and Western Pond Turtle Surveys – 2013*, Dr. Lee B. Kats, 2013;
- *General Biological Assessment for the Malibu Country Club Property* (TeraCor, August 2007);
- *Preliminary Determination of California Department of Fish and Game "Streambeds" Jurisdiction on the Malibu Country Club Property* (TeraCor, August 2007);
- *Preliminary Determination of U.S. Army Corps of Engineers "Waters of the U.S." and Wetlands on the Malibu Country Club Property* (TeraCor, August 2007);
- *Critical Wildlife Corridor/Habitat Linkage Areas Between the Santa Susana Mountains, the Simi Hills, and the Santa Monica Mountains* (Edelman, 1990);
- *Reserve Design in the Santa Monica Mountains* (Lieberstein, 1989); and,
- *Significant Ecological Areas of the Santa Monica Mountains Report* (Los Angeles County Museum of Natural History Foundation, 1982).

V. CHARACTERISTICS OF THE SITE

1. PROJECT LOCATION

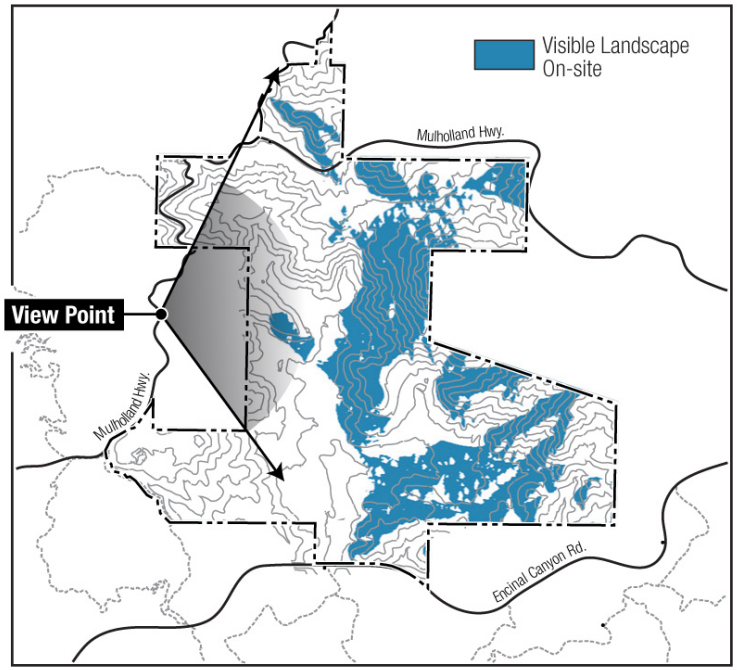
As stated in the Project Description, the Malibu Golf Club property is an irregularly shaped amalgamation of parcels encompassing approximately 650 acres, located in the Santa Monica Mountains of Los Angeles County, on the USGS topographic map sheet Point Dume (T.1S., R.19W., Sections 2, 3, 10, 11, and 15), as shown on Figure 1. The existing golf course is centered in the southern portion of the property. Figure 2 shows a color, vertical aerial photograph of the property. **Figure 3** and **Figure 4** show two low-level oblique panoramic views of the property from off-site locations.

The property lies almost entirely within the upper watershed area of Trancas Canyon, with the exception of a small, northerly extension of the property into the upper watershed of an unnamed tributary of Carlisle Canyon. Also, with the exception of this northerly extension of the property, and a small northwesterly extension, the property is bounded by Mulholland Highway to the north and west, and Encinal Canyon Road to the south. The northerly extension lies east of Westlake Boulevard and north of Mulholland Highway.



Easterly view of Malibu Golf Club seen from Mulholland Highway.

Site Visibility from Mulholland Highway and Decker Road



THE MALIBU INSTITUTE PROJECT BIOTA REPORT

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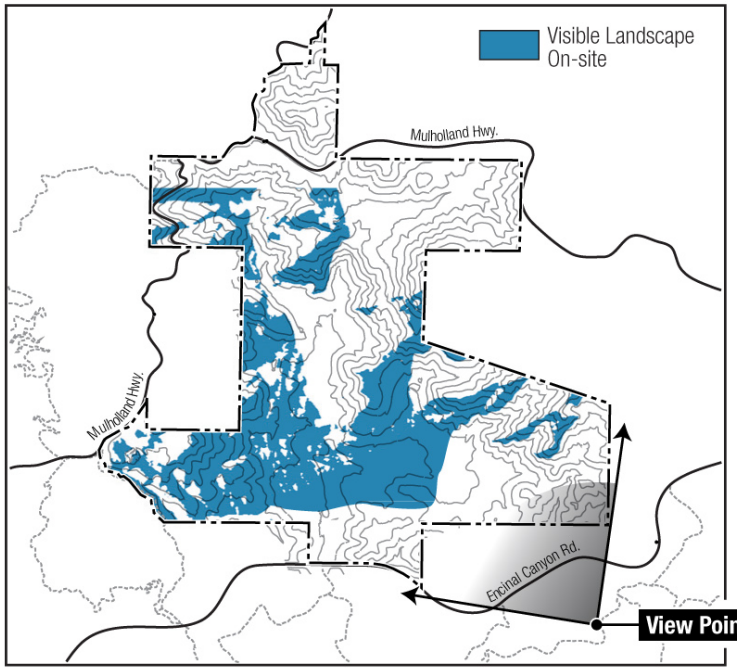
Easterly View of Malibu Golf Club From Mulholland Highway

No Scale

FIGURE 3

Northwesterly view of Malibu Golf Club from Backbone Trail.

Site Visibility from Backbone Trail



THE MALIBU INSTITUTE PROJECT BIOTA REPORT

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Northwesterly View of Malibu Golf Club From Backbone Trail

No Scale

FIGURE 4

2. PROXIMITY TO CALIFORNIA COASTAL ZONE AND ENVIRONMENTALLY SIGNIFICANT HABITAT AREAS

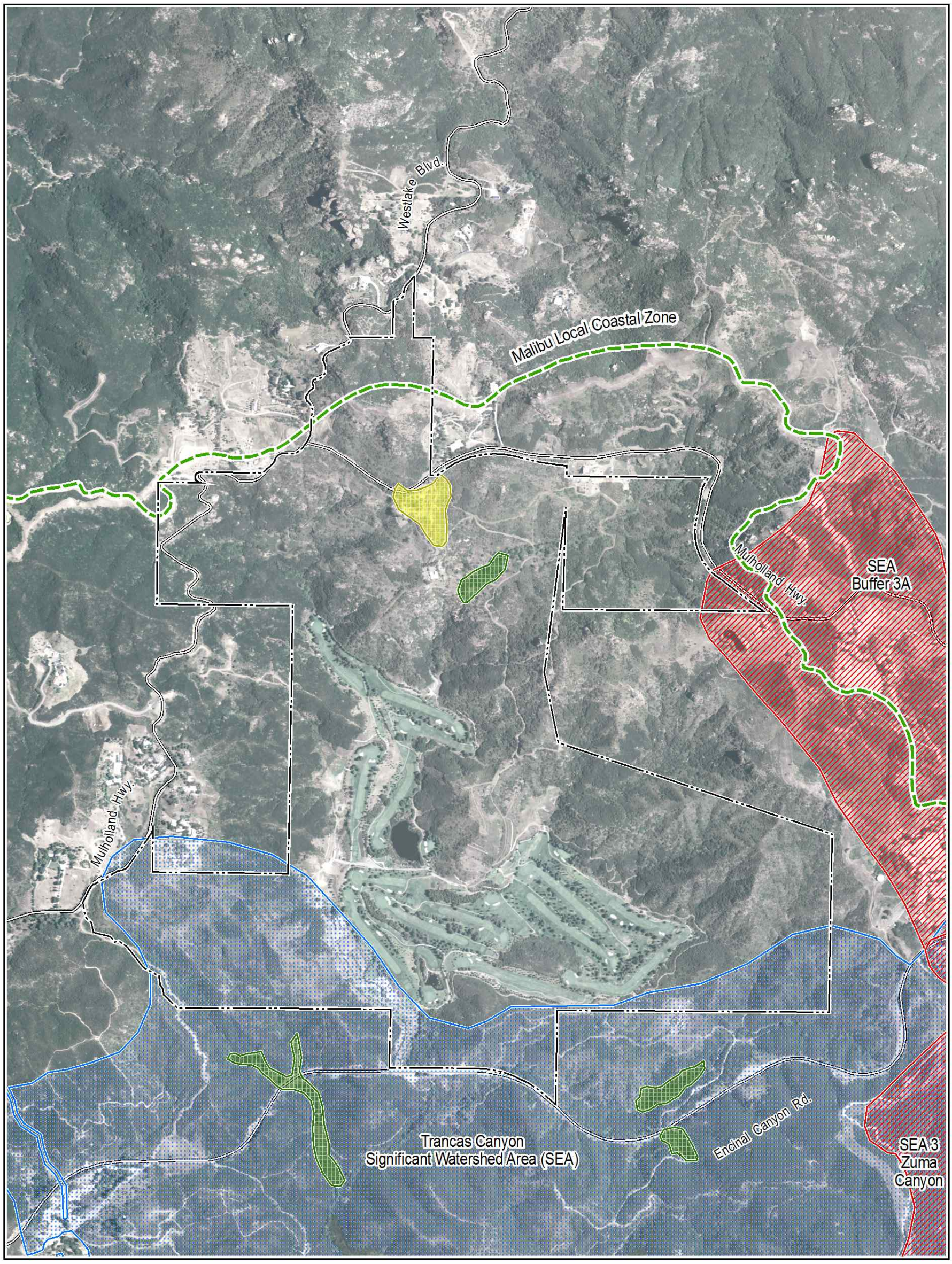
Excepting the northerly extension, the property is situated in the Santa Monica Mountains Local Coastal Zone Community Standards District, as shown on **Figure 5**. A specific portion of the site, namely, a Willow/Sycamore/Coast Live Oak community in the northeast portion of the property has previously been designated as an Environmentally Significant Habitat Area (ESHA) in the Malibu LCP (See Figure 5 and Figure 8). Another designated ESHA located immediately adjacent to residences in the northern portion of the property is appears to have been erroneously mapped. This area was observed during surveys of the site to consist predominately of non-native trees and disturbed areas associated with a residence and the former hunting lodge, and does not contain notable or sensitive native habitat.

In addition, the integrity of the Trancas Canyon Watershed has been recognized, and designated as a Significant Watershed Area (SWA) in the Malibu LCP. The boundary of the SWA does not include the uppermost watershed area, but does include a portion of the subject property along its southern margin. According to the Malibu LCP, Significant Watersheds are relatively undisturbed watershed areas containing exceptional undisturbed riparian and oak woodlands (or savannas), and are recognized as important in contributing to the integrity of these woodlands. Significant Watersheds contain significant vegetation and wildlife resources, and require special protection to maintain their health and diversity. The Malibu LCP contains policies regulating development within and adjacent to Significant Watersheds, including permitted uses and development standards and policies protecting watershed functions and the quality of sensitive habitats in the watershed.

The property borders, and only marginally includes a small portion of the Los Angeles County designated Zuma Canyon Significant Ecological Area Buffer (Buffer 3A) to the north and east, and the Zuma Canyon Significant Ecological Area (SEA 3) to the south and east. The general area is described in the draft Santa Monica Mountains Significant Ecological Area Report and the Draft Los Angeles County General Plan Update Conservation and Open Space Element as containing a variety of relatively undisturbed biotic communities including chaparral, redshank chaparral, coastal sage scrub, native and non-native grassland, oak and walnut woodland, and riparian woodland.

The CCC recognized the Mediterranean Ecosystem of the Santa Monica Mountains to be rare and especially valuable because of the mountains' relatively pristine character, physical complexity, and resultant biological diversity in a memorandum referred to as the "Dixon Memo" (Dixon, J., March 25, 2003). In addition to those areas that have been designated and mapped as ESHA in the Malibu LCP, according to the Dixon Memo, native habitats within the Coastal Zone of the Santa Monica Mountains, including chaparral, coastal sage scrub, California perennial grasslands, oak woodlands, and riparian woodlands are also ESHA, provided the habitat is largely undeveloped and part of a large, contiguous block of relatively pristine native vegetation. This determination is made on a case-by-case basis.

With the exception of areas within and adjacent to the proposed limits of disturbance, the ESHA status of the native habitats on the Project site was not evaluated during preparation of this report. However, the coastal sage scrub, chaparral, native herbaceous, and riparian communities on the slopes surrounding the existing golf club are in general largely undeveloped and part of large, contiguous tracts of native vegetation. The undeveloped native habitats on the Project site have many important roles in the ecosystem, such as maintenance of watershed health and provision of essential habitat for species requiring several habitat types during their life histories. These natural habitats very likely would qualify as ESHA under the thresholds discussed in the Dixon Memo. An evaluation of the ESHA status of the



Source: USDA-FSA Aerial Photograph, 2005. L.A. County GIS Data Portal data downloaded, March 2013.

Legend

- Project Boundary
- Designated Environmental Sensitive Habitat Area ESHA (Malibu Local Coastal Plan)
- Designated "ESHA" (Erroneously Mapped as ESHA by Malibu Local Coastal Plan)
- Malibu Local Coastal Zone
- Sensitive Ecological Area (SEA)
- Trancas Canyon Significant Watershed Area (SWA)

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Coastal Zone and Sensitive Ecological Areas (SEA) Boundaries

0 450 900 Feet

FIGURE 5

native habitats within the proposed limits of disturbance is provided under the Project Impacts heading later in this report.

3. WATERSHED BOUNDARIES AND DRAINAGE PATTERNS

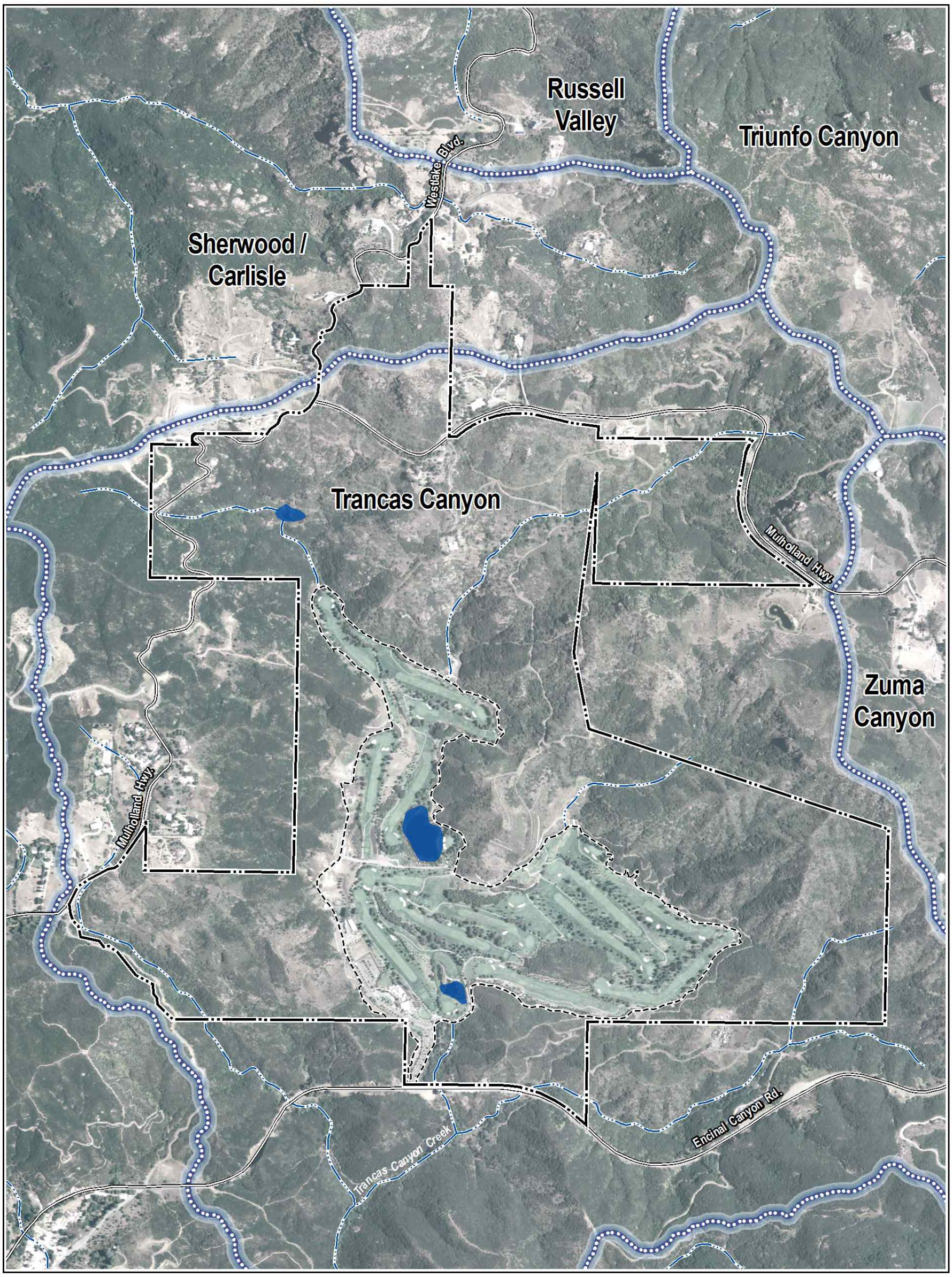
With respect to regional river basins and coastal watersheds of the Los Angeles Region, the project site (with the exception of a small northerly extension of it) falls entirely within the Trancas Canyon Hydrologic Subarea of the Point Dume Hydrologic Area of the Santa Monica Bay Hydrologic Unit (HU No. 404.37). In terms of the vicinity's topography, the project lies in the upper portion of the mainstem of the Trancas Canyon watershed, as shown in **Figure 6**. The Trancas Canyon watershed basin containing the project site terminates approximately 4 miles south-southeast of the project site, at the Pacific Ocean.

The headwaters of the mainstem of Trancas Canyon Creek traverse and are located, to large extent, on the Malibu Golf Club property. Steep drainages leading from the crest of the range pass through rockland and chaparral covered slopes and converge onto the artificial fill that constitutes the developed golf course within the central valley areas of the project site. A number of debris basins are located around the periphery of the existing development and golf course that serve to dissipate the high energy of runoff from the steepest headwater slopes. These debris basins are designed to intercept and collect the fluvial sediments, and then to direct natural runoff via man-made surface channels and/or underground culverts into two artificially created ponds on the golf course. Two original segments of the Trancas Creek "blueline stream" indicated on the Point Dume, California USGS topographic map (1950 edition) no longer exist across the golf course. Rather, they were truncated by the construction of the golf course. Near the entrance to the golf course (Clubhouse Drive from Encinal Canyon Road), any excess water flow from the golf course ponds is discharged back into the mainstem of the creek, which subsequently passes under Encinal Canyon Road to continue downstream via a natural streamcourse. One other tributary to the mainstem originates offsite to the west, within an area characterized by rural residential developments along Mulholland Highway. The streamcourse follows along the southwestern boundary of the subject property and leaves it to pass under Encinal Canyon Road. Approximately 1,000 feet downstream of the Road the streamcourse is tributary with the mainstem of Trancas Creek.

The drainage pattern on the property is dendritic in nature as the developed golf course area and the proposed project site are in effect situated in a bowl created by the crests of the surrounding Santa Monica Mountain ridgelines. The surrounding ridgeline slopes constitute the headwaters area of Trancas Canyon Creek. The on-site topography ranges from elevations of approximately 1,280 feet at the valley bottoms of the subject property, to ridgeline peaks of 1,900 to 2,300 feet in the northeast and northwest areas. Mountainous areas that lie southwest of the valley floor reach elevations of approximately 1,400 feet to 1,900 feet and mountainous areas to the southeast range from 1,400 to 1,700 feet.

A series of man-made ponds retain water on-site. Downstream of the lower pond, Trancas Canyon Creek is culverted and any excess water is discharged to the east of Clubhouse Drive near the southern property boundary. After water has pooled in this area, it re-enters the natural course of Trancas Creek, which flows south in a drainage pattern consistent with the existing topography of Trancas Canyon. A few miles downstream, the creek is eventually directed into a concrete channel running along the west side of Paseo Canyon Drive and then under Pacific Coast Highway where it discharges to the Trancas Lagoon and the Pacific Ocean.

As stated, the Project site is situated almost entirely within the upper watershed area of Trancas Canyon, with the exception of a small, northerly extension that extends into the upper watershed of an unnamed tributary of Carlisle Canyon. Trancas Canyon is one of the larger and least disturbed canyons in the



Source: USDA-FSA Aerial Photograph, 2005. State of California Watershed Geodatabase.

Legend

- Property Boundary
- Watershed Boundary
- Existing Golf Course
- USGS Blue Line Stream

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Watershed Boundaries

0 450 900 Feet

FIGURE 6

Malibu Coastal Zone (approximately 4% developed in 2004). The upper half of the canyon contains scattered homes, ranches, and recreational facilities, while the lower half remains relatively undisturbed. Much of the upper portion of the watershed is owned by the National Park Service. The lowermost portion of the watershed and the canyon mouth are largely developed and suburbanized, and consist of a small commercial center and three distinct neighborhoods: Malibu West; upper Trancas Canyon Road and the Trancas Highlands; and the Bailard/Lunita area. When Malibu West was built, a portion of Trancas Creek was lined with concrete and channelized for flood control.

4. UNUSUAL AND SIGNIFICANT LANDFORMS AND GEOLOGIC FEATURES

The geology of the project site consists of Miocene volcanic rocks that are generally basaltic and pyroclastic in nature. The formation is informally named the Conejo Formation, and contains basalt flows and breccia, some andesite, arkose, and tuff. This formation is not unusual, as it dominates large areas of the central and western portions of the Santa Monica Mountains, and it extends beyond this mountain range into the Santa Rosa and Tierra Rejada Hills to the north. It is an extensive geologic feature that characterizes the site and of much of the surrounding area.

The subject property includes engineered fill (Af_e) estimated to be from 14 to 26 feet deep in the area of the existing clubhouse facilities. Generally, fill distribution coincides with the extent of the existing golf course. Artificial fill does not constitute a soil; it typically lacks developed soil horizons, which form in-situ under long-term soil development conditions. Site investigations conducted by Leighton and Associates in February 2006 confirmed fill was moist, stiff to very stiff sandy clay with trace of coarse sand and gravel. Further discussion of soil types is presented below in Section 5.

Landforms present include relatively narrow ridgelines and crests of ridge spur slopes and narrow V-shaped valleys that are rugged and youthful in appearance as is often typical of areas experiencing tectonic uplift. The widest valley landform feature on-site contains the developed golf course and is located in a southern interior portion of the site, near the project site's access road (Clubhouse Drive) from Encinal Canyon Road. The site access road closely parallels the course of Trancas Canyon Creek where it exits the property via a culvert under Encinal Canyon Road. Mulholland Highway has been constructed across the northern edges of the primary drainage catchment along a roadbed that generally follows the contour by means of road cuts that trend across the steep headward slopes of Trancas Canyon.

The most prominent elevated landform on-site is a steep-sided central ridgeline that arcs in a northwest-southeast orientation, as it extends southerly into the middle of the site. As the site is situated near the backbone crest of the Santa Monica Mountains the headwater drainage profiles are generally steep and Quaternary alluvial deposits in the form of fans or valley terraces are generally lacking (Campbell et al. 1996). A localized base level appears to have formed by a constriction of Upper Trancas Canyon caused by ridge spur-slope landforms of confluent east- and west-bank tributaries to Trancas Canyon Creek immediately north of Encinal Canyon Road. The interior ridgeline and valley perimeter mountainsides have side slopes that exceed gradients of 100%. Locations with rock outcrop and shallow bedrock features occur along the sides and crests of the higher-elevated slopes that surround the developed golf course portions of the site.

5. SITE HABITATS AND ASSOCIATIONS IN RELATION TO SOIL TYPES, AND LOCATION OF MAJOR PLANT COMMUNITIES SOIL TYPES

Soils, as described by the Natural Resources Conservation Service (NRCS 2007) are broken down into four (4) components for the general subject property area[3], as shown on **Figure 7**. These soil associations include Mipolomol-Topanga association, xerothents-landscaped (Golf Course), Cotharian-Talepop association, and the Kayiwish association. Inclusive of these major components are rock outcrops and other minor soil components[4]. The Cotharin-Talepop association soils are dominant on-site. The Cotharin component (70% of association) is found on hills and mountains with parent material consisting of colluvium and/or in-situ residual regolith weathered from andesite. Depth to a root restrictive layer, bedrock, or parlithic, is 4 to 14 inches. The Talepop component makes up 15% of the map unit. This component is also present on hills and mountains within the subject property, and is consistent in the attributes also common to those of the Cotharin component. Additional soils information is available through the NRCS website.

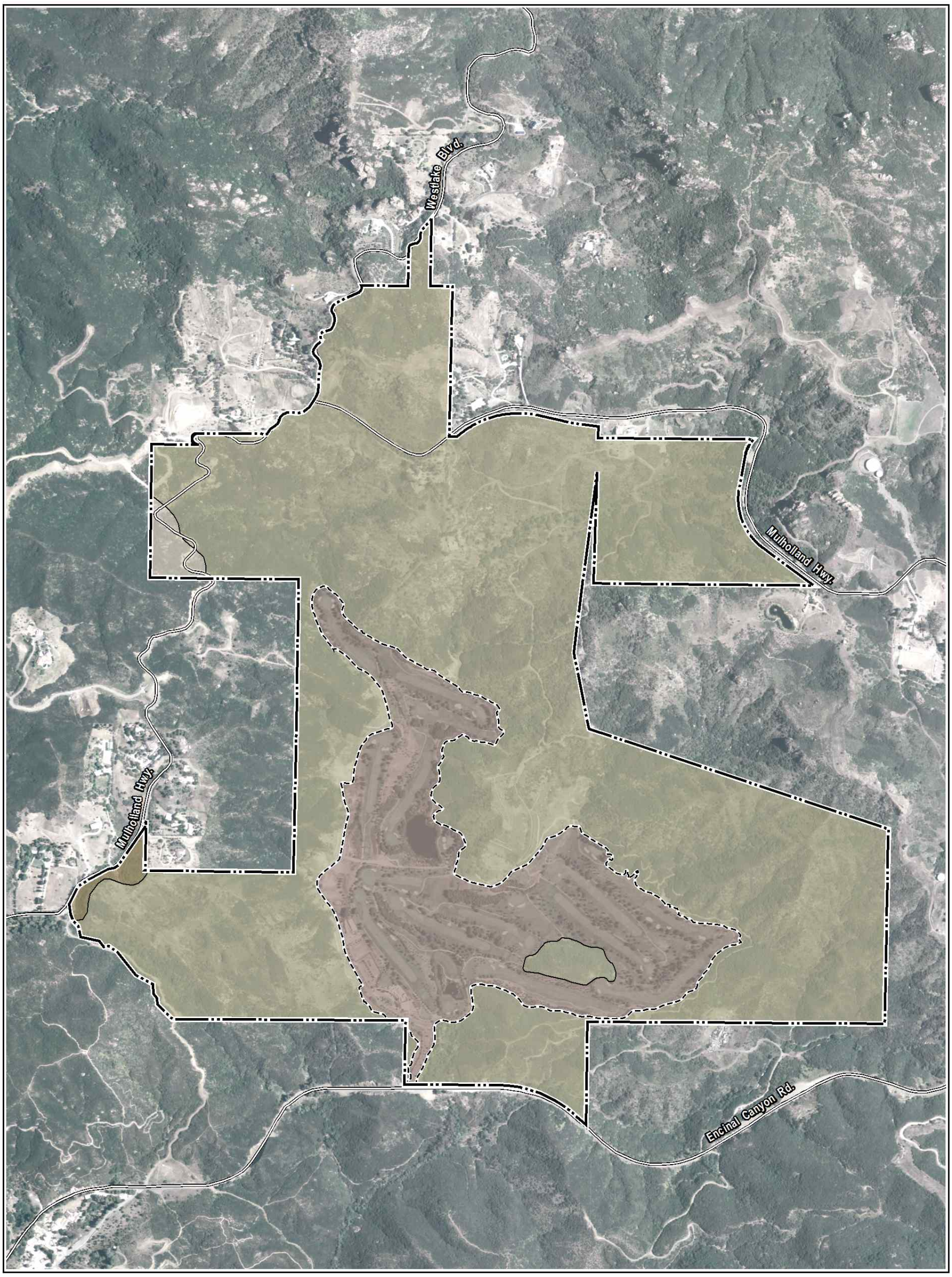
The igneous rocks comprising the Conejo Volcanic Formation that underlie the site have given rise to the development of the Hambright, Gilroy, and Vina soils series. The Hambright soils are characteristically shallow and well drained. They typically have upper profiles consisting of coarse textured decomposed igneous rock with inclusions of up to 10% gravel in the upper three inches of the profile. The gravel composition typically increases to 45% of the soil body at depths of approximately 12 inches, below which parent material consisting of fractured basalt may be encountered.

In areas of steep slopes (50-75%), the rock formations and parent material have yielded Hambright loam. The latter soils cover approximately 25% of the site. Hambright rocky clay loam occurs on moderately-steep to steep slopes (15-50%). The latter soils cover approximately 75% of the property (USDA-SCS 1967, *Soils of the Malibu Area*). The Hambright soils on-site (HtG and HrF letter designations) generally fall within areas of low Agricultural Capability Classes (VIII-el and VIII-sl) respectively. The USDA *Soils of the Malibu Area* does not consider the Hambright soils found on the project site to be suitable for either cropland or rangeland uses and generally considers the steeper sloping terrain to be most suitable for natural wildlife habitat and watershed uses. Nevertheless, adjacent properties to the north and east of the site with permissible slopes, which were formerly vegetated with dense chaparral similar to that of the site, have been extensively cleared of native vegetation in recent years for the establishment of vineyards and avocado orchards.

The soils of the Gilroy series consist of loams, clay loams, and rocky clay loams that are typically 22-40 inches deep that form as residual soils over fractured basalt and volcanic breccia with slopes ranging from 9-30%. Although the Gilroy soils form in areas of less steep slopes, they still exhibit a moderate to high erosion hazard. Additional limitations exhibited by the soil series include: 1) moderate to high shrink swell conditions; 2) severe septic tank and filter/leach field limitations; 3) high compressibility; and 4) a slow hydrologic infiltration rate.

[3] The Natural Resources Conservation Service (NRCS) map unit containing the project site is described as the Santa Monica Mountains Recreational Area Map Unit. A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas, and is identified and named according to the taxonomic classification of the dominant soils.

[4] Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils (NRCS 2007).



Source: USDA-FSA Aerial Photograph, 2005. USDA-NRCS Soil Data, 2007.

Legend

- Property Boundary
- Existing Golf Course
- Cotharin-Talepop Association
- Cotharin Loam - Rock Outcrop
- Kaywish Association
- Xerorthents - Landscaped

Soils

0 450 900 Feet

FIGURE 7

The soils of the Vina series consist of silty clay loams that are typically well drained that form over alluvial soils on valley floors with slopes ranging from 2-9%, and exhibit a slight erosion hazard. Additional limitations exhibited by the soil series include: 1) moderate shrink swell conditions; 2) severe septic tank and filter/leach field limitations; 3) moderate to high compressibility; and 4) a slow hydrologic infiltration rate.

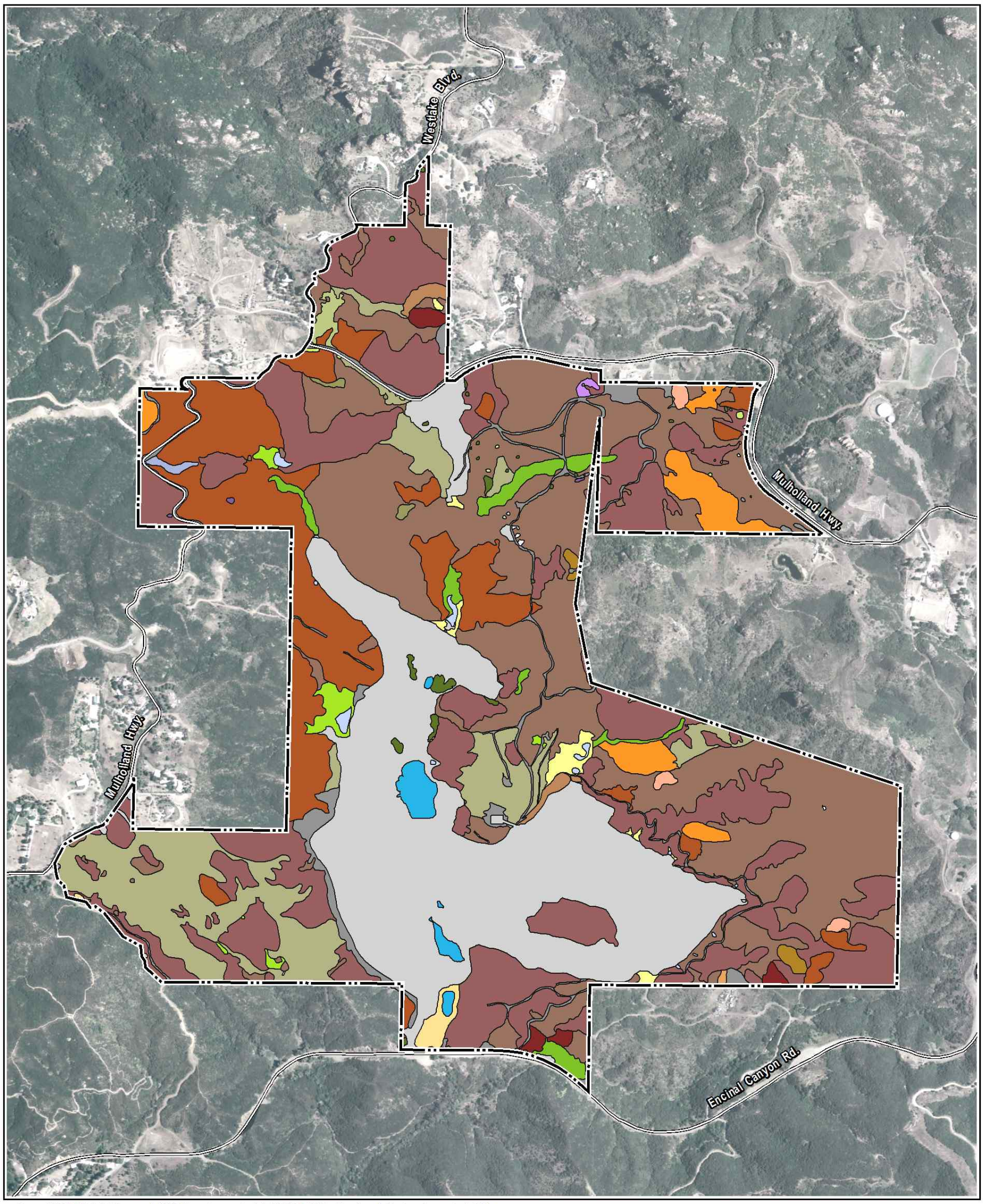
The site is located on the coastal slope at a relatively low elevation and features steep slopes and a southern aspect. These site characteristics contribute to weather influences, which are representative of southern California's Mediterranean climate. The prevailing soils that have formed from the underlying volcanic substrates, coupled with the vagaries of the area's climate, has resulted in the development of rather complex patterns of vegetation communities within the general area, as well as on-site.

Vegetation Communities and Habitats

TeraCor (2007) investigators recognized and mapped 27 distinct plant communities on the project site, applying the system of classification presented on the *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (2003). Due to the level of detail produced by the methodology applied in the TeraCor report, the results are presented here as **Figure 8**, with only minor modifications. It should be noted that the majority of these 27 classifications fit within four broader natural categories. By this, the dominant plant community on the project site is ***chaparral***, which through various disturbances contains, or is locally dominated by plant species that are typically classed as ***coastal scrub***. Scattered elements of ***woodland*** are present as isolated oak trees or concentrations of oak trees among the chaparral. Riparian woodland and patches of riparian scrub surround Trancas Creek as well as some of the other intermittent and ephemeral drainages at the site. In some places, openings among the brush and scrub are dominated by herbaceous cover that would be classed as ***grassland***. Some classifications do not fit into any of these four broad natural categories, namely, ***rocklands***, ***freshwater marsh,*** and ***aquatic habitats***. ***Rocklands*** are so sparsely covered that only a few species of vascular plants, including spike-moss and ferns, and saxicolous bryophytes and lichens are the dominant cover. ***Freshwater marsh*** and ***aquatic habitats*** are found on the golf course ponds and along the section of Trancas Creek to the east of the access road to the golf club (Clubhouse Drive). Other areas mapped by TeraCor are artificial and non-natural.

In **Table 3** below, the units of vegetation mapped by TeraCor using the *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (2003) have been cross-referenced with the most up-to-date plant community classification recognized by the State of California, as provided in the *Manual of California Vegetation, 2nd edition* (Sawyer et al. 2009) and the Department of Fish and Wildlife's (CDFW) *List of Alliances and Associations* (September 2010). Also included on the table are the most recent Global and State rarity rankings, which are analogous to rankings provided for species reported in the CNDDB. Thus, an alliance marked with an S1 through S3 code is considered to be a Natural Community of Special Concern, or a "sensitive plant community". Sensitive plant communities are protected pursuant to CEQA, and impacts to sensitive plant communities must therefore be avoided or mitigated. Notice that by this State ranking, the sensitive plant communities, i.e., the alliances in this table ranked S3 or lower, include Red Willow Thickets (G3S3), Purple Needlegrass Grassland (G4S3?), Creeping Ryegrass Grassland (G4S3), Foothill Needlegrass Grassland (G3?S3?), Giant Wildrye Grassland (G3S3), California Sycamore Woodland (G3S3), California Walnut Groves (G3S3.2), California Bay Forest (G4S3), Blue Elderberry Stands (G3S3), and Spike-Moss Mats (G4S3).[5]

[5] A "?" is included beside the status rank, there is an inexact numeric rank due to insufficient samples over the full, expected range of the vegetation type, but existing information points to the rank given.



Source: USDA-FSA Aerial Photograph, 2005. Vegetation mapping by TERACOR, 2007, with updates by Envicom Corporation in 2012.

Legend

- Project Boundary
- California Bay Woodland
- Ceaonothus Chaparral
- Chamise Chaparral
- Coast Live Oak Woodland
- Coastal Sage Scrub
- Coastal Sage Scrub/Non-Native Grassland
- Coastal Sage-Chaparral Scrub/Non-Native Grassland
- Coastal Sage/Chaparral Scrub
- Developed/Ornamental
- Disturbed/Ruderal
- Freshwater Marsh/Aquatic
- Marsh/Emergent Annual Wet
- Mulefat Scrub
- Native Grassland
- Native Grassland/Non-native Grasslands
- Native Grasslands/Coastal Sage Scrub
- Non-native Grasslands
- Ornamental/Willow/Sycamore/Coast Live Oak Woodland
- Red Shank Chaparral
- Red Shank Chaparral/Ceanothus Chaparral
- Red Shank Chaparral/Undifferentiated Chaparral Scrub
- Rock Outcrops
- Southern Willow Scrub
- Undifferentiated Chaparral Scrub
- Walnut Woodland
- Walnut Woodland/California Bay Woodland
- Willow/Sycamore/Coast Live Oak Woodland

Plant Communities

0 450 900 Feet

FIGURE 8

6. FLORA AND FAUNA – ESTIMATES OF POPULATION SIZE

The Biota Report Guidelines require "rough estimates of the population sizes of flora and fauna on the project site." **Appendix 1** (flora) and **Appendix 2** (fauna) include an estimate of population sizes of the flora and vertebrate fauna of the subject property. The terms "rare, uncommon, common, and abundant" are used, as specified in the requirement for Biota Reports.

Table 3
Classification of Vegetation Units Mapped by TeraCor
(* Denotes a Rare or Sensitive Plant Community)

Mapped Units (CDFW 2003) (Figure 8)	Plant Community Alliances (CDFW 2010; Sawyer et al. 2009)	Area (acres)
Coastal Sage/Chaparral Scrub 32300	Chamise – Black sage Chaparral (G5S5) Bigpod Ceanothus Chaparral (G4S4) Greenbark Ceanothus Chaparral (G4S4) California Sagebrush Scrub (G5S5) California Buckwheat Scrub (G5S5) Toyon Chaparral (G4S4?)	175.77
Coastal Sage/Chaparral Scrub/Non-Native Grassland 32300/42000	all above, plus: California Annual Grassland [G5S5] *Brassica (nigra*) and Other Mustards (not ranked)	0.19
Coastal Sage Scrub 32000	Laurel Sumac Scrub (G4S4) Black Sage Scrub (G4S4) California Sagebrush Scrub (G5S5) California Buckwheat Scrub (G5S5)	54.36
Coastal Sage/Non-Native Grassland 32000/42000	all above plus: California Annual Grassland (G5S5) *Brassica (nigra*) and Other Mustards (not ranked)	2.26
Mulefat Scrub 63510	Mulefat Thickets (G5S4) Sandbar Willow Thickets (G5S4.2) Arroyo Willow Thickets (G4S4)	3.52
Chamise Chaparral 37101	Chamise Chaparral (G5S5)	2.88
Red Shank Chaparral 37501	Red Shank Chaparral (G4S4) Red Shank – Birchleaf Mountain-Mahogany Chaparral (G4S4) Red Shank – Chamise Chaparral (G4S4)	1.51
Ceanothus Chaparral 37200	Bigpod Ceanothus Chaparral (G4S4) Hoaryleaf Ceanothus Chaparral (G4S4)	70.55
Red Shank/Ceanothus Chaparral 37501/37200	Red Shank Chaparral (G4S4) Bigpod Ceanothus Chaparral (G4S4) Hoaryleaf Ceanothus Chaparral (G4S4)	12.68
Undifferentiated Chaparral 37000	Laurel Sumac Scrub (G4S4) Black Sage Scrub (G4S4) Chamise Chaparral (G5S5)	141.60
Undifferentiated Chaparral Scrub/Red Shank Chaparral 37000/37501	Laurel Sumac Scrub (G4S4) Black Sage Scrub (G4S4) Chamise Chaparral (G5S5) Red Shank Chaparral (G4S4) Toyon Chaparral (G4S4?)	1.39

Mapped Units (CDFW 2003) (Figure 8)	Plant Community Alliances (CDFW 2010; Sawyer et al. 2009)	Area (acres)
Native Grassland 41000	*Purple Needlegrass Grassland (G4S3?) *Creeping Ryegrass Grassland (G4S3) *Foothill Needlegrass Grassland (G3?S3?) *Giant Wildrye Grassland (G3S3)	0.67
Native Grassland/Coastal Sage Scrub 41000/32000	All above plus: Laurel Sumac Scrub (G4S4) Black Sage Scrub (G4S4) California Sagebrush Scrub (G5S5) California Buckwheat Scrub (G5S5)	1.59
Non-Native Grassland 42000	California Annual Grassland (G5S5)	3.41
Native Grassland/Non-Native Grassland 41000/42000	*Purple Needlegrass Grassland (G4S3?) *Foothill Needlegrass Grassland (G3?S3?) *Giant Wildrye Grassland (G3S3) California Annual Grassland (G5S5)	0.46
Willow/Sycamore/Coast Live Oak Woodland 61000	Arroyo Willow Thickets (G4S4) *Red Willow Thickets (G3S3) *California Sycamore Woodland (G3S3) Coast Live Oak Woodland (G5S4)	7.65
Coast Live Oak Woodland 71060	Coast Live Oak Woodland (G5S4) *California Bay Forest (G4S3)	1.92
California Walnut Woodland 72100.01	*California Walnut Groves (G3S3.2) *Blue Elderberry Stands (G3S3) Coast Live Oak Woodland (G5S4) Toyon Chaparral (G4S4)	3.04
California Bay Woodland 74100	*California Bay Forest (G4S3) *California Walnut Groves (G3S3) Bigpod Ceanothus Chaparral (G4S4) Greenbark Ceanothus Chaparral (G4S4)	0.14
California Walnut/California Bay Woodland 72100.01/74100	*California Walnut Groves (G3S3.2) *California Bay Forest (G4S3)	0.65
Ornamental/Willow/Sycamore/Coast Live Oak Woodland 61000	Ornamental Stands [unranked] Arroyo Willow Thickets (G4S4) *Red Willow Thickets (G3S3) *California Sycamore Woodland (G3S3) Coast Live Oak Woodland (G5S4)	2.20
Southern Willow Scrub 63130	Arroyo Willow Thickets (G4S4)	1.29
Marsh/Emergent Annual Wetland 52000	Pale spike rush marsh (G4S4)	1.39
Freshwater Marsh/Aquatic 52000	Bulrush Marsh (G5S4) Duckweed Blooms (G5S4?)	4.38
Disturbed/Ruderal Areas	*Brassica (nigra*) and Other Mustards (not ranked)	19.05
Developed/Ornamental Areas	Ornamental Stands (not ranked) Eucalyptus Groves (not ranked)	135.28
Rock Outcrops	*Spike-Moss Mats (G4S3)	0.17

A "?" denotes an inexact numeric rank due to insufficient samples over the full, expected range of the vegetation type, but existing information points to the rank given.

The five-digit numbers corresponding to the mapped units are codes used to identify each plant community type, as provided in CDFW (2003). The mapped units in the table for which no corresponding five–digit numbers are provided, such as "Rock Outcrops" or "Disturbed/Ruderal areas," are landcover classes or habitat types, as opposed to classified vegetation communities.

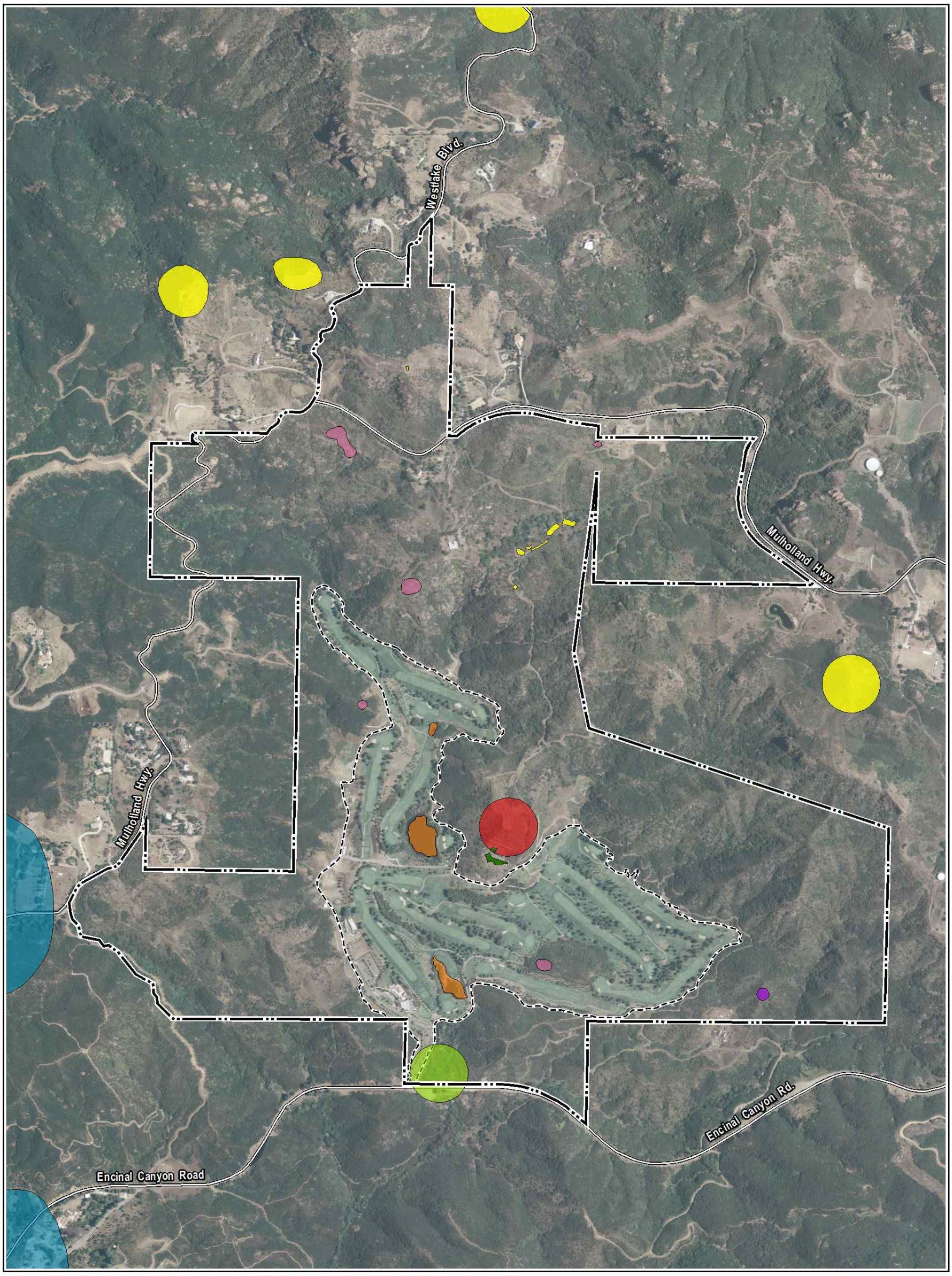
7. FLORA AND FAUNA – LISTS OF SPECIES

During the course of field observations made from 2006 through 2013 by biologists from TeraCor and Envicom Corporation, a combined total of **375 taxa** of vascular plants have been observed on the subject property including 10 native ferns and fern allies, 2 introduced conifers, 294 dicotyledonous flowering plants (194 native, 100 introduced), and 69 monocotyledonous flowering plants (35 native, 34 introduced). A list of these species is provided in **Appendix 1**. Many of the common mosses and liverworts were noted, however, lichens were not surveyed. Also indicated in Appendix 1 is whether the listed species were observed by biologists from TeraCor, Envicom, or both). In all, approximately 36 percent of all plant taxa on the property are introduced. These observations generally do not include introduced species used in managed landscapes and turf areas, unless these have been observed to escape into unmanaged, disturbed or natural areas. An estimate of the population sizes of the flora observed on the Project site is also included in Appendix 1, based on the categories "rare, uncommon, common, and abundant."

Several occurrences of the state- and federally-Endangered Lyon's pentachaeta (*Pentachaeta lyonii*) [FE, CE] occur on the Project site and in the surrounding area. Patches of Lyon's pentachaeta were discovered during surveys conducted between 2007 and 2012 on and adjacent to unpaved roads in the north-central portion of the Project site and on a broad ridgeline and firebreak to the north of Mulholland Highway (for status codes for special-status plants, see **Table 4** at the end of this section). Additionally, a single, isolated Lyon's pentachaeta was found growing on an unpaved roadbed, approximately 300 feet to the south of the nearest patch in 2012. Populations of this species are remote from areas on the Project site proposed for development. The locations of known observations of Lyon's pentachaeta from surveys conducted in preparation of this report and from CNDDB records are shown on **Figure 9**, Known Locations of Special-Status Species.

The County maintains a list of plant species the County considers locally sensitive within the Santa Monica Mountains. The list is based on a list of uncommon plant species of the Santa Monica Mountains maintained by the National Park Service with some additions, as determined by the County biologist. The County considers locally sensitive plant species to be significant biological resources, and requires that potential impacts to these species be evaluated during environmental review of proposed projects. The following County locally sensitive plant species were identified on the Project site during botanical surveys conducted between May 2006 and April 2013: California hedge parsley (*Yabea microcarpa*), slender combseed (*Pectocarya linearis* spp. *ferocula*), smooth western morning-glory (*Calystegia purpurata* ssp. *purpurata*), leather root (*Hoita macrostachya*), downy mimetanthe (*Mimulus pilosus*), Fish's milkwort (*Polygala cornuta* ssp. *fishiae*), deergrass (*Muhlenbergia rigens*), six-weeks fescue (*Festuca octoflora*), and creeping wildrye (*Elymus triticoides*). Of these species, slender combseed occurs within the proposed limits of disturbance. On April 9, 2013, there were an estimated 300 individuals within and in the vicinity of the proposed helicopter pad site. This occurrence is mapped on Figure 9. All of the remaining L.A. County locally sensitive species, which were not mapped, were found outside of the proposed disturbance limits.

Of continuing concern is the observation that two species of introduced weeds have continued to make significant increases in their numbers and extent since observations made of them in 2007. In particular, Geraldton carnation weed (*Euphorbia terracina*), which has previously been called Terracina spurge, has continued to spread over a large area in the western portion of the property. Because it is observed to be *highly invasive*, and able to spread rapidly, and become dominant over large areas of intact grassland, chaparral and coastal scrub habitats, its presence at the Malibu Golf Club represents a significant threat to the future health and integrity of the natural lands there. There are a number of invasive species listed on the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory (www.cal-ipc.org)



Source: USDA-FSA Aerial Photograph, 2005. Envicom Corporation, 2007, 2008, 2009, 2010, 2011, and 2012. CNDDB Database, December 2012.

Legend

- Property Boundary
- Existing Golf Course

Special-Status Plant Species

- **Lyon's Pentachaeta** (*Pentachaeta lyonii*) [FE, CE] *
- **Plummer's Mariposa Lily** (*Calochortus plummerae*) [L.A. County]
- **Slender Combseed** (*Pectocarya linearis ssp. ferocula*) [L.A. County]

Special-Status Animal Species

- **Coastal Western Whiptail** (*Aspidoscelis tigris stejnegeri*) [SA]
- **Cooper's Hawk** (*Accipiter cooperii*) [SA]
- **Santa Monica Grasshopper** (*Trimerotropis occidentaloides*) [SA]
- **Coast Horned Lizard** (*Phrynosoma blainvillii*) [SSC]
- **Western Pond Turtle** (*Emys marmorata*) [SSC]

* Lyon's Pentachaeta within property boundary surveyed by Envicom Corporation during field surveys in 2007, 2008, 2009, 2010, 2011, and 2012.

Known Locations of Special-Status Species

0 450 900 Feet

FIGURE 9

on the property, including but not limited to Cretan lavatera (*Malva pseudolavatera* [<= *Lavatera cretica*]) and poison hemlock (*Conium maculatum*). New reports of pampas grass (*Cortaderia* sp.) and tall sock-destroyer (*Torilis arvensis*), as well as English ivy (*Hedera helix*) and cultivated grape (*Vitus* sp.), which were found in riparian habitats onsite, are also of concern.

During the course of combined field visits made from 2006 through 2013 by biologists from TeraCor, Envicom Corporation, and Dr. L. Kats of Pepperdine University, four species of fish, one amphibian, eight reptiles, 82 birds, and 13 species of mammals were observed. The available habitats for wildlife include mainly chaparral, coastal scrub, grassland, and minor elements of riparian oak/sycamore woodland. Based on the known range of the species and their habitat preferences, a broad spectrum of vertebrate wildlife species can reasonably be anticipated to occur at the project site, and in the surrounding area. In some cases, the species are common residents. In other cases, species may be anticipated only rarely, occasionally, sporadically, irregularly, seasonally, infrequently, etc. Nonetheless, their presence and use of the site and area can still be anticipated. In **Appendix 2**, this range of wildlife species has been compiled from a variety of literature, including local lists, popular references, field guides, and personal experience. By this method, approximately **eight** species of amphibians (**one** newt, **three** salamanders, **three** frogs, and **one** toad), **22** reptiles (**two** turtles, **seven** lizards and **13** snakes), **222** species of birds, and **58** species of mammals can be reasonably expected to inhabit or pass through the project site and surrounding area. Almost all of these are native species. An estimate of the population sizes of potentially occurring vertebrate wildlife is also included, based on the categories "rare, uncommon, common, and abundant." The source of any observation made during the annual surveys, whether it be biologists from TeraCor, or Envicom, or both is also indicated in Appendix 2.

During surveys of the Project site between 2006 and 2013 by biologists from TERACOR, Envicom Corporation, and Dr. L. Kats of Pepperdine University, sixteen special-status wildlife species were observed, including the coast horned lizard (*Phrynosoma blainvillii*) [SSC], western pond turtle (*Emys marmorata*) [SSC], coastal whiptail (*Aspidoscelis tigris stejnegeri*) [SA], olive-sided flycatcher (*Contopus cooperi*) [SSC], golden eagle (*Aguila chrysaetos*) [CFP], northern harrier (*Circus cyaneus*) [SSC], white-tailed kite (*Elanus leucurus*) [CFP], yellow warbler (*Dendroica petechia brewsteri*) [SSC], Cooper's hawk (*Accipiter cooperi*) [SA], sharp-shinned hawk (*Accipiter striatus*) [SA], southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) [SA], lark sparrow (*Chondestes grammacus*) [SA], oak titmouse (Baeolophus inornatus) [SA], Nuttall's woodpecker (*Picoides nuttallii*) [SA], red-breasted sapsucker (*Sphyrapicus ruber*) [SA], and Allen's hummingbird (*Selasphorus rufus*) [SA]. The locations of these observations, if known, as well as observations of other special-status wildlife from California Natural Diversity Database (CNDDB) records are shown on Figure 9. For a list of status codes for special-status wildlife, see **Table 5** at the end of this section.

Appendix 3 presents a listing of butterflies observed on-site by Envicom Corporation beginning in 2009. To date 19 species of butterflies have been observed.

Appendix 4 presents an assessment of the potential for occurrence of special-status species on the property. This was undertaken through research of the California Department of Fish and Wildlife's Natural Diversity Data Base (CDFW 2012), using the Rarefind 3 application for sensitive "elements" on the Point Dume quadrangle, and five others that surround it, namely Triunfo Pass, Newbury Park, Calabasas, Thousand Oaks, and Malibu Beach. A number of elements not reported on these quadrangles are also anticipated to occur in the region and vicinity of the property. For plants (including Lichens and Bryophytes), we speculate about the potential for occurrence for those species included on the *List of Special Vascular Plants, Bryophytes and Lichens* (CDFW 2012). For animals, there is room for considerable speculation about the potential for their occurrence on the property on the basis of known

distribution and their habitat requirements, but little actual observation. A number of special-status species are known to occur in the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains, but are herein considered not to have any potential to occur on the subject property, based on habitat considerations alone. These latter species, listed at the end of Appendix 3, were excluded from additional analysis and consideration. All other *Special Animals* (CDFW 2012) known to occur in the range, and which could not be so excluded, and therefore might reasonably be anticipated to occur on the property are included in the assessment.

The special-status plant species that are known to occur or have potential to occur on the Project site are listed below.

Special-Status Lichens

***P**otentially present:*

Woven-spored lichen *(Texosporium sancti-jacobi)* [Status: S1.1]

Special-Status Bryophytes

Potentially present:

California screw moss *(Tortula californica)* [CRPR 1B.2]

Coastal triquetrella *(Triquetrella californica)* [CRPR 1B.2]

Special-Status Vascular Plants

Present:

Lyon's Pentachaeta *(Pentachaeta lyonii)* [FE/CE, CRPR 1B.1]

Plummer's mariposa-lily *(Calochortus plummerae)* [CRPR 4.2, L.A. County]

Catalina mariposa lily *(Calochortus catalinae)* [CRPR 4.2]

Southern California black walnut *(Juglans californica)* [CRPR 4.2]

Fish's milkwort *(Polygala cornuta var. fishiae)* [CRPR 4.3, L.A. County]

Leatherroot *(Hoita macrostachya)* [L.A. County]

Downy mimetanthe *(Mimulus pilosus)* [L.A. County]

Deergrass *(Muhlenbergia rigens)* [L.A. County]

California hedge parsley *(Yabea microcarpa)* [L.A. County]

Slender combseed *(Pectocarya linearis spp. ferocula)* [L.A. County]

Smooth western morning-glory *(Calystegia purpurata ssp. purpurata)* [L.A. County]

Six-weeks fescue *(Festuca octoflora)* [L.A. County]

Creeping wildrye *(Elymus triticoides)* [L.A. County]

Potentially present:

Malibu baccharis (*Baccharis malibuensis*) [CRPR 1B.1]

Parry's spineflower (*Chorizanthe parryi* var. *parryi*) [CRPR 1B.1, L.A. County]

Slender mariposa-lily (*Calochortus clavatus* var. *gracilis*) [CRPR 1B.2]

Rayless ragwort (*Senecio aphanactis*) [CRPR 2B.2]

Plummer's baccharis (*Baccharis plummerae* ssp. *plummerae*) [CRPR 4.2, L.A. County]

Southern mountain misery (*Chamaebatia australis*) [CRPR 4.2]

Fragrant pitcher sage (*Lepechinia fragrans*) [CRPR 4.2]

Brewer's calandrinia (*Calandrinia breweri*) [CRPR 4.2]

Island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*) [CRPR 4.3]

Santa Barbara bedstraw (*Galium cliftonsmithii*) [CRPR 4.3]

The following wildlife species that are listed, proposed for listing, or that meet criteria for listing as Endangered, Threatened, or Rare under the FESA or CESA, or that are listed as a California Species of Special Concern (SSC) or as California Fully Protected (CFP) are confirmed present on the Project site or are considered potentially occurring, with varying probabilities ranging from high to very low, depending on the species. These species meet the criteria of CEQA Guidelines Section 15380 as an endangered, threatened, or rare species, whether or not official listed, as provided in Section 15380(d). For a discussion of all other special-status wildlife species (i.e., those species referred to herein as "special animals," abbreviated "SA") that are confirmed present on the Project site or that are considered potentially occurring, see Appendix 4. "Special animals" do not require a mandatory finding of significance pursuant to CEQA Guidelines Section 15380. However, the County of Los Angeles requires that the potential for significant impacts to all "special animals" be evaluated during environmental review on a case-by-case basis.

Special-Status Gastropods

Potentially Present:

Trask or Peninsular Range Shoulderband (*Helminthoglypta traskii traskii*) [L.A. County]

Special-Status Fishes

No special-status fishes have potential to occur at the Project site. The following special-status fishes are potentially occurring in aquatic habitats several miles downstream from the Project site at the Trancas Lagoon:

Southern steelhead (*Oncorhynchus mykiss irideus*) (southern California Distinct Population Segment (DPS) [FE, SSC]

The southern Steelhead (southern California DPS), which includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in streams from the Santa Maria River (north of Point Sal) south to the Tijuana River at the U.S.-Mexico border, is listed as Endangered under the Federal Endangered Species Act. The National Marine Fisheries Service (NMFS) estimates the southern steelhead population to be less than 1% of its historic population size. The southern steelhead is absent from the Project site, but is potentially present in aquatic habitats downstream from the Project site at the Trancas Lagoon.

Although the southern steelhead is considered absent currently from Trancas Creek, the species was probably present historically. Historical Distribution of Southern Steelhead Trout in the Santa Monica Bay Region (Dagit, R., S. Drill, PhD., and B. Meyer, 2005), a report prepared for the CDFW and NOAA Fisheries by the Resource Conservation District of the Santa Monica Mountains, includes

the following chronological records documenting steelhead presence in Trancas Creek: "1930's Giles Manwaring reported that Bernie Neumann (deceased) who was raised in Trancas Canyon described catching silver salmon, most likely steelhead. Also Manwaring spoke with Leo Bourget who caught steelhead up to 6 pounds in the area of the housing track in his youth, circa 1938. (interviewed for this report)" and "1980's John Steckwald caught several 8 inch trout and observed good steelhead habitat. (interviewed for this report)." According to NMFS Southern Steelhead ESU Current Stream Habitat Distribution Table (website) for Trancas Canyon creek, there are "[a]necdotal reports of silver salmon and steelhead catches pre World War II." In the Santa Monica Mountains, recent records for steelhead exist for Arroyo Sequit, Big Sycamore, Malibu, and Topanga Canyons (Swift, et al. 1993, CDFW 2013).

The *Santa Monica Mountains Steelhead Habitat Assessment Final Project Report* (California Trout, Inc., 2006) identifies and prioritizes streams for steelhead restoration actions within the Santa Monica Mountains, based in part on an assessment of habitat type and quality and natural and anthropogenic barriers to fish passage in 13 focal watersheds, including the Trancas Canyon Watershed. The following excerpt on steelhead life history is reproduced from this report:

> Steelhead, which are members of the Salmonid family, are rainbow trout with a life cycle similar to that of a salmon. It is an anadromous species: steelhead are born and reared in freshwater streams, as juveniles they migrate to estuaries where they adjust to saltwater, and then migrate to the ocean to mature into adults. After spending one to three years foraging on the food sources of the Pacific, large adult steelhead, some reaching 20 pounds, generally return to their home streams – some to the very pools of their birth – to reproduce. Unlike salmon, steelhead do not necessarily die after spawning and may make the spawning journey more than once. Unlike juvenile Chinook salmon that typically migrate to the ocean after just a few months of freshwater rearing, juvenile steelhead reside in coastal streams from one to three years before migrating to the ocean. As such, steelhead use all segments of a stream system to complete the freshwater phase of their life cycle. They use estuaries to acclimate to salinity changes, the middle reaches of the mainstem stream to reach headwaters and tributaries, and headwaters and tributaries to spawn and rear. Steelhead require cool, clean water year-round to sustain themselves (McEwan and Jackson 1996; CalTrout 1996). In addition, they need cool, clean well-oxygenated water flowing over clean gravel to spawn and develop. Under natural conditions, these habitat requirements - especially suitable water temperatures - occur primarily in the headwater tributaries, which is why adult steelhead migrate higher into a river system to spawn than do other anadromous fish species.

The following excerpts on steelhead life history are reproduced from the *Southern California Steelhead Recovery Plan* (NMFS, January 2012):

> This species may also display a non-anadromous life history pattern (i.e., a "freshwater-resident" strategy). It has been common practice to refer to non-anadromous individuals that complete their entire life history cycle (incubating, hatching, rearing, maturing, reproducing, and dying) in freshwater as rainbow trout, while referring to those emigrating to and maturing in the ocean as steelhead. However, this terminology does not capture the complexity of the life history cycles exhibited by native *O. mykiss*. Individuals can complete their life history cycle completely in freshwater, or they can migrate to the ocean after one to three years, and spend two to four years in the marine environment before returning to freshwater rivers and streams to spawn.

Additionally, "rainbow trout" which have completed their life history cycle entirely in freshwater sometimes produce progeny which become anadromous and emigrate to the ocean and return as adults to spawn in freshwater. Conversely, it has also been shown that steelhead may produce progeny which complete their entire life cycle in freshwater. The cues that trigger this phenomenon are unknown, but may be linked to environmental variation. For example, juvenile residency can be strongly influenced by the hydrologic cycle in southern California, where extended droughts can cause juveniles to become land-locked and therefore unable to reach the ocean.

Anadromous southern steelhead are precluded from occurring in the upper Trancas Canyon Watershed at or in the vicinity of the Project site by a nearly three meter high natural waterfall within Trancas Creek, which is located above a bedrock cascade. The waterfall, which is roughly one mile downstream from the Project site, is considered the absolute natural limit to upstream steelhead migration in the watershed (California Trout, Inc., 2006). Also according to the CalTrout study, the large artificial flood control channel in the lower reaches of Trancas Creek near the Malibu West development is likely impassable to steelhead at all times.

The "steelhead" that were reportedly caught by John Steckwald in Trancas Creek in the 1980s would therefore have been a non-anadromous form of rainbow trout (which is not listed as Endangered), given the presence of a barrier (the large artificial flood control channel) to upstream fish migration in the lower reaches of Trancas Creek that was constructed in the 1950s, or earlier. If non-anadromous rainbow trout are still present in the Trancas Canyon Watershed, the trout could potentially be found in Trancas Creek or its tributaries wherever there is year-round water and suitable habitat, including upstream from the aforementioned natural limit to steelhead migration. Non-anadromous rainbow trout are not expected at the golf course ponds due to the presence of large, predatory fish, including largemouth bass. Also, the ponds do not provide suitable habitat for *O. mykiss* reproduction.

If non-anadromous rainbow trout are present in Trancas Creek, they could potentially be naturally occurring or introduced. According to *The Status and Distribution of the Freshwater Fishes of Southern California* (Swift, C., et al., December 1993): "Beginning in the 1890s and extending through the late 1930s fingerling rainbow trout were planted into almost all possible waters in southern California," although whether or not rainbow trout were introduced to Trancas Creek historically was not determined during preparation of this document. Non-anadromous rainbow trout could potentially begin to migrate if downstream barriers were removed (i.e., both return to the ocean and migrate back upstream to spawn); however, if downstream barriers were removed, only the naturally occurring and not introduced trout would then have protected Endangered status.

The CalTrout study selected Trancas Creek as a "middle-priority" stream that should undergo habitat restoration actions, receiving an overall ranking of fifth out of 13 focal watersheds. According to the CalTrout study, in general, habitat quality for adult steelhead ranges between poor and very good, while juvenile habitat ranges between poor and excellent. Based on both stormflow and baseflow hydrology, the stream was identified as one of the watersheds where future restoration efforts should be focused."

The principle anthropogenic threats contributing to extinction risk of steelhead are impassable barriers and water storage and withdrawal that alter the pattern and magnitude of streamflow, which affect basic life history phases including egg-to-smolt survival and smolt-to-spawner survival. Therefore, the federal recovery strategy (*Southern California Steelhead Recovery Plan* (NMFS, January 2012) places a high priority on actions that alleviate these threats. Also of high priority are

the protection and the restoration of mainstem and estuarine rearing habitats. Additional actions important to the recovery strategy are:

1) curb unnatural inputs of fine sediments to waterways;
2) promote the establishment and maintenance of streamside vegetation and flood-plain connectivity and function; and
3) encourage the formation and preservation of complex instream habitat.

The Southern California Steelhead Recovery Plan (NMFS, January 2012) identifies certain watersheds and the steelhead populations within those watersheds that constitute the foundation of recovery of the Southern California Steelhead DPS. The objective of the Recovery Plan is the removal of the Southern California Steelhead DPS from the Federal List of Endangered and Threatened Wildlife. The focus of the NMFS southern California steelhead biological recovery strategy is the core steelhead populations in larger watersheds that exhibit the physical and hydrological characteristics (e.g., large spatial area, perennial and reliable winter streamflow, stream network extending inland) that are most likely to sustain independently viable populations, which are critical for ensuring viability of the DPS as a whole. The Trancas Canyon Watershed does not currently support an anadromous population of steelhead, although, as discussed above, John Steckwald reportedly caught "steelhead" in Trancas Creek in the 1980s, which due to the presence of barriers to fish migration in the lower reaches of Trancas Creek would have been the non-anadromous form of rainbow trout. Also, the Trancas Canyon Watershed is not part of the recovery strategy outlined in the federal Recovery Plan, nor has Trancas Creek been designated as Critical Habitat for steelhead by the NMFS. However, the restoration of unoccupied steelhead habitat in watersheds such as Trancas Canyon is recommended by CalTrout and would reduce extinction risk.

Tidewater Goby (*Eucyclogobius newberryi*) [FE, SSC]

This small, estuarine fish occurs in shallow coastal lagoons and the lower portions of coastal rivers and streams. Tidewater gobies prefer slow-moving and almost still brackish water for building and maintenance of burrows. Tidewater gobies may at times be found several miles upstream of estuaries. The CNDDB does not indicate that Trancas Lagoon or the lower reaches of Trancas Creek are inhabited by tidewater goby. Currently, the only water bodies within the Santa Monica Mountains region where tidewater gobies are known to exist are Malibu Lagoon, Malibu Creek, and Topanga Creek (Federal Register, v. 78, No. 25, February 6, 2013). No other creek or estuary in the Santa Monica Mountains region is currently occupied by the tidewater goby. Although there are no records of this species at the Trancas Lagoon, its presence or future presence at the Trancas Lagoon cannot be discounted.

Special-Status Amphibians

Special-status amphibians that are known to occur in the Santa Monica Mountains are limited to California red-legged frog (*Rana draytonii*) [FT, SSC] and the California newt (*Taricha torosa*) [SSC]. The California newt is considered absent from the Project site based on a habitat assessment and a focused survey that was conducted on March 26 and June 3, 2013 (See *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area. A Report on California Newt and Western Pond Turtle Surveys -- 2013* in Appendix 6). The survey was conducted within areas at the Project site that would most likely constitute breeding habitat, including 160 meters of Trancas Creek to the east of the entrance to the Malibu Golf Club, the reach of Trancas Creek where the stream exists the property under Encinal Road, and 76 meters of the

open channel stream on the golf course grounds, which is shown as "Drainage 2" on the Jurisdictional Delineation Maps. In addition, upland habitats near the headwaters of Trancas Creek were searched for newts by turning over logs, rocks, and other debris. To be thorough, the golf course ponds were also surveyed, although the ponds do not provide suitable breeding habitat. No California newts were found during the survey and, due to the presence of numerous invasive aquatic animals, including crayfish and mosquitofish, the stream habitats that were surveyed are currently unsuitable for newt breeding. With the removal of the invasive animals, the reach of Trancas Creek at the Project site to the east of the entrance to the Malibu Golf Club could potentially support breeding newts. As part of the Project, invasive crayfish would be captured and removed from this section of the creek, as discussed in *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area* (See Appendix 5).

The California red-legged frog is likely extirpated from the Santa Monica Mountains and is considered absent from the Project site. The golf course ponds could potentially provide suitable breeding habitat for the California red-legged frog, although the ponds are currently unsuitable habitat for all life stages of the species due to the presence of numerous invasive animals, including predatory fish, mosquito fish, and crayfish. With removal of the invasive animals, the ponds could potentially support a breeding population of the California red-legged frog. As stated, as part of the Project, invasive predatory fish and crayfish would be removed from the ponds, as discussed under the Invasive Animals heading and in *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area* (See Appendix 5).

Special-Status Reptiles

Present:

Western pond turtle (*Emys marmorata*) [SSC]

The western pond turtle has been confirmed present at the three largest golf course ponds. Several adult turtles (estimated at 10 individuals) were captured as incidental by-catch in mesh crayfish traps early in 2013 as a part of the ongoing effort to eradicate crayfish from the Project site. Also, focused trapping and visual surveys for the western pond turtle were conducted at the three largest golf course ponds between June 13 and June 22, 2013 and from mid-July to mid-August, 2013. Thirteen (13) adult turtles were captured in collapsible mesh traps and five adult turtles were directly observed. The size of the pond turtles suggests that minimal reproduction is occurring as no smaller turtles were observed, presumably due to the presence of large predatory fish. All captured turtles were released back into the ponds. Western pond turtles may also be present at the smallest golf course pond or within Trancas Creek to the east of the entrance road, although none were observed in these areas during any of the surveys conducted in preparation of this DEIR. For additional information on the survey methods and results see Kats, L. B., *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area – A Report on California Newt and Western Pond Turtle Surveys --- 2013*, in Appendix 6.

Coast horned lizard (*Phrynosoma blainvillii*) [SSC]

Potentially Present:

California legless lizard (*Anniella pulchra*) [SSC]

Two-striped garter snake (*Thamnophis hammondii*) [SSC]

Coast patch-nosed snake (*Salvadora hexalepis virgultea*) [SSC]
San Diego mountain king snake (*Lampropeltis zonata pulchra*) [SSC]

Special-Status Birds

Present:

White-tailed kite (*Elanus leucurus*) [CFP]
Olive-sided flycatcher (*Contopus cooperi*) [SSC]
Northern harrier (*Circus cyaneus*) [SSC]
Golden eagle (*Aquila chrysaetos*) [CFP]
Yellow warbler (*Dendroica petechia brewsteri*) [SSC]

Potentially Present:

Least Bell's vireo (*Vireo bellii pusillus*) [FE, CE]
Willow flycatcher (*Empidonax traillii extimus*) [FE, CE]
Bank swallow (*Riparia riparia*) [CT]
Western least bittern (*Ixobrychus exilis hesperis*) [SSC]
Burrowing owl (*Athene cunicularia*) [SSC]
Long-eared owl (*Asio otus*) [SSC]
Short-eared owl (*Asio flammeus*) [SSC]
Black swift (*Cypseloides niger*) [SSC]
Vaux's swift (*Chaetura vauxi*) [SSC]
Loggerhead shrike (*Lanius ludovicianus*) [SSC]
Purple martin (*Progne subis*) [SSC]
Yellow-breasted chat (*Icteria virens*) [SSC]
Summer tanager (*Piranga rubra*) [SSC]
American peregrine falcon (*Falco peregrinus anatum*) [CFP]

Special-Status Mammals

Potentially Present:

San Diego desert woodrat (*Neotoma lepida intermedia*) [SSC}
Ringtail (*Bassariscus astutus octavus*) [CFP]
American badger (*Taxidea taxus neglecta*) [SSC]
Mexican long-tongued bat (*Choeronycteris mexicana*) [SSC]
Cave myotis (*Myotis velifer velifer*) [SSC]
Western red bat (*Lasiurus blossevillii frantzii*) [SSC]
California leaf-nosed bat (*Macrotis californicus*) [SSC]
Spotted bat (*Euderma maculatum*) [SSC]
Pale big-eared bat (*Corynorhinus townsendii pallescens*) [SSC]
Pallid bat (*Antrozous pallidus pacificus*) [SSC]
Western mastiff bat (*Eumops perotis californicus*) [SSC]
Big free-tailed bat (*Nyctinomops macrotis*) [SSC]

Table 4
Status Codes for Special-Status Plants

FEDERALLY PROTECTED SPECIES	
FE (Federal Endangered)	A species that is in danger of extinction throughout all or a significant portion of its range.
FT (Federal Threatened)	A species that is likely to become Endangered in the foreseeable future.
FC (Federal Candidate)	A species for which USFWS has sufficient information on its biological status and threats to propose it as Endangered or Threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.
STATE PROTECTED SPECIES	
CE (California Endangered)	A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
CT (California Threatened)	A native species or subspecies that, although not presently threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as "Rare" on or before January 1, 1985, is a "Threatened species."
CR (California Rare)	A species, subspecies, or variety of plant is rare under the Native Plant Protection Act when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become Endangered if its present environment worsens. Animals are no longer listed as Rare; all animals listed as Rare before 1985 have been listed as threatened.
CALIFORNIA RARE PLANT RANK (CRPR) (formerly CNPS Lists)	
CRPR 1A	Plants presumed extirpated in California and either rare or extinct elsewhere.
CRPR 1B	Plants rare, threatened, or endangered in California and elsewhere.
CRPR 2A	Plants presumed extirpated in California, but more common elsewhere.
CRPR 2B	Plants rare, threatened, or endangered in California, but more common elsewhere.
CRPR 3	A review list for plants for which there is inadequate information to assign them to one of the other lists or to reject them.
CRPR 4	A watch list for plants that are of limited distribution in California.
CALIFORNIA NATIVE PLANT SOCIETY (CNPS) THREAT RANK	
The CNPS Threat Rank is an extension added onto the California Rare Plant Rank and designates the level of endangerment, as follows: • 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat) • 0.2-Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat) • 0.3-Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)	
LOCALLY IMPORTANT SPECIES	
L.A. County	Los Angeles County Locally Sensitive Species

Table 5
Status Codes for Special-Status Wildlife

FEDERALLY PROTECTED SPECIES	
FE (Federal Endangered)	A species that is in danger of extinction throughout all or a significant portion of its range.
FT (Federal Threatened)	A species that is likely to become endangered in the foreseeable future.
FC (Federal Candidate)	A species for which USFWS has sufficient information on its biological status and threats to propose it as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.
FSC (Federal Species of Concern)	A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as "Category-2 Candidate" species.
STATE PROTECTED SPECIES	
CE (California Endangered)	A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
CT (California Threatened)	A native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as "rare" on or before January 1, 1985, is a "threatened species."
SSC (California Species of Special Concern)	Animals that are not listed under the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.
CFP (California Fully Protected)	This designation originated from the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians, reptiles, and birds. Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. California Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.
SA (Special Animal)	"SA" is used herein if the animal is included on the CDFW's *Special Animals List* but does not fall under any of the categories listed above. "Special Animals" is a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. The CDFW considers these taxa on the *Special Animals List* to be those of greatest conservation need.

8. JURISDICTIONAL WETLANDS, WATERS, AND HABITAT

As stated, the Project site is located in the upper Trancas Canyon watershed and the headwaters of the main stem of Trancas Creek are located to large extent onsite. Trancas Creek and several tributary drainages pass through chaparral and scrub-covered slopes on the Project site to detention basins of various sizes around the perimeter of the existing golf course. After being detained in the basins, flows pass into a network of underground drains beneath the golf course. The underground drains converge and flows are directed downstream through four ponds of varying sizes located on the golf course, which are presumably in-line with the historical alignment of Trancas Creek. The two largest ponds were created in the late 1960s when the site was apparently used for hunting and were incorporated into the golf course when it was constructed in the mid-1970s. In the current condition, flows migrate downstream through the sub-surface drains and through the inlet and outlet structures of the four ponds before discharging via a large culvert to the natural Trancas Creek channel at the southern end of the golf course just northeast of Clubhouse Drive, and then through a large culvert under Encinal Canyon Road. Trancas Creek then descends through Trancas Canyon to the Pacific Ocean. All subsurface drains, drainages, ponds, and detention basins within the proposed limits of disturbance are ultimately tributary to Trancas Creek and the Pacific Ocean.

Jurisdictional Delineation

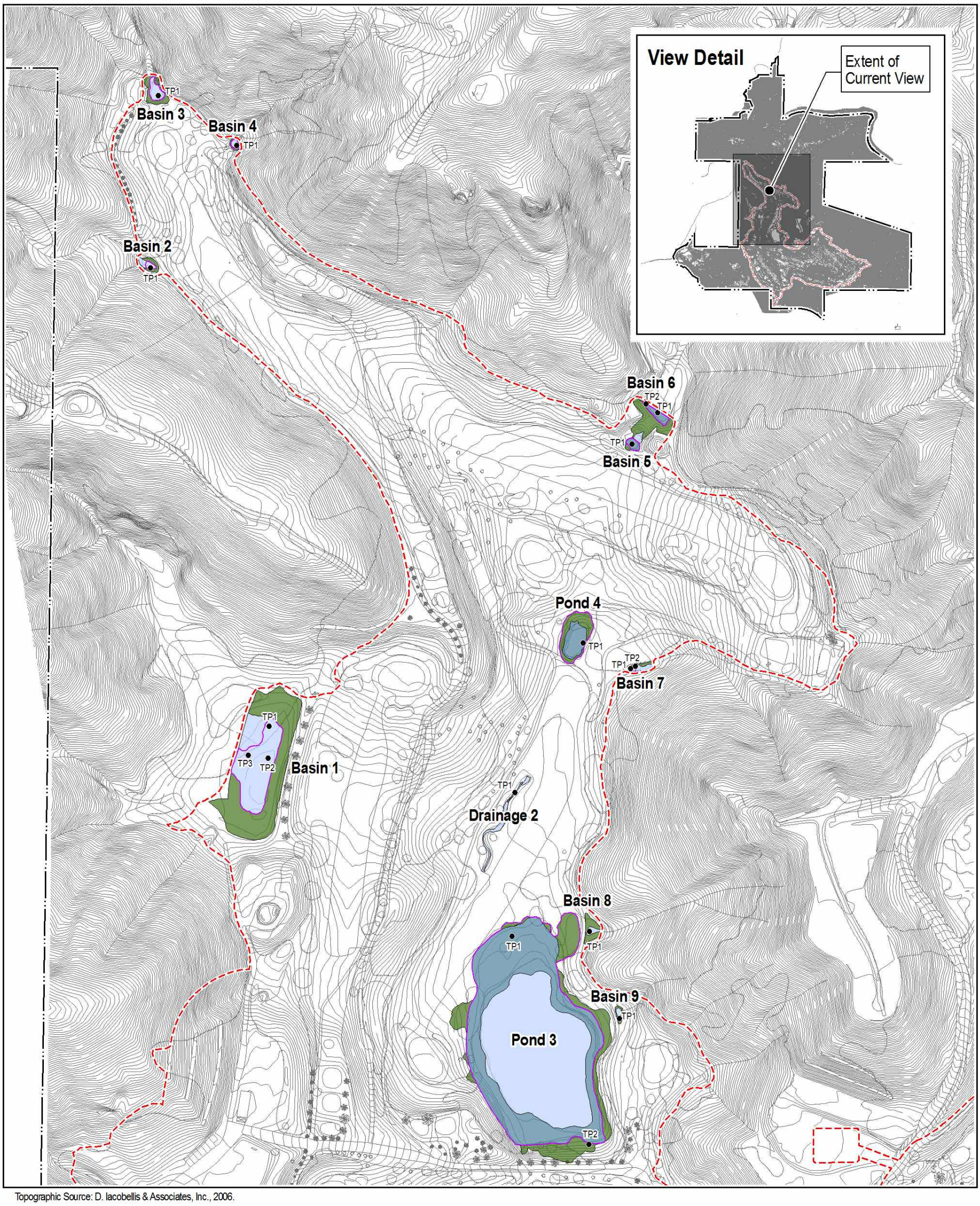
A field investigation to delineate the amount and type of jurisdictional waters, wetlands, and habitat was performed by Envicom Corporation in October 2012 and December 2012, using the methods described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (September 2008) and definitions and protocols described by the CDFW for identifying and classifying jurisdictional habitat. A delineation of areas meeting the "single-parameter" wetland definition used by the CCC also was performed. The field investigation focused on areas within the proposed limits of disturbance as well as several detention basins located along the perimeter of the existing golf course. The limits of the jurisdictional delineation are shown on **Figures 10A, 10B, and 10C.** USACE and CDFW jurisdictional boundaries were geo-referenced using a Trimble GeoXT GPS unit to sub-meter accuracy. For a detailed discussion of the regulatory background and methods and results of the jurisdictional delineation, refer to the *Malibu Institute Project Jurisdictional Delineation* report by Envicom Corporation (March 2013).

USACE "Wetland" "Waters of the United States"

For an area to be classified as "wetland" "waters of the United States" under the jurisdictional authority of the USACE, it must exhibit the three criteria of hydrophytic vegetation, hydric soils, and wetland hydrology, or must present an atypical or naturally problematic situation where one (or more) of the criteria is not met. Atypical situations are wetlands in which vegetation, soil, or hydrology indicators are absent due to recent human activities or natural events. Naturally problematic wetlands are naturally occurring wetland types that lack indicators of hydrophytic vegetation, hydric soil, or wetland hydrology periodically due to normal seasonal or annual variability, or permanently due to the nature of the soils or plant species on the site.

USACE "Non-wetland" "Waters of the United States"

Streams that do not exhibit hydrophytic vegetation, hydric soils, and wetland hydrology may still be subject to USACE jurisdiction as "non-wetland" "waters of the United States", based on criteria outlined in the memorandum "Revised Guidance on Clean Water Act Jurisdiction Following the Supreme Court Decision in Rapanos v. U.S. and Carabell v. U.S." (Environmental Protection Agency (EPA)/USACE, December 2, 2008). The extent of USACE jurisdiction of "non-wetland" "waters of the U.S." is based



Topographic Source: D. Iacobellis & Associates, Inc., 2006.

Legend

- Project Boundary
- Limits of Jurisdictional Delineation

CDFW Jurisdiction

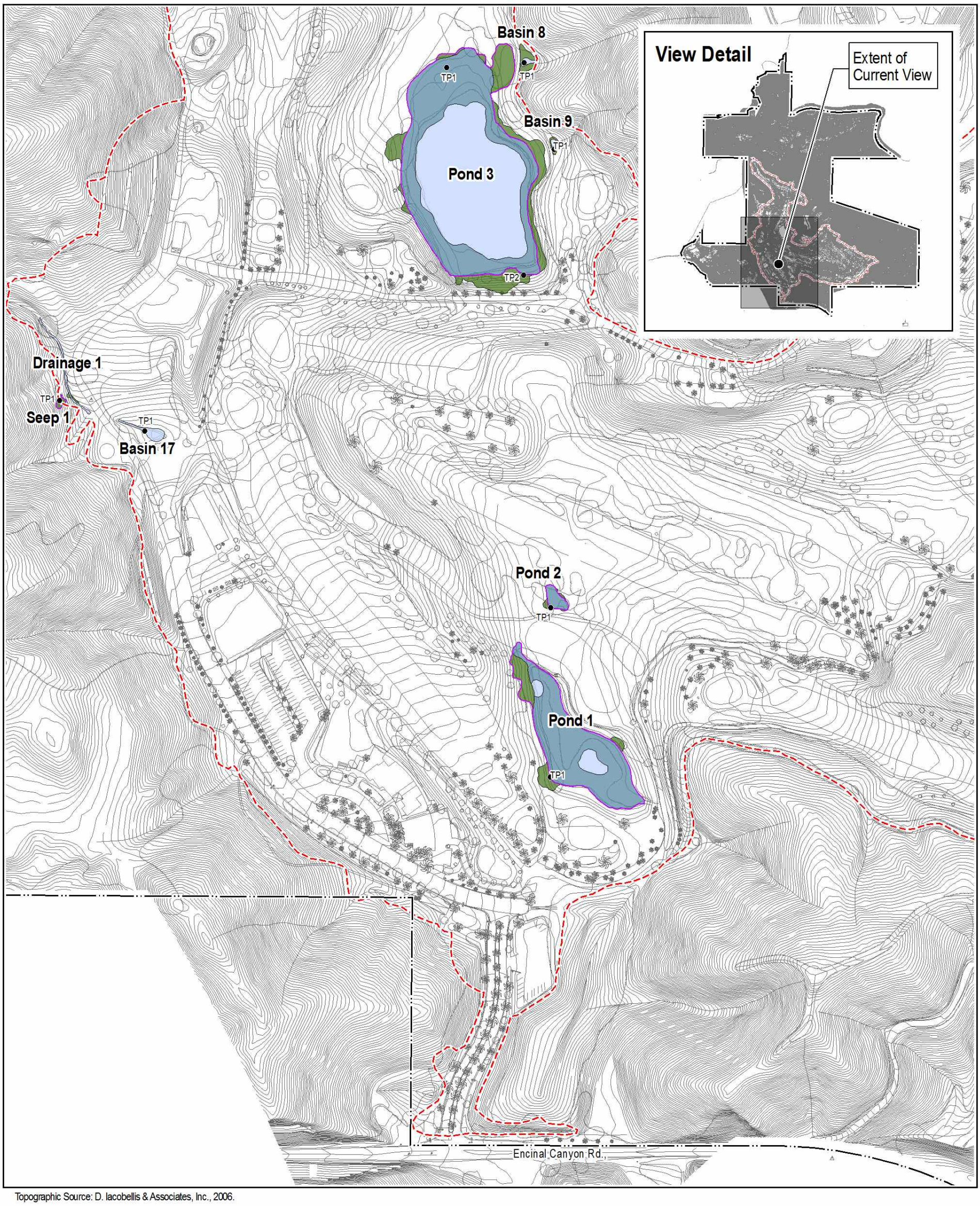
- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat
- Single-Parameter Wetlands (California Coastal Commission Wetland Definition)
- ●TP# Sample Plots/Test Pits

ENVICOM CORPORATION

Jurisdictional Areas

0 225 Feet

FIGURE 10A



Topographic Source: D. Iacobellis & Associates, Inc., 2006.

Legend

- Project Boundary
- Limits of Jurisdictional Delineation

CDFW Jurisdiction

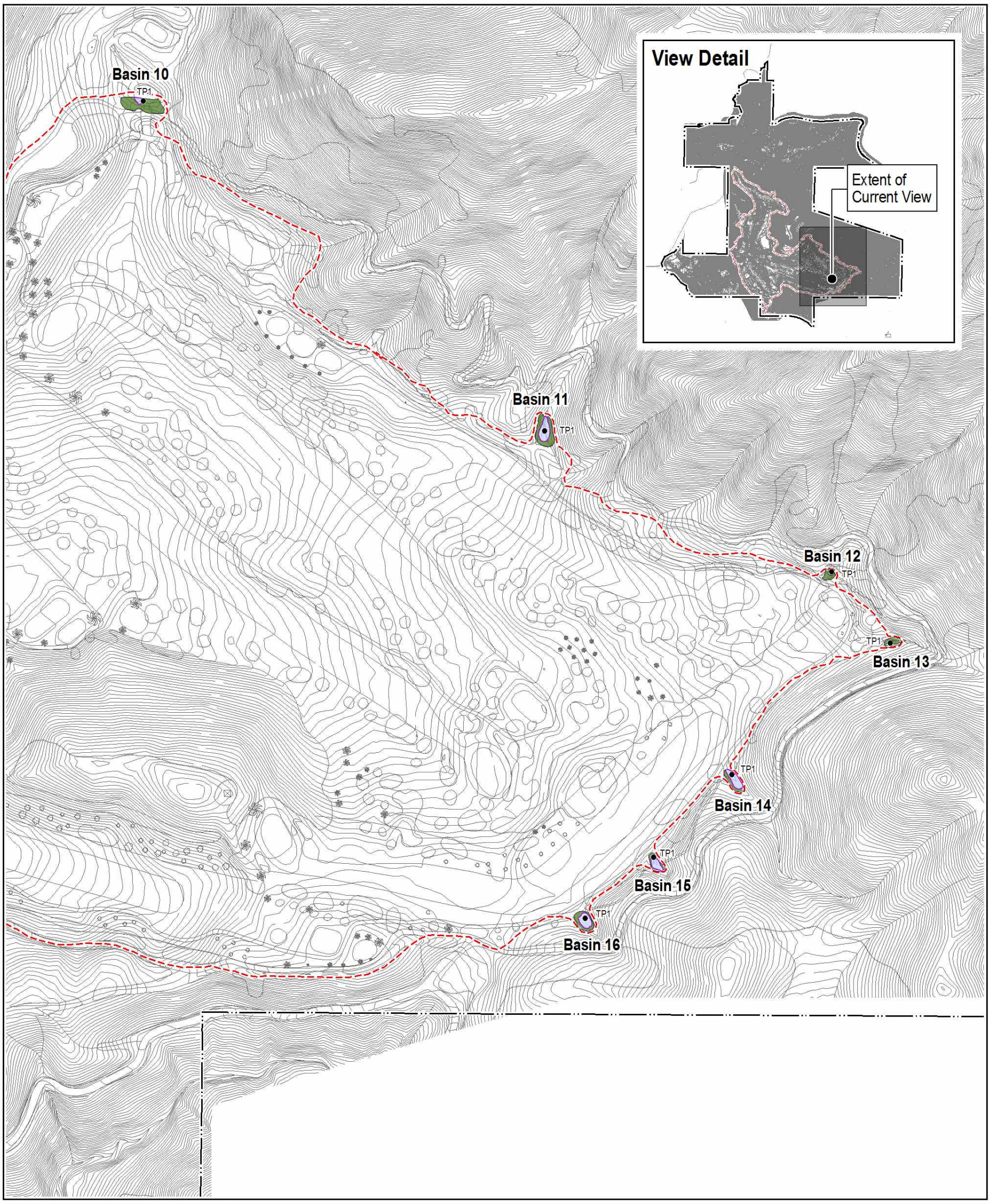
- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat
- Single-Parameter Wetlands (California Coastal Commission Wetland Definition)
- ●TP# Sample Plots/Test Pits

ENVICOM CORPORATION

Jurisdictional Areas

0 225 Feet

FIGURE 10B



Topographic Source: D. Iacobellis & Associates, Inc., 2006.

Legend

- Project Boundary
- Limits of Jurisdictional Delineation

CDFW Jurisdiction

- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat
- Single-Parameter Wetlands (California Coastal Commission Wetland Definition)
- ●TP# Sample Plots/Test Pits

ENVICOM CORPORATION

Jurisdictional Areas

0 225 Feet

FIGURE 10C

upon the Ordinary High Water Mark (OHWM), which is defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris.

CDFW Jurisdictional Habitat

The extent of CDFW jurisdiction is defined as from the top of bank to the opposite top of bank and, if applicable, outside the stream banks and to the canopy edge of riparian vegetation. Measurements from the top of the banks or to the canopy edge of riparian vegetation are typically wider than the Ordinary High Water Mark (OHWM) measurement, often substantially so.

CCC Regulated Wetlands

In *Procedural Guidance for the Review of Wetland Projects within California's Coastal Zone* (1994), the CCC provides the following statement regarding the recognition of wetlands subject to regulation under the California Coastal Act: "In the California coastal zone, the California Coastal Commission (CCC), with the assistance of the [California Department of Fish and Wildlife (CDFW)] is responsible for determining the presence of wetlands subject to regulation under the California Coastal Act. As the primary wetland consultant to the CCC, the [CDFW] essentially relies on the FWS [United States Fish and Wildlife Service] wetland definition and classification system, with some minor changes in classification terminology, as the methodology for wetland determinations. However, one important difference in the [CDFW] delineation process compared to the FWS process is that the [CDFW] only requires the presence of one attribute (e.g., hydrology, hydric soils, or hydrophytic vegetation) for an area to qualify as a wetland." The CCC typically considers USACE methods for delineating wetland hydrology, hydric soils, or hydrophytic vegetation, as described in *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (September 2008) to be acceptable for delineating "single-parameter wetlands".

Jurisdictional Areas

Jurisdictional waters, wetlands, and habitat under the regulatory authority of the USACE, CDFW, RWQCB, and/or CCC are shown on Figures 10A, 10B, and 10C. The jurisdictional features are also listed on **Table 6,** along with their jurisdictional status and acreage, and in the case of drainages their length. The jurisdictional areas within the proposed limits of disturbance include four ponds; a man-made drainage on the golf course; an ephemeral drainage in the vicinity of an existing water tank near the western boundary of the Project site; and, a small seep on a slope in an existing fuel modification zone, also in the vicinity of the same water tank. Seventeen detention basins around the perimeter of the golf course were also delineated, although only two of these basins fall within the limits of disturbance. These jurisdictional features are described in detail in the *Malibu Institute Project Jurisdictional Delineation* report.

Table 6
Existing USACE, CDFW, and "Single-Parameter" Jurisdictional Wetlands, Waters, and Habitat

	USACE Waters of U.S.		CDFW Jurisdictional Habitat (Acres)	"Single-Parameter" Wetlands (Acres)
	Wetlands (Acres)	Non-wetlands (Acres)		
Pond 1	0.81	0.08	1.02	0.97
Pond 2	0.04	--	0.05	0.04
Pond 3	1.26	1.56	3.26	2.94
Pond 4	0.08	--	0.15	0.15
Basin 1	--	0.40	0.94	0.32
Basin 2	--	0.01	0.02	0.01
Basin 3	--	0.03	0.06	0.03
Basin 4	--	0.01	0.02	0.01
Basin 5	0.01	--	0.10	0.01
Basin 6	0.02	0.01	0.12	0.02
Basin 7	--	0.01	0.02	0.002
Basin 8	--	0.01	0.04	--
Basin 9	--	0.006	0.01	--
Basin 10	--	0.004	0.05	0.004
Basin 11	--	0.02	0.05	0.02
Basin 12	--	0.003	0.01	--
Basin 13	--	0.004	0.01	--
Basin 14	--	0.01	0.02	0.01
Basin 15	--	0.01	0.02	0.01
Basin 16	--	0.01	0.02	0.01
Basin 17	--	0.03	0.03	--
Drainage 1	--	0.02 (261 linear feet)	0.03 (261 linear feet)	--
Drainage 2	0.002 (36 linear feet)	0.03 (277 linear feet)	0.03 (313 linear feet)	--
Seep 1	--	--	0.01	0.01
Total Jurisdictional Acreage	**2.22**	**2.27**	**6.09**	**4.57**

The following jurisdictional features contain a total of 2.22 acres of "wetland" "waters of the U.S.": the four ponds and the man-made stream channel on the golf course grounds (i.e., Pond 1, Pond 2, Pond 3, Pond 4, and Drainage 2) and two detention basins in line with the main stem of Trancas Creek at the northern boundary of the golf course (Basin 5 and Basin 6).

The following jurisdictional features contain a total of 2.27 acres of "non-wetland" "waters of the U.S.": the two largest ponds and the man-made stream channel on the golf course grounds (i.e., Pond 1, Pond 3, and Drainage 2); sixteen of the detention basins around the perimeter of the golf course (Basins 1 – 4, Basins 6 – 17); and an ephemeral drainage near the western boundary of the proposed limits of disturbance (Drainage 1).

The following jurisdictional features contain a total of 6.09 acres of CDFW jurisdictional habitat: the four ponds and the man-made stream channel on the golf course grounds (i.e., Pond 1, Pond 2, Pond 3, Pond 4, and Drainage 2); the detention basins around the perimeter of the golf course (Basins 1 – 17); the ephemeral drainage near the western boundary of the proposed limits of disturbance (Drainage 1); and a small seep on a slope in an existing fuel modification zone, also located near the western boundary of the limits of disturbance (Seep 1).

The following jurisdictional features contain a total of 4.57 acres of "single-parameter" wetlands: the four ponds and the man-made stream channel on the golf course grounds (i.e., Pond 1, Pond 2, Pond 3, Pond 4, and Drainage 2); twelve of the detention basins around the perimeter of the golf course (Basins 1 – 7, Basins 10 – 11, Basins 14 – 16); the ephemeral drainage near the western boundary of the proposed limits of disturbance (Drainage 1); and a small seep on a slope in an existing fuel modification zone also near the western boundary of the limits of disturbance (Seep 1).

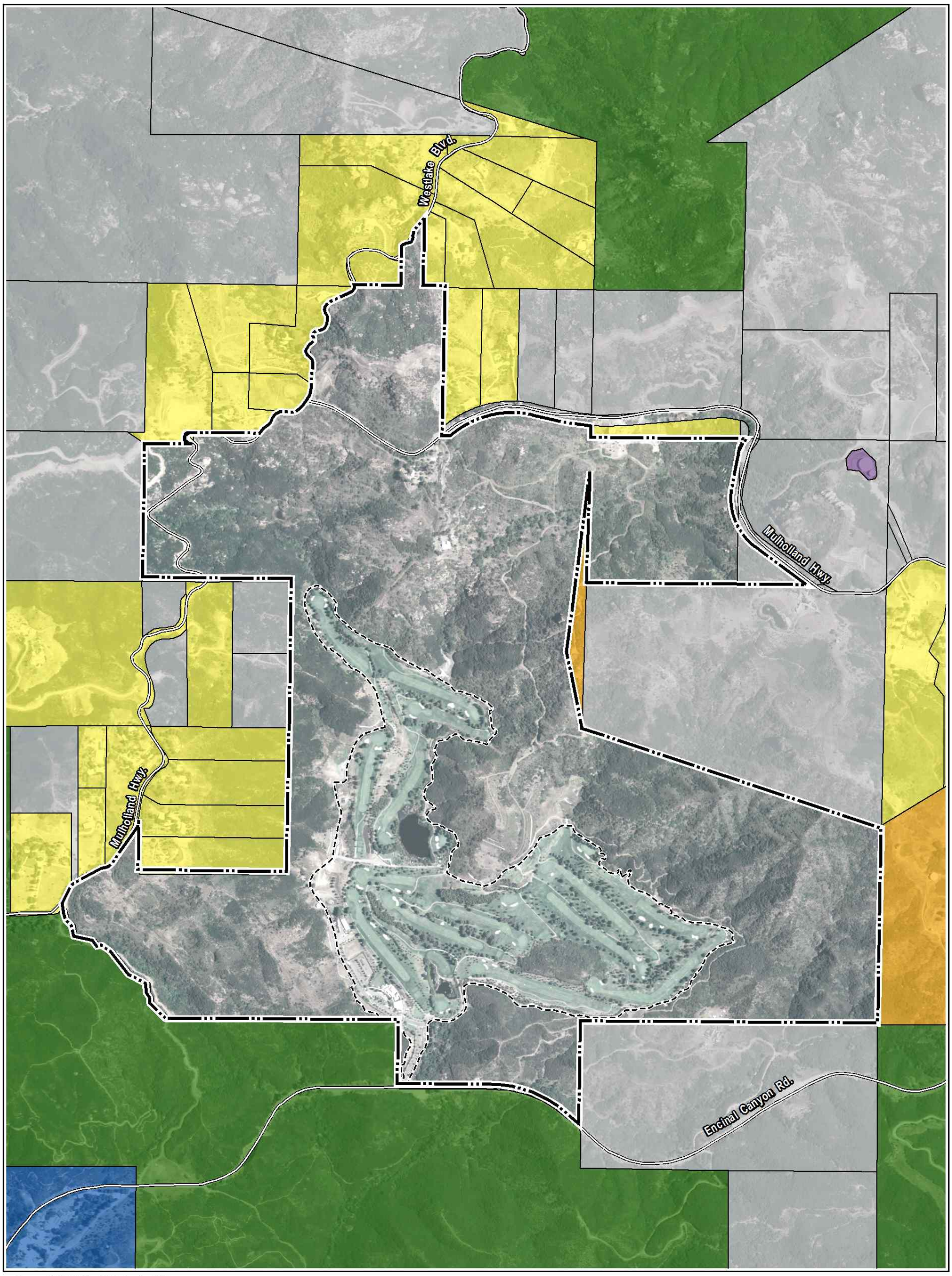
VI. CHARACTERISTICS OF THE SURROUNDING AREA

1. SURROUNDING LAND USE

The 650-acre subject property is bounded by private property on three of four sides, namely to the west, north, and northeast. Private properties in the latter areas have undergone lot-by-lot rural residential development in locations where building pad sites have been made accessible by private driveways from Mulholland Highway. Examination of an aerial photograph of the Project site and vicinity illustrates the locations of the residential development near the Project site by virtue of conspicuous 200-foot brush clearance zones surrounding habitable structures, shown on **Figure 11**. Single-family residential properties are in evidence in the aerial photograph where they abut the Project site along the east-west alignment of Mulholland Highway north of the Trancas Canyon valley floor containing the golf course and along the southerly approach of Decker Canyon Road to its intersection with Mulholland Highway. To the northeast of the Project site, large lot residential properties with equestrian facilities have been developed, and large properties north of Mulholland Highway have undergone agricultural development with removal of native chaparral and scrub vegetation to make way for vineyards and avocado groves. Rural residential properties has also concentrated along Mulholland Highway and along Decker Canyon Road on higher-elevated terrain to the west of the Malibu Golf Club. A State-owned parcel straddles Encinal Canyon Road and abuts the southeastern corner area of the site. The interior portion of the State property lying north of the road contains two youthful offender correctional facilities (Camps Miller and Kilpatrick). The undeveloped portions of the site that extend northerly to Mulholland Highway and the southern half of the site extending south of Encinal Canyon Road are covered with intact stands of chaparral and scrub vegetation that are contiguous with equivalent undisturbed vegetation on adjacent private and publicly-owned properties (a straight-line distance of approximately 1.4 miles). Most of the southern boundary of the subject property fronts along lands in public ownership at the northern extent of publicly protected core habitat, which lies within the "significant watershed" of Zuma/Trancas Canyon. Among these lands to the south of the property, the Backbone Trail stretches east/west along the crests of ridges that are mostly on public land. County of Los Angeles Fire Camp #13 occupies a site on State-owned property that is situated on Encinal Canyon Road approximately 3,000 feet southwest of the entry road (Clubhouse Drive) to the golf course.

2. OPEN SPACE RESERVES AND MOVEMENT CORRIDORS

Privately owned property borders the western, northern and northeastern sides of the Malibu Golf Club, and much of it exhibits a trend toward rural residential and equestrian residential development.



Source: USDA-FSA Aerial Photgraphy, 2005.

Legend

- Property Boundary
- Existing Golf Course
- Rural Residential
- Public Land
- Open Space
- Institutional
- Utilities
- Private/Undeveloped Land

Surrounding Land Use

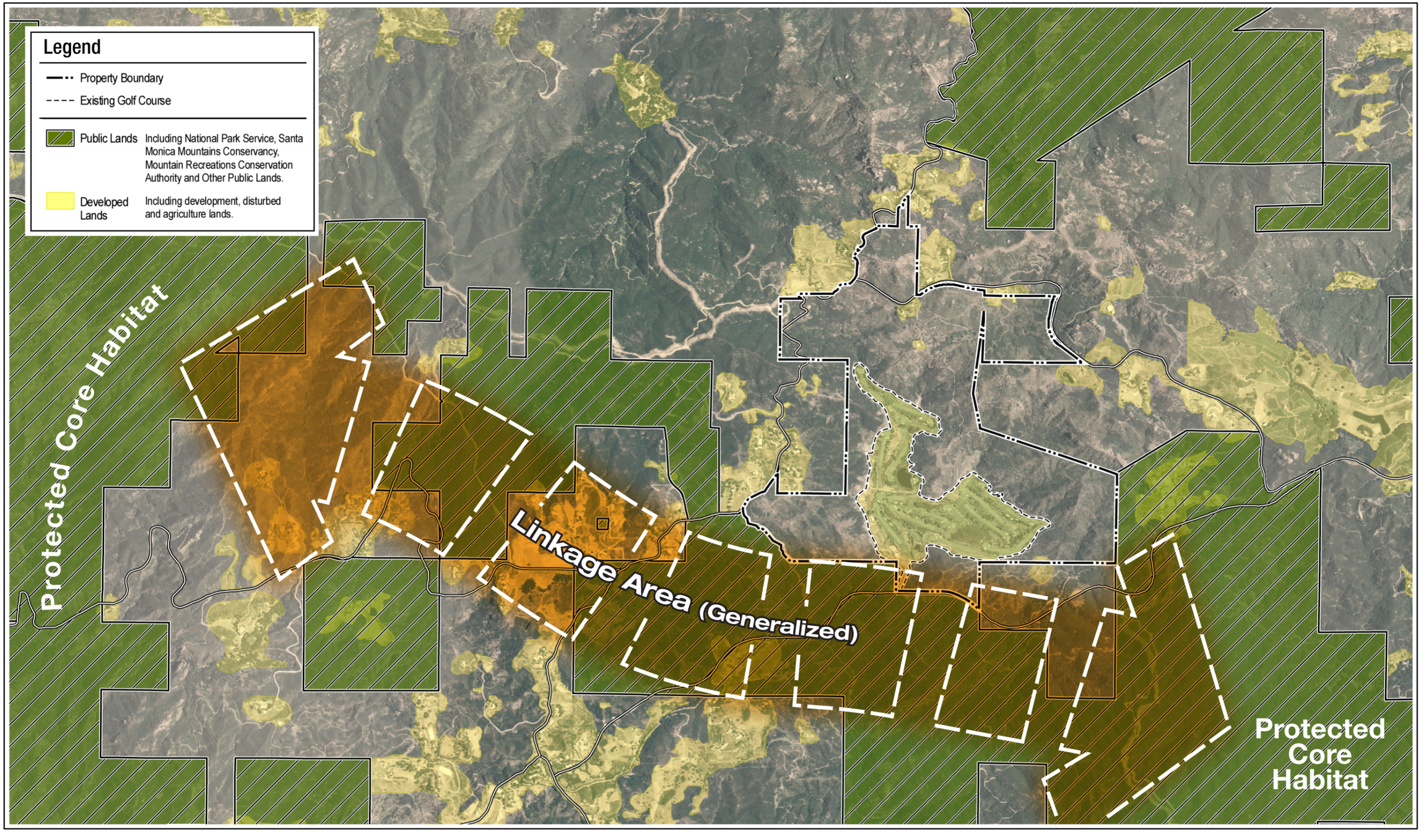
0 450 900 Feet

FIGURE 11

Numerous of the large-lot private residential properties developed in the project vicinity are also situated in rugged terrain, and where the lots are large or unevenly configured they also contain relatively undisturbed native habitats beyond their requisite fire-clearance zones. Continuing incremental residential development to the west, north, and northeast of the site (along Mulholland Highway) will likely continue to result in a fragmentation and thinning of natural habitats. State of California-owned property containing Camps Miller and Kilpatrick (for youthful offenders) abuts the southeastern corner of the site. Both State- and Santa Monica Mountains National Recreation Area-owned properties front along nearly the entire southern boundary of the Malibu Golf Club property. A natural resource management strategy for the acquisition of habitat linkages between large areas of core habitat in the western Santa Monica Mountains is manifested immediately west of the golf club (west of Mulholland Highway/Decker Canyon Road). Two emerging pathways consisting of public owned parcels, with gaps of private-owned land, form the backbones of intact east-west trending habitat linkages. One pathway arches northwesterly, north of Mulholland Highway, along the Triunfo Ridge Fire Trail/Etz Meloy Trail, and the second arches southwesterly, south of Mulholland Highway, via the valley and foothills of the Arroyo Sequit and through the adjacent holdings of Camp Shalom, which is designated by the *NPS Land Protection Plan for the Santa Monica Mountains* (August, 1997) as "Compatible Private Recreation Land." The Malibu Golf Club carries the same designation. The Public and Private Open Space properties are shown on **Figure 12**. For more discussion on movement corridors and linkages, refer to Section 4, below.

3. HABITATS, ASSOCIATIONS AND VEGETATION COMMUNITIES

The dominant habitats of the surrounding area are generally classed as chaparral and coastal scrub. These occur throughout the region on the predominantly southerly-facing coastal slopes on the Conejo volcanic rock substrate. The chaparral and coastal scrub surrounds the developed areas of the golf course, extending onto steep slopes on all sides and continuous with the same habitats in the surrounding area. Chaparral associations are mainly those classed as chamise, red-shank, big-pod ceanothus, hoary-leaf ceanothus, and birch-leaf mountain-mahogany. Coastal scrub associations are mainly those classed as black sage, California sagebrush, laurel-leaf sumac, and California buckwheat. Discontinuities in the dominant chaparral and scrub are represented by the local roadways including Mulholland Highway, Encinal Canyon Road, and Decker Canyon Road. The chaparral and coastal scrub discontinuities are more pronounced as individual residential and estate property owners have developed their land with residential structures, equestrian facilities, vineyards and avocado orchards, and extensive vegetation clearances that is mandated by the fire department. These residential disturbances virtually surround the northern extension of the subject property near the intersection of Mulholland Highway and Decker Canyon Road/Westlake Blvd, along Mulholland Highway/Decker Canyon Road intersection near the western extension of the property, at the intersection of Lechusa Road and Decker Canyon Road, scattered along Mulholland Highway on the north and northeast boundaries of the property, and extending toward the intersection of Mulholland Highway and Encinal Canyon Road, to Saddle Rock. The County's Camps Kilpatrick and Miller represent another discontinuity in the chaparral and scrub habitats, located on Encinal Canyon Road, to the immediate east of the property. Riparian scrub and woodlands are also a major component of habitats in the surrounding area. These are located along the intermittent drainages of Trancas Canyon with its numerous unnamed tributaries, many of which originate on, or at least cross over portions of the subject property. Riparian associations are classed as mulefat, willow, coast live oak, and California sycamore. Discontinuities in these habitats in the surrounding area occur where they are crossed by roads, especially by Encinal Canyon Road, Decker Canyon Road, and Mulholland Highway. In addition, these habitats are discontinuous as portions of them have been truncated by the golf course. North of the golf course, remnant segments of the upper Trancas Canyon Creek and unnamed tributaries remain. The latter drainage courses commonly converge into debris



ENVICOM CORPORATION

Open Space and Movement Corridors

FEET 0 900 1,800

FIGURE 12

basins situated at the base of the slopes and around the perimeter of the golf course. Prominent volcanic rock outcrops and peaks are also present, comprising a major distinctive habitat of the surrounding area, although they are less continuous with each other, and those of the subject property, whereon they are largely confined to the northern and northwestern areas.

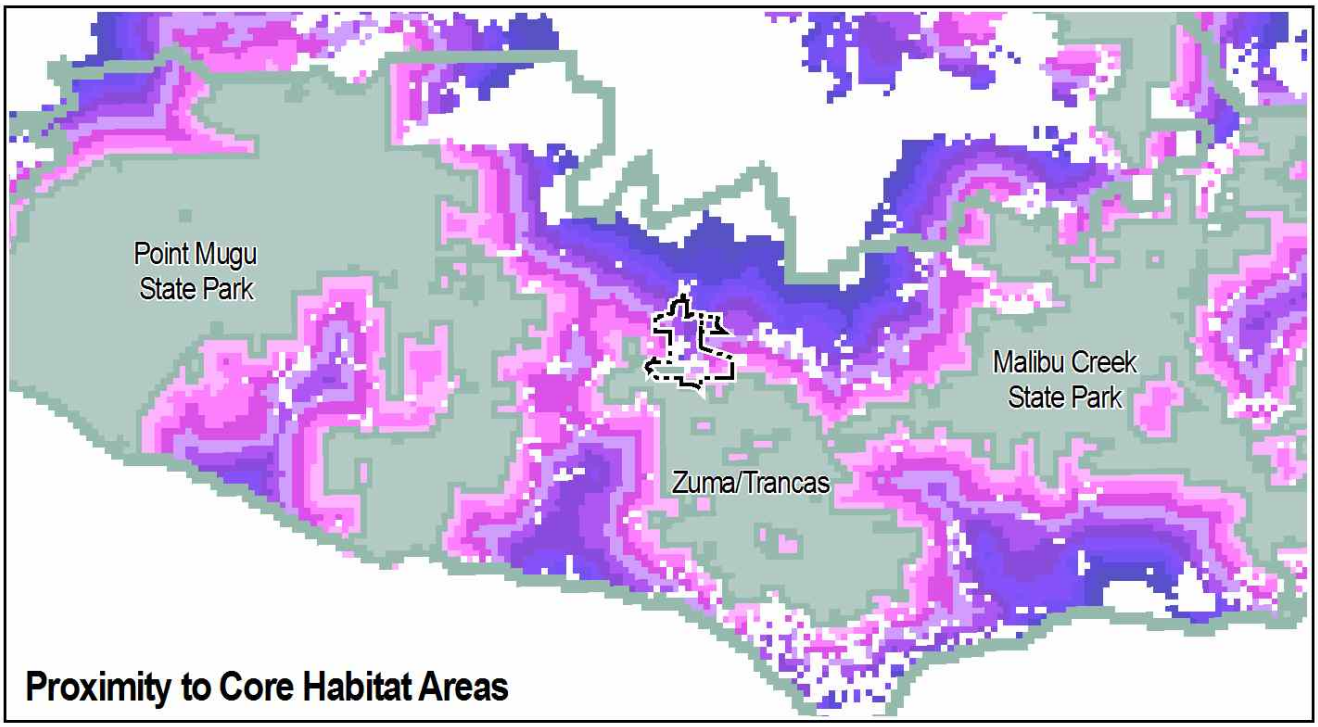
4. RELATIONSHIP OF SITE TO BIOTIC MOSAIC AND WILDLIFE MOVEMENT

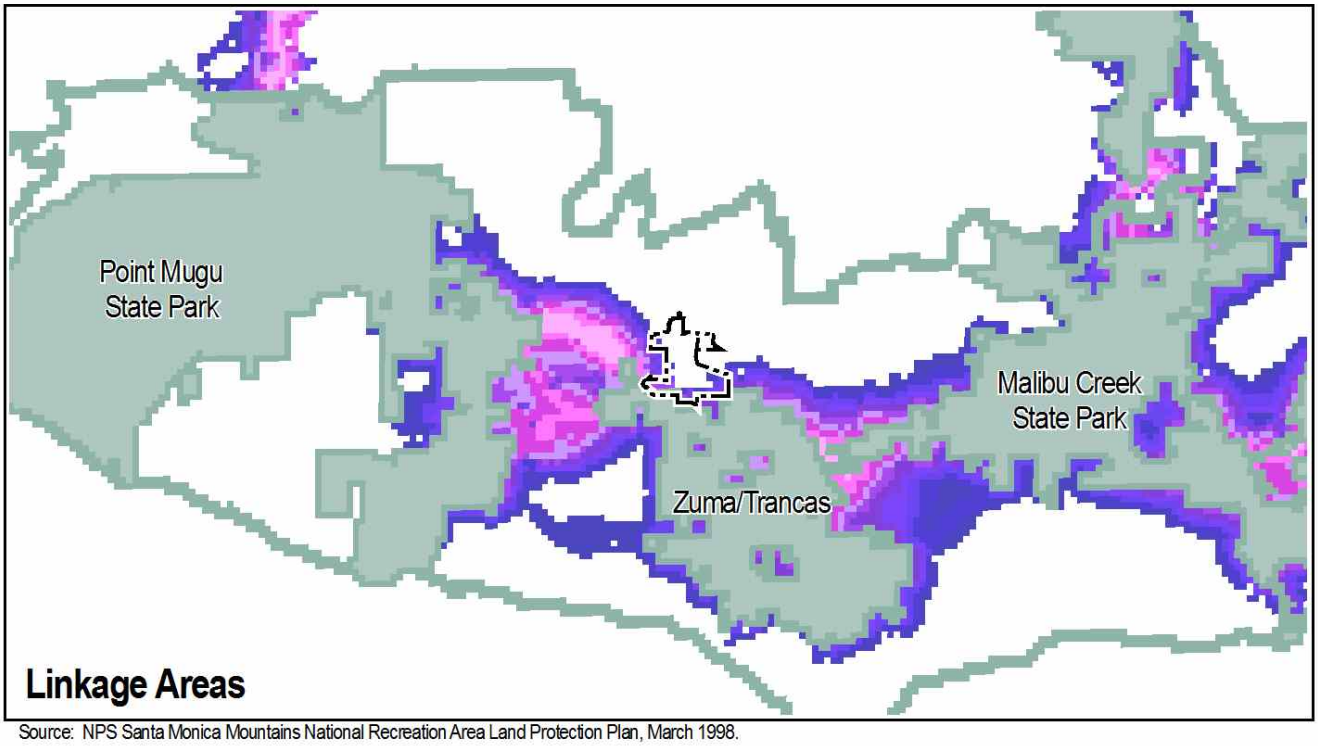
A management goal for the maintenance of wildlife resources in the Santa Monica Mountains is the protection of habitat linkages, or potential movement zones or corridors for wildlife. An established objective of public land acquisition and quasi-public land conservation agencies has been to acquire and assemble properties to provide for multiple linkages that connect areas of protected contiguous core habitat. The accelerating rate of development in the Santa Monica Mountains, as well as in and around other nearby mountain ranges in the region has led to fragmentation and separation of habitats. The viability of linkages between areas of core habitat within the Santa Monica Mountains may become increasingly tenuous as privately owned properties in and adjacent to recognized habitat linkages between areas of core habitat are developed. The consequences of continuing area-wide development may ultimately lead to de-stabilization of existing populations, physical and genetic isolation, and the loss of natural diversity (Lieberstein 1987; Revkin 1987; Leach 1987). Research trends in Conservation Biology indicate that one of the best ways to protect biological diversity is to protect large areas of protected core habitat. The National Park Service has recognized that the protection of the buffer zones around and along linkages between areas of protected core habitat, such as those which lie within Zuma/Trancas Canyon and Point Mugu State Park, are extremely important and offer among the best opportunities to protect habitat that can sustain biological diversity. The above protected core habitat areas are representative of the Range's greatest ecological assets (NPS, March 1998; *Land Protection Plan for the Santa Monica Mountains National Recreation Area*).

Many wildlife species require large areas of suitable habitat to sustain genetically and demographically viable populations. The largest of the assembled protected contiguous core habitat areas in the Santa Monica Mountains (approximately 22,300 acres) lies approximately 1.9 miles to the west of the Malibu Golf Club and it is inclusive of Point Mugu State Park, Leo Carrillo State Park, Rancho Sierra Vista/Satwiwa, the Circle X Ranch, and Malibu Springs area. A second, smaller area of protected contiguous core habitat, consisting of approximately 6,500 acres, lies immediately south of the Malibu Golf Club within the Zuma/Trancas Canyon Significant Watershed.

Much of the subject property contains natural vegetation communities that are relatively intact and undisturbed. Similarly, undeveloped private properties and portions of developed properties that abut the site are still characterized by contiguous tracts of native vegetation. The above cited *Land Protection Plan* (NPS, 1998) places values on the natural habitats that surround the developed golf course portions of the Malibu Golf Club that rank from "high" to "highest", as determined primarily from their proximity to protected core habitat to the west and south. Maps contained in the *Land Protection Plan* (NPS 1998) that show areas of "high" to "highest" ecological habitat values, as based on "proximity to core habitat" and "linkage areas" between them, indicate that the southern portions of the Malibu Golf Club that abut public land have the highest rankings, as shown on **Figure 13**.

The undeveloped portions of the property, inclusive of areas along the southern margins of it, are in relatively undisturbed condition and connect with areas of equivalent chaparral habitat lying across the boundaries of the property. The combination of these factors supports the conclusion that the site and its surrounding habitat areas can support a diversity of wildlife species, and can facilitate their movements





Source: NPS Santa Monica Mountains National Recreation Area Land Protection Plan, March 1998.

Legend

- Property Boundary
- Protected Core Habitat
- Santa Monica Mountains National Recreation Boundary

Natural Resource Criteria

Resource Value

High — Highest

Natural Resource Conservation Criteria Mapping

0 1 2 Miles

FIGURE 13

between larger habitat areas. The species expected include the larger animals that range over extensive areas such as bobcat, badger, mountain lion, and golden eagle.

In summary, the subject property is situated between areas to the west and south that contains chaparral in contiguous habitat connections between large protected core habitat areas to the west and south. Based upon evaluations of the site's relatively undisturbed habitat conditions (excepting the golf course and support facilities), and of its geographical situation relative to surrounding habitats, it is reasoned that there is wildlife movement and gene flow between the property and the vicinity's undeveloped private property and public open spaces.

5. FLORA AND FAUNA – ESTIMATES OF POPULATION SIZES IN THE RANGE

The Biota Report Guidelines require "rough estimates of the population sizes of flora and fauna in the range of which the subject property is a part." **Appendix 1** (flora) and **Appendix 2 and 3** (fauna) include an estimate of population sizes of the flora and vertebrate fauna of the subject property. The terms "rare, uncommon, common, and abundant" are used, as specified in the requirement for Biota Reports.

6. OVERALL BIOLOGICAL VALUE OF THE AREA

The subject property and surrounding area occupies an important position in these mountains with respect to the location of Protected Core Habitat. Specifically, Protected Core Habitats are large blocks of land (> 1,000 ha) owned by resource agencies including the National Park Service, California Department of Parks and Recreation, Santa Monica Mountains Conservancy, or private land trusts such as Mountains Restoration Trust. There are only seven such large Protected Core Habitats in these mountains. The subject property and surrounding area is situated adjacent to the northwest quadrant of one such Core Habitat, namely, Zuma/Trancas Canyon, and leading west-northwesterly through a series of smaller, more or less connected public ownerships to other Protected Core Habitats constituting Malibu Springs/Leo Carrillo State Park, Circle X Ranch, and Point Mugu State Park/Rancho Sierra Vista/Satwiwa. Two maps published in the *Santa Monica Mountains Recreation Area Land Protection Plan* (NPS-SMMNRA 1998) serve to clearly illustrate this fact. One shows virtually the entire subject property and surrounding area as having "high" to "highest resource value" in terms of "proximity to Core Habitat Areas."

Another places a "high resource value" on the southerly margins of the subject property, and most of the surrounding lands to the east and west as high to highest resource value, in terms of "linkage areas." Thus, the overall biological value of the area is considered high, to highest according to the criteria for conservation being applied by the National Park Service in their current *Land Protection Plan*.

The subject property and surrounding area must also be considered to have high biological value in terms of species diversity. As mentioned in a previous section, to date, **375** taxa of vascular plants have been observed on the subject property, including 10 native ferms and allies, 2 introduced conifers, 294 dicotyledonous flowering plants (194 native, 100 introduced), and 69 monocotyledonous flowering plants (35 native, 34 introduced). In a recent, published compilation of the flora of the Santa Monica Mountains (Wishner 1997), the number of vascular plant taxa for the range was estimated at around 875. Since then, an unknown number of previously unreported species have been added. However, as a rough estimate, the number is around 900 taxa. Thus, about 40 percent of the entire flora of the mountain range occurs on the subject property. For vertebrate wildlife species, it was previously mentioned that as of 2012 biologists from TeraCor and Envicom Corporation have observed, one fish, one amphibian, seven reptiles, 82 birds, and 13 species of mammals. Adding in those species that would be reasonably anticipated to occur, the numbers rise to an estimated **eight** species of amphibians (**one** newt, **three** salamanders, **three** frogs, and **one** toad), **22** reptiles (**two** turtles, **seven** lizards and **13** snakes), **222** species of birds, and **58** species of mammals.

The occurrence of "special interest" populations must also be considered. As discussed, several occurrences of the state- and federally-Endangered Lyon's pentachaeta surround the subject property, and previously unknown occurrences were found thereon, as a result of this study. These are the most westerly of all the known occurrences of this species. Patches of this species have been discovered during surveys conducted between 2007 and 2012 on and adjacent to unpaved roads in the northcentral portion of the property, as well as on a broad ridgeline and firebreak to the north of Mulholland Highway. Additionally, a single, isolated Lyon's pentachaeta was found growing on an unpaved roadbed, approximately 300 feet to the south of the nearest patch.

Similarly, there are numerous locations of Plummer's mariposa lily, which is a L.A. County locally sensitive species, surrounding the property, and several formerly unknown ones have been found on the property. The most westerly populations of federally-Endangered Braunton's milkvetch occur in Zuma Canyon and on Zuma ridge. One invertebrate, namely, Santa Monica Mountains grasshopper, is known only from these mountains, and the type location is identified as the "corner of California Highway 23 and Mulholland Highway." Thus, the entire known world distribution of this species is from the vicinity of the subject property toward the western end of the mountain range. Rugged terrain with unbroken chaparral and coastal scrub, with prominent rocklands and riparian corridors offer opportunities for other sensitive wildlife, including a range of lizards and snakes, nesting opportunities for birds such as golden eagle and Cooper's hawk, and mammals such as numerous species of bats, San Diego desert woodrat, American badger, and mountain lion. Per these potential examples, the biological value of the subject property and surrounding area would also be considered high.

"Special interest" plant communities recognized as Natural Communities of Special Concern, or "sensitive plant communities" by the California Department of Fish and Wildlife also occur on the property. Sensitive plant communities identified by Envicom in 2012 include several patches of purple needlegrass grassland (*Stipa pulchra*) and a patch of creeping ryegrass grassland (*Elymus triticoides*). Additional plant communities occurring on the property with State rarity rankings of S3 or lower include Red Willow Thickets (G3S3), Foothill Needlegrass Grassland (G3?S3?), Giant Wildrye Grassland (G3S3), California Sycamore Woodland (G3S3), California Walnut Groves (G3S3.2), California Bay Forest (G4S3), Blue Elderberry Stands (G3S3), and Spike-Moss Mats (G4S3). Some of the plant communities that are defined by the tree layer (e.g., California walnut, California sycamore, red willow, blue elderberry) occur on the property as small patches, and are not necessary quality examples of these habitats.

VII. BIOLOGICAL CONSTRAINTS ANALYSIS

The Los Angeles County Biological Constraints Analysis (BCA) guidelines specify that an Los Angeles BCA "shall include a discussion of the ecological services provided by the site." "Ecological services" provided by the site's biological resources fit well with discussion contained in a report entitled *Sliding Toward Extinction*, commissioned by the California Nature Conservancy (Jones and Stokes 1987): "these services include benefits resulting from protection of the watershed and its floodplain, moderation of the climate, abatement of water and air pollution, biological control of pest populations, and maintenance of habitat for wild crop pollinators and for species providing food or recreation for humans." "As human populations and resource consumption grow, they threaten the ability of natural ecosystems to continue providing these services at the same time that, ironically, we are becoming more dependent on them. Maintaining ecological services through protection of natural ecosystems is very inexpensive compared to the technological alternatives. Technologies to control floods, abate pollution, and control pests are often expensive, hazardous, ineffective, and often have far-reaching unintended adverse side effects. There are no technological alternatives to biological systems for certain natural functions such as moderating climate or providing disease resistance buffers for our crops."

The BCA guidelines also specify to "provide a clear statement of constraints (which biological resources on the subject parcel are valuable and thus should be preserved, or avoided by the project design)." The most obvious resources that should be avoided are the known locations of federally- and State-Endangered Lyon's pentachaeta. These locations are among the most westerly of this endemic species of the Santa Monica Mountains. Although these plants were found primarily to occupy disturbed sites, any "taking" of this species would require a permit under Section 2081 of the Fish and Game Code.

Other known plant species that are *not listed* as Threatened or Endangered, but that meet criteria as L.A. County locally sensitive species include California hedge parsley (*Yabea microcarpa*), slender combseed (*Pectocarya linearis* spp. *ferocula*), smooth western morning-glory (*Calystegia purpurata* ssp. *purpurata*), leather root (*Hoita macrostachya*), downy mimetanthe (*Mimulus pilosus*), Fish's milkwort (*Polygala cornuta* ssp. *fishiae*), deergrass (*Muhlenbergia rigens*), six-weeks fescue (*Festuca octoflora*), and creeping wildrye (*Elymus triticoides*).

One other "Special Vascular Plant" is known to occur in large numbers on the subject property, namely, Catalina mariposa lily. This species is given a 4.2 and *does not* meet the criterion for listing, or CEQA Section 15380. This plant is found extensively throughout chaparral and coastal scrub, especially within pockets of grassland.

Habitat areas, plant communities or associations that should be avoided include Native Grasslands in the northern portion of the site (corresponding to Creeping Ryegraass, Purple Needlegrass, Giant Wildrye Grassland, and Foothill Needlegrass Series). These are very limited in extent in these mountains. The California Department of Fish and Wildlife has recently (2007) ranked these alliances with a State Rank of S3 (21-80 occurrences, or 3,000-10,000 individuals, or 10,000-50,000 acres). This is a moderately high ranking. Although the current CDFW ranking of alliances does not include a "Threat Rank," previous incarnations of their lists of Terrestrial Natural Communities (1993) did provide a Threat Rank of S3.1 for foothill and purple needlegrass grassland, indicating these communities are "*very threatened*."

California Sycamore Woodland (G3S3), California Walnut Groves (G3S3.2), California Bay Forest (G4S3), and Blue Elderberry Stands (G3S3) also have a current (CDFW 2010) State Rank of S3, and should be avoided. California walnut is also given a CRPR 4.2, whereby the species is considered "fairly endangered in California" (20-80% of occurrences threatened).

Mulefat Scrub is not highly ranked (S4) in the current list of California alliances (CDFW 2010). However, it is primarily associated with riparian habitats, which are very threatened, and are generally considered "sensitive" by most Lead and Trustee agencies, and worthy of protection and avoidance. The same applies to Southern Willow Scrub, which in the present case includes areas dominated by arroyo and red willows. The red willow alliance is ranked S3. Moreover, riparian habitats support disproportionate abundance and diversity of wildlife species compared to adjacent upland chaparral and scrub habitats, as well as to provide important ecological services including protection of the watershed and its floodplain, moderation of the climate, and abatement of air and water pollution. Willow/Sycamore/Coast Live Oak Woodland should also be avoided for the ecological services they provide, and disproportionate value to wildlife. The California Sycamore and Red Willow alliances have recently been ranked S3, and similarly ranked "very threatened" in earlier CDFW lists. One such area on the site has already been designated as ESHA. Coast Live Oak Alliances have not generally been ranked highly. However, many agencies would consider substantial impacts to them to be significant under CEQA, and have enacted policies and/or ordinances for the protection of these trees.

Rock Outcrops should be avoided. The Spike-moss Mat Alliance is ranked S3 and covers some of the rock outcrops on the property. Also, in the northern portion of the subject property, we observed the dens of the special-status San Diego woodrat among these rocks. Special-Status reptiles including San Bernardino ringnecked snake and coast patch-nosed snake, in addition to other locally uncommon species such as San Diego night snake, western black-headed snake, and Baja lyre snake are also expected to seek refuge here. These rock outcrops also provide opportunities for perching and nesting of birds.

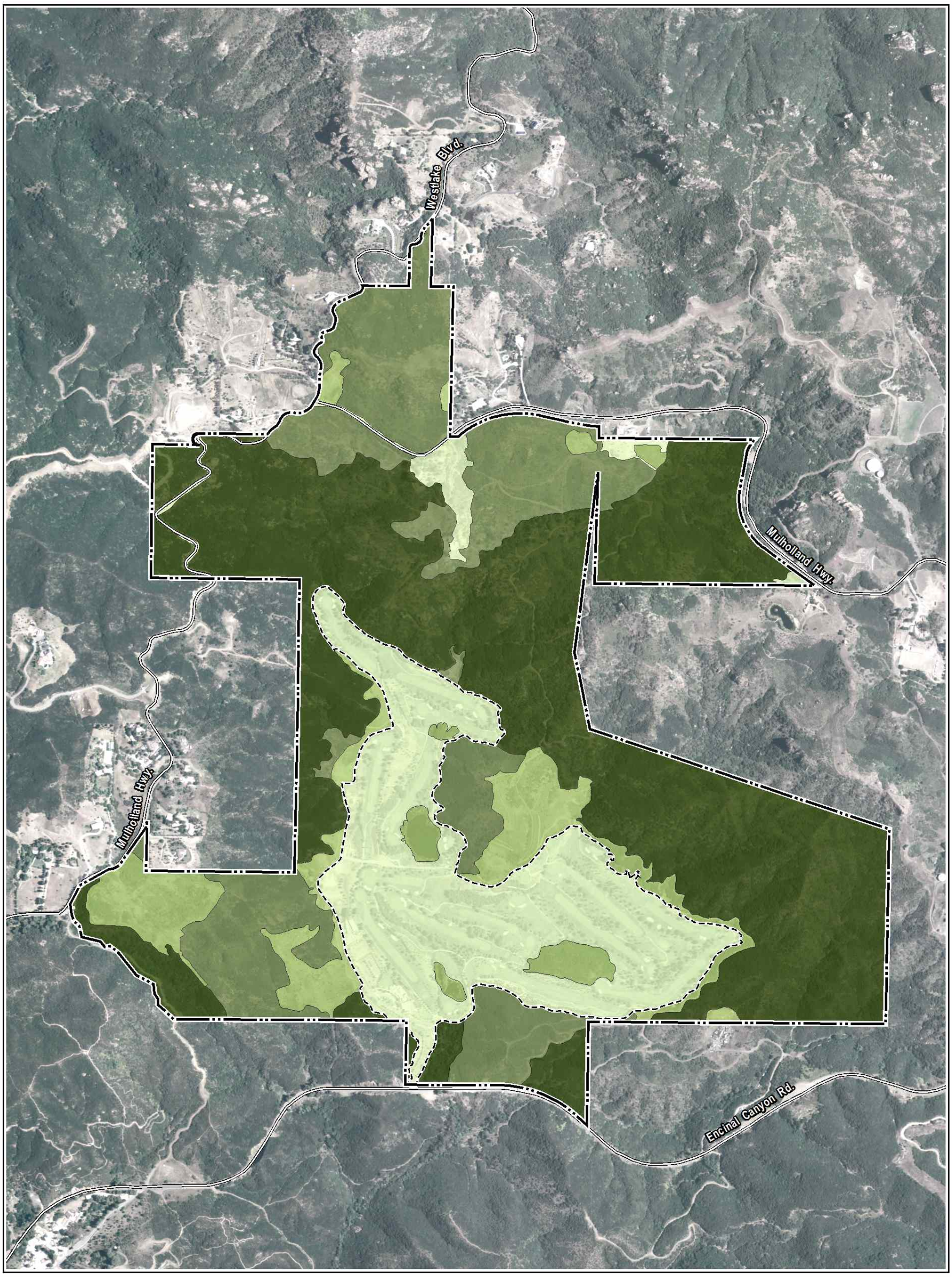
Another consideration of areas to avoid and protect are those ranked "high" to "highest" in terms of their resource value by virtue of "proximity to core habitat," and "linkage areas," as identified in the *Santa Monica Mountains Land Protection Plan* (NPS 1998), and discussed in Section 4 above. The subject property is situated between areas to the west and south that contains chaparral in contiguous habitat connections between large protected core habitat areas to the west and south. Based upon evaluations of the site's relatively undisturbed habitat conditions (except the golf course), and of its geographical situation relative to surrounding habitats, it is reasoned that there is wildlife movement and gene flow between the property and the vicinity's undeveloped private property and public open spaces. This consideration especially applies to a tier of land along the southern boundary of the subject property. However, in our opinion, the same consideration should be applied to larger, more northern areas of the property that support undisturbed, intact, and unbroken stands of chaparral and coastal scrub, which also provide important ecological services. Moreover, the California Coastal Commission has recognized the unique nature of the Mediterranean-climate habitat, and has made findings that "large, contiguous, relatively pristine stands of coastal sage scrub and chaparral in the Santa Monica Mountains meet the definition of ESHA."

In accordance with the BCA guidelines, a *Biological Constraints Map*, included here as **Figure 14** synthesizes information from the sources listed above, including the aerial distribution of the plant communities and locations of special-status plants and wildlife species. The rationale for assignment of the Malibu Golf Club property into four categories of constraints is provided below:

High - The riparian, woodland and forest communities including the Coast Live Oak Woodland provide habitat for a diversity of wildlife, including bird species. These communities provide important cover, food and habitat for breeding and nesting. The Southern Willow Scrub, Willow/Sycamore/Coast Live Oak communities are well-developed riparian habitats associated with drainages. These areas are very important for wildlife, especially riparian dependent bird species and sensitive bird species. This includes resident, nesting, and migratory species that may spend the winter, or perhaps only stop for a short time. Although no federally listed species were observed, non-listed sensitive bird species could occur. In addition, riparian habitats are generally recognized by Trustee Resource Agencies including the CDFW, US USACE and the California RWQCB. Therefore, these riparian woodland communities are highly constrained based on biological resource values.

The California Walnut Woodland, California Bay Forest are considered sensitive by CDFW and therefore are considered highly constrained. The Willow/Sycamore/Coast Live Oak community in the northeast portion of the property has already been designated as an Environmentally Significant Habitat Area (ESHA). In addition, the riparian, woodland and forest communities are important for maintaining the integrity of the Trancas Canyon Watershed, which has been designated a Significant Watershed Area (SWA) in the Malibu LCP.

The coastal sage scrub and chaparral communities primarily in the upper and lower Trancas Canyon watershed, as well as the eastern and western portion of the property are well developed, and relatively undisturbed. Following the "Dixon memo" the CCC finds that riparian corridors, as well as large contiguous relatively pristine stands of coastal sage scrub and chaparral in the Santa Monica Mountains



Source: USDA-FSA Aerial Photograph, 2005. Envicom Corporation, 2007.

Legend

- Property Boundary
- Existing Golf Course
- High
- Moderate
- Low
- Least

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Biological Constraints Map

0 450 900 Feet

FIGURE 14

meet the definition of ESHA. Coastal sage scrub and chaparral have many important roles in the ecosystem, including the provision of critical linkages between riparian corridors, and essential habitat for species that require several habitat types during their life histories. Therefore, these areas would very likely be considered ESHA, and are herein assigned a high level of constraint.

Moderate - Some coastal sage scrub and chaparral communities are relatively undisturbed and relatively intact, but are isolated by, or in close proximity to development. The mulefat scrub is typically associated with the emergent man-made wetlands and provides marginal habitat for riparian dependent bird species and other wildlife. Native grasslands have been on the decline, and while the native grassland communities on site are small and limited, they do support native grass species and associated plant assemblages. Therefore, these areas would be considered to have moderate level of constraints.

Low - Some areas of coastal sage scrub and chaparral have been recently and historically disturbed by grading, and exhibit less diversity than their undisturbed counterparts. The non-native grasslands on the property are minimal, and are characterized by non-native grasses and other weedy species. The Freshwater Marsh Aquatic communities, while man-made, provides wildlife habitat for resident, nesting, and migratory species that may spend the winter, or only stop for a short time. Therefore, they are considered to be a low level of constraint.

Least - The Disturbed/Ruderal community is associated with areas that have little to no vegetative cover, or were comprised of persistently disturbed vegetation. These areas are generally confined to relatively recent golf course operational and maintained areas, and unimproved roads. The Developed/Ornamental community is associated with the golf course associated facilities and infrastructure. Exotic landscape plants, including introduced trees and turf grass, dominate the area. The area is considered to be the least constrained. However, the trees do provide for resting, foraging, and nesting habitat for many birds, including raptor species. Removal of the trees for development could result in disruption of nesting birds that would be considered a violation of Fish and Game Code and the Migratory Bird Treaty Act. Timing of construction and surveys to detect and avoid nesting birds during nesting season could reduce or eliminate disruption to nesting bird species.

One final BCA guideline item specifies "for SEA/SERA projects, the conclusion section must include an explicit statement of prior reductions by development of the SEA, what is left of the SEA/SERA, and how its function remains, relative to that when it was initially designated by the County." This is not provided. The subject property is *not* within a designated SEA. The site does contain two designated ESHAs, one of which is erroneous. The other remains intact, and has not been reduced by development.

VIII. THRESHOLDS OF SIGNIFICANCE

Based on the Initial Study Environmental Checklist prepared by the Los Angeles County Department of Regional Planning and Appendix G of the CEQA Guidelines, the Project would result in a significant adverse impact with respect to biological resources if the Project would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

b. Have a substantial adverse effect on any sensitive natural communities (e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

c. Have a substantial adverse effect on federally or state protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, and drainages) or waters of the United States, as defined by Section 404 of the Clean Water Act or California Fish and Game Section 1600, et seq. through direct removal, filling, hydrological interruption, or other means;

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e. Convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5 inches in diameter measured at 4.5 feet above mean natural grade) or otherwise contain oak or other unique native trees (junipers, Joshua trees, southern California black walnut, etc.);

f. Conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36), the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16), the Significant Ecological Areas (SEAs) (L.A. County Code, Title 22, Section 22.56.215), and Sensitive Environmental Resources Areas (SERAs) (L.A. County Code, Title 22, Ch. 22.44, Part 6); or,

g. Conflict with the provisions of an adopted state, regional, or local habitat conservation plan.

The Project would also result in a significant adverse impact with respect to biological resources if the Project would meet any of the following conditions that require a mandatory finding of significance, as set forth in CEQA Guidelines Section 15065:

h. Substantially reduce the habitat of a fish or wildlife species;

i. Cause a fish or wildlife population to drop below self-sustaining levels;

j. Threaten to eliminate a plant or animal community; or,

k. Substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

IX. PROJECT IMPACTS

The Project limits of disturbance are shown overlaid on the proposed site plan on **Figure 15**. The limits of disturbance are inclusive of all proposed ground and vegetation disturbance, including but not limited to grading, landscaping, and tree removals. All areas within the limits of disturbance would or would potentially be developed or potentially disturbed by the Project. The Project would be sited almost entirely within existing developed/disturbed areas of the Project site. The construction of two tee boxes and pathway to the tee boxes would occur within undisturbed native habitat. Fuel modification would only be required in areas that are currently subject to fuel modification in the existing condition. As part of the Project, over 450 acres of native habitat surrounding the golf course would be left undisturbed and would become permanently dedicated open space.

The Project would incorporate native, drought-tolerant landscaping, replacing most of the existing ornamental non-native landscaping on the Malibu Golf Club, and would remove 1,590 non-native trees

Source: Jackson Kahn Golf Course Design, 2012.

Legend

- Project Boundary
- Limit of Ground Disturbance
- Limit of Fuel Modification (Not Shown - Pending)
- Helipad

Project Limits

0 250 500 Feet

FIGURE 15

and palms, relocate some non-native pine trees, and plant native oak and sycamore trees at the Project site. Over 50% of the non-native trees at the Project site would be removed. All new trees planted at the site would be native California trees. The Project's Tree Removal Plan, dated October 29, 2012, shows the locations of the non-native trees that would be removed.

The ponds on the golf course would be temporarily dewatered to eradicate invasive animals, including predatory fish and crayfish. The dewatering process would take place during construction of the proposed remodeled golf course. The plan to eradicate invasive animals from the aquatic habitats at the site is provided in **Appendix 5.** Vegetation and sediment would be removed from the ponds to improve functional capacity and to remove potentially occurring toxins such as pesticides and herbicides that may have accumulated in bottom sediments.

The Project would install pumps at the two largest ponds on the golf course to circulate the water in the ponds by conveying it up-gradient from each pond approximately 700 feet, then releasing the water within man-made channels that would be created to direct the flows back to each respective pond. As discussed in Appendix 5, the re-circulation of water in the ponds would improve water quality and control mosquito populations by eliminating standing water areas, which allow for breeding of mosquitoes.

Threshold(s): Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Would the Project substantially reduce the habitat of a fish or wildlife species?

Would the Project cause a fish or wildlife population to drop below self-sustaining levels?

Would the Project threaten to eliminate an animal community?

Would the Project substantially reduce the number or restrict the range of an endangered, rare, or threatened species?

1. SPECIAL-STATUS PLANT SPECIES

Special-status plant species either have unique biological significance, limited distribution, restricted habitat requirements, particular susceptibility to human disturbance, or a combination of these factors. For the purposes of this impact analysis, the term "special-status" is used to denote those species that meet the criteria of CEQA Guidelines Section 15380 as an endangered, threatened, or rare species, whether or not officially listed. Special-status plant species include either of the following:

- Plant species that are listed, proposed for listing, or meet the criteria for listing as Endangered, Threatened, or Rare by under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA); or
- Plant species that are listed on the CDFW *Special Vascular Plants, Bryophytes and Lichens List*, which includes the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants. Plants on the CNPS Inventory with a California Rare Plant Rank (CRPR) 1A (plants presumed extirpated in California and either rare or extinct elsewhere), 1B (which includes plants considered to be rare, threatened, or endangered species in California and elsewhere), 2A (plants presumed extirpated in California, but more common elsewhere), and 2B (plants rare, threatened, or endangered in California, but more common elsewhere) are considered sensitive.

CEQA Guidelines Section 15125(a) also requires special emphasis to be placed on resources that are rare or unique to the region. The term "special-status" is also used herein to denote species that are considered locally sensitive by the County, and those plants on the CNPS Inventory with a CRPR 4 that meet criteria to be considered locally significant.

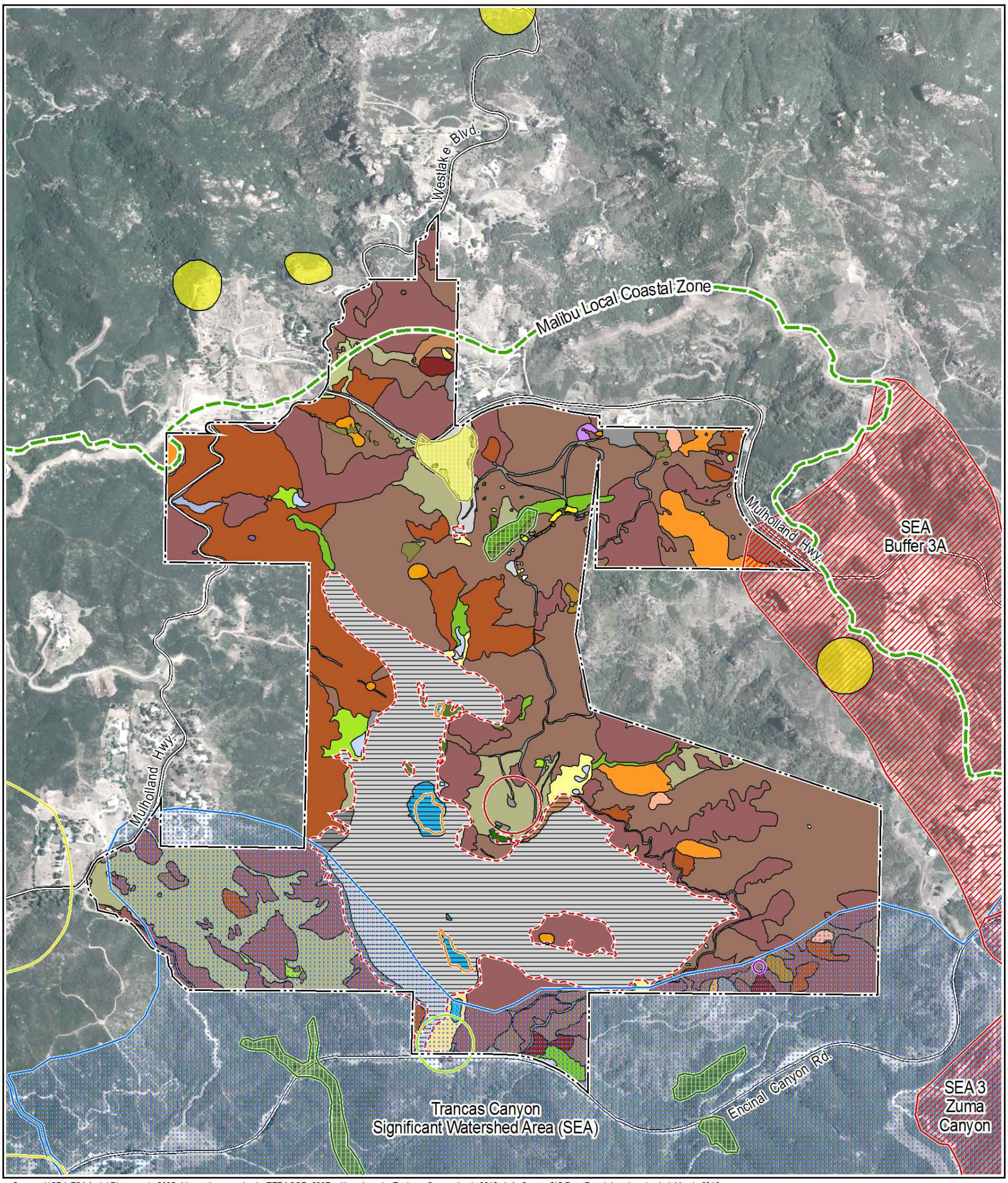
The federal and state-listed Endangered Lyon's pentachaeta (*Pentachaeta lyonii*) [FE/CE, CRPR 1B.1] occurs on and adjacent to unpaved roads in the north-central portion of the Project site and on a broad ridgeline and firebreak to the north of Mulholland Highway. Populations of this species are more than 1,000 feet from areas on the Project site that are proposed for development, and would not be impacted by the Project (See **Figure 16**, Impacts to Biological Resources). As a component of the Project, all Lyon's pentachaeta on the Project site would be preserved in permanently dedicated open space.

Plants with a CRPR of 4 are not rare, but rather are included on a "watch list" of species with limited distribution. However, while plants in this category cannot be called "rare" from a statewide perspective, and very few, if any, are eligible for state listing, many of them are significant locally. For this reason, CNPS strongly recommends that CRPR 4 plants be evaluated for consideration during preparation of environmental documents, which may be particularly appropriate for the type locality of a CRPR 4 plant; populations at the periphery of a species' range; areas where the taxon is especially uncommon; areas where the taxon has sustained heavy losses; or populations exhibiting unusual morphology or occurring on unusual substrates. Impacts to CRPR 4 plants do not require a mandatory finding of significance pursuant to CEQA Guidelines Section 15380.

The following CRPR 4 plants were identified on the property during botanical surveys conducted between May 2006 and April 2013: Catalina mariposa lily (*Calochortus catalinae*) [CRPR 4.2], Plummer's mariposa lily (*C. plummerae*) [CRPR 4.2], Fish's milkwort (*Polygala cornuta* var. *fishiae*) [CRPR 4.3], and southern California black walnut (*Juglans californica*) [CRPR 4.2]. Plummer's mariposa lily has been recently down-listed from CRPR 1B.2 (fairly threatened in California with 20-80% occurrences threatened and a moderate degree/immediacy of threat) to CRPR 4.2 (watch list). Of these species, only Plummer's mariposa lily and Catalina mariposa lily occur within the proposed limits of disturbance. The Catalina mariposa lily is not locally rare, and is not uncommon in suitable habitats within the Santa Monica Mountains region, and is not otherwise locally significant based on the CNPS criteria outlined above. Although less common than the Catalina mariposa lily, the Plummer's mariposa lily is also not locally significant based on the CNPS criteria. It is not locally rare and often occurs in significant numbers where it is found in the Santa Monica Mountains. Therefore, the Project would not result in significant impacts to a CRPR 4 plant species due to its CRPR 4 status.

A proposed tee box and the proposed pathway to the tee box would intersect approximately 0.02 acres of native chaparral habitat containing the Plummer's mariposa lily (*Calochortus plummerae*) [CRPR 4.2][L.A. County] on the lower south-facing slope of an isolated hill surrounded by the developed golf course (See Figure 16). The Plummer's mariposa lily is a County of Los Angeles locally sensitive plant species. Construction of the tee box and pathway would potentially result in loss or injury to a relatively small but unknown number of individuals of this species, loss of a seed bank, and loss of suitable Plummer's mariposa lily habitat, which would be a significant, but mitigable impact. Implementation of mitigation measure MM2, which would require replacement of individual Plummer's mariposa lilies at a 2:1 ratio, would reduce impacts to the Plummer's mariposa lily to a less than significant level.

The proposed helicopter pad would be sited within a formerly graded area containing disturbed native habitat and a population of native annual slender combseed (*Pectocarya linearis* ssp. *ferocula*) [L.A. County]. The proposed helicopter pad would encompass 79 individuals (based on the number of live



Source: USDA-FSAAerial Photograph, 2005. Vegetation mapping by TERACOR, 2007, with updates by Envicom Corporation in 2012. L.A. County GIS Data Portal data downloaded, March, 2013.

Legend

- Project Boundary
- Limit of Ground Disturbance
- Limit of Fuel Modification (Not Shown - Pending)
- Impacted Areas
- Designated Environmental Sensitive Habitat Area ESHA (Malibu Local Coastal Plan)
- Designated "ESHA" (Erroneously Mapped as ESHA by Malibu Local Coastal Plan)
- Malibu Local Coastal Zone
- Sensitive Ecological Area (SEA)
- Trancas Canyon Significant Watershed Area (SWA)

Special-Status Plant Species

- Lyon's Pentachaeta (*Pentachaeta lyonii*) [FE, CE] *
- Plummer's Mariposa Lily (*Calochortus plummerae*) [L.A. County]
- Slender Combseed (*Pectocarya linearis* ssp. ferocula) [L.A. County]

Special-Status Animal Species

- **Coastal Western Whiptail** (*Aspidoscelis tigris stejnegeri*) [SA]
- **Cooper's Hawk** (*Accipiter cooperii*) [SA]
- **Santa Monica Grasshopper** (*Trimerotropis occidentaloides*) [SA]
- **Coast Horned Lizard** (*Phrynosoma blainvillii*) [SSC]
- **Western Pond Turtle** (*Emys marmorata*) [SSC]

Vegetative Communities

- California Bay Woodland
- Ceaonothus Chaparral
- Chamise Chaparral
- Coast Live Oak Woodland
- Coastal Sage Scrub
- Coastal Sage Scrub/Non-Native Grassland
- Coastal Sage-Chaparral Scrub/Non-Native Grassland
- Coastal Sage/Chaparral Scrub
- Developed/Ornamental
- Disturbed/Ruderal
- Freshwater Marsh/Aquatic
- Marsh/Emergent Annual Wet
- Mulefat Scrub
- Native Grassland
- Native Grassland/Non-native Grasslands
- Native Grasslands/Coastal Sage Scrub
- Non-native Grasslands
- Ornamental/Willow/Sycamore/Coast Live Oak Woodland
- Red Shank Chaparral
- Red Shank Chaparral/Ceanothus Chaparral
- Red Shank Chaparral/Undifferentiated Chaparral Scrub
- Rock Outcrops
- Southern Willow Scrub
- Undifferentiated Chaparral Scrub
- Walnut Woodland
- Walnut Woodland/California Bay Woodland
- Willow/Sycamore/Coast Live Oak Woodland

* Lyon's Pentachaeta within property boundary surveyed by Envicom Corporation during field surveys in 2007, 2008, 2009, 2010, 2011, and 2012.

Impacts to Biological Resources

0 450 900 Feet

FIGURE 16

plants observed in Spring of 2013) and a seed bank of this plant, as well as 0.11 acres of suitable slender combseed habitat (See Figure 16). The preparation of the helicopter pad, construction of a proposed waterline to the helicopter pad, and installation of a proposed fire hydrant at the helicopter pad would not involve grading or substantial ground disturbance such that the annual slender combseed population would be significantly and adversely affected. Therefore the impacts to annual slender combseed that would result from preparation of the helicopter pad, construction of a waterline to the helicopter pad, and installation of a fire hydrant at the helicopter pad would be less than significant. The superficial ground disturbance and routine mowing of native and non-native vegetation that would be associated with the use and maintenance of the helicopter pad would be a beneficial impact on the annual slender combbur, as this species typically occurs in disturbed areas and responds favorably to minor ground disturbance and the removal of taller shading vegetation.

No other special-status plant species were found at the Project site during several surveys of the site conducted between May 2006 and April 2013. As discussed in the potential for occurrence analysis in the appendices for special-status plant species, many of the special-status species known to occur in the region are presumed to be absent from the Project site due to lack of suitable habitat or because the Project site is outside of the species known range or distribution. Several botanical surveys of the Project site were conducted primarily in the spring between May 2007 and April 2013. Given the correct timing, intensity, and negative results of these surveys, all potentially occurring special-status plant species are considered absent from within the proposed limits of disturbance.

2. SPECIAL-STATUS WILDLIFE SPECIES

For the purposes of this impact analysis, the term "special-status" includes those species that are:

- Listed, proposed for listing, or meet the criteria for listing as Endangered, Threatened, or Rare by under FESA or CESA; or
- Listed on the CDFW's *Special Animals List.*

CEQA Guidelines Section 15125(a) also requires special emphasis be placed on resources that are rare or unique to the region. The term "special-status" is also used herein to denote species that are considered locally sensitive by the County.

Ground and Vegetation Disturbance in Native Chaparral, Disturbed Coastal Scrub, and Landscaped Habitats

Ground and vegetation disturbing activities necessary to construct the tee box, construct the pathway to the tee box, and maintain the helipad would impact chaparral and disturbed coastal sage scrub, which could result in potentially significant but mitigable impacts caused by direct mortality or injury to the following potentially occurring special-status species (with varying probabilities ranging from high to very low depending on the species): Trask shoulderband snail, coast horned lizard, western pond turtle, and coast patch nosed snake. Also, ground and vegetation disturbing activities necessary to construct the modified golf course, including the removal and installation of turf and landscaping could result in potentially significant but mitigable impacts caused by direct mortality or injury to the western pond turtle. These species are relatively slow moving or could be present in burrows, cavities, or nest structures, or could be otherwise concealed or incapable of escaping harm. All potentially occurring adult special-status birds would be reasonably capable of escaping direct mortality or injury, although nesting birds would be susceptible to mortality, injury, and disturbance during vegetation disturbing activities, which is addressed under the Nesting Birds heading, below. Ground and vegetation disturbance in native

chaparral, disturbed coastal scrub, and landscaped areas could result in direct loss of special-status wildlife species meeting CEQA Guidelines section 15380 criteria, which would be a potentially significant, but mitigable impact. Implementation of mitigation measures MM1, MM3, and MM4 which would require pre-construction biological surveys and monitoring of ground or vegetation disturbing activities affecting native chaparral, coastal sage scrub, and landscaped areas, would reduce potential impacts that could result in direct mortality or injury to the Trask shoulderband snail, western pond turtle, coast horned lizard, and coast patch nosed snake that may be present in these areas to a less than significant level.

Grading and Maintenance of the Golf Course Ponds

The proposed grading and maintenance, i.e., sediment and vegetation removal, of the golf course ponds would impact aquatic, wetland, and riparian habitats, which would result in potentially significant but mitigable impacts caused by direct mortality or injury to resident western pond turtles. Also, the proposed grading and maintenance of the golf course ponds could result in potentially significant but mitigable impacts caused by direct mortality or injury to the following potentially occurring special-status species (with varying probabilities ranging from high to very low depending on the species): California legless lizard, two-striped garter snake, California mountain kingsnake, and tree-roosting bats. These species are all relatively slow moving or could be present in burrows or cavities, or could be otherwise concealed or incapable of escaping harm and could be impacted by the Project. All adult special-status birds that may potentially occur at the golf course ponds would be reasonably capable of escaping direct mortality or injury, although nesting birds would be susceptible to mortality, injury, and disturbance, which is addressed under the Nesting Birds heading, below. Impacts to tree-roosting bats are addressed under the Roosting Special-Status Bats heading, below. Special-status fishes are not present at the golf course ponds or in the vicinity of the Project site, as all special-status fish species known to occur in the region are precluded from occurring within the upper Trancas Canyon watershed by barriers to upstream movement or because the upper Trancas Canyon is outside of their historical range and distribution. Implementation of mitigation measure MM1 and MM3, which would require pre-project biological surveys and monitoring of ground or vegetation disturbing activities affecting aquatic and riparian habitats, would reduce potential impacts that could result in direct mortality or injury to the California legless lizard, two-striped garter snake, and California mountain kingsnake to a less than significant level. Implementation of mitigation measures MM5, which would require the capture of all western pond turtles prior to grading or maintenance, the temporary containment and management of the captured turtles at a suitable on-site or off-site location, and release of the captured turtles back into the ponds at an appropriate time following completion of the Project, would reduce potential impacts that could result in direct mortality or injury to the western pond turtle to a less than significant level.

Loss and Modification of Habitat

Many of the special-status wildlife species with potential to occur within the proposed limits of disturbance likely would occur only rarely or occasionally and would not be significantly affected by habitat loss and habitat modification that would result from development of the Project, as impacts to suitable habitats would represent an exceedingly small proportion of the available suitable habitat within their ranges. These species include residents, as well as migrants and other rare and uncommon visitors that may rarely or occasionally forage on the site, including the least Bell's vireo, willow flycatcher, bank swallow, golden eagle, northern harrier, American peregrine falcon, burrowing owl, western least bittern, short-eared owl, long-eared owl, black swift, Vaux's swift, olive-sided flycatcher, purple martin, yellow warbler, yellow-breasted chat, summer tanager, as well as several additional potentially occurring species of birds considered "special animals". Impacts to suitable native habitat would not have a substantial adverse effect on these species, due to the small acreage of habitat that would be lost or modified, the

relatively low importance of the habitat within the limits of disturbance to their survival, and because these species can be expected to adapt and utilize other available habitat in the surrounding area or in the region. The loss or modification of suitable habitat for these species that would result from development of the Project therefore would be less than significant.

Several other special-status species with potential to occur on the Project site may be resident individuals that have all or part of their home ranges or territories within the disturbance limits and may use all or a portion of habitat within the disturbance limits to meet their life history requirements for refuge, breeding and foraging. These species include the Trask shoulderband snail, Santa Monica grasshopper, coastal whiptail, coast horned lizard, California legless lizard, San Bernardino ringneck snake, coast patch-nosed snake, two-striped garter snake, western pond turtle, white-tailed kite, loggerhead shrike, all potentially occurring special-status bat species, and several additional potentially occurring species of birds considered "special animals" (e.g., Cooper's hawk and southern California rufous crowned sparrow). For example, species with small home ranges or territories such as the Trask shoulderband snail, coastal whiptail, and coast horned lizard may spend all or most of their entire life inside the limits of disturbance while other species such as the white-tailed kite or the bats would use habitats within the limits of disturbance for only a portion of their foraging habitat.

With the exception of the western pond turtle and the possible exception of the two-striped garter snake, which are discussed below, the native habitats within the limits of disturbance are not particularly important or essential for the survival of a population of any of these species. The acreage of suitable habitat for these species that would be impacted would be small, particularly when compared to the amount of remaining suitable habitat on the Project site, which would be protected as permanently dedicated open space as a component of the Project. A small number of individuals of Trask shoulderband snail, Santa Monica grasshopper, coastal whiptail, coast horned lizard, and California legless lizard, if present, would potentially have their entire or a large portion of home range or territory affected, while individuals of the remaining species could continue to use the undeveloped portions of the Project site and adjacent offsite areas as resident and foraging habitat. Habitat loss or habitat modification affecting the Trask shoulderband snail, Santa Monica grasshopper, coastal whiptail, coast horned lizard, or California legless lizard could result in direct impacts or displacement of some individuals, but would not adversely impact a population of any of these species. Impacts to the Trask shoulderband snail, Santa Monica grasshopper, coastal whiptail, coast horned lizard, California legless lizard, San Bernardino ringneck snake, coast patch-nosed snake, white-tailed kite, loggerhead shrike, and all potentially occurring birds considered "special animals" from habitat loss that would result from development of the Project would be less than significant.

The aquatic, wetland, and riparian habitats at the golf course ponds support a resident population of the western pond turtle, and may potentially support a breeding population of the two-striped garter snake. The western pond turtle has been observed at the two largest golf course ponds. The two-striped garter snake may remain well concealed and therefore may not have been observed if present during general biological surveys of the Project site. Since focused surveys for the two-striped garter snake have not been conducted their presence or absence at the ponds is speculative and the possibility that the ponds provide important habitat for these species cannot be discounted.

As stated, the Project would dewater and dry the ponds over a several month period, which would be necessary to eradicate the invasive animals and improve the ecological condition of the ponds and prevent potential degradation of downstream habitats within the watershed. The Project also would excavate the vegetation and sediment from the ponds to improve functional capacity and to remove potentially occurring toxins that may have accumulated in bottom sediment. The dewatering of the ponds and

removal of vegetation from the ponds would result in a temporary loss of aquatic and wetland habitats, as well as the temporary loss of the riparian habitat adjacent to the ponds both by direct removal and possibly indirectly due to changes in water availability. Also, after the ponds were refilled there would be a period of reduced habitat value as the marsh habitats at the ponds recover over time and riparian habitats are restored.

The temporary loss of the aquatic, marsh, and riparian habitats at the golf course ponds could result in indirect mortality and other adverse effects to the western pond turtle and two-striped garter snake, including displacement and potential extirpation from the ponds. Although these species are capable of dispersal to other suitable habitats, there is very limited aquatic habitat available in the vicinity of the Project site. The section of Trancas Creek at the Project site provides a perennial water source, but this section may also dry when the ponds are dewatered. Furthermore, dispersal to and from the ponds during project development is anticipated to be unsafe, and movement could be obstructed by construction barrier fencing or silt fencing, as project development is anticipated to last for two years and would result in substantial disturbance to all areas in the vicinity of the ponds. The entire existing golf course and all associated landscaping would be modified as a part of the Project.

The proposed dewatering and drying of the ponds and the removal of vegetation from the ponds could have a potentially significant adverse effect on the western pond turtle, and may have a significant adverse effect on the two-striped garter snake, if the two-striped garter snake is present at the site. These species are identified as special-status species by the CDFW. The temporary removal and modification of requisite habitat for foraging, cover, and reproduction for these species would be a potentially significant, but mitigable impact. These potential impacts to the western pond turtle may be avoided if the timing and duration of the period that the ponds would be unsuitable for the species (i.e., lacking water, cover, or food supply) coincides with the seasonal period that the turtles may move to upland habitats (western pond turtles typically spend much of the year in upland habitats) *and* if the safe dispersal of the turtles between the ponds and the native habitats in the surrounding area could be ensured. Implementation of mitigation measure MM5, which would require the capture of all western pond turtles at the ponds prior to grading or maintenance, the temporary containment and management of the captured turtles at a suitable on-site or off-site location, and release of the captured turtles back into the ponds at an appropriate time following completion of the Project would reduce potential impacts to the western pond turtle that could result from temporary loss and modification of the golf course pond habitats to a less than significant level. Potential impacts to the two-striped garter snake would be mitigated by implementation of MM3. Any two-striped garter snakes found should be relocated to permanent aquatic habitats that are downstream and relatively close to the Project site.

Roosting Special-Status Bats

Special-status bats with potential to occur at the Project site could roost, hibernate, or form maternity colonies in trees or man-made structures within the limits of disturbance, such as in culverts, vacant or unoccupied buildings, tree cavities, crevices, exfoliating bark, or by hanging pendant from bark or tree branches. The Project would include demolition of a vacant residence and maintenance sheds, and the removal of 1,590 non-native trees and palms, including many large trees that could potentially contain roosting, hibernating, or breeding bats (see the Project's Tree Removal Plan, dated October 29, 2012). Trees supporting bats may also be removed or disturbed by vegetation removal at the golf course ponds. The demolition of uninhabited structures and the felling of trees, particularly larger trees, could result in direct morality, injury, or disturbance to roosting bats, including hibernating bats or bats raising young. Immature bats and hibernating bats that would be unable to escape harm are particularly susceptible to direct impacts. Project activities conducted in the vicinity of occupied hibernacula or maternity roosts

could indirectly disturb hibernating or bats raising young, e.g., due to human presence or excessive noise or artificial night lighting. Arousal of hibernating bats could be adverse as bats do not feed during this period and rely on a limited supply of fat for survival during hibernation. Also, bats raising young may abandon roosts when disturbed, which could result in indirect mortality of immature bats if the adults abandon their young. Direct mortality or injury to special-status bats or disturbance to occupied hibernacula or maternity roosts would have a substantial adverse effect on a wildlife species under CEQA Guidelines section 15380 criteria and would be a significant, but mitigable impact. Implementation of mitigation measure MM6, and MM7 which would require pre-project surveys and other measures to protect special-status bats, would reduce potential impacts to special-status bats to a less than significant level.

The removal of a substantial number of large trees from the Project site could have an adverse effect on a population of special-status bats, if one or more is present in the area, as removal of these trees could result in the loss of important roosting habitat. The presence of a population of tree roosting bats and the value of the non-native trees for roosting has not been confirmed or investigated. It is recommended as a precautionary measure that tree removals be conducted in phases and that some of the larger trees and trees with the most suitable roosting habitat be retained to reduce potential adverse effects of habitat loss on potentially occurring special-status bats.

3. NESTING BIRDS

The Federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (Sections 3503, 3503.5, 3511, 3513 and 3800) protect most native birds. In addition, the federal and state Endangered Species Acts protect some bird species listed as Threatened or Endangered. Project-related impacts to birds protected by these regulations could occur during the breeding season, because unlike adult birds, eggs and nestlings are unable to escape impacts.

Fish and Game Code Section 3513 upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, there are Fish and Game Code Sections 3503, 3503.5, 3511, and 3800, which further protect nesting birds and their parts, including passerine birds, raptors, and state “fully protected” birds.

Birds may nest within the Project impact area in trees, shrubs, dense herbaceous vegetation, and on or within suitable man-made structures. Certain Project activities including but not limited to grading, tree and vegetation removal, maintenance of the golf course ponds, and demolition of structures conducted during the nesting bird season (February 1 through September 15), could potentially impact nesting birds protected under the MBTA and Fish and Game Code. The large number of trees that would be removed or relocated could potentially result in substantial direct mortality or injury to nesting birds. Some special-status bird species and numerous non-special-status bird species may nest within or in the vicinity of the Project site and would be directly impacted if present in vegetation or suitable structures during Project activities. Additionally, birds nesting in the vicinity of Project activities may potentially be disturbed by noise, lighting, dust, and human activities associated with the Project, which could result in nesting failure and the loss of eggs or nestlings. Project impacts to nesting birds are therefore significant, but mitigable. Implementation of MM8, which would require surveys for nesting birds, establishment of nest buffers, and avoidance and monitoring of active nests, would reduce potential impacts to nesting birds to a less than significant level.

The removal of a substantial number of large trees and palms from the Project site may have an adverse

effect on populations of some species of non-special-status birds, as removal of these trees could result in the loss of important perching, foraging, and nesting habitat. It is recommended as a precautionary measure tree removals be conducted in phases to reduce impacts to non-special-status nesting birds.

4. INVASIVE ANIMALS

Invasive animals confirmed present in aquatic habitats on the Project site include crayfish, mosquito fish, and predatory fish, including non-native catfish and largemouth bass. These species have been introduced to the golf course ponds over the course of the last five decades. Their presence may precede development of the golf course, as the ponds were created in the late 1960s when the site was apparently used for hunting. When the golf course was developed in the mid 1970s, the ponds were incorporated into the golf course area.

As discussed earlier, the aquatic habitats on the Project site would be temporarily dewatered to eradicate invasive animals, including predatory fish, crayfish, and mosquito fish. The dewatering process would occur over a period of several months to allow the habitat to completely dry. The dewatering would maximize the probability that invasive species populations would be removed. The pond water would not be discharged to Trancas Creek, as this could result in the release of invasive species to downstream habitats. As there are no habitats upstream of the golf course ponds that are suitable for predatory fish, crayfish, or mosquito fish, with removal of the invasive animals, there would be no concern of reintroduction of invasive species to the ponds from creeks or tributaries upstream from the Project site. Invasive crayfish would also be removed from the segment of Trancas Creek to the east of Clubhouse Drive and north of Encinal Canyon Road. After the ponds are refilled, the aquatic habitats would be monitored to determine if invasive animals have been successfully eradicated.

The golf course ponds are currently a potential source of invasive animals, particularly crayfish, to aquatic habitats downstream from the Project site. Invasive species are of wide concern to ecologists and conservation biologists, as invasive species are commonly thought to be a major contributor to observed declines in biodiversity. Invasive species are known to negatively impact native species through predation, competition, or even hybridization. Removal of invasive animals from the Project site would be a significant step toward improving the quality of aquatic habitats for native wildlife species in Trancas Canyon, especially due to its position in the upper headwaters area of the watershed. For example, the elimination of invasive crayfish would restore aquatic habitat quality for native amphibians including the California newt, the Pacific treefrog, and the California treefrog, as crayfish eat native aquatic insects, the eggs and larvae of native amphibians, and attack and sometimes kill native adult amphibians. In addition, the two-striped garter snake is dependent on native frogs for prey and also could see recovery. The California newt, the California treefrog, and the two-striped garter snake are all either currently species of concern or have been considered so in the past. See *The Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains Recreation Area* in Appendix 5 for additional details on the ecological effects of invasive animals and the plan to eradicate invasive animals from the Project site.

The Project would not facilitate population growth or the spread of invasive animals that currently exist at the site. The temporary dewatering and drying of the golf course ponds is expected to eradicate the invasive animals and would improve habitat conditions for wildlife at the golf course ponds as well as within areas downstream from the Project site in the Trancas Canyon Watershed, which would be a beneficial impact.

Threshold(s): Would the Project have a substantial adverse effect on any sensitive natural communities

(e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Would the Project threaten to eliminate an animal community?

5. VEGETATION AND CDFW SENSITIVE PLANT COMMUNITIES

The plant communities that would be removed or disturbed by the Project, as well as the acreages that would be affected and the causes of the impacts are shown on **Table 7.** No plant communities that meet criteria of CDFW sensitive plant communities would be impacted by the Project. Therefore, Project impacts to CDFW sensitive plant communities would be less than significant. Impacts to Environmentally Sensitive Habitat Areas (ESHAs) and riparian habitat are addressed under the Environmental Sensitive Habitat Areas (ESHAs) and Jurisdictional Wetlands, Waters, and Habitats headings later in this section.

Table 7
Project Impacts to Vegetation and Sensitive Plant Communities
(* Denotes a sensitive plant community)

Plant Communities (CDFW 2003) (Figure 8)	Plant Community Alliances (CDFW 2010; Sawyer et al. 2009) [potentially occurring within the mapped units]	Total Acreage Impacted	Cause of Impacts
Developed/Ornamental Areas	Eucalyptus Groves (not ranked) Ornamental Stands (not ranked)	127.71	Construction; grading; landscaping; tree removals; structure demolition
Disturbed/Ruderal Areas	*Brassica (nigra)* and Other Mustards (not ranked)	3.84	Helicopter pad.
Undifferentiated Chaparral 37000	Black Sage Scrub (G4S4) Chamise Chaparral (G5S5)	0.02	Tee box and pathway to tee box.
Southern Willow Scrub 63130	Arroyo Willow Thickets (G4S4)	0.60	Grading; dewatering and maintenance of golf course ponds.
Freshwater Marsh/Aquatic	Bulrush Marsh (G5S4)	3.82	Grading; dewatering and maintenance of golf course ponds.
	Total	**135.99**	

6. ENVIRONMENTALLY SENSITIVE HABITAT AREA (ESHA)

The Malibu LCP Land Resources Policy P68 requires, in accordance with Section 30240(a) of the Coastal Act, "Environmentally sensitive habitat areas (ESHAs) shall be protected against significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. Residential use shall not be considered a resource-dependent use."

There are two designated ESHAs on the Project site, including a Willow/Sycamore/Coast Live Oak

woodland community and an area of non-native tree plantings and disturbed areas associated with a residence and the former hunting lodge, which lacks notable or sensitive native habitat and therefore appears to have been erroneously mapped. The Willow/Sycamore/Coast Live Oak ESHA is located upstream and approximately 970 feet from the limits of disturbance. The Willow/Sycamore/Coast Live Oak ESHA would not be impacted by the Project. The erroneously mapped "ESHA" is approximately 210 feet from the abandoned residence that would be demolished, and 1310 feet from the limits of disturbance associated with modification of the golf course. The erroneously mapped "ESHA" would not be impacted by the Project.

In addition to areas that have been designated and mapped as ESHA in the Malibu Local Coastal Program Land Use Plan, according to the CCC "Dixon Memo," native habitats within the Coastal Zone of the Santa Monica Mountains, including chaparral, coastal sage scrub, California perennial grasslands, oak woodlands, and riparian woodlands are also ESHA, provided that the habitat is largely undeveloped and part of a large, contiguous block of relatively pristine native vegetation.

Vegetated areas within the limits of disturbance were evaluated in the field to determine if habitats meeting the CCC's "Dixon Memo" criteria would be impacted by the Project. The Project, including all proposed grading, landscaping, tree removals, and vacant structure demolition, would be sited within areas that do not qualify as ESHA based on the Malibu LCP policy, the Coastal Act definition, or Dixon Memo criteria. The Project would be sited almost entirely within existing developed and disturbed areas, and the native habitats that would be affected by the Project do not qualify as ESHA based on their being isolated from large, extensive areas of native habitat or due to substantial previous or ongoing disturbance. For example, the aquatic and marsh habitats at the golf course ponds are significant resources, but they are not "relatively pristine" as the ponds have been degraded by invasive, aquatic animals, including non-native predatory fish, mosquito fish, and crayfish.

The Malibu LCP Land Resources Policy P69 requires, in accordance with Section 30240(b) of the Coastal Act, that "Development in areas adjacent to environmentally sensitive habitat areas (ESHAs) shall be subject to the review of the Environmental Review Board, shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas."

The large contiguous tracts of relatively pristine native vegetation on the Project site are ESHA based on Dixon Memo criteria. Development activities along the margins of the golf course would occur in close proximity to ESHA habitats, which could be degraded by inadvertent encroachment of construction activities or by excessive levels of construction noise, dust, or lighting, which could have adverse effects on native flora and fauna within those habitats. Although impacts would be temporary, Project development is anticipated to last for two years and a relatively large area would be subject to ground disturbance to create the remodeled golf course. Impacts to ESHAs adjacent to the limits of disturbance that could result from development of the Project would be potentially significant, but mitigable. Implementation of MM9, which would require measures to be implemented during the construction phase to avoid impacts to ESHAs located adjacent to the Project limits of disturbance, as well as the flora and fauna associated with the ESHAs, would reduce potential impacts to ESHAs located adjacent to the limits of disturbance to a less than significant level.

Native habitats located adjacent to the limits of disturbance also could be permanently degraded if subject to excessive noise or artificial night lighting during the Project's operational phase, which could affect the normal behavior of wildlife and cause some species to avoid the area. The Project would conform to the Los Angeles County Rural Lighting District Ordinance, which regulates outdoor lighting to promote and

maintain dark skies at night for residents and wildlife. Compliance with the Los Angeles County lighting ordinance, particularly those policies requiring shielding and downward orientation of lights, as well as those policies placing restrictions on lighting height and hours of operation, would minimize potential impacts to sensitive native habitats and ensure light trespass and glare would not encroach into native habitats surrounding the Project site. Given the proposed height of buildings and the locations of areas to be developed relative to surrounding native habitats combined with the restrictions of the L.A. County Ordinance, significant encroachment and glare within ESHAs would not be expected, and operational phase impacts of artificial night lighting would be less than significant.

The Project is not expected to be a noise generator as it primarily consists of passive educational and recreational activities, with the remodeled golf course being a continuation of an existing use. However, the Project would continue to host occasional events, and some of these events could be held outdoors and involve the use of amplified sound. As background levels of noise are low at the Project site, amplified sound could be audible from ESHAs surrounding the Project site, and also could be audible from the wildlife movement corridor in the southern and western portion of the Project site. With the Project improvements, events currently held outdoors could be held indoors and as such, noise impacts would be lower than existing levels. To reduce the potential for adverse effects on wildlife in these areas, for events held outdoors, the use of amplified sound should be infrequent and the event should end by 10:00 p.m. Under the strict assumption that events held outdoors with amplified sound would be the held at an equivalent or reduced frequency when compared to the existing condition, and with incorporation of a mitigation measure including a time restriction (See MM5.10-4 in Section 5.10, Noise of the Malibu Institute Project EIR), operational phase noise impacts to ESHAs and associated wildlife would be less than significant.

7. INVASIVE PLANT SPECIES

Ground disturbance associated with Project development, including grading, landscaping, pond maintenance, tree removals, and construction activities, could facilitate the introduction and/or spread of non-native, invasive plant species. Invasive plant species could be dispersed by stormwater, wind, or wildlife, or by various other means to native habitats in the surrounding area, including sensitive habitats in SEAs, the Trancas Canyon SWA, ESHAs, and significant riparian woodland and oak woodland habitats downstream from the Project site. Invasive species could compete with native plants for resources and disrupt normal ecological processes, reducing biological diversity and potentially threatening the quality of natural habitats and special-status plant species populations, where present. Of concern is the large area that would be subject to ground disturbance, the presence of large tracts of environmentally sensitive habitat on the Project site, and the sensitive riparian and oak woodland habitats downstream from the Project site. Also, if invasive, non-native plant species are used in Project landscaping, or in bio-swales or bio-detention basins at the Project site, invasive species could be dispersed to native habitats in the surrounding area.

The introduction and spread of non-native, invasive plant species could have a substantial adverse effect on riparian habitat and other sensitive natural communities identified in local and regional plans, policies, regulations, and by the CDFW. The current conceptual landscaping plan for the project does not include invasive species; however, the plan does not provide species proposed for bioswales, biodetention basin, or golf course turf areas. Therefore, mitigation is required to ensure that invasive species are not included in final landscaping plans. Prior to mitigation that would reduce Project level impacts of invasive species to native habitats, such as ESHAs and downstream riparian habitats, to less than significant levels, introduction of invasive plant species would be a potentially significant impact. Implementation of mitigation measures MM10 and MM11, which would require implementation of a Pest and Invasive

Species Management Plan and review of the Project's proposed Landscaping Plan to ensure invasive species are not planted at the site, would reduce potential impacts to ESHAs and sensitive habitats downstream from the Project to a less than significant level.

8. POLLUTANTS DISCHARGED TO HABITATS WITHIN THE TRANCAS CANYON WATERSHED

Sensitive habitats within the Trancas Canyon Watershed, including designated stream and riparian woodland ESHAs, could be impacted by the Project if pollutants were transported downstream from the Project site by stormwater runoff or other means. Pollutants originating from the Project site also could impact special-status wildlife species in downstream habitats, including the federally Endangered southern steelhead and tidewater goby, and the California newt, western pond turtle, and the two-striped garter snake, which are California Species of Special Concern.

The western pond turtle, California newt, and two-striped garter snake are known to occur downstream of the Project site in Trancas Creek, and the southern steelhead and tidewater goby may potentially occur in aquatic habitats approximately four miles downstream from the Project site at the Trancas Lagoon. Also, naturally occurring non-anadromous rainbow trout, which are not protected, may potentially occur downstream from the Project site within Trancas Creek and, if anthropogenic barriers to their upstream migration are removed (which is not proposed at this time) individual rainbow trout could adopt a steelhead migratory life-history pattern, and thus would have protected Endangered status. The Trancas Canyon Watershed has been identified as a "middle-priority" focal watershed for restoration of a population of anadromous steelhead, and therefore could become the site of future recovery actions for the species, which would include the removal of anthropogenic barriers along Trancas Creek and possibly the reintroduction of the species to the watershed. Pollutants, such as fine sediment, heavy metals, petroleum hydrocarbons, herbicides, pesticides, and fertilizers, could degrade the quality of sensitive aquatic, wetland, and riparian habitats upon which these species depend, and could result in adverse effects on existing or reintroduced (natural or assisted) populations of these species and/or the recovery of these species within the watershed.

Pollutants could be discharged to Trancas Creek during grading, landscaping, and construction activities during the construction phase of the Project, or during routine activities such as golf course maintenance during the operational phase of the Project. Pollutants discharged to offsite habitats within the Trancas Canyon Watershed could have substantial adverse effects on riparian habitat identified by the CDFW, conflict with local Malibu LCP policies protecting ESHAs, and have substantial adverse effects directly and through habitat modifications on special-status species identified by the USFWS and CDFW. These impacts are significant, but mitigable. Implementation of MM11, which would require implementation of a Pest and Invasive Species Management Plan, as well as compliance with existing County codes, which would require implementation of SWPPP and SUSMP best management practices, would reduce potential impacts to a less than significant level.

9. PESTICIDES, HERBICIDES, AND FERTILIZERS AND PEST AND RODENT CONTROL

Pesticides, herbicides, fungicides, toxic chemicals, fertilizers (nutrients), and poisons used for pest and rodent control used at the Project site could be released to the environment, including aquatic and terrestrial systems. These chemicals could affect aquatic invertebrates that provide the food base for many larger species, such as birds, fishes, and amphibians. There also would be a potential hazard to amphibians, reptiles, birds and mammals that use the aquatic habitats as a water source. Increases in nitrogen and other nutrients into aquatic habitats could alter plant species composition and the quality of

habitat for wildlife. Terrestrial plants and animals likewise would be adversely affected by the introduction of chemical pesticides and fertilizers in proximity of their habitat. The overall effect of toxic chemicals being introduced into the environment is the loss or decrease in populations of species and a reduction of biodiversity. Poisons used for rodent control also could cause injury to raptors and other large predators as poisons accumulate through the food chain. If left uncontrolled, chemicals and fertilizers could have substantial adverse effects on riparian habitats and sensitive natural communities identified by the CDFW and special-status species identified by the CDFW and USFWS, either directly or through habitat modifications, and conflict with local policies protecting biological resources (SWA, ESHAs), which would be a significant, but mitigable impact. Implementation of mitigation measure MM11, which would require implementation of a Pest and Invasive Species Management Plan that would place restrictions on the use of pesticides, herbicides, fungicides, and fertilizers and on pest and rodent control methods, would reduce potential impacts to a less than significant level.

Threshold: Would the Project have a substantial adverse effect on federally or state protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, and drainages) or waters of the United States, as defined by Section 404 of the Clean Water Act or California Fish and Game Section 1600, et seq. through direct removal, filling, hydrological interruption, or other means?

10. JURISDICTIONAL WETLANDS, WATERS, AND HABITAT

The jurisdictional areas that would be permanently and temporarily impacted by the Project are shown on **Figures 17a and 17b**, Impacts to Jurisdictional Areas. The acreages of jurisdictional areas that would be impacted are shown in **Table 8** and **Table 9**, below. Impacts to jurisdictional areas are based upon a preliminary grading plan provided by RCE Consultants, Inc., a preliminary golf course design provided by Jackson Kahn Golf Course Designs, dated October 29, 2012, and *The Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains Recreation Area* by L. Kats (See Appendix 5).

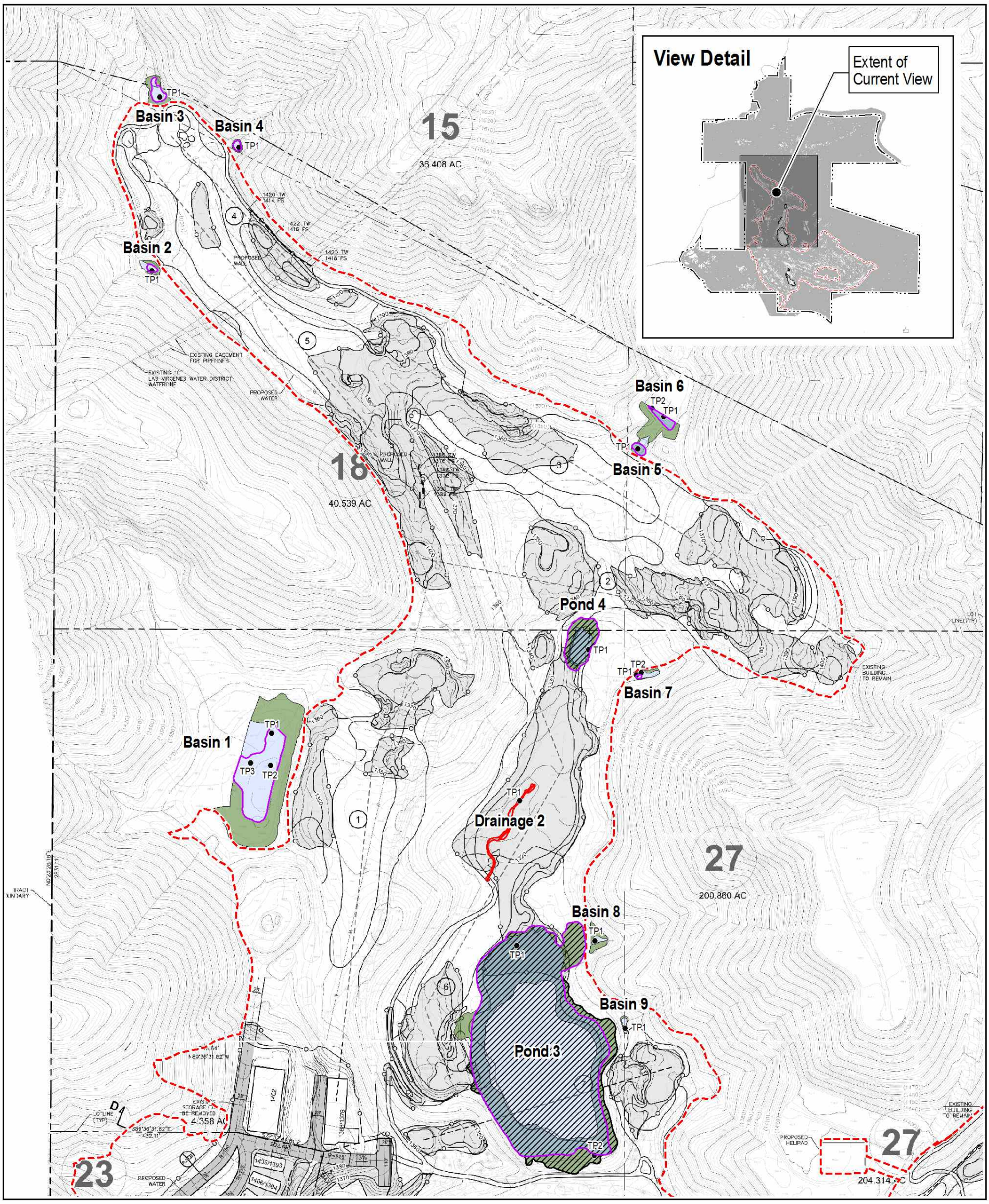
Permanent Impacts to USACE "Waters of the United States" and CDFW Jurisdictional Habitat

Grading to construct the redesigned golf course would permanently impact a man-made drainage (Drainage 2) on the golf course grounds. Drainage 2 currently receives flows from a storm drain, which are conveyed through the drainage to a storm drain at its southern end. The Project would install a buried culvert to convey flows through this area in place of the aboveground drainage. The removal of Drainage 2 would permanently impact a total of 0.032 acres of jurisdictional area. Of the 0.032 acres, 0.002 acres are USACE wetland "waters of the United States" [coincident with 0.002 acres of CDFW jurisdictional habitat] and 0.03 acres are USACE non-wetland "waters of the United States" [also coincident with 0.03 acres of CDFW jurisdictional habitat]. Therefore, the Project would have a substantial adverse effect on riparian habitat identified by the CDFW and federally protected wetlands as defined by Section 404 of the Clean Water Act. Permanent impacts to USACE "waters of the United States" and CDFW jurisdictional habitat would be significant, but mitigable. Implementation of mitigation measures MM12 and MM13, which would require acquisition of resource agency permits and implementation of a final approved Habitat Mitigation and Monitoring Program, would reduce the permanent impacts to USACE "waters of the U.S." and CDFW jurisdictional habitat to a less than significant level.

Temporary Impacts to USACE "Waters of the United States," CDFW Jurisdictional Habitat, and CCC Single-Parameter Wetlands

Grading to construct the redesigned golf course would temporarily impact wetland "waters of the United States," CDFW jurisdictional habitat, and CCC single-parameter wetlands at three of the four ponds

(Pond 1, Pond 2, and Pond 3) on the golf course grounds. Also, the temporary de-watering and drying of the golf course ponds, as well as removal of sediment and vegetation from the ponds would temporarily



Topographic Source: RCE Consultants, Inc., June 30, 2013.

Legend

- Project Boundary
- Limit of Ground Disturbance
- Limit of Fuel Modification (Not Shown - Pending)

Jurisdictional Areas

CDFW Jurisdiction
- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat

Single-Parameter Wetlands (California Coastal Commission Definition)

●TP# Sample Plots/Test Pits

Temporary Impacts	Acres
CDFW Jurisdiction: ACOE Non-wetland Waters of the U.S.	1.63
CDFW Jurisdiction: ACOE Wetland Waters of the U.S.	2.19
CDFW Jurisdiction: CDFW Streambed and Riparian Habitat	0.60
Total	4.42
Single-Parameter Wetlands (California Coastal Commission Definition)	4.10

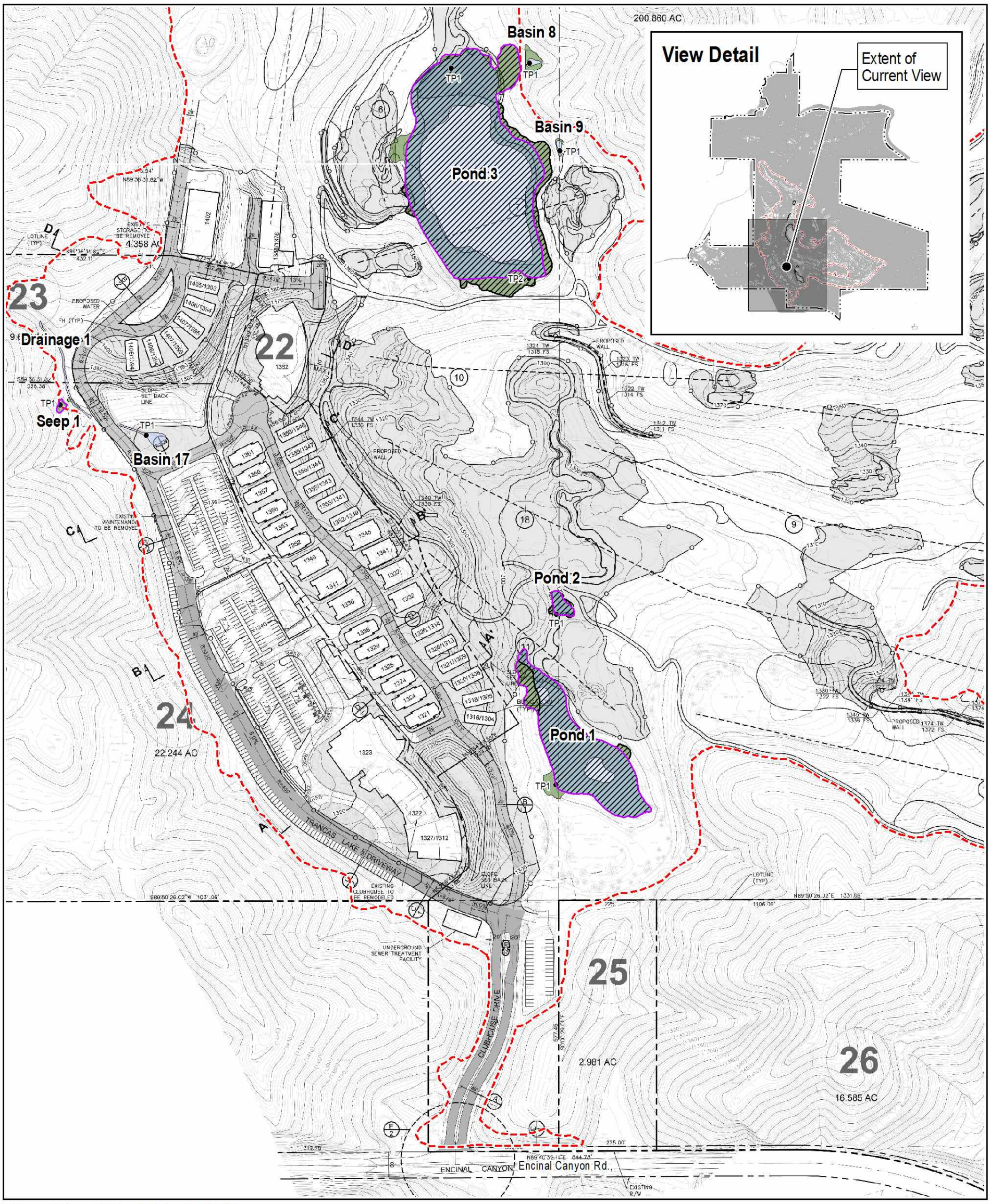
Permanent Impacts	Acres
CDFW Jurisdiction: ACOE Non-wetland Waters of the U.S.	0.03
CDFW Jurisdiction: ACOE Wetland Waters of the U.S.	0.002
Total	0.032

ENVICOM CORPORATION

Impacts to Jurisdictional Waters and Habitat

0 225 Feet

FIGURE 17A



Topographic Source: RCE Consultants, Inc., June 30, 2013.

Legend

- Project Boundary
- Limit of Ground Disturbance
- Limit of Fuel Modification (Not Shown - Pending)

Jurisdictional Areas

CDFW Jurisdiction
- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat

Single-Parameter Wetlands (California Coastal Commission Definition)

●TP# Sample Plots/Test Pits

Temporary Impacts	Acres
CDFW Jurisdiction: ACOE Non-wetland Waters of the U.S.	1.63
CDFW Jurisdiction: ACOE Wetland Waters of the U.S.	2.19
CDFW Jurisdiction: CDFW Streambed and Riparian Habitat	0.60
Total	**4.42**
Single-Parameter Wetlands (California Coastal Commission Definition)	4.10

Permanent Impacts	Acres
CDFW Jurisdiction: ACOE Non-wetland Waters of the U.S.	0.03
CDFW Jurisdiction: ACOE Wetland Waters of the U.S.	0.002
Total	**0.032**

ENVICOM CORPORATION

Impacts to Jurisdictional Waters and Habitat

0 225 Feet

FIGURE 17B

impact wetland "waters of the United States", non-wetland "waters of the United States", CDFW jurisdictional habitat, and CCC single-parameter wetlands at all four of the ponds on the golf course grounds (Pond 1, Pond 2, Pond 3, and Pond 4). The purpose of the de-watering, drying, and removal of sediment and vegetation at the golf course ponds is to restore the habitat and water quality of the ponds by eradicating exotic crayfish and other invasive animals and by removing potentially occurring toxins associated with prior management activities of the golf course that may have accumulated in bottom sediments. The eradication of invasive animals and removal of bottom sediments from the ponds also would prevent degradation of habitats downstream from the Project site. These impacts are considered temporary, as all wetland and riparian habitats at the ponds would be restored.

The grading of portions of Pond 1, Pond 2, and Pond 3, as well as the dewatering and removal of vegetation and sediment from Pond 1, Pond 2, Pond 3, and Pond 4 would temporarily impact a total of 4.42 acres of jurisdictional area. Of the 4.42 acres, 2.19 acres are USACE wetland "waters of the United States" [coincident with 2.19 acres of CDFW jurisdictional habitat] and 1.63 acres are USACE non-wetland "waters of the United States" [also coincident with 1.63 acres of CDFW jurisdictional habitat]. Also, of the 4.42 acres, 4.10 acres meet the single-parameter wetlands definition used by the CCC [coincident with 2.19 acres of wetland "waters of the United States", 1.63 acres of non-wetland "waters of the United States", and 0.28 acres of CDFW riparian habitat], and 0.32 acres are solely under the jurisdiction of the CDFW. Therefore, the Project would have a substantial adverse effect on riparian habitat identified by the CDFW and federally protected wetlands as defined by Section 404 of the Clean Water Act. Temporary impacts to USACE "waters of the U.S.", CDFW jurisdictional habitat, and CCC single-parameter wetlands would be significant, but mitigable. Implementation of mitigation measures MM12 and MM13, which would require acquisition of resource agency permits and implementation of a final approved Habitat Mitigation and Monitoring Program, would reduce the permanent impacts to USACE "waters of the U.S.", CDFW jurisdictional habitat, and CCC single-parameter wetlands to a less than significant level.

A small cattail seep (Seep 1) on a slope at the western margin of the Project site meets criteria to be considered a single-parameter wetland and CDFW jurisdictional habitat. Seeps supporting cattails on sloped terrain are rare in the Santa Monica Mountains. The vegetation supported by the seep is currently subject to fuel modification in the existing condition and would continue to be affected by fuel modification throughout the Project's construction and operational phases.

Table 8
Impacts to USACE Jurisdictional Areas

	USACE Waters of U.S.				Cause of Impacts
	Wetlands		Non-wetlands		
	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	
Pond 1	0.00	0.81	0.00	0.08	Grading; dewatering and excavation of sediment and vegetation.
Pond 2	0.00	0.04	0.00	0.00	Grading; dewatering and excavation of sediment and vegetation.
Pond 3	0.00	1.26	0.00	1.55	Grading; dewatering and excavation of sediment and vegetation.
Pond 4	0.00	0.08	0.00	0.00	Dewatering and excavation of sediment and vegetation.
Drainage 2	0.002 (36 linear feet)	0.00 (0 linear feet)	0.03 (277 linear feet)	0.00 (0 linear feet)	Grading; conversion of the above ground drainage to a buried culvert.
Total Jurisdictional Acreage	**0.002**	**2.19**	**0.03**	**1.63**	

Table 9
Impacts to CDFW and CCC Jurisdictional Areas

	CDFW Bed and Bank Riparian		"Single-Parameter" Wetlands		Cause of Impacts
	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)	
Pond 1	0.00	1.02	0.00	0.97	Grading; dewatering and excavation of sediment and vegetation.
Pond 2	0.00	0.05	0.00	0.04	Grading; dewatering and excavation of sediment and vegetation.
Pond 3	0.00	3.20	0.00	2.94	Grading; dewatering and excavation of sediment and vegetation.
Pond 4	0.00	0.15	0.00	0.15	Dewatering and excavation of sediment and vegetation.
Drainage 2	0.032 (277 linear feet)	0.00 (0 linear feet)	n/a	n/a	Grading and conversion of the above ground drainage to a buried culvert.
Total Jurisdictional Acreage	**0.032**	**4.42**	**0.00**	**4.10**	

Threshold: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

11. WILDLIFE MOVEMENT AND HABITAT LINKAGES

Wildlife must to be able to access essential habitat for water, foraging, breeding, and cover. Examples of barriers or impediments to movement (access) include housing and other urban development, roads, fencing, unsuitable habitat, or open areas with little vegetative cover.

The term wildlife movement corridor is used to describe physical connections that allow wildlife to move between patches of suitable habitat in both undisturbed landscapes, as well as environments fragmented by urban development. Large areas of suitable habitat and habitat linkages between these areas are necessary to maintain healthy ecological and evolutionary processes. Habitat linkages and wildlife movement corridors are necessary for dispersal and migration, to ensure the mixing of genes between populations, and so wildlife can respond and adapt to environmental stress.

Wildlife crossings are generally small, narrow areas allowing wildlife to pass through an obstacle or barrier, such as a roadway to reach another patch of habitat. These can be critical at both the local and regional level. Wildlife crossings include culverts, drainage pipes, underpasses, tunnels, and, more recently, crossings created specifically for wildlife movement over highways.

To assess impacts on wildlife movement, the *Santa Monica Mountains National Recreation Area (SMMNRA) Land Protection Plan* (March 1998) was reviewed for the locations of identified habitat linkages important for wildlife movement and maintaining connectivity between large areas of core habitat. The Project site also was evaluated in the field and by reviewing recent aerial photographs for potential wildlife movement corridors and wildlife crossings. The Project was evaluated for its potential to reduce or fragment habitat within habitat linkages and wildlife movement corridors, and to create impediments or barriers to wildlife movement and regional and local scales.

The Project would be developed almost entirely within the existing development footprint of the Malibu Golf Club. Development outside of the existing footprint would be limited to installation of tee box, a pathway to the tee box, and a helicopter pad. The tee box, pathway, and helicopter pad would not be sited in areas that are important for wildlife movement.

The *Land Protection Plan* indicates that undeveloped southwestern, southern, and southeastern portions of the Project site are of "high" resource value, based on their being part of an important "linkage area" connecting large protected core habitats. The Project would not encroach upon this corridor. Also, the remaining habitat on the Project site within this corridor would remain undeveloped and, as a component of the Project, would be permanently preserved as open space and would therefore continue to provide habitat for wildlife movement.

The golf course ponds are used as a stopover for resting and foraging by migratory birds. The proposed dewatering and drying of the ponds would result in a temporary loss of aquatic, wetland, and riparian habitat for migratory birds. Although adverse, the loss of habitat would be temporary and would not interfere with movement. Also, migratory birds have reasonable ability to adapt and utilize other similar habitats available in the Santa Monica Mountains region (e.g., Lake Sherwood, Westlake Lake, the ponds at Rocky Oaks NPS park unit, and others).

Artificial night lighting can affect terrestrial wildlife movement by dissuading wildlife from using lit areas thereby decreasing the habitat value of the area for movement. Also, artificial night lighting is known to interfere with movement of birds migrating at night, and to cause disorientation and collisions with tall, lit objects. The Project would conform to the Los Angeles County Rural Lighting District Ordinance, which regulates outdoor lighting to promote and maintain dark skies at night for residents and wildlife. Compliance with the Los Angeles County lighting ordinance, particularly those policies requiring shielding and downward orientation of lights, as well as those policies placing restrictions on lighting height and hours of operation, would minimize potential impacts to migratory birds and ensure that light trespass and glare would not encroach substantially into natural habitats surrounding the Project site, including those areas that are identified in the *SMMNRA Land Protection Plan* as part of an important habitat linkage and wildlife movement corridor. Given the proposed height of buildings and the locations of areas to be developed relative to the habitat linkage combined with the restrictions of the L.A. County Ordinance, significant encroachment or glare into the linkage is not expected.

Special-status fish are not present at or in the vicinity of the Project site, as all special-status fish species known to occur in the region are precluded from occurring within the upper Trancas Canyon watershed by barriers to upstream movement or because the upper Trancas Canyon is outside of their historical range and distribution. Although Trancas Creek has been identified as a "middle-priority" focal watershed for the restoration of the federally Endangered steelhead, the upstream natural limit to migration of anadromous steelhead is a natural three-meter high waterfall, located approximately one mile downstream from the Project site. Also the large artificial flood control channel in the lower reaches of Trancas Creek near the Malibu West development is likely impassable to steelhead at all times. Therefore, the Project would not impact the movement of steelhead or any other special-status fish species.

The Project would not remove or modify habitat within an important habitat linkage or wildlife movement corridor, and the Project would not isolate habitat or construct or create permanent barriers that would impede wildlife movement, migration, or significantly disrupt the capacity of the habitat linkage on the Project site to provide opportunities for dispersal of fauna (and flora) over the short or long-term. As the Project would not interfere substantially with the movement of wildlife or with established wildlife corridors, impacts to wildlife movement would be less than significant.

Threshold: Would the Project convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5 inches in diameter measured at 4.5 feet above mean natural grade) or otherwise contain oak or other unique native trees (junipers, Joshua trees, southern California black walnut, etc.)?

12. OAK WOODLANDS

Public Resource Code Section 21083.4 requires a county to determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment. The California legislature has defined "oak woodlands" in the Oak Woodlands Conservation Act of 2001 as lands that contain at least 10% oak canopy cover. This definition is widely accepted and is used herein, in part, for the purpose of defining oak woodlands under PRC Section 21083.4. PRC Section 21083.4 defines an "oak" as a native tree species in the genus *Quercus*, which is not designated as a commercial species, and that is 5 inches or more in diameter at breast height (dbh). All oak trees within the Project development limits have been mapped. Site maps showing the location of the surveyed oak trees are provided in the Project's Oak Tree Report (Trees, Etc., July 20, 2012).
For the purposes of this analysis, oak woodlands are oak tree stands with a minimum of two trees that

attain at least 10% canopy cover. The oak woodlands within the Project development limits or within 200 feet of the proposed grading footprint are shown on Figures 5.3-3 and 5.3-4 in the Malibu Institute Project DEIR. The understory of some of these oak woodlands is modified and disturbed, and contains paved or unpaved cart paths or golf course turf or landscaping. The largest and most significant of these woodlands, which still contains some native vegetation in its understory, is located along the northeastern boundary of the golf course between the northernmost pond on the golf course to its west and native chaparral to its east. Additional oak woodlands occur along drainages along with willows and sycamores in undeveloped portions of the Project site (See Figure 8).

The Project would avoid all oak trees, including their canopies and root protection zones. The Project would not modify the understory of any of the oak woodlands at the site, including those oak woodlands located within or along the perimeter of the existing golf course, which are typically disturbed and in some cases contain unpaved or paved cart paths or golf course turf or landscaping. Existing paths would not be removed or improved, and the disturbed understory would not be restored. Therefore, the Project would not convert oak woodlands, and impacts to oak woodlands would be less than significant.

Thresholds: Would the Project conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36), the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16), the Significant Ecological Areas (SEAs) (L.A. County Code, Title 22, Section 22.56.215), and Sensitive Environmental Resources Areas (SERAs) (L.A. County Code, Title 22, Ch. 22.44, Part 6); or, conflict with the provisions of an adopted state, regional, or local habitat conservation plan?

13. PROTECTED OAK TREES

The Los Angeles County Oak Tree Permits Ordinance (Part 16 of Chapter 22.56 in Title 22 of the Los Angeles County Code) protects oak trees of 8" or larger diameter at 4.5 ft above ground level on lots or parcels of land within the unincorporated area of Los Angeles County. Oak trees with more than one trunk are also protected if the two largest trunks have a combined diameter of 12" or larger. The County Code does not provide protections for native or non-native trees that are not within the genus *Quercus.*

TREES, Inc. inventoried native oak trees meeting the necessary criteria defined in the County's oak tree ordinance within the entire Project development area and within 200 feet of the proposed grading footprint. The oak tree inventory was conducted on March 17-18, 2009, June 16, 2009, September 12, 2011, October 11, 2011, and May 23, 2012. A total of 111 ordinance-sized oak trees, including 105 coast live oaks (*Quercus agrifolia*), one valley oak (*Quercus lobata*), and five scrub oaks (*Quercus berberidifolia*), were identified. One coast live oak also meets size requirements as a "heritage oak." A "heritage oak" in Los Angeles County is any oak tree that has at least one trunk that is at least 36" in diameter, or any oak tree having a significant historical or cultural importance to the community, notwithstanding the tree's diameter. Site maps showing the location of the surveyed oak trees at the site are provided in the Project's Oak Tree Report (Trees, Etc., July 20, 2012). Maps showing the location and canopy extent of the surveyed oak trees within the Project development limits or within 200 feet of the proposed grading footprint are provided as Figures 5.3-3 and 5.3-4 in the Malibu Institute Project DEIR. Surveyed oak trees lacking canopy data in the Oak Tree Report were mapped on Figures 5.3-3 and 5.3-4 based on an assumed 25-foot canopy radius.

No native oaks in the genus *Quercus* would be removed and/or encroached upon by the Project.

Therefore, the Project would not conflict with the County oak tree permit ordinance, and impacts to County protected trees would be less than significant.

14. SIGNIFICANT ECOLOGICAL AREAS (SEAs) AND BUFFERS

The Project site includes a small portion of the Los Angeles County designated Zuma Canyon Significant Ecological Area Buffer (SEA Buffer 3A) on the far northeastern portion of the Project site. SEA Buffer 3A is approximately 1,850 feet from the limits of disturbance. Also, the Zuma Canyon Significant Ecological Area (SEA 3) is outside of the Project site to the south and east, and approximately 2,265 feet from the limits of disturbance. Because of the distance between the limits of disturbance and SEA 3 and SEA Buffer 3A, and the terrain and drainage network of the area, a significant nexus between the Project area and SEA 3 or SEA Buffer 3A is not expected. Therefore, Project impacts to SEA 3 and SEA Buffer 3A would be less than significant.

15. SENSITIVE ENVIRONMENTAL RESOURCE AREAS (SERAs)

Potential impacts to SERAs are addressed under the headings **Invasive Plant Species**, **Invasive Animals**, **Environmentally Sensitive Habitat Areas (ESHAs), Pollutants Discharged to Habitats within the Trancas Canyon Watershed**, and **Pesticides, Herbicides, and Fertilizers, and Pest and Rodent Control**, which are presented earlier in this document.

X. CUMULATIVE IMPACTS

The surrounding area includes fourteen currently planned projects, as shown on the list of Related Projects and Figure 4-1 in Section 4, Environmental Setting. Eight of these projects are in the Coastal Zone. There is only one planned project in the Trancas Canyon Watershed, a remodel and expansion of existing retail totaling 53,423 square feet at 30745 Pacific Coast Highway, which is approximately four miles south of the Project site. Two of the related projects are relatively close to the Project site. The first is a subdivision of a parcel at 557 Westlake Blvd. into two lots and the development of a single-family home on each lot. The second is located adjacent to and to the east of the Project site at 427 S. Encinal Canyon Road, which would remove and replace 44,878 square feet of buildings with 47,000 square feet of new buildings at a juvenile detention facility.

The planned mitigation measures for this Project's impacts to biological resources would reduce all potential Project impacts to biological resources to a less than significant level. The anticipated residual impacts to biological resources that would remain with implementation of these mitigation measures were considered for their potential to be "cumulatively considerable." As demonstrated in the examples provided below, the anticipated residual impacts are of sufficiently low level such that the Project's potential contribution to a cumulative impact would not be cumulatively considerable. Therefore, with implementation of this Project's planned mitigation measures, the Project's would not result in a significant cumulative impact in combination with other past, present, and future projects.

For example, relatively small numbers of the locally sensitive Plummer's mariposa lily would be impacted by the Project. The mitigation for the loss of individual plants requires transplantation of plants prior to impacts and propagation of additional plants, which is expected to result in no net loss in the number of plants of this species. Furthermore, this Project's impact to this species would not be cumulatively considerable, given the small number of plants and associated habitat that would be impacted combined with the total population size and distribution of the species.

Also, ground and vegetation disturbing activities affecting chaparral and disturbed coastal sage scrub

could result in direct impacts to special-status wildlife species, including the Trask shoulderband snail, western pond turtle, coast horned lizard, and coast patch nosed snake. The grading and maintenance of aquatic, wetland, and riparian habitats at the golf course ponds could result in impacts to the California legless lizard, two-striped garter snake, California mountain kingsnake, and the western pond turtle. The dewatering and drying of the golf course ponds could impact the resident population of western pond turtles and potentially occurring population of the two-striped garter snake. As the western pond turtles would be captured and returned to the ponds following project development and pre-construction surveys would be conducted as mitigation to avoid or capture and move special-status species out of harm's way, and because only a very small acreage of habitat would be permanently affected, the number of individuals that could be impacted by the Project is expected to be very low, such that any residual impacts to these species after mitigation would not be cumulatively considerable and would not contribute to an adverse affect on a population of these species in the region, and certainly could not contribute to a potential impact along with related projects that would jeopardize the existence of these species.

Project impacts to jurisdictional wetlands, waters, and riparian habitat would be almost entirely temporary, and impacts to these habitats would be mitigated, such that there would be no net loss of acreage of these habitats in the region. The quality of the aquatic and wetland habitats that are impacted would be improved considerably over the existing condition, as invasive animals would be removed. It does not appear that related projects would result in substantial impacts to wetlands or riparian habitats, and it can be anticipated that any impacts to these habitats would be mitigated. Therefore, any residual impacts to wetlands, waters, or riparian habitat would not be cumulatively considerable.

As another example, the Project has the potential to impact nesting birds. Mitigation would require that pre-construction nesting bird surveys be conducted and that nesting birds found be avoided until nesting is completed. Potential residual impacts for this Project in the worst case include the loss of nests that may not have been detected during pre-construction surveys. Although some special-status or rare bird species have the potential to nest within the limits of disturbance with low probability, the overwhelming majority of birds nesting at the site would be species that are common or relatively common to the region. Therefore in all likelihood any residual Project impact to nesting birds would involve the loss of a small number of nests of bird species that occur in substantial or at least secure numbers. Given the small number of anticipated related projects in the region (overall small potential cumulative impact) and that the largest proportion of any residual impact would be to common species, as well as that other related projects would also be required to conduct pre-construction nesting bird surveys to be in compliance with federal and state law, a cumulative impact to nesting birds is not expected.

XI. MITIGATION MEASURES

MM1 Retainer of a Biological Monitor

Prior to the issuance of a grading permit, a qualified biologist shall be retained by the Applicant as the lead biological monitor subject to the approval of the LACDRP and CDFW. That person shall ensure that impacts to all biological resources are minimized or avoided, and shall conduct (or supervise) pre-grading field surveys for species that may be avoided, affected, or eliminated as a result of grading or any other site preparation activities. The lead biological monitor shall ensure that all surveys are conducted by qualified personnel (e.g. avian biologists for bird surveys, herpetologists for reptile surveys, etc.) and that they possess all necessary permits and memoranda of understanding with the appropriate agencies for the handling of potentially-occurring special-status species. The lead biological monitor shall also ensure that daily monitoring

reports (e.g., survey results, protective actions, results of protective actions, adaptive measures, etc) are prepared, and shall make these monitoring reports available to DRP and CDFW at their request.

SPECIAL-STATUS PLANT SPECIES

MM2 To compensate for the loss of the locally sensitive Plummer's mariposa lily, Plummer's mariposa lilies shall be replaced at a minimum 2:1 ratio within suitable habitats on the Project site in an area to be preserved as permanent open space. A Plummer's Mariposa Lily Mitigation and Monitoring Plan that provides for the replacement of the Plummer's mariposa lilies impacted by project construction shall be developed by a qualified biologist and approved by LACDRP prior to issuance of the grading permit for the Project. The Plan shall specify the following:

- a summary of impacts;
- the location of the mitigation site;
- methods for harvesting seeds or salvaging and transplantation of individual bulbs to be impacted;
- measures for propagating plants or transferring living bulbs from the salvage site to the mitigation site;
- site preparation procedures for the mitigation site;
- a schedule and action plan to maintain and monitor the mitigation area;
- criteria and performance standards by which to measure the success of the mitigation, including replacement of impacted lilies at a minimum 2:1 ratio;
- measures to exclude unauthorized entry into the mitigation areas; and
- contingency measures such as replanting or weeding in the event that mitigation efforts are not successful.

The performance standards for the Plummer's Mariposa Lily Mitigation and Monitoring Plan shall be at a minimum the following:

- Within five years after introducing the Plummer's mariposa lily to the mitigation site, the number of established, reproductive plants shall be no less than 2x the number of those lost to project construction, and;
- Non-native species relative cover shall be no more than 5% through the term of the restoration.

The mitigation project shall be initiated prior to development of the Project, and shall be implemented over a five-year period following occupancy or until performance standards are met, whichever period is longer. The mitigation project shall incorporate an iterative process of annual monitoring and evaluation of progress, and allow for adjustments to the Plan, as necessary, to achieve desired outcomes and meet performance standards. Annual reports discussing the implementation, monitoring, and management of the mitigation project shall be submitted to LACDRP. Five years after the start of the mitigation project, a final report shall be submitted to LACDRP, which shall at a minimum discuss the implementation, monitoring and management of the mitigation project over the five-year period, and indicate whether the mitigation project has, in part, or in whole, been successful based on established performance standards. The annual reports and the final report shall include as-built plans submitted as an appendix to the report. The mitigation

project shall be extended if performance standards have not been met to the satisfaction of LACDRP at the end of the five-year period.

SPECIAL-STATUS WILDLIFE SPECIES

Ground and Vegetation Disturbance in Native Chaparral and Disturbed Coastal Scrub Habitats

MM3 Pre-construction Biological Surveys and Biological Monitoring

Prior to commencement of ground or vegetation disturbing activities, including but not limited to grading, pond maintenance, and landscaping activities in native chaparral, coastal sage scrub, riparian, or aquatic habitats, as well as in landscaped areas, a qualified biologist shall conduct weekly pre-construction surveys for special-status wildlife species beginning no less than thirty (30) and ending no more than three (3) days prior to the commencement of disturbance. The pre-disturbance surveys shall incorporate methods to detect the special-status wildlife species that could potentially occur at the site. To the extent feasible, special-status species shall be avoided. If avoidance is not feasible, the species shall be captured and transferred to an appropriate habitat and location where they would not be harmed by project activities. Two-striped garter snakes shall be relocated to permanent aquatic habitats that are downstream and as close as feasible to the Project site.

MM4 Pre-Project Surveys for Shoulderband Snails

Prior to construction of the Project, a qualified biologist shall conduct a habitat assessment to locate all suitable chaparral, coastal sage scrub, and coastal scrub habitats within and directly adjacent to the limits of disturbance that may potentially support the Trask shoulderband snail (Helminthoglypta traskii traskii). Prior to ground or vegetation disturbing activities, a terrestrial snail specialist shall conduct surveys in suitable habitats for the Trask shoulderband snail.

The surveys shall be conducted in the winter to maximize the potential for detecting live snails. The project area shall be subject to a minimum of five (5) visual surveys, preferably spaced one (1) week apart, although surveys spaced more frequently may be acceptable in order to take advantage of wet weather. Surveys may be conducted during periods of rain, dense fogs, or heavy dews, but shall not be conducted during dry weather conditions.

Each survey shall involve a general search for key features and likely places for snails followed by more intensive searching of areas with key habitat features. Surveys shall focus on careful examination of soil, leaf litter, downed wood, debris piles, beneath rocks and vegetation, and the undersides of branches and leaves. The U.S. Fish and Wildlife Morro shoulderband snail (Helminthoglypta walkeriana) Protocol Survey Guidelines (June 2003) may be referred to for additional guidance on surveying for Helminthoglypta snails.

If Trask shoulderband snails are found, they shall be moved to suitable habitat on the Malibu Institute property, such that the snails would not be subject to direct or indirect harm by the project, and would not migrate back into the project area. Handling time

shall be minimized and attractants shall not be used, so as to avoid inadvertently attracting vandals or predators of the snail.

The survey shall be valid for two years. Following the two-year period, surveys shall be required prior to new ground or vegetation disturbance in suitable habitat.

Prior to the issuance of a grading permit, the surveying biologist shall provide a report to LACDRP covering the survey methods and results, including maps, photographs, and field notes documenting the area surveyed and any Trask shoulderband snails that were identified and relocated.

Grading and Maintenance of the Golf Course Ponds

Direct impacts would be mitigated by implementation of MM3 and MM5.

MM5 Capture, Management, and Release of Western pond turtles

A Western Pond Turtle Mitigation and Monitoring Plan for the avoidance of impacts to the western pond turtle shall be prepared by a qualified biologist and approved by LACDRP and the CDFW prior to issuance of the grading permit for the Project. The Plan shall involve the capture of all western pond turtles at the Project site, the temporary containment and maintenance of the captured turtles at a suitable on-site or off-site location, and the release of the turtles back to the ponds at an appropriate time when the ponds would provide suitable habitat and the turtles would no longer be threatened by Project activities. The Plan shall at a minimum specify the following:

- timing and methods of capture and removal of the turtles, and turtle eggs if applicable, from the golf course ponds and elsewhere within the Project limits;
- site conditions necessary for the release of the turtles back to the ponds;
- methods for release to the ponds;
- monitoring program to document the status and condition of the turtle population following the release of the turtles back into the ponds;
- a schedule and action plan for monitoring and reporting on the status of the turtle mitigation project;
- criteria and performance standards by which to measure success; and,
- contingency measures in the event that the mitigation effort is not successful.

Alternatively, if feasible, the temporary containment of all or part of the turtle population at the golf course ponds may be avoided if it can be demonstrated that the timing and duration of the period that the ponds would be unsuitable for the species (i.e., lacking water, cover, or food supply) coincides with the seasonal periods that the turtles would move to upland habitats and if the safe dispersal of the turtles between the ponds and the native habitats in the surrounding area could be ensured throughout Project construction. In this case, the Plan shall also specify the timing and duration of the period that the ponds would be unsuitable and methods and monitoring activities to ensure that both direct impacts to individuals and the population of turtles at the Project site would be avoided.

Annual reports discussing the implementation, monitoring, and management of the western pond turtle mitigation project shall be submitted to LACDRP and the CDFW. The fifth annual report shall discuss the implementation, monitoring and management of the mitigation project and indicate whether the mitigation project has, in part, or in whole, been successful based on established performance standards. If performance standards have been satisfied, the mitigation shall be considered complete, and no further reporting shall be required. If performance standards have not been met, mitigation efforts shall be extended, with the incorporation of contingency measures, as identified in the Western Pond Turtle MMP.

Loss and Modification of Habitat

Impacts would be mitigated by implementation of MM3 and MM5.

Roosting Special-Status Bats

MM6 Special-Status Roosting Bats

To avoid the direct loss of bats that could result from removal of trees or structures that may provide maternity roost habitat (e.g., in cavities or under loose bark) or structures that contain a hibernating bat colony, the following steps shall be taken:

- To the extent feasible, tree removal, tree relocation, and demolition of vacant buildings and other suitable man-made structures shall be scheduled between October 1 and February 28, outside of the maternity roosting season.
- If trees must be removed during the maternity season (March 1 to September 30), or structures must be removed at any time of the year, a qualified bat specialist shall conduct a pre-construction survey to identify those trees or structures proposed for disturbance that could provide hibernacula or nursery colony roosting habitat for bats.
- Each tree or structure identified as potentially supporting an active maternity roost and each structure potentially supporting a hibernating colony shall be closely inspected by the bat specialist no greater than 7 days prior to tree disturbance to more precisely determine the presence or absence of roosting bats.
- If bats are not detected, but the bat specialist determines that roosting bats may be present at any time of year, it is preferable to push any tree down using heavy machinery rather than felling it with a chainsaw. In order to ensure the optimum warning for any roosting bats that may still be present, the tree shall be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. The tree shall then be pushed to the ground slowly and shall remain in place until it is inspected by a bat specialist. Trees that are known to be bat roosts shall not be sawn up or mulched immediately. A period of at least 48 hours shall elapse prior to such operations to allow bats to escape. Bats shall be allowed to escape prior to demolition of buildings. This may be accomplished by placing one way exclusionary devices into areas where bats are entering a building that allow bats to exit but not enter the building.
- Maternity season lasts from March 1 to September 30. Trees or structures determined to be maternity roosts shall be left in place until the end of the maternity season. A structure containing a hibernating colony shall be left in

place until a qualified biologist determines that the bats are no longer hibernating.

The bat specialist shall document all demolition monitoring activities and prepare a summary report to the County upon completion of tree disturbance or building demolition activities.

MM7 Bat Relocation

If confirmed occupied or formerly occupied bat roosting habitat is destroyed, artificial bat roosts of comparable size and quality shall be constructed and maintained at a suitable undisturbed area, preferably on the Malibu Institute property. The design and location of the artificial bat roosts shall be determined by the bat specialist in consultation with CDFW.

In exceptional circumstances, such as when roosts cannot be avoided and bats cannot be evicted by non-invasive means, it may be necessary to capture and transfer the bats to appropriate natural or artificial bat roosting habitat in the surrounding area. Bats raising young or hibernating shall not be captured and relocated. Capture and relocation shall be performed by the bat specialist in coordination with CDFW, and shall be subject to approval by LACDRP and CDFW.

A monitoring plan shall be prepared for the replacement roosts, which shall include performance standards for the use of the replacement roosts by the displaced species, as well as provisions to prevent harassment, predation, and disease of relocated bats.

Annuals reports detailing the success of roost replacement and bat relocation shall be prepared and submitted to LACDRP and CDFW for five years following relocation or until performance standards are met, whichever period is longer.

NESTING BIRDS

MM8 Nesting Bird Surveys

Proposed project activities including, but not limited to, staging and disturbances to native and nonnative vegetation, structures, and substrates shall occur outside of the avian breeding season which generally runs from February 1-August 31 (as early as January 1 for some raptors) to avoid take of birds or their eggs. Take means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86), and includes take of eggs or young resulting from disturbances which cause abandonment of active nests. Depending on the avian species present, a qualified biologist may determine that a change in the breeding season dates is warranted.

If avoidance of the avian breeding season is not feasible, beginning thirty days prior to the initiation of construction activities, a qualified biologist with experience in conducting breeding bird surveys shall conduct weekly bird surveys to detect protected native birds occurring in suitable nesting habitat that is to be disturbed, including but not limited to site preparation, grading, construction, tree removal, landscaping removal,

pond or detention basin maintenance, or building demolition and (as access to adjacent areas allows) any other such habitat within 300 feet of the disturbance area (within 500 feet for raptors). The surveys shall continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of project activities. If a protected native bird is found, the project proponent shall delay all project activities within 300 feet of on- and off-site suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, the qualified biologist could continue the surveys in order to locate any nests.

If an active nest is located, project activities within 300 feet of the nest (within 500 feet for raptor nests) or as determined by a qualified biological monitor, must be postponed until the nest is vacated and juveniles have fledged and there is no evidence of a second attempt at nesting. Flagging, stakes, or construction fencing shall be used to demarcate a buffer of 300 feet (or 500 feet) between the project activities and the nest. Project personnel, including all contractors working on site, shall be instructed on the sensitivity of the area. The project proponent shall provide LACDRP the results of the recommended protective measures described above to document compliance with applicable State and Federal laws pertaining to the protection of native birds.

If the biological monitor determines that a narrower buffer between the project activities and observed active nests is warranted, he / she shall submit a written explanation as to why (e.g., species-specific information; ambient conditions and birds' habituation to them; and the terrain, vegetation, and birds' lines of sight between the project activities and the nest and foraging areas) to LACDRP and, upon request, CDFW. Based on the submitted information, LACDRP (and CDFW, if CDFW requests) will determine whether to allow a narrower buffer.

The biological monitor shall be present on site during all grubbing and clearing of vegetation to ensure that these activities remain outside the demarcated buffer and that the flagging / stakes / fencing is being maintained, and to minimize the likelihood that active nests are abandoned or fail due to project activities. The biological monitor shall send weekly monitoring reports to LACDRP during the grubbing and clearing of vegetation, and shall notify LACDRP immediately if project activities damage active avian nests.

INVASIVE ANIMALS

The Project would result in a beneficial impact. No mitigation would be required.

VEGETATION AND CDFW SENSITIVE PLANT COMMUNITIES

Impacts would be less than significant. No mitigation would be required.

ENVIRONMENTALLY SENSITIVE HABITAT AREAS (ESHA)

MM9 The following measures shall be implemented during the construction phase to avoid impacts to ESHAs and other sensitive habitats located adjacent to the Project limits of disturbance, as well as the flora and fauna associated with the ESHAs:

a) Prior to all ground disturbing and construction activities, the Applicant shall demarcate the Project limits of disturbance with sturdy exclusionary fencing to prevent encroachment of Project activities into native habitats adjacent to the Project limits of disturbance and to dissuade wildlife from entering the construction area. The fencing shall be marked with highly visible flagging and signed as a sensitive area. The LACDRP shall verify the fencing has been correctly installed prior to the start of ground disturbance or construction activities. The temporary fencing shall be routinely inspected and maintained in functional condition for the duration of Project construction.
b) All construction and maintenance activities, except in an emergency, shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday.
c) If construction lighting is required, then lighting shall be pointed away from native habitats and shall be pointed downward and shielded to the extent practicable.
d) All on-site construction equipment shall have properly operating mufflers.
e) All pets shall be on a leash and shall not be allowed to enter native habitats at the Project site.
f) All food-related trash shall be disposed of in closed containers.

INVASIVE PLANT SPECIES

MM10 Invasive Plant Species and Landscaping, Bio-detention Basins, and Bio-swales

Prior to the issuance of a grading permit, a Landscaping Plan shall be reviewed and approved by LACDRP to ensure that only non-invasive ornamental plant species or appropriate native plant species are used in landscaping, bio-detention basins, and bio-swales in future development of the project site. The review shall include a comparison of proposed plants with the following lists of invasive plant species: the California Invasive Plant Inventory (California Invasive Plant Council 2006, 2007), the California Invasive Plant Council Watchlist (December 2011), the Federal Noxious Weed List (December 10, 2010), the California Department of Food and Agriculture Pest Ratings of Noxious Weed Species and Noxious Weed Seed (January 2010), the Significant Ecological Area Draft Design Manual list of "L.A. County Non-Native Species to Avoid in Landscaping," (December 2012), and the draft Santa Monica Mountains Local Coastal Program list of "Plants to Avoid in the Santa Monica Mountains."

The Landscaping Plan shall include all plant species that would be planted as part of the proposed project, including but not limited to plant species that would be planted within bio-detention basins and bio-swales and the drought-tolerant grasses for the golf course. Species used in bio-detention basins and bio-swales shall be locally-indigenous natives. Drought-tolerant grasses for the golf course shall be non-invasive and shall not be capable of hybridizing with native grasses in the surrounding habitat. LACDRP shall conduct site inspections to ensure the appropriate plant materials have been planted and are maintained through the life of the project.

INVASIVE PLANT SPECIES

POLLUTANTS DISCHARGED TO HABITATS WITHIN THE TRANCAS CANYON WATERSHED

PESTICIDES, HERBICIDES, AND FERTILIZERS AND PEST AND RODENT CONTROL

MM11 Invasive Plant Species Management Plan

A Pest and Invasive Species Management Plan shall be developed and implemented that emphasizes eradication and control of problem species within the development limits and fuel modification zones, including pests that interfere with the management goals of the Malibu Institute and invasive plant and animal species could adversely affect the quality of native habitats in the surrounding area. If invasive species from the Project site spread to natural areas, control of invasive species shall extend to those areas as well. The Plan shall incorporate sustainable methods, avoid or minimize the use of chemical fertilizers, insecticides, herbicides, fungicides, and rodenticides, and ensure that toxic chemicals or excessive nutrient loads do not adversely affect native habitats and wildlife. Success criteria shall be tied to the control and eradication of problem species, and the lack of adverse effects of pest management practices and fertilizer use on sensitive species and habitats both at the Project site and in the surrounding area, including downstream from the Project site. The Plan shall allow for adaptation of management strategies, as necessary, and shall include periodic monitoring, reporting, and evaluation of progress. In broad terms, the Plan shall at a minimum include:

- Specific objectives;
- Target species and problem areas;
- Prioritization of threats;
- Success criteria;
- Management strategies that would prevent the establishment of problem species;
- Management strategies that would result in eradication and/or control of problem species;
- Implementation plan;
- Monitoring plan; and,
- Contingency measures.

The Plan shall incorporate but shall not be limited to the following practices and conditions:

- Use of chemical fertilizers, insecticides, herbicides, and fungicides shall be avoided or minimized;
- Pesticides and herbicides used within or near aquatic habitats shall be designated for use in aquatic habitats and shall be applied with techniques that avoid over-spraying and control application to avoid excessive concentrations.
- Water quality shall be monitored and water quality test results evaluated with respect to potential adverse effects on sensitive species and habitats;
- Biological and organic controls shall be used to the maximum extent feasible;
- Chemical pesticides and fertilizers shall be limited to the immediate vicinity of buildings and exotic landscape plantings;
- Bt (*Bacillus thuringiensis kursaki*) or non-native predatory snails (i.e., decollate snails) shall not be used for pest control;
- Rodent eradication efforts shall emphasize the use of traps and shall avoid chemical controls, unless otherwise directed by the Department of Health Services (DOHS);

- Anticoagulant rodenticides shall not be used, as they are a risk to non-target species and have been identified as a factor in the deaths of large predators in the Santa Monica Mountains; and,
- Application of non-anticoagulant rodenticides shall be limited to the vicinity of buildings, facilities, and developed areas and shall not extend to the landscaped areas on the golf course grounds.

The Plan shall be adhered to for the life of the Project and shall be updated every ten years. The Plan shall be prepared by qualified specialists in coordination with personnel responsible for pest and invasive species management at the Malibu Institute, and shall be approved by the Director of Planning prior to issuance of a grading permit for the Project. Implementation of the Plan shall begin with commencement of ground disturbance for the project. Biannual reports shall be prepared by qualified specialists which document the methods, treatments, and monitoring, and evaluate the implementation of the Plan and whether success criteria have been met. The reports shall be submitted by December 31 to the Los Angeles County Director of Planning for review who will ensure the Plan has been fully implemented and that success criteria have been met.

JURISDICTIONAL WATERS, WETLANDS, AND HABITAT

MM12 Prior to issuance of the grading permit, the Applicant shall prepare and submit to the USACE for verification a "Preliminary Delineation Report for "waters of the U.S."" and a Streambed Alteration Notification package to the CDFW for alterations to USACE jurisdictional "waters of the U.S." and CDFW jurisdictional streambed and habitat. A Clean Water Act Section 404 permit shall be obtained from the USACE, and the Applicant shall comply with the permit conditions. A Streambed Alteration Agreement shall be entered into with the CDFW under Section 1602 of the California Fish and Game Code, and the Applicant shall comply with the associated conditions. A Clean Water Act Section 401 Water Quality Certification shall be obtained from the RWQCB, and the Applicant shall comply with the certification conditions. Mitigation for unavoidable impacts to USACE jurisdictional "waters of the U.S." and CDFW jurisdictional streambed and habitat shall be provided through implementation of the Habitat Mitigation and Monitoring Program, as required by MM13.

MM13 The Project shall implement the requirements of the final approved Habitat Mitigation and Monitoring Program, which shall mitigate for permanent impacts to 0.032 acres of CDFW jurisdictional habitat, 0.002 acres of USACE wetland "waters of the United States", and 0.03 acres of USACE non-wetland "waters of the United States" at a 2:1 ratio. Due to the overlap of the jurisdictional areas that would be permanently impacted, a total of 0.032 acres consisting of 0.002 acres of wetland "waters of the United States"/CDFW jurisdictional habitat and 0.03 acres of non-wetland "waters of the United States"/CDFW jurisdictional habitat shall be mitigated.

Also as part of the Habitat Mitigation and Monitoring Program, the Project shall mitigate for temporary impacts to 4.42 acres of CDFW jurisdictional habitat, 2.19 acres of USACE wetland "waters of the United States", 1.63 acres of USACE non-wetland "waters of the United States", and 4.10 acres of single-parameter wetlands at a 2:1 ratio. Due to the overlap of jurisdictional areas that would be temporarily impacted, a total of 4.42 acres consisting of 0.32 acres of CDFW jurisdictional habitat, 0.28 acres of CDFW

jurisdictional habitat/single-parameter wetlands, 2.19 acres of USACE wetland "waters of the United States"/CDFW jurisdictional habitat/single-parameter wetlands, and 1.63 of non-wetland "waters of the United States"/CDFW jurisdictional habitat/single-parameter wetlands shall be mitigated.

The Habitat Mitigation and Monitoring Program shall mitigate for permanent and temporary impacts to jurisdictional areas by the on-site or off-site restoration of degraded in-kind wetland and riparian habitats, or by a contribution to an in-lieu fee program approved by the LACDRP, USACE, and the CDFW. Restoration should be implemented only where suitable conditions exist to support viable wetland and riparian habitat. If the mitigation will be performed off-site, to the extent feasible the restoration should be implemented within the Trancas Canyon Watershed. Also to the extent feasible, in-lieu fees shall be used for the restoration of in-kind wetland and riparian habitat within the Trancas Canyon Watershed.

The final Habitat Mitigation and Monitoring Program shall be developed by a qualified biologist, restoration ecologist or resource specialist and submitted to and approved by the LACDRP, USACE, RWQCB, and CDFW, in compliance with Clean Water Act Sections 401 and 404 and California Fish and Game Code 1602 and supporting regulations, prior to issuance of a grading permit for the Project. The Program shall be based on the USACE Final Mitigation Guidelines and Monitoring Requirements (April 19, 2004) and the Los Angeles District's Recommended Outline for Draft and Final Compensatory Mitigation and Monitoring Plans[6]. In broad terms, this Program shall at a minimum include:

- Description of the project/impact and mitigation sites;
- Specific objectives;
- Success criteria;
- Plant palette;
- Implementation plan;
- Maintenance activities;
- Monitoring plan; and
- Contingency measures.

Success criteria shall at a minimum be evaluated based on appropriate survival rates and percent cover of planted native species, as well as eradication and control of invasive plant and animal species within the restoration area.

The target species and native plant palette, as well as the specific methods for evaluating whether the project has been successful at meeting the above-mentioned success criteria

[6] The USACE's *Final Mitigation Guidelines and Monitoring Requirements* (April 19, 2004) is available at the Army Corps of Engineers Los Angeles District Regulatory Division webpage at www.spl.usace.army.mil/regulatory/. This document contains the Los Angeles District's Recommended Outline for Draft and Final Compensatory Mitigation and Monitoring Plans. This publication is intended to serve as a technical guide for permit applicants preparing compensatory mitigation plans and identifies the types and extent of information that agency personnel need to assess the likelihood of the success of mitigation proposals. The Los Angeles District's outline is adapted to specific issues encountered in the region.

shall be determined by the qualified biologist, restoration ecologist or resource specialist and included in the mitigation program.

To the extent possible, the mitigation project or in-lieu fee contribution shall be initiated prior to development of the Project. If the compensatory mitigation involves the restoration of on-site wetland and riparian habitats that were removed or disturbed by project grading or pond maintenance, the mitigation project shall be initiated as the earliest possible date, but shall not interfere with project development or the planned eradication of invasive animals from aquatic habitats at the site. The mitigation project shall be implemented over a five-year period and shall incorporate an iterative process of annual monitoring and evaluation of progress and allow for adjustments to the program, as necessary, to achieve desired outcomes and meet success criteria. Annual reports discussing the implementation, monitoring, and management of the mitigation project shall be submitted to the LACDRP, USACE, and the CDFW. Five years after project start, a final report shall be submitted to the LACDRP, USACE, and CDFW, which shall at a minimum discuss the implementation, monitoring and management of the mitigation project over the five-year period, and indicate whether the mitigation project has, in part, or in whole, been successful based on established success criteria. The annual reports and the final report shall include as-built plans submitted as an appendix to the report. The project shall be extended if success criteria have not been met at the end of the five-year period to the satisfaction of the Director of Regional Planning, USACE, and the CDFW.

WILDLIFE MOVEMENT AND HABITAT LINKAGES

Impacts would be less than significant. No mitigation would be required.

OAK WOODLANDS

Impacts would be less than significant. No mitigation would be required.

PROTECTED OAK TREES

Impacts would be less than significant. No mitigation would be required.

SIGNIFICANT ECOLOGICAL AREAS (SEAs) AND SEA BUFFERS

Impacts would be less than significant. No mitigation would be required.

SENSITIVE ENVIRONMENTAL RESOURCES AREAS (SERAs)

Impacts to SERAs would be mitigated to a less than significant level with implementation of MM9, MM10, and MM11.

CUMULATIVE IMPACTS

Impacts would be less than significant, with implementation of the above mitigation measures.

XII. RESIDUAL IMPACTS

With implementation of the above mitigation measures, the following Project impacts would be reduced

to less than significant levels: special-status plant species; ESHAs adjacent to the Project limits of disturbance; jurisdictional wetlands, waters, and riparian habitat; special-status wildlife species; nesting birds; roosting special-status bats; and sensitive native habitats from invasive plant species, pesticides, herbicides, fertilizers, and other pollutants. Project impacts to vegetation and CDFW sensitive plant communities (direct impacts), oak woodlands, protected oak trees, Significant Ecological Areas, and wildlife movement would be less than significant. The Project would also result in a beneficial impact to on-site and downstream habitats by improving water quality and eradicating invasive aquatic animals from the Project site.

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Appendix 1

Vascular Plants Observed at Malibu Golf Club in 2007 through 2013 by Envicom (E) and TeraCor (T)

* indicates alien species

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
FERNS AND ALLIES				
Dryopteridaceae				
Dryopteris arguta	coastal wood fern	R	U	ET
Polypodiaceae				
Polypodium californicum	California polypody	R	R	E
Pteridaceae				
Adiantum sp.	maidenhair fern	?	?	T
Adiantum jordanii	California maidenhair fern	R	U	E
Aspidotus californica	California lace fern	R	R	E
Cheilanthes covillei	Coville's lip fern	R	R	E
Pellaea andromedifolia. var. *a.*	coffee fern	R	C	E
Pellaea mucronata var. *m.*	bird's-foot fern	R	C	E
Pentagramma triangularis ssp *t.*	goldback fern	R	C	E
Selaginellaceae				
Selaginella bigelovii	Bigelow's spike-moss	U	C	E
CONIFERS				
Pinaceae				
**Pinus coulteri*	Coulter pine	R	R	E
**Pinus* sp.	pine	R	R	ET
FLOWERING PLANTS-DICOTS				
Adoxaceae[7]		U		
Sambucus nigra ssp. *caerulea* [<= *Sambucus mexicana*]	blue elderberry	U	A	ET
Aizoaceae				
**Carpobrotus edulis*	Hottentot-fig	R	R	T
Amaranthaceae				
**Amaranthus albus*	Tumbleweed	R	R	E
**Amaranthus blitoides*	prostrate pigweed	R	R	E
Apiaceae				
Apiastrum angustifolium	wild-celery	U	C	E
**Anthriscus caucalis*	bur-chervil	R	R	E
**Ciclospermum leptophyllum*	marsh parsley	R	R	E
**Conium maculatum*	Poison hemlock	C	C	E
Daucus pusillus	rattlesnake weed	R	U	E
**Foeniculum vulgare*	fennel	R	R	E
Lomatium dasycarpum	hog-fennel	R	C	E
Lomatium utriculatum	spring-gold lomatium	R	U	E
Sanicula arguta	sharp toothed snakeroot	R	U	E
Sanicula crassicaulis	Pacific sanicle	R	C	E
Tauschia arguta	southern tauschia	R	U	E
**Torilis arvensis*	tall sock-destroyer	R	R	E
**Torilis nodosa*	knotted hedge parsley	R	R	E
Yabea microcarpa	California hedge parsley	R	U	E

[7] The genus *Sambucus* was formerly placed in Caprifoliaceae.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Anacardiaceae				
Malosma laurina	laurel sumac	C	A	E
Rhus integrifolia	lemonadeberry	R	U	T
Rhus ovata	sugarbush	C	A	ET
**Schinus molle*	Peruvian peppertree	R	R	ET
Toxicodendron diversilobum	western poison-oak	U	A	ET
Apocynaceae[8]				
Asclepias fascicularis	narrow-leaf milkweed	U	C	ET
**Nerium oleander*	oleander	R	R	ET
**Vinca major*	greater periwinkle	R	R	ET
Araliaceae				
**Hedera helix*	English ivy	R	R	E
Asclepiadaceae (see Apocynaceae)				
Asteraceae				
Achillea millefolium	common yarrow	R	U	E
Acourtia microcephala	sacapellote	R	C	E
**Ageratina adenophora*	sticky eupatory	R	R	T
Ambrosia acanthicarpa	sand-bur	R	R	E
Ambrosia psilostachya	western ragweed			
Ambrosia sp.		?	?	T
Artemisia californica	California sagebrush	C	A	ET
Artemisia douglasiana	mugwort	U	C	ET
Artemisia dracunculus	wild tarragon	R	U	T
Baccharis pilularis ssp. *consanguinea*	coyote brush	C	A	ET
Baccharis salicifolia	mulefat	U	A	ET
**Bellis perennis*	English daisy	U	R	E
Brickellia californica	California brickellbush	C	A	ET
Brickellia nevinii	Nevin's brickellbush	R	U	ET
**Carduus pycnocephalus*	Italian thistle	A	A	ET
**Centauria melitensis*	tocalote	A	A	ET
**Centauria solstitialis*	yellow starthistle	R	U	ET
Chaenactis artemisiifolia	white pincushion	R	U	E
Cirsium occidentale	western cobweb thistle	R	R	ET
**Cirsium vulgare*	bull thistle	R	U	E
**Erigeron* [<= *Conyza*] *bonariensis*	Buenos Aires horseweed	A	A	ET
Erigeron [<= *Conyza*] *canadensis*	Canadian horseweed	A	A	ET
Corethrogyne filaginifolia [<= *Lessingia f.* var. *f.*]	California-aster	A	A	ET
**Cotula australis*	Australian brass buttons	R	R	E
Deinandra fasciculata [<= *Hemizonia f.*]	fascicled tarweed	U	A	ET

[8] Including genus *Asclepias*, formerly placed in Asclepiadaceae.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Encelia californica	California encelia	R	A	T
**Encelia farinosa*[9]	brittlebush	R	R	E
Erigeron foliosus	fleabane	R	U	E
Eriophyllum confertiflorum var. *c.*	golden-yarrow	C	A	ET
Euthamia occidentalis	western goldenrod	R	R	E
**Gazania linearis*	linear-leaf gazania	R	R	ET
Pseudognaphalium biolettii [<=*Gnaphalium bicolor*][10]	two-tone everlasting	U	C	ET
Pseudognaphalium [<= *Gnaphalium*] *californicum*	California everlasting	U	A	ET
**Pseudognaphlium* [<= *Gnaphalium*] *luteoalbum*	red-tipped cudweed	U	U	E
Gnaphalium palustre	cudweed	R	R	E
Grindelia camporum[11]	coastal gumplant	R	U	ET
Hazardia squarrosa var. *grindelioides*	sawtooth goldenbush	C	A	ET
**Hedypnois cretica*	Crete weed			E
Helianthus annuus	common sunflower	R	U	ET
Helianthus gracilentus	slender sunflower	C	A	ET
**Helminthotheca echioides* [<= *Picris e.*]	bristly ox-tongue	U	A	E
Heterotheca grandiflora	telegraph weed	A	A	ET
**Hypochaeris glabra*	smooth cat's-ear	A	A	ET
**Hypochaeris radicata*	rough cat's-ear	R	R	E
Isocoma menziesii var. *vernonioides*	coastal goldenbush	U	C	E
**Lactuca serriola*	prickly lettuce	U	A	ET
Lasthenia gracilis [<= *L. californica* ours)]	goldfields	R	U	E
Logfia filaginoides [<= *Filago californica*]	California filago	R	U	E
**Logfia gallica* [<= *Filago gallica*]	French filago	U	U	ET
Madia gracilis	slender tarweed	U	U	ET
Malacothrix saxatilis var. *tenuifolia*	cliff-aster	U	A	ET
Matricaria discoidea [<= *Chamomilla suaveolens*]	pineapple weed	R	C	E
Micropus californicus	slender cottonweed	R	A	E
Pentachaeta lyonii	Lyon's pentachaeta	R	R	ET
Pseudognaphalium microcephalum [<= *Gnaphalium canescens* ssp. *m.*]	white everlasting	U	A	E
Rafinesquia californica	California chicory	U	C	E

[9] Evidently introduced with seed mix used on a graded slope just west of golf course main facilities, along with a variety of Whipple's yucca that is also not native to the Santa Monica Mountains.

[10] The name *Gnaphalium bicolor* is illegitimate, and has been renamed *Pseudognaphalium biolettii*.

[11] TeraCor indicated the synonym *Grindelia robusta*.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
**Senecio vulgaris*	common groundsel	U	A	E
**Silybum marianum*	milk thistle	R	U	E
**Sonchus asper*	prickly sow-thistle	U	A	E
**Sonchus oleraceus*	common sow-thistle	U	A	E
Stebbinsoseris heterocarpa	brown microseris	R	R	E
Stephanomeria exigua ssp. *coronaria*	slender wand-chicory	R	U	ET
Stephanomeria virgata ssp. *v.*	virgate wand-chicory	C	A	ET
Stylocline gnaphaloides	nest-straw	R	C	ET
**Taraxacum officinale*	dandelion	R	R	E
Uropappus lindleyi	silver-puffs	U	C	E
Venegasia carpesioides	canyon-sunflower	R	C	E
Xanthium strumarium	cocklebur	R	C	ET
Betulaceae				
Alnus rhombifolia	white alder	R	R	E
Boraginaceae[12]				
Amsinckia menziesii var. *intermedia*	common fiddleneck	R	A	E
Cryptantha clevelandii	Cleveland's popcorn flower	U	A	E
Cryptantha intermedia	intermediate popcorn flower	U	A	ET
Cryptantha micromeres	popcorn flower	R	R	E
Cryptantha microstachys	popcorn flower	R	R	E
Cryptantha muricata	muricate popcorn flower	U	A	E
Emmenanthe penduliflora var. *p.*	whispering bells	R	U	E
Eucrypta chrysanthemifolia var. c.	common eucrypta	C	A	ET
Nemophila pedunculata	meadow nemophila	R	R	E
Pectocarya linearis ssp. *ferocula*	slender comb seed	R	U	E
Phacelia cicutaria var. *hispida*[13]	caterpillar phacelia	U	A	ET
Phacelia distans	wild-heliotrope	R	C	T
Phacelia parryi	Parry's phacelia	U	U	E
Phacelia viscida	sticky phacelia	R	C	E
Pholistoma auritum var. *a.*	fiesta flower	R	C	E
Brassicaceae				
**Brassica nigra*	black mustard	U	A	ET
**Brassica rapa*	field charlock	R	R	T
**Capsella bursa-pastoris*	shepherd's purse	U	U	E
**Hirschfeldia incana*	hoary mustard	C	A	ET
**Lepidium didymum*	wart cress	R	R	E
**Lobularia maritima*	sweet alyssum	R	R	E
**Nasturtium officinale* [<= *Rorippa nasturtium-aquaticum*]	watercress	R	U	E
**Raphanus sativus*	cultivated radish	R	U	E

[12] Including genera formerly included in Hydrophyllaceae.

[13] Plants here are distinct from the recently named *Phacelia hubbyi* (formerly *P. cicutaria* var. *h*) in having stiff hairs and spotted corollas.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
**Sisymbrium irio*	London rocket	R	C	E
**Sisymbrium officinale*	hedge mustard	U	C	E
Thysanocarpus curvipes	lacepod	C	C	E
Thysanocarpus laciniatus	narrow leaved lacepod	C	C	E
Cactaceae				
**Opuntia* sp.[14]	nopal	R	A	ET
Caprifoliaceae[15]				
Lonicera subspicata var. *denudata*	chaparral honeysuckle	C	A	ET
Symphoricarpos mollis	creeping snowberry	U	U	E
Caryophyllaceae				
**Cerastium glomeratum*	large mouse ears	U	U	E
**Polycarpon tetraphyllum*	four-leaf polycarp	R	R	E
**Silene gallica*	windmill pink	U	A	E
Silene laciniata ssp. *major*	Indian pink	R	U	E
**Spergularia bocconei*	Boccone's sand spurry	R	R	E
Stellaria media	common chickweed	C	A	E
Stellaria nitens	shining chickweed	U	C	E
Chenopodiaceae				
**Atriplex semibaccata*	Australian saltbush	R	R	E
**Chenopodium album*	lamb's quarters	R	U	ET
**Dysphania ambrosioides* [<= *Chenopodium a.*]	Mexican-tea	R	R	ET
Chenopodium berlandieri	pitseed goosefoot	R	R	E
Chenopodium californicum	California goosefoot			E
**Chenopodium murale*	Sowbane	R	U	E
**Salsola tragus*	Russian-thistle	R	C	ET
Cistaceae				
**Cistus* sp.	rock-rose	R	R	T
Helianthemum scoparium	peak rush-rose	R	U	E
Convolvulaceae				
Calystegia purpurata ssp. *p.*	smooth western morning-glory	R	U	E
Calystegia macrostegia ssp. *cyclostegia*	Chaparral morning-glory	C	A	ET
Cuscuta subinclusa	dodder	U	C	E
Crassulaceae				
Crassula connata	pygmy weed	R	C	E
Dudleya pulverulenta	chalk dudleya	U	C	ET
Dudleya lanceolata	lance-leaf dudleya	R	C	E
Cucurbitaceae				
Cucurbita sp.[16]	stinking gourd	R	U	T
Marah macrocarpus	wild cucumber	U	A	E

[14] Plants here appear to be *Opuntia ficus-indica*.
[15] See Adoxaceae for *Sambucus*.
[16] Presumably, TeraCor observed *Cucurbita foetidissima*.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Euphorbiaceae				
**Chamaesyce serpens*	spurge	R	R	E
**Euphorbia peplus*	petty spurge	U	U	E
**Euphorbia terracina*	Terracina spurge	R	R	ET
**Ricinus communis*	castor bean	R	R	E
Fabaceae				
Acmispon americanus [<= *Lotus purshianus*]	Pursh's lotus	U	A	ET
Acmispon glaber var. *g.* [<= *Lotus s.* var. *scoparius*]	deerweed	C	A	ET
Acmispon maritimus var. *m.* [<= *Lotus salsuginosus* var. *s.*]	coastal lotus	R	C	E
Acmispon strigosus [<= *Lotus s.*]	strigose lotus	R	C	E
Acmispon wrangelianus [<= *Lotus w.*]	Chilean trefoil	U	C	E
Astragalus gambelianus	Gambel's dwarf milkvetch	R	R	E
Astragalus trichopodus var. *phoxus*	milkvetch	R	A	T
**Cytisus scoparius*[17]	Scotch broom	?	?	T
**Genista monspessulana*	broom	R	R	E
Hoita macrostachya	leather root	R	R	ET
Lathyrus vestitis var. *v.*	wild sweetpea	U	U	E
**Lotus corniculatus*	Bird's-foot trefoil	R	R	E
Lupinus bicolor	miniature lupine	R	A	E
Lupinus longifolius	bush lupine	R	C	E
Lupinus truncatus	blunt leaf lupine	R	U	E
**Medicago lupulina*	black medic	R	R	E
**Medicago polymorpha*	bur-clover	R	A	E
**Melilotus albus*	white sweet clover	C	A	ET
**Melilotus indicus*	sourclover	C	A	E
**Melilotus officinalis*[18]	yellow sweetclover	?	?	T
**Spartium junceum*	Spanish broom	R	U	ET
**Trifolium repens*	common white clover	R	R	E
**Vicia sativa*	spring vetch	R	C	E
Fagaceae				
Quercus agrifolia var. *a.*	coast live oak	U	A	ET
Quercus berberidifolia	California scrub oak	C	A	ET
Quercus lobata	valley oak	R	R	T

[17] *Cytisus scoparius*, reported here by TeraCor has heretofore not been reported for the Santa Monica Mountains. If the field determination is correct, it is unfortunate that a voucher specimen is not indicated for this NOXIOUS WEED. It is possible the reference to *Cytisus* by TeraCor are the same plants observed by Wishner in 2010 in the vicinity of the abandoned home in the northern portion of the property, and referred to *Genista monspessulana*, and possibly also including *G. stenopetala* (with larger leaflets), both differeing from Genista by their abruptly bent styles at tip, and strongly two-lobed upper calyx lip. *Genista monspessulana* is also considered a TOXIC, NOXIOUS WEED.

[18] *Melilotus officinalis*, reported here by TeraCor has heretofore not been reported for the Santa Monica Mountains. If the field determination is correct, it is unfortunate that a voucher specimen is not indicated.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Geraniaceae				
**Erodium botrys*	long beaked filaree	U	C	E
**Erodium cicutarium*	red-stem filaree	C	A	ET
**Erodium moschatum*	white-stem filaree	U	C	E
Grossulariaceae				
Ribes malvaceum var. *viridifolium*	chaparral currant	R	C	ET
Ribes speciosum	fuchsia-flowered gooseberry	R	U	E
Hydrophyllaceae (see Boraginaceae)				
Juglandaceae				
Juglans californica	California walnut	R	U	ET
Lamiaceae				
**Lamium amplexicaule*	henbit	U	U	E
**Marrubium vulgare*	horehound	R	U	E
Salvia apiana	white sage	R	U	ET
Salvia columbariae	chia	R	C	E
Salvia leucophylla	purple sage	U	C	ET
Salvia mellifera	black sage	A	A	ET
Scutellaria tuberosa ssp. *t.*	skullcap	R	U	E
Stachys ajugoides var. *rigida*	hedge nettle	R	R	E
Stachys albens	white hedge-nettle	R	R	ET
Trichostema lanatum	woolly blue-curls	U	A	ET
Lauraceae				
Umbellularia californica	California bay	R	C	ET
Linaceae				
Hesperolinon micranthum	dwarf flax	R	U	E
Lythraceae				
Lythrum californicum	California loosestrife	R	R	E
Malvaceae				
**Malva pseudolavatera* [<= *Lavatera cretica*]	Cornish mallow	R	R	E
Malacothamnus fasciculatus var. *f.*	bush mallow	C	A	ET
**Malva parviflora*	cheeseweed	C	A	ET
Myrsinaceae[19]				
**Anagallis arvensis*	scarlet pimpernel	A	A	ET
Myrtaceae				
**Eucalyptus globulus*	blue gum	R	R	ET
**Eucalyptus sideroxylon*	red ironbark	R	R	ET
Nyctaginaceae				
Mirabilis laevis var. *crassifolia* [<= *M. californica*]	wishbone bush	U	C	E
Oleaceae				
**Olea europaea*	olive	R	R	E

[19] The genus *Anagallis* was formerly placed in Primulaceae.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Onagraceae				
Camissoniopsis [<=*Camissonia*] *intermedia/micrantha*	small-flowered evening-primrose	U	A	E
Clarkia bottae	Botta's clarkia	R	R	E
Clarkia epilobioides	willow-herb Clarkia	C	A	ET
Clarkia purpurea ssp. *quadrivulnera*	four-spot godetia	C	A	ET
Clarkia unguiculata	elegant Clarkia	C	A	ET
Epilobium brachycarpum	short-fruit willow-herb	R	R	E
Epilobium canum ssp. *c.*[20]	California-fuchsia	C	A	ET
Epilobium ciliatum ssp. *c.*	willow-herb	R	R	E
Eulobus californicus [<= *Camissonia californica*]	mustard evening-primrose	U	C	E
Orobanchaceae[21]				
Castilleja exserta ssp. *e.*	purple owl's clover	R	U	E
Cordylanthus rigidus ssp. *setigerus*	bird's-beak	U	C	E
Pedicularis densiflora	Indian warrior	R	U	E
Oxalidaceae				
Oxalis california [<= *Oxalis albicans* ssp. *californica*]	wood-sorrel	R	R	E
**Oxalis corniculata*	creeping wood-sorrel	R	R	E
Paeoniaceae				
Paeonia californica	California peony	R	C	ET
Papaveraceae				
Eschscholzia caespitosa	foothill poppy	R	R	E
Eschscholzia californica	California poppy	R	C	ET
Phrymaceae[22]				
Mimulus aurantiacus	orange bush monkeyflower	C	A	ET
Mimulus brevipes	wide-throated yellow monkeyflower	R	U	E
Mimulus cardinalis	scarlet monkeyflower	R	U	T
Mimulus guttatus	common monkeyflower	R	U	ET
Mimulus pilosus	downy mimetanthe	R	R	E
Plantaginaceae[23]				
Keckiella cordifolia	heart-leaf penstemon	U	A	ET
Penstemon heterophyllus ssp. *australis*	foothill penstemon	R	C	ET
Plantago erecta	California plantain	R	A	E
**Plantago lanceolata*	English plantain	C	U	E
**Plantago major*	common plantain	C	A	ET

[20] TeraCor report *Epilobium canum* ssp. *angustifolium*. According to the current Jepson Interchange, this taxon is "unresolved," and generally reduced to synonymy with the nominate subspecies in The Jepson Manual.
[21] The genera *Castilleja*, *Cordylanthus*, and *Pedicularis* were formerly placed in Scrophulariaceae
[22] The genus *Mimulus* was formerly placed in Scrophulariaceae.
[23] Includes some genera formerly placed in Scrophulariaceae.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
**Veronica anagallis-aquatica*	Water speedwell	U	C	E
**Veronica persica*	Persian speedwell	R	R	E
Platanaceae				
Platanus racemosa	western sycamore	R	R	ET
Polemoniaceae				
Eriastrum sapphirinum	sapphire wool-star	C	A	E
Gilia capitata ssp. *abrotanifolia*	blue head gilia	U	U	E
Linanthus californicus [<= *Leptodactylon c.* ssp. *californicum*]	prickly-phlox	R	U	E
Navarretia hamata	hooked navarretia	R	R	E
Polygalaceae				
Polygala cornuta	milkwort	R	R	E
Polygonaceae				
Chorizanthe staticoides	Turkish-rugging	R	C	ET
Eriogonum elongatum var. *e.*	wand buckwheat	C	A	ET
Eriogonum fasciculatum var. *foliolosum*	California buckwheat	A	A	ET
**Polygonum aviculare* ssp. *depressum* [<= *Polygonum arenastrum*]	prostrate knotweed	R	U	ET
Persicaria [<= *Polygonum*] cf. *hydropiperoides*	waterpepper	R	R	E
Pterostegia drymarioides	thread stem	C	A	E
**Rumex conglomeratus*	clustered dock	U	U	E
**Rumex crispus*	curly dock	U	U	ET
Rumex salicifolius	willow dock	R	R	E
Portulacaceae				
Claytonia parviflora[24]	small-flower miner's-lettuce	?	?	T
Claytonia perfoliata var. *p.*	miner's lettuce	U	A	E
**Portulaca oleracea*	yellow purslane	R	R	E
Primulaceae[25]				
Dodecatheon clevelandii ssp. ?	Padre's shooting-star	R	R	ET
Ranunculaceae				
Delphinium cardinale	scarlet larkspur	R	R	ET
Delphinium parryi ssp. *p.*	Parry's larkspur	R	U	E
Delphinium patens ssp. *hepaticoideum*	spreading larkspur	R	R	E
Thalictrum fendleri var. *polycarpum*	western meadow-rue	R	U	ET
Rhamnaceae				
Ceanothus crassifolius	hoary-leaf ceanothus	R	A	T

[24] *Claytonia parviflora*, reported here by TeraCor has heretofore not been reported for the Santa Monica Mountains. If the field determination is correct, it is unfortunate that a voucher specimen is not indicated, as there are two subspecies that might reasonably be expected for this region. Possibly, the plants seen here are actually *Claytonia perfoliata* ssp. *perfoliata*.

[25] See family Myrsinaceae for *Anagallis*.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Ceanothus cuneatus	common buck-brush	R	C	E
Ceanothus megacarpus var. *m.*	buckbrush	A	A	ET
Ceanothus spinosus	greenbark ceanothus	A	A	ET
Frangula californica ssp. *c.* [<= *Rhamnus c.*]	California coffeeberry	R	U	T
Rhamnus ilicifolia	holly-leaf redberry	C	A	ET
Rosaceae				
Adenostoma fasciculatum	chamise	A	A	ET
Adenostoma sparsifolium	redshank	U	U	ET
Cercocarpus betuloides var. *b.*	birch-leaf mountain-mahogany	A	A	ET
Drymocallis glandulosa. var. *g.* [<= *Potentilla g.* ssp. *g.*]	sticky potentilla	R	U	E
Heteromeles arbutifolia	toyon	U	A	ET
Prunus ilicifolia	holly-leaf cherry	R	C	ET
Rosa californica	California rose	R	R	ET
Rubus ursinus	California blackberry	R	R	ET
Rubiaceae				
Galium andrewsii ssp. *intermedium*	phlox-leaved bedstraw	R	R	E
**Galium aparine*	goose-grass	R	A	E
Galium angustifolium ssp. *a.*	narrow-leaf bedstraw	U	A	ET
Galium nuttallii ssp. *n.*	San Diego bedstraw	R	A	E
**Galium parisiense*	Paris bedstraw	R	R	T
Salicaceae				
Populus fremontii ssp. *f.*	Fremont cottonwood	R	R	ET
Salix exigua	narrow-leaf willow	R	R	T
Salix laevigata	red willow	U	C	ET
Salix lasiolepis	arroyo willow	U	C	ET
Saxifragaceae				
Lithophragma affine	woodland star	R	R	E
Scrophulariaceae[26]				
Solanaceae				
Datura wrightii	jimson weed	R	C	E
**Nicotiana glauca*	tree tobacco	R	C	E
**Solanum nigrum*[27]	black nightshade	?	?	T
Solanum xanti	chaparral nightshade	U	A	ET
Tamaricaceae				
**Tamarix* sp.	tamarisk	?	?	T
**Tamarix ramosissima*	tamarisk	R	R	E
Ulmaceae				
**Ulmus parvifolia*	Chinese elm	R	R	ET

[26] See family Phrymaceae for *Mimulus*. Several other genera formerly placed in Scophulariaceae are now placed in Plantaginaceae.

[27] *Solanum nigrum* reported here by TeraCor has heretofore not been reported for the Santa Monica Mountains. If the field determination is correct, it is unfortunate that a voucher specimen is not indicated.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Urticaceae				
Parietaria hespera var. *h.*	Western pellitory	R	R	E
**Urtica urens*	dwarf nettle	R	U	E
Verbenaceae				
Verbena lasiostachys var. ?	western verbena	R	C	E
Vitaceae				
**Vitus* sp.	grape	R	R	E
FLOWERING PLANTS-MONOCOTS				
Agavaceae				
Chlorogalum pomeridianum var. *p.*	wavy-leaf soapplant	R	C	E
Hesperoyucca [<= *Yucca*] *whipplei* ssp. *intermedia*	Whipple's yucca	C	A	ET
**Hesperoyucca* [<=*Yucca*] *whipplei* ssp. ?[28]	Whipple's yucca	R	R	E
Arecaceae				
**Washingtonia* sp.	fan palm	R	R	ET
Cyperaceae				
Cyperus eragrostis	tall cyperus	R	R	ET
**Cyperus involucratus*	umbrella sedge	R	R	E
Eleocharis macrostachya	common spike-rush	R	R	E
Schoenoplectus californicus[29]	tule	R	U	ET
Iridaceae				
Sisyrinchium bellum	blue-eyed-grass	U	A	E
Juncaceae				
Juncus bufonius var. *b.*	toad rush	R	R	E
Juncus dubius[30]		?	?	T
Juncus macrophyllus	large-leaf rush	R	R	E
Juncus xiphioides	iris-leaf rush			E
Lemnaceae				
Lemna cf. *minor*	duckweed	U	U	E
Liliaceae				
Bloomeria crocea	golden-star	R	U	E
Calochortus catalinae	Catalina mariposa lily	R	U	E
Calochortus clavatus var. *pallidus*	club-haired mariposa lily	R	R	E
Calochortus plummerae	Plummer's mariposa lily	R	R	ET
Melanthiaceae				
Toxicoscordion brevibracteatum [<= *Zigadenus fremontii* var. *brevibracteatus*]	star-lily	R	U	E

[22] Plants occurring on a cut slope west of the main clubhouse appear to be a different subspecies, probably introduced with a hydroseed mix.

[29] In addition to *Schoenoplectus californicus*, TeraCor also reports *Scirpus californicus*, which is a synonym of the former.

[30] *Juncus dubius* reported here by TeraCor has heretofore not been reported for the Santa Monica Mountains. If the field determination is correct, it is unfortunate that a voucher specimen of this native species is not indicated. Plants of perennial *Juncus* observed by Envicom were in very poor condition, and indeterminable at the time of surveys, although they were provisionally referred to *J. macrophyllus*. These plants should be re-examined at an optimal season.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
Poaceae				
Aristida adscensionis	six-weeks three-awn	R	R	E
**Avena barbata*	slender oat	A	A	ET
**Avena fatua*	fat oat	U	U	T
**Brachypodium distachyon*	false brome	R	U	E
Bromus carinatus var. *c.*	California brome	R	U	E
**Bromus catharticus*	rescue grass	R	U	E
**Bromus diandrus*	ripgut grass	A	A	E
**Bromus hordeaceus*	soft-chess	A	A	ET
**Bromus madritensis* ssp. *rubens*	red brome	A	A	ET
**Bromus tectorum*	cheatgrass	U	U	E
**Cortaderia* sp.	Pampas grass	R	R	E
**Crypsis schoenoides*	prickle grass	R	R	E
**Cynodon dactylon*	Bermuda grass	U	R	E
**Digitaria sanguinalis*	hairy-leaf crabgrass	R	R	E
**Ehrharta erecta*	--	R	U	E
Elymus condensatus [<= *Leymus c.*]	giant wildrye	U	C	ET
Elymus g. glaucus	blue wildrye	R	U	E
Elymus triticoides	creeping wildrye	R	U	E
**Fesuca arundinacea*	reed fescue	U	R	E
Festuca microstachys [<= *Vulpia*] *microstachys* var. *pauciflora*		R	R	E
**Festuca* [<= *Vulpia*] *myuros*	rattail fescue	C	A	E
Festuca octoflora [<= *Vulpia octoflora* var. *hirtella*]	six weeks fescue	R	U	E
**Festuca perennis* [<= *Lolium multiflorum*]	ryegrass	U	A	E
**Gastridium phleoides* [<= *Gastridium ventricosum*]	nit grass	U	C	E
Hordeum sp.[31]		?	?	T
**Hordeum murinum* ssp. ?	hare/foxtail barley	A	A	E
**Lamarckia aurea*	goldentop	R	R	ET
Melica imperfecta	coast melic grass	C	A	E
Muhlenbergia microsperma	little-seed muhly	R	R	ET
Muhlenbergia rigens	deer grass	R	R	E
**Paspalum dilitatum*	dallis grass	U	R	E
**Pennisetum alopecuroides*[32]	Chinese fountain grass	?	?	T
**Pennisetum clandestinum*	kikiyu grass	A	R	E

[31] *Hordeum* sp. reported here by TeraCor, in all likelihood the same as *H. murinum* ssp.

[32] *Pennisetum alopecuroides* reported here by TeraCor, has not been heretofore reported as an escaped or naturalized species in the Santa Monica Mountains. However, the Floridata website at http://www.floridata.com/ref/P/penn_alo.cfm indicates "It has escaped cultivation and established in many areas including California and parts of the northeastern United States." The species is not included in The Jepson Manual.

GROUP Family *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Source
**Pennisetum setaceum*	purple fountain grass	R	R	E
**Phalaris aquatica*	Harding grass	R	R	E
**Poa annua*	annual bluegrass	R	U	E
Poa secunda ssp. *s.*	one-sided bluegrass	R	C	E
**Polypogon monspeliensis*	annual beardgrass	R	U	ET
**Polypogon viridis* [<= *Agrostis semiverticillata*]	water beardgrass	R	R	E
**Schismus arabicus*	Arabian Mediterranean grass	R	U	E
**Schismus barbatus*	Mediterranean grass	R	U	E
Stipa coronata [<= *Achnatherum coronatum*]	giant stipa	R	U	ET
Stipa lepida [<= *Nassella l.*]	foothill needlegrass	A	A	E
**Stipa miliacea* [<= *Piptatherum miliaceum*]	mountain-millet	U	A	ET
Stipa pulchra [<= *Nassella p.*]	purple needlegrass	R	R	ET
Themidaceae				
Dichelostemma capitatum ssp. *c.*	blue dicks	R	C	E
Typhaceae				
Typha angustifolia[33]	narrow-leaf cattail	?	?	T
Typha domingensis	southern cattail	R	U	E
Typha latifolia	broad-leaf cattail	R	R	ET

Population size codes:
R = rare
U = uncommon
C = common
A = abundant

Source codes:
E = Envicom Corp.
T = TeraCor

[33] *Typha angustifolia* reported here by TeraCor has heretofore not been reported for the Santa Monica Mountains. If the field determination is correct, it is unfortunate that a voucher specimen is not indicated. Plants occurring here may actually be *T. domingensis*.

Appendix 2
Vertebrate Wildlife Species Observed (2007 through 2013) Or Expected at Malibu Golf Club

ORDER **FAMILY** ***Scientific Name***	**Common Name**	**Pop. Size Site**	**Pop. Size Area**	**Observed: E=Envicom T=TeraCor K=Lee Kats**
FISHES				
SALMONIDAE - Trout and Salmon				
Oncorhynchus mykiss irideus	rainbow trout	X	R	
CYPRINIDAE - Minnows and Carp				
Gila orcutti	arroyo chub	X	R	
Pimephales promelas[34]	fathead minnow	X	U	
ICTALURIDAE - Catfishes				
Ameiurus sp.	catfish	C	U	K
Ameiurus melas[35]	black bullhead	X	U	
POECILIDAE - Livebearers				
Gambusia affinis[36]	western mosquitofish	C	U	EK
CENTRARCHIDAE - Sunfishes				
Micropterus salmoides	largemouth bass	C	U	K
Micropterus dolomieui	smallmouth bass	U	R	
Pomoxis nigromaculatus[37]	black crappie	X	R	
Lepomis cyanellus	green sunfish	?	R	
Lepomis macrochirus	bluegill	C	U	K
AMPHIBIANS				
CAUDATA				
SALAMANDRIDAE - Newts				
Taricha torosa	California newt	X	R	
PLETHODONTIDAE - Lungless Salamanders				
Aneides lugubris	arboreal salamander	?	R	
Batrachoseps nigriventris	black-bellied slender salamander	U	U	
Ensatina e. eschscholtzii	Monterey ensatina	?	R	
ANURA				
BUFONIDAE - True Toads				
Anaxyrus [*Bufo*] *boreas halophilus*	California toad	U	C	
HYLIDAE - Treefrogs				
Pseudacris [*Hyla*] *regilla*	Pacific chorus frog	C	C	E
Pseudacris [*Hyla*] *cadaverina*	California chorus frog	X	R	
REPTILES				
RANIDAE - True Frogs				
Lithobates catesbeianus [*Rana catesbiana*]	bullfrog	?	R	
TESUDINES				
EMYDIDAE - Box and Water Turtles				
Trachemys scripta elegans	red-eared slider	U	R	K

[34] "This bait fish is common and established in most if not all low gradient streams in [southern California], as well as in some lakes and reservoirs." Confirmed present in Medea Creek in 1998 during a survey therein for the project currently known as "Triangle Ranch."

[35] "The most common bullhead in the streams and rocky areas of reservoirs."

[36] "Found in almost all fresh and low salinity waters, and are continually being reintroduced by many mosquito abatement districts."

[37] "Most, if not all, of the larger reservoirs hold this species, which arrived in 1891 and later."

ORDER FAMILY *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Observed: E=Envicom T=TeraCor K=Lee Kats
Emys marmorata	western pond turtle	C	R	K
SQUAMATA				
IGUANIDAE - Iguanid Lizards				
Sceloporus occidentalis longipes	Great Basin fence lizard	A	A	ET
Uta stansburiana elegans	California side-blotched lizard	A	A	ET
Phrynosoma blainvillii[38]	coast horned lizard	U	U	E
SCINCIDAE - Skinks				
Plestiodon [*Eumeces*] *s. skiltonianus*	western skink	U	U	
TEIIDAE - Whiptail Lizards				
Aspidoscelis tigris stejnegeri[39]	coastal whiptail	U	U	ET
ANGUIDAE - Alligator Lizards				
Elgaria multicarinata webbii	San Diego alligator lizard	U	U	E
Anniella pulchra	California legless lizard	R	R	
LEPTOTYPHLOPIDAE - Slender Blind Snakes				
Leptotyphlops h. humilis	southwestern blind snake	R	R	
COLUBRIDAE - Colubrid Snakes				
Diadophis punctatus modestus	San Bernardino ringneck snake	U	U	
Coluber mormon[40]	western racer	R	R	T
Masticophis lateralis lateralis	California striped racer	U	U	
Masticophis flagellum piceus	red coachwip	U	U	
Salvadora hexalepis virgultea	coast patch-nosed snake	R	R	
Pituophis catenifer annectens	San Diego gopher snake	C	C	
Lampropeltis getula californiae	California kingsnake	U	U	
Lampropeltis zonata (pulchra)	(San Diego) California mountain kingsnake	R	R	
Tantilla planiceps	western black-headed snake	R	R	
Thamnophis hammondii	two-striped garter snake	R	R	
Trimorphodon biscutatus lyrophanes[41]	Baja California lyre snake	R	R	
Hypsiglena ochrorhynchus [*H. torquata klauberi*]	coast night snake	U	U	

[38] Brattstrom (1997 Journal of Herpetology 31(3): 434-436) recommended that the subspecies *blainvillii* and *frontale* not be recognized.

[39] Maslin and Walker (1981 American Midland Naturalist 105: 84-92) treated *C. t. multiscutatus* as the name of an insular Mexican endemic (with the type locality of Isla Cedros off the coast of Baja California) and *C. t. stejnegeri* Van Denburgh 1894, as the name of the race occurring on mainland coastal southern California (with the type locality of Ensenada, Baja California, Mexico). This being the case, the subspecies *C. t. stejnegeri* replaces *C. t. multiscutatus*. The standard common name remains Coastal Whiptail.

[40] Liner (1994 SSAR Herpetological Circular 23: 1-113) considered this taxon a species distinct from *C. constrictor,* as proposed by Collins (1991 Herpetological Review 22(2): 42-43). Powell, Collins and Hooper (1998 A Key to the Amphibians and Reptiles of the Continental United States and Canada. University Press of Kansas, Lawrence. vi + 131 pp.) recognized this lineage as a species distinct from *C. constrictor.*

[41] Grismer et al. (1994 Bulletin of the Southern California Academy of Science 93(2): 45-80) synonymized the subspecies *vandenburghi* with the subspecies *lyrophanes.*

ORDER **FAMILY** ***Scientific Name***	**Common Name**	**Pop. Size Site**	**Pop. Size Area**	**Observed: E=Envicom T=TeraCor K=Lee Kats**
VIPERIDAE - Vipers				
Crotalus helleri[42]	southern Pacific rattlesnake	U	U	E
BIRDS		season[43] WSSF	season WSSF	
PODICIPEDIFORMES				
PODICIPEDIDAE - Grebes				
Podilymbus podiceps	pied-billed grebe	CUUC	CUUC	
Podiceps auritus	horned grebe	UUcU	UUcU	
Podilymbus nigricollis	eared grebe	CURC	CURC	
Aechmophorus occidentalis	western grebe	ACUU	ACUU	
Aechmophorus clarkii	Clark's grebe	UURU	UURU	
PELECANDIIFORMES				
PELICANIDAE - Pelicans				
PHALACROCORACIDAE - Cormorants				
Phalacrocorax auritus	double-crested cormorant	CUUC	CUUC	
CICONIIFORMES				
ARDEIDAE – Bitterns and Herons				
Botaurus lentiginosus	American bittern	URRU	URRU	
Ixobrychus exilis hesperis	western least bittern	RRRR	RRRR	
Ardea herodias	great blue heron	CUUC	CUUC	
Ardea alba	great egret	UCUU	UCUU	
Egretta thula	snowy egret	CUCU	CUCU	
Egretta tricolor	tricolored heron	-c--	-c--	
Bubulcus ibis	cattle egret	R--U	R--U	
Butorides virescens	green heron	URUU	URUU	
Nycticorax nycticorax	black-crowned night-heron	RUUU	RUUU	
THRESKIORNITHIDAE – Ibises and Spoonbills				
Plegadis chihi	white-faced ibis	UUUU	UUUU	
CATHARTIDAE - New World Vultures				
Cathartes aura	turkey vulture	CCCC	CCCC	ET
Gymnogyps californianus	California condor	cccc	cccc	
ANSERIFORMES				
ANATIDAE – Swans, Geese and Ducks				
Anser albifrons	greater white-fronted goose	cc-c	cc-c	
Branta canadensis	Canada goose	CUUR	CUUR	E
Aix sponsa	wood duck	RccR	RccR	
Anas platyrhynchos	mallard	AAAA	AAAA	E
Anas strepera	gadwall	RU-U	RU-U	
Anas crecca	green-winged teal	AC-U	AC-U	

[42] Douglas, Douglas, Schuett, Porras, and Holycross [2002. Phylogeography of the Western Rattlesnake *(Crotalus viridis)* Complex, With Emphasis on the Colorado Plateau]. Pp. 11-50. *In* Biology of the Vipers [Schuett, Höggren, Douglas, and Greene (editors). Eagle Mountain Publishing, Eagle Mountain, Utah. xii + 580 pp. + 16 color plates] recognized this taxon as a distinct species, *C. helleri.* Standard common name remains the same.

[43] Seasonal abundance for Birds given Winter, Spring, Summer, Fall (WSSF).

ORDER **FAMILY** ***Scientific Name***	**Common Name**	**Pop. Size Site**	**Pop. Size Area**	**Observed: E=Envicom T=TeraCor K=Lee Kats**
Anas Americana	American wigeon	CCRU	CCRU	
Anas penelope	Eurasian wigeon	R--R	R--R	
Anas acuta	northern pintail	CCUA	CCUA	
Anas clypeata	northern shoveler	CCcC	CCcC	
Aythya valisineria	canvasback	UUcU	UUcU	
Aythya americana	redhead	URcU	URcU	
Aythya collaris	ring-necked duck	R---	R---	
Aythya marila	greater scaup	RRcc	RRcc	
Aythya affinis	lesser scaup	CUcU	CUcU	
Bucephala clangula	common goldeneye	Rccc	Rccc	
Bucephala albeola	bufflehead	CUcU	CUcU	
Mergus merganser	common merganser	cR-U	cR-U	
Mergus serrator	red-breasted merganser	CUUC	CUUC	
Lophodytes cucculatus	hooded merganser	RccR	RccR	
Oxyura jamaicensis	ruddy duck	ACUC	ACUC	E
FALCONIFORMES				
ACCIPITRIDAE - Hawks, Old World Vultures, Eagles, and Harriers				
Pandion haliaetus	osprey	UccU	UccU	
Elanus leucurus	white-tailed kite	UUUU	UUUU	T
Circus cyaneus	northern harrier	UUcU	UUcU	T
Accipiter striatus	sharp-shinned hawk	CU-C	CU-C	ET
Accipiter cooperii	Cooper's hawk	CCUC	CCUC	T
Buteo lineatus	red-shouldered hawk	UUUU	UUUU	ET
Buteo jamaicensis	red-tailed hawk	ACCA	ACCA	ET
Buteo regalis	ferruginous hawk	R--R	R--R	
Aquila chrysaetos	golden eagle	UUUU	UUUU	E
FALCONIDAE - Falcons				
Falco sparverius	American kestrel	AAAA	AAAA	T
Falco columbarius	merlin	Rc-R	Rc-R	
Falco mexicanus	prairie falcon	RRRR	RRRR	
Falco peregrinus	peregrine falcon	URRR	URRR	
GALLIFORMES				
ODONTOPHORIDAE - New World Quail				
Oreorytx pictus	mountain quail	UUUU	UUUU	
Callipepla californica	California quail	AAAA	AAAA	ET
GRUIFORMES				
RALLIDAE – Rails, Gallinules and Coots				
Rallus limicola	Virginia rail	UUUU	UUUU	
Porzana carolina	sora	CUUC	CUUC	
Gallinula chloropus	common moorhen	RRRR	RRRR	
Fulica americana	American coot	AACA	AACA	ET
CHARADRIIFORMES				
CHARADRIIDAE - Plovers and relatives				
Charadrius vociferus	killdeer	CCCC	CCCC	

ORDER **FAMILY** ***Scientific Name***	**Common Name**	**Pop. Size Site**	**Pop. Size Area**	**Observed: E=Envicom T=TeraCor K=Lee Kats**
RECURVIROSTRIDAE – Avocets and stilts				
Recurvirostra americana	American avocet	CCUU	CCUU	
SCOLOPACIDAE - Sandpipers and relatives				
Arctitis macularia	spotted sandpiper	UcRU	UcRU	
Numenius phaeopus	whimbrel	CCUU	CCUU	
Numenius americanus	long-billed curlew	CCUU	CCUU	
Limosa fedoa	marbled godwit	CCUC	CCUC	
Calidris mauri	western sandpiper	CAUC	CAUC	
Calidris mutilla	least sandpiper	URUU	URUU	
Calidris alpina	dunlin	CCcC	CCcC	
Limnodromus scolopaceus	long-billed dowitcher	CCUC	CCUC	
Gallinago gallinago	common snipe	UURU	UURU	
LARIDAE - Gulls and Terns				
Larus heermannii	Heermann's gull	AUcA	AUcA	
Larus delawarensis	ring-billed gull	UCRC	UCRC	
Larus californicus	California gull	AACC	AACC	
Larus occidentalis	western gull	CUUC	CUUC	
Sterna forsteri	Forster's tern	ACUA	ACUA	
Sterna elegans	elegant tern	UUCU	UUCU	
COLUMBIFORMES				
COLUMBIDAE - Doves and Pigeons				
Columba livia	rock dove	CCCC	CCCC	
Columba fasciata	band-tailed pigeon	CUUC	CUUC	
Streptopelia chinensis	spotted dove	UUUU	UUUU	
Zenaida macroura	mourning dove	ACCA	ACCA	ET
Columbina passerina	common ground-dove	c--c	c--c	
CUCULIFORMES				
CUCULIDAE - Cuckoos				
Geococcyx americanus	greater roadrunner	UUUU	UUUU	
STRIGIFORMES				
TYTONIDAE - Barn Owls				
Tyto alba	barn owl	CCCC	CCCC	
STRIGIDAE - Typical Owls				
Otus kennicottii	western screech-owl	UUUU	UUUU	
Bubo virginianus	great-horned owl	CCCC	CCCC	T
Asio otus	long-eared owl	RRcR	RRcR	
Asio flammeus	short-eared owl	UR-R	UR-R	
CAPRIMULGIFORMES				
CAPRIMULGIDAE - Goatsuckers (Nightjars)				
Chordeiles acutipennis	lesser nighthawk	-RRR	-RRR	
Phalaenoptilus nuttallii	common poorwill	UCCC	UCCC	

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APODIFORMES				
APODIDAE - Swifts				
Cypseloides niger	black swift	-R-R	-R-R	
Chaetura pelagica	chimney swift	-cc-	-cc-	
Chaetura vauxi	Vaux's swift	-U-U	-U-U	
Aeronautes saxatalis	white-throated swift	CAAC	CAAC	E
TROCHILIDAE - Hummingbirds				
Archilochus alexandri	black-chinned hummingbird	cCCR	cCCR	T
Calypte anna	Anna's hummingbird	AAAA	AAAA	ET
Calypte costae	Costa's hummingbird	RUCR	RUCR	T
Selasphorus rufus	rufous hummingbird	cUUc	cUUc	
Selasphorus sasin	Allen's hummingbird	CCCC	CCCC	T
PICIFORMES				
PICIDAE - Woodpeckers				
Melanerpes lewis	Lewis' woodpecker	UURc	UURc	
Melanerpes formicivorus	acorn woodpecker	AAAA	AAAA	T
Sphyrapicus nuchalis	red-naped sapsucker	RR-R	RR-R	
Sphyrapicus ruber	red-breasted sapsucker	RR-R	RR-R	E
Picoides nuttallii	Nuttall's woodpecker	AAAA	AAAA	ET
Picoides pubescens	downy woodpecker	UUUU	UUUU	ET
Picoides villosus	hairy woodpecker	UR-U	UR-U	
Colaptes auratus	northern flicker (red-shafted)	AACA	AACA	ET
PASSERIFORMES				
TYRANNIDAE - Tyrant Flycatchers				
Contopus cooperi	olive-sided flycatcher	-URU	-URU	E
Contopus sordidulus	western wood-pewee	-CCU	-CCU	E
Empidonax trailii extimus	southwestern willow flycatcher	-UcU	-UcU	
Empidonax hammondii	Hammond's flycatcher	-R-R	-R-R	
Empidonax oberholseri	dusky flycatcher	-c-c	-c-c	
Empidonax difficilis	Pacific-slope flycatcher	cCCC	cCCC	ET
Sayornis nigricans	black phoebe	ACCA	ACCA	ET
Sayornis saya	Say's phoebe	CRRU	CRRU	E
Myiarchus cinerascens	ash-throated flycatcher	-CCU	-CCU	ET
Tyrannus melancholicus	tropical kingbird	c--c	c--c	
Tyrannus vociferans	Cassin's kingbird	URUU	URUU	E
Tyrannus verticalis	western kingbird	-UCU	-UCU	ET
LANIIDAE - Shrikes				
Lanius ludovicianus	loggerhead shrike	UUUU	UUUU	
VIREONIDAE - Vireos				
Vireo bellii pusillus	least Bell's vireo	-ccc	-ccc	
Vireo cassinii	Cassin's vireo	cRRR	cRRR	
Vireo huttoni	Hutton's vireo	CCCC	CCCC	
Vireo gilvus	warbling vireo	-CUC	-CUC	E
CORVIDAE - Crows, Jays, and Magpies				
Cyanocitta stelleri	Steller's jay	cccc	cccc	

ORDER FAMILY *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Observed: E=Envicom T=TeraCor K=Lee Kats
Apehelocoma californica	western scrub-jay	AAAA	AAAA	ET
Corvus brachyrhynchos	American crow	CCCC	CCCC	ET
Corvus corax	common raven	AAAA	AAAA	ET
ALAUDIDAE - Larks				
Eremophila alpestris actia	California horned lark	UUUU	UUUU	
HIRUNDINIDAE - Swallows				
Progne subis	purple martin	-ccc	-ccc	
Tachycineta bicolor	tree swallow	CCRC	CCRC	T
Tachycineta thalassina	violet-green swallow	RACU	RACU	E
Stelgidopteryx serripennis	northern rough-winged swallow	RCCR	RCCR	T
Petrochelidon pyrrohnota	cliff swallow	cAAU	cAAU	ET
Riparia riparia	bank swallow	-Rcc	-Rcc	
Hirundo rustica	barn swallow	RCUC	RCUC	E
PARIDAE - Chickadees and Titmice				
Poecile gambeli	mountain chickadee	RRRR	RRRR	
Baeolophus inornatus	oak titmouse	AAAA	AAAA	ET
AEGITHALIDAE - Bushtits				
Psaltriparus minimus	bushit	AAAA	AAAA	ET
SITTIDAE - Nuthatches				
Sitta canadensis	red-breasted nuthatch	U-cU	U-cU	
Sitta carolinensis	white-breasted nuthatch	CCCC	CCCC	E
CERTHIIDAE - Creepers				
Certhia americana	brown creeper	RR-R	RR-R	
TROGLODYTIDAE - Wrens				
Salpinctes obsoletus	rock wren	UUUU	UUUU	
Catherptes mexicanus	canyon wren	UUUU	UUUU	E
Thryomanes bewickii	Bewick's wren	AAAA	AAAA	ET
Troglodytes aedon	house wren	CAAC	CAAC	ET
Troglodytes troglodytes	winter wren	Rc-c	Rc-c	
Cistothorus palustris	marsh wren	CCUC	CCUC	
REGULIDAE - Kinglets				
Regulus satrapa	golden-crowned kinglet	Uc-R	Uc-R	
Regulus calendula	ruby-crowned kinglet	ACcC	ACcC	E
SYLVIIDAE - Gnatcatchers				
Polioptila caerulea	blue-gray gnatcatcher	UUUC	UUUC	E
TURDIDAE - Thrushes				
Sialia mexicana	western bluebird	CCCC	CCCC	ET
Myadestes townsendi	Townsend's solitaire	RR-R	RR-R	
Catharus ustulatus	Swainson's thrush	-UUU	-UUU	
Catharus guttatus	hermit thrush	CC-C	CC-C	
Turdus migratorius	American robin	CCUU	CCUU	ET
Ixoreus naevius	varied thrush	U--U	U--U	
TIMALIIDAE - Wrentit				
Chamaea fasciata	wrentit	AAAA	AAAA	ET

ORDER FAMILY *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Observed: E=Envicom T=TeraCor K=Lee Kats
MIMIDAE - Mimic Thrushes				
Mimus polyglottos	northern mockingbird	AAAA	AAAA	ET
Toxostoma redivivum	California thrasher	AAAA	AAAA	ET
STURNIDAE - Starlings and Mynas				
Sturnus vulgaris	European starling	AAAA	AAAA	ET
MOTACILLIDAE - Wagtails and Pipits				
Anthus rubescens	American pipit	CU-C	CU-C	
BOMBYCILLIDAE- Waxwings				
Bombycilla cedrorum	cedar waxwing	CU-U	CU-U	
PTILOGONATIDAE- Silky Flycatchers				
Phainopepla nitens	phainopepla	UCCU	UCCU	ET
PARULIDAE - Warblers				
Vermivora peregrina	Tennessee warbler	cccR	cccR	
Vermivora celata	orange-crowned warbler	AACA	AACA	E
Vermivora ruficapilla	Nashville warbler	RR-R	RR-R	
Vermivora virginiae	Virginia's warbler	---R	---R	
Dendroica petechia brewsteri	yellow warbler	RCUC	RCUC	T
Dendroica coronata	(Audubon's) yellow-rumped warbler	AC-C	AC-C	ET
Dendroica coronata	(myrtle) yellow-rumped warbler	UR-U	UR-U	
Dendroica nigrescens	black-throated gray warbler	RC-U	RC-U	
Dendroica townsendi	Townsend's warbler	CU-R	CU-R	
Dendroica occidentalis	hermit warbler	RU-U	RU-U	
Mniotilta varia	black and white warbler	cc-R	cc-R	
Setophaga ruticilla	American redstart	-c-R	-c-R	
Seiurus noveboracensis	northern waterthrush	R--R	R--R	
Oporornis tolmiei	McGillivray's warbler	cR-U	cR-U	
Geothlypis trichas	common yellowthroat	CCCC	CCCC	ET
Wilsonia pusilla	Wilson's warbler	RCcC	RCcC	E
Icteria virens	yellow-breasted chat	-URR	-URR	
THRAUPIDAE - Tanagers				
Piranga rubra	summer tanager	cccc	cccc	
Piranga ludoviciana	western tanager	-RcR	-RcR	
EMBERIZIDAE - Sparrows				
Pipilo chlorurus	green-tailed towhee	R--R	R--R	
Pipilo maculatus	spotted towhee	ACCA	ACCA	ET
Pipilo crissalis	California towhee	AAAA	AAAA	ET
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	UUUU	UUUU	E
Spizella passerina	chipping sparrow	RRRR	RRRR	
Spizella breweri	Brewer's sparrow	---R	---R	
Spizella atrogularis	black-chinned sparrow	-U-c	-U-c	
Pooecetes gramineus	vesper sparrow	R--R	R--R	
Chondestes grammacus	lark sparrow	CCUC	CCUC	ET
Amphispiza bilineata	black-throated sparrow	c--c	c--c	
Amphispiza belli belli	Bell's sage sparrow	UUUU	UUUU	
Ammodramus sandwichensis	savannah sparrow	AU-C	AU-C	

ORDER FAMILY *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Observed: E=Envicom T=TeraCor K=Lee Kats
nevadensis				
Ammodramus savannarum	grasshopper sparrow	cUUR	cUUR	
Passerella iliaca	fox sparrow	UU-U	UU-U	E
Melospiza melodia	song sparrow	AAAA	AAAA	ET
Melospiza lincolnii	Lincoln's sparrow	UU-C	UU-C	
Zonotrichia albicollis	white-throated sparrow	R--R	R--R	
Zonotrichia leucophrys	white-crowned sparrow	AU-C	AU-C	E
Zonotrichia atricapilla	golden-crowned sparrow	CC-C	CC-C	ET
Junco hyemalis caniceps	California gray-headed junco	R--R	R--R	
Junco hyemalis oreganus	dark-eyed junco	ACRC	ACRC	ET
CARDINALIDAE - Cardinals, Grosbeaks, Orioles and Blackbirds				
Pheucticus ludovicianus	rose-breasted grosbeak	cccR	cccR	
Pheucticus melanocephalus	black-headed grosbeak	-CAU	-CAU	ET
Guiraca caerulea	blue grosbeak	-RUR	-RUR	
Passerina amoena	Lazuli bunting	-CCU	-CCU	
Passerina cyanea	indigo bunting	RRRR	RRRR	
Agelais phoeniceus	red-winged blackbird			E
Agelais tricolor	tricolored blackbird			
Sturnella neglecta	western meadowlark	CCCC	CCCC	
Euphagus cyanocephalus	Brewer's blackbird	UCCU	UCCU	E
Quiscalis mexicanus	great-tailed grackle			
Molothrus ater	brown-headed cowbird	UCCU	UCCU	ET
Icterus cucullatus	hooded oriole	-CCU	-CCU	ET
Icterus bullockii	Bullock's oriole	RCCR	RCCR	ET
Icterus parisorum	Scott's oriole	R--c	R--c	
FRINGILIDAE - Finches				
Carpodacus purpureus	purple finch	CRRU	CRRU	
Carpodacus mexicanus	house finch	AAAA	AAAA	ET
Loxia curvirostra	red crossbill	Rc-R	Rc-R	
Carduelis pinus	pine siskin	UU-U	UU-U	E
Carduelis psaltria	lesser goldfinch	AACC	AACC	ET
Carduelis lawrencei	Lawrence's goldfinch	UCUU	UCUU	
Carduelis tristis	American goldfinch	CCCC	CCCC	T
PASSERIDAE - Weaver Finches				
Passer domesticus	house sparrow	AAAA	AAAA	
MAMMALS				
MARSUPIALIA				
DIDELPHIIDAE - Opossums				
Didelphis marsupialis virginiana	Virginia opossum	C	C	
INSECTIVORA				
SORICIDAE - Shrews				
Notiosorex c. crawfordi	desert shrew	R	R	
Sorex ornatus californicus	ornate shrew	R	R	
Scapanus latimanus occultus	broad-handed mole	U	C	
CHIROPTERA				
PHYLLOSTOMIDAE - Leaf-nosed Bats				
Choeronycteris mexicana	Mexican long-tonged bat	?	U	

ORDER **FAMILY** ***Scientific Name***	**Common Name**	**Pop. Size Site**	**Pop. Size Area**	**Observed: E=Envicom T=TeraCor K=Lee Kats**
VESPERTILIONIDAE - Mouse-eared Bats				
Myotis thysanodes	fringed myotis	?	U	
Myotis evotis	long-eared myotis	?	U	
Myotis californicus	California myotis	?	C	
Myotis ciliolabrum (*subulatus, leibii*)	small-footed myotis	?	U	
Myotis yumanensis	Yuma myotis	?	?	
Myotis v. velifer	cave myotis	?		
Myotis volans	hairy-winged (long-legged) myotis	?	U	
Lasionycteris noctivagans	silver-haired bat	?	?	
Lasiurus cinerea	hoary bat	?	C	
Lasiurus blossevillii frantzii[44]	western red bat	?	U	
Lasiurus xanthinus	western yellow bat	?	?	
Pipistrellus hesperus	western pipistrelle	?	?	
Eptesicus fuscus	big brown bat	?	C	
Euderma maculatum	spotted bat	?	?	
Corynorhinus townsendi intermedius	Townsends big-eared bat	?	?	
Corynorhinus townsendii pallescens	pale big-eared	?	?	
Antrozous pallidus pacificus	pallid bat	?	?	
MOLOSSIDAE - Free-tailed Bats				
Eumops perotis californicus	California mastiff bat	?	?	
Tadarida brasiliensis	Brazilian free-tailed bat	?	?	
Nyctinimops femorosaccus	pocketed free-tailed bat	?	?	
Nyctinimops macrotis	big free-tailed bat	?	?	
LAGOMORPHA				
LEPORIDAE - Hares and Rabbits				
Lepus californicus bennettii	San Diego black-tailed jackrabbit	R	U	
Sylvilagus audubonii sanctidiegi	desert cottontail	C	A	ET
Sylvilagus bachmani cinerascens	brush rabbit	R	U	E
RODENTIA				
SCIURIDAE - Squirrels				
Spermophilus beechyi beecheyi	California ground squirrel	C	A	ET
Sciurus griseus anthonyi	western gray squirrel	U	U	ET
Sciurus niger	eastern fox squirrel	R	R	
GEOMYIDAE - Pocket Gophers				
Thomomys bottae bottae	Botta's pocket gopher	C	C	E
HETEROMYIDAE - Pocket and Kangaroo Mice and Rats				
Chaetodipus californicus dispar	California pocket mouse	U	U	
Dipodomys a. agilis	Pacific kangaroo rat	U	C	ET

[44] Recently segregated taxonomically from eastern red bat, *Lasiurus borealis* (see discussion in Constantine, 1998).

ORDER FAMILY *Scientific Name*	Common Name	Pop. Size Site	Pop. Size Area	Observed: E=Envicom T=TeraCor K=Lee Kats
CRICETIDAE - New World Mice, Rats, Lemmings, Voles				
Reithrodontomys megalotis longicaudis	western harvest mouse	U	C	
Peromyscus boylii rowleyi	brush mouse	C	C	
Peromyscus californicus insignis	parasitic mouse	U	U	
Peromyscus eremicus insulicola	cactus mouse	R	R	
Peromyscus maniculatus gambelii	deer mouse	U	C	
Peromyscus truei montipinoris	piñon mouse	R	R	
Neotoma macrotis	big-eared woodrat	C	C	ET
Neotoma lepida intermedia	San Diego desert woodrat	U	U	
ARVICOLIDAE - voles and lemmings				
Microtus californicus sanctidiegi	(California) vole	U	U	
CARNIVORA				
CANIDAE - Dogs, Wolves, Foxes				
Canis latrans ochropus	coyote	C	C	ET
Canis familiaris	domestic dog	U	U	
Urocyon cinereoargenteus californicus	gray fox	U	U	
PROCYONIDAE - Racoons, Coatis, Ringtail				
Procyon lotor psora	raccoon	C	C	ET
Bassariscus astutus octavus	ringtail	R	R	
MUSTELIDAE - Weasels, Skunks, etc.				
Mustela frenata latirostra	long-tailed weasel	U	U	
Spilogale gracilis microrhina	western spotted skunk	R	R	
Mephitis mephitis holzneri	striped skunk	C	C	E
Taxidea taxus neglecta	American badger	R	U	
FELIDAE - Cats				
Felis concolor californica	mountain lion	R	R	T
Felis rufus californicus	bobcat	U	U	
Felis catus	house cat	R	R	
PERISSODACTYLA				
EQUIIDAE - Horses				
Equus caballus	horse	C	C	
ARTIODACTYLA				
CERVIDAE - Deer				
Odocoileus hemionus	mule deer	C	C	ET

Population Size

? = Occurrence uncertain, potentially present.

X = Presumed or probably absent**.**

R = Rare - observed or expected rarely; may be observed if site is visited frequently at appropriate season and in suitable habitat; usually individual observations, rarely more than one present at a given time.

U = Uncommon - observed or expected in low numbers in a portion or all of the site or area; may be seen on a few site visits.

C = Common - observed or expected throughout the area in high numbers; should be easily seen on most site visits in appropriate habitat and season.

c = casual – (birds only) occurring out of normal range or season. Not found every year during this season.

A = Abundant - observed or expected in substantial numbers at appropriate season and in suitable habitat.

Appendix 3
Butterflies Observed at Malibu Golf Club
2009 by Envicom Corporation

ORDER **FAMILY** ***Scientific Name***	**Common Name**	**Pop. Size Site**	**Pop. Size Area**
BUTTERFLIES			
LEPIDOPTERA			
HESPERIIDAE – Skippers			
Heliopetes ericetorum	northern white-skipper	U	C
Erynnis funeralis	funereal duskywing	C	A
Erynnis properties	propertius duskywing	C	C
?*Hesperia* sp.	skipper	?	?
LYCAENIDAE – Gossamer-winged butterflies			
Callophrys perplexa viridis	coastal bramble hairstreak	U	U
Glaucopsyche lygdamus	silvery blue	C	A
Plebejus acmon	Acmon blue	C	A
Satyrium auretorum	gold-hunter's hairstreak	U	U
NYMPHALIDAE – Brush-footed butterflies			
Adelpha californica	California sister	U	C
Chlosyne gabbii	Gabb's checkerspot	C	A
Coenonympha tullia	common ringlet (California pop.)	A	A
Junonia coenia	common buckeye	U	C
Vanessa cardui	painted lady	U	C
Liminetis lorquini	Lorquin's Admiral	U	U
PAPILIONIDAE – Parnassians and Swallowtails			
Papilio eurymedon	pale swallowtail	U	C
Papilio rutulus	western tiger swallowtail	U	C
PIERIDAE – Whites and Sulfurs			
Anthocharis sara	Sara orange tip	C	A
Pieris rapae	cabbage white	C	A
Pontia protodice	checkered white	C	A
RIODINIDAE – Metalmarks			
Apodemia mormo virgulti	Mormon metalmark (California pop.)	C	A

Population Size

? = Occurrence uncertain, potentially present.

X = Presumed or probably absent.

R = Rare – observed or expected rarely; may be observed if site is visited frequently at appropriate season and in suitable habitat; usually individual observations, rarely more than one present at a given time.

U = Uncommon - observed or expected in low numbers in a portion or all of the site or area; may be seen on a few site visits.

C = Common – observed or expected throughout the area in high numbers; should be easily seen on most site visits in appropriate habitat and season.

C = casual (birds only) occuring out of normal range or season. Not found every year during this season.

A = Abundant – observed or expected in substantial numbers at appropriate season and in suitable season.

Appendix 4
Assessment of Potential Occurrence of Special-Status Plant and Wildlife Species of the Santa Monica Mountains at Malibu Golf Club

An evaluation of the potential for occurrence of special-status species on the property was undertaken through research of the California Department of Fish and Wildlife's Natural Diversity Data Base (CDFW 2010), using the Rarefind application for special-status "elements" on the Point Dume quadrangle, and five others that surround it, namely Triunfo Pass, Newbury Park, Calabasas, Thousand Oaks, and Malibu Beach. A number of elements not reported on these quadrangles are also anticipated to occur in the region[45] and vicinity of the property. For plants (including Lichens and Bryophytes), we have speculated about the potential for occurrence for those species included on the *Special Vascular Plants, Bryophytes and Lichens List* (CDFW January 2010). For animals, there is room for considerable speculation about the potential for their occurrence on the property on the basis of known distribution and their habitat requirements, but little actual observation. A number of special-status species are known to occur in the Santa Monica Mountains, Simi Hills and Santa Susana Mountains, but are herein considered not to have any potential to occur on the subject property, based on habitat considerations alone. These latter species, listed at the end of this appendix, were excluded from additional analysis and consideration. All other *Special Animals* [list] (CDFW July 2009) known to occur in the range, and which could not be so excluded, and therefore might reasonably be anticipated to occur on the property are included in the following list:

Lichens[46]

Not Listed:

Woven-spored lichen (*Texosporium sancti-jacobi*) [Status: S1.1] Reported from 20 locations by in California, of which 18 reports are from the Southwestern Geographic Province, mainly in San Diego, Riverside and Los Angeles [San Clemente Id] Counties, with one in Ventura, and one in Santa Barbara [Aliso Canyon Campground]. Two other occurrences are rather disjunct in San Benito County in the Central Coast Province. Based upon this, the species possibly occurs throughout the southern and central coastal region of California, being largely undetected. The Global Rank is G2, and State Rank S1.1. Habitat "Chaparral, open sites in California, with *Adenostoma fasciculatum*, *Eriogonum* [spp.], *Selaginella* [spp.], at Pinnacles, on small mammal pellets, 290-660m." This published description is geographically outdated, however. In the Santa Monica Mountains of Ventura County near Conejo Mountain [Long Grade Canyon], Reifner (2003) describes its occurrence as "rare, on [volcanic] soil with cryptogrammic crust, on rabbit dung and old twigs [in coastal sage scrub]." In the Gavilan Hills of Riverside County, Reifner noted the species "rare, on old twigs and rabbit dung [on decomposed granitic soils in chamise chaparral]." Thus, this species with wide distribution from coastal southern and central California has potential to occur at the project site, on specialized substrates, especially on mammal dung and twigs. Locations: Pinnacles National Monument (San Benito Co.); Del Mar, Kearney Mesa, Shepherd Canyon and Tierra Santa, Mission Gorge, La Jolla, Soledad Canyon (San Diego County); San Clemente Id. (Los Angeles Co.); Shipley Muli-Species Preserve, Wilson Valley, Gavilan Hills, (Riverside Co.); Long Grade Canyon (Ventura Co.) (CDFW 2010). **Potentially present**.

Splitting yarn lichen (*Sulcaria isidiifera*) [S1.1] Reported from "Chaparral, cismontane woodland, on branches of oaks and shrubs, 20-30m." [of course this elevation reflects only known occurrences]. Near Morro Bay in San Luis Obispo County, Bratt () reports occurrence and Los Osos State Oaks Reserve "on branches of *Quercus agrifolia* [coast live oak], *Adenostoma fasciculatum* [chamise], and *Ceanothus ramulosus* [], in sandy areas [this is also type locality for *hypogymnia mollis*]." Locations: Los Osos State Preserve, and Baywood (San Luis Obispo County) (CDFW 2010). **Presumed absent**.

[45] Here considered the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains, as well as adjacent Los Angeles Basin and Ventura Basin coastal plain areas.

[46] Among nine lichens included among the CDFW Special Lichens, CNPS gives no status ranking for these, as they do for bryophytes. Information about distribution in California of these and other lichens is even more limited than it is for bryophytes. According to CDFW, "there are few lichens in California for which we have adequate information to place them on the list of Special taxa." "We [do not include] lichens for which little is known, even if they are only known from a few sites in California, because the level of information is not developed enough. Lichen statuses are developed in coordination with the California Lichen Society (CALS) and relevant experts."

Solorina spongiosa (*Solorina spongiosa*) [S1.2] "Alpine areas and subalpine coniferous forest, on moss mats in areas with calcareous seepage, generally in high altitude sites with north or east exposure." One reported occurrence in Inyo Co., near South Lake at ca. 9,500 ft., Mt Thompson quadrangle (CDFW 2010). **Presumed absent**.

Light-gray lichen (*Mobergia californica*) [S1.1] An endemic genus for North America (Mayerhoffer) is reported by CNDDB from one location, in "coastal scrub? abundant on cobbles in right habitat, only known from on site in Baja and one in San Diego area" (CDFW 2010). **Presumed absent**.

Long-beard lichen (*Usnea longissima*) [S4.2] Reported from "North Coast coniferous forest, broadleaf upland forest, grow[ing] in the redwood zone on a variety of trees including big-leaf maple, oaks, ash, Douglas-fir, and [California] bay, 0-2,000 ft." All records are coastal from San Mateo to Del Norte County (CDFW 2010). **Presumed absent**.

Baja rock lichen (*Graphis saxorum*) [S1S3] Reported "only from Santa Catalina Id on rocky substrates, volcanic rocks, moderately shaded, usually north-facing, [near] vertical, and on underhangs, recesses, etc., 20-100m" (CDFW 2010). **Presumed absent**.

Thamniola lichen (*Thamniola vermicularis*) [S1.1] Reported from "chaparral, valley and foothill grassland, on rocks derived from Wilson Ranch Sandstone formation" in Marin County (CDFW 2010). **Presumed absent**.

Bryophytes[47]

Not Listed:

Three-ranked hump moss (*Meesia triquetra*) [Status: CRPR 4.2] "Rich fens in arctic and boreal areas and disjunct in a few locations farther south; Greenland; Alta., B.C., Man., Nfld. and Labr (Nfld.), N.W.T., Nunavut, Ont., Que., Yukon; Alaska, Calif., Mich., Minn., Mont., Nebr., N.J., N.Y., Oreg., S. Dak., Vt.; boreal and Arctic Eurasia" (Vitt [in Flora of North America Editorial Committee 2007]). Bogs and fens, meadows and seeps, upper montane coniferous forest, mesic soil, 1300-2500m. Locations: all are in Sierra Nevada and Cascade Range (CDFW 2010). **Presumed absent**.

Broad-nerved hump moss (*M. uliginosa*) [CRPR 2.2] "Rich fens, moist calcareous soil banks, and soil covered rock crevices; Greenland; Alta., B.C., Man., Nfld. and Labr. (Nfld), Nunavut, N.W.T., N.S., Ont., Que., Sask., Yukon; Alaska, Calif., Colo., Mich., Mont., N.Y., Wis., Wyo.; boreal and Arctic Eurasia" (Vitt [in Flora of North America Editorial Committee 2007]). Meadows and seeps, upper montane coniferous forest, mesic soil, 1300-2500m. Locations: all are in Sierra Nevada and Cascade Range, and one in the San Jacinto Mountains (CDFW 2010). **Presumed absent**.

Shevock's copper moss (*Schizmenium shevockii*) [CRPR 1B.2] A recently described species (Shaw 2000) reported at (Santa Margarita Ecological Reserve, Riverside Co.)], from [cismontane woodland at mesic sites, on metamorphic rocks (in same habitat as *Mielichhoferia elongata*)] (Jessup et al. 2001). Known from the Sierra Nevada (Fresno, Mariposa, Tulare cos.) and Southwestern California (Riverside Co.) (Norris and Shevock 2004b). "*Schizymenium shevockii* has recently been found in soutghern California on metamorphic rocks litke those occupied by *Mielichhoferia*." "Most of our collections of *Mielichhoferia elongata* come from seasonally wet metamorphic rocks, mostly ones with a high concentration of heavey metal ores, especially copper. It is often there associated with *Schizymenium shevockii* " (Norris and Shevock 2004a). Cismontane woodland, on metamorphic rocks, mesic sites, along roads, 750-1400m. Locations: all reported in central and southern Sierra Nevada, except one at Santa Margarita Ecological Reserve, Riverside Co. (CDFW 2010). **Presumed absent**.

[47] The California Native Plant society has assigned rankings for all of these bryophytes, and four of these *probably* meet the criteria for listing under CESA as Threatened or Endangered species, and therefore, also the CEQA Section 15380 criterion for EIR consideration, being given a CRPR 1B. Two others with a CRPR 2 *may* meet the previous criteria. However, CESA has no precedent or provision for the listing of bryophytes, therefore, CEQA criteria are ambiguous or unknown. One species with a CRPR 4 probably does not meet the criteria.

California screw moss (*Tortula californica*) [CRPR 1B.2] "Has been reported from several counties in southern California (Norris and Shevock 2004), and is characterized by obovate leaves with smooth awns, plane margins, and smooth laminal cells" (Zander and Eckel [in Flora of North America Editorial Committee 2007]). Chenopod scrub, valley and foothill grassland, on sandy soil, 10-1460m. Locations: Elsinore Mountains (Riverside Co.); Temecula (Riverside Co.); east of Bakersfield (Kern Co.); 9 miles east of Cedarville (Modoc Co.); Garrapata State Park (Monterey Co.); Santa Rosa Id (Santa Barbara Co.) (CDFW 2010). Sagar (personal communication January 15, 2007) reports that this species occurs in the Santa Monica Mountains at Circle X Ranch, on moist soil over rocks, citing a recent collection by Wilson. **Potentially present**.

Coastal triquetrella (*Triquetrella californica*) [CRPR 1B.2] "Roadsides, hillsides, rocky slopes, fields, chaparral, low to moderate elevations (50-500m), California, Oregon." "This rare species is easily confused with *Didymodon ferrugineus*." (Zander [in Flora of North America Editorial Committee 2007]). Coastal bluff scrub, coastal scrub, on soil, 10-100m. Locations: San Vicente Reservoir (San Diego Co.); Mount Diablo (Contra Costa Co.); San Francisco (San Francisco Co.); Point Reyes National Seashore (Marin Co.); Mackerricher State Park (Mendocino Co.); Requa (Del Norte Co.) (CDFW 2010). **Potentially present**.

Bottle liverwort (*Sphaerocarpos drewei*)[48] [CRPR 1B.1] "Soil; low elevations; known only from Calif. (San Diego County)." "This and the following species (*S. hians*) are the rarest of the North American *Sphaerocarpos*. (Timme [in Flora of North America Editorial Committee 2007]). "This is a rare and endangered species endemic to the Peninsular Ranges and coastal hills and mesas of southern California. In Riverside County, small populations occur in the San Jacinto, Santa Margarita, and Santa Rosa Mountains, In San Diego County, small populations occur on the Kearney and Otay Mesas, Soledad Mountain, and the hills and mesas between the coast and the Laguna Mountains. Habitat: Exposed and easily disturbed gravelly soil under and near chaparral, near vernal pools, margins of drainages, along dirt paths, and on road cuts. Elevation between 25 and 1450m, but mostly from 100 and 650. Distribution: endemic to southern California. Geographic Regions: South Coast." (Doyle and Stottler 2006). Chaparral, coastal scrub, on soil, 90-600m. Locations: Balboa Park, Kearney Mesa (San Diego Co.); Santa Rosa Plateau Ecological Reserve (Riverside Co.) (CDFW 2010). **Presumed absent**.

Campbell's liverwort (*Geothallus tuberosus*) [CRPR 1B.1] "Geothallus is a rare and endangered monotypic genus endemic to the Peninsular Ranges, and coastal hills and mesas of San Diego and Riverside counties. In San Diego County, it has been found in small, isolations from the coast, east to the northwestern slope of Cowles Mountain, and south to the border with Mexico. Many of the early collection sites in San Diego Co. have been compromised with development. In Riverside County, small populations occur in the Santa Rosa Plateau Ecological Reserve, Santa Ana Mountains. Plants should be searched for in Orange Co., as well as in northern Baja California, because populations located on the slope of the Otay Mesa and ravine slope overlooking the Tijuana River are just north of the border with Mexico. Habitat: Gravelly soil; margins of vernal pools; flat and gently sloping areas in and near chaparral, elevation from 25 to 550m. Distribution: California. Geographic Regions: South Coast." (Doyle and Stottler 2006). Coastal Scrub, vernal pools, mesic soil 10-600m. Locations: Balboa Park, Kearney Mesa (San Diego Co.); Santa Rosa Plateau Ecological Reserve (Riverside Co.) (CDFW 2010). **Presumed absent**.

Plants -- Vascular

Listed:

Lyon's Pentachaeta (*Pentachaeta lyonii*) [Status: FE/CE, CRPR 1B.1] Found in chaparral, valley and foothill grassland on edges of clearings in chaparral, usually at the ecotone between grassland and chaparral, or edges of firebreaks, 30-630m (CDFW 2010). "Endangered, coastal habitats <150 m, central South Coast, (Los Angeles Co), south Channel Islands (Santa Catalina Id)" (Lane [in Hickman, ed.] 1993). "Rare, hills near lower Malibu Creek, Stunt Ranch, to Saddle rock, Otherwise known only from Wildwood Park, just north of our area. [Formerly,] Palos Verdes Hills and Santa Catalina Island" (Raven et al. 1986). **Present** (located along unimproved roads as well as along a broad ridgeline in northern portion of subject property).

[48] Doyle and Stottler (2006) give the spelling as *Sphaerocarpos drewiae*.

Santa Susana tarplant (*Deinandra minthornii* [<= *Hemizonia m.*]) [CR, CRPR 1B.2] Found in chaparral, and coastal scrub. Generally located on sandstone outcrops and crevices, in shrubland, 280-760m. "Rare, chaparral, 300-500m, southern Western Transverse Range (Santa Susana, Santa Monica Mountains)" (Keil [in Hickman, ed.] 1993). "Rare in chaparral, Calabasas Peak, Castro Crest, Charmlee County Park, known elsewhere only in Simi Hills" (Raven et al. 1986). Nearest recorded location southwest of Cornell Road, northwest of Latigo Canyon, Santa Monica Mountains (CDFW 2010). Other location: north of Lake Sherwood, the only location on volcanic rock, and not on sandstone (Wishner collection). **Presumed absent.**

Beach spectaclepod (*Dithyrea maritima*) [CE, CRPR 1B.1] Coastal dunes, coastal scrub, seashores, on sand dunes, and sandy places near the shore, 3-50m. Nearest location: "dunes of coast near Santa Monica" (CDFW 2010). **Presumed absent**.

Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*) [FT, CRPR 1B.2] Found in chaparral, generally on sheer rock surfaces and rocky volcanic cliffs, 180-520m. "Rare, shaded rocky slopes, 150-500m, south Western Transverse Ranges (western Santa Monica Mountains, Ventura Co.)" (Bartel [in Hickman, ed.] 1993). "Little Sycamore Form: Little Sycamore Canyon and upper Malibu Creek" (Raven et al. 1986). Nearest recorded location: along banks of ephemeral stream, about 1.0 mi above Seminole Hot Springs, off Cornell Road (CDFW 2010). **Presumed absent.**

Santa Monica Mountains Dudleya (*Dudleya cymosa* ssp. *ovatifolia*) (includes **Agoura dudleya** (*D. c.* ssp. *agourensis*) [FT, CRPR 1B.2] Found in chaparral, coastal scrub, generally in canyons on sedimentary conglomerates; primarily on north-facing slopes, 210-500m. "Rare, shaded rocky slopes, 150-500m, south Western Transverse Ranges (western Santa Monica Mountains, Ventura Co.)" (Bartel [in Hickman, ed.] 1993). "Topanga Form: Topanga and Malibu Canyons;" "Hidden Valley Form: Old Topanga Canyon to Hidden Valley;" "Agoura Form: Agoura west to near Lake Sherwood" (Raven et al. 1986). Nearest reported location Upper Arroyo Sequit and Malibu Canyon along Malibu Canyon Road about 1.9 miles north of Highway 1, Santa Monica Mountains (CDFW 2010). **Presumed absent.**

Conejo dudleya (*Dudleya parva* [<= *D. abramsii* ssp. *parva*]) [FT, CRPR 1B.2] "Rare, clay grassland, 60-450m, south Western Transverse Ranges (western Santa Monica Mountains, Ventura Co." (Bartel [in Hickman, ed.] 1993). "In rocky clay grassland near and north of Conejo Grade, the type locality. Also found in the vicinity of Arroyo Santa Rosa and Wildwood Park, just to the north" (Raven et al. 1986). Records in California Consortium of Herbaria are *all* in Ventura County, *all* north of US 101 and none are in the Santa Monica Mountains. **Presumed absent.**

Verity's dudleya (*Dudleya verityi*) [FT, CRPR 1B.2] "Rare, north-facing volcanic outcrops, 60-120m, south Western Transverse Ranges (western Santa Monica Mountains, Ventura Co." (Bartel [in Hickman, ed.] 1993). "North-facing volcanic rocky slopes from Mt. Conejo to Long Grade Canyon, the type locality. Endemic" (Raven et al. 1986). Records in California Consortium of Herbaria are *all* in Ventura County, *all* south of US 101 and *all* are in the Santa Monica Mountains. **Presumed absent.**

Braunton's Milk-vetch (*Astragalus brauntonii*) [FE, CRPR 1B.1] Generally found in chaparral, coastal scrub, valley and foothill grassland on recent burns or disturbed areas; in stiff gravelly clay soils overlying granite or limestone, 4-640m. "Rare, disturbed areas in chaparral, <450 m, central South Coast, northern Peninsular Range (Los Angeles Basin)" (Spellenberg [in Hickman, ed.] 1993). "Very rare, above firebreaks, in disturbed soil, or on burns, vicinity of Temescal, Topanga and Malibu Canyons, the type locality is above Sherman Oaks" [erroneous; Sherman is the power station for the Red Car Line, located in West Los angeles?] (Raven et al., 1986). Nearest location reported on Zuma ridgeline, Zuma Canyon, Santa Monica Mountains Recreation Area (CDFW 2010). **Presumed absent.**

Ventura marsh milkvetch (*Astragalus pycnostachyus* var. *lanosissimus*) [FE, CE, CRPR 1B.1] Coastal salt marsh, within reach of high tide or protected by barrier beaches, more rarely near seeps on sandy bluffs, 1-35 m. Nearest location: "meadow near seashore, Santa Monica [extirpated]. **Presumed absent**.

Coastal dunes milkvetch (*Astragalus tener* var. *titi*) [FE/CE, CRPR 1B.1, L.A. County] "Endangered, seasonal depressions near coast, coastal bluffs, dunes, <20 m, central Central Coast, South Coast (where possibly extirpated)" (Spellenberg [in Hickman, ed.] 1993). "On vernally moist clay flats near Santa Monica, Hasse (1891) (DS)" (Raven et al. 1986). Historic records in California Consortium of Herbaria include "Santa Monica;" "near Hyde Park." **Presumed absent**.

Fish's Milkwort (*Polygala cornuta* var. *fishiae*) [CRPR 4.3, L.A. County] "Uncommon in chaparral, oak woodland, 100-1100m elevation, from outer South Coastal, Transverse and Peninsular ranges, and northern Baja California, Mexico. **Observed** in remote chaparral areas of the site.

San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) [FCE, CE, CRPR 1B.1, L.A. County] "Sandy places, generally in coastal or desert scrub, 200-1200 m, South Coast, eastern western Transverse Range, San Gabriel Mountains, extirpated from Los Angeles Basin" (Hickman [in Hickman, ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. Recently rediscovered on Laskey Mesa in the Simi Hills, and Newhall Ranch. No records in California Consortium of Herbaria for Santa Monica Mountains. **Presumed absent**.

Conejo buckwheat (*Eriogonum crocatum*) [CR, CRPR 1B.2] Found in chaparral, coastal scrub, valley and foothill grassland on Conejo volcanic outcrops; rocky sites, 50-580m. "Rare, dry rocky slopes, 50-150m, southern Western Transverse Range (northwestern Santa Monica Mountains)" (Hickman [in Hickman, ed.] 1993). Nearest location reported about 10,000 ft southwest of Lake Sherwood (fire station) on unnamed peak in upper Carlisle Canyon (CDFW 2010). **Presumed absent.**

Salt marsh bird's-beak (*Cordylanthus maritimus* ssp. *maritimus*) [FE/CE, CRPR 1B.2] Coastal salt marsh, coastal dunes, limited to the higher zones of the salt marsh habitat, 0-30m. Nearest location: "near Santa Monica [extirpated]; Point Mugu (CDFW 2010). **Presumed absent**.

California Orcutt grass (*Orcuttia californica*) [FE/CE, CRPR 1B.1] "Vernal pools, <625 m, Southwest (Los Angeles, Riverside, San Diego cos.), northern Baja California" (Reeder [in Hickman ed.] 1993). Not included in Raven et al. (1986). No records for Santa Monica Mountains. California Consortium of Herbaria: Moorpark, northwest corner Highway 23 and Tierra Rejada Road (*Lindsey s.n.*, July 31, 1992 [RSA554731]). Nearest location: Thousand Oaks (CDFW 2010). **Presumed absent**.

Not Listed:

Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) [CRPR 2.2, L.A. County] "Uncommon, along streams, seepage areas, 50-550m, South Coast and western Transverse ranges, San Gabriel and San Jacinto Mountains, to Arizona, southern Mexico" (Smith and Lemieux [in Hickman, ed.] 1993). "Rare, in clumps along streams, Encinal Canyon" (referring to *Kiefer 1778*, March 26, 1966 [UC1440270]) (Raven et al. 1986). Meadows and seeps, along streams, seepage areas. 50-550m. Nearest locations: Encinal canyon, about 0.5 mile from mouth; Encinal canyon, about 2 miles from coast; Lachusa canyon, about 2.5 miles from mouth (CDFW 2010). Other location: Rustic Canyon [extirpated] (Wishner observation). **Presumed absent**.

Coulter's saltbush (*Atriplex coulteri*) [CRPR 1B.2] Generally found in coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Ocean bluffs, ridgetops, as well as alkaline low places, 10-440 m. "Rare, alkaline or clay soils, open sites, coastal shrubland, <50 m, South Coast, Channel Islands, Baja California" (Taylor and Wilken [in Hickman, ed.] 1993). "Rare on coastal bluffs near Point Dume (Raven et al. 1986). Nearest

location: coastal bluffs at Point Dume (CDFW 2010). Other location: Malibu Bluff (Wishner, personal observation 2004). **Presumed absent.**

Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) [CRPR 1B.2] Coastal bluff scrub, coastal scrub, alkaline soil, 3-250m. "Rare, bluffs, <200 m, south South Coast" (Taylor and Wilken [in Hickman, ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. One record for Santa Monica Mountains in California Consortium of Herbaria: "Malibu Canyon, Las Virg[e]nes Road, 1.5 mi north of junction of Highway 1 (*Mayer and Mayer 142*, April 6, 1974 [CHSC14042)]. Nearest location: Hollywood [extirpated] (CDFW 2010). **Presumed absent.**

Estuary sea-blite (*Suaeda esteroa*) [CRPR 1B.2] "Uncommon, coastal salt marshes, <5 m, South Coast, northern Mexico" (Ferren [in Hickman, ed.] 1993). "Irregularly flooded, coastal salt marsh, Mugu Lagoon, type locality" (Raven et al. 1986). Several records for Santa Monica Mountains in California Consortium of Herbaria: Mugu Lagoon, Point Mugu. **Presumed absent.**

Woolly sea-blite (*Suaeda taxifolia*) [CRPR 4.2] "Coastal bluffs, margins of salt marshes, <15 m, south South Coast, Channel Islands, Baja California" (Ferren [in Hickman, ed.] 1993). "Occasional in coastal salt marshes along beaches, usually in clayey soil, along the entire coast (Raven et al. 1986). Several records for Santa Monica Mountains in California Consortium of Herbaria: "Sierra Santa Monica;" Topanga Canyon; Escondido Canyon' "northwest of Santa Monica;" Mugu Lagoon, Point Mugu. No records in CNDDB (CDFW 2010). **Presumed absent.**

Malibu baccharis (*Baccharis malibuensis*) [CRPR 1B.1] Found in coastal scrub, chaparral, cismontane woodland, in conejo volcanic substrates, often on exposed roadcuts. Sometimes occupies oak woodland habitat, 150-260m. Not included in Raven et al. (1986), or Hickman [ed.] (1993), described subsequently as a new taxon. Nearest reported location: 1/2 mile northwest of west end of lake Malibu (CDFW 2010). **Potentially present.**

Plummer's baccharis (*Baccharis plummerae* ssp. *plummerae*) [CRPR 4.2, L.A. County] "Uncommon, rocky slopes, woodlands, 0-425m, Central Coast, outer South Coast, South Coast, northern Channel islands, western Transverse Ranges" (Sundberg [in Hickman ed.] 1993). "Local in shaded canyons usually near the coast from the west end of the mountains to Cahuenga Pass." "A local plant that ranges north to the Santa Ynez Range and is also on Santa Cruz Island" (Raven et al. 1986). Several records in California Consortium of Herbaria for Santa Monica Mountains of Los Angeles County (Topanga, Tuna, Solstice Canyons), but none for Ventura Co? No records in CNDDB (CDFW 2010). **Potentially present**.

Southern tarplant (*Centromadia parryi* ssp. *australis* [<=*Hemizonia parryi* ssp. *a*.]) [CRPR 1B.1] Marshes and swamps (margins), valley and foothill grassland. Often disturbed sites near the coasst at marsh edges, also in alkaline soils sometimes with saltgrass."Rare, seasonally moist slaine grasslands, <200m, South Coast, northern Baja California" (Keil [in Hickman ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. Two records in California Consortium of Herbaria for Santa Monica Mountains of Los Angeles County: UC75837 collector unknown, May 1 1903, "Laurel Canyon; JEPS 20076 Raven, Sept 21, 1957, "hill nw of UCLA campus." Nearest location: Santa Monica.Other location: Newbury Park, north side of US 101, west of Borchard Road (Wishner collection). **Presumed absent.**

Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*) [CRPR 1B.1] "Coastal dunes, bluffs, <100m, South Coast, northwestern Baja California" (Morefield [in Hickman ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. No records in California Consortium of Herbaria for Santa Monica Mountains of Los Angeles or Ventura County. Nearest location: South Beach (1898 collection by Barber [UC57420]) (CDFW 2010). **Presumed absent.**

Coulter's goldfields (*Lasthenia glabrata* var. *coulteri*) [CRPR 1B.1, L.A. County] "Rare, saline places, vernal pools, <1000m, inner North Coast, Tehachapi, Sacramento Valley, northern San Joaquin Valley, San Francisco Bay, outer South Coast, South Coast, northern Channel Islands, Peninsular Range, western Mojave Desert" (Ornduff [in Hickman, ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. One record in California Consortium of Herbaria for Santa Monica Mountains: "Near Malibu, along Rosevelt (sic) Highway near the beach" (*Bauer 17532* April 30, 1933 [RSA361569]). Nearest location: Mugu Lagoon (CDFW 2010). **Presumed absent**.

Rayless ragwort (*Senecio aphanactis*) [CRPR 2.2, L.A. County] Found in cismontane woodland, coastal scrub. drying alkaline flats, 20-575 m. "Drying alkaline flats <400m, Central Western, South Coast, Channel Islands, Baja California" (Barkley [in Hickman, ed.] 1993). Included in Raven et al. (1986), without habitat or location information. Nearest locations: "hills near Newberry Park and Conejo grade;" "hillside on long Grade Rd., Guadalasca Ranch" (CDFW 2010). Very closely resembling, and easily mistaken for the common introduced *Senecio vulgaris*. **Potentially present.**

Suffrutescent wallflower (*Erysimum insulare* ssp. *suffrutescens*) [CRPR 4.2] "Uncommon, coastal dunes, 0-150 m, south Central Coast, north South Coast " (Price [in Hickman, ed.] 1993). "Rare, Point Mugu" (Raven et al. 1986). Several records for Santa Monica Mountains in California Consortium of Herbaria, at Point Mugu. No records in CNDDB (CDFW 2010). **Presumed absent**.

Small-flowered morning glory (*Convolvulus simulans*) [CRPR 4.2, L.A. County] "Wet clay, serpentine ridges, 30-700m, San Joaquin Valley, Central and South Coast, southern Channel Islands, Baja California" (Dempster [in Hickman, ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. One record for Santa Monica Mountains in California Consortium of Herbaria: "Brumholly Hill, Hollywood" *Davidson 2337* no date [RSA398346]). Other known location: Montclef Ridge, north of Thousand Oaks, with *California macrophylla* (Wishner collection). No records in CNDDB (CDFW 2010). **Presumed absent**.

Western dichondra (*Dichondra occidentalis*) [CRPR 4.2, L.A. County] "Uncommon, slopes, headlands, generally under shrubs, 50-500 m, South Coast, southern Channel Islands, Baja California" (Dempster [in Hickman, ed.] 1993). "Locally abundant but quite conspicuous, on bare slopes after fires, La Jolla Valley, slopes above Mugu Lagoon, lower Big Sycamore Canyon" (Raven et al. 1986). No records in CNDDB (CDFW 2010). No records for Santa Monica Mountains in California Consortium of Herbaria. **Presumed absent**.

Blochman's Dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*) [CRPR 1B.1, L.A. County] Found in coastal scrub, coastal bluff scrub, valley and foothill grassland, open, rocky slopes; often in shallow clays over serpentine or in rocky areas w/little soil, 5-450m. "Open, rocky slopes, often serpentine or clay-dominated, <450m, south Central Coast, South Coast, northern Baja California" (Bartel [in Hickman, ed.] 1993). "Stony, open slopes, often in clay, common from near Cinejo Grade south to Long Grade Canyon, rare at Point Dume, formerly at Malibu Beach and Santa Monica Canyon; Conejo Grade is type locality of *Hasseanthus kessleri*" (Raven et al. 1986). Nearest reported location: Point Dume, herbarium collection did not give more precise location. Common on clayey slopes in coastal sage (CDFW 2010); west slope of Conejo Mountain (Wishner, personal observation). **Presumed absent.**

Round-leaf filaree (*California macrophylla* [<= *Erodium macrophyllum*]) [CRPR 1B.1] Found in chaparral, coastal scrub, cismontane woodland, valley and foothill grassland, clay soils, 15-1200 m. "Open sites, grassland, shrubland, <1200m, Sacramento Valley, northern San Joaquin Valley, Central Western, South coast, northern Channel Islands (Santa Cruz Id), to southern Utah, northern Mexico" (Taylor [in Hickman, ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. Nearest reported location: Malibu Creek State Park, exact location unknown; in duff and in shade of *Quercus agrifolia,* 2001 documentation by Reiser included in this location. Described in source as a "handful of individuals." A 1918 collection by Peirson from "along road to Brents on the Malibu" also attributed here. (CDFW 2010). Other location: Montclef Ridge, north of Thousand Oaks, with

Convolvulus simulans (Wishner collection). **Presumed absent.**

Mud nama (*Nama stenocarpum*) [CRPR 2.2] "Intermittently wet areas, <500 m, Southwest, to Texas" (Bacon [in Hickman, ed.] 1993). "Rare, on wet heavy soil, Sawtelle, Santa Monica" (Raven et al. 1986), probably referring to "Soldiers Home" records in California Consortium of Herbaria. Nearest locations: Sawtelle; Santa Monica (CDFW 2010). **Presumed absent.**

California walnut (*Juglans californica*) [CRPR 4.2] "Uncommon, slopes, canyons, 50-900 m, South Coast, southern Transverse Ranges, northern Peninsular Ranges (Santa Ana Mountains)" (Wilken [in Hickman, ed.] 1993. "Throughout the area in southern oak woodland or in chaparral, on north slopes or otherwise moist situations" (Raven et al. 1986). No records in CNDDB (CDFW 2010), except those associated with Walnut Woodlands. **Present**, a few locations in the northern portion of the Malibu Golf Club property.

Fragrant pitcher sage (*Lepechinia fragrans*) [CRPR 4.2] "Uncommon, chaparral, <1100 m, South Coast, Northern Channel Islands (Averett [in Hickman, ed.] 1993). "On moist, higher slopes and in canyons leading to the sea in the western portion of the range and north-facing slope of Boney Mountain (Raven et al. 1986). Two records in California Consortium of Herbaria for Santa Monica Mountains of Los Angeles County; Los Alisos Canyon (*Epling s.n*. May 30, 1931 [UD457317]); "Santa Monica Mountains" (*Howe 2229* June 15, 1952 [SD44965]), (all others are restricted to Santa Catalina Id, and San Gabriel Mountains. Several California Consortium of Herbaria records for western Santa Monica Mountains of Ventura Co. Other nearby location: Along Yerba Buena Road, 0.25 mi east of Ventura Co line in Los Angeles Co (Wishner, observation). No records in CNDDB (CDFW 2010). **Potentially present**.

Red sand-verbena (*Abronia maritima*) [CRPR 4.2, L.A. County] "Coastal dunes, <1000 m, south South Coast, South Coast, Baja California" (Spellenberg [in Hickman, ed.] 1993). "Local colonies along the coast, coastal strand, from Point Dume west" (Raven et al. (1986). No records in CNDDB (CDFW 2010). California Consortium of Herbaria: "Santa Monica" (*Crawford and Hiatt s.n.,* March 30, 1916 [POM737]); "Topango Canyon" (*Crawford and Hiatt s.n.,* March 28, 1916 [POM744]); "Malibu Lagoon State Park" (*Keys 83,* May 25, 1981 [RSA651287]); "South Santa Monica" (*Barber 25,* January 25, 1907 [UC7607]); "Point Mugu" (*Zembal s.n.,* May 21, 1977 [RSA678659]). **Presumed absent**.

Lewis' evening-primrose (*Camissonia lewisii*) [CRPR 3] Valley and foothill grassland, coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, sandy or clay soil, 0-300 m. "Rare, grassland, sandy or clay soils, coastal 0-300 m, South Coast, western Peninsular Range, northern Baja California, related to *C. bistorta*; *C. micrantha* misapplied" (Wagner [in Hickman, ed.] 1993). "Rare, Point Dume" (Raven et al. 1986). No records in CNDDB (CDFW 2010). No records in California Consortium of Herbaria for Santa Monica Mountains of Los Angeles or Ventura Counties. **Presumed absent**.

Ojai navarretia (*Navarretia ojaiensis*) [CRPR 1B.1] Described in late 2007in the article titled: Two new annual species in the *Navarretia pubescens* (Bentham) Hooker and Arnott complex of section *Mitracarpium* Brand of the Phlox family (Polemoniaceae) (Leigh Johnson (*Novon* 17(4):454-461)). According to the article, it "is known from Ventura County." "*Navarretia ojaiensis* is presently known from dry, clay soils of native grasslands in opening of chaparral in the Ojai Valley, Santa Clarita Valley, and Santa Susana Mountains of Ventura County, California." "Proximity of the latter locations and an unverified report from the Santa Monica Mountains suggest it occurs in Los Angeles County as well." Wishner has collected this species from several locations in the vicinity of Agoura Hills, and found they have blue flowers, in addition to the white flowers as originally described, and these collections have been verified by Jones. **Presumed absent**.

Fish's milkwort (*Polygala cornuta* var. *fishiae*) [CRPR 4.3, L.A. County] "Uncommon, chaparral, oak woodland, 100-1100 m, south outer South Coast, Transverse, Peninsular ranges, northern Baja California (Wilken [in Hickman, ed.] 1993). "Rare, on shaded slopes, chaparral or dense southern oak woodland; Triunfo Canyon, Topanga Canyon,

Cold Creek Canyon, Tapia Park, Crater Camp" (Raven et al. 1986). Several records in California Consortium of Herbaria for Santa Monica Mountains. No records in CNDDB (CDFW 2010). **Potentially present**.

Parry's spineflower (*Chorizanthe parryi* var. *parryi*) [CRPR 1B.1, L.A. County] Found in coastal scrub, chaparral, generally on dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland; dry, sandy soils, 40-1705 m. "Sandy places, generally in coastal or desert scrub, 300-1200m, central and eastern South Coast, eastern Transverse Range, northwestern edge of Sonoran Desert" (Hickman [in Hickman, ed.] 1993). Not included in Raven et al. (1986) flora of Santa Monica Mountains. No records in California Consortium of Herbaria for Santa Monica Mountains of Los Angeles County, and none anywhere in Ventura County, Nearest location: west side of mouth of Latigo Canyon, 3 miles northeast of Point Dume. Collection by Thomas, 1957 (herb), in an article by Reveal and Hardman. **Potentially present**.

Wheeler's spineflower (*Chorizanthe wheeleri*) [CRPR 4.2, L.A. County] "Uncommon, non-serpentine chaparral, <600 m, northern Channel Islands (Santa Cruz, Santa Rosa ids)" (Hickman [in Hickman, ed.] 1993). "A plant of dry chaparral, reported in the Santa Monica Mountains by Munz (1974)" (Raven et al. 1986). "Uncommon, non-serpentine chaparral, <600m, closely related to *C. staticoides*, stamen number (6) is unique in the complex" (Hickman [in Hickman, ed.] 1993). No records in CNDDB (CDFW 2010). No records in California Consortium of Herbaria for Los Angeles or Ventura Counties. **Presumed absent**, needs further field study, potentially mistaken as *C. staticoides*.

California spineflower (*Mucronea californica*) [CRPR 4.2] "Coastal scrub, chaparral, in sandy soils below <1400m, south Central Western and Southwest California" (Hickman [in Hickman, ed.] 1993). "Sandy flats behind Point Dume" (Raven et al. 1986), probably referring to *Thompson 14318* June 4, 1959 (RSA127919). Other known locations: Tierra Rejada Hills, Moorpark, northeast corner of New Los Angeles Ave and SR 23, Ventura Co. [extirpated] (Wishner collection); Santa Susana Mountains, Grimes Canyon (Wishner collection). No records in CNDDB (CDFW 2010). **Probably absent**.

Brewer's calandrinia (*Calandrinia breweri*) [CRPR 4.2] " Uncommon, sandy to loamy soil, disturbed places, burns, <1200m, North Coast, central Sierra Nevada foothills, San Francisco Bay area, Outer South Coast, South Coast, western Transverse, Baja California. Like *C. ciliata*" (Kelley [in Hickman ed.] 1993). "Burned or disturbed areas in chaparral, scattered throughout (Raven et al. 1986)." Several records in Consortium of California Herbaria for Santa Monica Mountains of Los Angeles County**,** as at Mandeville Canyon, Los Alisos Canyon, and Zuma Canyon (but none for Ventura Co.). Also, north of Lake Sherwood (Ventura Co.) (Wishner collection). **Possibly present**, needs further field study, especially following any fire, potentially mistaken as *C. ciliata.*

Seaside calandrinia (*Calandrinia maritima*) [CRPR 4.2] "Uncommon, sandy soil, sea bluffs, <300 m, South coast, Channel Islands, Baja California" (Kelley [in Hickman ed.] 1993). "Rare, Santa Monica, *Parry 713* (DS)" (Raven et al. 1986). No records in CNDDB (CDFW 2010). No records in Consortium of California Herbaria for Santa Monica Mountains of Los Angeles or Ventura counties. **Presumed absent**.

Dune larkspur (*Delphinium parryi* ssp. *blochmaniae*) [CRPR 1B.2, L.A. County] Found in chaparral, coastal dunes (maritime), generally on rocky areas and dunes. 30-375m. "Rare, coastal chaparral, sand, 0-200 m, south Central Coast" (Warnock [in Hickman ed.] 1993). "Subspecies *blochmaniae* occurs in Long Grade Canyon-formerly known only from the area between Nipomo Mesa, San Luis Obispo Co., and Lompoc, Santa Barbara Co." (Raven et al. 1986). East side of Highway 23 just south of Lake Eleanor, south of Thousand Oaks, east side of road. Mapped within oak woodland. Only source of information for this site is map from Lake Eleanor Open Space area by Westec Services, Inc. provided by Burgess (CDFW 2010). **Presumed absent.**

Island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*) [CRPR 4.3] "Uncommon, chaparral, <600 m, Channel Islands (except San Clemente Id), and Western Transverse Ranges." (Lis [in Hickman, ed.] 1993). No records in CNDDB (CDFW 2010). "Plants with leaves more than 3cm long and with 6-10 lateral veins on each side of the midrib, thus like the Channel Island var. *blanchaea* (sic) occur above 1800 ft in the Saddle Rock area" (Raven

et al. 1986). Four collections, two each from two locations were collected by Brian Vanden Huevel on May 8, 2003, and these are on deposit at UCD. One location is Santa Monica Mountains, in gulch at northwest corner of Mulholland Hwy. and Little Sycamore Canyon Rd (UCD22488, UCD22489); Santa Monica Mountains. On Decker Rd., 1 mile north of junction of Mulholland Hwy. and Decker Rd (UCD22490, UCD22491). Both of these locations are very close to the Malibu Golf Club property. According to Lis, var. *betuloides* has "leaf blade with 4-7 lateral veins, 1-4cm long," whereas, var. *blancheae* has "6-12 lateral veins, and blades 2-8cm." Thus, there is some overlap in diagnostic characters for plants with 6-7 lateral veins and leaves 2-7cm long. The only other mainland collections are from La Purissima Hills near Lompoc, by same collector. **Possibly present** (needs further field study).

Southern mountain misery (*Chamaebatia australis*) [CRPR 4.2] "Dry slopes in chaparral, 300-700 m, southern Peninsular Ranges, northern Baja California" (Rosatti [in Hickman ed.] 1993). Santa Monica Mountains are outside of this reported range, although Raven et al. (1986) report "rare on north-facing slopes in volcanic substrate; Rocky Oaks, *Thomas 441* (LA)."[49] No records in CNDDB (CDFW 2010). **Possibly present.**

Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) [CRPR 1B.1] Chaparral, cismontane woodland, coastal scrub, sany or gravelly sites, 70-810 m. Nearest location: "Sepulveda Blvd, nw of Sunset Blvd [extirpated]; Griffith Park (CDFW 2010). **Presumed absent**.

Santa Barbara bedstraw (*Galium cliftonsmithii*) [CRPR 4.3] "Uncommon, light shade, upper parts of canyons, to ocean, 200-1220 m, outer South Coast and Western Transverse Ranges (Dempster [in Hickman ed.] 1993). Reported from light shade under coast live oak (Munz 1974) Raven et al. (1986), probably citing *Munz and Harwood 4013*, May 15, 1920 (POM9650), from "Sepulveda Canyon." Also, from "Los Flores Canyon", *Ewan 1251*, May 18, 1929 (POM183470). No records in CNDDB (CDFW 2010). **Possibly present**, needs further field study, potentially mistaken as *G. nuttallii.*

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) [CRPR 4.2] "Moist saline places (saltmarshes, alkaline seeps), generally <300 m, Central Coast, South Coast, southern Channel Islands, Sonoran Desert, to Arizona, Baja California, South America, South Africa" (Swab [in Hickman, ed.] 1993). "Frequent about seepages and by coastal salt marshes along the entire coast" (Raven et al. 1986). Records reported in Consortium of California Herbaria for Santa Monica Mountains: "coast highway opposite Canfield's, Pacific Palisades" (*Raven and Thompson 14556*, October 4, 1959, [RSA126744]); "west of Point Mugu" (*Raven and Thompson 14570*, October 4, 1959, [RSA133792]); "Point Mugu" (*Zembal s.n*., May 25, 1977 [RSA 678683]. No records in CNDDB (CDFW 2010). **Presumed absent**.

Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*) [CRPR 4.2] "Uncommon, yellow pine forest and openings, <1800 m, outer South Coast, Southwest California (Skinner [in Hickman, ed.] 1993)." ("Locally common along more or less shaded streams in southern oak woodland, away from the immediate coast, vicinity of Rustic Canyon and westward" (Raven et al. 1986). Only two records reported in Consortium of California Herbaria for Santa Monica Mountains: *Hiatt s.n*., June 3, 1916, [POM1732] location not specific); Circle X Ranch *Gorelick s.n.* June 18, 1966 [RSA337145]. More common than limited collections would suggest. Nearest locations: Mouth of Arroyo Sequit (Wishner observation); Yerba Buena Road at Cotharin Road (Wishner observation); Leo Carrillo State Beach (Wishner observation). No records in CNDDB (CDFW 2010). **Presumed absent**.

Catalina mariposa lily (*Calochortus catalinae*) [CRPR 4.2] "Uncommon, heavy soil, open grassland or shrubland, <700m, south Central Coast, west South Coast, especially Channel Islands" (Fiedler and Ness [in Hickman, ed.] 1993)." "Very common, especially in grassland and coastal sage scrub, and especially conspicuous after fires, at low elevations throughout" (Raven et al. 1986). No records in CNDDB (CDFW 2010). **Present**, and moderately abundant in chaparral, coastal scrub and pocket grasslands, especially in northern portion of Malibu Golf Club property; not mapped-common.

[49] This record is not included in Consortium of California Herbaria, since UCLA is not yet a participant.

Slender mariposa-lily (*Calochortus clavatus* var. *gracilis*) [CRPR 1B.2] Found in shaded foothill canyons; often on grassy slopes within other habitat. 420-760. Interestingly, this taxon has not previously been reported from the Santa Monica Mountains. In the Jepson Manual (Fiedler and Ness [in Hickman (ed.) 1993]), it is reported as "uncommon, shaded foothill canyons, <100m, [only from the] San Gabriel Mountains." Over the last several years, Wishner has observed plants referable to this variety in the Santa Susana Mountains from the vicinity of Rocky Peak, and westward to Grimes Canyon, and in the Topatopa Range north of Santa Paula. Nearest location: northeast of entrance to Stokes Canyon, exact location unknown, mapped by CNDDB as best guess in general vicinity of Stokes Canyon. Elevation given as 600-800 feet. Only source of information for this occurrence is a 1959 collection by Everett and Balls (CDFW 2010). **Potentially present** (plants observed outside of flowering period are provisionally referred to Plummer's mariposa).

Plummer's mariposa-lily (*Calochortus plummerae*) [CRPR 1B.2, L.A. County] Found in coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Generally occurs on rocky and sandy sites, usually of granitic or alluvial material. It can be very common after fire. 90-1610m (CDFW 2010). "Rare, dry rocky chaparral, yellow pine forest, <1700 m, South Coast, Peninsular Range" (Fiedler and Ness [in Hickman (ed.) 1993]). "Scattered and local on rocky slopes at low elevations away from the coast, throughout" (Raven et al. 1986). Nearest reported location: Mandeville Canyon; Stokes Canyon; Decker Canyon, Lake Sherwood; Willow Creek (Leo Carrillo State Beach); Topanga Canyon; Triunfo Pass (CDFW 2010). **Present** (multiple locations throughout the subject property).

Chaparral nolina (*Nolina cismontana*) [CRPR 1B.2, L.A. County] Chaparral, coastal scrub, primarily on sandstone and shale substrates, also known from gabbro, 140-1275 m. Not included in Raven et al. (1986), or Hickman [ed.] (1993), described subsequently as a new taxon. All records in California Consortium of Herbaria for Ventura County are in Simi Hills and Santa Susana Mountains, none in Santa Monica Mountains; no record for Los Angeles County. Nearest location: Palo Comado Canyon; North Ranch Open Space; Oak Canyon (CDFW 2010). **Presumed absent**.

Vernal barley (*Hordeum intercedens*) [CRPR 3.2] "Vernal pools, dry saline stream beds, alkaline flats, <1000 m, Southwest, northwestern Baja California" (Barkworth [in Hickman ed.] 1993). "Along rill in dry adobe soil, northeast slopes of Conejo Mountain" (Raven et al. 1986). All records in Consortium of California Herbaria for Los Angeles and Ventura Co are located on Channel Islands. No records in CNDDB (CDFW 2010). **Presumed absent**.

Creeping Ryegrass Grassland - Creeping ryegrass (*Elymus* [<= *Leymus*] triticoides) is a perennial and rhizomatous native grass that often occurs in mesic habitats, including areas that are seasonally saturated. This plant community is apparently rare in the Santa Monica Mountains region and, in California, non-native grasses and agriculture have probably replaced many of the native stands. CDFW considers creeping ryegrass grassland to be a natural community of special concern. **Present** (one small pocket in the northern portion of the subject property).

Valley Needlegrass Grassland - A midheight (to 2 feet) grassland dominated by perennial, tussock-forming *Stipa* [<= *Nassella*] *pulchra*. Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. Usually on fine-textured (often clay) soils, moist or even waterlogged during winter, but very dry in summer. Often found with Oak Woodlands on moister, better-drained sites (Holland, 1986). Nearest recorded location with prime example of Valley Needlegrass Grassland located on Laskey Mesa, southeast corner of Ventura County, north facing slopes south of East Las Virgenes Creek, Upper Las Virgenes Open Space Preserve (CDFW 2010). **Present** (in small pockets in northern portion of the subject property).

Gastropods

Not Listed:

Trask or Peninsular Range Shoulderband (*Helminthoglypta traskii traskii*) [L.A. County]

This snail is a southern California endemic, known from Ventura, Los Angeles, Orange, and San Diego Counties. It also extends into northern Baja California. NatureServe has givin this species a G1G2T1 rank (Critically

Imperiled globally and nationally), and the California Natural Diversity Database has assigned it a S1 rank (Critically imperiled statewide). This snail has been observed in the Santa Monica Mountains in the Point Mugu area and at Malibu Lagoon State Park. Its preferred habitat is coastal sage scrub and chaparral. **Potentially present.**

Invertebrates

Not Listed:

Monarch butterfly (*Danaus plexippus*) [Status: SA, winter roost sites sensitive]. Roosting in large trees, primarily *Eucalyptus*, in winter along the coast from northern Mendocino County to Ensenada, Baja California Norte (Hogue 1993). Roost sites reported at several coastal locations, all below 350 feet elevation (data for non-sensitive locations only) (CDFW 2010). **Expected to forage** widely throughout the drainage, **but not roosting** in winter at this location, due to cold temperatures at higher elevations in these mountains.

Santa Monica Mountains hairstreak butterfly (*Satyrium auretorum fumosum*) [None-no longer included on 2007 and subsequent Special Animals list]. Only known from a few colonies in the Santa Monica Mountains [three locations in central Malibu Creek drainage]. Larval foodplant, coast live oak (Mattoni 1989, 1990) present on the property. **Presumed absent**.

Santa Monica shieldback katydid (*Aglaothorax longipennis*) [SA]. Occurs in the Santa Monica Mountains in chaparral, riparian woodland, and grassy areas. Occurs nocturnally in chaparral and canyon stream bottom vegetation; inhabits introduced iceplant and native chaparral plants. A single record at Big Rock Canyon entrance, 2 mi. west of Topanga (type collection) (CDFW 2010). **Presumed absent**.

Santa Monica grasshopper (*Trimerotropis occidentaloides*) [SA]. Endemic to the Santa Monica Mountains. Frank Hovore (personal communication November 2, 2001) reports the following locations, primarily in grassland or disturbed habitats: 8.8 km south of Thousand Oaks, at the junction of Mulholland Highway and SR 23; junction of Lechusa Rd and Encinal Canyon Rd; Kanan Road, at the pass; and 18.5 km E Oxnard, 5.3 km W Potrero Rd. junction with Reino Rd. Perhaps common along the whole crest of the western one-third of the range. Found only on bare hillsides and along dirt trails in chaparral (CDFW 2010). **Potentially present**.

Valley oak ant (*Proceratium californicum*) [No longer included on 2007 and subsequent Special Animals list]. Known only from a few widely-scattered locations from the Sacramento Valley and Santa Cruz Mountains (type), and one single disjunct location in the Santa Monica Mountains of Los Angeles County (Ward 1988). Two females were collected in April 1959 by an entomology student at UCLA. Snelling (1967) states "according to Dr. J.N. Belkin, the specimens were most likely taken at Tapia Park in Malibu Canyon." **Presumed absent**.

Fishes

Listed:

Southern steelhead (*Oncorhynchus mykiss irideus*) (southern California Distinct Population Segment (DPS)) [FE, SSC]. The southern steelhead (southern California DPS), which includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in streams from the Santa Maria River (north of Point Sal) south to the Tijuana River at the U.S.-Mexico border, is listed as Endangered under the Federal Endangered Species Act. The National Marine Fisheries Service (NMFS) estimates the southern steelhead population to be less than 1% of its historic population size. The southern steelhead is absent from the project site, but is potentially present in aquatic habitats downstream from the project site, including within the lowermost reaches of Trancas Creek and at the Trancas Lagoon. **Absent.**

Although the southern steelhead is considered absent currently from Trancas Creek, it was probably present historically. *Historical Distribution of Southern Steelhead Trout in the Santa Monica Bay Region* (Dagit, R., S. Drill, PhD., and B. Meyer, 2005), a report prepared for the CDFW and NOAA Fisheries by the Resource Conservation District of the Santa Monica Mountains, includes the following chronological records documenting

steelhead presence in Trancas Creek: "1930's Giles Manwaring reported that Bernie Neumann (deceased) who was raised in Trancas Canyon described catching silver salmon, most likely steelhead. Also Manwaring spoke with Leo Bourget who caught steelhead up to 6 pounds in the area of the housing track in his youth, circa 1938. (interviewed for this report)" and "1980's John Steckwald caught several 8 inch trout and observed good steelhead habitat. (interviewed for this report)." According to NMFS Southern Steelhead ESU Current Stream Habitat Distribution Table (website) for Trancas Canyon creek, there are "Anecdotal reports of silver salmon and steelhead catches pre World War II." In the Santa Monica Mountains, recent records for steelhead exist for Arroyo Sequit, Big Sycamore, Malibu, and Topanga Canyons (Swift et al. 1993, CDFW 2013).

The *Santa Monica Mountains Steelhead Habitat Assessment Final Project Report* (California Trout, Inc., 2006) identifies and prioritizes streams for steelhead restoration actions within the Santa Monica Mountains, based in part on an assessment of habitat type and quality and natural and anthropogenic barriers to fish passage in 13 focal watersheds, including the Trancas watershed. The following excerpt on steelhead life history is reproduced from this report:

> Steelhead, which are members of the Salmonid family, are rainbow trout with a life cycle similar to that of a salmon. It is an anadromous species: steelhead are born and reared in freshwater streams, as juveniles they migrate to estuaries where they adjust to saltwater, and then migrate to the ocean to mature into adults. After spending one to three years foraging on the food sources of the Pacific, large adult steelhead, some reaching 20 pounds, generally return to their home streams – some to the very pools of their birth – to reproduce. Unlike salmon, steelhead do not necessarily die after spawning and may make the spawning journey more than once. Unlike juvenile Chinook salmon that typically migrate to the ocean after just a few months of freshwater rearing, juvenile steelhead reside in coastal streams from one to three years before migrating to the ocean. As such, steelhead use all segments of a stream system to complete the freshwater phase of their life cycle. They use estuaries to acclimate to salinity changes, the middle reaches of the mainstem stream to reach headwaters and tributaries, and headwaters and tributaries to spawn and rear. Steelhead require cool, clean water year-round to sustain themselves (McEwan and Jackson 1996; CalTrout 1996). In addition, they need cool, clean well-oxygenated water flowing over clean gravel to spawn and develop. Under natural conditions, these habitat requirements – especially suitable water temperatures – occur primarily in the headwater tributaries, which is why adult steelhead migrate higher into a river system to spawn than do other anadromous fish species.

The following excerpts on steelhead life history are reproduced from the *Southern California Steelhead Recovery Plan* (NMFS, January 2012):

> This species may also display a non-anadromous life history pattern (i.e., a "freshwater resident" strategy). It has been common practice to refer to non-anadromous individuals that complete their entire life history cycle (incubating, hatching, rearing, maturing, reproducing, and dying) in freshwater as rainbow trout, while referring to those emigrating to and maturing in the ocean as steelhead. However, this terminology does not capture the complexity of the life history cycles exhibited by native *O. mykiss*. Individuals can complete their life history cycle completely in freshwater, or they can migrate to the ocean after one to three years, and spend two to four years in the marine environment before returning to freshwater rivers and streams to spawn.
>
> Additionally, "rainbow trout" which have completed their life history cycle entirely in freshwater sometimes produce progeny which become anadromous and emigrate to the ocean and return as adults to spawn in freshwater. Conversely, it has also been shown that steelhead may produce progeny which complete their entire life cycle in freshwater. The cues that trigger this phenomenon are unknown, but may be linked to environmental variation. For example, juvenile residency can be strongly influenced by the hydrologic cycle in southern California, where extended droughts can cause juveniles to become land-locked and therefore unable to reach the ocean.

Anadromous southern steelhead are precluded from occurring in the upper Trancas watershed at or in the vicinity of the Malibu Golf Club site by a nearly three (3) meter high natural waterfall in Trancas Creek, which is located above a bedrock cascade. The waterfall, which is roughly one (1) mile downstream from the Malibu Golf Club property, is considered the absolute natural limit to upstream steelhead migration in the watershed (California Trout, Inc., 2006). Also according to the CalTrout study, the large artificial flood control channel in the lower reaches of Trancas Creek near the Malibu West development is likely impassable to steelhead at all times.

The "steelhead" that were reportedly caught by John Steckwald in Trancas Creek in the 1980s would therefore have been a non-anadromous form of rainbow trout (which is not listed as Endangered) given the presence of a barrier (the large artificial flood control channel) to upstream fish migration in the lower reaches of Trancas Creek that was constructed in the 1950s, or earlier. If non-anadromous rainbow trout are still present in the Trancas Canyon Watershed, the trout could potentially be found in Trancas Creek or its tributaries wherever there is year-round water and suitable habitat, including upstream from the aforementioned natural limit to steelhead migration. Non-anadromous rainbow trout are not expected at the golf course ponds due to the presence of large, predatory fish, including largemouth bass. Also, the ponds do not provide suitable habitat for *O. mykiss* reproduction.

If non-anadromous rainbow trout are present in Trancas Creek, they could potentially be naturally occurring or introduced. According to *The Status and Distribution of the Freshwater Fishes of Southern California* (Swift, C., et al., December 1993): "Beginning in the 1890s and extending through the late 1930s fingerling rainbow trout were planted into almost all possible waters in southern California," although whether or not rainbow trout were introduced to Trancas Creek historically was not determined during preparation of this document. Non-anadromous rainbow trout could potentially begin to migrate if downstream barriers were removed (i.e., able to both return to the ocean and migrate back upstream to spawn); however, if downstream barriers were removed only the naturally occurring and not introduced trout would then have protected Endangered status.

The CalTrout study selected Trancas Creek as a "middle-priority" stream that should undergo habitat restoration actions, receiving an overall ranking of fifth out of 13 focal watersheds. According to the CalTrout study, in general, habitat quality for adult steelhead ranges between poor and very good, while juvenile habitat ranges between poor and excellent. Based on both stormflow and baseflow hydrology, the stream was identified as one of the watersheds where future restoration efforts should be focused."

The principle anthropogenic threats contributing to extinction risk of steelhead are impassable barriers and water storage and withdrawal that alter the pattern and magnitude of streamflow, which affect basic life history phases including egg-to-smolt survival and smolt-to-spawner survival. Therefore, the federal recovery strategy (*Southern California Steelhead Recovery Plan* (NMFS, January 2012) places a high priority on actions that alleviate these threats. Also of high priority are the protection and the restoration of mainstem and estuarine rearing habitats. Additional actions important to the recovery strategy are:

- curb unnatural inputs of fine sediments to waterways;
- promote the establishment and maintenance of streamside vegetation and flood-plain connectivity and function; and,
- encourage the formation and preservation of complex instream habitat.

The Southern California Steelhead Recovery Plan (NMFS, January 2012) identifies certain watersheds and the steelhead populations within those watersheds that constitute the foundation of recovery of the Southern California Steelhead DPS[50]. The objective of the Recovery Plan is the removal of the Southern California Steelhead DPS from the Federal List of Endangered and Threatened Wildlife. The focus of the NMFS southern California steelhead

[50] The Endangered Species Act (ESA) mandates that the NMFS develop and implement Recovery plans for the conservation (recovery) of listed species. Recovery plans are guidance documents and not mandatory regulatory documents. However, the ESA envisions Recovery plans as the central organizing tool for guiding the recovery of listed species.

biological recovery strategy are the core steelhead populations in larger watersheds that exhibit the physical and hydrological characteristics (e.g., large spatial area, perennial and reliable winter streamflow, stream network extending inland) that are most likely to sustain independently viable populations, which are critical for ensuring viability of the DPS as a whole. The Trancas watershed does not currently support an anadromous population of steelhead although, as discussed above, John Steckwald reportedly caught "steelhead" in Trancas Creek in the 1980s, which due to the presence of barriers to fish migration in the lower reaches of Trancas Creek would have been the non-anadromous form of rainbow trout. Also, the Trancas Canyon Watershed is not part of the recovery strategy outlined in the federal Recovery Plan, nor has Trancas Creek been designated as Critical Habitat for steelhead by the NMFS. However, the restoration of unoccupied steelhead habitat in watersheds such as Trancas Canyon is recommended by CalTrout and would reduce extinction risk.

Tidewater Goby (*Eucyclogobius newberryi*) [FE, SSC]. This small, estuarine fish occurs in shallow coastal lagoons and the lower portions of coastal rivers and streams. Tidewater gobies prefer slow-moving and almost still brackish water for building and maintenance of burrows. Tidewater gobies may at times be found several miles upstream of estuaries. The CNDDB does not indicate that Trancas Lagoon or the lower reaches of Trancas Creek are inhabited by tidewater goby. Currently, the only water bodies within the Santa Monica Mountains region where tidewater gobies are known to exist are Malibu Lagoon, Malibu Creek, and Topanga Creek (Federal Register, v. 78, No. 25, February 6, 2013). No other creek or estuary in the Santa Monica Mountains region is currently occupied by the tidewater goby. This species is absent from the project site, but potentially occurring in habitats downstream from the project site, including the lowermost reach of Trancas Creek and the Trancas Lagoon. **Absent.**

Not Listed:

Arroyo chub (*Gila orcutti*) [SSC]. Los Angeles Basin coastal streams. Slow water stream sections with mud or sand bottoms. Feed heavily on aquatic vegetation and associated aquatic invertebrates. Nearest reported location: Arroyo Simi. In Malibu Creek, Miller (1968) considered this species to be native, based upon prehistoric remains in middens along upper Malibu Creek (Gobalet 1990). However, according to Swift et al. (1993), the current Malibu Creek population may be introduced, because elsewhere, arroyo chubs always occur with threespine stickleback (*Gasterosteus aculeatus*), which is absent from this stream (Culver and Hubbs 1917). There are no reports of this species in Trancas Canyon Creek. **Absent**.

Threespine stickleback (*Gasterosteus aculeatus microcephalus*) [SA (south of Pt. Conception only)]. However, according to Swift et al. (1993), the current Malibu Creek population of arroyo chub may be introduced, because elsewhere, arroyo chubs always occur with threespine stickleback (*Gasterosteus aculeatus*), which is absent from this stream (Culver and Hubbs 1917). There are no reports of this species in Trancas Canyon Creek. **Absent**.

Amphibians

Special-status amphibian species that are known to occur in the Santa Monica Mountains are limited to California red-legged frog (*Rana draytonii*), which is believed extirpated from the range, and the California newt (*Taricha torosa*).

Listed:

California red-legged frog (*Rana draytonii*) [FT, SSC]. California red-legged frogs typically occur in lowlands and foothills, and in wetlands and streams in coastal drainages. They require permanent sources of relatively deep water, and are typically found along the shores of ponds and creeks with dense riparian or wetland vegetation that serves as adequate cover. Upland habitat for this species includes landscape features that provide cover and moisture generally within 300 feet of aquatic habitat. Requires 11-20 weeks of permanent water for larval development. Previous recorded from Trancas Creek, Tapia Park (Malibu Creek) (De Lisle et al. 1986) and other streams in the Santa Monica Mountains (Jennings and Hayes 1994). Last sighting however in the Santa Monica Mountains was at Cold Creek in 1975. Nearest reported location: Simi Hills—Ahmanson Ranch (Now Upper Las Virgenes Canyon Open Space Preserve), East Las Virgenes Creek (CDFW 2013). The red-legged frog is likely extirpated from the Trancas watershed and the Santa Monica Mountains. The golf course ponds and the reach of

Trancas Creek on the property would provide suitable habitat for this species, except for the presence of invasive crayfish, mosquito fish and predatory fishes, which prey on all live stages of the frog and preclude its occurrence or successful reintroduction at the site. **Absent**.

Arroyo toad (*Anaxyrus californicus*) [FE, SSC]. Semi-arid regions near washes or intermittent streams, including valley foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range. Nearest reported location: Chatsworth Creek (drain), Canoga Park, below Chatsworth Reservoir; Santa Clara River, just east of I-5 (CDFW 2010). There are no historic or extant records of arroyo toad in the Santa Monica Mountains (Jennings and Hayes 1994). **Absent**.

Not Listed:

California newt (*Taricha torosa*) [SSC]. Found in riparian woodland, wandering through adjacent habitats during rains. Numerous reports in Santa Monica Mountains including Big Sycamore, Decker/Encinal, Trancas, Zuma, etc. (De Lisle et al. 1986). The species is considered absent from the Project site based on focused surveys conducted in March and June, 2013 as well as due to the presence of numerous invasive mosquito fish and crayfish in potentially suitable stream habitats to the east of the entrance road to the Malibu Golf Club. **Absent.**

Reptiles

Not Listed:

Western pond turtle (*Emys marmorata*) [SSC]. This turtle inhabits permanently or nearly permanent bodies of water in many habitat types, below 6,000 feet in elevation. It requires basking sites, such as partially submerged logs, vegetation mats, or open mud banks. It needs suitable nesting sites with a proper thermal and hydric environment for incubation of the eggs. Nests sites are typically located on relatively dry, exposed slopes within 200 meters of the aquatic site, and usually much closer. The man-made ponds and associated banks on the golf course and Trancas Creek to the east of the entrance road to the Malibu Golf Club are suitable habitats for nesting and basking. The western pond turtle has been confirmed present at the three largest golf course ponds. Several adult turtles (estimated at 10 individuals) were captured as incidental by-catch in mesh crayfish traps early in 2013 as a part of the ongoing effort to eradicate crayfish from the Project site. Also, focused trapping and visual surveys for the western pond turtle were conducted at the three largest golf course ponds between June 13 and June 22, 2013 and from mid-July to mid-August, 2013. Thirteen (13) adult turtles were captured in collapsible mesh traps and five adult turtles were directly observed. The size of the pond turtles suggests that minimal reproduction is occurring as no smaller turtles were observed, presumably due to the presence of large predatory fish. All captured turtles were released back into the ponds. Western pond turtles may also be present at the smallest golf course pond or within Trancas Creek to the east of the entrance road, although none were observed in these areas to date. For additional information on the survey methods and results see Kats, L. B., *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area – A Report on California Newt and Western Pond Turtle Surveys --- 2013*, in Appendix 6. **Observed, resident.**

California legless lizard (*Anniella pulchra*) [SSC]. Sandy areas within other habitats, also in litter under live oaks. Reported from Malibu Canyon, Point Dume, Triunfo Canyon (De Lisle et al. 1986), and other locations in the Santa Monica Mountains (Jennings and Hayes 1994). Litter accumulation and sandy, friable soils on property; potential occurrence considered **moderate**.

Coast horned lizard[51] (*Phrynosoma blainvillii*)[52] [SSC]. Reported from numerous locations in the Santa Monica Mountains (Jennings and Hayes 1994), and at Point Dume (on the point) (CDFW 2010). Prefers friable, rocky, or shallow soils. As *P. coronatum frontale* described as: Open areas in chaparral, coastal sage, and oak woodland. Reported Triunfo Canyon (De Lisle et al. 1986); hills surrounding Pepperdine University, Malibu (Envicom Corporation 1999). Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants (CDFW 2010) **Observed, resident**.

Coastal whiptail (*Aspidoscelis tigris stejnegeri*) [SA]. Open areas in the coastal sage and chaparral, generally where ground may be firm soil, sandy, or rocky. Reported from numerous locations in the Santa Monica Mountains including Triunfo Canyon (De Lisle et al. 1986), and on-sire during November 2006 survey (CDFW 2010). Nearest location: 0.8 mile sse of the intersection of Decker Road and Mulholland Highway (this places it on the Malibu Golf Club property). Habitat consists of several veg communities: coastal sage scrub, chamise chaparral, ceanothus chaparral, southern willow scrub, mulefat scrub, willow/sycamore/oak/cottonwood woodland, ca walnut woodland, and native/non-native grasslands. One (1) adult observed on 21 Nov 2006. **Observed, resident**. The database gives the scientific name as *Aspidoscelis tigris stejnegeri*.

San Bernardino ringneck snake (*Diadophis punctatus modestus*) [SA]. Most common in open, relatively rocky areas. Often found in somewhat moist microhabitats near intermittent streams. avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous veg. Found in all habitats throughout the mountains. Reported from Tapia Park, Triunfo Canyon, etc. (De Lisle et al. 1986); Malibu Canyon (CDFW 2010). **Expected, resident**.

Coast patch-nosed snake (*Salvadora hexalepis virgultea*) [SSC]. Found along rocky canyons and the edges of chaparral. Reported from Malibu Canyon, Westlake, etc. (De Lisle et al. 1986). Suitable habitat is available throughout most of the undeveloped portions of the Project site. **Expected, resident**.

Two-striped garter snake (*Thamnophis hammondii*) [SSC]. Found in coastal California from vicinity of Salinas to northwest Baja California from sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth. Nearest locations: 1.6 miles nw of the intersection of Potrero Road and north Potrero Road, se of Conejo Mountain; Triunfo Creek, nw of the intersection of Kanan Road and Triunfo Road, 2 miles nw of Malibou (CDFW 2010). Also reported numerous locations including Trancas Canyon, Zuma Canyon, etc (De Lisle et al. 1986). This species may occur in aquatic and riparian habitats on the property at the golf course ponds and at Trancas Creek. **Expected, resident**.

San Diego mountain kingsnake (*Lampropeltis zonata pulchra*) [SSC]. Prefers canyon bottoms, but wanders to adjacent coastal sage, valley oak savanna, or southern oak woodland. Reported from Lower Malibu Canyon, Triunfo Canyon, etc. (De Lisle et al. 1986) and other locations in the Santa Monica Mountains (Jennings and Hayes 1994). Suitable mesic, riparian or woodland available on property; potential for occurrence considered **moderate**.

[51] Wide disagreement has existed as to the allocation of horned lizards in the *coronatum* complex and their associated forms. While De Lisle et al. (1986) attribute horned lizards from the Santa Monica Mountains to the California subspecies (*frontale*), others (Jennings and Hayes 1994, CDFW NDDB) place ours in the San Diego subspecies (*blainvillii*). For purposes of CEQA, there is no difference, however.

[52] Montanucci [2004 Geographic variation in *Phrynosoma coronatum* (Lacertilia, Phrynosomatidae): Further evidence for a Peninsular Archipelago. *Herpetologica* 60(1): 117-139] restricted the name *coronatum* to populations in southern Baja California. He applied name *Phrynosoma blainvillii* to all populations in the United States. Standard common name remains Coast Horned Lizard.

Birds

Listed:

Least Bell's vireo (*Vireo bellii pusillus*) [FE, CE]. The federally listed Endangered and California Endangered Least Bell's vireo (*Vireo bellii pusillus*) is a rare and local summer resident in lowland riparian woodlands, breeding in willow thickets and other dense, low riparian growth in lowlands and the lower portions of the canyons, generally along permanent or semi-permanent streams. TERACOR conducted a protocol-level survey for least Bell's vireo between May 13 and July 26, 2006, based on the *Least Bell's Vireo Survey Guidelines* issued by the USFWS, dated January 19, 2001. No least Bell's vireos were detected on the property during the survey (TERACOR Resource Management, February 16, 2007). This species is a **potential transient**, but it is not expected to nest at the project site.

Willow flycatcher (*Empidonax traillii extimus*) [FE, CE]. Uncommon spring transient and fairly common fall transient along the coast. Formerly breeding in riparian woodlands, but virtually extirpated from the region (Garrett and Dunn 1981), although successfully nesting in 2000 for the first time in several decades on the Santa Clara River at Fillmore (Jim Greaves pers. comm. August 13, 2000). A rare to locally uncommon, summer resident in wet meadow and montane riparian habitats at 2000-8000 ft. in the Sierra Nevada and Cascade Range. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows (Zeiner et al. 1990b). **Potential visitant, transient**.

Bank swallow (*Riparia riparia*) [CT]. Very uncommon spring transient and rare fall transient, and casual winter transient along the coast, formerly a fairly common summer resident, now virtually extirpated as a breeder in the region (Garrett and Dunn 1981). Nesting habitat for this species absent, species **potentially transient**, not nesting.

Coastal California gnatcatcher (*Polioptila californica californica*) [FT, SSC]

This species is an obligate, permanent resident of coastal sage scrub below 2,500 feet in southern California. It occurs in low, coastal sage scrub in arid washes and on mesas and slopes. There is only one record of this species in the CNDDB for the Santa Monica Mountains; two adults were identified in cactus scrub with buckwheat adjacent to the California State University, Channel Islands campus at the western edge of the Santa Monica Mountains in 2008 (CDFW 2013). This species is not known from other locations in the Santa Monica Mountains. **Probably absent.**

Not Listed:

Great blue heron (*Ardea herodias*) [SA, rookery site]. Fairly common resident throughout most of the region (Garrett and Dunn 1981). Nearest location: Lake Sherwood (rookery, Wishner, personal observation). **Expected, resident, not nesting.**

Great egret (*Ardea alba*) [SA, rookery site]. Fairly common winter visitant along the coast (Garrett and Dunn 1981). **Expected, winter visitant.**

Snowy egret (*Egretta thula*) [SA, rookery site]. Common winter visitant along the coast (Garrett and Dunn 1981). **Expected, winter visitant.**

American bittern (*Botaurus lentiginosus*) [SA]. Primarily a winter visitant, uncommon in coastal district (Garrett and Dunn 1981). **Expected, winter visitant**.

Western least bittern (*Ixobrychus exilis hesperis*) [SSC, nesting]. Rather rare throughout the year in coastal district (Garrett and Dunn 1981). **Expected, rare visitant**.

Black-crowned night-heron (*Nycticorax nycticorax*) [SA, rookery site]. Fairly common but local resident in coastal district (Garrett and Dunn 1981). **Expected, occasional visitant.**

Canvasback (*Aythya valisneria*) [SA, nesting]. Fairly common winter visitant in all districts (Garrett and Dunn 1981). **Expected, casual visitant**.

Northern harrier (*Circus cyaneus*) [SSC, nesting]. Fairly common winter visitant to open grasslands, agricultural fields, freshwater and coastal salt marshes, estuaries, open desert and brushlands in all districts (Garrett and Dunn 1981). **O bserved, winter visitant**.

Sharp-shinned hawk (*Accipiter striatus*) [DFW WL, nesting]. Fairly common winter visitant in all districts, and fall transient moving along coastal ridges and promontories (Garrett and Dunn 1981). Breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers, but not restricted to, riparian habitats. North facing slopes, with plucking perches are critical requirements. All habitats except alpine, open prairie, and bare desert used in winter (Zeiner et al. 1990b). **Observed, winter visitant or transient**.

Cooper's hawk (*Accipiter cooperi*) [DFW WL, nesting]. Uncommon permanent resident, augmented by fall transients in the coastal district (Garrett and Dunn 1981). Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently (Zeiner et al. 1990b). **Reported** just northeast of the junction of Encinal Canyon Road and Clubhouse Drive (Malibu Golf Club Entrance). Nest tree is a coast live oak; surrounded by coastal sage scrub, chamise chaparral, ceanothus chaparral, southern willow scrub, mulefat scrub, willow/sycamore/oak/cottonwood woodland, ca walnut woodland, and native/non-native grasslands. Adult female and 3 fledglings observed in the nest tree on 5 Jul 2006 (CDFW 2010). **Expected, resident, potentially nesting**.

Ferruginous hawk (*Buteo regalis*) [DFW WL, nesting]. Rare to uncommon along the coast (Garrett and Dunn 1981). Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats (Zeiner et al. 1990b). **Potential visitant, transient**.

Golden eagle (*Aquila chrysaetos*) [DFW WL, nesting, CFP]. Uncommon resident, favoring grasslands, brushlands, deserts, oak savannas, open coniferous forest, and montane valleys, nesting in rugged, mountainous country (Garrett and Dunn 1981). Nearest reported location: Lobo Canyon. 1980 and 1981: 1 young in nest. 1982: 2 young in nest. 1983-86: 1 young in nest. 1987: nest failed. 1988: 1 young in nest. 1989: nest failed. **Observed, resident, probably not nesting on property**.

American peregrine falcon (*Falco peregrinus anatum*) [CFP]. This species is an uncommon but widespread resident in the Los Angeles region, with some influx of birds during migration (Garrett, K. L., et al, 2006). It occurs near wetlands, lakes, rivers, or other water and on cliffs, banks, dunes, mounds, and human-made structures (CDFW 2013). The nest consists of a scrape or a depression or ledge at an open site. **Potential resident, visitant, or transient, but probably nesting on property.**

Merlin (*Falco columbarius*) [DFW WL, wintering]. Uncommon fall transient and rare winter visitant. Fall migrants often pass along the immediate vicinity of the coast (e.g., over coastal estuaries) (Garrett and Dunn 1981). Seldom found in heavily wooded areas, or open deserts. Frequents coastlines, open grasslands, savannas, woodlands, lakes, wetlands, edges, and early successional stages. Ranges from annual grasslands to ponderosa pine and montane hardwood-conifer habitats (Zeiner et al. 1990b). **Potential visitant, transient**.

Prairie falcon (*Falco mexicanus*) [DFW WL, nesting]. Rare visitant to the coastal slope. Birds of open regions, shunning heavily wooded areas. Open desert scrub and grasslands are preferred, with some shifting into agricultural areas during winter (Garrett and Dunn 1981). Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannas, rangeland, some agricultural fields, and desert scrub areas (Zeiner et al. 1990b). **Expected resident, possibly nesting on property**.

White-tailed kite (*Elanus leucurus*) [SA, nesting, CFP]. Uncommon to locally fairly common resident in the coastal regions of southern California (Garrett and Dunn 1981). **Observed, possible resident, nesting, or occasional visitant**.

California gull (*Larus californicus*) [DFW WL, nesting colony]. Abundant winter visitant throughout the coastal district. An opportunistic bird which occupies a broad range of habitats; a common gull of urban centers in winter (Garrett and Dunn 1981). **Potential visitant, transient**.

Burrowing owl (*Athene cunicularia*) [SSC, burrow sites and some wintering sites]. Resident in open areas of the lowlands throughout much of the region, greatly reduced in numbers and now quite local in the coastal district (Garrett and Dunn 1981). Nearest reported location: Simi Hills--Laskey Mesa; Santa Susana Mountains—Dry Canyon. **Potential visitant, transient**.

Long-eared owl (*Asio otus*) [SSC, nesting]. Very rare transient and winter visitant along the coast (Garrett and Dunn 1981). Riparian habitat required; also uses live oak thickets and other dense stands of trees (Zeiner et al. 1990b). **Potential visitant, transient**.

Short-eared owl (*Asio flammeus*) [SSC, nesting]. Uncommon and local winter visitant along the coast, where it formerly nested. Wintering locations include Point Mugu, Sepulveda Basin (Garrett and Dunn 1981). Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands (Zeiner et al. 1990b). **Potential visitant, transient**.

Black swift (*Cypseloides niger*) [SSC, nesting]. Rare and irregular transient through coastal district, nesting at a few steep waterfall locations in the San Gabriel, San Bernardino, and San Jacinto mountains (Garrett and Dunn 1981). Breeds very locally in the Sierra Nevada and Cascade Range, the San Gabriel, San Bernardino, and San Jacinto Mts., and in coastal bluffs and mountains from San Mateo Co. south probably to San Luis Obispo Co. Nests in moist crevice or cave on sea cliffs above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats (Zeiner et al. 1990b). **Potential visitant, transient**.

Vaux's swift (*Chaetura vauxi*) [SSC, nesting]. Fairly common spring and fall transient in southern California, and rare and irregular winter visitant, primarily along the coast (Garrett and Dunn 1981). A summer resident of northern California. Breeds fairly commonly in the Coast Ranges from Sonoma Co. north, and very locally south to Santa Cruz Co.; in the Sierra Nevada; and possibly in the Cascade Range. Prefers redwood and Douglas-fir habitats with nest-sites in large hollow trees and snags, especially tall, burned-out stubs. Fairly common migrant throughout most of the state in April and May, and August and September. A few winter irregularly in southern coastal lowlands (Zeiner et al. 1990b). **Potential visitant, transient**.

Rufous hummingbird (*Selasphorus rufus*) [SA, nesting]. Fairly common to common spring transient, uncommon fall transient, and casual winter visitant[53] along the coast. In spring passage, particularly fond of flowering Eucalyptus trees and other exotic plantings, and native chaparral plants. In fall, birds along the coast are partial to flowering tree tobacco (Garrett and Dunn 1981). **Potential visitant, transient**.

Allen's hummingbird (*Selasphorus sasin*) [SA, nesting]. Breeds on the immediate coast south to Ventura County, and on the Palos Verdes peninsula, Los Angeles County. Increasing numbers found in the Los Angeles area, as at Malibu, Marina Del Rey, Newport (Garrett and Dunn 1981). **Expected, resident**.

Costa's hummingbird (*Calypte costae*) [SA, nesting]. Fairly common to common breeder in the coastal district (Garrett and Dunn 1981). **Expected, possible resident.**

Lewis' woodpecker (*Melanerpes lewis*) [SA, nesting]. Irregularly fairly common winter visitant in the interior portions of the coastal district (Garrett and Dunn 1981). **Potential visitant, transient**.

[53] Winter birds indistinguishable in field from Allen's hummingbird (Garrett and Dunn 1981).

Nuttall's woodpecker (*Picoides nuttallii*) [SA, nesting]. Common resident in woodlands in most of the coastal district (Garrett and Dunn 1981). **Observed** (abandoned residential development in northern portion of property in eucalyptus tree)**, resident, probably nesting.**

Red-breasted sapsucker (*Sphyrapicus ruber*) [SA, nesting]. Uncommon to locally fairly common winter visitant in the coastal district (Garrett and Dunn 1981). **Observed by sign, visitant, transient**.

Olive-sided flycatcher (*Contopus cooperi*) [SSC, nesting]. Uncommon spring and fall transient in lowlands. Breed primarily in open coniferous forests, but also descend wooded canyons well into the foothill portions of the coastal district. Plantings of tall trees of conifers and Eucalyptus form a marginally acceptable breeding habitat locally within the coastal district (Garrett and Dunn 1981). **Observed, visitant, transient**.

Loggerhead shrike (*Lanius ludovicianus*) [SSC, nesting]. Fairly common resident in open areas throughout the region (Garrett and Dunn 1981). A common resident and winter visitor in lowlands and foothills throughout California. Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. It reaches its highest densities in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Occurs only rarely in heavily urbanized areas, but often found in open cropland. Sometimes uses edges of denser habitats (Zeiner et al. 1990b). It may potentially occur as a breeder or migrant. **Expected, resident, potentially nesting.**

Purple martin (*Progne subis*) [SSC, nesting]. Rather rare and very local summer resident in woodlands of the foothill portions of coastal district; also a rare spring transient. For nesting, they utilize old, tall sycamores, pines, etc., often within oak woodland or open conifer forest (Garrett and Dunn 1981). **Potential visitant, transient**.

Oak titmouse (*Baeolophus inornatus*) [SA, nesting]. Common resident in oak and oak-conifer woodlands in coastal district. **Observed, resident, possibly nesting**.

Virginia's warbler (*Vermivora virginiae*) [DFW WL, nesting]. Rare but regular vagrant or transient in the lowlands, primarily in fall, usually in low brush such as fennel and tree tobacco (Garrett and Dunn 1981). **Potential visitant, transient**.

Hermit warbler (*Dendroica occidentalis*) [SA, nesting]. Fairly common transient in spring along coast, and rare winter visitant, preferring tall shaded woodlands of live oaks, and planted conifers (Garrett and Dunn 1981). **Potential visitant, transient**.

Yellow warbler (*Dendroica petechia brewsteri*) [SSC, nesting]. Common transient throughout region, and uncommon to locally common summer resident in lowland and foothill riparian woodlands, remaining rarely but regularly in lowlands in winter. Breed in tall riparian growth of cottonwoods, alders, willows, etc. (Garrett and Dunn 1981). **Observed, potential visitant, transient**.

Yellow-breasted chat (*Icteria virens*) [SSC, nesting]. Uncommon and local summer resident in riparian thickets and brushy tangles of the lowlands and lower portions of foothill canyons (Garrett and Dunn 1981). **Potential visitant, transient**.

California thrasher (*Toxostoma redivivum*) [No longer on Special Animals list 2009]. Common resident in chaparral and other brushy areas west of deserts (Garrett and Dunn 1981). **Observed,** (northeast property boundary with Mulholland Highway), **Observed, resident, probably nesting**.

Tricolored blackbird (*Agelaius tricolor*) [SSC, nesting colony]. Local resident in coastal district, common where it occurs (Garrett and Dunn 1981). Nearest reported location: Chatsworth Reservoir, Lake Sherwood (CDFW 2010). **Probably absent**.

California horned lark (*Eremophila alpestris actia*) [DFW WL]. Common transient and winter visitant in coastal district, remaining to nest locally (Garrett and Dunn 1981). **Expected winter visitant, transient**.

Summer tanager (*Piranga rubra*) [SSC, nesting]. Rare, but regular in fall, winter, and late spring along the coast, mostly from Los Angeles Co. southward (Garrett and Dunn 1981). Frequents cottonwood-willow associations of riparian habitats for breeding, feeding, cover, and other activities (Zeiner et al. 1990b). **Potential visitant, transient**.

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) [DFW WL]. Fairly common resident in suitable habitat [coastal sage scrub] through most of the coastal district (but largely absent from the coast north of Point Mugu) (Garrett and Dunn 1981). Frequents relatively steep, often rocky hillsides with grasses and forb patches. **Observed, resident, probably nesting**. (northeast of junction of SR-23 and Mulholland Highway).

Chipping sparrow (*Spizella passerina*) [SA, nesting]. Fairly common transient throughout the lowlands, although rather uncommon on the immediate coast north of Los Angeles Co. (Garrett and Dunn 1981). A common migrant and summer visitor throughout most of California, excluding Central Valley, southern deserts, and alpine areas. Winters less commonly in Central Valley and southern California lowlands. Prefers open wooded habitats with a sparse or low herbaceous layer and few shrubs, if any. Although apparently requires trees for resting and singing, and prefers trees for nesting, often forages in nearby herbaceous and open shrub habitats, including dry margins of wet meadows. Less common in breeding season in southern and interior foothills than in montane habitats, northern coastal ranges, and Great Basin. Fairly common in Imperial and Colorado River valleys in winter, but rare elsewhere. May breed or winter in orchards (Zeiner et al. 1990b). **Potential visitant, transient**.

Brewer's sparrow (*Spizella breweri*) [SA, nesting]. Uncommon fall transient and rare spring transient along the coast. Now mostly absent from former breeding grounds in southwestern California (Garrett and Dunn 1981). **Potential visitant, transient**.

Bell's sage sparrow (*Amphispiza belli belli*) [DFW WL, nesting]. Uncommon to fairly common but local resident in dense, dry chaparral in foothills of coastal district. Occurs locally close to the coast, as in the coastal ridges of the Santa Barbara area and in the western Santa Monica Mountains. Sage sparrows require vegetation of little complexity. Nominate *belli* breeds in low, dense chamise chaparral and in dry coastal sage scrub, often with stands of cactus (Garrett and Dunn 1981). **Potential resident, nesting**.

Lark sparrow (*Chondestes grammacus*) [SA, nesting]. Uncommon to fairly common breeder through much of its range in the coastal district (Garrett and Dunn 1981). **Expected, potentially nesting**.

California gray-headed junco (*Junco hyemalis caniceps*) [DFW WL, nesting]. Rare to uncommon winter visitant throughout the region, and fall transient along the coast (Garrett and Dunn 1981). The gray-headed race breeds locally in White and Grapevine Mts., and on Clark Mountain in southeastern California (McCaskie et al. 1979). **Potential visitant, transient**.

Lawrence's goldfinch (*Carduelis lawrencei*) [SA, nesting]. Fairly common summer resident in the coastal district (Garrett and Dunn 1981). Typical habitat includes valley foothill hardwood and conifer woodland, desert riparian, palm oasis, pinyon-juniper, and lower montane habitats. Breeds in open oak or other arid woodland and chaparral, near water. Rarely breeds along immediate coast (Zeiner et al. 1990b). **Potential resident, nesting**.

Mammals

Special-status bats with potential to occur at the site could roost, hibernate, or form maternity colonies in trees or man-made structures within the project limits, such as in culverts, vacant or unoccupied buildings, tree cavities, crevices, exfoliating bark, or by hanging pendant from bark or tree branches.

Not Listed:

Mexican long-tongued bat (*Choeronycteris mexicana*) [SSC]. Range of the species extends along coastal southern California from western Ventura County southward (Constantine 1998). Primarily nectar feeding species migrates to follow flowering food plants, esp. *Agave* and *Yucca*. Winters in Mexico and northern Central America. Uses caves, mines and buildings as day roosts and nursery sites. ***All* of the bat species discussed here are considered potentially present**, primarily foraging above ground, and perhaps roosting in trees thereon or adjacent. No additional speculation is provided below for the bats.

Fringed myotis (*Myotis thysanodes*) [SA]. Occurs in a wide variety of habitats from sea level to 9350 feet. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a).

Long-eared myotis (*Myotis evotis*) [SA]. Has been found in nearly all brush, woodland, and forest habitats from sea level to 9,000 feet. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a).

Small-footed myotis (*Myotis ciliolabrum*) [SA]. Found in a wide range of habitats mostly arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines and crevices. Prefers open stands in forests and woodlands. Requires drinking water. Feeds on a wide variety of small flying insects. Occurs in a wide variety of habitats, especially woodland and brushlands near water from sea level to 8900 feet. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a). Nearest location: Malibu Creek State Park, Century Lake; China Flat in the Simi Hills (CDFW 2010).

Yuma myotis (*Myotis yumanensis*) [SA]. Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices. Found in a wide variety of habitats from sea level to 11,000 feet. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a). Nearest location: Malibu Creek State Park, Century Lake; Peter Strauss Ranch (CDFW 2010).

Cave myotis (*Myotis v. velifer*) [SSC]. Found during warm months in California near the Colorado River. Three specimens from Los Angeles County (Valencia, Florence, Lancaster) extend the range of the species to coastal southern California (Constantine 1998).

Long-legged myotis (*Myotis volans*) [SA]. Woodland, forest, chaparral, coastal sage scrub, desert scrub and grassland habitats from sea level to 11,400 feet. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a).

western red bat (*Lasiurus blossevillii frantzii*) [SSC]. Roosts in forests and woodlands, and feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a). Foliage-dwelling, migratory bat occurs in California's Central Valley, foothills, and in similar areas of tree growth in southern California (Constantine 1998). Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. Nearest locations: Paramount Ranch, 2 miles east of Cornell; Peter Strauss Ranch; about 4.5 air miles nne of Malibu Beach, south and west of Cold Creek, Stunt Ranch (CDFW 2010).

western yellow bat (*Lasiurus xanthinus*) [SA]. Occurs in foothill riparian and desert riparian, wash, and oasis habitats (Zeiner et al. 1990a). Range extends to coastal southern California Los Angeles (Azusa, Inglewood, Glendale) and San Bernardino County southward (Constantine 1998).

hoary bat (*Lasiurus cinereus*) [SA]. Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water. Reported range includes the Santa Monica Mountains (Zeiner et al. 1990a). Nearest location: Peter Strauss Ranch (CDFW 2010).

California leaf-nosed bat (*Macrotis californicus*) [SSC]. Found in desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub and palm oasis habitats. Needs rocky, rugged terrain with mines or caves for roosting. Reported range ***does not*** include the Santa Monica Mountains (Zeiner et al. 1990a). Nearest location: Owensmouth (now Canoga Park), east of Cheeseboro/Palo Comado Canyons, on Los Angeles/Ventura Co. line, just off Vanowen St. Observations in a cave (CDFW 2010).

Spotted bat (*Euderma maculatum*) [SSC]. Mostly in foothills and mountains and desert regions of southern California, in a range of habitats from desert and grasslands through mixed conifer forest. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a). Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests.feeds over water and along washes. feeds almost entirely on moths. Needs rock crevices in cliffs or caves for roosting. Nearest location: Malibu Creek State Park, near rocky pool and Century Lake area has rocky cliffs which would provide preferred roosting habitat. Individuals recorded from this area 4 times in June and Aug 2003. Three (3) of the calls were recorded at dusk and the other within 1 hour after sunset, indicating a roost in the vicinity (CDFW 2010).

Pale big-eared bat (*Corynorhinus townsendii pallescens*) [SSC]. Found in a wide variety of habitats except subalpine and alpine. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a).

Pallid bat (*Antrozous pallidus pacificus*) [SSC]. Occurs in a wide variety of habitats including deserts, grasslands, shrublands, woodlands and forests from sea level to mixed conifer forests. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a). Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. Nearest reported location: China Flat, Simi Hills. Individuals detected acoustically during survey between Apr 2002 and Jul 2004. The majority of the detections in the SMMNRA were at this site.

Western mastiff bat (*Eumops perotis californicus*) [SSC]. Occurs in many open habitats including woodlands, coastal scrub, grasslands, chaparral, desert, and urban. Range in California includes Santa Monica Mountains (Zeiner et al. 1990a). Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels. Nearest location: 2 mi e Cornell, Paramount Ranch. 1-3 animals detected 31 may 1995; Malibu Creek State Park, Century Lake (Century Reservoir); Peter Strauss Ranch; China Flat in the Simi Hills.

Big free-tailed bat (*Nyctinomops macrotis*) [SSC]. Range (scattered records) extends from San Francisco Bay to Morro Bay, Santa Barbara, and coastal southern California from Los Angeles (Azusa, Burbank, Pomona) and San Bernardino counties southward (Constantine 1998).

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) [SSC]. Inhabits desert scrub, coastal scrub and early stages of forest and chaparral habitats (Zeiner et al. 1990a). **Presumed absent.**

San Diego desert woodrat (*Neotoma lepida intermedia*) [SSC]. Occurs in a variety of habitats from sea level to 8500 feet (Zeiner et al. 1990a). Found in coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops & rocky cliffs and slopes. Nearest location: West edge of Pepperdine University campus, Malibu (CDFW 2010). **Expected, resident**.

Ringtail (*Bassariscus astutus octavus*) [CFP]. Occurs in various riparian habitats, and in brush stands of most forest and shrub habitats (Zeiner et al. 1990a). **Expected, resident**.

American badger (*Taxidea taxus neglecta*) [SSC]. Occurs in a diversity of habitats throughout California, except the extreme northern coast (Williams 1986; Zeiner et al. 1990a). **Expected, resident**.

EXCLUDED SPECIES

The following special-status species are known to occur in the Santa Monica Mountains (or adjacent Simi Hills), but are considered not to have any potential to occur on the subject property, based on habitat considerations alone (federal- and/or state-listed Threatened or Endangered species indicated by asterisk):

Plants
Parish's brittlescale (*Atriplex parishii*) [CRPR 1B.1] (uncertain location)

Snails
Mimic tryonia (*Tryonia imitator*)

Spiders
Gertsch's socalchemis spider (*Socalchemis gertschi*)

Insects
Sandy beach tiger beetle (*Cicendela hirticollis gravida*)
Globose dune beetle (*Coelus globosus*)
Wandering skipper (*Panoquina errans*)

Fishes
*Tidewater goby (*Eucyclogobius newberryi*)

Amphibians
None

Reptiles
None

Birds
*California brown pelican (*Pelecanus occidentalis californicus*)
*California black rail (*Laterallus jamaicensis coturniculus*)
*Light-footed clapper rail (*Rallus longirostris levipes*)
*western snowy plover (*Charadrius alexandrinus nivosus*)
*California least tern (*Sterna antillarum browni*)
Common loon (*Gavia immer*)
American white pelican (*Pelecanus erythrorhynchos*)
Double-crested cormorant (*Phalacrocorax auritus*)
Harlequin duck (*Histrionicus histrionicus*)
Osprey (*Pandion haliaetus*)
*Bald eagle (*Haliaeetus leucocephalus*)
Black oystercatcher (*Haematopus bachmani*)
Long-billed curlew (*Numenius americanus*)
Elegant tern (*Sterna elegans*)
Forster's tern (*Sterna forsteri*)
Black tern (*Chlidonia niger*)
Black skimmer (*Rhynchops niger*)
Rhinoceros auklet (*Cerorhinca monocerata*)

*Bank swallow (*Riparia riparia*)
*Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)
Large-billed savanna sparrow (*Passerculus sandwichensis rostratus*)
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)

Mammals
Southern California saltmarsh shrew (*Sorex ornatus salicornicus*)
Southern marsh harvest mouse (*Reithrodontomys megalotis limicola*)

Appendix 5

Malibu Institute Project; A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area

The Malibu Institute Project

A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Mountains Recreation Area

By: Dr. Lee B. Kats

Introduction

This report was prepared at the request of Envicom Corporation for the Environmental Impact Report for the Malibu Institute project proposed for the existing Malibu Golf Club located at 901 Encinal Canyon Road, Malibu, CA. by Dr. Lee Kats, Professor of Biology Pepperdine University, Malibu, California.

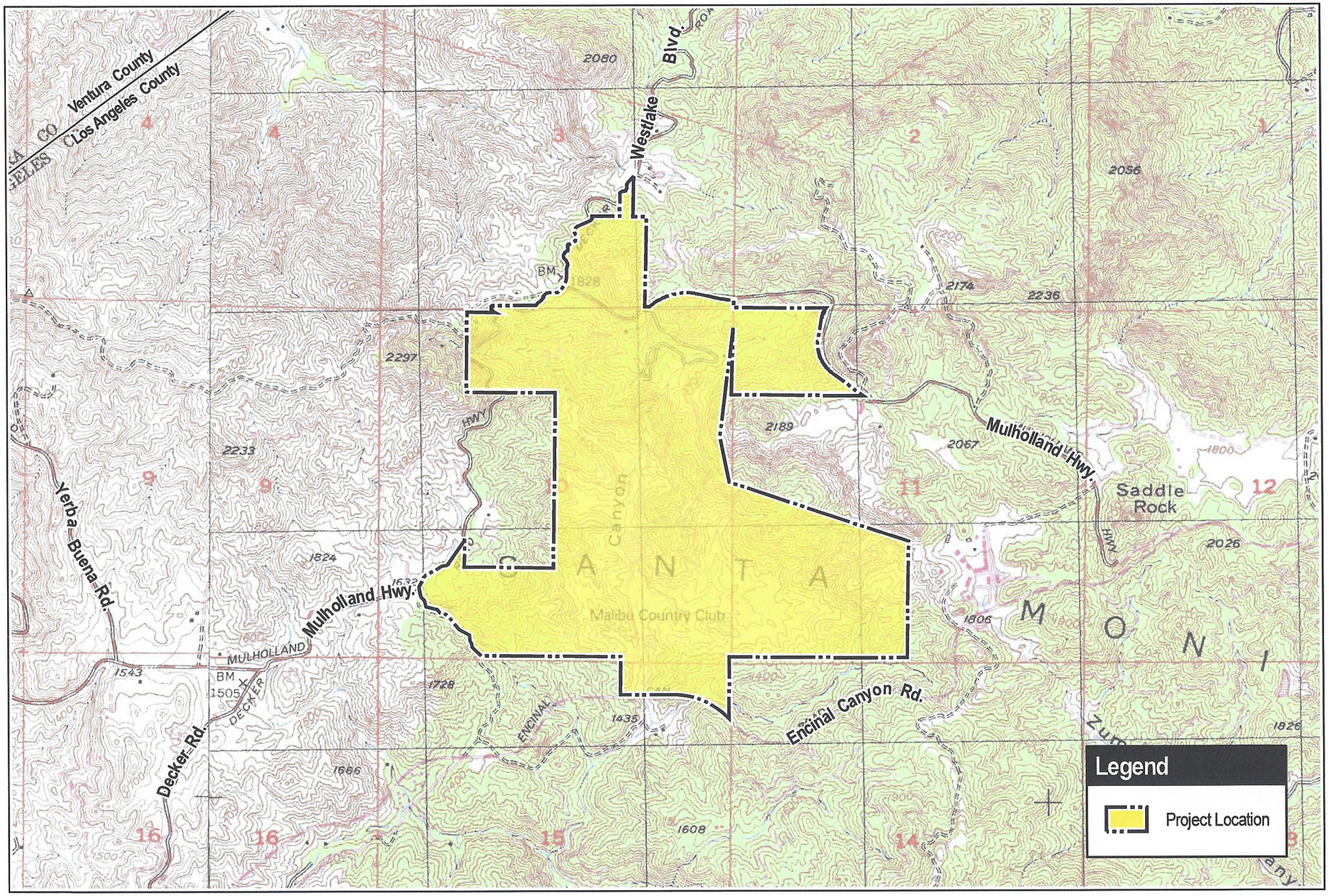
The Malibu Golf Club property consists of approximately 650 acres located in the Santa Monica Mountains of Los Angeles County, on the USGS topographic map sheet Point Dume (T.1S., R.19W., Sections 2,3,10,11 and 15), as shown on **Figure 1.**

With the exception of a small northerly extension of the property into the upper watershed of an unnamed tributary of the Carlisle Canyon, the remainder of the property is entirely within the upper watershed area of the Trancas Canyon as shown on **Figure 2.**

The Malibu Golf Club site is the headwaters of the Trancas Creek. Several large ponds were created in the late 1960's on the site apparently used as a hunting lodge associated with the large home on the northern boundary of the property, When the golf course was constructed in the mid 1970's, these ponds were incorporated into the golf course area, but the water from the ponds is not utilized by the golf course for irrigation leading to stagnation and very little turnover of the water.

Additionally, the natural creeks and tributaries were apparently relocated and the majority of what was the Trancas Creek was piped underground connecting the various ponds within the site. Over the course of the last five decades, invasive species such as crayfish and mosquito fish have been introduced into the ponds. The populations of these species are abundant throughout the ponds and the connecting creeks and wetlands on the property.

There are no ponds located north of the property boundary that feed into the existing ponds on the property; therefore there is a unique opportunity to eradicate the invasive species that exist in the ponds without the concern for the future intrusion of the species in the ponds from other creeks or tributaries off-site.

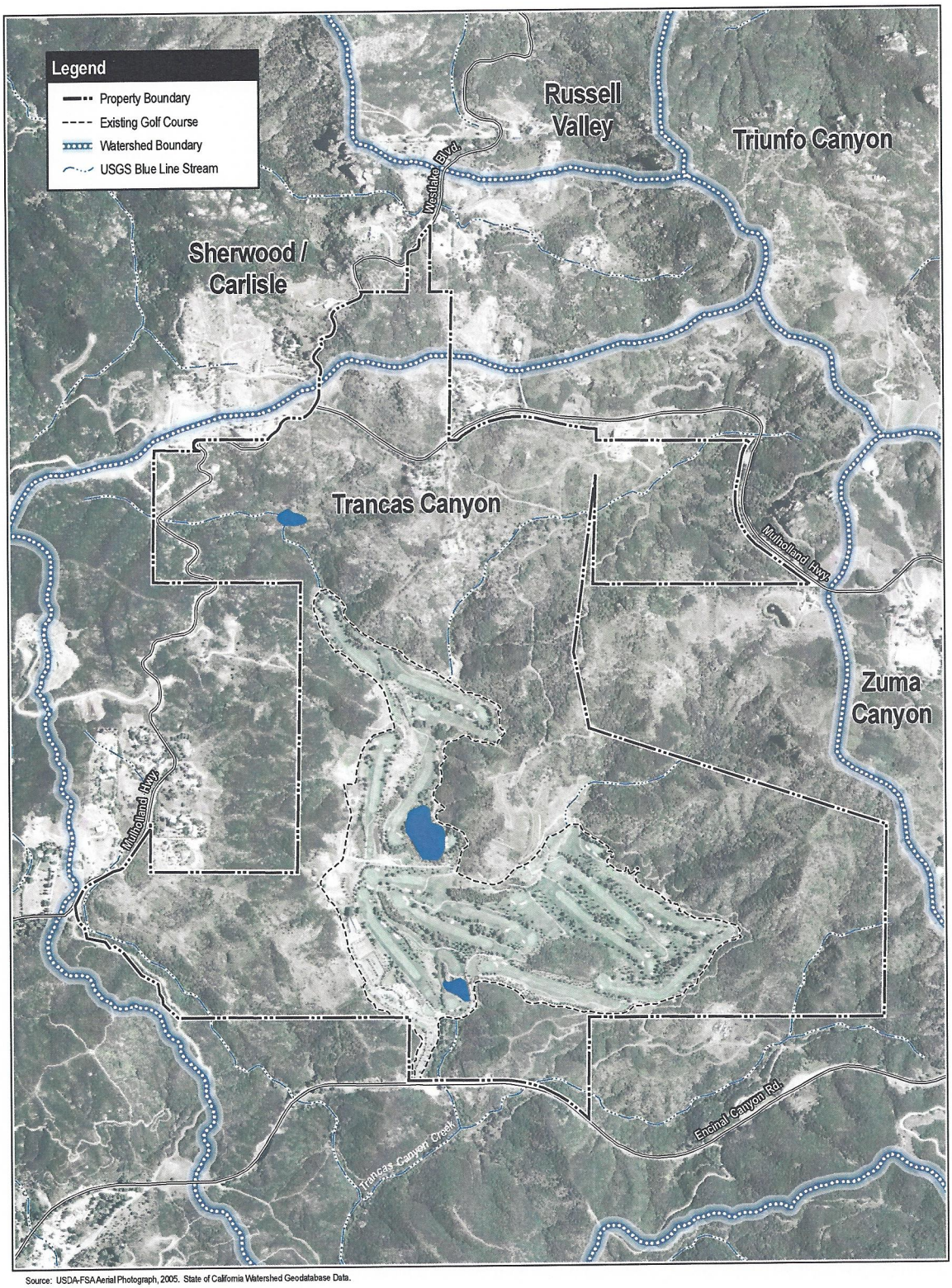


Source: USGS 7.5' Topographic Quadrangle, Point Dume.

Project Location

FIGURE 1

0 1,000 2,000 Feet



Source: USDA-FSA Aerial Photograph, 2005. State of California Watershed Geodatabase Data.

Watershed Boundaries

FIGURE 2

0 450 900 Feet

I. Invasive Species Habitat

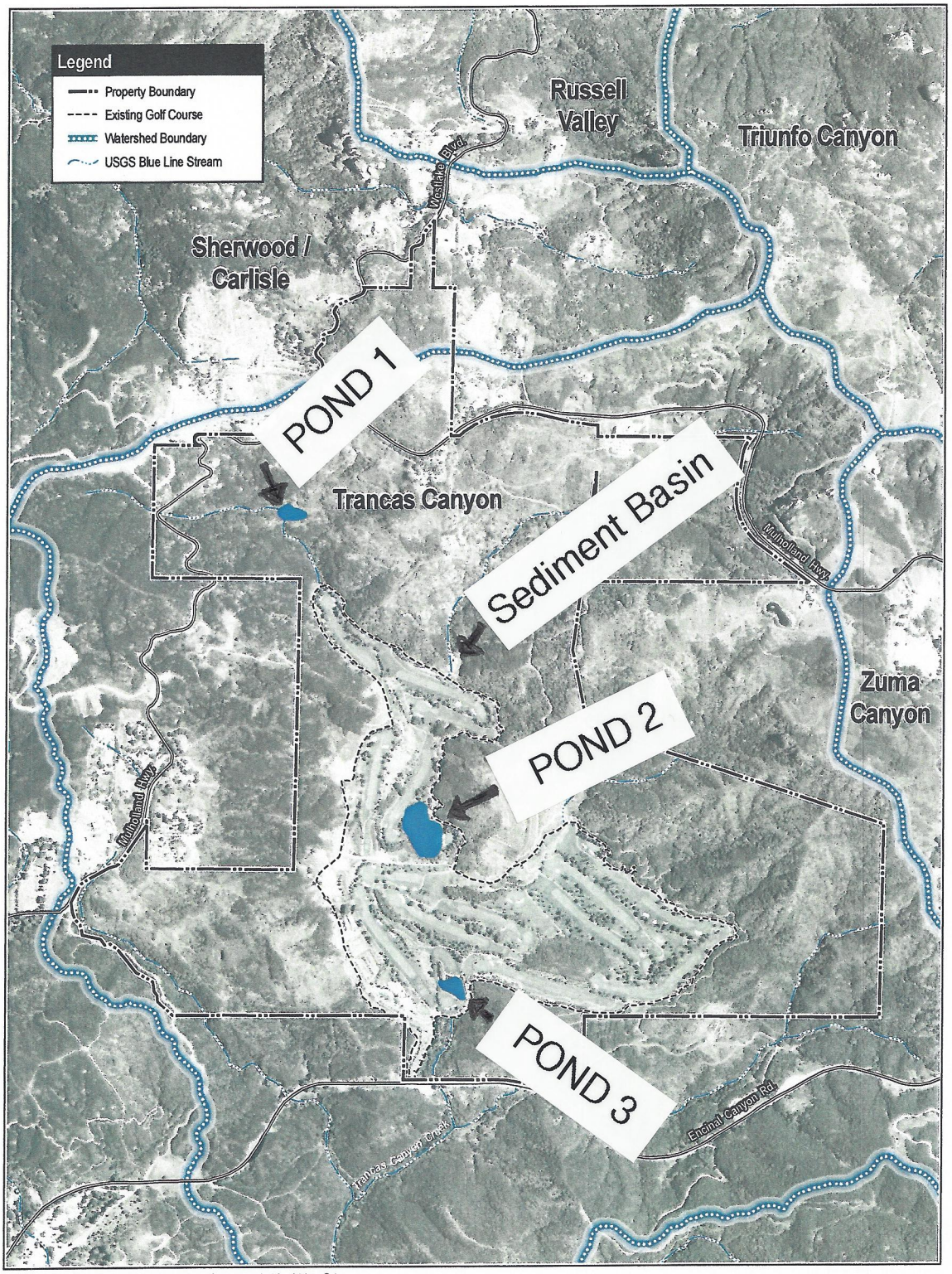
There are three major ponds or ponding areas on the property. **Figure** 3 depicts the location of the three largest areas. Pond 1 is located just north of existing golf hole #3. It is approximately 10,000 square feet of surface area and is believed to be one of the only natural (not manmade) ponds on the property. Pond 1 collects water from the northwestern portion of the watershed. More careful examination of Pond 1 is needed, but habitat for invasive species is not believed to exist.

Below the waterfall, which would be considered the headwaters of the Trancas Creek, lies a sediment basin that is approximately 18,000 square feet in surface area. The sediment basin is the first major collection area for the water after significant rainfall. The sediment basin is mostly dry year round except in large rain events and has a large diameter standpipe that allows the water to flow out through a large underground pipe to Pond 2 during the rainy season. The sediment basin does not contain the permanent water necessary to maintain suitable habitat for crayfish or mosquito fish. Between the sediment basin and pond 2 there is a small wetland adjacent to golf hole #5. This area is approximately 8-9,000 square feet in size and early surveying indicates that it contains numerous juvenile crayfish. The water from the wetland is piped underground to pond 2. Pond 2 is the largest of the three ponds and is approximately 2.5 surface acres. This pond is purported to be approximately 25-30 feet deep and may be spring fed since it does not fluctuate over the year even without significant rainfall. Pond 2 contains crayfish, mosquito fish, non-native bass, non-native catfish and potentially other invasive species.

During significant rain events, the water from Pond 2 flows through a large diameter pipe to Pond 3. Pond 3 is just over 1 surface acre in size. Pond 3 contains crayfish, mosquito fish, non-native catfish and is the last large ponding area before the water is discharged into the Trancas Creek. There is approximately 300 feet of creek on the golf club property before the creek flows under Encinal Canyon Road. Preliminary surveying of this section of the creek also indicates that invasive crayfish are abundant.

II. Trancas Creek Invasive Species Problem

Invasive species are of wide concern to ecologists and conservation biologists. Impacts of invasive species are widespread and are commonly thought to be a major contributor to observed declines in biodiversity. Invasive species are known to negatively impact native species through predation, competition, or even hybridization. Freshwater systems are thought to be particularly susceptible to species declines and extinctions, and as suggested by Ricciardi and Rasmussen



Source: USDA-FSA Aerial Photograph, 2005. State of California Watershed Geodatabase Data.

POND locations

FIGURE 3

0 450 900 Feet

(1998), understanding the negative impacts of invasive species is key to managing freshwater biodiversity.

Global amphibian declines have been well documented, and invasive species have been implicated as frequent contributors to these declines (reviewed in Kats and Ferrer, 2003). In most instances the invasions are recent enough that negative impacts of the invading species can be measured by observing population reductions of native amphibians (e.g., Tyler et al., 1998; Matthews et al., 2001). In other instances, the invasive species has persisted long enough to eliminate local native amphibian populations (Gamradt and Kats, 1996). There are few long-term examples where native amphibians and invasive predators/competitors have been shown to coexist, and in most instances where these interactions have been studied, scientists predict that the invasive will eliminate the native amphibian species (D'Amore et al., 2010).

In southern California, native amphibians have also been declining. Studies have suggested that invasive fish and crayfish have contributed to these declines in native amphibians (Gamradt and Kats, 1996; Riley et al., 2005; Miller et al., 2012). The only stream-breeding salamander in southern California is the California newt, *Taricha torosa*. The California newt is a long-lived terrestrial salamander that returns to streams each winter/spring to breed. The skin of adult newts contains a neurotoxin that protects it from most terrestrial and aquatic predators. After breeding, female newts remain in the streams to deposit small (2-3 cm diameter, 15-30 embryos each) egg masses by attaching them to rocks or vegetation. Egg masses contain the neurotoxin and are not preyed on by native aquatic predators.

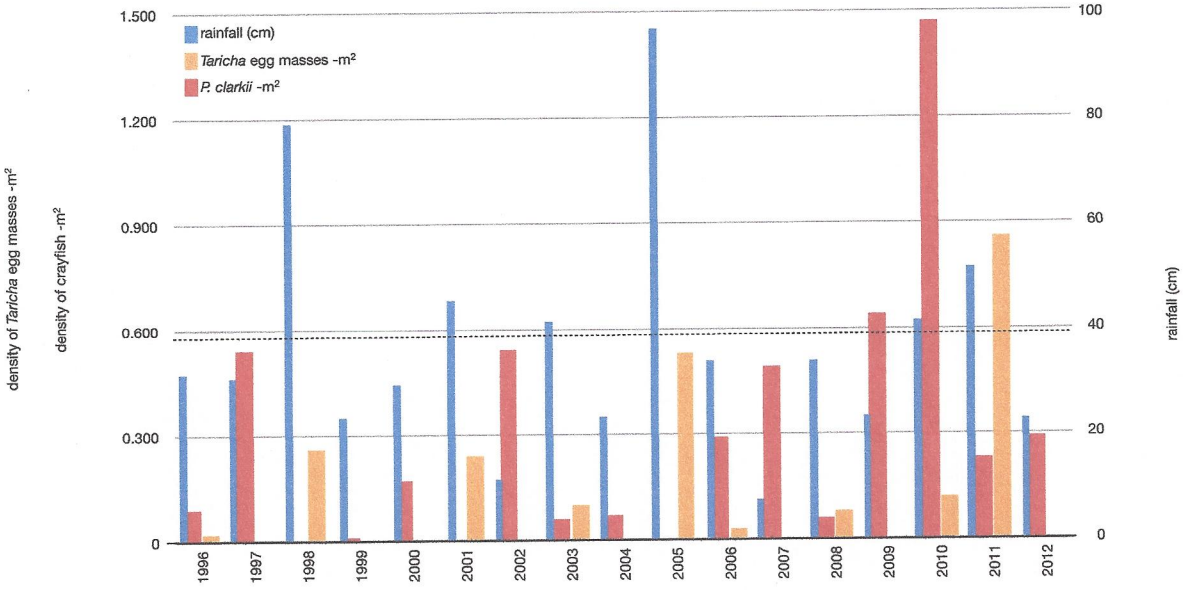
The swamp crayfish is native to the southeastern United States but is now widespread around the world (Gherardi, 2011). In some instances it has been introduced as a source of food for humans, but in southern California its introduction to local waterways is related to its widespread use as fishing bait. Despite toxins in the skin of adult newts and the egg masses that provide defense from most native predators, these invasive crayfish are known to attack and either destroy or damage adult newts, larvae and egg masses (Gamradt and Kats, 1996; Gamradt et al., 1997). For instance, over a 24 hour period no newt larvae survived crayfish predation in enclosure experiments, and previous field surveys clearly indicate that introduction of crayfish to local streams is correlated with either decline or local extinction of newt populations (Gamradt and Kats, 1996).

Most streams of the Santa Monica Mountains National Recreation Area in southern California that historically contained populations of the California newt experienced local extinction of this amphibian upon introduction of the swamp crayfish (Gamradt and Kats, 1996; Riley et al., 2005). These streams contained newts when surveyed in the 1970's but did not contain newts when surveyed again in the 1990's. In contrast, streams with no history of invasive predators, including crayfish, still contained newts. Therefore, extinction of local newt populations appears attributable to invasive predators, such as the crayfish.

Unlike most streams in the Santa Monica Mountains, where native newts have been extirpated by crayfish and other invasive species, one stream, Trancas Creek, contains both invasive crayfish and California newts that appear to persist in sympatry much longer than other streams surveyed since the 1990's. Trancas represents one of several creeks that have been monitored annually since 1996. Near the headwaters of this stream are ponds on the property of the Malibu Golf Club that have been stocked with non-native fish in the last 50 years. These ponds also contain the red swamp crayfish that likely accompanied the stocking of non-native fish. We know that these crayfish eat the eggs of native amphibians, eat native aquatic insects, eat native amphibian larvae and attack (sometimes kill) native adult amphibians.

The red swamp crayfish

Tail damage of a California newt caused by crayfish attacks in Trancas Creek. The top of the newts tail should be one smooth continuous line and each jagged mark represents a crayfish attack.



Yearly data from Trancas from 1996 to 2012. Blue represents rainfall, red crayfish density and orange newt density. In years when crayfish densities are high, for example, 1997, 2002, 2007, 2009, newt reproduction is zero.

Non-native catfish removed from the golf club property.

Despite the relatively long-term coexistence of invasive crayfish and newts in Trancas Creek, the long-term prognosis for native aquatic organisms here is not good. It is likely that newts will ultimately be extirpated in Trancas Creek if there is not a significant effort at habitat restoration.

III. Moving Toward Restoration

We are currently surveying aquatic habitats on the Malibu Golf Club property. Our early sampling confirms that crayfish inhabit these bodies of water, are reproducing in these habitats and these habitats are likely serving as a source of crayfish for the entire Trancas Creek system.

We would propose to The Malibu Institute a plan that would restore native aquatic species to the bodies of water on the Golf Club property and consequently would over time, restore native aquatic biodiversity to the entire stream. Our long term data suggest that periodic heavy rainfall washes crayfish out of the stream only for the stream to be recolonized by crayfish populations in the Malibu Golf habitats (noted above). If crayfish can be removed from the Malibu Golf habitats it is very likely that ultimately crayfish will be eliminated from the watershed.

The elimination of invasive crayfish from the watershed would restore quality aquatic habitat for native amphibians including, the California newt, the Pacific treefrog and the California treefrog. In addition, the two striped garter snake

is dependent on native frogs for prey and they also would potentially see recovery. The California newt, the California treefrog and the two-striped garter snake are all either currently species of concern in California or have been considered so in the past. In addition, the elimination of crayfish would restore habitat for a multitude of native aquatic insects that are dependent on local freshwater streams for habitat. These include: mayflies, dragonflies, damselflies, stoneflies, diving beetles, aquatic bugs, crane flies, and water penny aquatic beetles.

We would propose a program that would have The Malibu Institute de-water the current aquatic habitats to properly remove invasive crayfish. The de-watering process would take place during the construction of the proposed new golf course and could be done over a period of several months to allow the habitat to completely dry. De-watering these bodies of water maximizes the probability that crayfish populations can be removed. This would also assure that non-native fish are removed as well. We currently know that invasive mosquitofish inhabit some of the bodies of water and some invasive predatory fish are also known in the larger ponds. In addition, there should be some effort to produce water movement through the restored water bodies. Water movement is natural and makes the habitat less hospitable for invasive species and for mosquito breeding.

IV. Conclusion

The program outlined above involving the de-watering of the habitat will eradicate the invasive species located on the property. Based on our examination of the species that exist in the ponds today, water quality does not seem to be a significant issue. However, substantial improvements to the water quality can be made to the Trancas Creek by the proposed redesign of the golf course and the elimination of direct drainage to the ponds in the future from the golf course turf areas. The new golf plan proposes to daylight a portion of the Trancas Creek on the property and create several areas where the water will be re-circulated to help improve water quality and control mosquito populations in the future by eliminating standing still water areas for breeding. Returning the stream completely to its original state is likely not feasible giving the enormous amount of grading that occurred decades ago during the construction of the golf course. The sediments that now surround the beginning reaches of the stream could be available for transport and erosion during heavy rainfalls if basic stream controls are altered significantly from current conditions. Additionally, the addition of sand capping in the construction of the new golf course and the proposed redirection of the direct golf course drainage to grass swale areas will definitely improve future water quality of the ponds and the downstream Trancas Creek.

In addition to removal of crayfish we would suggest a long term monitoring of aquatic species both within the property of the golf club and in Trancas Creek below the property. This long term monitoring will allow us to verify the removal of invasive species and also examine the recovery of native species. Given that we

have data since 1996 on Trancas Creek, this project offers a large opportunity to examine stream restoration at a scale that has rarely been attempted. Rarely do such long term data sets exist for streams and the opportunity to compare stream biodiversity both before the large scale removal of invasives and after presents a unique opportunity for scientific discovery.

For over 15 years I, along with scientists throughout the region have contemplated what the best plan for restoration of Trancas might be. That plan has always centered around a possible opportunity to remove invasive crayfish from the watershed. The Malibu Institute's interest in this restoration represents the best opportunity for habitat, biodiversity and water quality restoration that has been afforded Trancas Creek in the last 50 years. Invasives have already caused local extirpation of native species in several streams throughout the Santa Monica Mountains. Without this proposed restoration in Trancas, the same will most likely occur. The plan presented here presents an opportunity for restoring one of the most significant streams in the region.

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Appendix 6

Malibu Institute Project; A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area – A Report on California Newt and Western Pond Turtle Surveys (August 2013)

Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Mountains Recreation Area.

A report on California newt and Western pond turtle surveys--2013

Invasive species are of wide concern to ecologists and conservation biologists. Impacts of invasive species are widespread and are commonly thought to be a major contributor to observed declines in biodiversity. Invasive species are known to negatively impact native species through predation, competition, or even hybridization. Freshwater systems are thought to be particularly susceptible to species declines and extinctions, and as suggested by Ricciardi and Rasmussen (1998), understanding the negative impacts of invasive species is key to managing freshwater biodiversity. The on-site ponds at the Malibu Golf Club property are known to contain several species of aquatic invasive organisms, but the exact species are not currently known.

In addition to the aquatic invasives in the on-site ponds and stream course, the Malibu Golf Club property contains several habitats that could potentially be suitable habitat for aquatic vertebrates such as the California newt (*Taricha torosa*) and the western pond turtle (*Emys marmorata*). Both species are residents of streams of the Santa Monica Mountains near Malibu, California (Los Angeles County). The golf course property includes the headwaters of the perennial stream known as Trancas Creek. My students and I have surveyed aquatic species in Trancas Creek for the last 20 years. California newts are regularly found in Trancas Creek while western pond turtles are infrequently encountered in Trancas Creek.

Newt Survey

On 26 March 2013 we conducted a survey of the on-site stream course of the Golf Club most likely to be breeding habitat of California newts (*Taricha torosa*). We surveyed 75 m of upland habitat near the headwaters of the Trancas Creek. Logs, rocks and other debris were overturned to look for adult newts. None were found. We also surveyed 76 meters of the open channel stream (along hole no. 6) to look for breeding adult newts or newt egg masses. No newts were found, however, numerous invasive aquatic animals were found (> 25 crayfish and > 50 mosquitofish) that would have made the habitat unsuitable for newt breeding. We surveyed 160 m of the stream near the entrance to the Malibu Golf Club and where the stream exits the property under Encinal road. While this habitat was a natural and logical location where we historically might find evidence of breeding newts, we did not find any evidence of newts and again, there were numerous invasive species that would make the habitat unsuitable for newt breeding. In addition, we saw no macroinvertebrates that would be typical of similar locations in the mountains. However, invasive predators like crayfish and mosquitofish are known to eliminate native invertebrates as well.

Water quality	
phosphates	0.52 ppm
nitrates	none measurable
chloride	16.9 ppm
sulfates	79 ppm
temp.	13.5 C
pH	8.40
conductivity	1.42 mS/cm
DO	7.78 mg/L

On 3 June 2013, we conducted a second survey for newts. In addition to the areas and techniques used in March we also used D-nets to sweep the edges of the three largest ponds on the golf course property. These sweeps would sample newt egg masses or newt larvae. We conducted 20 net sweeps around the edges of each of the three ponds and there were no signs of newt egg masses or newt larvae. We also manually searched the edges of the ponds (by standing in the water and feeling along solid edges) for newt egg masses. These areas would have been the most likely areas to be used for egg deposition. No egg masses were found.

We again surveyed the 76 m of open channel along hole no. 6. There were no sign of adult newts, newt egg masses or newt larvae. We did see 35 Pacific treefrog tadpoles, 15 crayfish and > 50 mosquitofish.

We also surveyed the 160 m of stream near the entrance of the golf course. Again, there was no sign of adult newts, newt egg masses or newt larvae. We did see 15 crayfish and one adult Pacific treefrog that showed signs of injury. It was missing one leg and several front digits. These injuries are most likely caused by invasive crayfish attacks.

During these same survey periods, newts were active in other local streams that we survey in the Santa Monica Mountains. Our conclusion is that while there are newts further downstream in Trancas (personal observation), the current Malibu Golf Club property does not provide habitat suitable for newts.

Invasive Crayfish Sampling and Removal

Beginning in January 2013, we used mesh crayfish traps to sample and remove invasive crayfish. We placed crayfish traps into the two largest ponds on the Malibu Golf Club property. We also placed traps in the downstream section of the stream near the entrance to the property. To date we have captured and removed >600 invasive crayfish (*Procambarus clarkii*). Over 90% of these have come from the second largest pond on the course and the open channel areas of the

stream. The remainder of the crayfish have been captured in the largest pond on the property.

Incidental Bycatch

In addition to the invasive crayfish which were targeted by the traps, the traps also caught invasive catfish (*Ameiurus* sp.), largemouth bass (*Micropterus salmoides*), and bluegill sunfish (*Lepomis macrochirus*). These invasive predatory fish were captured in the two largest ponds on the property. We suspect that the greatest density of invasive predatory fish resides in the largest pond and that this explains why no crayfish are being trapped. Bass and catfish readily consume crayfish.

Other bycatch include one large adult invasive red-eared slider turtle (*Trachemys scripta*) and multiple western pond turtles (*Emys marmorata*). The invasive turtle was found in the largest pond and the western pond turtles were found in the largest two ponds. The size (see table under western pond turtle survey) of the western pond turtles (all were adults) suggest that minimal reproduction is occurring as no smaller turtles were observed. This suggests that the invasive predatory fish may be preventing the recruitment of young western pond turtles.

Western Pond Turtle Survey

From 13 June until 22 June we surveyed for turtles in the three largest ponds on the golf course property. We used collapsible mesh traps that were equipped with floats and all traps were baited with sardines. We placed 6 traps in the smallest pond, 4 traps in the middle pond and 7 traps in the largest pond. The traps were checked each day. Two adult turtles were captured (see table). In addition to the traps, we conducted visual surveys on 2 days (see table).

species	method	size	sex	disposition
wpt	bycatch-lg pond	14 cm	male	released
wpt	bycatch-lg pond	17.5 cm	female	released
wpt	bycatch-lg pond	10.5 cm	male	released
wpt	survey-sm pond	15 cm	female	PIT tagged released
wpt	survey-med pond	14 cm	male	PIT tagged released
red-eared sl	survey-lg pond	>18 cm	female	removed
15 bluegill sunfish	survey-lg pond	> 10 cm svl		moved to med pond

In addition to those caught in traps, we observed 5 turtles basking over two days of observations. One large adult was observed in the largest pond, four medium size adults in the medium size pond.

We conducted an additional trapping period from mid-July until mid August. Eleven additional western pond turtles were trapped, PIT tagged and released. There were 7 additional males and 4 additional females. All were adults ranging in size from 12.9 cm – 16.8 cm. These turtles were all captured in the two largest ponds on the property.

Western pond turtle adult and several invasive crayfish in turtle trap.

Summary

Our findings suggest that the invasive crayfish and fish predators are dictating the structure of the aquatic communities at the Malibu Golf Club property. These invasives have likely completely excluded California newts from the aquatic habitats. Further, these invasive predators are also likely limiting the reproduction of western pond turtles. The recommended de-watering of the ponds and ultimate

removal of aquatic invasive crayfish, all invasive fishes (mosquitofish, largemouth bass, catfish and bluegill sunfish) and invasive turtles (red-eared slider) will allow native species like California newts and California treefrogs to recolonize the aquatic habitats. Further, during the de-watering process, the existing adult western pond turtles can be captured and protected. We will work with turtle experts from the Los Angeles Zoo to provide temporary on-site turtle habitats during the process. After the eradication of invasive species, the turtles will be reintroduced into the ponds and most likely the pond turtles will be able to recruit young into the population. The removal of invasives will also allow many native aquatic insects (e.g., dragonflies, damselflies, diving beetles, mayflies, etc) to recolonize the aquatic habitats and restore these aquatic habitats to biota similar to other pristine areas of the Santa Monica Mountains.

Submitted by:

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Frank R. Seaver Chair in Natural Science
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Appendix 7
Qualifications of Preparers

James Anderson
Senior Biologist

Mr. Anderson has more than ten years of experience in the environmental field, including employment in the private and public sectors and work experience in biology, forestry, and Geographic Information Systems (GIS). As a biologist with Envicom Corporation, Mr. Anderson conducts biological surveys, site mapping, CEQA analysis, and other biological studies in support of permitting and entitlement review processes. His biological field experience includes rare plant surveys, vegetation mapping, identification of sensitive plant communities, bird surveys, forest health assessment, biological monitoring, and delineation of Federal, State, and local jurisdictional wetlands and riparian habitat.

Mr. Anderson's recent experience includes biological surveys, vegetation mapping, and biological impact analyses for the Calabasas Blue Residential Project Initial Study/Mitigation Negative Declaration in the City of Calabasas, the Westar Mixed-Use Project Environmental Impact Report in the City of Goleta, the Pepperdine University Campus Life Development Project Environmental Impact Report in the County of Los Angeles, and the Joint Powers Authority Solar Generation Project Initial Study/Mitigated Negative Declaration for the Las Virgenes Municipal Water District in the City of Calabasas. His other recent project experience includes the Willow Springs Phase II condominium development in Goleta, the McCrea Ranch Visitor Center Project in Thousand Oaks, the Hilton Foundation's proposed headquarters and Foursquare Gateway Church property in Agoura Hills, and the Sakaida and Sons Surface Mining Project in Sylmar.

Mr. Anderson has conducted biological surveys and biological monitoring for the North Fork Arroyo Conejo Flood Maintenance Project (a project to reduce the risk of flooding of the North Fork of Arroyo Conejo Creek at the Hill Canyon Wastewater Treatment Plant in Thousand Oaks), prepared Initial Study Biological Assessments for the County of Ventura, and performed jurisdictional delineations of Army Corps of Engineers Waters of the U.S. and California Department of Fish and Wildlife riparian habitat for the Malibu Institute Project in the Santa Monica Mountains, the Blessed Teresa of Calcutta Parish in the County of Riverside, and for Sinaloa Park (a component of the Rancho Simi Recreation and Park District within the City of Simi Valley). Mr. Anderson has also performed special-status species and habitat suitability surveys and monitored project compliance with the terms and conditions of a U.S. Fish and Wildlife Biological Opinion and California Fish and Game Code for the Santa Susana Field Laboratory Area IV Radiological Study Project, which encompassed 472 acres of habitat in the Simi Hills in Ventura County.

Mr. Anderson has extensive experience surveying plant communities in coastal southern California ecosystems. He has identified in the course of field investigations a number of sensitive plant communities and endangered, threatened, and rare plant species. Mr. Anderson worked on a vegetation map and classification of the Santa Monica Mountains and environs for the National Park Service, and performed forest inventory and forest health assessments in many California ecosystems while traveling extensively for the U.S. Forest Service. For Conservation International, he designed, implemented and evaluated surveys for monitoring endangered and threatened birds. He has attended protocol survey workshops recognized by the U.S. Fish and Wildlife Service (USFWS) for the threatened California desert tortoise (*Gopherus agassizii*) and the endangered southwestern willow flycatcher (*Empidonax traillii extimus*), as well as a workshop on the biology and management of the Threatened California red-legged frog (*Rana draytonii*). He has training in Surface Water Ambient Monitoring Training (SWAMP) aquatic bioassessment and has attended several plant identification workshops, including the rush family (Juncaceae), grass family (Poaceae), sedges (*Carex*), and others. He has completed coursework in field ornithology through the University of California, Riverside.

Mr. Anderson has provided, as a function of previous employment, GIS and cartography services for ecologists and planners. He co-produced vegetation and geology maps and managed GIS databases at the Tundra Ecosystem Analysis and Mapping Laboratory at the Institute for Arctic and Alpine Research, and has provided GIS and other technical support for trail management planning for the National Park Service.

Mr. Anderson has a Master of Environmental Science and Management with a specialization in Conservation Planning from the University of California, Santa Barbara. During his master's degree program, he worked on projects involving identification of wildlife corridors and impacts of projected future development on wildlife movement, protected area network design, and abundance estimation of endangered and threatened species. Mr. Anderson has a Bachelor of Arts degree in Geography from the University of Colorado, Boulder with a concentration in Geographic Information Science, and a certificate in Community-Based Development from the International Institute for Sustainable Development at Colorado State University, which focused on participatory practices and capacity building for community development.

Carl Wishner
Subcontracted Biologist

Mr. Wishner has over 30 years of professional experience in the study and analysis of biological and natural sciences. His technical proficiency is broad-based, including expertise in floristic and faunal surveys, focused surveys of sensitive, rare and endangered species, habitat inventory and evaluation, biological impact assessment, wetland determination, natural resource policy analysis, habitat restoration, and biological monitoring. Mr. Wishner pursued his education in the biological sciences, receiving a BS (Cum Laude) in Botany and MS in Biology from Humboldt State University. He held the position of Lecturer in Botany at the University, conducted research for the Pacific Southwest Forest and Range Experiment Station (Corvalis) and worked for several years for the U.S. Forest Service in California.

Mr. Wishner's experience with endangered plant species is considerable, having performed numerous surveys and impact analyses, and prepared salvage and restoration plans and incidental take permits for Lyon's pentachaeta at Lake Sherwood, Conejo buckwheat and Verity's dudleya at Conejo Mountain, and Blochman's dudleya at El Chorro Regional Park. He also managed biological inventories and analyses for large areas including Santa Margarita and Hearst Ranches in San Luis Obispo County, and for the Ahmanson and Jordan Ranches in Ventura County. Mr. Wishner completed comprehensive surveys over 4,000 acres at Adams Canyon in Ventura County, a botanical resource inventory of Malibu Lagoon State Beach in Los Angeles County, and prepared a Biological Resources Management Plan for the 6,000-acre Upper Las Virgenes Canyon Open Space Preserve (formerly Ahmanson Ranch) for the Santa Monica Mountains Conservancy. Mr. Wishner's botanical skills were instrumental in the establishment of the former Soka University Botanical Research Center and Nursery at the King Gillette Ranch in the Santa Monica Mountains. Mr. Wishner served for five years as Editor of *Crossosoma*, the journal of Southern California Botanists, Inc, and contributed numerous articles to the journal.

Mr. Wishner has contributed to the development of habitat restoration plans for wetland areas in the Cuyama and Santa Clara Rivers of Ventura County, El Chorro Regional Park in San Luis Obispo County, and for a soil-contaminated upland restoration site at North American Rockwell's Santa Susana Field Laboratory (Rocketdyne) in the Simi Hills of Ventura County. He is also knowledgeable in zoology, wildlife management, mycology, bryology, biogeography and biostatistical analysis (multivariate). Mr. Wishner has investigated wildlife movements in the Santa Susana Mountains of Ventura County; the effects of blasting on nesting birds-of-prey in the Santa Monica Mountains; the status of endangered reptiles and amphibians in the Santa Lucia Mountains of San Luis Obispo County; the condition of Critical Habitat for endangered mammals at Morro Bay; faunal inventory for La Purisima Mission State Historic Park; a valuation of damages assessment at Gaviota State Park for the State's Attorney General; a botanical evaluation of Malibu Lagoon State Beach and implications for the planned Lagoon restoration; and plan for restoration of lower Topanga Creek for California State Parks.

In the arena of resource planning and public policy, Mr. Wishner has a number of General Plan documents to his credit including a map-based inventory of biological resource areas within the City of Los Angeles for the City's Framework Planning process. Mr. Wishner also provides services to litigants in civil suits involving the disposition and valuation of biological resources. Mr. Wishner is frequently requested to perform critical reviews of environmental reports, in many cases for projects involved in litigation. Mr. Wishner has been instrumental in recent cases involving properties which serve as nesting habitats for the California least tern in Ventura County, habitat for wintering bald eagles at Big Bear Lake (San Bernardino County), and habitats for Stephens' kangaroo-rat in Riverside County. Mr. Wishner was also involved in comprehensive planning efforts for facilities expansion at the Santa Barbara Botanic Garden, and for long range land uses over the 6,000 acre Upper Las Virgenes Open Space Conservation Area (formerly Ahmanson Ranch), on behalf of the Santa Monica Mountains Conservancy.

As a recognized biologist and environmental professional, Mr. Wishner served for ten years on the County of Los Angeles' Significant Ecological Areas Technical Advisory Committee (SEATAC), with responsibility to review proposed projects and make recommendations to the applicants, and to the Regional Planning Department and Board of Supervisors. Mr. Wishner has served on the Board of the Los Angeles Chapter of the California Native Plant Society, on the Scientific Advisory Committee for the Cold Creek Preserve and the Mountains Restoration Trust, and as a Volunteer to the National Park Service at Santa Monica Mountains National Recreation Area, and to the Forest Service at Tahoe National Forest. Los Angeles Pierce College recognized Mr. Wishner as a Distinguished Alumnus on their 50th anniversary in 1998.

Appendix D.2

Malibu Institute Project Jurisdictional Delineation Report, Envicom Corporation 2013

JURISDICTIONAL DELINEATION AND IMPACT ANALYSIS

Malibu Institute Project
County of Los Angeles, California

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September 10, 2013

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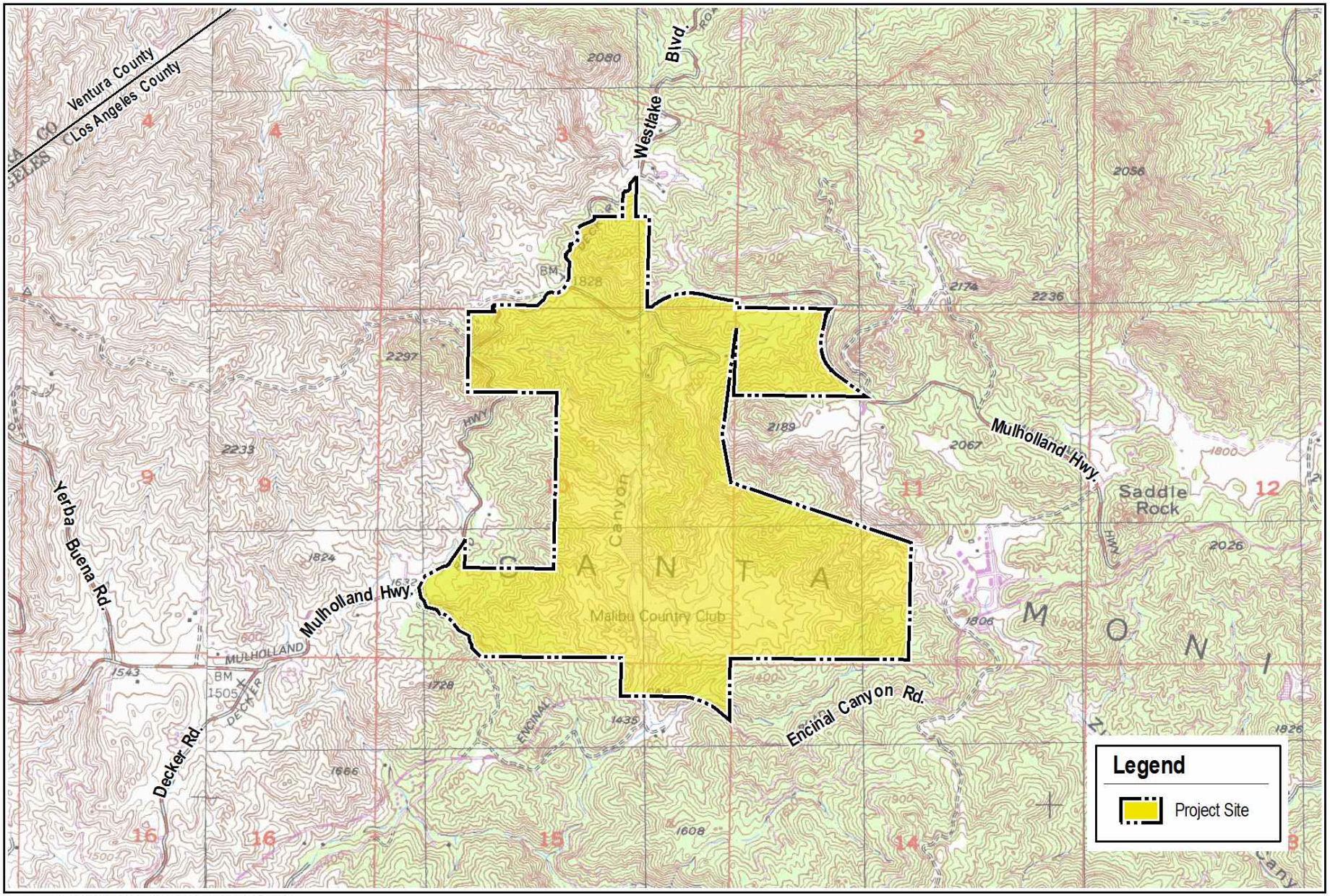
1.0 INTRODUCTION

Envicom Corporation was retained to prepare a delineation of jurisdictional waters and riparian habitat, as well as an impact analysis for the Malibu Institute Project (Project). The Project would create a sports-oriented educational retreat to complement a remodeled 18-hole golf course on a 650-acre Project site currently operated as the Malibu Golf Club. The Project would be located at 901 Encinal Canyon Road in the Santa Monica Mountains in an unincorporated Malibu area of Los Angeles County (See **Project Location, Figure 1)**. The Project site is located within Sections 3, 10, 11, and 15 in Township 1 North, Range 19 West of the USGS 7.5' Point Dume quadrangle map. For purposes of this report, Project site refers to the entire 650-acre property, while the term disturbance limits refers to the limits of the proposed future buildings, golf course, associated infrastructure, and fuel modification areas.

The intent of this report is to provide the applicant with baseline existing conditions information and an impact analysis with respect to the Project for use by Trustee Agencies in their review of the proposed impacts. The delineation of jurisdictional waters and riparian habitat focuses on the potential jurisdictional areas within the disturbance limits as well as several detention basins located outside of the disturbance limits along the perimeter of the golf course. The extent of jurisdictional waters and riparian habitat are identified pursuant to the requirements of the California Department of Fish and Wildlife (CDFW), the United States Army Corps of Engineers (USACE), and the Los Angeles Regional Water Quality Control Board (RWQCB).

PROJECT DESCRIPTION

The Malibu Institute (the Applicant) proposes to create a sports-oriented educational retreat to complement a remodeled 18-hole golf course on a 650-acre Project site currently operated as the Malibu Golf Club. The Project would provide for the development of educational and meeting facilities, along with visitor-serving overnight accommodations consisting of 40 bungalow units with four bedrooms per unit, a clubhouse with fitness and wellness center, a restaurant and lounge, a swimming pool, a golf pro-shop and grill, and associated support facilities, including a maintenance building, a golf cart storage barn, a warehouse, and a security/information building. In total, the Project proposes to construct a combined 225,087 square feet of structures, which would include the reuse and remodel of the existing 12,475-square foot clubhouse and cart barn as part of the Institute building and the removal of 11,160 square feet of existing structures, for a total increase of 201,452 square feet of structures on the Project site. An existing 875-square foot guesthouse located on the northern portion of the property along Mulholland Highway would be retained by the Project for use as a caretakers' residence. An onsite wastewater recycling system is proposed to replace existing septic tanks within the proposed development area. The wastewater recycling system would convey effluent to a proposed onsite recycled water treatment system, to be installed underground, where it would be treated to a standard suitable for use as landscape irrigation on the golf course. The Project also would redesign the existing public golf course to incorporate new "green" features, including a smart irrigation system, drought-tolerant grass, sand capping for optimum growing conditions and filtration, and re-vegetation with drought-tolerant native trees and shrubs. The Project would remove approximately 1,590 trees of non-native species, including palm trees, which were planted during the original construction of the golf course, to reduce irrigation demands and to provide habitat features and a color palette more consistent with that of the Santa Monica Mountains. All of the proposed improvements would be constructed within the previously disturbed area of the Malibu Golf Club, and all of the proposed structures would be clustered within a 20-acre development area in the southern portion of the Project site along Encinal Canyon Road. The reconfigured 18-hole golf course would be redesigned using the acreage of 17 of the existing holes on the golf course, allowing the proposed facilities, including the redesigned golf course, to be constructed



Source: USGS 7.5' Topographic Quadrangle, Point Dume.

THE MALIBU INSTITUTE PROJECT JURISDICTIONAL DELINEATION AND IMPACT ANALYSIS

ENVICOM CORPORATION

Project Location

0 1,000 2,000 Feet

FIGURE 1

within previously disturbed areas. An existing helipad would be relocated to an existing cleared pad adjacent to the golf course and would be used for public safety and fire fighting purposes by LACFD. A new water line and hydrant would be installed to provide additional water at the helicopter pad for firefighting purposes. An abandoned residence/hunting lodge beyond the limits of the proposed development area would removed due to safety and security concerns. As a part of the Project, over 450 acres of native coastal scrub and chaparral, including oak and riparian woodland, on the property surrounding the development would be left undisturbed and would become permanently dedicated open space.

The proposed grading and drainage plans would include stormwater runoff control and treatment for each of the Project components and include bioswales and other features to facilitate infiltration, or to capture runoff to be reused for on-site irrigation. A total of 185,000 square feet of non-pervious parking lot and cart path paving would be removed and replaced with pervious materials to increase infiltration and reduce stormwater runoff from the proposed development area.

The Project proposes to add pumps to the two larger ponds on the golf course to circulate the water by conveying it up-gradient from each pond approximately 700 feet, to be released within meandering channels that would be created to direct the flows back to each respective retention pond.

The golf course ponds would be temporarily dewatered to eradicate invasive animals, including predatory fish, crayfish, and mosquito fish. The dewatering process would take place during construction of the proposed new golf course and would be done over a period of several months to allow the habitat to completely dry. At this time, vegetation and bottom sediment would be removed from the ponds to reduce the risk of flooding and to remove potentially occurring toxins such as pesticides and herbicides that may have accumulated in the ponds, thereby improving the water quality leaving the project site.

METHODS

An on-site investigation to delineate the amount and type of United States Army Corps of Engineers (USACE) jurisdictional wetland and "non-wetland" Waters of the U.S., and CDFW jurisdictional streambed and riparian habitat at the site was conducted in August and December 2012 by Mr. Jim Anderson, Senior Biologist of Envicom Corporation, using the methods described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (September 2008) and definitions and protocols described by the CDFW for identifying and classifying jurisdictional streambed and riparian habitat. The *Corps of Engineers Wetland Delineation Manual* (January 1987) was also consulted for additional guidance on man-induced wetlands. The field investigation focused on areas within the proposed Project limits as well as several detention basins located along the perimeter of the existing golf course. The extent of the field investigation is shown on **Figure 2**. The delineation of the detention basins was conducted to a distance of 100 feet from the limits of the existing golf course. There are a few additional detention basins on the property that were not delineated; these facilities are located at least 100 feet from the proposed limits of disturbance and are generally far from areas that would be disturbed by the Project. During the field investigation, the golf course ponds, detention basins, drainages, and other potential jurisdictional features at the site were examined for Ordinary High Water Marks (OHWMs), riparian vegetation, and indicators of hydrophytic vegetation, hydric soils, and wetland hydrology. The boundaries of all jurisdictional areas were geo-referenced using a hand-held Trimble GPS unit with sub-meter accuracy or were delineated using aerial photographs from August 2012. The connectivity of the jurisdictional features to downstream waterbodies was also assessed.

Source: Jackson Kahn Golf Course Design, 2012.

Legend

- Project Boundary
- Limit of Ground Disturbance
- Limit of Fuel Modification (Not Shown - Pending)
- Helipad

Project Limits

0 250 500 Feet

FIGURE 2

USACE "Wetland" Waters of the United States

For an area to be classified as "wetland" Waters of the U.S. under the jurisdictional authority of the USACE, it must exhibit the three criteria of hydrophytic vegetation, hydric soils, and wetland hydrology, or must present an atypical or naturally problematic situation where one (or more) of the criteria is not met. Atypical situations are wetlands in which vegetation, soil, or hydrology indicators are absent due to recent human activities or natural events. Naturally problematic wetlands are naturally occurring wetland types that lack indicators of hydrophytic vegetation, hydric soil, or wetland hydrology periodically due to normal seasonal or annual variability, or permanently due to the nature of the soils or plant species on the site.

The presence or absence of hydrophytic vegetation, hydric soils, and wetland hydrology was evaluated at each sample location, or 'sample plot.' Wetland Delineation Data Forms – Arid West Region, Version 2.0 were used to record data. Completed forms for each sample plot are in **Appendix 1**. Representative photographs of the delineated jurisdictional areas as well as each soil test pit are presented in **Appendix 2**.

Hydrophytic vegetation

At each sample plot location, the "dominance test" was used to determine if the area exhibited a predominance of hydrophytic vegetation. To accomplish this, cover estimates were made for each plant species and for each stratum (i.e., trees, shrubs, herbs, and woody vines). The dominant plant species were determined by selecting those species that individually or collectively accounted for more than 50 percent of the total cover of vegetation in each stratum. Additional species comprising 20 percent or more of the total cover in each stratum were also considered dominant species. Strata containing less than 5% absolute cover were not sampled. The wetland indicator status of each dominant species was derived from the *2013 National Wetland Plant List* (Lichvar, R. W., 2013). As shown in **Table 1**, this list separates vascular plants into five groups (Obligate [OBL], Facultative Wetland [FACW], Facultative [FAC], Facultative Upland [FACU], and Obligate Upland [UPL]) based on the frequency of occurrence of the plant in wetland areas. The indicator status of dominant species in the plots determines whether the hydrophytic vegetation criterion for wetland determination is met.

Table 1
Wetland Indicator Status of Wetland Plants (Lichvar R.W., 2013)

Wetland Indicator Status	Definition
Obligate Wetland (OBL)	Almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface.
Facultative Wetland (FACW)	Usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
Facultative (FAC)	Occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
Facultative Upland (FACU)	Usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
Obligate Upland (UPL)	Almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

Hydric soils

The second criterion for wetland determination is the presence of hydric soils. Hydric soils are saturated, flooded, or ponded for sufficient duration to develop anaerobic conditions. Anaerobic conditions cause distinctive soil characteristics that are useful indicators for identifying hydric soils, such as accumulation of organic matter, or reduction, translocation, or accumulation of iron and other reducable elements. At each sample plot a soil pit was dug to examine the soil profile and determine if hydric soil indicators were present. Hydric soil indicators include, but are not limited to, redoximorphic features (concretions, depletion and reduced matrix), gleyed soils, and low chroma. Soils that exhibit one or more hydric soil indicators meet the hydric soils criterion for wetland determination.

Wetland hydrology

The third criterion for wetland determination is the presence of wetland hydrology. Wetland hydrology indicators are used in combination with indicators of hydric soil and hydrophytic vegetation to determine whether an area is USACE wetland. For an area to be a wetland under jurisdiction of the USACE, it must have a continuing wetland hydrological regime. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime and that hydric soils and hydrophytic vegetation are not relicts of a past hydrologic regime. Wetland hydrology indicators include, but are not limited to: direct observation of surface water or saturated soils; evidence of flooding or ponding such as watermarks, drift deposits, or sediment deposits; and soil conditions or vegetation that indicates soil saturation. However, the presence or absence of wetland hydrology indicators does not necessarily provide a basis for concluding that wetland conditions exist or do not exist at a site. The USACE technical standard for wetland hydrology requires 14 or more consecutive days of flooding or ponding, or a water table 12 inches or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10.

USACE "Non-wetland" Waters of the United States

Streams that do not exhibit hydrophytic vegetation, hydric soils, and wetland hydrology may still be subject to USACE jurisdiction as "non-wetland" Waters of the U.S., based on criteria outlined in the memorandum *Revised Guidance on Clean Water Act Jurisdiction Following the Supreme Court Decision in Rapanos v. U.S. and Carabell v. U.S.* (Environmental Protection Agency (EPA)/USACE, December 2, 2008). The extent of USACE jurisdiction of "non-wetland" Waters of the U.S. is based upon the Ordinary High Water Mark (OHWM), which is defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris.

California Department of Fish and Wildlife Jurisdictional Streambed and Riparian Habitat

The extent of CDFW jurisdiction is defined as from the top of bank to the opposite top of bank, and if applicable, outside the stream banks and to the canopy edge of riparian vegetation. Measurements from the top of the banks or to the canopy edge of riparian vegetation are typically wider than the Ordinary High Water Mark (OHWM) measurement, often substantially so.

2.0 SITE CONDITIONS

ENVIRONMENTAL SETTING

The Project site is located at mid to upper elevations on the southern flank of the Santa Monica Mountains. Topographically, the site is situated in a bowl created by the crest of the Upper Trancas Canyon drainage basin. The on-site topography ranges in elevation from peaks that reach 1,900 feet to 2,300 feet above mean sea level (MSL) in the northeast and northwest, to valley bottom elevations that fall to approximately 1,300 feet above MSL. The property consists of relatively narrow ridgelines and crests of ridge spur slopes and narrow V-shaped valleys that are rugged and youthful in appearance as is often typical of areas experiencing tectonic uplift. The widest valley landform feature on-site contains the developed Malibu Golf Club, which is located in a southern interior portion of the site near Clubhouse Drive and Encinal Canyon Road.

Vegetation typical of the southern flank of the Santa Monica Mountains is coastal sage scrub transitioning to chaparral at higher elevations. The undeveloped portions of the site that extend northerly to Mulholland Highway and the southern half of the site extending south of Encinal Canyon Road are covered with intact stands of chaparral, which are contiguous with equivalent undisturbed vegetation on adjacent private and publically-owned properties. Riparian and oak woodlands are also a component of habitats on the property and in the surrounding area. Rock outcrops and shallow bedrock features occur along the sides and crests of the higher-elevated slopes that surround the developed portions of the site.

The Project is located in the upper Trancas Canyon watershed and the headwaters of the mainstem of Trancas Creek are located to large extent on the property. Trancas Creek and several tributary drainages pass through chaparral and scrub-covered slopes to detention basins of various sizes around the perimeter of the existing golf course. After being detained in the basins, flows pass into a network of underground drains beneath the golf course. The alignment of the subsurface drainage system beneath the golf course is speculative, as we have been unable to obtain a diagram of the network. However, the underground drains apparently converge and flows are directed downstream through four perennial ponds of varying sizes located on the golf course, which contain marsh vegetation and are approximately in-line with the historical alignment of Trancas Creek. The larger ponds were created in the late 1960's when the site was apparently used as a hunting lodge and were incorporated into the golf course area when the golf course was constructed in the mid 1970s. The ponds provide wildlife habitat and also serve as flood control basins and aesthetic features on the golf course. In the current condition, flows migrate downstream through the sub-surface drains and through the inlet and outlet structures of the ponds before discharging via a large culvert to the natural Trancas Creek channel at the southern end of the golf course just northeast of Clubhouse Drive, and then through a large culvert under Encinal Canyon Road. Trancas Creek then descends through Trancas Canyon to the Pacific Ocean.

The climate at mid to upper elevations of the Santa Monica Mountains is moderate year round, with a frost-free period that ranges from 290 to 350 days and mean annual temperatures of 60 to 64 degrees F (Wasner, A. 2006). Precipitation averages 18 to 23 inches annually, and fog occurs primarily in spring (Evens, J. and Keeler-Wolf, T., 2006).

The Malibu Golf Club and Surrounding Land Uses

The Malibu Golf Club is an 18-hole public golf course with supporting amenities, two surface parking lots, and associated driveways that was constructed in the early-1970s in the central and southern regions of the Project site. Existing on-site structures associated with the Malibu Golf Club include an

approximate 12,475-square foot golf clubhouse and restaurant, maintenance structures, sheds, and an administrative office totaling approximately 7,000 square feet. Much of the existing golf course area is planted with non-native and ornamental plant species. As described, the remainder of the Project site surrounding the developed footprint of the Malibu Golf Club consists of lands with native vegetation on generally steeply sloped terrain. Several areas adjacent to the golf course have been graded in the past in connection with various development phases of the golf course.

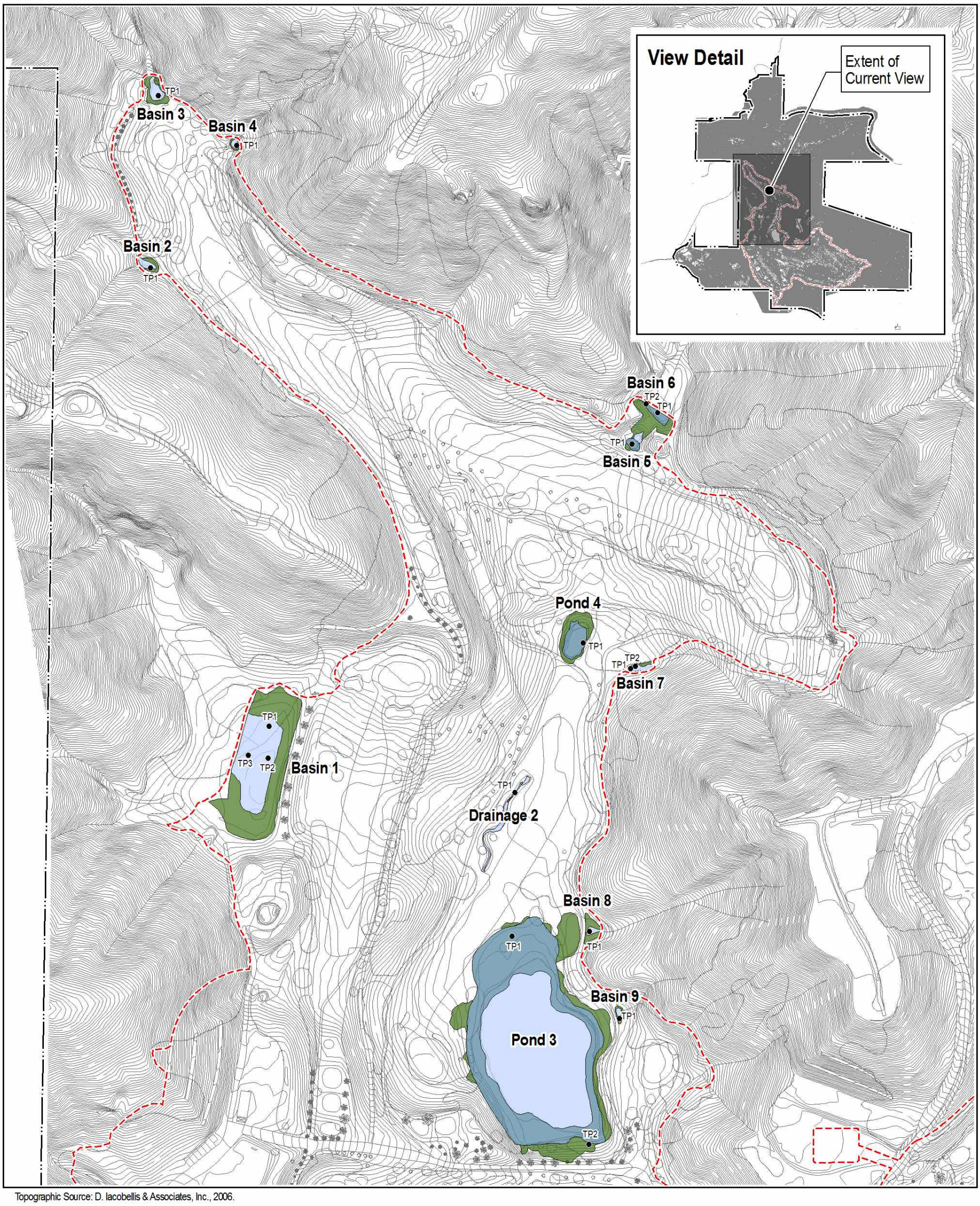
Privately owned property borders the western, northern and northeastern sides of the Malibu Golf Club property, and much of it exhibits a trend toward rural and equestrian residential development. Many of the residential properties developed in the Project vicinity are situated in rugged terrain, and often contain relatively undisturbed native habitats beyond their requisite fire-clearance zones. State of California-owned property and Camps Miller and Kilpatrick abut the southeastern corner of the site. Both State and Federally owned open space front along nearly the entire southern boundary of the Malibu Golf Club property. Most of the southern boundary of the subject property fronts along lands in public ownership at the northern extent of publicly protected core habitat, which lies within the designated "significant watershed" of Zuma/Trancas Canyon.

3.0 JURISDICTIONAL AREAS

The findings of the jurisdictional delineation are discussed below, and the area and length of the jurisdictional areas that were delineated are shown in **Table 2**. The boundaries of USACE jurisdictional waters and CDFW riparian habitat identified are illustrated on **Figures 3A, 3B, and 3C**. The jurisdictional areas within the Project disturbance limits include four ponds of various sizes on the golf course, including their aquatic, wetland, and riparian habitats; a man-made aesthetic stream feature on the golf course; and an ephemeral drainage, a small detention basin, and a seep in the vicinity of an existing water tank near the western edge of the Project limits. Although located outside of the proposed Project limits of disturbance, several detention basins located along the perimeter of the golf course were also delineated to a distance of 100 feet from the golf course boundary. A few small ephemeral drainages within the fuel modification zone near the western edge of the Project disturbance limits were determined to be non-jurisdictional, due to lack of connectivity to downstream traditional navigable waters and because the drainages are entirely crossed by upland vegetation and lack riparian habitat. The jurisdictional status and extent of the jurisdictional areas identified in this report are subject to verification by the USACE and the CDFW.

There are currently no existing permits from the regulatory agencies that regulate maintenance of the jurisdictional facilities, waters, and habitat at the site. The Applicant acquired the Malibu Golf Club property in 2006. The Applicant has not conducted cleanouts of the detention basins or maintenance of vegetation at the golf course ponds, although accumulated debris has been removed and vegetation in the detention basins has been mowed. The maintenance history of the ponds and detention basins under prior ownership of the golf club is unknown. Therefore, the history of disturbance to vegetation and soils at the ponds and detention basins prior to 2006 is unknown.

At the time of the delineation, several of the detention basins had been recently mowed, which represents an atypical situation. In some cases, the mowing made determining whether a predominance of wetland vegetation is normally present speculative. In other cases, the vegetation composition in the basin prior to the mowing was known to the delineator, at least generally if not specifically, as Envicom has also been conducting botanical surveys of the property since 2007 and conducted a spring survey prior to and in the same year as the detention basin maintenance was conducted in 2012. In addition to creating an atypical situation for vegetation, the mowing that was conducted in several of the detention basins could also have disturbed or removed indicators of wetland hydrology. Also, basin cleanouts involving sediment removal that may have been conducted under prior ownership could have removed hydric soils and hydric soil indicators.



Topographic Source: D. Iacobellis & Associates, Inc., 2006.

Legend

- Project Boundary
- Limits of Jurisdictional Delineation

CDFW Jurisdiction

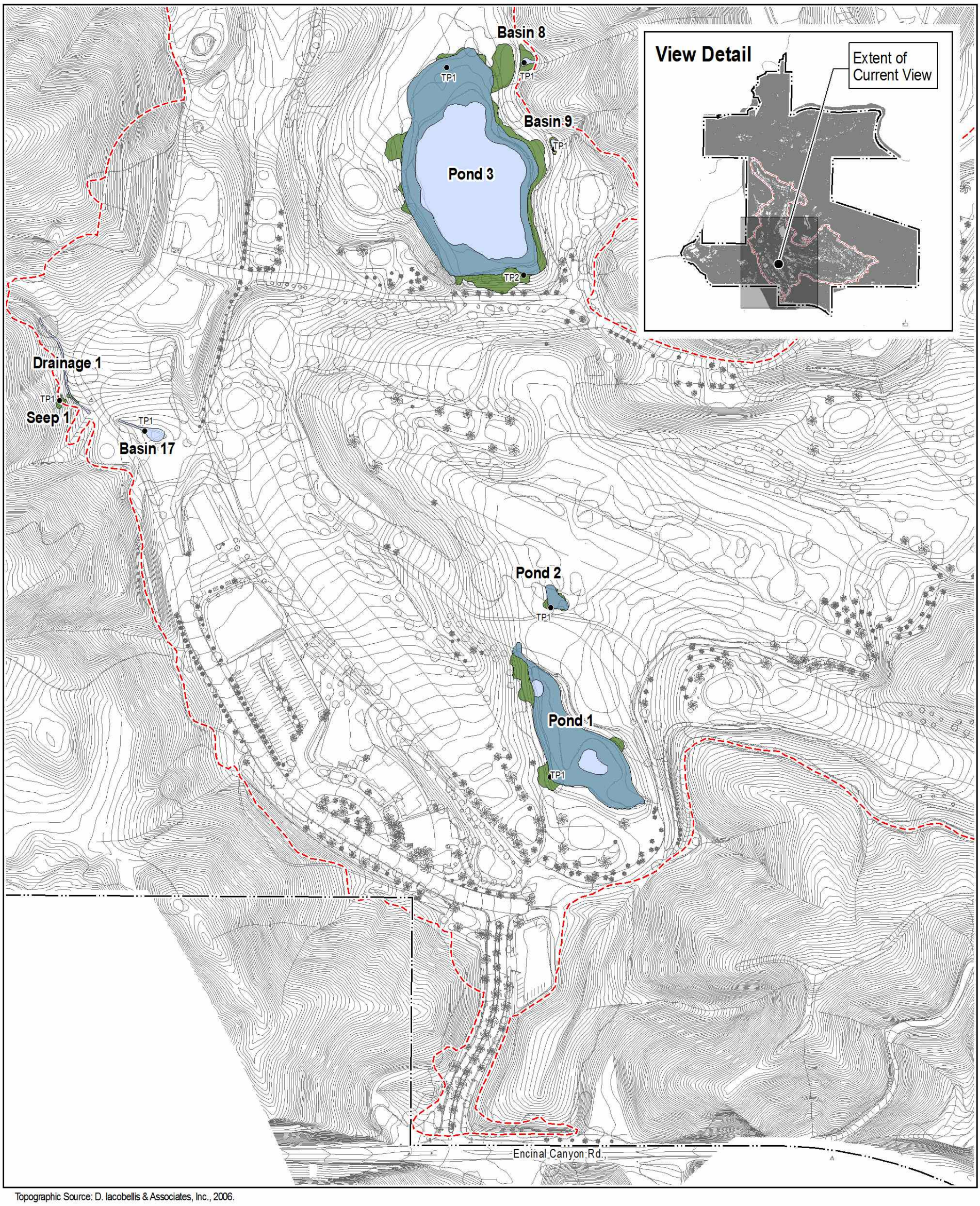
- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat

●TP# Sample Plots/Test Pits

Jurisdictional Areas

0 225 Feet

FIGURE 3A



Topographic Source: D. Iacobellis & Associates, Inc., 2006.

Legend

- Project Boundary
- Limits of Jurisdictional Delineation

CDFW Jurisdiction

- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat

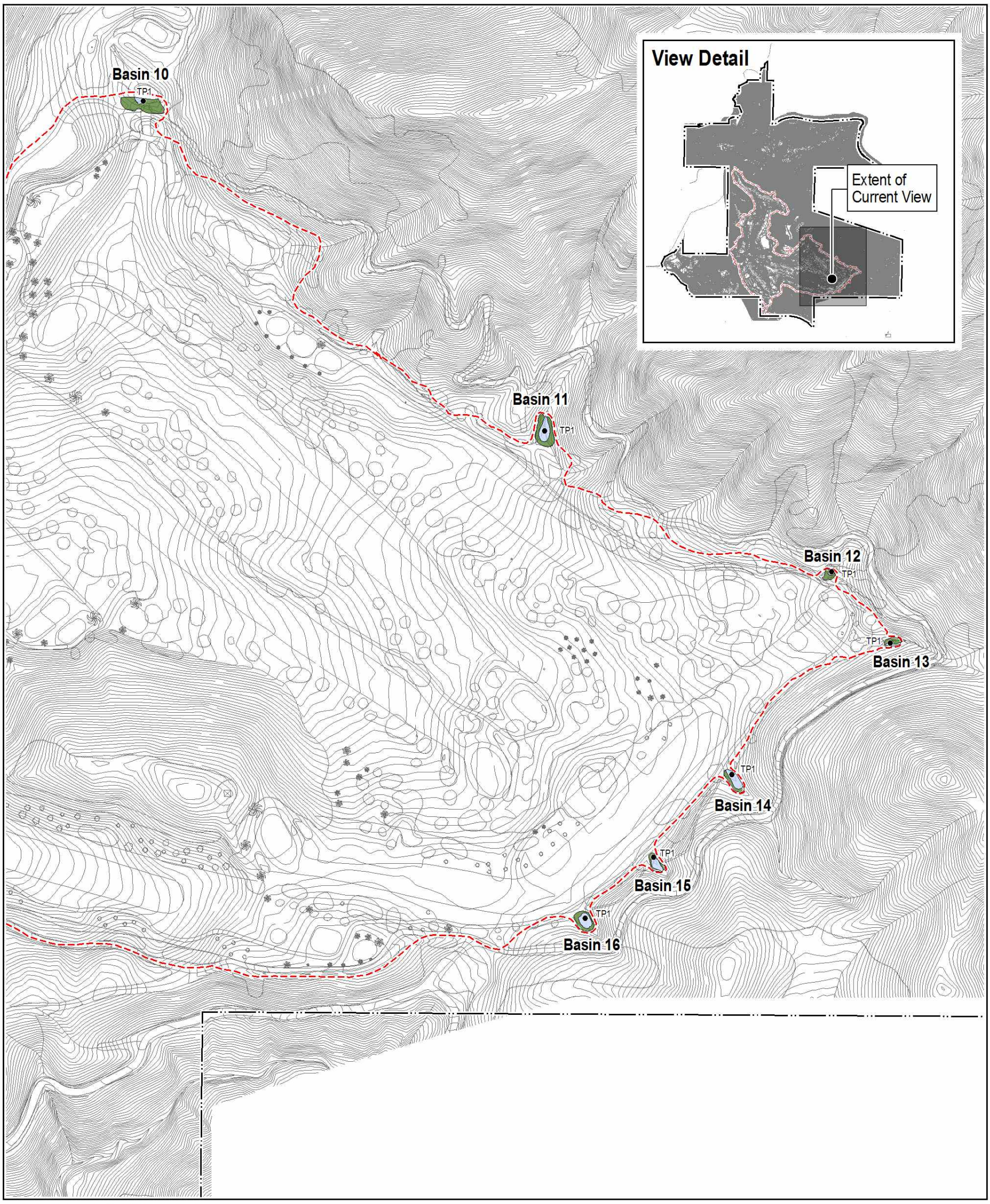
●TP# Sample Plots/Test Pits

ENVICOM CORPORATION

Jurisdictional Areas

0 225 Feet

FIGURE 3B



Topographic Source: D. Iacobellis & Associates, Inc., 2006.

Legend

- Project Boundary
- Limits of Jurisdictional Delineation

CDFW Jurisdiction

- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat

● TP# Sample Plots/Test Pits

Jurisdictional Areas

0 225 Feet

FIGURE 3C

Table 2
Existing USACE and CDFW Jurisdictional Wetlands, Waters, and Habitat

	USACE Waters of U.S.		CDFW Jurisdictional Habitat (Acres / Linear Feet)
	Wetlands (Acres / Linear Feet)	Non-wetlands (Acres / Linear Feet)	
Pond 1	0.81 / 485	0.08 / 110	1.02 / 485
Pond 2	0.04 / 75	--	0.05 / 75
Pond 3	1.26 / 560	1.56 / 395	3.26 / 595
Pond 4	0.08 / 90	--	0.15 / 125
Basin 1	--	0.40 / 235	0.94 / 365
Basin 2	--	0.01 / 44	0.02 / 55
Basin 3	--	0.03 / 57	0.06 / 76
Basin 4	--	0.01 / 23	0.02 / 29
Basin 5	0.01 / 26	--	0.10 / 36
Basin 6	0.02 / 21	0.01 / 25	0.12 / 86
Basin 7	--	0.01 / 55	0.02 / 60
Basin 8	--	0.01 / 36	0.04 / 75
Basin 9	--	0.006 / 30	0.01 / 42
Basin 10	--	0.004 / 19	0.05 / 91
Basin 11	--	0.02 / 51	0.05 / 69
Basin 12	--	0.003 / 11	0.01 / 26
Basin 13	--	0.004 / 30	0.01 / 35
Basin 14	--	0.01 / 50	0.02 / 58
Basin 15	--	0.01 / 37	0.02 / 44
Basin 16	--	0.01 / 33	0.02 / 46
Basin 17	--	0.03 / 48	0.03 / 48
Drainage 1	--	0.02 / 261	0.03 / 261
Drainage 2	0.002 / 36	0.03 / 277	0.03 / 313
Seep 1	--	--	0.01 / 30
Total Jurisdictional Acreage	**2.22 / 1,293**	**2.27 / 1,827**	**6.09 / 3,125**

As shown on Table 2 and on Figures 2A, 2B, and 2C, the four ponds (Pond 1, Pond 2, Pond 3, Pond 4), the man-made stream channel on the golf course (Drainage 2), and two detention basins (Basin 5, Basin 6) located at the northern boundary of the golf course contain a total of 2.22 acres / 1,293 linear feet of "wetland" waters of the U.S. The two largest ponds (Pond 1, Pond 3), the man-made stream channel (Drainage 2), sixteen (16) of the detention basins (Basins 1 – 4, Basins 6 – 17), and the ephemeral drainage near the western boundary of the proposed limits of disturbance (Drainage 1) contain a total of 2.27 acres / 1,827 linear feet of "non-wetland" waters of the U.S. The four ponds (Pond 1, Pond 2, Pond 3, Pond 4), the man-made stream channel (Drainage 2), all of the detention basins (Basins 1 – 17), the ephemeral drainage (Drainage 1), and a small seep on a slope in an existing fuel modification zone (Seep 1) contain a total of 6.09 acres / 3,125 linear feet of CDFW jurisdictional habitat.

All subsurface drains, drainages, ponds, and detention basins within the proposed limits of disturbance as well as the detention basins along the perimeter of the golf course are ultimately tributary to Trancas Creek and the Pacific Ocean. The delineation of these features is discussed in detail below. Plates

showing representative photos of the delineated features as well as soil test pits that were evaluated are provided in **Appendix 2**.

Pond 1

Pond 1 is a large 0.9-acre man-made pond located on the golf course approximately 300 feet northeast of the existing Malibu Golf Club clubhouse building (**Photo 1A**). The pond is connected to a large diameter subsurface storm drain (i.e., the channelized portion of Trancas Creek) that runs beneath the golf course. Flows enter the pond through a large culvert at its northwestern end and exit the pond through a large culvert at its southeastern end, which discharges to the natural Trancas Creek channel to the east of Clubhouse Drive. The pond has an earthen bottom and is inundated year-round. The majority of the pond's surface area contains dense California bulrush (*Schoenplcctus californicus*) [OBL] and cattail (*Typha* sp.) [OBL]. There is also some open water habitat of unknown depth. The marsh habitats meet all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation to be considered "wetland" waters of the U.S., while the unvegetated area below the OHWM qualifies as "non-wetland" waters of the U.S.. Exotic freshwater fish, including catfish (*Ameiurus* sp.), largemouth bass (*Micropterus salmoides*), bluegill sunfish (*Lepomis macrochirus*), mosquito fish (*Gambusia affinis*), exotic crayfish (*Procambarus clarkii),* and native western pond turtles (*Emys marmorata*), a California species of special concern, have been observed in the pond.[1]

The soils were evaluated at a test pit excavated in an area containing *Typha* and six inches of surface water along the pond's southern margin (**Photo 1B**). The soil profile consisted of a very thin (<1 cm) mucky organic surface layer, a layer of silty clay loam to two inches in depth, a layer of sandy clay loam between two and eight inches, and a layer of clay between eight and 16 inches. The matrices of all three mineral layers are "black" (Gley 1 N 2.5/) and contain a significant amount of organic material. A strong odor of hydrogen sulfide provided evidence of anaerobic conditions, but no redoximorphic features were detected after drying the soil. The area below the OHWM meets several primary indicators for wetland hydrology, including surface water, saturation (at pond margins), water marks, drift deposits, inundation visible on aerial imagery, water-stained leaves, aquatic invertebrates, hydrogen sulfide odor, and thin muck surface.

The extent of CDFW jurisdictional habitat was determined to include the wetland and open water habitats of the pond as well as the riparian vegetation growing adjacent to the pond. Pond 1 supports a limited amount of CDFW jurisdictional riparian arroyo willow (*Salix lasiolepis*) habitat at its northwestern end. Also, a few native and non-native willows, as well as small native white alders (*Alnus rhombifolia*) grow along the margins of the pond, which were also included within the delineated CDFW jurisdictional habitat.

Pond 2

Pond 2 is a small man-made pond on the golf course located approximately 140 feet north of Pond 1 (**Photo 1C**). The pond is connected to the subsurface storm drain system that runs beneath the golf course. Flows enter the pond through small culvert at its northern end and exit the pond through a small culvert at its southern end, which presumably discharges to Pond 1. Pond 2 has an earthen bottom, is inundated year-round, and supports a dense freshwater marsh consisting primarily of California bulrush [OBL] with lesser amounts of cattail [OBL]. There are a few small arroyo willow, eucalyptus, and white

[1] Kats, L., *Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains Recreation Area. A report on California newt and Western pond turtle surveys—2013*, August 2013.

alder trees growing along the wetland margin. Also, the branches of large eucalyptus trees on the golf course extend over and contribute substantial amounts of leaf litter into the wetland area. The marsh habitats meet all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation to be considered "wetland" waters of the U.S.. The soils were evaluated at a test pit excavated in dense *Schoenoplectus* and four inches of surface water along the pond's southern margin (**Photo 1D**). The soil profile consisted of a thick surface layer of organic muck with no mineral texture to three inches in depth, a layer of silty clay loam between 3 and 10 inches, and a layer of sandy clay loam between ten and 16 inches in depth. The matrix between 3 and 10 inches in depth is "black" (Gley 1 N 2.5/) and contains a significant amount of organic material. The sandy clay loam layer has a gleyed matrix (Gley 2 5B 4/1) and, therefore, as no minimum thickness is required provided that the gleyed matrix occurs within the upper 12 inches of the soil profile, the soils in the basin meet the hydric soil indicator "loamy gleyed matrix." A strong odor of hydrogen sulfide also provided evidence of anaerobic conditions. The area below the OHWM meets several primary indicators for wetland hydrology, including surface water, saturation (at pond margins), drift deposits, inundation visible on aerial imagery, water-stained leaves, aquatic invertebrates, hydrogen sulfide odor, and thin muck surface.

The extent of CDFW jurisdictional habitat was determined to include the pond and the willow, eucalyptus, and white alder trees growing along the margin of the pond.

Pond 3

Pond 3 is a large ~2.8-acre pond, or small lake, located in the central portion of the golf course grounds (**Photo 1E**). Pond 3 is connected to a large diameter subsurface storm drain (i.e., the channelized portion of Trancas Creek) that runs beneath the golf course. Flows enter the pond through culverts at its northern end and exit the pond through a large culvert and spillway at its southern end. The pond has an earthen bottom and is inundated year-round. Freshwater marsh vegetation consisting of California bulrush [OBL] and cattail [OBL] grows within the shallower water along the pond's margins. The majority of the surface area of the pond is open water habitat, which is reported to be in excess of 25 feet at its deepest point. The marsh habitats meet all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation to be considered "wetland" waters of the U.S., while the unvegetated area below the OHWM qualifies as "non-wetland" waters of the U.S.. Exotic freshwater fish, including catfish, largemouth bass, bluegill sunfish, mosquito fish, a non-native red-eared slider turtle (*Trachemys scripta*), and native western pond turtles, a California species of special concern, were observed in the pond.[2] The soils were evaluated at a test pit (test pit #2) excavated in an area of saturated soil containing *Typha* at the pond's southern margin (**Photo 1F, Photo 2A**). This sample plot is representative of the marsh habitats occurring in perennially inundated areas along the margins of the pond. The soil profile at test pit #2 consisted of a layer of sandy loam to three inches over layer of silty clay loam to 15 inches in depth. Both layers exhibit low chroma (10YR 2/1, 2.5Y 2.5/1) and contain a significant amount of organic material. An odor of hydrogen sulfide provided evidence of anaerobic conditions. The soils were dried and then inspected for redoximorphic features revealing only <1% redox concentrations within the matrix. Several primary indicators for wetland hydrology were observed in this area, including surface water, high water table, saturation (at pond margins), watermarks, inundation visible on aerial imagery, water-stained leaves, aquatic invertebrates, and hydrogen sulfide odor.

An arroyo willow stand [FACW] within an understory of scattered cattail [OBL] at the northern end of the pond was also evaluated for wetland conditions at a second representative sample plot. The arroyo willow stand grows to the north of the aforementioned dense marsh habitat, which as discussed is

[2] Ibid.

typically flooded. The ground surface below the willows is essentially flat and, at the time of the delineation, was only slightly higher than the water level in the pond. The willow stand may experience a high water table or saturation within 12 inches of the surface and appears to be inundated occasionally depending upon the water levels in the pond. The silty clay loam soils in the test pit (test pit #1) excavated in this area meet the hydric soil indicator "redox dark surface," based on low chroma values (2.5Y 2.5/1, Gley 2 10B 2.5/1) and the presence of redox concentrations ranging from 2% and 10% within the matrix and at pore linings (**Photo 2B**). Indicators of wetland hydrology in this area consisted solely of redox concentrations. Based on these findings, in addition to the bulrush-cattail marsh, the willow woodland at the pond below the OHWM was determined to be "wetland" waters of the U.S.

The extent of CDFW jurisdictional habitat at Pond 3 was determined to include the wetland and open water habitats of the pond to the outward extent of the pond's banks and riparian vegetation growing outside of the banks. Representative species found in CDFW jurisdictional riparian habitat surrounding the pond depending on the location include arroyo willow, coast live oak (*Quercus agrifolia*), mugwort (*Artemisia douglasiana*), and western goldenrod (*Euthamia occidentalis*). Some non-native trees are also included in the CDFW jurisdictional area if they grow directly adjacent to the pond. A remnant patch of upland chaparral and several non-native trees growing in the vicinity of the pond were not included as CDFW jurisdictional habitat.

Pond 4

Pond 4 is a small man-made pond in the northern section of golf course, approximately 700 feet to the north of Pond 3 (**Photo 2C**). The pond is connected to the subsurface storm drain system that runs beneath the golf course. Waters are discharged to the pond through a small pipe and exit the pond at a small culvert at its southern end, which presumably then flow to Drainage 2. The pond has an earthen bottom, is inundated year-round, and is densely vegetated. The pond supports a freshwater marsh consisting of California bulrush [OBL] and cattail [OBL], as well as arroyo willow [FACW] and red willow (*Salix laevigata*) [FACW] and other wetland/riparian indicators (e.g., *Cyperus, Eleocharis*) along its margin. The marsh and willow woodland habitats below the OHWM meet all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation to be considered "wetland" waters of the U.S. The soils in the pond were evaluated at a test pit excavated in an area containing *Schoenoplectus* and *Typha* along the pond's eastern margin (**Photo 2D**). The soil profile consisted of a surface layer of silty clay to 3 inches in depth over a layer of loamy sand to 18 inches. The colors of the silty clay and loamy sand matrices are Gley 1 10Y 2.5/1 and 5YR 3/2, respectively. There is a significant amount of litter and organic material throughout the test pit. A strong odor of hydrogen sulfide provided evidence of anaerobic conditions, but no redoximorphic features were observed. The area below the OHWM meets several primary indicators for wetland hydrology, including surface water, saturation (at pond margins), drift deposits, inundation visible on aerial imagery, water-stained leaves, salt crust, aquatic invertebrates (crayfish), and hydrogen sulfide odor. Western pond turtles have also been observed at this pond.[3]

The extent of CDFW jurisdiction at Pond 4 was determined to include the pond and the riparian habitats such as the willows, sedges, spikerushes, and other riparian plant species growing around the perimeter of the pond. Also of note but not included as CDFW jurisdictional habitat is an upland coast live oak woodland to the east of the pond.

[3] Ibid.

Basin 1

Basin 1 is a large detention basin located to the west of the western boundary of the golf course (**Photo 2E**). Large soil berms form the eastern and southern banks of the basin. The basin receives flows during significant storm events from ephemeral drainages originating on the steep, naturally vegetated slopes to the northwest and southwest of the basin. Portions of the basin have been disturbed by vehicles, which apparently pass regularly through the wide basin. The flat basin bottom is dominated by annual rabbitfoot grass (*Polypogon monspeliensis*) [FACW] (**Photo 2F**), common spikerush (*Eleocharis macrostachya*) [OBL], or upland weeds. No portion of basin meets all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation to be considered "wetland" waters of the U.S., although areas below the OHWM are "non-wetland" waters of the U.S. Three representative test pits were excavated to evaluate the soils in areas containing a predominance of potential hydrophytes, including common spikerush (test pit #1) and annual rabbitfoot grass (test pits #2 and #3). The clay soils in all three of the test pits (**Photos 3A, 3B,** and **3C**) did not exhibit hydric soil indicators. Soils in two of the three test pits had a low chroma of 2 as well as oxidized rhizospheres ranging from <1% to <5% of the soil profile, averaging <1% throughout the profile. A GoogleEarth image from January 2008 shows the basin when entirely inundated, although this degree of flooding is only anticipated during the most significant storm events. During most storm events, concentrated flows and short-term flooding probably only affect some area of the basin. There are no significant drainage patterns entering the basin; only a few shallow erosion channels were found. The extent of CDFW jurisdiction at Basin 1 was determined to include the basin to the top of the basin's banks.

Basin 2

Basin 2 is a small detention basin located at the northwestern edge of the golf course (**Photo 3D**). The basin receives flows from two ephemeral drainages that originate on naturally vegetated slopes to the west of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. At the time of the delineation, the vegetation in the basin had been recently mowed and only the very early growth of annual grasses was evident. Although the recent mowing represents an atypical situation, the basin was dominated by annual rabbitfoot grass [FACW] when observed during springtime biological surveys by Envicom earlier in 2012. Therefore, under normal circumstances the basin contains a predominance of potential hydrophytes. Although the predominance of hydrophytic vegetation indicator is met, the basin is not "wetland" waters of the U.S., as its does not exhibit indicators of hydric soil, although areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed a clay soil profile with a low chroma of 2 and redox concentrations averaging between <1 and 4% within the matrix and at pore linings **(Photo 3E**). The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 3

Basin 3 is a small detention basin located at the northwestern edge of the golf course (**Photo 4A**). The basin receives flows from an ephemeral USGS "blue-line" stream that originates on naturally vegetated slopes to the north of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. The area below the OHWM is subject to the jurisdiction of the USACE as "non-wetland" waters of the U.S., but it does not meet all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation necessary for determination as wetland waters of the U.S. Although the basin is dominated by potential hydrophytes, including cocklebur (*Xanthium strumarium*) [FAC] and annual rabbitfoot grass [FACW], and primary and secondary indicators of wetland hydrology

were evident in the bottom of the basin, including surface soil cracks, biotic crust (dry algae), drift deposits, and drainage patterns, soils at a test pit excavated in the bottom of the basin failed to exhibit hydric soil indicators. The soil profile at the test pit consisted of clay loam to a depth of 13 inches **(Photo 4B**). The clay loam exhibited low chroma (7.5YR 2.5/1), but lacked redoximorphic features or other hydric soil indicators. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 4

Basin 4 is a very small detention basin located at the northwestern edge of the golf course **(Photo 4C**). The basin receives flows from a small ephemeral drainage that originates on the naturally vegetated slopes to the northeast of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. The area within the basin below the OHWM is subject to the jurisdiction of the USACE as "non-wetland" waters of the U.S., but the basin does not meet all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation necessary for determination as wetland waters of the U.S. Although the entire bottom of the basin is strongly dominated by common spikerush [OBL], soils at a test pit excavated in the bottom of the basin failed to exhibit hydric soil indicators. The soil profile at the test pit consisted of clay loam to a depth of 15 inches **(Photo 4D**). The clay loam exhibits low chroma (10YR 2/1) but lacks redoximorphic features. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 5

Basin 5 is a small, relatively deep concave basin located at the northern edge of the golf course. The basin is in-line with Trancas Creek **(Photo 4E**). Basin 5 receives flows that are discharged through a standpipe and culvert from a larger basin (Basin 6) located to the north of Basin 5. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. The area below the OHWM in the basin is subject to the jurisdiction of the USACE as "non-wetland" waters of the U.S., but it does not meet all three criteria of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation necessary for determination as wetland waters of the U.S. Although the basin bottom is dominated by northern water plaintain (*Alisma triviale*) [OBL], and primary and secondary indicators of wetland hydrology were evident, including surface soil cracks, salt crust, inundation visible on aerial imagery, and oxidized rhizospheres, soils at a test pit excavated in the bottom of the basin failed to exhibit hydric soil indicators. The soil profile at the test pit consisted of sandy clay loam to a depth of 17 inches **(Photo 4F**). The sandy clay loam exhibited low chroma (2.5Y 3/2), but at 3% lacked the necessary amount of redox concentrations. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 6

Basin 6 is an medium-sized detention basin consisting of a concrete dam and banks located at the northern edge of the golf course to the north of Basin 5 (**Photo 5A**). The basin receives flows from the reach of Trancas Creek located to the north of the golf course, which is a USGS "blue-line" stream. Flows are then conveyed via a standpipe and culvert to Basin 5 where flows are detained before entering the surface storm drain network beneath the golf course. The delineated portion of the basin is dominated by potential hydrophytes including annual rabbitfoot grass [FACW] and/or Italian ryegrass (*Festuca perenne*) [FAC]. The delineated portion of the basin (i.e., the approximate lower southern 1/3 of the basin) below the OHWM meets all three criteria of wetland hydrology, hydric soils, and a predominance

of hydrophytic vegetation to be considered wetland waters of the U.S. Soils were evaluated at several test pits throughout the bottom of the basin. The results from two representative test pits were documented on a wetland determination data form (**Photo 5B**). A layer of clay loam found throughout the delineated portion of the basin meets the hydric soil indicator "redox dark surface," as it exhibits a low chroma of 2; averages 7% redox concentrations within the matrix and at pore linings **(Photo 5C**); is at least 4 inches thick; and, is within the upper 12 inches of the soil profile. Primary and secondary indicators of wetland hydrology observed in the basin include surface soil cracks, inundation visible on aerial imagery, salt crust, oxidized rhizospheres, sediment deposits, and drainage patterns. The extent of CDFW jurisdiction was determined to coincide with the facility, including the basin bottom and concrete banks and dam.

Basin 7

Basin 7 is a small detention basin located to the west of a chaparral vegetated slope and east of coast live oak woodland in the vicinity of the northern section of the golf course **(Photo 5D**). The basin receives flows from a small ephemeral drainage that originates on the naturally vegetated slopes to the east of the basin. Flows are then conveyed via an elevated pipe presumably to a subsurface storm drain beneath the golf course. The basin slopes toward the lower section of the basin near the elevated pipe, such that any temporary pooling in the basin would only be expected to occur at its western end. At the time of the delineation, the vegetation in the basin had been recently mowed and only the very early and unidentifiable growth of annual grasses and other herbs was evident. Although the recent mowing represents an atypical situation, the best available information suggests that under normal circumstances the basin would contain a predominance of potential hydrophytes, as the plants that could be identified to the genus or species at the time of the delineation are wetland indicators, including annual rabbitfoot grass [FACW], dock (*Rumex* sp.) [FACW, FAC], flatsedge (*Cyperus* sp.) [OBL, FACW], spikerush (*Eleocharis* sp.) [OBL, FACW], and mulefat (*Baccharis salicifolia*) [FAC], and because TeraCor found the basin to be dominated by annual rabbitfoot grass [FACW] during a field investigation in 2006/2007. Although the predominance of hydrophytic vegetation indicator may be met and indicators of wetland hydrology were observed, including minor surface soil cracks, a small amount of salt crust, and inundation visible on aerial imagery, no portion of the basin qualifies as wetland waters of the U.S., as it does not exhibit indicators of hydric soil. Two test pits excavated in the clay loam soil in the bottom of the basin revealed a soil profile that is upland in appearance **(Photo 5E, Photo 5F**). Prolonged inundation or saturation is not expected in the basin. However, areas below the OHWM are "non-wetland" waters of the U.S. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 8

Basin 8 is a small, shallow detention basin located along the edge of the golf course to the east of Pond 3 **(Photo 6A**). The basin receives flows from a small ephemeral drainage that originates on the naturally vegetated slopes to the east of the basin. A small, elevated outflow pipe in the basin appears to convey stormwater from the basin to Pond 3. At the time of the delineation, the vegetation in the basin had been recently mowed and, other than small amounts of Bermuda grass (*Cynodon dactylon*) [FACU] and curly dock (*Rumex crispus*) [FAC], only the very early growth of unidentifiable annual grasses and other herbs was evident. The recent mowing represents an atypical situation and the composition of the vegetation in the basin prior to the mowing is unknown. TeraCor found the basin contained 70% relative cover of the wetland indicator species annual rabbitfoot grass [FACW] in 2006/2007. Based on the current condition of the basin and the expected amount, frequency, and duration of inundation, in our judgment the basin under normal circumstances does not contain a predominance of potential hydrophytes at any time of year. Regardless of whether or not the hydrophytic vegetation indicator is met, Basin 8 is not wetland waters of the U.S., as its does not exhibit indicators of hydric soil, although areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile

consisted of clay to 3 inches over a rocky layer of sandy loam mixed with clay to 14 inches in depth. The clay exhibits low chroma (10YR 3/2) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 6B**). Other than the fact that the basin receives flows from an ephemeral drainage during at least some storm events, no wetland hydrology indicators were observed. Indicators of wetland hydrology could have been disturbed during the recent mowing of the vegetation in the basin. Only occasional, short-term inundation of the basin is expected in a normal year. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 9

Basin 9 is a small, shallow detention basin located along the edge of the golf course to the east of Pond 3 **(Photo 6C**). The basin receives flows from a small ephemeral drainage that originates on the naturally vegetated slopes to the east of the basin. A small culvert at the downstream end of the basin appears to convey stormwater from the basin to Pond 3. At the time of the delineation, the vegetation in the basin had been recently mowed and only the very early growth of unidentifiable annual grasses and other herbs was evident. The recent mowing represents an atypical situation and the composition of the vegetation in the basin prior to the mowing is unknown. TeraCor found the basin to be dominated by upland species in 2006/2007. Based on the current condition of the basin and the expected amount, frequency, and duration of inundation, under normal circumstances the basin probably does not contain a predominance of potential hydrophytes at any time of year. Regardless of whether or not the hydrophytic vegetation indicator would be met, Basin 9 is not wetland waters of the U.S., as its does not exhibit indicators of hydric soil, although areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of clay to 14 inches in depth. The clay exhibits low chroma (10YR 3/2) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 6D**). Other than the fact that the basin receives flows from an ephemeral drainage during at least some storm events, no wetland hydrology indicators were observed, although indicators of wetland hydrology could have been disturbed during the recent mowing of the basin. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 10

Basin 10 is a small detention basin located at the northeastern edge of the golf course (**Photo 6E**). It is the third of a series of three basins that are in-line with a USGS "blue-line" stream that originates on the naturally vegetated slopes to the northeast of the basin. The other two basins, which are upstream from Basin 10, probably retain the flows from this drainage, as they are relatively large and would not discharge to Basin 10 unless overtopped. Basin 10 therefore only receives some runoff from surrounding slopes and a short drainage located between Basin 10 and the detention basin to the north, which is densely vegetated with mulefat. The other two basins were not delineated, as they are more than 100 feet from the golf course. Flows passing through the basin standpipe discharge via two culverts directly onto the golf course grounds. At the time of the delineation, the vegetation had been recently mowed and the basin was barren. Although the recent mowing represents an atypical situation, the best available information suggests under normal circumstances the basin would contain a predominance of potential hydrophytes. The basin appeared to contain a predominance of hydrophytes during biological surveys of the site by Envicom in Spring 2012, and TeraCor found the basin to be dominated by cattail (*Typha* sp.) [OBL] and annual rabbitfoot grass [FACW] in 2006/2007. Although the predominance of hydrophytic vegetation indicator may therefore be met, and primary and secondary indicators of wetland hydrology were observed, including surface soil cracks, inundation visible on aerial imagery, and drift deposits, no portion of the basin qualifies as wetland waters of the U.S., as the basin does not exhibit indicators of hydric soil. However, areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of clay to four inches over a layer of sandy

loam to ten inches in depth. The clay exhibits low chroma (10YR 3/2) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 6F**). The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 11

Basin 11 is a small detention basin located at the northeastern edge of the golf course **(Photo 7A**). The basin receives flows from a small ephemeral drainage that originates on the naturally vegetated slopes to the northeast of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. At the time of the delineation, the vegetation in the basin had been recently mowed and only the very early growth of unidentifiable annual grasses and other herbs was evident. Although the recent mowing represents an atypical situation, the best available information suggests under normal circumstances the basin would contain a predominance of potential hydrophytes. TeraCor found the basin to be dominated by annual rabbitfoot grass [FACW] in 2006/2007. Although the predominance of hydrophytic vegetation indicator may therefore be met, and two secondary indicators of wetland hydrology were observed, including drift deposits and drainage patterns, no portion of the basin qualifies as wetland waters of the U.S., as the basin does not exhibit indicators of hydric soil. However, areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of clay loam to 12 inches in depth. The clay exhibits low chroma (10YR 2/2) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 7B**). The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 12

Basin 12 is a very small detention basin located at the northeastern edge of the golf course **(Photo 7C**). The basin receives flows from a concrete swale and a small ephemeral drainage that originates on the naturally vegetated slopes to the northeast of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. At the time of the delineation, the vegetation in the basin had been recently mowed and lacked vegetation. Although the recent mowing represents an atypical situation, the best available information suggests under normal circumstances the basin would not contain a predominance of potential hydrophytes. Vegetative cuttings found in the basin bottom at the time of the delineation were from upland mustards, grasses, and shrubs. Also, TeraCor found the basin to be dominated by upland species in 2006/2007. Regardless of whether or not the hydrophytic vegetation indicator is met, the basin does not contain wetland waters of the U.S., as its does not exhibit indicators of hydric soil, although areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of sandy clay loam to 14 inches in depth. The sandy clay loam exhibits low chroma (10YR 3/2) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 7D**). Other than the fact that the basin receives flows from an ephemeral drainage during at least some storm events, no wetland hydrology indicators were observed, although wetland hydrology indicators could have been disturbed during the recent mowing of the vegetation in the basin. Only occasional short-term inundation of the basin is expected in a normal year. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 13

Basin 13 is a small detention basin located at the northeastern edge of the golf course **(Photo 7E**). The basin receives flows from a small ephemeral drainage that originates on the hillslopes to the east of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf

course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. The basin slopes toward the lower section of the basin near the standpipe, such that any temporary pooling in the basin would only be expected at its western end. At the time of the delineation, the vegetation had been recently mowed and the basin lacked vegetation. Although the recent mowing represents an atypical situation, the best available information suggests under normal circumstances the basin does not contain a predominance of potential hydrophytes. The basin contained upland thistles, mustards, and shrubs when observed during biological surveys of the site by Envicom in Spring 2012. Regardless of whether or not the wetland vegetation indicator is met, no portion of the basin qualifies as wetland waters of the U.S., as the basin does not exhibit indicators of hydric soil. However, areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of clay loam to 15 inches in depth. The clay loam exhibits low chroma (2.5Y 3/2) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 7F**). Other than the fact that the basin receives flows from an ephemeral drainage during at least some storm events, no wetland hydrology indicators were observed. Only occasional short-term inundation of the basin is expected in a normal year. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 14

Basin 14 is a small detention basin located at the southeastern edge of the golf course **(Photo 8A**). The basin receives flows from concrete swales and a small ephemeral drainage that originates on a naturally vegetated slopes to the southeast of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. The basin slopes toward the lower section of the basin near the standpipe, such that any temporary pooling in the basin would be expected to occur at its northern end. At the time of the delineation, the vegetation in the basin had been recently mowed and except for numerous "stumps" of cut long-leaved rushes (*Juncus macrophyllus*) [FACW] only the early and unidentifiable new growth of grasses and other herbs was evident. Although the recent mowing represents an atypical situation, the best available information suggests under normal circumstances the basin contains a predominance of potential hydrophytes. The basin was dominated by long-leaved rush [FACW] when observed during biological surveys of the site by Envicom in Spring 2012. Also, TeraCor found the basin to be dominated by annual rabbitfoot grass [FACW] in 2006/2007. Although the predominance of hydrophytic vegetation indicator may therefore be met, no portion of the basin qualifies as wetland waters of the U.S., as the basin does not exhibit indicators of hydric soil. However, areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of clay loam to 14 inches in depth. The clay loam exhibits low chroma (10YR 3/2) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 8B**). Other than the fact that the basin receives concentrated runoff from an ephemeral drainage and concrete swales during at least some storm events, no wetland hydrology indicators were observed, although wetland hydrology indicators could have been disturbed during the recent mowing of the vegetation in the basin. Only occasional short-term inundation of the basin is expected in a normal year. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 15

Basin 15 is a small detention basin located at the southeastern edge of the golf course **(Photo 8C**). The basin receives flows from concrete swales and erosion channels. No natural drainages discharge into the basin. Flows are conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. The basin slopes toward the lower section of the basin near the standpipe, such that any temporary pooling in the

basin would be expected to occur at its northern end. At the time of the delineation, the vegetation in the basin had been recently mowed and only the early and unidentifiable new growth of grasses and other herbs was evident. Although the recent mowing represents an atypical situation, the best available information suggests under normal circumstances the basin contains a predominance of potential hydrophytes. TeraCor found the basin to be dominated by annual rabbitfoot grass [FACW] in 2006/2007. Although the predominance of hydrophytic vegetation indicator may therefore be met, no portion of the basin qualifies as wetland waters of the U.S., as the basin does not exhibit indicators of hydric soil. However, areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of clay loam to 15 inches in depth. The clay loam does not exhibit low chroma (10YR 3/3) and the entire profile lacks redoximorphic features and is upland in appearance **(Photo 8D)**. Other than the fact that the basin receives concentrated runoff from erosion channels and concrete swales during at least some storm events, no wetland hydrology indicators were observed, although wetland hydrology indicators could have been disturbed during the recent mowing of the vegetation in the basin. Only occasional short-term inundation of the basin is expected in a normal year. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 16

Basin 16 is a small detention basin located at the southeastern edge of the golf course **(Photo 8E)**. The basin receives flows from concrete swales and a small ephemeral drainage that originates on a naturally vegetated slopes to the southeast of the basin. Flows are then conveyed via a standpipe to the subsurface storm drain network beneath the golf course. If the basin were to be overtopped, water would spread overland onto the golf course grounds. At the time of the delineation, the vegetation in the basin had been recently mowed and only the early and unidentifiable new growth of grasses and other herbs was evident. Although the recent mowing represents an atypical situation, the best available information suggests under normal circumstances the basin contain a predominance of potential hydrophytes. TeraCor found the basin to be dominated by annual rabbitfoot grass [FACW] in 2006/2007. Although the predominance of hydrophytic vegetation indicator may therefore be met, no portion of the basin qualifies as wetland waters of the U.S., as the basin does not exhibit indicators of hydric soil. However, areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin showed the soil profile consisted of clay loam to 15 inches in depth. The clay exhibits low chroma (10YR 3/3) but the entire profile lacks redoximorphic features and is upland in appearance **(Photo 8F)**. Other than the fact that the basin receives concentrated runoff from an ephemeral drainage and concrete swales during at least some storm events, no wetland hydrology indicators were observed, although wetland hydrology indicators could have been disturbed during the recent mowing of the vegetation in the basin. Only occasional short-term inundation of the basin is expected in a normal year. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Basin 17

Basin 17 is a small detention basin located near the western edge of the golf club development to the east of an existing water tank and Trancas Lake Drive **(Photo 9A)**. The basin receives flows from a small ephemeral drainage (Drainage 1) that originates on the naturally vegetated slopes to the northwest of the basin. The ephemeral drainage has been realigned to flow parallel to Trancas Lake Drive and to then pass through a culvert beneath the road to the basin. The basin also receives regular inputs of runoff from a site where golf carts are washed, which is located just west of the basin along Trancas Lake Drive. The vegetation composition of the basin is influenced more by the regular inputs of nuisance water then stormwater runoff from the ephemeral drainage. The outflow culvert at the basin is substantially elevated such that water likely never discharges from the basin, and rather only pools temporary before infiltrating into the ground and evaporating. Any flows entering the outflow culvert would pass through the golf club

storm drain system and eventually discharge to Trancas Creek. At the time of the delineation, the vegetation in the basin had been recently mowed. Prior observations of the basin between 2009 and 2012 by Envicom suggest that under normal circumstances the basin contains a mix of potential hydrophytes and upland species. At the time of the delineation, the basin was dominated by the non-native common purslane (*Portulaca oleracea*) [FAC]. Although the predominance of hydrophytic vegetation indicator may therefore be met, and primary and secondary indicators of wetland hydrology were observed, including salt crust, water marks, sediment deposits, and drift deposits, no portion of the basin qualifies as wetland waters of the U.S. However, areas below the OHWM are "non-wetland" waters of the U.S. A test pit excavated in the bottom of the basin revealed a soil profile that consisted of loam to 6 inches over silty clay to 14 inches in depth **(Photo 9B)**. The upper nine inches of the profile exhibits low chroma (10YR 3/2, 5YR 3/2), but redox concentrations in the matrix and at pore linings only averaged <1%. Redox concentrations are more prevalent at 15% between 9 and 10 inches in depth within a thin layer of silty clay, but the chroma (2.5Y 4/3) is too high to meet any hydric soil indicator. The extent of CDFW jurisdiction was determined to coincide with the basin and its banks.

Drainage 1

Drainage 1 originates on the naturally vegetated slopes to the west of the Malibu Golf Club property and drains in a southeasterly direction to Trancas Lake Drive at the western edge of the golf club development. The drainage, which is ephemeral, then flows parallel to Trancas Lake Drive and passes through a culvert beneath the road to Basin 17. The reach of the drainage that parallels Trancas Lake Drive is within a fuel modification zone. The drainage is crossed by upland vegetation, except for a very small patch of willow and mulefat that grows in the channel at the base of the slope below Seep 1. Vegetation within and surrounding the channel in this area is normally cleared for fuel modification purposes. The drainage does not contain wetland "waters of the U.S.," but it is "non-wetland" waters of the U.S. Also, the bed and banks of the drainage to the outward extent of the canopies of riparian vegetation are under the jurisdiction of the CDFW.

Drainage 2

Drainage 2 is a man-made aesthetic stream feature on the golf course that is located between Pond 3 and Pond 4 (**Photo 9C**). The stream is an approximately 300-foot "daylighted" section of the underground storm drain network that runs beneath the golf course. Although the alignment of the subsurface storm drain network is speculative, it appears that Drainage 2 receives flows directly from Pond 4, which is a perennial water source. The stream flows in a north to south direction and there are small culverts at its northern and southern ends. Drainage 2 is subject to jurisdiction of the USACE as "non-wetland" waters of the U.S. Also, three small sections of the channel containing wetland obligates including watercress (*Nasturtium officinale*) [OBL] and water speedwell (*Veronica anagallis-aquatica*) [OBL] and about three inches of black, greasy, organic sapric muck are subject to USACE jurisdiction as wetland waters of the U.S. (**Photo 9D**). Primary and secondary wetland indicators of wetland hydrology including surface water, aquatic invertebrates, water marks, sediment deposits, drift deposits, and drainage patterns were observed in the drainage. The drainage receives intermittent flows throughout the year, although the lower reach of the channel may dry temporarily. Water also pools at some locations in the channel when the stream is not flowing. Crayfish, mosquito fish, and algae were observed in these pools. Non-wetland portions of the channel are barren or contain turfgrass and other weeds. The bed and banks of the drainage are under the jurisdiction of CDFW.

Seep 1

Seep 1 is located on a lower hillslope at the western edge of the golf club development in a fuel modification zone to the west of Trancas Canyon Drive. The seep is approximately 20 feet upslope from Drainage 1. A stand of cattail (*Typha* sp.) [OBL] was observed growing in this area during botanical surveys conducted by Envicom between 2009 and 2011. The cattail along with other surrounding vegetation was cut in 2012 for fuel modification purposes. At the time of the delineation, the slope lacked vegetation, as shown on **Photo 9E**. The remnant dry "stumps" of the cattail are visible at the center of the photo. The seep is probably seasonal and is presumably still active, although this requires verification. The slope does not qualify as "waters of the U.S.," but since it is adjacent to Drainage 1 it is under the jurisdiction of the CDFW. No surface water or saturation has been observed in this area, and soils in a test pit excavated in the patch of dead cattail stumps were dry and did not exhibit any hydric soil indicators (**Photo 9F**).

4.0 IMPACTS AND MITIGATION

IMPACTS

The Project limits of disturbance are shown overlaid on the proposed site plan in **Figure 2**. The limits of disturbance are inclusive of all proposed ground and vegetation disturbance, including but not limited to grading, landscaping, fuel modification, tree removals, pond dewatering, and pond maintenance. All areas within the limits of disturbance would be potentially developed or disturbed by the Project. The Project is discussed under the Project Description heading earlier in this document.

The Project limits of disturbance were determined based upon a preliminary golf course design provided by Jackson Kahn Golf Course Designs (see Figure 2), a preliminary grading plan provided by RCE Consultants, Inc. (see Appendix 3), a report by Dr. Lee Kats of Pepperdine University titled *The Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Mountains Recreation Area*, which describes the proposed dewatering of the golf course ponds, and discussions with the Applicant. The total Project limits of disturbance affecting jurisdictional areas also include a 20-foot buffer around the grading footprint and areas of pond excavation to account for temporary disturbance from these activities.

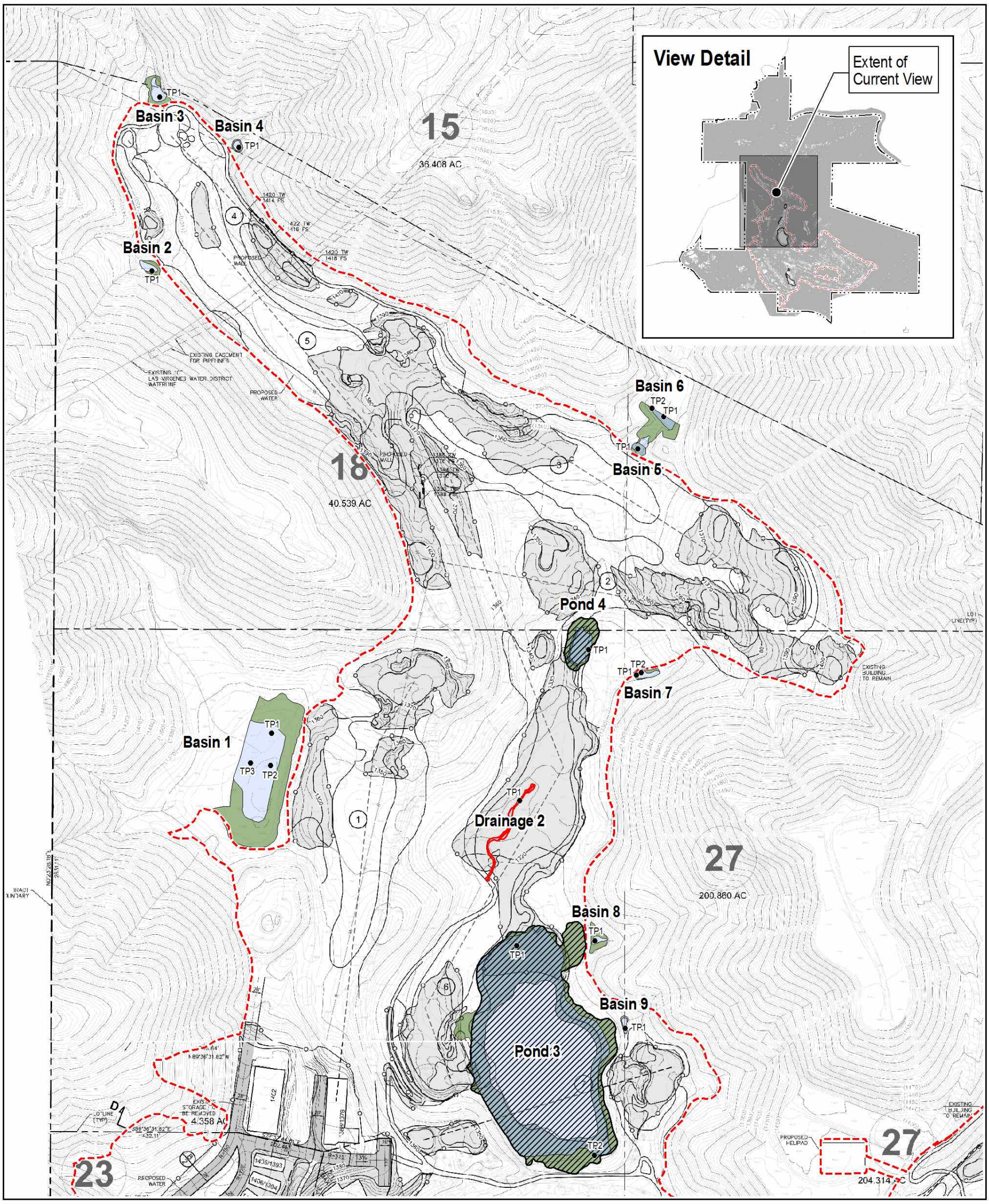
The jurisdictional areas that would be permanently and temporarily impacted by the Project are shown on **Figures 4A** and **4B**, Impacts to Jurisdictional Areas. The acreages of jurisdictional areas that would be impacted are shown in Table 3 and Table 4, below.

Permanent Impacts to USACE Waters of the United States and CDFW Jurisdictional Habitat

Grading to construct the redesigned golf course would permanently impact the "daylighted" man-made stream feature (Drainage 2) on the golf course grounds. Drainage 2 currently receives flows from a storm drain, which are conveyed through the drainage to a storm drain at its southern end. The Project would install a buried culvert to convey flows through this area in place of the aboveground drainage. The removal of Drainage 2 would permanently impact a total of 0.032 acres / 277 linear feet of jurisdictional area. Of the 0.032 acres / 277 linear feet, 0.002 acres / 36 linear feet are USACE wetland waters of the U.S. [coincident with 0.002 acres / 36 linear feet of CDFW jurisdictional habitat] and 0.03 acres / 277 linear feet are USACE "non-wetland" waters of the U.S. [also coincident with 0.03 acres / 277 linear feet of CDFW jurisdictional habitat]. Therefore, the Project would have a substantial adverse effect on riparian habitat identified by the CDFW and federally protected wetlands as defined by Section 404 of the Clean Water Act. It is recommended that permanent impacts to USACE waters of the U.S. and CDFW jurisdictional habitat be mitigated by the mitigation measures described below, which would require acquisition of resource agency permits and implementation of a final approved Habitat Mitigation and Monitoring Program.

Temporary Impacts to USACE Waters of the United States and CDFW Jurisdictional Habitat

Grading to construct the redesigned golf course would temporarily impact wetland waters of the U.S. and CDFW jurisdictional habitat at three of the four ponds (Pond 1, Pond 2, and Pond 3) on the golf course grounds. Also, the temporary de-watering and drying of the golf course ponds, as well as removal of sediment and vegetation from the ponds would temporarily impact wetland waters of the U.S., "non-wetland" waters of the U.S., and CDFW jurisdictional habitat at all four of the ponds on the golf course grounds (Pond 1, Pond 2, Pond 3, and Pond 4). The purpose of the de-watering, drying, and removal of sediment and vegetation at the golf course ponds is to restore the habitat and water quality of the ponds by eradicating exotic crayfish and other invasive animals and by removing potentially occurring toxins



Topographic Source: RCE Consultants, Inc., June 30, 2013.

Legend

- Project Boundary
- Limit of Ground Disturbance
- Limit of Fuel Modification (Not Shown - Pending)
- TP# Sample Plots/Test Pits

Jurisdictional Areas

CDFW Jurisdiction
- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat

Temporary Impacts		Acres	Linear Feet
CDFW Jurisdiction	ACOE Non-wetland Waters of the U.S.	1.63	505'
	ACOE Wetland Waters of the U.S.	2.19	1,210'
	CDFW Streambed and Riparian Habitat	0.60	70'
	Total	**4.42**	**-**

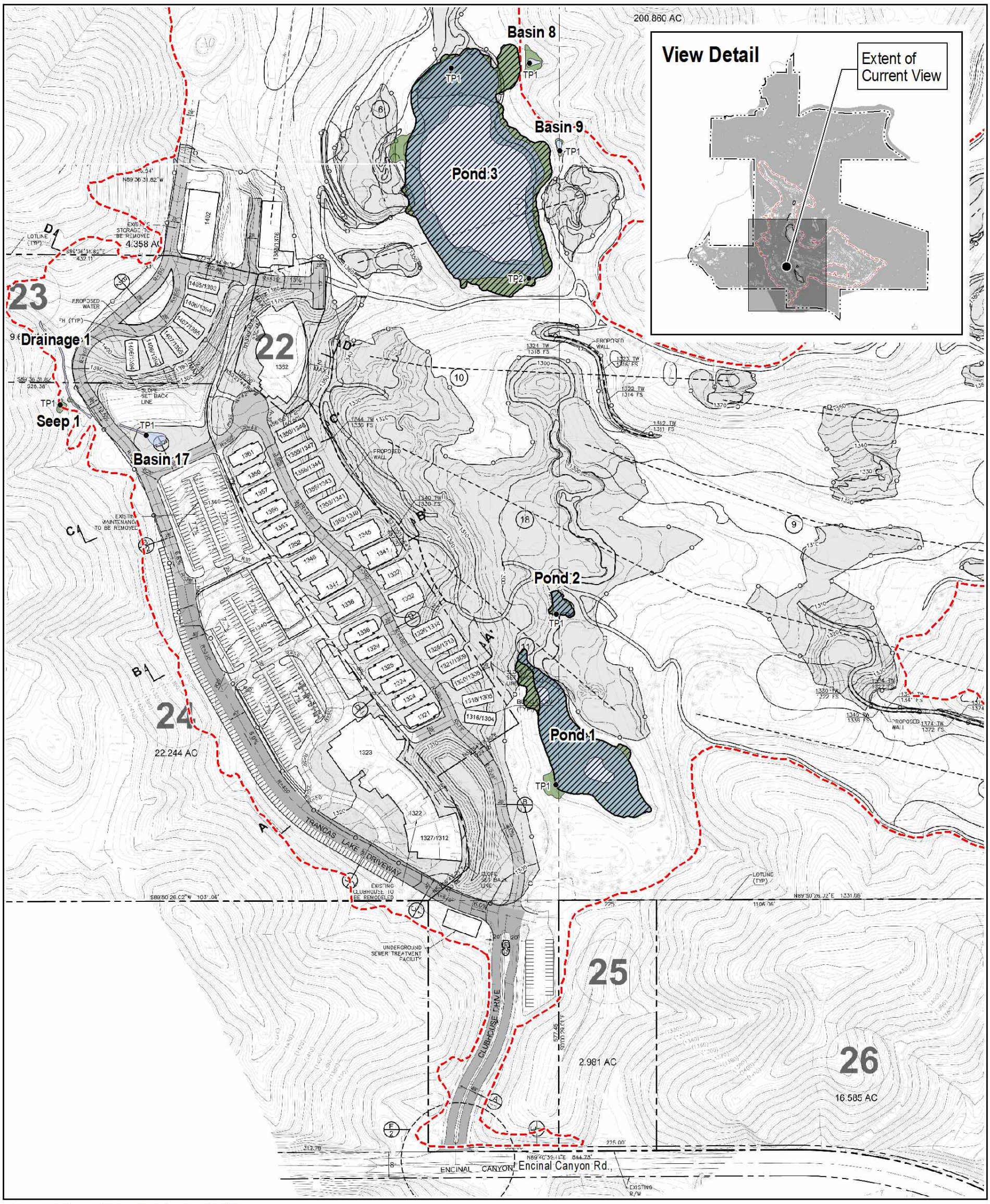
Permanent Impacts		Acres	Linear Feet
CDFW Jurisdiction	ACOE Non-wetland Waters of the U.S.	0.030	277'
	ACOE Wetland Waters of the U.S.	0.002	36'
	Total	**0.032**	**-**

ENVICOM CORPORATION

Impacts to Jurisdictional Waters and Habitat

0 225 Feet

FIGURE 4A



Topographic Source: RCE Consultants, Inc., June 30, 2013.

Legend

- Project Boundary
- Limit of Ground Disturbance
- Limit of Fuel Modification (Not Shown - Pending)
- TP# Sample Plots/Test Pits

Jurisdictional Areas

CDFW Jurisdiction
- ACOE Non-wetland Waters of the U.S.
- ACOE Wetland Waters of the U.S.
- CDFW Streambed and Riparian Habitat

Temporary Impacts	Acres	Linear Feet
CDFW Jurisdiction: ACOE Non-wetland Waters of the U.S.	1.63	505'
CDFW Jurisdiction: ACOE Wetland Waters of the U.S.	2.19	1,210'
CDFW Jurisdiction: CDFW Streambed and Riparian Habitat	0.60	70'
Total	4.42	-

Permanent Impacts	Acres	Linear Feet
CDFW Jurisdiction: ACOE Non-wetland Waters of the U.S.	0.030	277'
CDFW Jurisdiction: ACOE Wetland Waters of the U.S.	0.002	36'
Total	0.032	-

ENVICOM CORPORATION

Impacts to Jurisdictional Waters and Habitat

0 225 Feet

FIGURE 4B

associated with prior management activities of the golf course that may have accumulated in bottom sediments. The eradication of invasive animals and removal of bottom sediments from the ponds also would prevent degradation of habitats downstream from the Project site. These impacts are considered temporary, as all wetland and riparian habitats at the ponds would be restored.

The grading of portions of Pond 1, Pond 2, and Pond 3, as well as the dewatering and removal of vegetation and sediment from Pond 1, Pond 2, Pond 3, and Pond 4 would temporarily impact a total of 4.42 acres / 1,280 linear feet of jurisdictional area. Of the 4.42 acres / 1,280 linear feet, 2.19 acres / 1,210 linear feet are USACE wetland waters of the U.S. [coincident with 2.19 acres / 1,210 linear feet of CDFW jurisdictional habitat], 1.63 acres / 505 linear feet are USACE non-wetland waters of the U.S. [also coincident with 1.63 acres / 505 linear feet of CDFW jurisdictional habitat], and 0.60 acres / 70 linear feet are solely under the jurisdiction of CDFW. Therefore, the Project would have a substantial adverse effect on riparian habitat identified by the CDFW and federally protected wetlands as defined by Section 404 of the Clean Water Act. It is recommended that temporary impacts to USACE waters of the U.S. and CDFW jurisdictional habitat be mitigated by implementation of the mitigation measures discussed below, which would require acquisition of resource agency permits and implementation of a final approved Habitat Mitigation and Monitoring Program.

A small cattail seep (Seep 1) on a slope at the western margin of the Project site meets criteria to be considered CDFW jurisdictional habitat. Seeps supporting cattails on sloped terrain are rare in the Santa Monica Mountains. The vegetation supported by the seep is currently subject to fuel modification in the existing condition and would continue to be affected by fuel modification throughout the Project's construction and operational phases. Therefore, the Project would not result in new impacts to Seep 1.

Table 3
Impacts to USACE Jurisdictional Areas at Project Site

	USACE Waters of U.S.				Cause of Impacts
	Wetlands		Non-wetlands		
	Permanent (acres/ linear feet)	Temporary (acres/ linear feet)	Permanent (acres/ linear feet)	Temporary (acres/ linear feet)	
Pond 1	0.00 / 00	0.81 / 485	0.00 / 00	0.08 / 110	Grading; dewatering and excavation of sediment and vegetation.
Pond 2	0.00 / 00	0.04 / 75	0.00 / 00	0.00 / 00	Grading; dewatering and excavation of sediment and vegetation.
Pond 3	0.00 / 00	1.26 / 560	0.00 / 00	1.55 / 395	Grading; dewatering and excavation of sediment and vegetation.
Pond 4	0.00 / 00	0.08 / 90	0.00 / 00	0.00 / 00	Dewatering and excavation of sediment and vegetation.
Drainage 2	0.002 / 36	0.00 / 0	0.03 / 277	0.00 / 0	Grading; conversion of the above ground drainage to a buried culvert.
Total Jurisdictional Acreage	**0.002 / 36**	**2.19 / 1,210**	**0.03 / 277**	**1.63 / 505**	

Table 4
Impacts to CDFW Jurisdictional Areas

	CDFW Bed and Bank Riparian		Cause of Impacts
	Permanent (acres / linear feet)	**Temporary (acres / linear feet)**	
Pond 1	0.00 / 00	1.02 / 485	Grading; dewatering and excavation of sediment and vegetation.
Pond 2	0.00 / 00	0.05 / 75	Grading; dewatering and excavation of sediment and vegetation.
Pond 3	0.00 / 00	3.20 / 595	Grading; dewatering and excavation of sediment and vegetation.
Pond 4	0.00 / 00	0.15 / 125	Dewatering and excavation of sediment and vegetation.
Drainage 2	0.032 / 277	0.00 / 00	Grading and conversion of the above ground drainage to a buried culvert.
Total Jurisdictional Acreage	**0.032 / 277**	**4.42 / 1,280**	

Potential Impacts to Special-Status Wildlife and Nesting Birds

The proposed Project activities that would be conducted within jurisdictional waters and habitat, including grading, pond dewatering, and pond maintenance, as well as the removal of the man-made stream feature on the golf course have the potential to significantly impact special-status wildlife and/or nesting birds, including a known resident population of western pond turtles at the golf course ponds. For more information on the biological resources at the site, including a discussion of known and potentially occurring special-status species and an analysis of impacts to special-status species and nesting birds see the Malibu Institute Biota Report (Envicom Corporation, September 6, 2013) and the Malibu Institute Project DEIR. Mitigation measures to avoid and minimize impacts to special-status wildlife and nesting birds that could be present within jurisdictional areas during Project activities incorporated in the Malibu Institute Project DEIR are reproduced herein under the Mitigation heading later in this document.

MITIGATION

The following mitigation measures applicable to the proposed Project activities in jurisdictional areas are reproduced directly from the Malibu Institute DEIR. Implementation of these measures would mitigate for impacts or potential impacts to USACE Waters of the U.S., CDFW Jurisdictional Habitat, and special-status species and nesting birds that may potentially be present in jurisdictional areas during Project activities.

USACE Waters of the United States and CDFW Jurisdictional Habitat

USACE, CDFW, and RWQCB Permits

Prior to issuance of the grading permit, the Applicant shall prepare and submit to the USACE for verification a Preliminary Delineation Report for waters of the U.S. and a Streambed Alteration Notification package to the CDFW for alterations to USACE jurisdictional waters of the U.S. and CDFW jurisdictional streambed and habitat. A Clean Water Act Section 404 permit shall be obtained from the USACE, and the Applicant shall comply with the permit conditions. A Streambed Alteration Agreement shall be entered into with the CDFW under Section 1602 of the California Fish and Game Code, and the Applicant shall comply with the associated conditions. A Clean Water Act Section 401 Water Quality Certification shall be obtained from the RWQCB, and the Applicant shall comply with the certification conditions. Mitigation for unavoidable impacts to USACE jurisdictional waters of the U.S. and CDFW jurisdictional streambed and habitat shall be provided through implementation of the Habitat Mitigation and Monitoring Program.

Habitat Mitigation and Monitoring Program

The Project shall implement the requirements of the final approved Habitat Mitigation and Monitoring Program, which shall mitigate for permanent impacts to 0.032 acres / 277 linear feet of CDFW jurisdictional habitat, 0.002 acres / 36 linear feet of USACE wetland waters of the U.S., and 0.03 acres / 277 linear feet of USACE non-wetland waters of the U.S. at a 2:1 ratio. Due to the overlap of the jurisdictional areas that would be permanently impacted, a total of 0.032 acres / 277 linear feet consisting of 0.002 acres / 36 linear feet of wetland waters of the U.S. / CDFW jurisdictional habitat and 0.03 acres / 277 linear feet of non-wetland waters of the U.S. / CDFW jurisdictional habitat shall be mitigated.

Also as part of the Habitat Mitigation and Monitoring Program, the Project shall mitigate for temporary impacts to 4.42 acres / 1,280 linear feet of CDFW jurisdictional habitat, 2.19 acres / 1,210 linear feet of USACE wetland waters of the U.S., and 1.63 acres / 505 linear feet of USACE non-wetland waters of the U.S. at a 2:1 ratio. Due to the overlap of jurisdictional areas that would be temporarily impacted, a total of 4.42 acres / 1,280 linear feet consisting of 0.60 acres / 70 linear feet of CDFW jurisdictional habitat, 2.19 acres / 1,210 linear feet of USACE wetland waters of the U.S. / CDFW jurisdictional habitat, and 1.63 acres / 505 linear feet of non-wetland waters of the U.S. / CDFW jurisdictional habitat shall be mitigated.

The Habitat Mitigation and Monitoring Program shall mitigate for permanent and temporary impacts to jurisdictional areas by the on-site or off-site restoration of degraded in-kind wetland and riparian habitats, or by a contribution to an in-lieu fee program approved by the Department of Regional Planning, USACE, and the CDFW. Restoration should be implemented only where suitable conditions exist to support viable wetland and riparian habitat. If the mitigation will be performed off-site, to the extent feasible the restoration should be implemented within the Trancas Canyon Watershed. Also to the extent feasible, in-lieu fees shall be used for the restoration of in-kind wetland and riparian habitat within the Trancas Canyon Watershed.

The final Habitat Mitigation and Monitoring Program shall be developed by a qualified biologist, restoration ecologist or resource specialist and submitted to and approved by the Department of Regional Planning, USACE, RWQCB, and CDFW, in compliance with Clean Water Act Sections 401 and 404 and California Fish and Game Code 1602 and supporting regulations, prior to issuance of a grading permit for the Project. The Program shall be based on the USACE Final Mitigation Guidelines and Monitoring Requirements (April 19, 2004) and the Los Angeles District's Recommended Outline for Draft and Final

Compensatory Mitigation and Monitoring Plans. In broad terms, this Program shall at a minimum include:

- Description of the project/impact and mitigation sites;
- Specific objectives;
- Success criteria;
- Plant palette;
- Implementation plan;
- Maintenance activities;
- Monitoring plan; and
- Contingency measures.

Success criteria shall at a minimum be evaluated based on appropriate survival rates and percent cover of planted native species, as well as eradication and control of invasive plant and animal species within the restoration area.

The target species and native plant palette, as well as the specific methods for evaluating whether the project has been successful at meeting the above-mentioned success criteria shall be determined by the qualified biologist, restoration ecologist or resource specialist and included in the mitigation program.

To the extent possible, the mitigation project or in-lieu fee contribution shall be initiated prior to development of the Project. If the compensatory mitigation involves the restoration of on-site wetland and riparian habitats that were removed or disturbed by project grading or pond maintenance, the mitigation project shall be initiated as the earliest possible date, but shall not interfere with project development or the planned eradication of invasive animals from aquatic habitats at the site. The mitigation project shall be implemented over a five-year period and shall incorporate an iterative process of annual monitoring and evaluation of progress and allow for adjustments to the program, as necessary, to achieve desired outcomes and meet success criteria. Annual reports discussing the implementation, monitoring, and management of the mitigation project shall be submitted to the Department of Regional Planning, USACE, and the CDFW. Five years after project start, a final report shall be submitted to the Department of Regional Planning, USACE, and CDFW, which shall at a minimum discuss the implementation, monitoring and management of the mitigation project over the five-year period, and indicate whether the mitigation project has, in part, or in whole, been successful based on established success criteria. The annual reports and the final report shall include as-built plans submitted as an appendix to the report. The project shall be extended if success criteria have not been met at the end of the five-year period to the satisfaction of the Director of Regional Planning, USACE, and the CDFW.

Special-Status Wildlife and Nesting Birds

The following mitigation measures would also be necessary to avoid and minimize potential impacts to special-status and protected wildlife, including nesting birds that are known to occur or may occur within the jurisdictional areas that would be impacted by the Project. For additional details on the biological resources at the Project site see the *Malibu Institute Project Biota Report* (Envicom Corporation, September 6, 2013) and the Malibu Institute Project DEIR.

Capture, Management, and Release of Western Pond Turtles

A Mitigation and Monitoring Plan that would avoid impacts to the western pond turtle shall be prepared by a qualified biologist and approved by the County of Los Angeles Director of Regional Planning and the California Department of Fish and Wildlife prior to issuance of the grading permit for the Project. The Plan shall involve the capture of all western pond turtles at the Project site, the temporary containment and maintenance of the captured turtles at a suitable on-site or off-site location, and the release of the turtles back to the ponds at an appropriate time when the ponds would provide suitable habitat and the turtles would no longer be threatened by Project activities. The Plan shall at a minimum specify the following:

- timing and methods of capture and removal of the turtles and turtle eggs, if applicable, from the golf course ponds and elsewhere within the Project limits;
- location of the temporary containment site;
- maintenance and management of the turtles at the containment site;
- site conditions necessary for the release of the turtles back to the ponds;
- methods for release to the ponds;
- monitoring program to document the status and condition of the turtle population following the release of the turtles back into the ponds;
- a schedule and action plan for monitoring and reporting on the status of the turtle mitigation project;
- criteria and performance standards by which to measure success; and,
- contingency measures in the event that mitigation effort is not successful.

Alternatively, if feasible, the temporary containment of the all or part of the turtle population at the golf course ponds may be avoided if it can be demonstrated that the timing and duration of the period that the ponds would be unsuitable for the species (i.e., lacking water, cover, and/or food supply) coincides with the seasonal periods that the turtles would move to upland habitats and if the safe dispersal of the turtles between the ponds and the native habitats in the surrounding area could be ensured throughout Project development. In this case, the Plan shall also specify the timing and duration of the period that the ponds would be unsuitable and methods and monitoring activities to ensure that both direct impacts to individuals and the population of turtles at the Project site would be avoided.

Annual reports discussing the implementation, monitoring, and management of the western pond turtle mitigation project shall be submitted to the Director of Regional Planning and the CDFW. A final report shall be submitted to the Director of Regional Planning and CDFW, which shall at a minimum discuss the implementation, monitoring and management of the mitigation project and indicate whether the mitigation project has, in part, or in whole, been successful based on established success criteria.

Pre-Project Biological Surveys and Biological Monitoring

Prior to commencement of ground or vegetation disturbing activities in native chaparral, coastal sage scrub, riparian, or aquatic habitats, as well as in landscaped areas, including but not limited to grading, pond maintenance, and landscaping activities, a qualified biologist shall conduct two pre-project surveys for special-status wildlife species. The first survey shall be conducted no more than seven (7) days prior to commencement of project activities and the second survey shall be conducted no more than three (3)

days prior to the commencement of project activities. The pre-project survey shall incorporate methods to detect the special-status wildlife species that could potentially occur at the site. To the extent feasible, special-status species shall be avoided. If avoidance is not feasible, the species shall be captured and transferred to an appropriate habitat and location where it would not be harmed by project activities. Two-striped garter snakes should be relocated to permanent aquatic habitats that are downstream and relatively close to the Project site. The biologist shall hold the requisite permits for the capture and handling of the species. A qualified biologist shall monitor all ground and vegetation disturbing project activities within native habitats and landscaped areas. The biological monitor shall conduct ongoing searches for special-status species throughout project activities. Prior to commencement of the proposed activity, the methods and results of the surveys and the measures to be employed to avoid impacts to special-status species, should they be found, shall be presented in a letter report to the Department of Regional Planning and CDFW. Should a federally listed species be found, all construction-related activities, including mitigation actions, shall be postponed until the Applicant consults with the USFWS.

Nesting Bird Surveys

Project-related activities with potential to disturb suitable bird nesting habitat shall be prohibited within the breeding/nesting season for native bird species (February 1 through August 31). If the breeding/nesting season cannot be avoided, than no earlier than 14 days prior to the start of project activities that could disturb suitable bird nesting habitat, including but not limited to site preparation, grading, construction, tree removal, landscaping removal, pond or detention basin maintenance, or building demolition, a qualified biologist acceptable to the County of Los Angeles Department of Regional Planning shall perform three field surveys to determine if active nests of any bird species protected by the state or federal Endangered Species Acts, Migratory Bird Treaty Act, and/or the California Fish and Game Code Sections 3503, 3503.5, or 3511 are present in the project area or within 500 feet of the project area. The third nesting bird survey shall be conducted within three days of the start of project activities. If project activities are delayed, then additional surveys for nesting birds shall be conducted such that no more than three days will have elapsed between the last survey and the project activity. Prior to the nesting bird surveys, the Applicant shall provide the biologist with plans detailing the type, location, and timing of project activities.

For project activities conducted during the breeding/nesting season with potential to disturb bird nesting habitat over a prolonged period (more than 7 days), in addition to the requisite pre-project surveys the qualified biologist shall conduct nesting bird surveys at a minimum once weekly and as necessary to avoid harm or disturbance to nesting birds and violation of federal and state regulations protecting nesting birds.

To the maximum extent possible, removal of marsh and riparian vegetation from the golf course ponds shall be avoided during the breeding/nesting season. For project activities conducted during the breeding/nesting season involving the removal of or disturbance to marsh and riparian vegetation at the golf course ponds, in addition to the requisite pre-project surveys the biologist shall be present to monitor project activities and to conduct ongoing surveys for nesting birds.

If an active nest is found, the biologist shall establish an appropriate buffer between the activities and the active nest to avoid harm or disturbance to the nesting birds (typically 300 feet for most birds and 500 feet for raptors). The buffer shall be demarcated with highly visible construction fencing and signed as a sensitive area. Project personnel shall be instructed to avoid nesting bird buffers. Project activities with potential to harm or disturb the nesting birds shall be postponed within the buffer until the nest is vacated, the nestlings have fledged, the fledglings have left the area, as determined by the biologist, and there is no

evidence of a second attempt at nesting. Project activities conducted in the vicinity of the buffer shall be monitored by the biologist during the nesting period, as necessary, at the discretion of the biologist.

If an active nest of a bird species listed under the Federal or California Endangered Species Acts is found, project activities within a 500-foot radius of the nest shall be halted until the Applicant has consulted with the County, CDFW, and USFWS, if applicable.
Prior to start of project activities, the biologist shall submit a report discussing the pre-project nesting bird survey methods and results, as well as any measures to be implemented to avoid harm or disturbance to nesting birds to the Department of Regional Planning, CDFW, and USFWS, if applicable. The biologist shall also submit weekly email updates covering survey results and the status of nesting birds at the site to the Department of Regional Planning, CDFW, and USFWS, if applicable. Upon completion of project activities, the biologist shall submit a final report covering survey methods, results, avoidance measures implemented, and any "take" of nesting birds (e.g., loss or injury) to the Department of Regional Planning, CDFW, and USFWS, if applicable.

SUMMARY OF IMPACTS AND MITIGATION

The proposed Project grading would permanently impact a man-made stream feature (Drainage 2) on the golf course grounds. The removal of Drainage 2 would permanently impact a total of 0.032 acres / 277 linear feet of jurisdictional area. Of the 0.032 acres / 277 linear feet, 0.002 acres / 36 linear feet are USACE wetland waters of the U.S. [coincident with 0.002 acres / 36 linear feet of CDFW jurisdictional habitat] and 0.03 acres / 277 linear feet are USACE "non-wetland" waters of the U.S. [also coincident with 0.03 acres / 277 linear feet of CDFW jurisdictional habitat]. The proposed Project grading would temporarily impact wetland waters of the U.S. and CDFW jurisdictional habitat at three of the four ponds (Pond 1, Pond 2, and Pond 3) on the golf course grounds. Also, the temporary de-watering and drying of the golf course ponds, as well as removal of sediment and vegetation from the ponds would temporarily impact wetland waters of the U.S., "non-wetland" waters of the U.S., and CDFW jurisdictional habitat at all four of the ponds on the golf course grounds (Pond 1, Pond 2, Pond 3, and Pond 4). The grading of portions of Pond 1, Pond 2, and Pond 3, as well as the dewatering and removal of vegetation and sediment from Pond 1, Pond 2, Pond 3, and Pond 4 would temporarily impact a total of 4.42 acres / 1,280 linear feet of jurisdictional area. Of the 4.42 acres / 1,280 linear feet, 2.19 acres / 1,210 linear feet are USACE wetland waters of the U.S. [coincident with 2.19 acres / 1,210 linear feet of CDFW jurisdictional habitat], 1.63 acres / 505 linear feet are USACE non-wetland waters of the U.S. [also coincident with 1.63 acres / 505 linear feet of CDFW jurisdictional habitat], and 0.60 acres / 70 linear feet are solely under the jurisdiction of CDFW. Therefore, the Project would have a substantial adverse effect on riparian habitat identified by the CDFW and federally protected wetlands as defined by Section 404 of the Clean Water Act. It is recommended that permanent and temporary impacts to USACE waters of the U.S. and CDFW jurisdictional habitat be mitigated by implementation of the mitigation measures provided herein, which require acquisition of resource agency permits and implementation of a final approved Habitat Mitigation and Monitoring Program.

Also, the grading of Drainage 2 and portions of Pond 1, Pond 2 and Pond 3, as well as the dewatering and removal of vegetation and sediment from Pond 1, Pond 2, Pond 3, and Pond 4 would potentially impact special-status wildlife and nesting birds. It is recommended that potential impacts to special-status wildlife and nesting birds be mitigated by the mitigation measures provided herein, which require acquisition of resource agency permits, implementation of a final approved Habitat Mitigation and Monitoring Program, pre-construction surveys for special-status wildlife and nesting birds, and implementation of a Mitigation and Monitoring Plan to protect the population of western pond turtles at the Project site.

5.0 REFERENCES

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Appendix 1
Wetland Determination Data Forms

Pond 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/18/12
Applicant/Owner: Tom Hix State: CA Sampling Point: POND 1 TP1
Investigator(s): T. Anderson Section, Township, Range: S10; T.1S, R.19W
Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): Flat Slope (%): ~0
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Pond on golf course grounds containing dense bulrush-cattail marsh. In-line w/ Tranlas Creek, large culverts at northwestern and southeastern ends. Wooden posts ~~bermuda~~ along margin of pond are an artificial barrier that create a sharp boundary between the pond and the golf course. Some open water habitats as well

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 400 sq ft)			
1. Typha domingensis / angustifolium	95	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ~5% open water ~95% marsh % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Typha domingensis / angustifolium and Schoenoplectus californicus marsh covers ~95% of pond; remaining area is open water. A few native red and arroyo willows (Salix laevigata & Salix lasiolepis) along the margin of the pond. Large Salix lasiolepis at NW end. Also large non-native willows adjacent to pond and Alnus rhombifolia

Photos 4389-4395
4373-4381

SOIL

Sampling Point: POND 1 TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Thin O-2	Gley 1 2.5/N	100					organic silty clay loam	mucky organic layer on surface black; alot of greasy organic material but mineral soil
2-8	Gley 1 2.5/N	100					sandy clay loam	black; alot of organic material ~~mottled~~ in layer
8-16	Gley 1 2.5/N	100					clay	less organic material
	Test pit is 16" Deep.							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (LRR C)
- __ 1 cm Muck (A9) (LRR D)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (LRR C)
- __ 2 cm Muck (A10) (LRR B)
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: None encountered to 16"
Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks: Test pit excavated at marsh/pond edge in water. Alot of litter on surface and various sized organic material throughout profile. Difficult digging. Perhaps a deeper pit would have revealed another indicator but 16" was sufficient and clearly the area is inundated/saturated throughout the year.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- __ High Water Table (A2)
- ✓ Saturation (A3) At margins
- ✓ Water Marks (B1) (Nonriverine)
- __ Sediment Deposits (B2) (Nonriverine)
- ✓ Drift Deposits (B3) (Nonriverine)
- __ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Biotic Crust (B12)
- ✓ Aquatic Invertebrates (B13) Also Fish Crayfish
- ✓ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- ✓ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water Marks (B1) (Riverine)
- __ Sediment Deposits (B2) (Riverine)
- __ Drift Deposits (B3) (Riverine)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ____ Depth (inches): 6" at edge of pond where test pit excavated

Water Table Present? Yes ____ No ____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Perennial pond on golf course. Has existed for decades at least. Crayfish, amphibians, exotic fish, turtles in pond. Artificial banks of wooden posts contain water and separate marsh vegetation from golf course grounds. Trancas Creek flows in culverts beneath the golf course through the ponds on the golf course grounds. Flows that pass through are discharged to the Trancas Creek channel to the east of Clubhouse Drive.

POND 2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/18/12
Applicant/Owner: Tom Hix State: CA Sampling Point: POND 2-TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T1S, R19W
Landform (hillslope, terrace, etc.): bottomlands Local relief (concave, convex, none): Flat Slope (%): 20
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ____
Hydric Soil Present? Yes ✓ No ____
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Small artificial pond/wetland in interior of golf course, flooded year-round and densely vegetated, surrounded entirely by golf course grounds. Connected to storm drain system that runs beneath the golf course. Presumably in line of Trancas Creek. ~~Earthen bottom.~~

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1. Eucalyptus sp.	1		UPL
2. Alnus rhombifolia	<1		FACW
3. Salix lasiolepis (not sampled)	1		FACW
4.			
	2 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Schoenoplectus californicus	80	Y	OBL
2. Typha domingensis/angustifolia	5	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ✓ Yes ____ No ____

Remarks: Dense bulrush marsh (Schoenoplectus californicus) w/ patches of cattail (Typha sp.). Small Eucalyptus, arroyo willow, and white alder along margin. Also, large Eucalyptus on golf course branches extend over wetland and contributing alot of leaf litter to wetland.

Photos 4382-4388

Sampling Point: Pond2 TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	Gley 1 N2.5/	100					Organic muck	No mineral texture
3-10	Gley 1 N2.5/	100					Silty clay loam	A lot of organic material- all sizes
10-16	Gley 2 5B 4/1	100					Sandy clay loam	Some rocks, perhaps cobble
	Test pit depth is 16"							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ✓ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: Did not encounter to 16" Earthen bottom
Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks: Strong hydrogen sulfide. Difficult digging due to flooded conditions. Test pit excavated at edge of marsh / wetland. A lot of litter on surface and various sized organic material to 10" in depth in profile. Perhaps a deeper pit would reveal another indicator.

HYDROLOGY Wetland is clearly inundated / saturated throughout the year.

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3) At margins
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ✓ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12) Crayfish Amphibians also
- ✓ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ✓ Thin Muck Surface (C7) (Muck)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 4" (at test pit location)
Water Table Present? Yes ___ No ___ Depth (inches): ___ deeper in middle of wetland
Saturation Present? (includes capillary fringe) Yes ~~✓~~ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Flooded year-round. Artificial wetland / basin. Wood posts serve as barrier to impound water and create distinct boundary between the wetland and the golf course grounds. Presumably in-line w/ Trancas Creek and connected to Pond 1 and Pond 3 by underground storm drains. Concrete culverts enter and exit the basin.

Pond 3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/23/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Pond 3-T1
Investigator(s): J. Anderson Section, Township, Range: S10, T1S, R19W
Landform (hillslope, terrace, etc.): bottomlands Local relief (concave, convex, none): Flat Slope (%): 0
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ____ No ____		

Remarks: Sample plot evaluates a stand of willows along northern margin of the large pond on the golf course grounds. The plot is north of dense marsh vegetation associated w/ the pond as is in a relatively low lying area that appears ~~to may~~ have high water table or to be inundated or saturated occasionally depending on water levels in the pond.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 400 sqft)			
1. Salix lasiolepis	80	Y	FACW
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Typha domingensis/ angustifolium	40	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Salix lasiolepis thicket w/ scattered Typha in understory. Lots of leaf litter.

US Army Corps of Engineers Arid West – Version 2.0

Photos 4417 - 4431

Sampling Point: POND 3 - TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y 2.5/1	98	5YR 4/6	2	C	PL/M	Silty clay loam	Roots/organic materia
8-14	2.5Y 2.5/1	90	5YR 4/6	10	C	PL/M	Silty clay loam	Less organic materia
8-14	6/ey2 10B 2.5/1	10						
14-20	2.5Y 2.5/1	20	5YR 4/6	7	C	PL/M	Silty clay loam	blue-grey color
	Gley2 10B 2.5/1	80						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks: Matrix values from wet soil during field examination. Redox evaluated after drying soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ✓ Aquatic Invertebrates (B13) crayfish fish amphibians turtles
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Some water appearing in test pit at 20". This area probably has a high water table, is inundated or saturated w/ 12 inches of the surface occasionally depending on water levels in the pond, although frequency/duration unknown. At time of examination, did not appear to have flooded recently. Presence of wetland indicators (Typha) and redox features supports that meets wetland hydrology parameter.

Pond 3 is connected to underground storm drain system and is in line of Tranen creek

Pond 3

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/23/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Pond 3-TP2
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): Low Hummocks Local relief (concave, convex, none): Flat Slope (%): 0-3%
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Sample plot evaluates bulrush-cattail marsh at large pond on golf course grounds. Entire area within the confines of the pond is waters of the U.S. - Areas of marsh and some mulow woodland meet ~~three parameters as USACE wetlands.~~

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Typha domingensis / angustifolium	67	Y	OBL
2.	3	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Typha and Schoenoplectus californicus marsh at large pond. Marsh vegetation occurs around perimeter of pond w/ open water in middle of the pond. Riparian vegetation along portions of its perimeter, especially northern end.

Photos 4417-4431

Sampling Point: Pond 3 - TP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100	5YR 4/6	<1	C	M	Sandy loam	high organic material content
3-15	2.5Y 2.5/1	100	2.5YR 3/6	<1	C	M	Silty clay loam	fine organic material in layer
	Pit depth @ 15"							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks: Soil pit excavated in saturated area near standing pond water. Area clearly flooded each year; currently late in dry season. Soils dried before inspection for redox features. Strong rotten eggs ~~smell~~ odor.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ✓ Aquatic Invertebrates (B13) crayfish, fish, amphibians, turtles
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___
Water Table Present? Yes ✓ No ___ Depth (inches): 3"
Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 3"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Top 3" saturated. Below 3" pit fills w/ water. At edge of pond/wet area likely inundated much of the year. Pond is connected to storm drain system that runs beneath golf course — in line w/ Trancas Creek. Large outlet structure at southern end. Wooden posts around perimeter serve as barrier impounding water.

POND 4

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/22/12
Applicant/Owner: Tom Hix State: CA Sampling Point: POND 4-TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T1S, R19W
Landform (hillslope, terrace, etc.): Bottomlands Local relief (concave, convex, none): Flat Slope (%): 20
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	Is the Sampled Area within a Wetland? Yes ✓ No ___
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: Small wetland/basin (man-made) on golf course grounds. Flooded year-round and densely vegetated. Culverts in and out of basin. Earthen bottom. Wetland is connected to the underground drainage system beneath the golf course and is presumably in the upper Trancas Creek.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 400sq ft)			
1. Typha domingensis / angustifolium	65	Y	OBL
2. ~~Juncus effusus~~	~~10~~	~~N~~	~~FACW~~
3. Schoenoplectus californicus	10	N	OBL
4.			
5.			
6.			
7.			
8.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: Dense bulrush and cattail marsh. Some areas of open water. Also contains significant amounts of arroyo and red willow (Salix lasiolepis, S. laevigata) along its margin. Also Eleocharis, Cyperus and other wetland indicator species. Willow areas are also typically flooded. There is small coast live oak woodland to the east of the wetland.

Photos 4408–4416

Sampling Point: Pond 4-TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	Gley1 10Y 2.5/1	100					silty clay	a lot of litter and organic material
3-18	5YR 3/2	100					loamy sand	"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks: Strong rotten egg odor

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ✓ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ✓ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2 to 84 near test pit (deeper elsewhere)

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): at margins of wetland

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: crayfish • water enters from ~~[illegible]~~ pipe at north end and drains basin at southern end.

Basin 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 1, TP2
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Flat Slope (%): 0-2
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in portions of basin disturbed by vehicles/dozers.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Large earthern basin at edge of golf course. Receives ephemera flows from drainages originating on hillslopes to the west. ~~Flat bo~~ Generally flat bottom w/ earthen banks between basin and golf course. Vehicle tracks through basin bottom. Area to the South of basin used to stockpile vegetation cuttings.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1500 sq ft)			
1. Polypogon monspeliensis	75	Y	FACW
2. Epilobium ciliatum	<1	N	FACW
3. Xanthium strumarium	<1	N	FAC
4. Sonchus asper	1	N	FAC
5. Melilotus indicus	1	N	FACU
6. Rumex crispus	<1	N	FAC
7. Erigeron canadensis	4	N	FACU
8. Bromus hordeaceus	<1	N	FACU
9. Carduus pycnocephalus	<1	N	UPL
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Strongly dominant Polypogon monspeliensis. Relied on last years growth ~~due~~ as too early in growing season to assess based on new growth. The vegetation plot is representative of much of the ~~lowest~~ areas of the basin. Basin contains areas of vegetation in the lowest w/ dominant wetland indicators & areas that are upland dominan

Photos 4877-4880

Sampling Point: Basin 1, TP2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	2.5Y 3/2	100					clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7) Jan 9 2008 Google Earth
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Some erosion patterns where diffuse flows are spreading out and entering basin. Short-term, infrequent flooding/saturation only expected as normal circumstances in basin, and usually only over portions of basin. Google Earth Jan 2008 aerial shows basin completely inundated. Extent of basin difficult to determine.

Basin 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 1, TP3
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): Basin at base of hillslope. Local relief (concave, convex, none): Flat Slope (%): 0-2
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in portions of basin disturbed by vehicles/dozers.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Large earthen basin at edge of golf course. Receives ephemeral flows from drainages originating on hillslopes to the west. Generally flat w/ large earthen banks between basin and the golf course. Vehicle tracks through basin bottom. Vegetation & debris to west of basin. Large stand of mulefat to south.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 1500 sq ft)			
1. Polypogon monspeliensis	80	Y	FACW
2. Melilotus indicus	5	N	FACU
3. Sonchus asper	<1	N	FAC
4. Rumex crispus	<1	N	FAC
5. Epilobium ciliatum	<1	N	FACW
6. Engeron canadensis	<1	N	FACU
7. Carduus pycnocephalus	<1	N	UPL
8. Heterotheca grandiflora	<1	N	UPL
9. Xanthium strumarium	<1	N	FAC
	88 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Strongly-dominant Polypogon monspeliensis. Assessed based on last years growth. Representative of vegetation over much of lowest areas of the basin. Vegetation in some portions of the basin is recently disturbed by dozers/vehicles. Some of basin is upland dominant, other areas Polypogon monspeliensis dominant - the patches Oreochans is not repre

plots 4881 - 4896

Sampling Point: Basin 1, TP3

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	2.5Y 3/2	99+	2.5YR 3/6	<1	C	PL	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Oxidized rhizospheres present. Redox concentrations in matrix and pore linings but <1% wherever ~~the~~ they occur.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7) JAN 9 2008
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations: Google earth

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No significant drainage patterns entering the lower portion of the basin, only some minor erosion channels at some locations. Flows into basin appear to be ~~very~~ diffuse; perhaps rainfall/clay soil and sheet flow runoff are supporting the polygonal microrelief rather than flows from ephemeral drainages; however ephemeral drainages do flow to basin. Short-term, infrequent flooding/saturation over portions of basin only are expected to be normal circumstance.

Basin 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 1, TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Flat Slope (%): 0-2
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

Veg in Portions of basin disturbed by vehicles / dozers.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Large earthen basin at edge of golf course. Receives ephemeral flows from drainages originating on hillslopes to the west. Generally flat with large earthen berms between basin and golf course and vehicle tracks through basin bottom. Area to south of basin used to stockpile vegetative cuttings.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 200 sq ft)			
1. Eleocharis macrostachya	70	Y	OBL
2. Epilobium ciliatum	2	N	FACW
3. Polypogon monspeliensis	12	N	FACW
4. Rumex crispus	4	N	FAC
5. Sonchus asper	1	N	FAC
6. Melilotus indicus	3	N	FACU
7. Bromus hordeaceus	2	N	FACU
8. Bromus madritensis rubens	21	N	UPL
	95 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum <1 % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Assessed based on last year's growth - current years growth to new to determine spp. / cover. This plot focuses on small early patch of Eleocharis a wetland indicator, although plot not representative of vegetation throughout basin bottom.
Patch of Eleocharis w/ Rumex crispus & Epilobium ciliatum

Photos 4871-4876

Sampling Point: Basin 1 TP 1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2.5	100	2.5YR 3/6	<1	C	PL	clay	Redox concentrations typically 1-2% in profile where present.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Test pit excavated in small patch of Leochans. 12" is bottom of pit. Redox concentrations along root channels up to ~5% in places but typically 1-2% and where occur. Doesn't meet redox dark surface indicator. Clearly some flooding/saturation in this area but presumably not of sufficient duration and/or frequency

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) JAN 9, 2008 Google Earth
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

This is a large basin. Were only indicators observed oxidized rhizospheres. Google Earth image from Jan 2008 shows basin completely inundated, although this degree of flooding probably only occurs during significant storm events. Receives flows from prominent ephemeral drainage to west and at least one other ephemeral drainage to SW. During most storm events only minor flows in parts of basin likely. (Short-term, infrequent flooding expected.

Remarks:

Basin 2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 2-TP
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): concave Slope (%): 0-5
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Cotharin–Talepop Association, 15-30% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed All vegetation mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Small basin at edge of golf course. Receives flows from ephemeral drainages which then enter storm drain system beneath golf course via standpipe.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 400sq ft.)			
1. Polygonon monspeliensis	70	Y	FACW
2. Rumex crispus	1	N	FAC
3. Sonchus asper	21	N	FAC
4.			
5.			
6.			
7.			
8.			
	71 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:
Early growth of annual grass not identifiable at time of delineation. Also vegetation has been recently mowed. New growth of annual plants assumed to be Polygonon monspeliensis, based on observations of the basin earlier in 2012. Atypical situation – although conditions prior to mowing known.

Photos 4898 - 4904

Sampling Point: Basin 2 - TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix: Color (moist)	%	Redox Features: Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/2	99+	2.5YR 3/6	<1	C	M, PL	clay	
7-12	10YR 2/2	96	2.5YR 3/6	4	C	M, PL	clay	Redox concentrations in ~70% of layer. Rest <1%
Test pit depth 12"								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Redox concentrations in portions of profile but mostly absent. Redox concentrations too low % to meet F6 indicator. Portions of pit however contain up to 20% redox concentrations, ~~but~~ ~~atypical~~ ~~situation~~ ~~for hydric soils, but~~ ~~bottom of~~ ~~elements~~ & ~~soil disturbance~~ ~~unknown~~.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Other Indicators may be hidden/disturbed by recent mowing of vegetation within the basin.

Basin 3

WETLAND DETERMINATION DATA FORM – Arid West Region

10/23/12

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: ~~10/5/12~~

Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 3-TP

Investigator(s): J. Anderson Section, Township, Range: S10, T1S, R19W

Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR): C Lat: Long: Datum:

Soil Map Unit Name: Cotharin-Calepa Association, 15 to 50% slopes NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Basin at edge of golf course. Flows from significant ephemeral drainage enter basin, as well as possibly some concentrated runoff from the southwest. There is a standpipe and concrete spillway in NE corner for overflow, which if occurred would be directed onto golf course

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 900 sq ft)			
1. Xanthium strumarium	20	Y	FAC
2. Polypogon monspeliensis	25	Y	FACW
3. Rumex conglomeratus	5	N	FACW
4. Typha domingensis/angustifolium	<1	N	OBL
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 90

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Dry algae covers bottom of basin. Xanthium and Polypogon cover bottom of basin. A single red willow (Salix laevigata) on basin banks near the standpipe. Vegetation parameter assessed based on last years growth.

Photos 4432 - 4444

SOIL

Sampling Point: Basin 3 - TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
trace								biotic crust of algae
0-13	7.5YR 2.5/1	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ✓ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) JAN 8 2008
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12) (dry algae)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine) erosion channels
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), If available:

Remarks: Surface soil cracks throughout basin bottom. Basin is likely inundated following significant rain events but duration of inundation/saturation unknown. ~~Pools~~ Less than 14 days of flooding or saturation is expected, esp. given soil condition and ephemeral nature of drainage. Another basin upstream ~~exceeded~~ detains ~~some~~ flows that would otherwise reach this basin.

Basin 4

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/23/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 4-TP
Investigator(s): J. Anderson Section, Township, Range: S10, T. 1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of Local relief (concave, convex, none): concave Slope (%): 0 - 2
Subregion (LRR): C hillslope Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Small basin at edge of golf course. Small ephemeral drainage empties into basin. Small standpipe directs detained water to storm drain system beneath golf course. NP.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ~~impact~~ basin)			
1. Eleocharis macrostachya	87	Y	OBL
2. Polypogon monspeliensis	3	N	FACW
3. Hirschfeldia incana	10	N	UPL
4. Lactuca serriola	<1	N	FACU
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Perennial Eleocharis is strongly dominant but currently senesced. Shady location. Eleocharis very thick & can't see ground surface. OHWM based on limits of Eleocharis.

Photos 4445 – 4451

Sampling Point: Basin 4 – TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 2/1	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: No redox features found, ~~which was not expected~~.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7) Jan 8 2008
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Water collects here seasonally. Perennial Eleocharis is strongly dominant. Can't see ground surface – Eleocharis may hide wetland hydrology indicators. Slightly moist ground surface at time of delineating, but not saturated. Water ~~would~~ would not drain out of basin unless basin filled due to position of outflow pipe.

Basin 5

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/31/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 5 - TP
Investigator(s): E.J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No
Hydric Soil Present? Yes No ✓
Wetland Hydrology Present? Yes ✓ No
Is the Sampled Area within a Wetland? Yes No ✓

Remarks: Small, relatively deep concave basin between spillway of larger detention basin to north and the golf course. In-line with Trancas Creek. Basin receives flows from ~~stor~~ culvert from larger basin to north. Water collects here, seasonal drained by culvert that enters underground storm drain syst

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1. Salix laevigata (1 tree on basin slope)			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: entire basin)			
1. Alisma triviale	60	Y	OBL
2. Xanthium strumarium	5	N	FAC
3. Cyperus sp. cf. eragrostis	7	N	FACW
4. Rumex crispus	3	N	FAC
5. Rumex conglomeratus	1	N	FACW
6. Polypogon monspeliensis	5	N	FACW
7. Juncus macrophyllus	<1	N	FACW
8. Festuca perrennis	1	N	FAC
	82 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 3 % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks: Basin bottom dominanted by Alisma triviale w/ several other indicators present.

Photos 4452-4462

SOIL

Sampling Point: Basin 5-TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	2.5Y 3/2	97	10YR 5/6	3	C	M, PL	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: Some redox concentrations throughout profile but not sufficient to meet F6 indicator. Concentrations in places are 5-10%.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ✓ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7) Jan 8 2008
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface soil cracks & salt crust 10%. Vegetation composition shows obviously inundated or saturated for periods but frequency / duration unknown. ~~Vegetation~~ Dense wetland vegetation may mask some wetland hydrology indicators

Basin 6

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/31/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 6 - TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope - bottomland Local relief (concave, convex, none): Flat Slope (%): 0
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: In-line of Trancas Creek. Seasonal flooding/saturation during storm events only. Trancas Creek drainage empties into basin during storm events. Relatively large concrete dam, spillway and standpipe culvert

Debris basin

VEGETATION – Use scientific names of plants. Only delineated to 100 feet from SW course boundary – basin extends farther north

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 150059 ft.)			
1. Polypogon monspeliensis	15	N	FACW
2. Festuca perennis	72	Y	FAC
3. Baccharis salicifolia	<1	N	FAC
4. Rumex crispus	<1	N	FAC
5. Juncus macrophyllus	2	N	FACW
6. Cyperus cf eragrostis	<1	N	FACW
7. Stipa miliacea	3	N	UPL
8. Rumex conglomeratus	<1	N	FACW
	95 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Gradient from upper northern portion of basin to lower portion near basin of more upland species and fewer indicators to dominance of wetland indicators. Most Polypogon monspel in lower basin near drain. Two patches of Juncus along western margin of basin. Lack of hydrophytic dominance over much of basin based on Festuca perennis which is a poor indicator

Photos 4463 - 4483

Sampling Point: Basin 6-TP1

Soil

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 3/2	100					sandy clay loam	
2-6	"Sand"	100					"Sand"	sand dominated volcanic material stream deposits, fine rocks & little organic material
6-14	10YR 3/2	93	7.5YR 5/8	7	C	PL/M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: Apron or bedrock (suspect apron)
Depth (inches): 8-14" depending on location

Hydric Soil Present? Yes ✓ No ___

Remarks: This is a Representative test pit in lower basin (southern) part of basin. Numerous pits were excavated in lower basin to determine extent of area meeting hydric soil indicator Redox Dark Surface. Consistently finding excess of 5% redox concentrations in pits dug in delineated area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ✓ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7) June 2008
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Some microtopographic variation across basin bottom may affect duration of flooding/saturation in basin bottom, ie variable. There are drainage patterns within basin itself which is relatively wide. In average storm event the basin probably is not entirely inundated but rather the only parts of the basin are flooded. Duration/frequency of inundation/saturation unknown

Basin 6

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Course City/County: L.A. County Sampling Date: 10/31/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 6-TP2
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base Local relief (concave, convex, none): Flat Slope (%): 0-0%
Subregion (LRR): C at hillslope-bottomland Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% NWI classification: –
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: In-line w/ Tranquas Creek. ~~Ret~~ Debris basin. Seasonally flooded / saturated probably short duration only. Relatively large concrete dam, spillway, and standpipe/culvert. Only delineated basin to 100 feet from golf course although basin extends further north.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 400sq ft.)			
1. Polypogon monspeliensis	50	Y	FACW
2. Festuca perennis	30	Y	FAC
3. Ensenn canadensis	<1	N	FACU
4. Baccharis salicifolia	1	N	FAC
5. Rumex crispus	<1	N	UPL
6. Stipa miliacea	<1	N	FACW
7. Rumex conglomeratus	<1	N	FACW
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust ~~0~~

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Photos
P. 4483
4463

SOIL

Sampling Point: Basin 6-TP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	2.5Y 3/2	93	7.5YR 3/2	7	C	M/PL	clay loam	Salt crust on surface

Test pit 9" deep. Restrictive layer encountered.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: Apron
Depth (inches): 9"

Hydric Soil Present? Yes ✓ No ___

Remarks: Several test pits excavated in lower basin. This one is representative. Consistently finding redox concen. in excess of 5% throughout delineated basin bottom

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) Jan 8 2008
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) •
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Drainage patterns in basin bottom: Details flows from upper portion of Trancas Creek

Basin 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/31/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 1, TO1
Investigator(s): J. Anderson Section, Township, Range: S16, T. 1S, R. 19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): concave Slope (%): 20
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Small basin (approx 40ft long by 15ft wide) between hillslope and small oak woodland. Receives flows from ephemeral drainage. Outlet is a small plastic elevated culvert and lower portion of basin. Basin slopes somewhat from top to bottom. So any ponding only expected in lower portion of basin only

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: lower bottom basin)			
1. Baccharis salicifolia	<1	N	FAC
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: lower bottom basin)			
1. Polypogon monspeliensis	<1	Y	FACW
2. Rorippa curvipes	<1	Y	FAC
3. Cyperus sp.	<1	N	FACW
4.			
5.			
6.			
7.			
8.			
	1 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

shrub stratum <5% cover so not evaluated

% Bare Ground in Herb Stratum high % bare ground % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Vegetation in basin recently mowed so unable to reliably assess whether under normal circumstances basin would contain a predominance of hydrophytic vegetation. Best available information suggests that the lower part of the basin would contain a predominance of hydrophytes during the wet season based on: 1) Plant species that are identifiable (see list above) and early new growth are wetland indicators and 2) Teracor found in 2006/2007 that the basin was dominated by Polypogon monspeliensis, Upper portion clearly dominated by upland species

Photo> 4482
4486 - 4487
4834 - 4837

SOIL

Sampling Point: Basin 7-TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					clay loam	upland in appearance

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Pit excavated at ~~lowest~~ topographically lowest point in basin.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ✓ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9) Jan 9 2008
- ✓ Salt Crust (B11) minor
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Lower basin likely inundated during significant storm events although duration of inundation/saturation in typical year unknown.

Basin 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/4/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 7, TP
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Concave Slope (%): 5-10
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: Small basin between hillslope and small oak woodland. Receives flows from ephemeral drainage. Basin is approx 40' by 15' wide. Elevated plastic culvert is outflow pipe. Basin slopes from upper to lower part of basin.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. Baccharis salicifolia	<1		
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 300 sq ft)			
1. Unidentified Poaceae cf Pol mon	4	Y	FACW
2. Polygonum monspeliensis	<1	N	FACW
3. Rumex sp	2	N	FAC
4. Cyperus sp.	<1	N	FACW
5. Eleocharis sp.	3	Y	OBL
6. other herbs (new growth)	3	Y	?
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 65 % Cover of Biotic Crust ~

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: Atypical situation – vegetation recently mowed in basin. Only very new growth evident so unable to determine if under normal circumstances basin supports predominance of hydrophytes. Best available information suggests the lowest part of the basin supports a predominance of hydrophytes during the wet season. Part of lower basin is well shaded. Upper basin clearly dominated by UPL spp.

Photo: 4493
4486-4493
4834-4837

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ✓ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7) Jan 9, 2008
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11) minor
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Probably doesn't experience prolonged inundation or saturation. Short-term, temporary only

Basin D

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/4/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin B -TP
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Flat Slope (%): 0-5
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ✓, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No ✓
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No ✓	Is the Sampled Area within a Wetland? Yes No ✓
Hydric Soil Present?	Yes	No ✓	
Wetland Hydrology Present?	Yes	No ✓	

Remarks: Small, shallow basin (depression) that receives flow from small ephemeral drainage. Small elevated outflow pipe appears to direct water to Pond 3 on the golf course grounds.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size:)			
1.			
2. Not assessed - Atypical condition as recently mowed.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover			
Woody Vine Stratum (Plot size:)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A)
Total Number of Dominant Species Across All Strata: (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No ✓

Remarks: Vegetation recently mowed and could not assess hydrophytic predominance. Unidentifiable new growth of herbs/grasses throughout basin. Only Cynodon dactylon (FAC), a poor indicator, and Rumex crispus (FAC), better but still not good indicator, are identifiable. Appearance, expected volume and elevation of inundation/saturation [illegible] probably does not meet indica

Tera Cor found 70% polygon boundaries to match those in 2006/2007.

photos 4838-4843

SOIL

Sampling Point: Basin E-TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					clay	
3-14	10YR 3/3	90					sandy loam	rock/cobble layer
3-14	10YR 3/2	10					clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Upland in appearance

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: other than is a basin that clearly receives flows from an ephemeral channel no indicators of wetland hydrology observed. ~~Moderate~~ Small drainage and size/appearance of basin suggests ~~flood basin~~ soils are not inundated saturated for sufficient duration in average year to meet wetland hydrology indicator.

Basin 9

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/4/12

Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 9-T1

Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W

Landform (hillslope, terrace, etc.): basin at base of hillslope - bottomlands Local relief (concave, convex, none): Flat Slope (%): 0-2

Subregion (LRR): C Lat: Long: Datum:

Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

Vegetation in basin recently mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland?	Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓		
Wetland Hydrology Present?	Yes ____	No ✓		

Remarks: Small, shallow basin w/ small culvert at downstream end that appears to drain to Pond 3. Ephemeral drainage flows to the basin, culvert small. Only very short term infrequent inundation of lower basin expected – not sufficient to meet wetland hydrology indicator

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2. Not assessed – recently mowed			
3.			
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Recently mowed – only very new growth evident and can't assess predominance of hydrophytic vegetation at this time. Best evidence suggests dominated by FAC or UPL species and doesn't meet parameter. TERRCOR found did not meet vegetation parameter in 2006/2007.

Photos 4844-4848

Sampling Point: Basin 9 - TP1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks: Upland in appearance.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of wetland hydrology other than is a basin that obviously receives some flows from a small ephemeral drainage. Duration of inundation expected to be under 14 days in average year - presumably wetland hydrology indicator would not be met.

Basin 10

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/4/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 10-T
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): bottomlands Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: This basin is the closest of three basins ~~to the~~ to the golf course. The other two basins likely intercept and retain flows from the upstream ephem drainage and this basin receives less stormwater, primarily from the channe located between the basin to the north and this basin. Double culverts discharge directly into the golf course ~~grounds~~ grounds.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ___)			
1.			
2. Not assessed – Vegetation			
3. recently mowed and			
4. only very new growth			
5. evident.			
6.			
7. Assumed to support predominance			
8. of hydrophytes based on			
casual observations earlier in 2012			
Woody Vine Stratum (Plot size: ___) and Tenacor findings			
1. in 2006/2007.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)
Total Number of Dominant Species Across All Strata: ___ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: Vegetation composition cannot be assessed due to recent mowing but ~~there~~ only early new growth evident. Ephemeral drainage just upstream from basin contains dense mule fat. Basin is currently nearly barren but casual observations earlier in 2012 appeared to contain a predominance of hydrophytes. Also, TENACOR found Typha & Polypogon mowings accounted for 70% of vegetati in 2006/2007.

US Army Corps of Engineers Arid West – Version 2.0

photos 4851-4861

Soil Sampling Point: Basin 10 - TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/2	100					clay	
9-10	10YR 3/3	100					Sandy loam	decomposing rock

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Difficult dig-ing due to decomposing rock. Surface soil disturbance due to recent vegetation cutting.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ✓ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7) Jan 8, 2008
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicators may have been disturbed by recent mowing and vegetation removal. Evidence of recent pooling in basin.

Basin 11

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/4/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 11-TP
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Flat Slope (%): 0-2
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% Slopes NWI classification: –
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks: Small basin at edge of golf course that receives flows from an ephemeral drainage. Standpipe ~~directs~~ conveys flows to underground storm drain system beneath golf course.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1.			
2. Not assessed as Vegetation			
3. recently mowed.			
4.			
5.			
6.			
7.			
8.			
	___ = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)
Total Number of Dominant Species Across All Strata: ___ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: Atypical situation as vegetation in basin recently mowed. Presumed to meet indicator based on prior observations by TERRACOR. TERRACOR found 97% of vegetation in basin in 2006/2007 was Polypogon monspeliensis although conditions may have changed since this time.

Photos 4862-4867

Sampling Point Basin 11-TP1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
6-12	10YR 2/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Evidence of inundation in parts of basin. Recent mowing may hide other indicators of wetland hydrology. Probably less than 14 days flooding/saturation in normal year but unknown.

Basin 12

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 12-TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T1S, R19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Concave Slope (%): ~0
Subregion (LRR): C Lat: Long: Datum: —
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Very small basin at edge of golf course. Standpipe conveys water to underground storm drain system beneath the golf course, Receives concentrated runoff from small ephemeral channel and concrete swale.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ____)			
1.			
2. Not assessed: Atypical situation			
3. as recently mowed and			
4. currently barren.			
5.			
6. Presumed to be predominately upland.			
7. ~~bare ground~~			
8.			
= Total Cover			
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Was probably upland nurstands primarily and perhaps some coastal sage shrubs prior to mowing based on cuttings in basin bottom. No evidence of prior wetland indicator species at this time. TERRACON found ~~no relative cover of hydrophytes~~ vegetation to be upland in 2006/2007 as well.

Photos 4930-4934

SOIL

Sampling Point: Basin 12 - TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Sandy clay loam	Somewhat rocky; decomposing volcanic rock

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Upland in appearance.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Vegetation mowing may have masked wetland hydrology indicators. Expect duration/frequency of flooding is too low to ~~result in~~ meet wetland hydrology indicators

Basin 13

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/13
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 13-TP
Investigator(s): J. Anderson Section, Township, Range: S10, T. 1S, R. 19W
Landform (hillslope, terrace, etc.): Basin at base of hillslope Local relief (concave, convex, none): concave Slope (%): ~3%
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: XerorThents, 0–9% slope NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ✓, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No ✓
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No ✓	Is the Sampled Area within a Wetland?	Yes No ✓
Hydric Soil Present?	Yes	No ✓		
Wetland Hydrology Present?	Yes	No		

Remarks: Small basin at edge of golf course, receives flows from ephemeral drainage. Standpipe conveys flows to underground storm drain system beneath golf course. Slopes toward standpipe

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size:)			
1.			
2. NOT assessed due to recent mowing. Atypical situation.			
3.			
4.			
5.			
6. Presumed to be predominately upland due based on casual			
7.			
8. Observation of vegetation in basin earlier in 2012.			
= Total Cover			
Woody Vine Stratum (Plot size:)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: (A)
Total Number of Dominant Species Across All Strata: (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: Atypical Condition Situation; however, seasonal observation revealed no vegetation in basin earlier in 2012 to be predominantly upland species. Tera Cor formed 70% relative cover of vegetation in basin to be Polygonon monspeliensis in 2006/2007. Observed - Upland thistles, mustards, upland shrubs in basin in 2012.

Photos 4926-4929

SOIL

Sampling Point: Basin 13, TP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	2.5Y 3/2	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Upland in appearance.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ ~~Drainage~~ Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Recent mowing could mask indicators. Basin sloped slightly so would likely empty at standpipe or only pool at lower portion of basin near standpipe. Suspect less than 14 days of inundation/saturation.

Basin 14

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 14-TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Flat Slope (%): a5%
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slope NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Small basin at edge of golf course that receives runoff from erosion channels & concrete swales. Metal standpipe discharges to underground storm drain system beneath golf course. Slopes towards standpipe.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Juncus macrophyllus ?		Y	FACW
2. (Not assessed due to recent			
3. mowing. Assigned			
4. Carded Stratum.			
5.			
6. Presumed to be predominately			
7. wetland indicator based on			
8. casual observations earlier in 2012			
and TeraCor findings in 2006/2007			
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum high cover ground cover % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:
Recent mowed so ~~reduced~~ determination of predominance of hydrophytes not possible at this time. Only new growth evident and cut perennial Juncus macrophyllus throughout basin bottom. TeraCor found the basin to be dominated by Polypogon monspeliensis (FACW) in 2006/2007.

Photos 4920-4925

Sampling Point: Basin 14-TP1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Vegetation mowing may have removed some indicators of wetland hydrology. Some minor erosion channels within basin. Suspect < 14 days of inundation/saturation.

Basin 15

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Course City/County: L.A County Sampling Date: 12/5/12
State: CA Sampling Point: Basin 15 - TP
Applicant/Owner: Tom Irby
Investigator(s): J. Anderson Section, Township, Range: S10, T1S, R19W
Landform (hillslope, terrace, etc.): basin at base of debris basin Local relief (concave, convex, none): Concave Slope (%): 2%
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ~~✓~~	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks: Small basin at edge of golf course, receives flows from concrete swales and erosion channels from adjacent slopes. No drainage empties into the basin. Basin slopes toward metal standpipe.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1.			
2. Not assessed. Atypical situation: as vegetation recently mowed			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover			
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ___ (A)
Total Number of Dominant Species Across All Strata: ___ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	x 2 = ___
FAC species ___	x 3 = ___
FACU species ___	x 4 = ___
UPL species ___	x 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: Only early growth of herbs. The basin TeraCor found 90% relative cover of Polypogon monspeliensis on the basin in 2006/2007. Therefore, presumed to support predominance of wetland indicators, although probably not hydrophy

Photos 4912-4919

SOIL

Sampling Point: Basin 15-TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/3	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of wetland hydrology except for that receives runoff from swales and erosion channels. Suspect upland conditions <14 days inundation/saturation.

Basin 16

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 12/5/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin 16-TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): basin at base of hillslope Local relief (concave, convex, none): Flat Slope (%): 20
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓		
Wetland Hydrology Present?	Yes ____ No ✓		

Remarks: Small basin at edge of golf course, receives concentrated runoff from concrete swales, erosion channels, and a small ephemeral ditch. Plastic standpipe ~~present~~ conveys water to underground storm drain system.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2. Not assessed. Atypical situation.			
3. Recent mowing.			
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Recently mowed, Not possible to determine normal circumstances of vegetation. ~~Assuming hydric~~
TeraCor found 85% relative cover of Polygonum monspeliensis [~~FAC~~ FACW]
Assuming ~~bog~~ dominance of wetland indicators based on TeraCor finding in 2006/2007.

Photos 4905-4911

SOIL

Sampling Point: Basin 16-TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/3	100					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10) basin
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of wetland hydrology other than is a basin that receives concentrated runoff from a small channel & concrete swales. Vegetation mowing may have removed / disturbed other indicators.

Basin 17

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/17/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Basin17-TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T.1S, R.19W
Landform (hillslope, terrace, etc.): Bottomland Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents - 0-9% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation in basin recently mowed.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Man-made basin that receives flows from ephemeral drainage and nuisance water from area where golf carts are washed. Drainage empties into basin, which has been modified and realigned to ~~run along road and discharge to basin.~~ Most water entering basin is nuisance water from golf carts

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Portulaca oleracea	20	Y	FAC
2. Cynodon dactylon	1	N	FACU
3. Sonchus asper	<1	N	FAC
4. Euphorbia terracina	2	N	UPL
5. Amaranthus albus	<1	N	FACW
6. Persicaria sp.	1	N	?
7. Chenopodium / Atriplex			
8.			
	25 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Although atypical situation due to vegetation disturbance, assessed based on species found at basin at time of delineation. Combined w/ casual observation during prior site visits, the basin is typically a mix of indicators and non-indicators. Marginal and man-induced conditions

Photos 4351-4361

SOIL

Sampling Point: Basin 17-TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100	5YR 4/6	<1	C	PL/M	loam	
6-9	5YR 3/2	100	5YR 4/6	<1	C	PL/M	silty clay	
9-10	2.5Y 4/3	100	5YR 4/6	15	C	PL/M	"	
10-14	2.5Y 4/3	100	5YR 4/6	<1	C	PL/M	"	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Thin mulch layer on surface of profile. Redox concentrations present but only a thin layer at ~10 inches >5% so doesn't meet Indicator F6 or any other indicator. This is a man-induced condition as a result of runoff from washing golf carts.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Drainage 1 flows to this basin. However, ~~Hydrophytic~~ Wetland indicator species are primarily supported by excess water that drains to the basin from area where golf carts are washed. Water pools here as outlet is well above ~~the~~ any anticipated water level. ~~Adequate~~ Other wetland hydrology indicators may have been disturbed by recent vegetation mowing.

Seep 1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/17/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Seep 1 - TP1
Investigator(s): J. Anderson Section, Township, Range: S10, T, 1S, R, 19W
Landform (hillslope, terrace, etc.): lower hillslope Local relief (concave, convex, none): Flat Slope (%): 60
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Cotharin-Talepop Associations, 15-50% NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.) ✓
Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)
Vegetation cut for fuel modification purposes.

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Seep on steep slope in fuel modification zone. At time of delineation appears to be dry and all vegetation has been cut to the base. Although close enough to drainage / to be considered adjacent the seep does not meet all three parameters to be an USACE wetland

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ~400 sq ft)		—	Y OBL
1. Typha sp.			
2. Not assessed – based on prior observation.			
3. Atypical Situation –			
4. Vegetation cleared			
5. for fuel mod purposes.			
6.			
7. Based on prior observations			
8. presumably seasonal and Typha will grow back.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:
Previous observations of the vegetation in this area (2009-2011) support that under normal circumstances there is a predominance of hydrophytes, primarily Typha, a wetland obligate. The area contained a patch of Typha and other wetland indicator species prior to being cleared.

Photos
4365
4367-4368
4371-4372

Sampling Point: Seep 1 - TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y4/2	100					Sandy clay loam	
12-18	2.5Y3/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ____
Depth (inches): ____

Hydric Soil Present? Yes ____ No ✓

Remarks:
Soil dry to 18". Test pit in patch of Typha "stumps".
Soils appear upland condition

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____
Water Table Present? Yes ____ No ✓ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

only evidence is vegetation composition, includes obligates.

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology and no evidence seep is currently active at time of delineation. This may be a seasonal seep. The only indication of a seep in this area during prior observations is vegetation composition; no water or saturation has been observed at the soil surface. Seep is on lower hillslope not far a 30 ft from the base of the slope on a roadcut.

Drainage 2

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Malibu Golf Club City/County: L.A. County Sampling Date: 10/22/12
Applicant/Owner: Tom Hix State: CA Sampling Point: Drainage 2
Investigator(s): J. Anderson Section, Township, Range: S10, T1S, R19W
Landform (hillslope, terrace, etc.): bottomlands Local relief (concave, convex, none): ~~Con~~ flat Slope (%): 0-5
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: Xerorthents, 0-9% slopes NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks: Small "daylighted" man-made drainage on golf course. Part of stream contains pooled water due to incorrect grading of drainage bottom and supports 3 distinct patches of wetland vegetation. Remainder of drainage is only non-wetland waters.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Nasturtium officinale	80	Y	OBL
2. Veronica anagallis-aquatica	7	Y	OBL
3. Unknown sp of turfgrass	2	N	UPL?
4. Lysimachia peplioides	2	N	OBL
5. Rumex crispus	1	N	FAC
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 50 (flooded) % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Sections of stream supported wetland obligates, others contain turfgrass or are barren. Three area of wetland vegetation identified. Man-made channel. Algae on surface. Wetland obligates in channel but very patchy.

Photos 4396-4407
4868-4870

Sampling Point: Drainage 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	Gley 1 N 2.5/	100						black, greasy, organic sapric muck
3-12	Gley 1 N 2.5/	100					sandy loam	black, rocky, sandy; a lot of organic material
12x18	5Y 2.5/1	100					sandy clay	heavy clay w/ some sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ✓ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: None to 18"
Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks: Thick mucky ~~peat~~ surface layer in profile. Root very dark probably due to ~~organic~~ organic material. Heavy clay below 12".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12) Crayfish Fish
- ✓ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 4" at test pit

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Water ponds here due to stream microtopography even when stream is not flowing. Fish and crayfish in ~~stream~~ pools of water. May dry in dry season occasionally; connected to permanent water source (Pond 4) upstream presumably and Pond 3 is likely downstream. This is a "daylighted" section of the underground storm drain system, likely constructed for aesthetic purposes as a feature on the golf course.

Appendix 2
Photographs of Jurisdictional Areas and Test Pits

Photo 1A – View facing generally west showing dense cattail (*Typha* sp.) [OBL] in the southern portion of Pond #1.

Photo 1B – Test pit location at Pond #1.

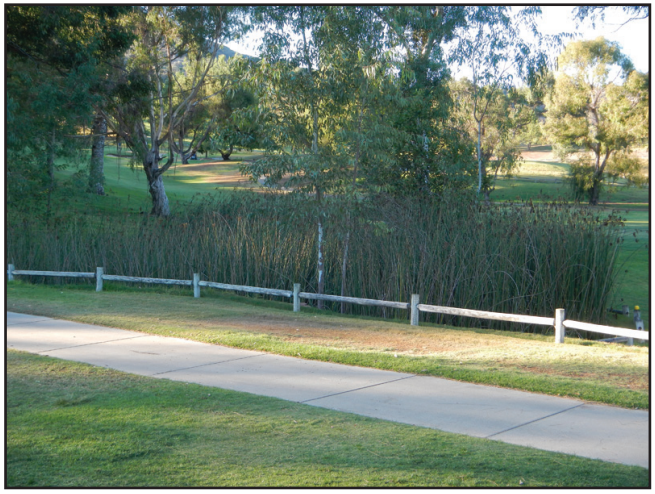


Photo 1C – View facing generally north showing dense bulrush (*Schoenoplectus californicus*) [OBL] at Pond #2.

Photo 1D – Test pit location at Pond #2.

Photo 1E – View facing generally west showing the central portion of Pond #3, the largest pond on the golf course.

Photo 1F – Test pit #1 at Pond #3.

Photographs of Jurisdictional Areas and Test Pits

Photo 2A – Location of sample plot #2 at Pond #3.

Photo 2B – Test pit #2 at Pond #3.

Photo 2C – View facing generally south of marsh and riparian habitats at Pond #4.

Photo 2D – Test pit location at Pond #4.

Photo 2E – View facing generally north of Basin #1.

Photo 2F – Representative photo showing an area within Basin #1 dominated by non-native annual rabbitfoot grass (*Polypogon monspeliensis*) [FACW], a wetland indicator species.

Photographs of Jurisdictional Areas and Test Pits

Photo 3A – Test pit #1 at Basin #1.

Photo 3B – Test pit #2 at Basin #1.

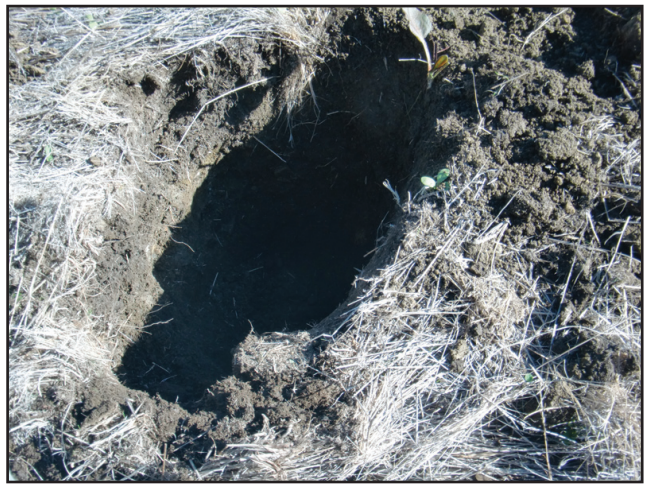


Photo 3C – Test pit #3 at Basin #1.

Photo 3D – Basin #2.

Photo 3E – Test pit at Basin #2.

Photographs of Jurisdictional Areas and Test Pits

Photo 4A – View facing southeast of Basin #3.

Photo 4B – Test pit at Basin #3.

Photo 4C – View of Basin #4. The bottom of Basin #4 contains common spikerush (*Eleocharis macrostachya*) [OBL].

Photo 4D – Test pit at Basin #4.

Photo 4E – View facing southwest of Basin #5.

Photo 4F – Test pit at Basin #5.

Photo 5A – View facing generally north of Basin #6 at the northern end of the golf course. Basin #6 detains flows from Trancas Creek.

Photo 5B – Test pit at Basin #6.

Photo 5C – Photo is representative of the redox concentrations found within the matrix and at pore linings in a layer of clay loam at test pits excavated in Basin #6.

Photo 5D – View facing generally west of Basin #7.

Photo 5E – Test pit #1 at Basin #7.

Photo 5F – Test pit #2 at Basin #7.

Photographs of Jurisdictional Areas and Test Pits

Photo 6A – Basin #8.

Photo 6B – Test pit at Basin #8.

Photo 6C – Basin #9.

Photo 6D – Test pit at Basin #9.

Photo 6E – View facing generally east of Basin #10.

Photo 6F – Test pit at Basin #10.

Photographs of Jurisdictional Areas and Test Pits

Photo 7A – Basin #11.

Photo 7B – Test pit at Basin #11.

Photo 7C – Basin #12.

Photo 7D – Test pit at Basin #12.

Photo 7E – Basin #13.

Photo 7F – Test pit at Basin #13.

Photographs of Jurisdictional Areas and Test Pits

Photo 8A – Basin #14.

Photo 8B – Test pit at Basin #14.

Photo 8C – Basin #15.

Photo 8D – Test pit at Basin #15.

Photo 8E – Basin #16.

Photo 8F – Test pit at Basin #16.

Photographs of Jurisdictional Areas and Test Pits

Photo 9A – View facing northwest of Basin #17.

Photo 9B – Test pit at Basin #17.

Photo 9C – View to the south of the man-made stream feature (Drainage #2) on the golf course.

Photo 9D – Test pit location at Drainage #2.

Photo 9E – Seep #1. Photo from October 2012 of a slope that based on prior observations between 2009 and 2011 has supported a patch of cattail (*Typha* sp.) [OBL]. The vegetation on the slope has been cut for fuel modification purposes. The cut *Typha* is visible in the center of the photo.

Photo 9F – Test pit at Seep #1.

Photographs of Jurisdictional Areas and Test Pits

Appendix 3
Malibu Institute Grading Plan

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 71735

LOCATED IN THE UNINCORPORATED TERRITORY OF THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

EXISTING LEGAL DESCRIPTION AND APN'S:

APN 2058-015-003
THAT PORTION OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY AND EASTERLY OF THE CENTER LINE OF DECKER ROAD, AS DESCRIBED IN THE DEED RECORDED IN BOOK 2544 PAGE 277, OFFICIAL RECORDS OF SAID LOS ANGELES COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH IS THE MOST SOUTHEASTERLY CORNER OF THE LANDS CONVEYED TO MABLE STRASZACKER, A MARRIED WOMAN, TO RALPH M. SWITZKY, A SINGLE MAN, BY DEED RECORDED IN BOOK 15134 PAGE 285, OFFICIAL RECORDS OF LOS ANGELES COUNTY; THENCE EASTERLY ALONG THE SOUTHERLY LINE OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, 200 FEET TO A POINT; THENCE NORTHERLY ALONG A LINE PARALLEL TO THE EASTERLY LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TO A POINT IN THE CENTER LINE OF DECKER ROAD, (AS DESCRIBED IN THE DEED RECORDED IN BOOK 2544 PAGE 277, OFFICIAL RECORDS OF LOS ANGELES COUNTY); THENCE WESTERLY ALONG THE CENTER LINE OF DECKER ROAD TO THE MOST NORTHEASTERLY CORNER OF SAID LANDS DESCRIBED IN SAID DEED RECORDED IN BOOK 15134 PAGE 285 OF SAID OFFICIAL RECORDS; THENCE SOUTHERLY ALONG THE EASTERLY LINE OF THE PROPERTIES CONVEYED BY SAID DEED, RECORDED IN BOOK 15134 PAGE 285, OFFICIAL RECORDS OF LOS ANGELES COUNTY, TO THE POINT OF BEGINNING.

APN 2058-015-045, 2058-015-046
THAT PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTH AND EAST OF THE CENTER LINE OF DECKER COUNTY ROAD, AS DESCRIBED IN DEED RECORDED IN BOOK 2544 PAGE 277, OFFICIAL RECORDS

EXCEPTING THEREFROM A PORTION SECTION 3, TOWNSHIP 1 SOUTH RANGE 19 WEST IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, COMMENCING AT THE SOUTH ONE QUARTER (1/4) SECTION CORNER OF SAID SECTION 3; THENCE ALONG THE SOUTH LINE OF SAID SECTION 3, SOUTH 89° 25' 34" EAST 207.80 FEET TO A POINT HEREINAFTER REFERRED TO AS POINT A; THENCE NORTH 27° 39' 39" EAST 302.67 FEET, MORE OR LESS, TO THE NORTH RIGHT OF WAY MULHOLLAND HIGHWAY, 100.00 FEET WIDE, AS SHOWN ON COUNTY SURVEYORS MAP CS 8824 SHEET 9, AND THE POINT OF BEGINNING; THENCE,

1. NORTH 27° 39' 39" EAST 93.01 FEET, MORE OR LESS, TO A POINT THAT BEARS NORTH 27° 39' 39" EAST 395.68 FEET FROM BEFORE MENTIONED POINT A;
2. THENCE, NORTH 22° 28' 25" WEST 187.64 FEET; THENCE,
3. NORTH 87° 48' 05" WEST 135.60 FEET MORE OR LESS TO THE EASTERLY RIGHT OF WAY WESTLAKE BOULEVARD, FORMERLY DECKER ROAD, 40.00 FEET WIDE As SHOWN ON COUNTY SURVEYORS MAP CS 8093; THENCE, ALONG SAID RIGHT OF WAY THE FOLLOWING THREE COURSES,
4. SOUTH 01° 53' 38" WEST 111.14 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE TO THE WEST, HAVING A RADIUS OF 220.00 FEET; THENCE SOUTHERLY AND SOUTHWESTERLY ALONG SAID CURVE
5. 123.94 FEET THROUGH A CENTRAL ANGLE OF 32° 16' 40"; THENCE
6. SOUTH 34° 10' 18" WEST 2.05 FEET, MORE OR LESS, TO SAID NORTH RIGHT OF WAY MULHOLLAND HIGHWAY, BEING A POINT OF CUSP ON A CURVE CONCAVE SOUTH HAVING A RADIUS OF 350.00 FEET, A RADIAL LINE BEARS NORTH 8° 36' 53" WEST, THENCE, EASTERLY AND SOUTHEASTERLY ALONG SAID NORTH RIGHT OF WAY

7. 212.43 FEET THROUGH A CENTRAL ANGLE OF 34° 46' 28" TO THE POINT OF BEGINNING.

PORTION OF APN 2058-015-037
THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THE EASTERLY 998.71 FEET (MEASURED ALONG THE SOUTHERLY LINE) OF SAID LAND.

ALSO EXCEPT THEREFROM THAT PORTION OF SAID LAND LYING NORTHERLY OF THE SOUTHERLY LINE OF THE 100 FOOT STRIP OF LAND, DESCRIBED IN DEED TO THE COUNTY OF LOS ANGELES, (FOR PUBLIC ROAD AND HIGHWAY PURPOSES), RECORDED IN BOOK 11862 PAGE 146, OFFICIAL RECORDS.

PORTION OF APN 2058-015-037
THE WESTERLY 333.15 FEET OF THE EASTERLY 998.71 FEET (MEASURED ALONG THE SOUTHERLY LINE) OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF LYING SOUTHERLY OF A STRIP OF LAND 100.00 FEET WIDE, THE CENTER LINE OF WHICH IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE WESTERLY TERMINUS OF THAT CERTAIN COURSE HAVING A BEARING AND LENGTH OF NORTH 84° 27' 05" EAST 561.42 FEET IN THE CENTER LINE OF MULHOLLAND HIGHWAY, AS DESCRIBED IN DEED RECORDED IN BOOK 10710 PAGE 291, OFFICIAL RECORDS, OF THE COUNTY OF LOS ANGELES, THENCE SOUTH 84° 27' 05" WEST 244.12 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTH, AND HAVING A RADIUS OF 2000 FEET; THENCE WESTERLY ALONG SAID CURVE, 642.52 FEET; THENCE NORTH 77° 08' 30" WEST 185.62 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTH AND HAVING A RADIUS OF 900 FEET; THENCE WESTERLY ALONG SAID LAST MENTIONED CURVE, 921.53 FEET; THENCE SOUTH 44° 11' 30" WEST 101.76 FEET.

ALL CURVES ARE TANGENT TO THE STRAIGHT LINES WHICH THEY JOIN, TO BE KNOWN AS MULHOLLAND HIGHWAY, REFERENCE IS MADE TO COUNTY SURVEYOR'S MAP NO. 8824, ON FILE IN THE OFFICE OF THE SURVEYOR OF THE COUNTY OF LOS ANGELES.

PORTION OF APN 2058-015-037
THE EASTERLY 332.64 FEET (MEASURED ALONG THE SOUTHERLY LINE) OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY OF A STRIP OF LAND 100.00 FEET WIDE, THE CENTER LINE OF WHICH IS DESCRIBED AS FOLLOWS:

BEGINNING AT THE WESTERLY TERMINUS OF THAT CERTAIN COURSE HAVING A BEARING AND LENGTH OF NORTH 84° 27' 05" EAST 561.42 FEET IN THE CENTER LINE OF MULHOLLAND HIGHWAY, AS DESCRIBED IN DEED RECORDED IN BOOK 10710 PAGE 291, OFFICIAL RECORDS, OF THE COUNTY OF LOS ANGELES, THENCE SOUTH 84° 27' 05" WEST 244.12 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTH, AND HAVING A RADIUS OF 2000 FEET; THENCE WESTERLY ALONG SAID CURVE, 642.52 FEET; THENCE NORTH 77° 08' 30" WEST 185.62 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTH AND HAVING A RADIUS OF 900 FEET; THENCE WESTERLY ALONG SAID LAST MENTIONED CURVE, 921.53 FEET; THENCE SOUTH 44° 11' 30" WEST 101.76 FEET.

ALL CURVES ARE TANGENT TO THE STRAIGHT LINES WHICH THEY JOIN TO BE KNOWN AS MULHOLLAND HIGHWAY. REFERENCE IS MADE TO COUNTY SURVEYOR'S MAP NO. 8824, ON FILE IN THE OFFICE OF THE SURVEYOR OF THE COUNTY OF LOS ANGELES.

PORTION OF APN 2058-015-037
THAT PORTION OF THE WESTERLY 332.92 FEET OF THE EASTERLY 665.56 FEET (MEASURED ALONG THE SOUTHERLY LINE) OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY OF THE SOUTHERLY LINE OF MULHOLLAND HIGHWAY, 100.00 FEET WIDE, AS DESCRIBED IN THE DEED TO THE COUNTY OF LOS ANGELES, RECORDED OCTOBER 25, 1932 IN BOOK 11862 PAGE 146, OFFICIAL RECORDS OF SAID COUNTY.

APN 2058-015-013
THAT PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY AND EASTERLY OF THE CENTER LINE OF DECKER COUNTY ROAD, AS DESCRIBED IN DEED RECORDED IN BOOK 2544 PAGE 277, OFFICIAL RECORDS OF SAID COUNTY.

APN 4471-001-033
THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 10 TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL MAP THEREOF.

EXCEPT THEREFROM THE EASTERLY 500.00 FEET, MEASURED ALONG THE NORTHERLY LINE OF SAID NORTHEAST QUARTER

APN 4471-001-032

THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 1 SOUTH, RANGE 19 WEST , SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

APN 4471-001-036

THE EASTERLY 500.00 FEET OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 10 TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

APN 4471-001-037

THE EASTERLY 500.00 FEET OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 10, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT BEGINNING AT A POINT IN THE EASTERLY LINE OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 10, SAID POINT BEING SOUTH 01°31'53" WEST 314.12 FEET, MEASURED ALONG SAID EASTERLY LINE FROM A COUNTY SURVEYOR'S BRASS CAP MONUMENT SET AT THE NORTHEAST CORNER OF SAID SECTION 10; THENCE SOUTH 01° 31'53" WEST 2300.71 FEET , MORE OR LESS, MEASURED ALONG SAID EASTERLY LINE TO THE EAST ONE-QUARTER CORNER OF SAID SECTION 10, SAID WEST ONE-QUARTER CORNER BEING A COUNTY SURVEYOR'S BRASS CAP MONUMENT.

APN 4471-001-039, 4471-001-041, 4471-001-042, 4471-001-043

AS DESCRIBED BY RLLA 2008 00014 AND RLLA 2008 00016

APN'S 4471-002-010, 4471-002-011
THE SOUTHEAST QUARTER OF SECTION 10 AND THAT PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 10, ALL IN TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY OF A Straight LINE DRAWN FROM THE SOUTHEASTERLY CORNER OF SAID SOUTH HALF TO THE NORTHWESTERLY CORNER OF SAID SOUTH HALF.

APN'S 4471-001-028, 4471-001-029
THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER AND THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 10, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THAT PORTION OF SAID LAND IN THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER DESCRIBED IN THE DEED TO BOYD A. DAVIS, RECORDED DECEMBER 29, 1961 IN BOOK D-1463 PAGE 954, OFFICIAL RECORDS, AS INSTRUMENT NO. 1741, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN'S 4471-001-034, 4471-001-035, 4471-002-010, 4471-002-011
THE SOUTHEAST QUARTER OF SECTION 10 AND THAT PORTION OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 10, ALL IN TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY OF A STRAIGHT LINE DRAWN FROM THE SOUTHEASTERLY CORNER OF SAID SOUTH HALF TO THE NORTHWESTERLY CORNER OF SAID SOUTH HALF.

APN'S 4471-003-010, 4471-003-011
THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, COUNTY OF LOS ANGELES, ACCORDING TO THE OFFICIAL PLAT THEREOF.
EXCEPT THEREFROM THAT PORTION OF SAID LAND, LYING EASTERLY AND NORTHEASTERLY OF A LINE, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF SAID SECTION 11, WITH THE CENTER LINE OF MULHOLLAND HIGHWAY, (100 FEET WIDE), AS DESCRIBED IN RESOLUTION APPROVED ON APRIL 2, 1934 BY THE BOARD OF SUPERVISORS OF LOS ANGELES COUNTY, RECORDED APRIL 10, 1934 IN BOOK 12707 PAGE 152, OFFICIAL RECORDS, AS INSTRUMENT NO. 943 OF SAID COUNTY; THENCE SOUTHERLY AND SOUTHEASTERLY, ALONG SAID CENTER LINE TO ITS FIRST INTERSECTION THEREOF WITH THE SOUTHERLY LINE OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SAID SECTION 11.

APN'S 4471-002-026, 4471-002-027
THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 10, AND THOSE PORTIONS OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER AND THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 10, ALL IN TOWNSHIP 1 SOUTH RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING NORTHEASTERLY, EASTERLY AND SOUTHEASTERLY OF THE SOUTHEASTERLY LINE OF DECKER CANYON ROAD, AS DESCRIBED IN THE DEED TO THE COUNTY OF LOS ANGELES, RECORDED APRIL 29, 1918 IN BOOK 6682 PAGE 1 OF DEEDS, RECORDS OF SAID COUNTY. EXCEPT THAT PORTION OF SAID LAND, IF ANY, AS DESCRIBED IN THE DEED TO THE COUNTY OF LOS ANGELES, RECORDED IN BOOK 1962 PAGE 258, OFFICIAL RECORDS OF SAID COUNTY. ALSO EXCEPT THAT PORTION OF SAID LAND, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE CENTER LINE OF DECKER CANYON ROAD, AS DESCRIBED IN THE DEED TO THE COUNTY OF LOS ANGELES, RECORDED MARCH 22, 1923 IN BOOK 1962 PAGE 258, OFFICIAL RECORDS, WITH THE SOUTH LINE OF SECTION 9; THENCE ALONG SAID CENTER LINE AS FOLLOWS,
NORTH 81° 58' 30" EAST 133.84 FEET; THENCE NORTH 59° 30' 30" EAST 73.97 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE SOUTHEASTERLY HAVING A RADIUS OF 100 FEET; THENCE NORTHEASTERLY 51.02 FEET ALONG THE ARC OF THE ABOVE MENTIONED CURVE; THENCE TANGENT TO SAID CURVE, NORTH 88° 44' 30" EAST 21.82 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 40 FEET; THENCE NORTHEASTERLY 69.67 FEET ALONG THE ARC OF THE ABOVE MENTIONED CURVE; THENCE TANGENT TO SAID CURVE, NORTH 8° 54' 20" EAST 105.59 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE WESTERLY HAVING A RADIUS OF 100 FEET; THENCE NORTHERLY 76.26 FEET ALONG THE ARC OF THE ABOVE MENTIONED 100 FOOT RADIUS CURVE; THENCE TANGENT TO SAID CURVE, NORTH 34° 47' 20" WEST 4.44 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHEASTERLY HAVING A RADIUS OF 70 FEET; THENCE NORTHERLY 50.43 FEET ALONG THE ARC OF THE ABOVE MENTIONED 70 FOOT RADIUS CURVE; THENCE TANGENT TO SAID CURVE, NORTH 6° 29' 20" EAST 17.26 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE EASTERLY HAVING A RADIUS OF 100 FEET; THENCE NORTHEASTERLY 59.89 FEET ALONG THE ARC OF THE ABOVE MENTIONED 100 FOOT RADIUS CURVE; THENCE TANGENT TO SAID CURVE, NORTH 40° 51' 40" EAST 83.35 FEET; THENCE NORTH 48° 18' 00" EAST 185 FEET; THENCE NORTH 20° 9'10"EAST 81.64 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE SOUTHEASTERLY HAVING A RADIUS OF 10 FEET; THENCE NORTHEASTERLY 84.53 FEET ALONG THE ARC OF THE ABOVE MENTIONED 100 FOOT RADIUS CURVE; THENCE TANGENT TO SAID CURVE, NORTH 69° 25' 10" EAST 194.19 FEET; THENCE SOUTH 85° 43' 30" EAST 153.24 FEET; THENCE NORTH 78° 27' 20" EAST 211.90 FEET; THENCE NORTH 71° 43' 30" EAST 304.16 FEET; THENCE NORTH 87° 45' 30" EAST 432.70 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 100 FEET; THENCE NORTHEASTERLY 107.03 FEET ALONG THE ARC OF THE ABOVE MENTIONED 100 FOOT RADIUS CURVE; THENCE TANGENT TO SAID CURVE, NORTH 26° 26' EAST 64.69 FEET; THENCE LEAVING SAID ROAD, SOUTH 8° 54' EAST 95.5 FEET; THENCE SOUTH 18° 44' EAST 57.5 FEET; THENCE SOUTH 46° 04' EAST 69.3 FEET; THENCE SOUTH 12° 56' EAST 99.6 FEET; THENCE SOUTH 77° 10' EAST 170.8 FEET; THENCE SOUTH 38° 34' EAST 66.00 FEET; THENCE NORTH 78° 32' EAST 45.6 FEET; THENCE SOUTH 54° 26' EAST 96.3 FEET; THENCE SOUTH 39° 11' 10" EAST 262.37 FEET; THENCE SOUTH 62° 20' EAST 173.7 FEET; THENCE SOUTH 5° 28' EAST 86.8 FEET; THENCE SOUTH 35° 06' EAST 50.4 FEET; THENCE SOUTH 5° 00' EAST 54.3 FEET; THENCE SOUTH 47° 00' EAST 221.2 FEET; THENCE SOUTH 54° 34' WEST 20.2 FEET TO THE INTERSECTION OF THE SOUTH LINE OF SAID SECTION 10; THENCE NORTH 89° 51' WEST 1620.82 FEET TO THE COMMON CORNER OF SECTION 9, 10, 15 AND 16, SAID TOWNSHIP AND RANGE, THENCE SOUTH 89° 51' 50" WEST 1305.95 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

APN 4471-021-034
THE EASTERLY 300.00 FEET OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 15, TOWNSHIP 1 SOUTH, RANGE 19 WEST, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING NORTHERLY OF A STRIP OF LAND 60.00 FEET WIDE, KNOWN AS ENCINAL CANYON ROAD, AS DESCRIBED IN DEED GRANTED TO SAID COUNTY, RECORDED MARCH 29, 1955 IN BOOK 47324 PAGE 226, OFFICIAL RECORDS OF SAID COUNTY.

APN 4471-021-033
THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 15, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHWEST CORNER OF SAID QUARTER QUARTER; THENCE ALONG THE NORTHERLY LINE OF SAID QUARTER QUARTER,
NORTH 89° 49' 35" EAST 225 FEET; THENCE SOUTH 0° 18' 53" WEST ALONG A LINE PARALLEL WITH THE WESTERLY LINE OF SAID QUARTER QUARTER TO THE NORTHERLY LINE OF ENCINAL CANYON ROAD, (60 FEET WIDE), DESCRIBED AS PARCEL "A" IN DEED RECORDED APRIL 27, 1955 IN BOOK 47605 PAGE 380, OFFICIAL RECORDS, AS INSTRUMENT NO. 2850 OF SAID COUNTY; THENCE ALONG SAID ENCINAL CANYON ROAD, SOUTH 89° 36' WEST 224.99 FEET TO SAID WESTERLY LINE; THENCE NORTH 0° 18' 53" EAST ALONG SAID WESTERLY LINE TO THE POINT OF BEGINNING. EXCEPT THEREFROM ALL OIL, GAS AND MINERALS IN, ON OR UNDER SAID LAND, BUT WITHOUT ANY RIGHT OF SURFACE ENTRY TO A DEPTH OF 500 FEET BELOW THE SURFACE OF SAID LAND, AS RESERVED BY FRANK BIASTRE AND CLAUDINE BIASTRE, HIS WIFE, IN DEED RECORDED SEPTEMBER 18, 1972 AS INSTRUMENT NO. 488.

APN'S 4471-003-030, 4471-003-031, 4471-003-032
THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO MERIDIAN IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHWESTERLY OF THE FOLLOWING DESCRIBED LINE:
BEGINNING AT THE NORTHWESTERLY CORNER OF SAID SOUTHWEST QUARTER; THENCE SOUTH 71° 57' 58" EAST 2825.01 FEET TO A POINT IN THE EASTERLY LINE OF SAID SOUTHWEST QUARTER, DISTANT THEREON NORTH 00° 47' 04" EAST 1766.75 FEET FROM THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER.

APN 4471-021-028
THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 15, TOWNSHIP 1 SOUTH, RANGE 19 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF. EXCEPT THAT PORTION AS FOLLOWS:
BEGINNING AT THE NORTHWEST QUARTER OF SAID NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER; THENCE EASTERLY ALONG THE NORTH LINE OF SAID NORTHEAST QUARTER A DISTANCE OF 225 FEET; THENCE SOUTHERLY PARALLEL WITH THE WEST LINE OF SAID QUARTER SECTION, A DISTANCE OF 950 FEET; THENCE SOUTHWESTERLY IN A DIRECT LINE TO A POINT IN SAID WEST LINE DISTANT SOUTHERLY 1000 FEET TO THE POINT OF BEGINNING. ALSO EXCEPT THAT PORTION LYING SOUTHERLY AND SOUTHWESTERLY OF THE CENTERLINE OF THAT CERTAIN 60 FEET EASEMENT FOR PUBLIC ROAD AND HIGHWAY PURPOSES AS DESCRIBED IN THE DEED TO THE COUNTY OF LOS ANGELES RECORDED JUNE 6, 1955 AS INSTRUMENT NO. 3763, IN THE OFFICE OF THE COUNTY RECORDER OF OF SAID COUNTY. ALSO EXCEPT THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION.

EASEMENT DATA

PER PRELIMINARY TITLE REPORT ISSUED BY STEWART TITLE OF CALIFORNIA, DATED APRIL 4, 2006, AT 8:00 A.M., ORDER NUMBER 05569015. GEOGRAPHICALLY LOCATABLE ITEMS FROM SAID TITLE REPORT (SUCH AS EASEMENTS) WHICH AFFECT THE TITLE TO THE SUBJECT PROPERTY ARE NUMERICALLY KEYED TO SAID REPORT AND ARE AS FOLLOWS:

ITEM (5)
PURPOSE:AN EASEMENT FOR PUBLIC ROAD (DECKER ROAD)
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA:SEPTEMBER 14, 1923 I N BOOK 2544 PAGE 277, OF OFFICIAL RECORDS
AFFECTS: PARCELS 1, 2 AND 8

ITEM (6)
PURPOSE:AN EASEMENT FOR PUBLIC ROAD (MULHOLLAND HWY)
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA:OCTOBER 21, 1926 IN BOOK 5685 PAGE 377, OF OFFICIAL RECORDS
AFFECTS:PARCEL 8

ITEM (7)
PURPOSE:AN EASEMENT FOR PUBLIC ROAD AND HIGHWAY (MULHOLLAND HWY)
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA:IN BOOK 7813 PAGE 264, OFFICIAL RECORDS
AFFECTS:PARCEL 2

ITEM (9)
PURPOSE:AN EASEMENT FOR PUBLIC ROAD AND HIGHWAY (MULHOLLAND HWY)
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA: MARCH 27 , 1931 IN BOOK 10710 PAGE 291 OF OFFICIAL RECORDS AND RE-RECORDED JULY 14, 1933 IN BOOK 12283 PAGE 136, OFFICIAL RECORDS
AFFECTS:PARCEL 10 AND 17

ITEM (11)
PURPOSE: AN EASEMENT FOR PUBLIC ROAD AND HIGHWAY (MULHOLLAND HWY)
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA: APRIL 10 , 1934 IN BOOK 12707 PAGE 152,
OFFICIAL RECORDS, AS INSTRUMENT NO. 943 .
AFFECTS: PARCEL 10

ITEM (15)
PURPOSE:AN EASEMENT FOR POLE LINES
IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY, LTD.
RECORDING DATA: MARCH 19, 1951 IN BOOK 35829 PAGE 371, OF OFFICIAL RECORDS
AFFECTS: PARCEL 2

ITEM 16 (DOES NOT AFFECT SUBJECT PROPERTY – NOT PLOTTED)
PURPOSE:AN EASEMENT FOR SLOPES ALONG ENCINAL CANYON ROAD
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA: MARCH 29, 1955 IN BOOK 47324 PAGE 226, OF OFFICIAL RECORDS
AFFECTS: PARCELS 15 AND 16

ITEM (17)
PURPOSE:AN EASEMENT FOR SLOPES ALONG ENCINAL CANYON ROAD
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA: APRIL 27, 1955 IN BOOK 47605 PAGE 380, OF OFFICIAL RECORDS
AFFECTS: PARCEL 16

ITEM (20)
PURPOSE:AN EASEMENT FOR ROADS AND SLOPES ALONG ENCINAL CANYON ROAD
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA: JUNE 6, 1955 IN BOOK 47980, PAGE 152, OF OFFICIAL RECORDS
AFFECTS: PARCEL 19

ITEM (21)
PURPOSE: AN EASEMENT FOR STORM DRAIN ALONG ENCINAL CANYON ROAD
IN FAVOR OF: COUNTY OF LOS ANGELES
RECORDING DATA: AUGUST 28, 1956 IN BOOK 52148, PAGE 348, OF OFFICIAL RECORDS
AFFECTS: PARCEL 19

ITEM (22)
PURPOSE: AN EASEMENT FOR RIGHT OF WAY
IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION
RECORDING DATA: AUGUST 9, 1967 INSTRUMENT NO. 3494, OF OFFICIAL RECORDS
AFFECTS: PARCEL 19

ITEM (23)
PURPOSE: AN EASEMENT FOR PIPE LINES
IN FAVOR OF: LAS VIRGENES MUNICIPAL WATER DISTRICT, A CORPORATION
RECORDING DATA: FEBRUARY 7, 1963 IN BOOK D-1913, PAGE 307, OF OFFICIAL RECORDS
AFFECTS: PARCELS 9, 10, 11, 12 & 13

ITEM (26)
PURPOSE: AN EASEMENT FOR PIPE LINES
IN FAVOR OF: LAS VIRGENES MUNICIPAL WATER DISTRICT, A CORPORATION
RECORDING DATA: MARCH 12, 1963 IN BOOK D-1949 PAGE 732, OF OFFICIAL RECORDS
AFFECTS: PARCEL 8

ITEM (27)
PURPOSE: AN EASEMENT FOR STUB POLE, GUY WIRES AND ANCHORS
IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION
RECORDING DATA: MARCH 10, 1966 IN BOOK D-3233 PAGE 433, OF OFFICIAL RECORDS
AFFECTS: PARCEL 1 AND 2

ITEM (28)
PURPOSE: AN EASEMENT FOR ELECTRICAL TRANSMISSION LINE AND COMMUNICATION CIRCUITS, OVERHEAD AND UNDERGROUND, INCLUDING EASEMENT FOR ROADS
IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION
RECORDING DATA: DECEMBER 16, 1966 IN BOOK D-3508 PAGE 836, OF OFFICIAL RECORDS
AFFECTS: PARCEL 18

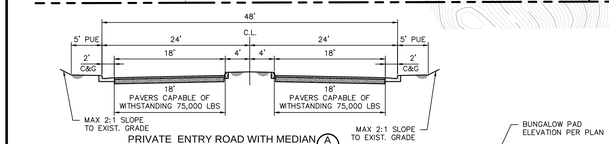
ITEM (30)
PURPOSE: AN EASEMENT FOR POLE LINES AND CONDUITS
IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION
RECORDING DATA: FEBRUARY 23, 1967 IN BOOK D-3564 PAGE 664, OF OFFICIAL RECORDS
AFFECTS: PARCEL 11

ITEM (32)
PURPOSE: AN EASEMENT FOR ROADWAYS
IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION
RECORDING DATA: APRIL 3, 1967 IN BOOK D-3601, PAGE 665, OF OFFICIAL RECORDS
AFFECTS: PARCEL 17

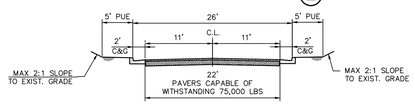
ITEM (33)
PURPOSE: AN EASEMENT FOR STUB POLES, GUY WIRES AND ANCHORS
IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION
RECORDING DATA: JUNE 25, 1967 IN BOOK D-3713 PAGE 297, OF OFFICIAL RECORDS
AFFECTS: PARCEL 8

ITEM (34)
PURPOSE: AN EASEMENT FOR INGRESS AND EGRESS (40 FT. WIDE ROADWAY)
IN FAVOR O

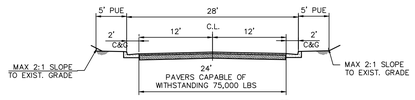
MATCHLINE SEE SHEET T - 3



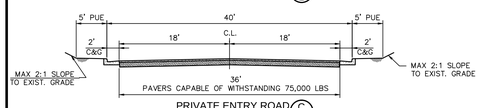
PRIVATE ENTRY ROAD WITH MEDIAN (A/—)



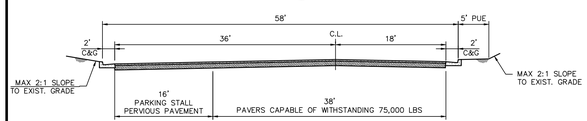
PRIVATE ENTRY ROAD (B/1)



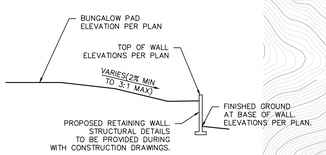
PRIVATE ENTRY ROAD (B/2)



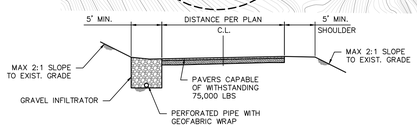
PRIVATE ENTRY ROAD (C/1)



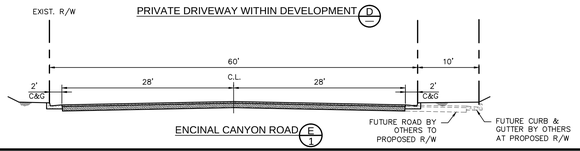
FIRE AND PUBLIC ACCESS ROAD (C/2)



TYPICAL RETAIINING WALL SECTION AT BUNGALOWS



PRIVATE DRIVEWAY WITHIN DEVELOPMENT (D/—)



ENCINAL CANYON ROAD (E/1)

GRAPHIC SCALE

100 0 50 100 100 300

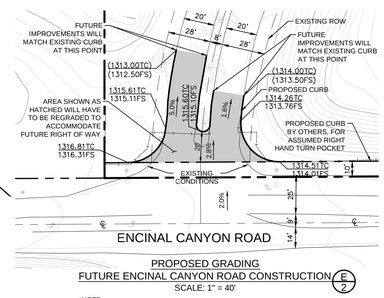
(IN FEET)
1 inch = 100 ft.

EARTHWORK VOLUMES:

UNIT PHASE	CUT (CY)	FILL (CY)	NET (CY)
GOLF	54,318	81,116	(26,798)
DEVELOPMENT	65,682	38,884	26,798

LEGEND:

- TRACT BOUNDARY
- PROPOSED LOT LINES
- EXISTING LOT LINES
- PROPOSED SEWER
- PROPOSED WATER
- DAYLIGHT LINE
- PROPOSED WALL
- FLIGHT LINES
- FIRE HYDRANT
- EXISTING FENCE
- CUT–FILL LINE
- BIOSWALE FLOW DIRECTION
- X — GOLF HOLE NUMBER
- PROPOSED GRADED AREAS
- PRIVATE FIRE LANE
- PRIVATE DRIVEWAY, FIRE LANE AND PUBLIC ACCESS
- PAD=XXXX — PROPOSED PAD ELEVATION
- X — LOT NUMBERS



PROPOSED GRADING
FUTURE ENCINAL CANYON ROAD CONSTRUCTION (E/2)
SCALE: 1" = 40'

*NOTE:
THE CURRENT DESIGN CAN ACCOMMODATE THE FUTURE RIGHT OF WAY AS SHOWN ABOVE

NORTH

RCE Consultants, Inc.
23332 Mill Creek Drive
Suite 205
Laguna Hills, Ca.92653
Phone: 949.453.0111
Fax: 949.453.0411

SIGNATURE

REGISTERED PROFESSIONAL ENGINEER RICHARD L. CLARK RE NO. C46559 EXP. 6-30-13 CIVIL STATE OF CALIFORNIA

P.E. C46559
EXP. 6-30-13

PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

PROJECT NUMBER: 0557

The Malibu Institute

901 Encinal Canyon Road
Malibu, CA 90265

SHEET TITLE:

STREET SECTIONS, VERTICAL DEVELOPMENT AND GOLF COURSE

DRAWN BY:

DATE ISSUED: ***6/18/13***

T - 2

DATE PLOTTED: 11/12/13

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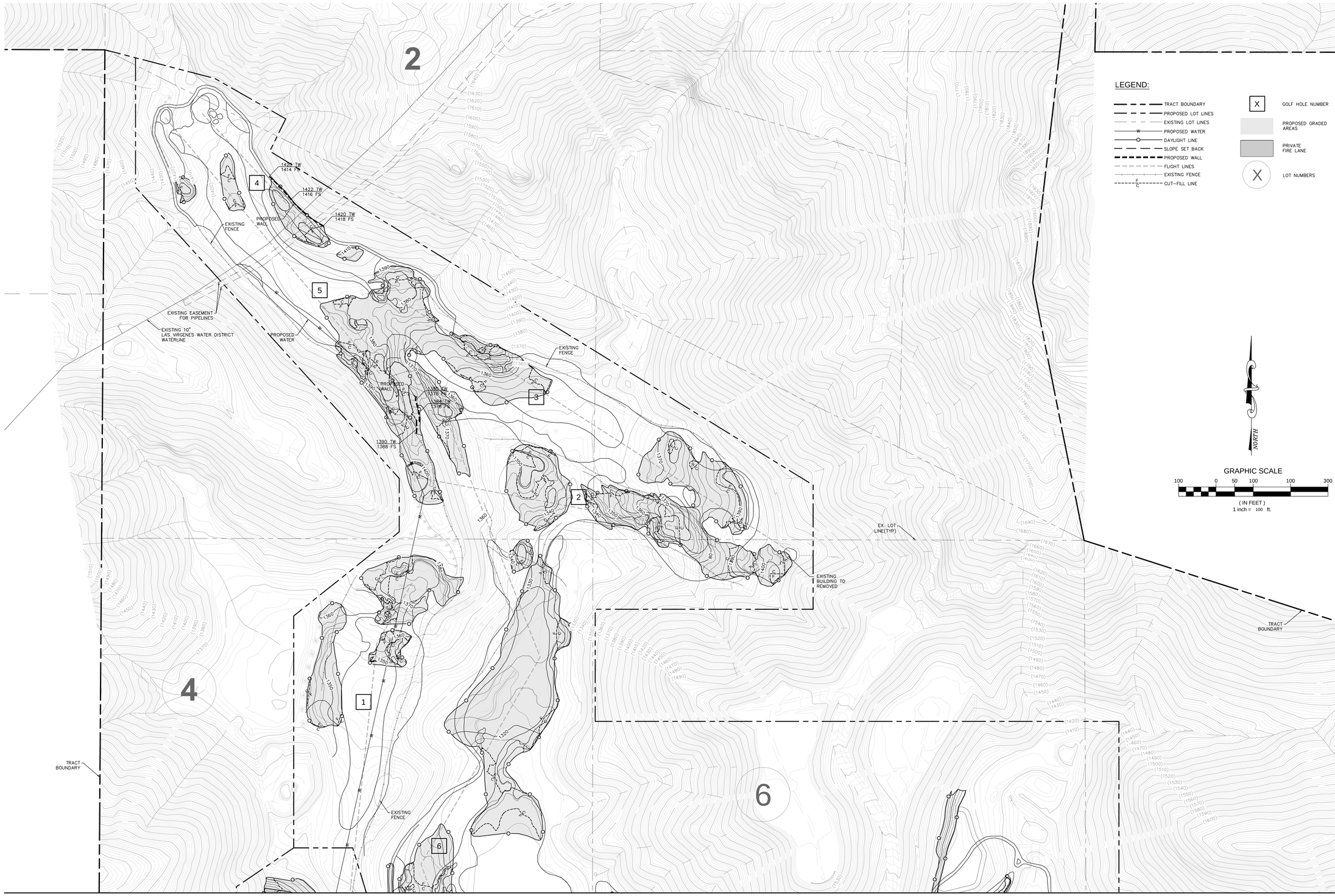

LEGEND:

- TRACT BOUNDARY
- PROPOSED LOT LINES
- EXISTING LOT LINES
- PROPOSED WATER
- DAYLIGHT LINE
- SLOPE SET BACK
- PROPOSED WALL
- FLIGHT LINES
- EXISTING FENCE
- CUT–FILL LINE
- X — GOLF HOLE NUMBER
- PROPOSED GRADED AREAS
- PRIVATE FIRE LANE
- X — LOT NUMBERS

NORTH

GRAPHIC SCALE

100 0 50 100 100 300

(IN FEET)
1 inch = 100 ft.

RCE Consultants, Inc.
23332 Mill Creek Drive
Suite 205
Laguna Hills, Ca.92653
Phone: 949.453.0111
Fax: 949.453.0411

SIGNATURE

REGISTERED PROFESSIONAL ENGINEER
RICHARD L. CLARK
RE NO. C46559
EXP. 6-30-13
CIVIL
STATE OF CALIFORNIA

P.E. C46559
EXP. 6-30-13

PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

DATE PLOTTED: 11/12/13

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PROJECT NUMBER: *0557*

The Malibu Institute

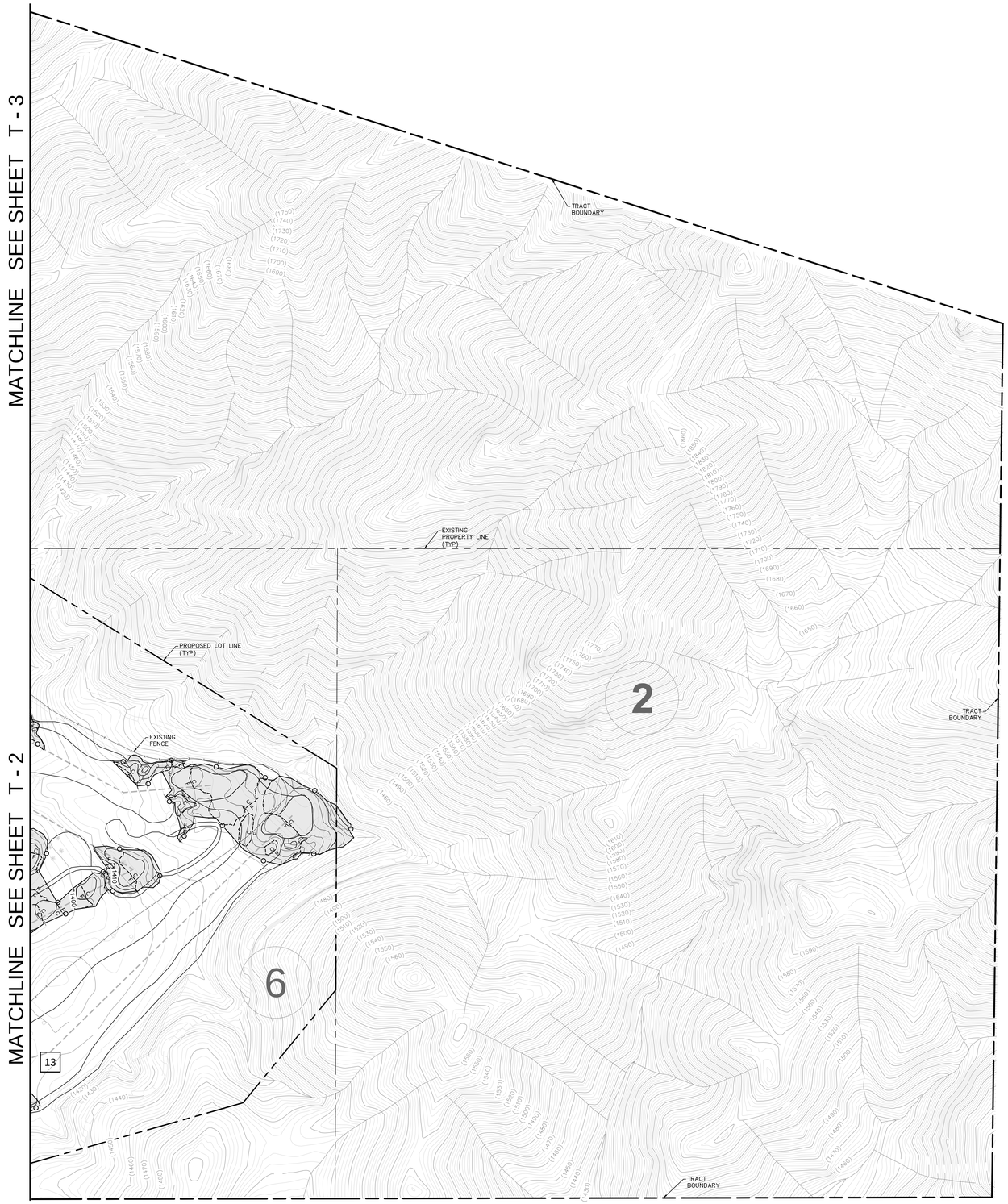
901 Encinal Canyon Road
Malibu, CA 90265

SHEET TITLE:

GOLF COURSE

DRAWN BY:

DATE ISSUED: ***6/18/13***



LEGEND:

- TRACT BOUNDARY
- PROPOSED LOT LINES
- EXISTING LOT LINES
- DAYLIGHT LINE
- FLIGHT LINES
- EXISTING FENCE
- F / C CUT–FILL LINE
- X GOLF HOLE NUMBER
- PROPOSED GRADED AREAS
- X LOT NUMBERS

NORTH

GRAPHIC SCALE

100 0 50 100 100 300

(IN FEET)

1 inch = 100 ft.

RCE Consultants, Inc.
23332 Mill Creek Drive
Suite 205
Laguna Hills, Ca.92653
Phone: 949.453.0111
Fax: 949.453.0411

SIGNATURE

REGISTERED PROFESSIONAL ENGINEER
RICHARD L. CLARK
RE NO. C46559
EXP. 6-30-13
CIVIL
STATE OF CALIFORNIA

P.E. C46559

EXP. 6-30-13

PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

DATE PLOTTED: 11/12/13

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PROJECT NUMBER: 0557

The Malibu Institute

901 Encinal Canyon Road
Malibu, CA 90265

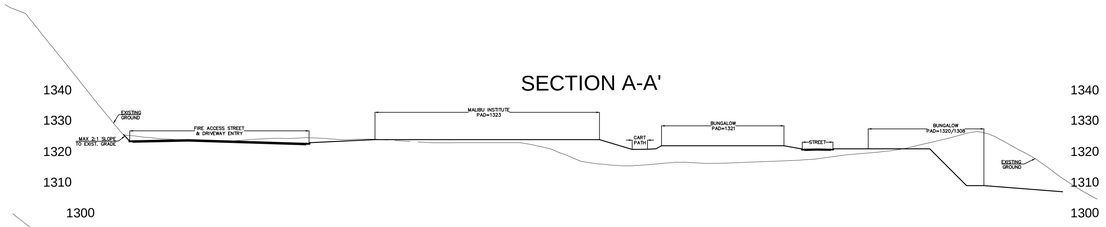
SHEET TITLE:

GOLF COURSE

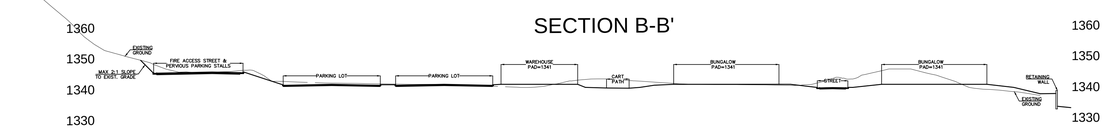
DRAWN BY:

DATE ISSUED: ***6/18/13***

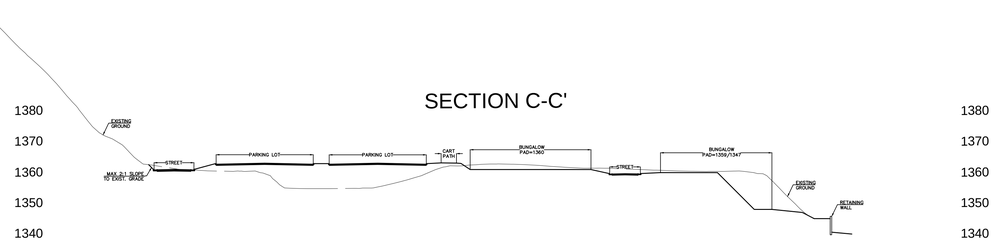
SECTION A-A'



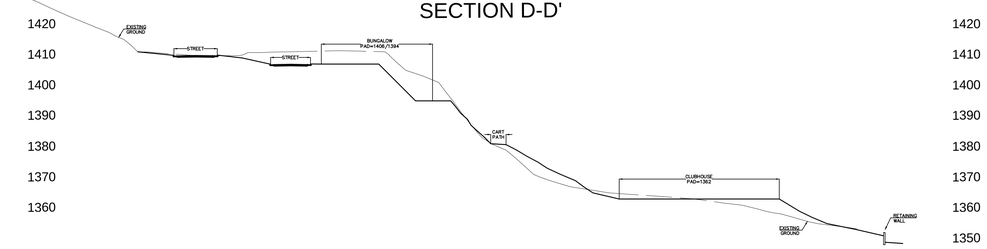
SECTION B-B'

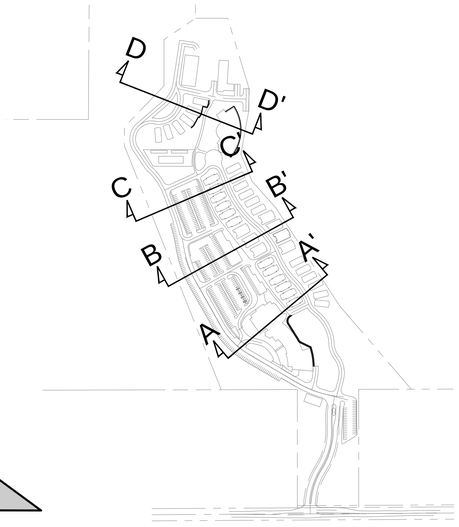


SECTION C-C'

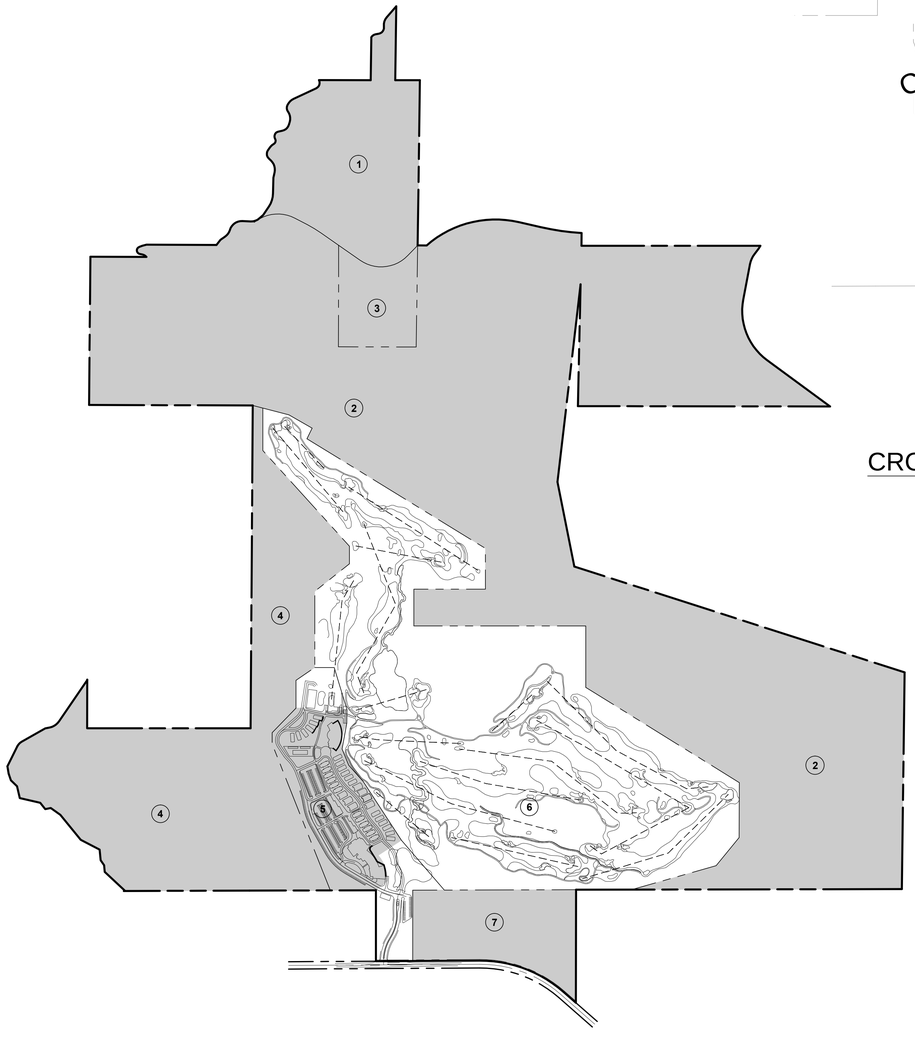


SECTION D-D'

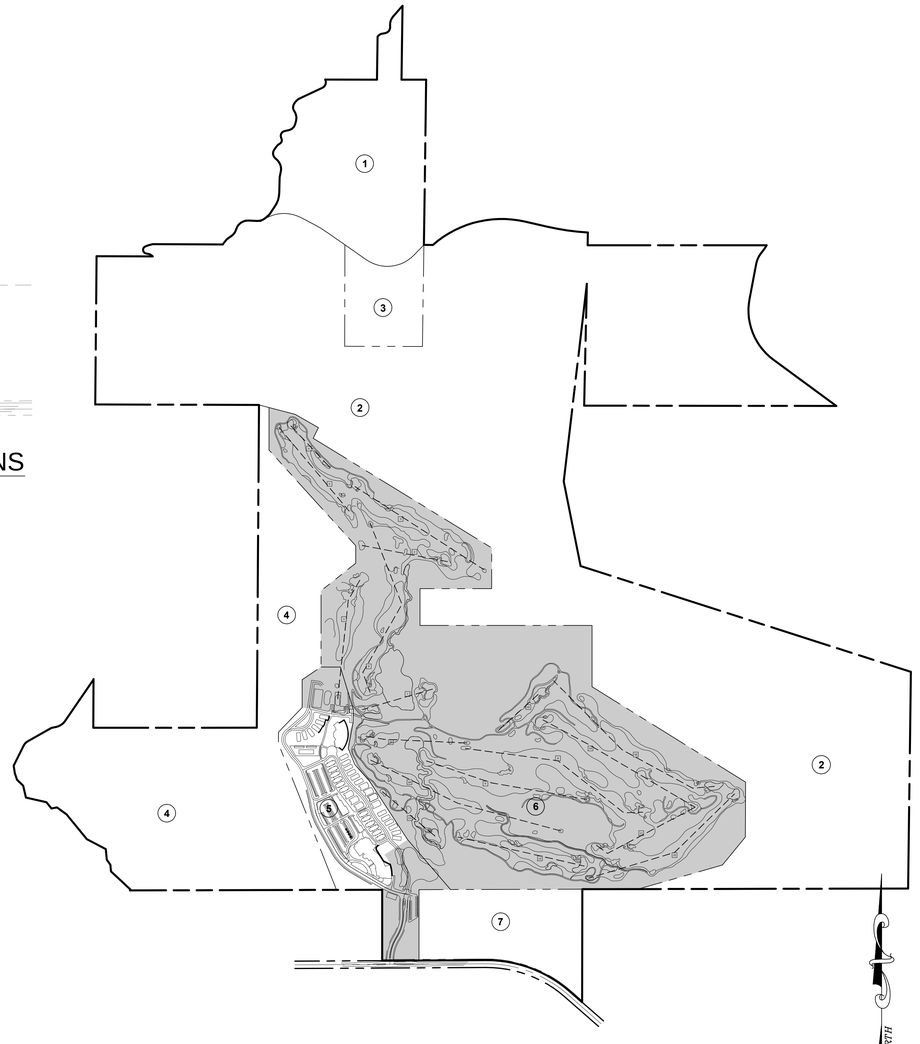




CROSS SECTION LOCATIONS



PHASE 1:



PHASE 2:

GRAPHIC SCALE

400 0 250 500 1000 1500

(IN FEET)

1 inch = 500 ft.

RCE Consultants, Inc.
23332 Mill Creek Drive
Suite 205
Laguna Hills, Ca.92653
Phone: 949.453.0111
Fax: 949.453.0411

SIGNATURE

REGISTERED PROFESSIONAL ENGINEER RICHARD L. CLARK JR. RE NO. C46559 EXP. 6-30-13 CIVIL STATE OF CALIFORNIA

P.E. C46559

EXP. 6-30-13

PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

DATE PLOTTED: 11/12/13

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PROJECT NUMBER: 0557

The Malibu Institute

901 Encinal Canyon Road
Malibu, CA 90265

SHEET TITLE:

PHASING MAP & CROSS SECTIONS

DRAWN BY:

DATE ISSUED:

Appendix D.3

Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area, Dr. Lee B. Kats, 2013.

Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Monica Mountains National Recreation Area. A Report on California Newt and Western Pond Turtle Surveys – 2013, Dr. Lee B. Kats, August 2013.

The Malibu Institute Project

A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Mountains Recreation Area

By: Dr. Lee B. Kats

Introduction

This report was prepared at the request of Envicom Corporation for the Environmental Impact Report for the Malibu Institute project proposed for the existing Malibu Golf Club located at 901 Encinal Canyon Road, Malibu, CA. by Dr. Lee Kats, Professor of Biology Pepperdine University, Malibu, California.

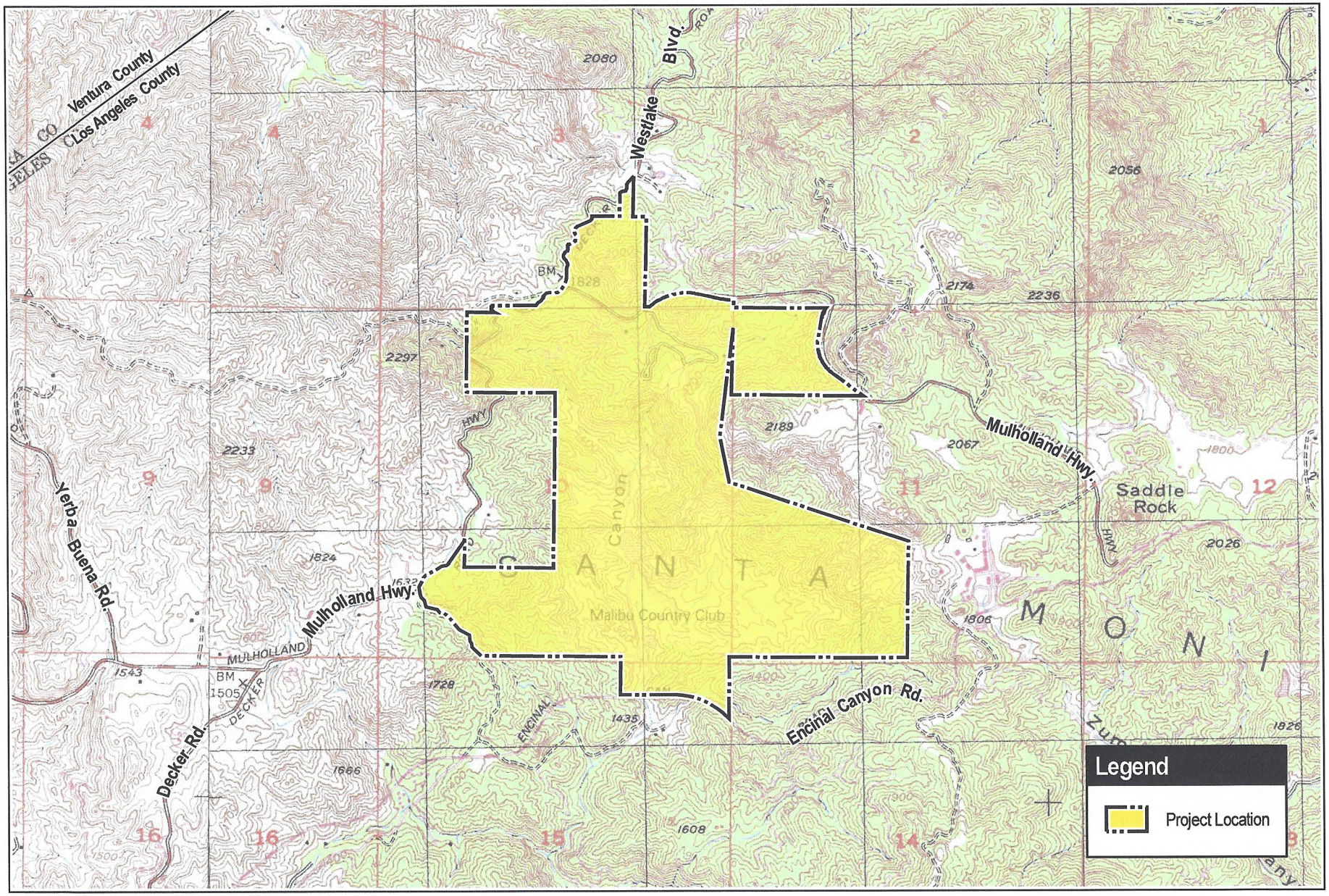
The Malibu Golf Club property consists of approximately 650 acres located in the Santa Monica Mountains of Los Angeles County, on the USGS topographic map sheet Point Dume (T.1S., R.19W., Sections 2,3,10,11 and 15), as shown on **Figure 1.**

With the exception of a small northerly extension of the property into the upper watershed of an unnamed tributary of the Carlisle Canyon, the remainder of the property is entirely within the upper watershed area of the Trancas Canyon as shown on **Figure 2.**

The Malibu Golf Club site is the headwaters of the Trancas Creek. Several large ponds were created in the late 1960's on the site apparently used as a hunting lodge associated with the large home on the northern boundary of the property, When the golf course was constructed in the mid 1970's, these ponds were incorporated into the golf course area, but the water from the ponds is not utilized by the golf course for irrigation leading to stagnation and very little turnover of the water.

Additionally, the natural creeks and tributaries were apparently relocated and the majority of what was the Trancas Creek was piped underground connecting the various ponds within the site. Over the course of the last five decades, invasive species such as crayfish and mosquito fish have been introduced into the ponds. The populations of these species are abundant throughout the ponds and the connecting creeks and wetlands on the property.

There are no ponds located north of the property boundary that feed into the existing ponds on the property; therefore there is a unique opportunity to eradicate the invasive species that exist in the ponds without the concern for the future intrusion of the species in the ponds from other creeks or tributaries off-site.

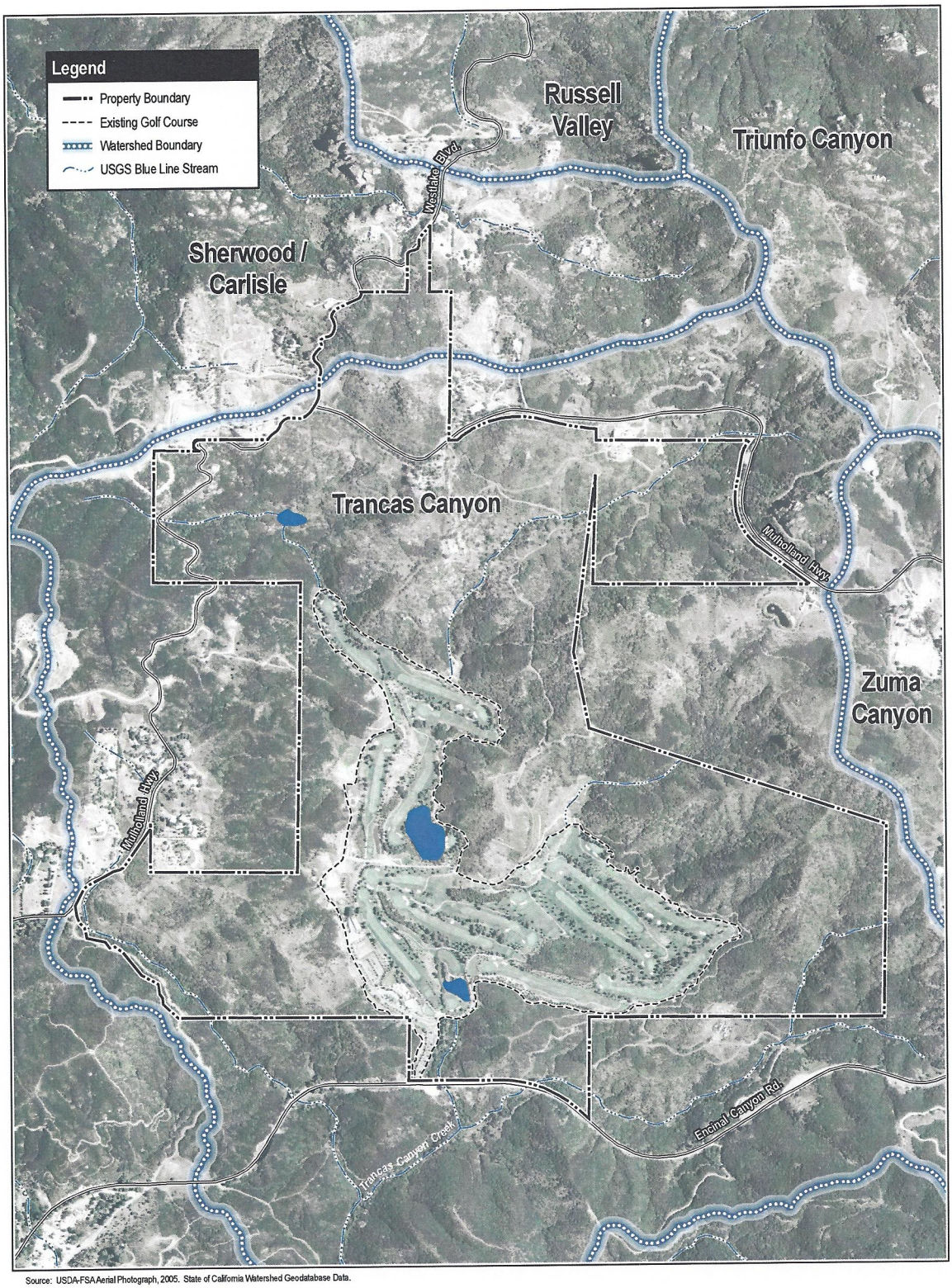


Source: USGS 7.5' Topographic Quadrangle, Point Dume.

Project Location

FIGURE 1

0 1,000 2,000 Feet



Source: USDA-FSA Aerial Photograph, 2005. State of California Watershed Geodatabase Data.

Watershed Boundaries

FIGURE 2

0 450 900 Feet

I. Invasive Species Habitat

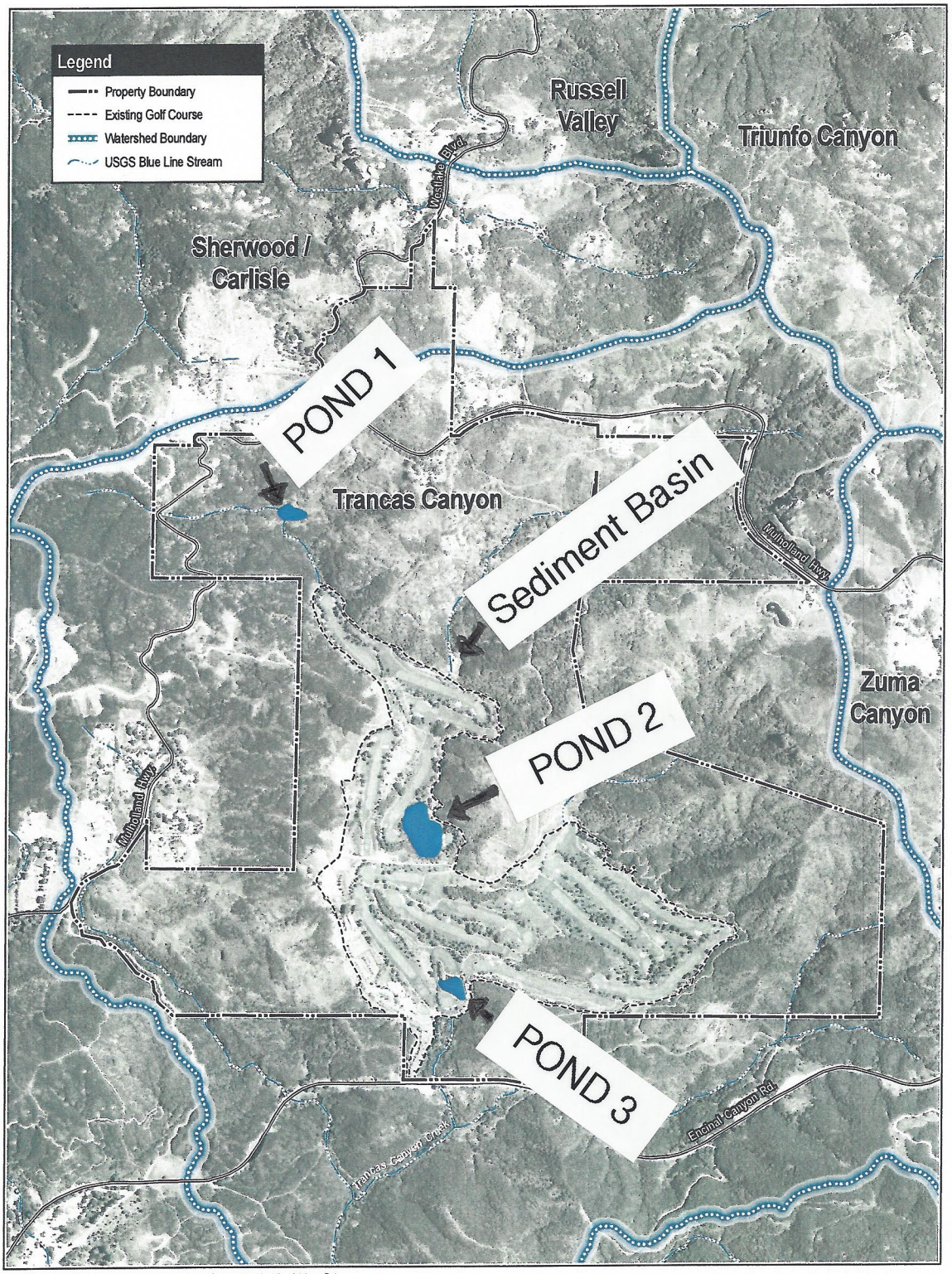
There are three major ponds or ponding areas on the property. **Figure** 3 depicts the location of the three largest areas. Pond 1 is located just north of existing golf hole #3. It is approximately 10,000 square feet of surface area and is believed to be one of the only natural (not manmade) ponds on the property. Pond 1 collects water from the northwestern portion of the watershed. More careful examination of Pond 1 is needed, but habitat for invasive species is not believed to exist.

Below the waterfall, which would be considered the headwaters of the Trancas Creek, lies a sediment basin that is approximately 18,000 square feet in surface area. The sediment basin is the first major collection area for the water after significant rainfall. The sediment basin is mostly dry year round except in large rain events and has a large diameter standpipe that allows the water to flow out through a large underground pipe to Pond 2 during the rainy season. The sediment basin does not contain the permanent water necessary to maintain suitable habitat for crayfish or mosquito fish. Between the sediment basin and pond 2 there is a small wetland adjacent to golf hole #5. This area is approximately 8-9,000 square feet in size and early surveying indicates that it contains numerous juvenile crayfish. The water from the wetland is piped underground to pond 2. Pond 2 is the largest of the three ponds and is approximately 2.5 surface acres. This pond is purported to be approximately 25-30 feet deep and may be spring fed since it does not fluctuate over the year even without significant rainfall. Pond 2 contains crayfish, mosquito fish, non-native bass, non-native catfish and potentially other invasive species.

During significant rain events, the water from Pond 2 flows through a large diameter pipe to Pond 3. Pond 3 is just over 1 surface acre in size. Pond 3 contains crayfish, mosquito fish, non-native catfish and is the last large ponding area before the water is discharged into the Trancas Creek. There is approximately 300 feet of creek on the golf club property before the creek flows under Encinal Canyon Road. Preliminary surveying of this section of the creek also indicates that invasive crayfish are abundant.

II. Trancas Creek Invasive Species Problem

Invasive species are of wide concern to ecologists and conservation biologists. Impacts of invasive species are widespread and are commonly thought to be a major contributor to observed declines in biodiversity. Invasive species are known to negatively impact native species through predation, competition, or even hybridization. Freshwater systems are thought to be particularly susceptible to species declines and extinctions, and as suggested by Ricciardi and Rasmussen



Source: USDA-FSA Aerial Photograph, 2005. State of California Watershed Geodatabase Data.

POND locations

FIGURE 3

0 450 900 Feet

(1998), understanding the negative impacts of invasive species is key to managing freshwater biodiversity.

Global amphibian declines have been well documented, and invasive species have been implicated as frequent contributors to these declines (reviewed in Kats and Ferrer, 2003). In most instances the invasions are recent enough that negative impacts of the invading species can be measured by observing population reductions of native amphibians (e.g., Tyler et al., 1998; Matthews et al., 2001). In other instances, the invasive species has persisted long enough to eliminate local native amphibian populations (Gamradt and Kats, 1996). There are few long-term examples where native amphibians and invasive predators/competitors have been shown to coexist, and in most instances where these interactions have been studied, scientists predict that the invasive will eliminate the native amphibian species (D'Amore et al., 2010).

In southern California, native amphibians have also been declining. Studies have suggested that invasive fish and crayfish have contributed to these declines in native amphibians (Gamradt and Kats, 1996; Riley et al., 2005; Miller et al., 2012). The only stream-breeding salamander in southern California is the California newt, *Taricha torosa*. The California newt is a long-lived terrestrial salamander that returns to streams each winter/spring to breed. The skin of adult newts contains a neurotoxin that protects it from most terrestrial and aquatic predators. After breeding, female newts remain in the streams to deposit small (2-3 cm diameter, 15-30 embryos each) egg masses by attaching them to rocks or vegetation. Egg masses contain the neurotoxin and are not preyed on by native aquatic predators.

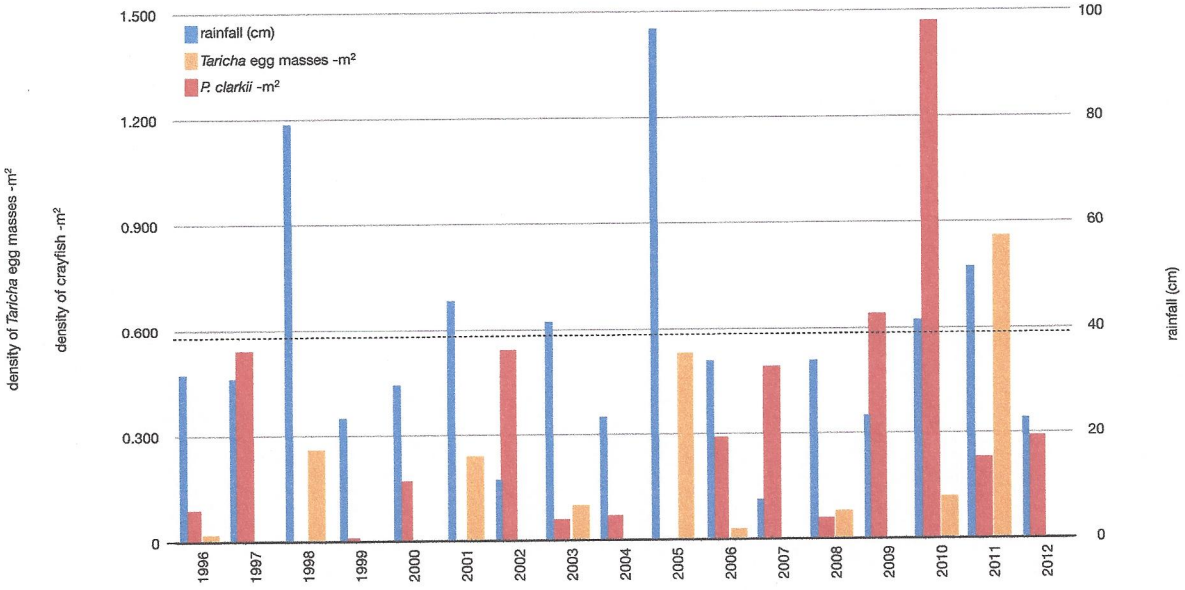
The swamp crayfish is native to the southeastern United States but is now widespread around the world (Gherardi, 2011). In some instances it has been introduced as a source of food for humans, but in southern California its introduction to local waterways is related to its widespread use as fishing bait. Despite toxins in the skin of adult newts and the egg masses that provide defense from most native predators, these invasive crayfish are known to attack and either destroy or damage adult newts, larvae and egg masses (Gamradt and Kats, 1996; Gamradt et al., 1997). For instance, over a 24 hour period no newt larvae survived crayfish predation in enclosure experiments, and previous field surveys clearly indicate that introduction of crayfish to local streams is correlated with either decline or local extinction of newt populations (Gamradt and Kats, 1996).

Most streams of the Santa Monica Mountains National Recreation Area in southern California that historically contained populations of the California newt experienced local extinction of this amphibian upon introduction of the swamp crayfish (Gamradt and Kats, 1996; Riley et al., 2005). These streams contained newts when surveyed in the 1970's but did not contain newts when surveyed again in the 1990's. In contrast, streams with no history of invasive predators, including crayfish, still contained newts. Therefore, extinction of local newt populations appears attributable to invasive predators, such as the crayfish.

Unlike most streams in the Santa Monica Mountains, where native newts have been extirpated by crayfish and other invasive species, one stream, Trancas Creek, contains both invasive crayfish and California newts that appear to persist in sympatry much longer than other streams surveyed since the 1990's. Trancas represents one of several creeks that have been monitored annually since 1996. Near the headwaters of this stream are ponds on the property of the Malibu Golf Club that have been stocked with non-native fish in the last 50 years. These ponds also contain the red swamp crayfish that likely accompanied the stocking of non-native fish. We know that these crayfish eat the eggs of native amphibians, eat native aquatic insects, eat native amphibian larvae and attack (sometimes kill) native adult amphibians.

The red swamp crayfish

Tail damage of a California newt caused by crayfish attacks in Trancas Creek. The top of the newts tail should be one smooth continuous line and each jagged mark represents a crayfish attack.



Yearly data from Trancas from 1996 to 2012. Blue represents rainfall, red crayfish density and orange newt density. In years when crayfish densities are high, for example, 1997, 2002, 2007, 2009, newt reproduction is zero.

Non-native catfish removed from the golf club property.

Despite the relatively long-term coexistence of invasive crayfish and newts in Trancas Creek, the long-term prognosis for native aquatic organisms here is not good. It is likely that newts will ultimately be extirpated in Trancas Creek if there is not a significant effort at habitat restoration.

III. Moving Toward Restoration

We are currently surveying aquatic habitats on the Malibu Golf Club property. Our early sampling confirms that crayfish inhabit these bodies of water, are reproducing in these habitats and these habitats are likely serving as a source of crayfish for the entire Trancas Creek system.

We would propose to The Malibu Institute a plan that would restore native aquatic species to the bodies of water on the Golf Club property and consequently would over time, restore native aquatic biodiversity to the entire stream. Our long term data suggest that periodic heavy rainfall washes crayfish out of the stream only for the stream to be recolonized by crayfish populations in the Malibu Golf habitats (noted above). If crayfish can be removed from the Malibu Golf habitats it is very likely that ultimately crayfish will be eliminated from the watershed.

The elimination of invasive crayfish from the watershed would restore quality aquatic habitat for native amphibians including, the California newt, the Pacific treefrog and the California treefrog. In addition, the two striped garter snake

is dependent on native frogs for prey and they also would potentially see recovery. The California newt, the California treefrog and the two-striped garter snake are all either currently species of concern in California or have been considered so in the past. In addition, the elimination of crayfish would restore habitat for a multitude of native aquatic insects that are dependent on local freshwater streams for habitat. These include: mayflies, dragonflies, damselflies, stoneflies, diving beetles, aquatic bugs, crane flies, and water penny aquatic beetles.

We would propose a program that would have The Malibu Institute de-water the current aquatic habitats to properly remove invasive crayfish. The de-watering process would take place during the construction of the proposed new golf course and could be done over a period of several months to allow the habitat to completely dry. De-watering these bodies of water maximizes the probability that crayfish populations can be removed. This would also assure that non-native fish are removed as well. We currently know that invasive mosquitofish inhabit some of the bodies of water and some invasive predatory fish are also known in the larger ponds. In addition, there should be some effort to produce water movement through the restored water bodies. Water movement is natural and makes the habitat less hospitable for invasive species and for mosquito breeding.

IV. Conclusion

The program outlined above involving the de-watering of the habitat will eradicate the invasive species located on the property. Based on our examination of the species that exist in the ponds today, water quality does not seem to be a significant issue. However, substantial improvements to the water quality can be made to the Trancas Creek by the proposed redesign of the golf course and the elimination of direct drainage to the ponds in the future from the golf course turf areas. The new golf plan proposes to daylight a portion of the Trancas Creek on the property and create several areas where the water will be re-circulated to help improve water quality and control mosquito populations in the future by eliminating standing still water areas for breeding. Returning the stream completely to its original state is likely not feasible giving the enormous amount of grading that occurred decades ago during the construction of the golf course. The sediments that now surround the beginning reaches of the stream could be available for transport and erosion during heavy rainfalls if basic stream controls are altered significantly from current conditions. Additionally, the addition of sand capping in the construction of the new golf course and the proposed redirection of the direct golf course drainage to grass swale areas will definitely improve future water quality of the ponds and the downstream Trancas Creek.

In addition to removal of crayfish we would suggest a long term monitoring of aquatic species both within the property of the golf club and in Trancas Creek below the property. This long term monitoring will allow us to verify the removal of invasive species and also examine the recovery of native species. Given that we

have data since 1996 on Trancas Creek, this project offers a large opportunity to examine stream restoration at a scale that has rarely been attempted. Rarely do such long term data sets exist for streams and the opportunity to compare stream biodiversity both before the large scale removal of invasives and after presents a unique opportunity for scientific discovery.

For over 15 years I, along with scientists throughout the region have contemplated what the best plan for restoration of Trancas might be. That plan has always centered around a possible opportunity to remove invasive crayfish from the watershed. The Malibu Institute's interest in this restoration represents the best opportunity for habitat, biodiversity and water quality restoration that has been afforded Trancas Creek in the last 50 years. Invasives have already caused local extirpation of native species in several streams throughout the Santa Monica Mountains. Without this proposed restoration in Trancas, the same will most likely occur. The plan presented here presents an opportunity for restoring one of the most significant streams in the region.

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Malibu Institute Project: A Plan toward Restoring Trancas Creek, a Significant Stream in the Santa Mountains Recreation Area.

A report on California newt and Western pond turtle surveys--2013

Invasive species are of wide concern to ecologists and conservation biologists. Impacts of invasive species are widespread and are commonly thought to be a major contributor to observed declines in biodiversity. Invasive species are known to negatively impact native species through predation, competition, or even hybridization. Freshwater systems are thought to be particularly susceptible to species declines and extinctions, and as suggested by Ricciardi and Rasmussen (1998), understanding the negative impacts of invasive species is key to managing freshwater biodiversity. The on-site ponds at the Malibu Golf Club property are known to contain several species of aquatic invasive organisms, but the exact species are not currently known.

In addition to the aquatic invasives in the on-site ponds and stream course, the Malibu Golf Club property contains several habitats that could potentially be suitable habitat for aquatic vertebrates such as the California newt (*Taricha torosa*) and the western pond turtle (*Emys marmorata*). Both species are residents of streams of the Santa Monica Mountains near Malibu, California (Los Angeles County). The golf course property includes the headwaters of the perennial stream known as Trancas Creek. My students and I have surveyed aquatic species in Trancas Creek for the last 20 years. California newts are regularly found in Trancas Creek while western pond turtles are infrequently encountered in Trancas Creek.

Newt Survey

On 26 March 2013 we conducted a survey of the on-site stream course of the Golf Club most likely to be breeding habitat of California newts (*Taricha torosa*). We surveyed 75 m of upland habitat near the headwaters of the Trancas Creek. Logs, rocks and other debris were overturned to look for adult newts. None were found. We also surveyed 76 meters of the open channel stream (along hole no. 6) to look for breeding adult newts or newt egg masses. No newts were found, however, numerous invasive aquatic animals were found (> 25 crayfish and > 50 mosquitofish) that would have made the habitat unsuitable for newt breeding. We surveyed 160 m of the stream near the entrance to the Malibu Golf Club and where the stream exits the property under Encinal road. While this habitat was a natural and logical location where we historically might find evidence of breeding newts, we did not find any evidence of newts and again, there were numerous invasive species that would make the habitat unsuitable for newt breeding. In addition, we saw no macroinvertebrates that would be typical of similar locations in the mountains. However, invasive predators like crayfish and mosquitofish are known to eliminate native invertebrates as well.

Water quality	
phosphates	0.52 ppm
nitrates	none measurable
chloride	16.9 ppm
sulfates	79 ppm
temp.	13.5 C
pH	8.40
conductivity	1.42 mS/cm
DO	7.78 mg/L

On 3 June 2013, we conducted a second survey for newts. In addition to the areas and techniques used in March we also used D-nets to sweep the edges of the three largest ponds on the golf course property. These sweeps would sample newt egg masses or newt larvae. We conducted 20 net sweeps around the edges of each of the three ponds and there were no signs of newt egg masses or newt larvae. We also manually searched the edges of the ponds (by standing in the water and feeling along solid edges) for newt egg masses. These areas would have been the most likely areas to be used for egg deposition. No egg masses were found.

We again surveyed the 76 m of open channel along hole no. 6. There were no sign of adult newts, newt egg masses or newt larvae. We did see 35 Pacific treefrog tadpoles, 15 crayfish and > 50 mosquitofish.

We also surveyed the 160 m of stream near the entrance of the golf course. Again, there was no sign of adult newts, newt egg masses or newt larvae. We did see 15 crayfish and one adult Pacific treefrog that showed signs of injury. It was missing one leg and several front digits. These injuries are most likely caused by invasive crayfish attacks.

During these same survey periods, newts were active in other local streams that we survey in the Santa Monica Mountains. Our conclusion is that while there are newts further downstream in Trancas (personal observation), the current Malibu Golf Club property does not provide habitat suitable for newts.

Invasive Crayfish Sampling and Removal

Beginning in January 2013, we used mesh crayfish traps to sample and remove invasive crayfish. We placed crayfish traps into the two largest ponds on the Malibu Golf Club property. We also placed traps in the downstream section of the stream near the entrance to the property. To date we have captured and removed >600 invasive crayfish (*Procambarus clarkii*). Over 90% of these have come from the second largest pond on the course and the open channel areas of the

stream. The remainder of the crayfish have been captured in the largest pond on the property.

Incidental Bycatch

In addition to the invasive crayfish which were targeted by the traps, the traps also caught invasive catfish (*Ameiurus* sp.), largemouth bass (*Micropterus salmoides*), and bluegill sunfish (*Lepomis macrochirus*). These invasive predatory fish were captured in the two largest ponds on the property. We suspect that the greatest density of invasive predatory fish resides in the largest pond and that this explains why no crayfish are being trapped. Bass and catfish readily consume crayfish.

Other bycatch include one large adult invasive red-eared slider turtle (*Trachemys scripta*) and multiple western pond turtles (*Emys marmorata*). The invasive turtle was found in the largest pond and the western pond turtles were found in the largest two ponds. The size (see table under western pond turtle survey) of the western pond turtles (all were adults) suggest that minimal reproduction is occurring as no smaller turtles were observed. This suggests that the invasive predatory fish may be preventing the recruitment of young western pond turtles.

Western Pond Turtle Survey

From 13 June until 22 June we surveyed for turtles in the three largest ponds on the golf course property. We used collapsible mesh traps that were equipped with floats and all traps were baited with sardines. We placed 6 traps in the smallest pond, 4 traps in the middle pond and 7 traps in the largest pond. The traps were checked each day. Two adult turtles were captured (see table). In addition to the traps, we conducted visual surveys on 2 days (see table).

species	method	size	sex	disposition
wpt	bycatch-lg pond	14 cm	male	released
wpt	bycatch-lg pond	17.5 cm	female	released
wpt	bycatch-lg pond	10.5 cm	male	released
wpt	survey-sm pond	15 cm	female	PIT tagged released
wpt	survey-med pond	14 cm	male	PIT tagged released
red-eared sl	survey-lg pond	>18 cm	female	removed
15 bluegill sunfish	survey-lg pond	> 10 cm svl		moved to med pond

In addition to those caught in traps, we observed 5 turtles basking over two days of observations. One large adult was observed in the largest pond, four medium size adults in the medium size pond.

We conducted an additional trapping period from mid-July until mid August. Eleven additional western pond turtles were trapped, PIT tagged and released. There were 7 additional males and 4 additional females. All were adults ranging in size from 12.9 cm – 16.8 cm. These turtles were all captured in the two largest ponds on the property.

Western pond turtle adult and several invasive crayfish in turtle trap.

Summary

Our findings suggest that the invasive crayfish and fish predators are dictating the structure of the aquatic communities at the Malibu Golf Club property. These invasives have likely completely excluded California newts from the aquatic habitats. Further, these invasive predators are also likely limiting the reproduction of western pond turtles. The recommended de-watering of the ponds and ultimate

removal of aquatic invasive crayfish, all invasive fishes (mosquitofish, largemouth bass, catfish and bluegill sunfish) and invasive turtles (red-eared slider) will allow native species like California newts and California treefrogs to recolonize the aquatic habitats. Further, during the de-watering process, the existing adult western pond turtles can be captured and protected. We will work with turtle experts from the Los Angeles Zoo to provide temporary on-site turtle habitats during the process. After the eradication of invasive species, the turtles will be reintroduced into the ponds and most likely the pond turtles will be able to recruit young into the population. The removal of invasives will also allow many native aquatic insects (e.g., dragonflies, damselflies, diving beetles, mayflies, etc) to recolonize the aquatic habitats and restore these aquatic habitats to biota similar to other pristine areas of the Santa Monica Mountains.

Submitted by:

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Vice Provost for Research and Strategic Initiatives
Frank R. Seaver Chair in Natural Science
Professor of Biology
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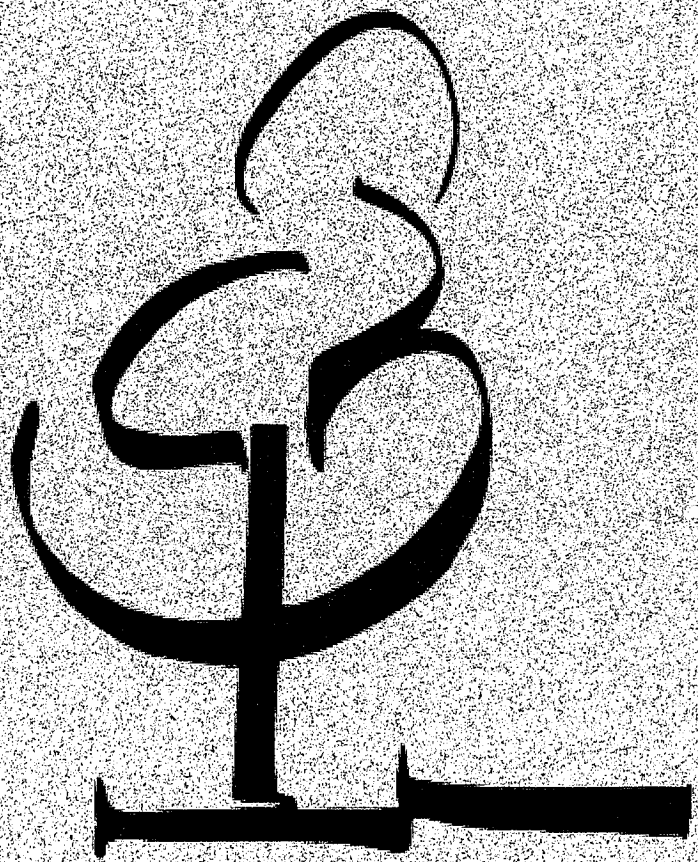
Appendix D.4

Oak Tree Report, July 20, 2012



TREES, etc.

OAK TREE REPORT

Malibu Institute
901 Encinal Canyon Rd.
Malibu, Ca 90265

for
Malibu Associates, LLC
480 San Antonio Rd., Ste. 205
Mountain View, Ca 94040

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RDI Project No. 767-1-08
July 20, 2012

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OAK TREE REPORT

Malibu Institute

RDI Project No. 767-1-08

This report presents the findings of an Oak tree survey conducted by RDI & Associates, Inc. of all native trees of the genus *Quercus* (Oaks) within the approximately 145-acre development area and remodeled 18-hole golf course for The Malibu Institute (the Proposed Project), a project to be located on the south-central portion of the existing 650-acre Malibu Golf Club, which is located at 901 Encinal Canyon Rd. in the unincorporated Malibu area of Los Angeles County, California ["The Thomas Guide 13th Edition – Los Angeles & Ventura Counties street guide" page 586 // sections H-5 to H-7 & J-6 & J-7].

The Proposed Project would create an educational retreat on the 650-acre property currently operated as the Malibu Golf Club. The Proposed Project would provide for the development of educational and meeting facilities, along with visitor-serving guest accommodations in forty bungalows, a re-designed 18-hole golf course and a spa/wellness center, all nestled into the already disturbed area of the Malibu Golf Club. Most of the construction activity would occur within the area already disturbed during development of the Malibu Golf Club in the 1970s. The buildings and accommodations would be developed on approximately 20 acres. The golf course along with a golf transition area vegetated with native, drought-tolerant plants would be developed on approximately 107 acres on land already developed with the existing Malibu Golf Club golf course. Over 450 acres of native coastal scrub and chaparral, including Oak woodland forest, would be left undisturbed and become permanently dedicated open space.

The property is located approximately 4.5 miles south of U.S. Highway 101 and is bounded by private property on the west, north & northeast. The majority of the surrounding area is generally comprised of naturally vegetated landscapes interspersed with a variety of low-density residential and institutional uses. Large lot residential properties are located along Decker Canyon Road to the west and along Mulholland Highway to the north. Residences north of Mulholland Highway commonly have incorporated equestrian facilities and/or agricultural development. A State-owned parcel straddles Encinal Canyon Road where it abuts the southeastern corner of the property. The interior portion of the State property lying north of Encinal Canyon Road contains two youth offender correctional facilities (Camp Miller & Camp Kilpatrick). From the southeastern corner of the property to the southwest (a straight-line distance of approximately 1.4 miles), most of the southern boundary of the property fronts land in public ownership. The Backbone Trail stretches along the crests of ridges that are aligned east/west mostly on public land to the south of Encinal Canyon Road. Los Angeles County Fire Camp #13 occupies a site on State-owned property that is situated on Encinal Canyon Road approximately 3,000 feet southwest of the entry road (Clubhouse Drive) to the golf course.

Existing Site Conditions

The 650-acre property is situated in a portion of the Santa Monica Mountains characterized with relatively steep hillsides, ridgelines and deep canyons. The on-site range in elevation for the entire property is approximately 845 feet, as it falls between a peak that reaches 2,125 feet above Mean Sea Level (MSL) in the northern portion of the property to valley bottom elevations in the south central portion of the property of approximately 1,280 feet above MSL. Nearly 78% of the landform surfaces of the property consist of steep hillsides & ridges that collectively exceed slope gradients of 15%. The elevations within the Development Area range from a low of approximately 1,280 feet above MSL near Encinal Canyon Road to approximately 1,440 feet above MSL on the northernmost interior valley part of the development area.

The majority of the Proposed Project would be located within the footprint of the existing developed golf course area, which consists predominantly of non-native ornamental landscaping and turf grass. Some of the Proposed Project would be located in areas vegetated with non-native grassland communities, non-native and ruderal plant communities, and ornamental plantings. The remainder of the property is comprised primarily of native plant communities. The dominant plant community on the property is chaparral, which through various disturbances contains, or is locally dominated by, plant species that are typically classed as coastal scrub. Scattered elements of woodland are present as isolated Oak trees among the chaparral. In some places, openings among the brush and scrub are dominated by herbaceous cover that would be classed as grassland. Additionally, the site contains exposed rocklands that are so sparsely vegetated that only a few species of vascular plants are present.

Methodology

In accordance with the Los Angeles County 'Oak Tree Ordinance', this Oak Tree Report is based on information compiled through field reconnaissance, previous documentation, and appropriate reference materials. Reference materials include aerial photography, USGS topographic maps, and the Ordinance. In compliance with the Ordinance, our Oak tree surveys throughout the 127-acre development area were conducted on March 17-18, 2009, June 16, 2009, September 12, 2011, October 11, 2011, and May 23, 2012.

The scope of the Oak Tree Report encompasses the existing site conditions, methodology, and survey results for all Ordinance-protected Oak trees located both in and within 200 feet of the grading required for the Proposed Project in the development area.

This report is prepared in accordance with Section 22.56.2050 of the Los Angeles County "Oak Tree Permit Regulations (adopted September 13, 1988)" relating to the "Oak Tree Preservation Guidelines". It shall be the policy of Los Angeles County (LACo) to require the preservation of all Oak trees unless compelling reasons justify the removal of such trees. The policy shall apply to the removal, pruning, cutting and/or the encroachment into the Protected Zone of Oak trees. The Los Angeles County Fire Department – Forestry Division (LACoFD-FD) shall have the primary & overall responsibility to administer, evaluate and monitor this policy. No person, partnership, firm, corporation, government agency, or other legal entity shall cut, prune, relocate, endanger or damage any tree protected by ordinance on any public or private land within the unincorporated areas of LACo except in accordance with the conditions of a valid Oak Tree Permit issued by LACo pursuant to the provisions of Section 22.56.2050.

The Permit requirements of Section 22.56.2060 cover the "damaging or removing Oak trees is prohibited". Except as otherwise provided in Section 22.56.2070, a person shall not cut, destroy, remove, relocate, inflict damage or encroach into a Protected Zone of any tree of the Oak genus which is (a) 25" or more in circumference (8" in diameter) as measured at 4½' above mean natural grade; in the case of an Oak with more than one trunk, whose combined circumference of any two trunks is at least 38" (12" in diameter) as measured at 4½' above mean natural grade, on any lot or parcel of land within the unincorporated area of LACo, or (b) any tree that has been provided as a replacement tree, pursuant to Section 22.56.2180, on any lot or parcel of land within the unincorporated area of LACo, unless an Oak tree permit is first obtained as provided.

The Ordinance also covers the "Protected Zone" of the jurisdictional Oaks, which extends to 5 feet outside of the dripline or 15 feet from the trunk(s) of a tree, whichever distance is greater.

Inventoried Oak trees were within the 127-acre development area and/or within 200 feet of grading required for the Proposed Project in the development area, and met the size criteria defined in the Ordinance. These trees were tagged, inventoried, and plotted (from field survey) on Oak Tree Location Maps.

For each inventoried tree, the trunk diameter, height, and physical condition was recorded, and the health, aesthetics, and canopy size of the trees were assessed and ranked by Health Grades and Aesthetic Grades. The *Tree Evaluations* provide a general outline on the health grading system compiled from our field survey. Additionally, the diameter of each tree's canopy plus 5' was documented to establish each tree's Protected Zone, as shown on the Oak Tree Location Maps. Many of the trees have connected canopies. In these circumstances, only the outer canopy boundary has been defined.

Plan Review

Included within this report are the following: twelve (12) **TREE EVALUATIONS** sheets, three (3) **TREE CANOPY MEASUREMENTS** sheets, and three (3) **TREE LOCATION MAPS** (derived from the '100 scale' "Phasing Map", as produced by RCE Consultants, Inc., plotted July 17, 2012). Most of the inventoried Oaks on the enclosed **TREE LOCATION MAP** were location surveyed by Pinnacle Design Company (in the early 2000's) and/or by Iacobellis & Associates (in October 2011).

1a. On the dates of our field review, within our scope of site work, we inventoried the following 111 Oaks:

Tree Qty.	Tag/Map Numbers	Common Name	Botanical Name
105	1-97, 100-104, 107, 108, 110, 111	Coast Live Oak	*Quercus agrifolia*
1	109	Valley Oak	*Quercus lobata*
5	98, 99, 105, 106, 112	Scrub Oak	*Quercus* sp.

- Coast Live Oak #93 (38½" diameter) is a Heritage Oak.
- It should be noted that trees Coast Live Oaks #49 & #50 and Scrub Oaks #105 & #106 were "under-sized".
- Tree #55 was not used as part of this project's Oak Tree Report.

1b. Also, on the dates of our field review, not within our scope of work, we found the following 'non-protected', 'under-sized Oaks' and/or dead trees on site:

Black Acacia (*Acacia melanoxylon*), White Alder (*Alnus rhombifolia*), Norfolk Island Pine (*Araucaria heterophylla*), European White Birch (*Betula pendula*), Bottle Tree (*Brachychiton populneus*), Carob Tree (*Ceratonia siliqua*), Mediterranean Fan Palm (*Chamaerops humilis*), Citrus (*Citrus* sp.), Cypress (*Cupressus* species), Italian Cypress (*Cupressus sempervirens* 'Stricta'), Sago Palm (*Cycas revoluta*), Triangle Palm (*Dypsis decaryi*), Eucalyptus (*Eucalyptus* sp.), Silk Oak (*Grevillea robusta*), Hollywood Juniper (*Juniperus chinensis* 'Torulosa'), Glossy Privet (*Ligustrum lucidum*), Sweet Gum (*Liquidambar styraciflua*), Myoporum (*Myoporum laetum*), Oleander (*Nerium oleander*), Canary

Island Palm (*Phoenix dactylifera*), Canary Island Pine (*Pinus canariensis*), Afghan Pine (*Pinus eldarica*), Aleppo Pine (*Pinus halepensis*), Italian Stone Pine (*Pinus pinea*), Chir Pine (*Pinus roxburghii*), Sycamore (*Platanus racemosa*), Purple-Leaf Plum (*Prunus cerasifera* 'Atropurpurea'), Evergreen Pear (*Pyrus kawakami*), 'undersized' Coast Live Oak (*Quercus agrifolia*), 'undersized' Holly Oak (*Quercus ilex*), 'undersized' Cork Oak (*Quercus suber*), 'undersized' Scrub Oak (*Quercus* sp.), White Willow (*Salix alba*), Willow (*Salix* sp.), California Pepper (*Schinus molle*), Giant Sequoia, (*Sequoiadendron giganteum*), Queen Palm (*Syagrus romanzoffianum*), Chinese Elm (*Ulmus parvifolia*), California Fan Palm (*Washingtonia filifera*) & Mexican Fan Palm (*Washingtonia robusta*).

It appears that some of the above-noted 'under-sized Oaks', including but not limited to Coast Live Oaks, Holly Oaks, Cork Oaks & Scrub Oaks, were planted throughout this existing project as ornament trees as well as mitigation trees.

2. Pursuant to the enclosed **TREE LOCATION MAPS**, the following is proposed to occur to the project's inventoried Oak trees:

Tree No(s).	Disposition//Requested Encroachment
1 to 54	**SAVES** = these 54 Coast Live Oaks shall be not be encroached upon from the 'overall' proposed grading.
55	This tree number/tag was not used as part of this project's Oak Tree Report.
56 to 112	**SAVES** = these 57 Oaks (51 [#56 to ##97, #100 to #104, #107, #108, #110, #111] Coast Live Oaks, 1 [#109] Valley Oak & 5 [#98, #99, #105, #106, #112] Scrub Oaks) shall be not be encroached upon from the 'overall' proposed grading. It should be noted that Coast Live Oak #93 is a Heritage Oak.

In summary, the following is proposed:

Total quantity of Oaks that were inventoried =	111
SAVES (with no encroachments) =	111
Removals =	0

Field Specific Observations

1. The trees are inventoried as to their species, health and aesthetic considerations. This inventory was reviewed in accordance with presently accepted industry procedures, which are of macro-visual observations only. No extensive microbiological, soil-root excavations, upper crown examination, nor internal tree investigations were conducted.

2. The Proposed Project's on-property trees were tagged with rectangular (¾"x3") metal tags with numbers written in black on them. It should be noted that because of the heavy growth of Poison Oak in some areas of the project, Oak trees #75 to #80, #103 to #106 were not tagged.

3. Definitions:

   A. This inventory includes the measuring of Oak tree trunk diameters of 8" & larger for a single trunk and 12" in diameter & larger for a multiple trunk (when the two largest trunks are added together) as measured at 4½' above existing grade. It should be noted that these dimensions might change in the next growing season(s) following our initial field measurements.

   B. The "dripline" or "canopy spread" is defined as the outermost edge of the tree's canopy when viewed from above. These measurements were taken in feet & are noted on the **TREE CANOPY MEASUREMENT** forms. It should be noted that these dimensions might change in the next growing season(s) following our initial field measurements.

   C. The "Protected Zone" is defined as the area at least 5' beyond the dripline or 15' from the trunk, whichever distance is greater, when viewed from above.

   D. A "Heritage Oak" in Los Angeles County is any Oak tree that has at least one trunk that is at least 36" in diameter. It is also any Oak tree having a significant historical or have cultural importance to the community, not withstanding that the tree diameter is less than 36" (as identified officially by the local Los Angeles County Resource Conservation District). It should be noted that Coast Live Oak #93 is a Heritage Oak.

Specific & Overall Recommendations

1. The 'saved' Oak trees within 100' from proposed construction shall be fenced with a temporary chainlink (or similar) protective fence at their Protected Zones prior to the start of any on-site grading. This fencing shall remain intact until this Consulting Arborist and/or the Los Angeles County Fire Department - Forestry Division (LACoFD-FD) allows it to be removed or relocated.

2. All work for the Proposed Project shall be in accordance with Los Angeles County's '**Oak Tree Ordinance**' and tree policies.

3. Prior to the completion of this project, ***RDI & Associates, Inc.*** *(*dba ***TREES, etc.****)* shall certify in a 'letter of compliance', that the '**Oak Tree Ordinance**' and all concerned tree policies have been adhered to.

4. Copies of this report and the '**Oak Tree Ordinance**' shall be maintained on site during all project construction.

NOTICE of DISCLAIMER = Opinions given in this report are those of ***RDI & Associates, Inc.*** (dba ***TREES, etc.)***, and are derived from current professional standards based on visual recordings at the time of inspection. This visual record does not include aerial or subterranean inspections, and therefore may not reveal existing hidden hazards. Records may not remain accurate after inspection due to changeable deterioration of the inventoried plant material. ***RDI & Associates, Inc.*** (dba ***TREES, etc.)***, provides no warranty regarding errors of omission resulting from the lack of communication of facts available only to the requester of this report which are expressed or implied as to the fitness of the urban forests for safe uses. ***RDI & Associates, Inc.*** (dba ***TREES, etc.)*** has no past, present or future interest in this property or the subject trees. This report may not be reproduced without the expressed written permission of ***RDI & Associates, Inc.*** (dba ***TREES, etc.)***. Any change or alteration to this report invalidates the entire report.

If you have any further questions, please do not hesitate to call ***RDI & Associates, Inc.*** (dba ***TREES, etc.)***.

Sincerely,
RDI & Associates, Inc.
dba ***TREES, etc.***

Richard Ibarra

Richard Ibarra, President
CONSULTING ARBORIST
(OAK TREE CONSULTANT)

767otr-1[b-4]

TREE EVALUATIONS

[on-property Oaks]

The inventory Health & Aesthetic Ratings of the trees are explained in the following:

The Health of the trees was visually determined from the following macroscopic inspection of signs and symptoms of disease.

A. Excellent (31 to 35 points) - This tree is a healthy & vigorous tree characteristic of its species and free of any visible signs of disease or pest infestation.
B. Good (26 to 30 points) - This tree is a healthy & vigorous tree. However, there are minor visible signs of disease and pest infestation.
C. Fair (16 to 25 points) - This tree is healthy in overall appearance, but there is a normal amount of disease and/or pest infestation.
D. Poor* (11 to 15 points) - This tree is characterized by exhibiting a greater degree of disease and/or pest infestation or structural instability than normal and appears to be in a state of decline.
E. Very Poor* (6 to 10 points) - This tree exhibits extensive signs of dieback.
F. Dead* (0 points) - This tree exhibits no signs of life at the time of field evaluation.

* A tree rating of "D" and lower is in low vigor and naturally a meaningful level of recovery is doubtful. Removal should be considered if it is within the proposed development.

The Aesthetic quality of the trees was visually determined from the following overall inspection of appearance.

A. Excellent - This tree is visually symmetrical, having the ideal form and appearance for the species.
B. Good to Fair - This tree, though non-symmetrical, has an appealing form for the species with very little dieback of foliage or twigs/branches.
C. Poor - This tree is non-symmetrical for the species with an unappealing form and/or has much dieback of foliage and twigs/branches.
D. Very Poor - This tree has few, if any, positive characteristics and may detract from the beauty of the landscape.

TREE EVALUATIONS

Inspection Date (Project No.) 3/17,18; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

FACTORS	POINTS	TREE NUMBER 1	2	3	4	5	6	7	8	9	10
CROWN DEVELOPMENT											
Well Balanced	5 points		X	X	X	X	X	X	X	X	X
Lacking Natural Symmetry	3 points	X									
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X	—	X	X			X	X	X	X
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points		X			X	X				
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X		X	X		X	X	X	X
Minor Root Problems	3 points			X			X				
Severe Root Problems	1 point										
TOTAL POINTS		30	27	30	32	27	25	32	32	32	32
Aesthetic Grade		B	B	A	A	B	B	A	B	A	B

ADDITIONAL COMMENTS

QA = Coast Live Oak

	1	2	3	4	5	6	7	8	9	10
	QA Crowded by #2 2x16"x25'x40' (9-84)	QA Crowded by #1 21"x30'x50' (9-85)	QA EZ-1023 18" (@44" high) x 20'x40'	QA 9"x20'x25'	QA 12",13",15"x30'x40'	QA 18",19"x35'x45'	QA crowded by #8 8"x20'x20'	QA crowded by #7 8",8"x20'x25'	QA on slope 6",6"x20'x20'	QA on slope 6",7"x20'x30'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17+18/09; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

FACTORS	POINTS	TREE NUMBER 11	12	13	14	15	16	17	18	19	20
CROWN DEVELOPMENT											
Well Balanced	5 points	X	X	X	X	X	X	X			
Lacking Natural Symmetry	3 points								X	X	X
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X			X	X	X	X	X	X	X
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points		X	X							
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points										
Severe Root Problems	1 point										
TOTAL POINTS		32	28	28	32	32	32	32	30	30	30
Aesthetic Grade		A	A	B	A	A	A	A	A	B	B

ADDITIONAL COMMENTS

QA = Coast Live Oak

Adj. → adjacent

QA 4",9",14"x25'x40' on slope	QA 18"x30'x30' on slope	QA 11",12",13",14"x30'x60'	QA 13"(@36" high)x20'x30'	QA 9"x26'x30'	QA 13"(@40" high)x25'x40'	QA 20"x35'x50'	QA Crowded by adj. trees	QA 15",10"x30'x30' Crowded by adj. trees	QA 8",9",10"x30'x40' Crowded by adj. trees	QA 8",2x9",10"x30'x30'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

TREE NUMBER		21	22	23	24	25	26	27	28	29	30
FACTORS	**POINTS**										
CROWN DEVELOPMENT											
Well Balanced	5 points	X	X	X	X	X	X	X	X	X	X
Lacking Natural Symmetry	3 points										
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X	X	X	X	X	X		X		X
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points							X		X	
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points										
Severe Root Problems	1 point										
TOTAL POINTS		32	32	32	32	32	32	27	32	27	32
Aesthetic Grade		B	B	A	A	A	A	A	A	A	A

ADDITIONAL COMMENTS

QA = Coast Live Oak

21	QA exposed roots 2", 2½", 4", 2×6" x 20' x 30'
22	QA exposed roots 9", 12", 13" x 25' x 40'
23	QA 15" x 25' x 40'
24	QA 10" x 20' x 30'
25	QA 11", 12", 15" x 35' x 50'
26	QA 8", 2x8", 12", 14", 15" x 20' x 50'
27	QA 16" x 30' x 50'
28	QA 9", 10" x 20' x 30'
29	QA 16", 20", 24" x 35' x 60'
30	QA crowded by #29 12" x 20' x 30'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

TREE NUMBER		31	32	33	34	35	36	37	38	39	40
FACTORS	**POINTS**										
CROWN DEVELOPMENT											
Well Balanced	5 points	X	X				X	X		X	X
Lacking Natural Symmetry	3 points			X	X	X			X		
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points		X	X	X	X	X	X	X	X	X
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points	X									
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points										
Severe Root Problems	1 point										
TOTAL POINTS		27	32	30	30	30	32	32	30	32	32
Aesthetic Grade		A	A	A	B	B	A	A	B	A	A

ADDITIONAL COMMENTS

QA = Coast Live Oak

QA 17", 24" x 35' x 55'	QA 18", 23" (stump) x 30' x 50'	QA 9" x 15' x 40'	QA 7", 13" x 20' x 40'	QA Northeasterly lean 12" x 15' x 45'	QA 24" x 40' x 60'	QA 22" x 40' x 55'	QA Southerly lean 16" x 20' x 40'	QA 2x12", 20" x 35' x 50'	QA 14" x 30' x 40'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

	TREE NUMBER	41	42	43	44	45	46	47	48	49	50
FACTORS	**POINTS**										
CROWN DEVELOPMENT											
Well Balanced	5 points		X	X	X	X	X	X	X	X	X
Lacking Natural Symmetry	3 points	X									
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points		X	X	X	X	X	X	X	X	X
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points	X									
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points		X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point	X									
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X			X
Less Than ½ Normal	3 points								X	X	
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X			X
Minor Deficiency Symptoms	3 points								X	X	
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points		X	X	X	X	X	X	X	X	X
Severe Infestation	1 point	X									
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points										
Severe Root Problems	1 point										
	TOTAL POINTS	20	32	32	32	32	32	32	28	28	32
	Aesthetic Grade	D	A	A	A	A	A	A	A	A	A

ADDITIONAL COMMENTS

QA = Coast Live Oak

QA 19"(@36" high) x 20'x15'	QA 16",18" x 35' x 50'	QA 16"(@36" high) x 25'x40'	QA 26" x 40' x 60'	QA 24",25" x 40'x40'	QA 10" x 20' x 35'	QA 11" x 20' x 30'	QA 8" x 15' x 20'	QA 6" x 15' x 25'	QA 7" x 20' x 20'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

	TREE NUMBER	51	52	53	54	55	56	57	58	59	60
FACTORS	**POINTS**										
CROWN DEVELOPMENT											
Well Balanced	5 points	X	X	X	X		X		X	X	X
Lacking Natural Symmetry	3 points							X			
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X	X	X	X		X				X
Section of Bark Missing:											
Less Than ¼ Around	4 points							X	X	X	
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points										
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X		X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X		X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X		X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X		X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X		X	X	X	X	X
Minor Root Problems	3 points										
Severe Root Problems	1 point										
	TOTAL POINTS	32	32	32	32		32	29	31	31	32
	Aesthetic Grade	A	A	A	A		A	C	B	B	A

TREE NUMBER NOT USED

ADDITIONAL COMMENTS

OA = Coast Live Oak

51	52	53	54	55	56	57	58	59	60
OA 22" (@32" high) x 30' x 50'	OA 12" x 25' x 30'	OA 13" x 25' x 30'	OA 14" x 25' x 35'		OA 27" x 35' x 50'	OA ball damage 9" (@24" high) x 20' x 20'	OA ball damage 22" x 30' x 45'	OA ball damage 20" (@36" high) x 30' x 40'	OA 11", 15" x 35' x 45'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09, 6/16/09, 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

	TREE NUMBER	61	62	63	64	65	66	67	68	69	70
FACTORS	**POINTS**										
CROWN DEVELOPMENT											
Well Balanced	5 points	X	X				X		X	X	X
Lacking Natural Symmetry	3 points			X	X	X		X			
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X				X	X	X	X	X	
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points		X	X	X						X
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X		X	X	X
Few Structurally Dead or Broken Branches	3 points							X			
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points										
Severe Root Problems	1 point										
	TOTAL POINTS	32	28	26	26	30	32	29	32	32	28
	Aesthetic Grade	A	A	B	B	A	A	C	A	B	B

ADDITIONAL COMMENTS

QA = Coast Live Oak

	61	62	63	64	65	66	67	68	69	70
	QA	QA	QA	QA	QA	QA	QA	QA	QA	QA
	11" x 30' x 60'	15" x 30' x 25'	crowded by #64 16" x 25' x 40'	crowded by #63 11½" x 25' x 30'	has existing brace 11" x 20' x 30'	20" (@ 36" high) x 30' x 40'	crowded by #68 & #69 5", 5½", 6½" x 20' x 20'	16" x 30' x 40'	11" x 25' x 30'	11", 14" x 25' x 40'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (T67-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

FACTORS	POINTS	TREE NUMBER 71	72	73	74	75	76	77	78	79	80
CROWN DEVELOPMENT											
Well Balanced	5 points	X									
Lacking Natural Symmetry	3 points		X	X	X	X	X	X	X	X	X
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X		X		X	X	X	X	X	
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points		X		X						X
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points		X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points	X									
Severe Root Problems	1 point										
TOTAL POINTS											
Aesthetic Grade		A	C	B	C	B	B	B	B	B	B

ADDITIONAL COMMENTS

QA = Coast Live Oak

QA Exposed girdling roots 20" x 35' x 50'	QA 9", 10" x 25' x 25'	QA 10" x 25' x 20'	QA 20" x 25' x 45'	QA 3x4", 9", 3x10", 2x12" x 30' x 50'	QA 2x9", 11" x 30' x 20'	QA 2x8", 9", 2x6" x 30' x 20'	QA 3x6", 4" x 25' x 20'	QA 9" x 30' x 40'	QA 4", 5", 2x6" x 30' x 20'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

FACTORS	POINTS	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
CROWN DEVELOPMENT											
Well Balanced	5 points				X	X	X			X	X
Lacking Natural Symmetry	3 points	X	X	X				X	X		
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X			X	X		X	X	X	
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points		X	X			X				X
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X			X	X	X	X	X	X	X
Severe Infestation	1 point		X	X							
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X		X	X		X
Minor Root Problems	3 points						X			X	
Severe Root Problems	1 point										27
TOTAL POINTS		30	23	23	32	32	27	30	30	32	
Aesthetic Grade		B	B	B	A	A	A	B	B	A	B

ADDITIONAL COMMENTS

QA = Coast Live Oak

	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
	QA	QA	QA	QA	QA	QA	QA	QA	QA	QA
	16" x 25' x 30'	22" x 25' x 30'	27" x 25' x 30'	14" x 25' x 40'	16" x 35' x 50'	exposed roots 14" x 30' x 40'	2x9", 6" x 25' x 20'	8" x 20' x 30'	ball damage 7", 8", 23" x 30' x 50'	ball damage 14" x 30'; basal exudation

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (767-1-08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

	TREE NUMBER	91	92	93	94	95	96	97	98	99	100
FACTORS	**POINTS**										
CROWN DEVELOPMENT											
Well Balanced	5 points		X	X		X	X	X	X	X	
Lacking Natural Symmetry	3 points	X			X						X
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	–	X		X	X	X	X	X	X	X
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points	X		X							
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X		X	X	X	X	X	X	X
Severe Infestation	1 point			X							
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X	X	X	X	X	X
Minor Root Problems	3 points										
Severe Root Problems	1 point										
	TOTAL POINTS	25	32	25	30	32	32	32	32	32	30
	Aesthetic Grade	B	A	A	C	B	A	A	A	A	C

ADDITIONAL COMMENTS

ΦA = Coast Live Oak
Φ = Scrub Oak

ΦA basal exudation 16"x35'x30'	ΦA exposed roots 14",18",23"x30'x50'	ΦA HERITAGE OAK 38½"x40'x75'	ΦA northwesterly lean 17"x25'x30'	ΦA 20"x30'x50'	ΦA on steep slope 3x12",5x5"x30'x40'	ΦA 2",4",2x6",8"x30'x30'	Φ 2x2",4x8",4x5",2x6"x15'x30'	Φ 3x7",2x9"x30'x50'	ΦA northwesterly lean 9"x20'x30'

TREE EVALUATIONS

Inspection Date (Project No.) 3/17-18/09; 6/16/09; 9/12/11 (767-1-08

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

5/23/12

	TREE NUMBER	101	102	103	104	105	106	107	108	109	110
FACTORS	**POINTS**										
CROWN DEVELOPMENT											
Well Balanced	5 points							X	X	X	X
Lacking Natural Symmetry	3 points	X	X	X	X	X	X				
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X	X	X	X	X	X	X	X	X	
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points										X
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X	X	X	X	X	X	X	X	X
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X	X	X	X	X	X	X	X	X
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X	X	X	X	X	X	X	X	X
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X	X	X	X	X	X	X	X	X
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X	X	X	X	X	X		X	X
Minor Root Problems	3 points								X		
Severe Root Problems	1 point										
	TOTAL POINTS	30	36	30	30	30	30	32	32	32	27
	Aesthetic Grade	C	B	B	B	B	B	A	A	A	C

ADDITIONAL COMMENTS

QA = Coast Live Oak
QL = Valley Oak
Q = Scrub Oak

101	102	103	104	105	106	107	108	109	110
QA	QA	QA	QA	Q	Q	QA	QA	QL	QA
northwesterly lean 12"x29'x35'	10"x25'x30	8"9"x20'x20'	6"x20'x26'	5"x20'x20'	4"x20'x20'	9"x20'x30'	exposed roots 10"(@12"high)x20'x20'	exposed roots 10"x25'x30'	Poison Oak engulfed 13"15"x25'

TREE EVALUATIONS

Inspection Date (Project No.) 3/23/12 (767.1.08)

TOTAL POINTS	CLASS	GRADE
31 to 35	Excellent	A
26 to 30	Good	B
16 to 25	Fair	C
11 to 15	Poor	D
6 to 10	Very Poor	E
0	Dead	F

FACTORS	POINTS	TREE NUMBER 111	112								
CROWN DEVELOPMENT											
Well Balanced	5 points	X	X								
Lacking Natural Symmetry	3 points										
Lacking a Full Crown	1 point										
TRUNK CONDITION											
Sound & Solid	5 points	X	X								
Section of Bark Missing:											
Less Than ¼ Around	4 points										
¼ to ½ Around	3 points										
½ or More Around	2 points										
Stump with New Basal Growth	1 point										
Extensive Decay or Hollow Trunk	0 points										
BRANCH STRUCTURE											
No Defects	5 points										
Dieback (Limited)	4 points	X	X								
Few Structurally Dead or Broken Branches	3 points										
Many Structurally Dead or Broken Branches	1 point										
TWIG GROWTH											
Typical for Species & Age	5 points	X	X								
Less Than ½ Normal	3 points										
Growth Greatly Reduced	1 point										
FOLIAGE											
Normal Size & Color	5 points	X	X								
Minor Deficiency Symptoms	3 points										
Major Deficiency Symptoms	1 point										
INSECTS & DISEASES											
No Insects or Diseases Apparent	5 points										
Few Controllable Insects/Diseases Apparent	3 points	X	X								
Severe Infestation	1 point										
ROOTS											
No Root Problems Apparent	5 points	X	X								
Minor Root Problems	3 points										
Severe Root Problems	1 point										
	TOTAL POINTS										
	Aesthetic Grade	C	A								

ADDITIONAL COMMENTS

QA = Coast Live Oak

Q = Scrub Oak

111: QA; Rats nest @ base 9" 12" x 15'

112: Q; Rats nest @ base 4" 5" 6" x 20'

TREE CANOPY MEASUREMENTS

[on-property Oaks]

[four-point driplines (north, east, south, & west) – **where needed**]

DRIPLINE MEASUREMENTS @ 4 compass points

Tree No.	North	East	South	West	Tree No.	North	East	South	West
1	20'	20	15'	20	26	35'	35'	35	35'
2	25'	20'	27'	20'	27	–	–	–	–
3	18'	13'	15'	16'	28	30'	–	–	25'
4	10'	10'	16'	10'	29	30'	–	–	30'
5	20'	25	25	–	30	40'	40'	40'	40'
6	–	–	–	–	31	30'	–	–	35'
7	–	–	–	–	32	30'	25'	35'	35
8	–	–	–	–	33	–	–	–	–
9	–	–	–	–	34	20'	25'	–	–
10	–	–	–	–	35	35'	30	–	–
11	–	–	–	–	36	40'	45'	20'	45'
12	–	–	–	–	37	25'	35'	30'	15'
13	35'	30'	30'	–	38	–	–	–	–
14	11'	15'	13'	–	39	–	–	–	–
15	15'	15'	17'	–	40	–	–	–	–
16	18'	17'	18'	–	41	–	–	–	–
17	–	10'	15'	35'	42	25'	40'	40'	30'
18	20'	22'	–	–	43	40'	10'	20'	30'
19	–	23'	–	–	44	25'	40'	35'	40'
20	25'	–	–	25'	45	60'	40'	45'	40'
21	15'	15'	–	15'	46	18'	18'	18'	18'
22	20'	20'	–	20'	47	20'	20'	20'	20
23	20'	20'	–	20'	48	15'	18'	20'	15'
24	15'	15'	–	15'	49	15'	15'	15'	15'
25	25'	25'	30'	25'	50	17'	20'	20'	15'

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DRIPLINE MEASUREMENTS @ 4 compass points

Tree No.	North	East	South	West	Tree No.	North	East	South	West
51	25'	25'	30'	35'	76	—	—	—	—
52	20'	20'	20'	20'	77	—	—	—	—
53	20'	25'	20'	25'	78	—	—	—	—
54	20'	20'	25'	20'	79	—	—	—	—
55	12" dia. stump				80	—	—	—	—
56	40'	25'	20'	25'	81	30'	—	—	—
57	20'	—	—	25'	82	25'	—	20'	20'
58	25'	—	30'	25'	83	—	—	—	20
59	—	35'	40'	—	84	20'	—	20'	20'
60	—	30'	25'	20'	85	20'	—	20'	25
61	15'	15'	15'	15'	86	25'	20'	20'	25'
62	20'	20'	20'	20'	87	—	—	—	—
63	25'	—	30'	25	88	—	—	—	—
64	30	25'	—	—	89	30'	30'	30'	—
65	30'	—	25'	25'	90	30'	—	—	—
66	20'	—	35	30'	91	—	—	—	—
67	—	—	—	—	92	—	35'	40'	40'
68	—	—	—	—	93	40'	30'	30	30'
69	—	—	—	—	94	30'	—	—	20'
70	~~25~~	—	25'	30'	95	—	—	30	30'
71	—	—	—	—	96	20'	20'	20'	20'
72	—	—	—	—	97	15'	15'	15'	20'
73	—	—	—	—	98	—	21	20'	25'
74	—	—	—	—	99	20	22'	—	25'
75	—	—	—	—	100	30'	—	—	21

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DRIPLINE MEASUREMENTS @ 4 compass points

Tree No.	North	East	South	West	Tree No.	North	East	South	West
101	21'	19'	–	15'					
102	–	–	–	–					
103	–	–	–	–					
104	–	–	–	–					
105	–	–		–					
106	–	–	–	–					
107	15'	15'	15'	15'					
108	11'	12'	7'	–					
109	20'	20'	20'	20'					
110	20'	20'	20'	20'					
111	20'	20'	20'	20'					
112	20'	20'	20'	20'					
113									
114									
115									
116									
117									
118									
119									
120									
121									
122									
123									
124									
125									

RDI Project No.: 767-1-08 Date: 5/23/12 Page: 3/3

TREE LOCATION MAP

[Oak trees]

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 3

LOTLINE (TYP)

S89°36'31.82"E 432.11'

N89°36'31.82"W 746.64'

S89°36'31.82"E 526.38'

S89°50'26.02"W 1031.06'

N89°50'26.02"E 1331.06'

1106.06'

225'

TRACT BOUNDARY

MAINTENANCE BUILDING 1402

GOLF SHOP 1388/1389

CLUBHOUSE 1362

POOL

WAREHOUSE

BUNGALOW (TYP.)

MALIBU INSTITUTE

FRANCAS LAKE DRIVEWAY

SEWER TREATMENT PLANT

CLUBHOUSE DRIVE

ENCINAL CANYON ROAD

PROPOSED HELIPAD

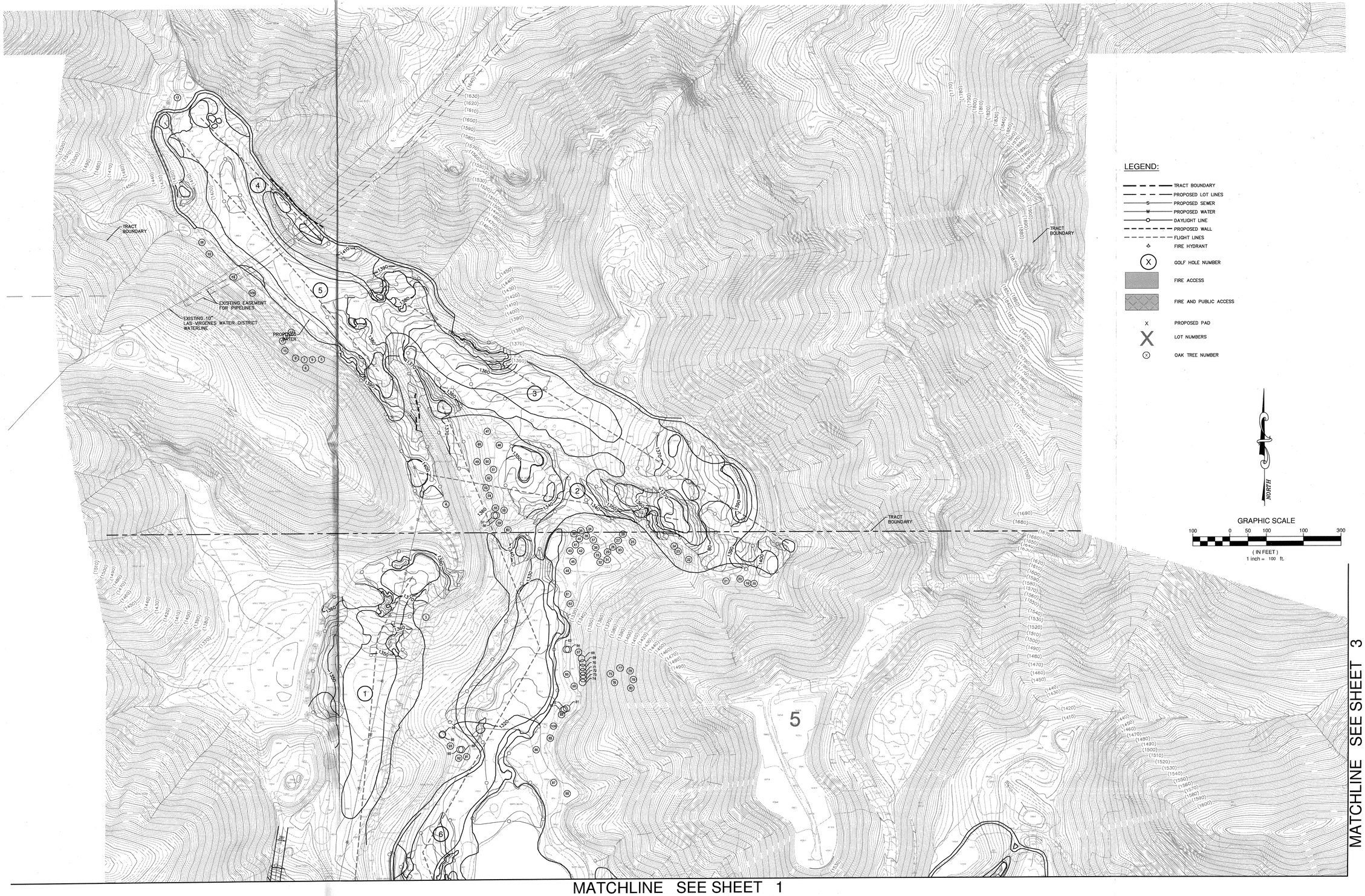
PROPOSED WALL

PROPOSED WATER

PROPOSED SEWER

FH (TYP)

1405/1393 1406/1394 1407/1395 1408/1396 1409/1397 1410/1398 1411/1399 1412/1400 1413/1401 1414/1402 1415/1403 1416/1404 1417/1405 1418/1406 1419/1407 1420/1408 1421/1409 1422/1410 1423/1411 1424/1412 1425/1413 1426/1414 1427/1415 1428/1416 1429/1417 1430/1418 1431/1419 1432/1420 1433/1421 1434/1422 1435/1423 1436/1424 1437/1425 1438/1426 1439/1427 1440/1428 1441/1429 1442/1430 1443/1431 1444/1432



LEGEND:

- TRACT BOUNDARY
- PROPOSED LOT LINES
- S — PROPOSED SEWER
- W — PROPOSED WATER
- DAYLIGHT LINE
- PROPOSED WALL
- FLIGHT LINES
- FIRE HYDRANT
- (X) GOLF HOLE NUMBER
- FIRE ACCESS
- FIRE AND PUBLIC ACCESS
- X PROPOSED PAD
- X LOT NUMBERS
- (X) OAK TREE NUMBER

NORTH

GRAPHIC SCALE

100 0 50 100 100 300

(IN FEET)
1 inch = 100 ft.

Rev 1-08 (July 2012)
TREES, etc.

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PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

PROJECT NUMBER: 0557

The Malibu Institute

901 Encinal Canyon Road
Malibu, CA 90265

SHEET TITLE:

PHASING MAP

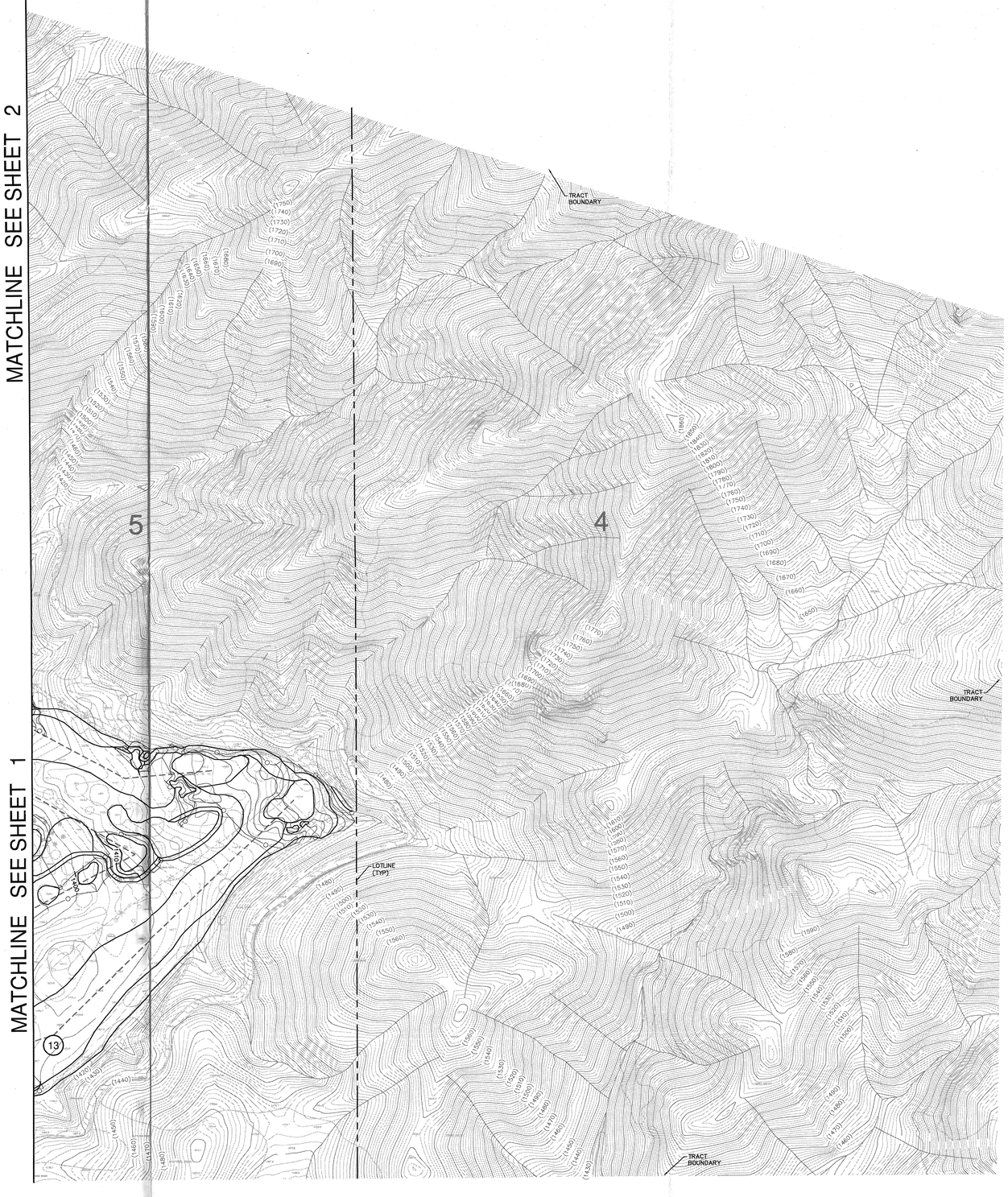
DRAWN BY:
DATE ISSUED:

T - 3

P:\Active\0557 Malibu Associates\0000 Malibu Institute\TIM Maps\TIM_MAP_TREE_TIM_VIM_03.dwg DATE PLOTTED: 07/17/12

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 1



LEGEND:

- TRACT BOUNDARY
- PROPOSED LOT LINES
- S PROPOSED SEWER
- W PROPOSED WATER
- DAYLIGHT LINE
- PROPOSED WALL
- FLIGHT LINES
- FIRE HYDRANT
- X GOLF HOLE NUMBER
- FIRE ACCESS
- FIRE AND PUBLIC ACCESS
- X PROPOSED PAD
- X LOT NUMBERS
- X OAK TREE NUMBER

NORTH

GRAPHIC SCALE

100 0 50 100 100 300

(IN FEET)

1 inch = 100 ft.

T&T-1-08 (July 2012)
TREES, etc.

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PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

PROJECT NUMBER: *0557*

The Malibu Institute

901 Encinal Canyon Road
Malibu, CA 90265

SHEET TITLE:

PHASING MAP

DRAWN BY:

DATE ISSUED:

PA1inch 10559 MoBio Association 10503 MoBio native XYW Rewer\XYW\OAK TREE 1 INCH XYW 04.dwg DATE PLOTED: 07/17/12

Appendix E

Geotechnical Investigation of The Malibu Institute and Proposed Renovations and Expansion of the Malibu Golf Course, Sladden Engineering, July 16, 2012; Responses to Comments February 25, 2013, July 22, 2013

GEOTECHNICAL INVESTIGATION
THE MALIBU INSTITUTE
PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB
901 ENCINAL CANYON ROAD
LOS ANGELES COUNTY, CALIFORNIA

-Prepared By-

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July 16, 2012

Project No. 444-12027
12-07-050

Malibu Associates, LLC
c/o RCE Consultants, Inc.
23332 Mill Creek Drive, Suite 205
Laguna Hills, California 92653

Subject: Geotechnical Investigation

Project: The Malibu Institute
Proposed Renovations and Expansion
Malibu Golf Club
901 Encinal Canyon Road
Los Angeles County, California

Sladden Engineering is pleased to present the results of our geotechnical investigation performed for the renovation and expansion proposed for the Malibu Golf Club located at 901 Encinal Canyon Road in Los Angeles County, California. Our services were completed in accordance with our revised proposal for geotechnical engineering services dated May 21, 2012 and your authorization to proceed with the work. The purpose of our investigation was to explore the subsurface conditions at the site in order to provide preliminary recommendations for foundation design and site preparation. Evaluation of environmental issues and hazardous wastes was not included within the scope of services provided.

The opinions, recommendations and design criteria presented in this report are based on our field exploration program, literature review, laboratory testing and engineering analyses. Based on the results of our investigation, it is our professional opinion that the proposed project is feasible provided the recommendations presented in this report are implemented in the design and carried out through construction.

We appreciate the opportunity to provide service to you on this project. If you have any questions regarding this report, please contact the undersigned.

Respectfully submitted,
SLADDEN ENGINEERING

Matthew J. Cohrt
Project Geologist

PROFESSIONAL GEOLOGIST
Matthew J. Cohrt
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SER/mc

Copies: 6/Addressee

GEOTECHNICAL INVESTIGATION
THE MALIBU INSTITUTE
901 ENCINAL CANYON ROAD
LOS ANGELES COUNTY, CALIFORNIA

July 16, 2012

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INTRODUCTION

This report presents the results of the geotechnical investigation performed by Sladden Engineering (Sladden) for the renovation and expansion project proposed for the Malibu Golf Club located at 901 Encinal Canyon Road in Los Angeles County, California. The site is located at approximately 34.0914^0 North latitude and 118.8565^0 West longitude. The approximate location of the site is indicated on the Site Location Map (Figure 1).

Our investigation was conducted in order to evaluate the engineering properties of the subsurface materials, to evaluate their *in-situ* characteristics and to provide engineering recommendations and design criteria for site preparation, foundation design and the design of various site improvements. This study also includes a review of unpublished geotechnical reports at the subject site.

PROJECT DESCRIPTION

It is our understanding that the proposed project will consist of renovating the existing clubhouse building for multi-purpose use, constructing 37 temporary occupancy bungalow structures, two (2) new warehouse buildings, a new maintenance building, a new facility pro shop and a new clubhouse on the Malibu Golf Club property. Sladden anticipates that the project will also include new exterior concrete flatwork, paved roadways and parking areas, underground utilities, landscape areas and various other improvements. For our analyses we expect that the proposed bungalows will be lightweight wood-frame structures or possibly modular structures. The clubhouse and pro shop are expected to include subterranean levels of reinforced masonry or reinforced concrete construction but the above grade levels will likely consist of wood frame or steel frame construction. The proposed warehouse buildings and maintenance building are expected to be of lightweight wood-frame or steel-frame construction. All of the buildings are expected to be supported on conventional shallow spread footings and concrete slabs-on-grade.

Preliminary grading plans including conceptual elevations were provided by RCE Consulting. Based upon the preliminary grading plans, Sladden anticipates that grading will consist of significant cuts to attain the desired subterranean level elevations along with generally minor cuts and fills to achieve the final surface elevations and to provide adequate gradients for site drainage. This does not include remedial grading consisting of the removal and recompaction of artificial fill soil, bedrock removal and the over-excavation and re-compaction of the primary foundation bearing soil within the new building areas. Upon completion of the final grading plans, Sladden should be retained in order to ensure that the recommendations presented within in this report are incorporated into the design of the proposed project.

Structural foundation loads were not available at the time of this report. Based on our experience with similar structures, we expect that isolated column loads for the bungalows, maintenance building and warehouse buildings will be less than 30 kips and continuous wall loads will be less than 3.0 kips per linear foot. We expect column loads of up to 50 kips and continuous wall loads of up to 5.0 kips per linear foot within the new clubhouse and pro shop buildings. If these assumed loads vary significantly from the actual loads, we should be consulted to verify the applicability of the recommendations provided.

SCOPE OF SERVICES

The purpose of our investigation was to determine specific engineering characteristics of the surface and near surface soil in order to develop foundation design criteria and recommendations for site preparation. Exploration of the site was achieved by drilling eleven (11) exploratory boreholes to depths between approximately 8 and 27 feet below the (existing) ground surface (bgs). Specifically, our site characterization consisted of the following tasks:

- Site reconnaissance to assess the existing surface conditions on and adjacent to the site.
- Advancing eleven (11) exploratory boreholes to depths between approximately 8 and 27 feet bgs in order to characterize the subsurface soil conditions. Representative samples of the soil and bedrock were classified in the field and retained for laboratory testing and engineering analyses.
- Performing laboratory tests on select samples to evaluate their engineering characteristics.
- Reviewing geologic literature for the project vicinity.
- Reviewing geotechnical and grading reports for the project site.
- Performing engineering analyses to develop recommendations for foundation design and site preparation.
- Preparation of this report summarizing our work at the site.

SITE CONDITIONS

The Malibu Institute site is located at 901 Encinal Canyon Road in the Malibu area of Los Angeles County, California. At the time of our investigation, the site was developed with the existing Malibu Golf Club facility including an 18-hole golf course, a 2-story clubhouse facility, paved parking areas and a maintenance building. There are existing underground utilities throughout the site.

The subject property is located within the USGS 7.5′ Point Dume Quadrangle map (1994), the site topography is undulating with surface elevations ranging from 1,300 to 1,410 feet above mean sea level (MSL).

No ponding water or surface seeps were observed at or near the site during our investigation conducted on June 4, 2012. Site drainage is controlled by sheet flow and surface infiltration.

GEOLOGIC SETTING

The project site is located within the Santa Monica Mountains and within the Transverse Ranges geomorphic province. The Transverse Ranges geomorphic province is characterized by roughly east-west trending, convergent (north-south compressional) deformational structural features. The convergent deformational features of the Transverse Ranges are a result of north-south crustal shorting due to plate tectonics, locally folding and uplifting of the mountains and lowering of the intervening valleys, along with propagation of thrust faults (including blind thrusts) and infilling of the valley basins with sediments. The Transverse Ranges are considered to be one of the most rapidly rising orogenic regions on earth (CGS, 2002).

The site has been mapped to be immediately underlain by Quaternary-age alluvium (Qa) and Tertiary-age extrusive rocks of the Conejo Volcanics (Tcvb). The geologic setting for the site and site vicinity is presented on the Regional Geologic Map (Figure 2).

SUBSURFACE CONDITIONS

The subsurface conditions at the site were investigated by drilling eleven (11) exploratory boreholes. The approximate locations of the boreholes are illustrated on the Borehole Location Plan (Figure 3). The boreholes were advanced using a truck-mounted Mobile B-61 drill-rig equipped with 8-inch outside diameter (O.D.) hollow stem augers. A representative of Sladden was on-site to log the materials encountered and retrieve samples for laboratory testing and engineering analysis.

During our field investigation, artificial fill and alluvium was encountered immediately overlying volcanic bedrock. Generally, artificial fill soil was encountered to a maximum depth of approximately ten (10) feet bgs in the area of our bores. The artificial fill soil consists of clayey sand (SC) to gravelly sand (SP) that appeared dry to moist, fine to coarse-grained and light yellowish brown to dark gray in in-situ color. Native alluvial materials consist of clayey sand (SC) that appeared moist, fine to coarse-grained and dark yellowish brown to dark bluish gray in in-situ color. Bedrock was encountered within each of the bores conducted for our investigation at depths ranging between five (5) and twenty-seven (27) feet bgs. Bedrock materials encountered within our bores consist of aphanitic volcanic rock of Conejo Volcanics. Generally, the bedrock encountered within our bores resulted in auger refusals at depths between approximately eight (8) and twenty-seven (27) feet bgs. Detailed descriptions of the materials encountered during our investigation are indicated on the bore logs included in Appendix A of this report.

Perched groundwater was encountered within borehole 11 (BH-11) during our field investigation at a depth of 13 feet bgs. Based upon the conditions observed within our bores and our review of historic high groundwater reported by the CDMG (2001), it is our opinion that groundwater is at a sufficient depth as not to be a factor during construction of the proposed structures.

SEISMICITY AND FAULTING

The southwestern United States is a tectonically active and structurally complex region, dominated by northwest trending dextral faults. The faults of the region are often part of complex fault systems, composed of numerous subparallel faults that splay or step from the main fault traces. Strong seismic shaking could be produced by any of these faults during the design life of the proposed project.

We consider the most significant geologic hazard to the project to be the potential for moderate to strong seismic shaking that is likely to occur during the design life of the project. The proposed project is located in the highly seismic Southern California region within the influence of several fault systems that are considered to be active or potentially active. An active fault is defined by the State of California as a "sufficiently active and well defined fault" that has exhibited surface displacement within the Holocene epoch (about the last 11,000 years). A potentially active fault is defined by the State as a fault with a history of movement within Pleistocene time (between 11,000 and 1.6 million years ago).

Table 1 lists the closest known active faults that were generated in part using the EQFAULT computer programs (Blake, 2000), and Quaternary Fault and Fold database (USGS and CGS, 2006) as modified using the fault parameters from The Revised 2002 California Probabilistic Seismic Hazard Maps (Cao et al, 2003). This table does not identify the probability of reactivation or the on-site effects from earthquakes occurring on any of the other faults in the region.

TABLE 1
CLOSEST KNOWN ACTIVE FAULTS

Fault Name	Distance (Km)	Maximum Event
Anacapa – Dune	<2.0	7.5
Malibu Coast	<2.0	6.7
Santa Monica	16.9	6.6
Simi – Santa Rosa	19.1	7.0
Northridge (E. Oak Ridge)	21.2	7.0
Oak Ridge (On shore)	25.7	7.0
Palos Verdes	30.6	7.3
Santa Susana	30.9	6.7
Holser	34.1	6.5
Oak Ridge (Blind Thrust Offshore)	34.6	7.1
San Cayetano	34.9	7.0
Channel Island Thrust (Eastern)	37.6	7.5
Ventura – Pitas Point	38.5	6.9
Hollywood	39.2	6.4
Sierra Madre (San Fernando)	42.0	6.7
Oak Ridge Mid Channel structure	42.5	6.6
Verdugo	44.4	6.9
Newport – Inglewood (L.A. Basin)	45.0	7.1
San Gabriel	47.1	7.2

2010 CBC DESIGN PARAMETERS

Sladden has reviewed the 2010 California Building Code (CBC) to provide the current seismic design parameters for the proposed structures. The seismic design category for a structure may be determined in accordance with Section 1613 of the 2010 CBC or ASCE7. According to the 2010 CBC, Site Class D may be used to estimate design seismic loading for the proposed structures. The period of the structure should be less than ½ second. This assumption should be verified by the project structural engineer. The 2010 CBC Seismic Design Parameters are summarized below.

Occupancy Category (Table 1604.5): II
Site Class (Table 1613.5.5): D
Ss (Figure 1613.5.1): 1.963g
S1 (Figure 1613.5.1): 0.821g
Fa (Table 1613.5.3(1)): 1.0
Fv (Table 1613.5.3(2)): 1.5
Sms (Equation 16-37 {Fa X Ss}): 1.963g
Sm1 (Equation 16-38 {Fv X S1}): 1.231g
SDS (Equation 16-39 {2/3 X Sms}): 1.309g
SD1 (Equation 16-40 {2/3 X Sm1}): 0.821g
Seismic Design Category: E

GEOLOGIC HAZARDS

The subject site is located in an active seismic zone and will likely experience strong seismic shaking during the design life of the proposed project. In general, the intensity of ground shaking will depend on several factors including: the distance to the earthquake focus, the earthquake magnitude, the response characteristics of the underlying materials, and the quality and type of construction. Geologic hazards and their relationship to the site are discussed below.

I. Surface Rupture. Surface rupture is expected to occur along preexisting, known active fault traces. However, surface rupture could potentially splay or step from known active faults or rupture along unidentified traces. Based on review of Jennings (1994), Hart and Bryant (1997), Dibblee and Ehrenspeck (1993) and CDMG (1995) known faults are not mapped on the site. In addition, no signs of active surface faulting were observed during our review of non-stereo digitized photographs of the site and site vicinity (Google, 2012; Terra Server 2002). Finally, no signs of active surface rupture or secondary seismic effects (lateral spreading, lurching etc.) were identified on-site during our field investigation. Therefore, it is our opinion that risks associated with primary surface ground rupture should be considered "low".

II. Ground Shaking. The site has been subjected to past ground shaking by faults that traverse through the region. Strong seismic shaking from nearby active faults is expected to produce high ground accelerations during the design life of the proposed project. A probabilistic approach was employed to the estimate the peak ground acceleration (a_{max}) that could be experienced at the site.

Based on the USGS Probabilistic Hazard Curves (USGS, 2011) the site could be subjected to ground accelerations on the order of 0.43g. The peak ground acceleration at the site is judged to have a 475 year return period and a 10 percent chance of exceedence in 50 years.

III. Liquefaction. Liquefaction is the process in which loose, saturated granular soil loses strength as a result of cyclic loading. The strength loss is a result of a decrease in granular sand volume and a positive increase in pore pressures. Generally, liquefaction can occur if all of the following conditions apply: liquefaction-susceptible soil, groundwater within a depth of 50 feet or less, and strong seismic shaking.

Based on the relatively shallow seated bedrock encountered throughout the project site and our review of CDMG (2002), risks associated with liquefaction are considered negligible.

IV. Tsunamis and Seiches. Because the site is situated at an elevated inland location, and is not immediately adjacent to any impounded bodies of water, risk associated with tsunamis and seiches is considered negligible.

V. Slope Failure, Landsliding, Rock Falls. The proposed project site is situated within the Tancus Canyon area of the Santa Monica Mountains and is not immediately adjacent to any slopes or hillsides potentially susceptible to slope instability. According to CDMG (2002) the site is not situated within a Seismic Hazard Zone (Figure 4). No signs of slope instability in the form of landslides, rock falls, earthflows or slumps were observed at or near the subject site during our investigation. As such, risks associated with slope instability should be considered "negligible".

VI. Expansive Soil. Expansion Index testing of select samples was performed in order to evaluate the expansive potential of the materials underlying the site. Based the results of our laboratory testing (EI=28, 55, 60), the materials underlying the site are considered to have a "low to medium" expansion potential. Accordingly, risk of structural damage caused by volumetric changes in the subgrade soil should be considered in design.

VII. Settlement. Settlement resulting from the anticipated foundation loads should be tolerable provided that the recommendations included in this report are considered in foundation design and construction. The estimated ultimate settlement is calculated to be less than one inch when using the recommended bearing pressures. As a practical matter, differential settlement between footings can be assumed as one-half of the total settlement.

VIII. Flooding and Erosion. No signs of flooding or erosion were observed during our field investigation. Therefore, risks associated with flooding and erosion should be considered "negligible".

CONCLUSIONS

Based on the results of our investigation, it is our professional opinion that the project is feasible from a geotechnical perspective provided the recommendations of this report are incorporated into design and carried out through construction. The main geotechnical concerns in the design and construction of the proposed project are the presence of relatively shallow bedrock and potentially compressible near surface native soil.

Due to the presence of somewhat soft and compressible near surface soil and relatively shallow bedrock, remedial grading including overexcavation or recompaction is recommended for the proposed new building areas. We recommend that remedial grading within the proposed new building areas include overexcavation and/or recompaction of all uncertified artificial fill soil, the primary foundation bearing soil and any bedrock encountered at the planned footing elevations. Specific recommendations for site preparation are presented in the Earthwork and Grading section of this report. The presence of bedrock will impact deeper excavations. Bedrock excavation may require specialized grading equipment.

What appeared to be perched groundwater was encountered within one of our bores (Borehole 11) at a depth of approximately 13 feet below existing grade. Groundwater was not encountered within the remainder of our bores. It is our opinion that groundwater should not be a significant factor during the construction of the proposed project.

Caving did occur to varying degrees within each of our exploratory bores and the surface soil may be susceptible to caving within deeper excavations. All excavations should be constructed in accordance with the normal CalOSHA excavation criteria. On the basis of our observations of the materials encountered, we anticipate that the subsoil will conform to that described by CalOSHA as Type B or C. Soil conditions should be verified in the field by a "Competent person" employed by the Contractor.

The following recommendations present more detailed design criteria that have been developed on the basis of our field and laboratory investigation.

EARTHWORK AND GRADING

All earthwork including excavation, backfill and preparation of the subgrade soil, should be performed in accordance with the geotechnical recommendations presented in this report and portions of the City of Los Angeles regulatory requirements, as applicable. All earthwork should be performed under the observation and testing of a qualified soil engineer. The following geotechnical engineering recommendations for the proposed project are based on observations from the field investigation program, laboratory testing and geotechnical engineering analysis.

a. Stripping. Areas to be graded should be cleared of the existing structures, improvements, vegetation, trees and the associated root systems and debris. All areas scheduled to receive fill should be cleared of undocumented fills and any irreducible matter. The strippings should be removed off-site, or stockpiled for later use in landscape areas. Undocumented fill soil should be removed in its entirety and replaced as engineered fill. Voids left by obstructions should be properly backfilled in accordance with the compaction recommendations of this report.

b. Preparation of the Building Areas. In order to achieve a firm and unyielding bearing surface and to mitigate potential cut/fill transition related differential settlements, we recommend overexcavation and recompaction throughout the building areas. All artificial fill soil and low density native soil and/or bedrock should be removed to a minimum depth of 3 feet below the bottom of the footings. Remedial grading should extend laterally, a minimum of five feet beyond the footings where possible. The exposed surface should then be scarified, moisture conditioned to within two percent of optimum moisture content, and compacted to at least 90 percent relative compaction.

c. Compaction. Soil to be used as engineered fill should be free of organic material, debris, and other deleterious substances, and should not contain irreducible matter greater than three inches in maximum dimension. All fill materials should be placed in thin lifts, not exceeding six inches in their loose state. If import fill is required, the material should be of a low to non-expansive nature and should meet the following criteria:

Plastic Index	Less than 12
Liquid Limit	Less than 35
Percent Soil Passing #200 Sieve	Between 15% and 35%
Maximum Aggregate Size	3 inches

The subgrade and all fills material should be compacted with acceptable compaction equipment, to at least 90 percent relative compaction. The bottom of the exposed subgrade should be observed by a representative of Sladden Engineering prior to fill placement. Compaction testing should be performed on all lifts in order to ensure proper placement of the fill materials. Table 2 provides a summary of the excavation and compaction recommendations.

TABLE 2
SUMMARY OF RECOMMENDATIONS

*Remedial Grading	Excavation and recompaction within the building envelope and extending laterally a least 5 feet beyond the building limits where possible to a minimum depth of 3 feet below the bottom of the footings.
Native / Import Engineered Fill	Place in thin lifts not exceeding 6 inches in the loose state, compact to a minimum of 90 percent relative compaction.
Asphalt Concrete Sections	Compact the top 12 inches to at least 95 percent compaction within 2 percent of optimum moisture content.

*Actual depth may vary and should be determined by a representative of Sladden Engineering in the field during construction.

d. Cut/Fill Slopes. Where fill is required on slopes steeper than five horizontal to one vertical (5H:1V), all weak soil should be removed and these areas should be positively benched horizontally into bedrock or competent soil in conjunction with fill placement. Keyways will be required at the toe of all fill embankments. The keyways should be excavated at least three (3) feet into competent native soil or bedrock as measured on the downhill side. The height of the benches and keyway dimensions should be determined by the soil engineer in the field during grading.

If required by field conditions, sub-drains should be installed on the inboard side of the keyways and sloped to drain by gravity to an adequate discharge point. Sub-drains should consist of a heavy walled four inch diameter perforated pipe sloped to drain by gravity. The subdrain should be wrapped in clean, free draining, three-quarter inch to one inch crushed rock or gravel. The depth of the subdrain should extend two to three feet into competent rock. The drain rock should extend to within 24 inches of the surface. The upper two feet should be backfill and compacted with fine-grained soil to exclude surface water. A Mirafi 140 N filter cloth should be placed between the on-site native soil and the drain rock.

e. Shrinkage and Subsidence. Volumetric shrinkage of the material that is excavated and replaced as controlled compacted fill should be anticipated. We estimate that this shrinkage could vary from 10 to 15 percent Subsidence of the surfaces that are scarified and compacted should be between 1 and 2 tenths of a foot. This will vary depending upon the type of equipment used, the moisture content of the soil at the time of grading and the actual degree of compaction attained. Some bulking of the excavated bedrock material should be anticipated.

FOUNDATION: CONVENTIONAL SPREAD FOOTINGS

Exterior footings should extend at least 18 inches beneath lowest adjacent grade and interior footings should extend at least 12 inches below slab subgrade. Isolated square or rectangular footings at least 2 feet square and continuous footings at least 12 inches wide may be designed using allowable bearing pressures of 1800 and 2000 pounds per square foot, respectively. The allowable bearing pressure may be increased by approximately 250 psf for each additional 1 foot of width and 250 psf for each additional 6 inches of depth, if desired. The maximum allowable bearing pressure should be limited to 3000 psf unless confirmed by Sladden Engineering subsequent to performing specific settlement calculations. The allowable bearing pressures are for dead and frequently applied live loads and may be increased by 1/3 to resist wind, seismic or other transient loading. All footings should be reinforced in accordance with the project Structural Engineer's recommendations.

Based on the allowable bearing pressures recommended above, total static settlement of the shallow footings is anticipated to be less than one-inch, provided foundation preparation conforms to the recommendations described in this report. Differential settlement is anticipated to be approximately half the total settlement for similarly loaded footings spaced up to approximately 40 feet apart.

Resistance to lateral loads can be provided by a combination of friction acting at the base of the slabs or foundations and passive earth pressure along the sides of the foundations. A coefficient of friction of 0.40 between soil and concrete may be used for dead load forces only. A passive earth pressure of 250 pounds per square foot, per foot of depth, may be used for the sides of footings that are poured against properly compacted native soil. Passive earth pressure should be ignored within the upper 1 foot except where confined.

All footing excavations should be observed by a representative of the project geotechnical consultant to verify adequate embedment depths prior to placement of forms, steel reinforcement or concrete. The excavations should be trimmed neat, level and square. All loose, disturbed, sloughed or moisture-softened soils and/or any construction debris should be removed prior to concrete placement. Excavated soil generated from footing and/or utility trenches should not be stockpiled within the building envelope or in areas of exterior concrete flatwork.

SLABS-ON-GRADE

In order to reduce the risk of heave, cracking and settlement, concrete slabs-on-grade must be placed on properly compacted fill as outlined in the previous sections. Concrete slabs-on-grade should be constructed in accordance with CBC (2010) Section 1808.6.1. The slab subgrades should remain near optimum moisture content and should not be permitted to dry. Prior to concrete pour, all slab subgrades should be firm and unyielding. Disturbed soils should be removed and then replaced and compacted to a minimum of 90 percent relative compaction.

Slab thickness and reinforcement should be determined by the structural engineer. All slab reinforcement should be supported on concrete chairs to ensure that reinforcement is placed at slab mid-height. Slabs with moisture sensitive surfaces should be underlain with a moisture vapor barrier consisting of a polyvinyl chloride membrane such as 10-mil Visqueen. All laps within the membrane should be sealed and at least 2 inches of clean sand should be placed over the membrane to promote uniform curing of the concrete and to limit damage. To reduce the potential for punctures, the membrane should be placed on a pad surface that has been graded smooth without any sharp protrusions. If a smooth surface can not be achieved by grading, consideration should be given to placing a 1-inch thick leveling course of sand across the pad surface prior to placement of the membrane.

RETAINING WALLS

Retaining walls will be required to accomplish the proposed subterranean level construction. Cantilever retaining walls may be designed using "active" pressures. Active pressures may be estimated using an equivalent fluid weight of 40 pcf for native backfill soil with level drained backfill conditions. At rest pressures should be utilized when considering restrained walls such as the basement walls. An equivalent fluid weight of 60 pcf is recommended for restrained walls with level drained backfill conditions.

According to the 2010 CBC, seismic loads must be considered in the design of earth retaining structures. Seismic pressures for retaining (basement) walls with drained level native backfill soil are summarized in Appendix C of this report. The estimated "seismic" pressures may be utilized for the design of earth retaining walls up to 12 feet in height. A summary of our seismic retaining wall loading calculations are presented within Appendix E.

PRELIMINARY PAVEMENT DESIGN

Asphalt concrete pavements should be designed in accordance with Topic 608 of the Caltrans Highway Design Manual based on R-Value and Traffic Index. Design R-Value is assumed to be 50. On-site and any imported soil should be tested for R-Value. Actual R-Value of subgrade soil should be consistent with the pavement design.

For Pavement design, Traffic Indices (TI) of 5.0 and 6.5 were used for the light duty and heavy duty pavements, respectively. We assumed Asphalt Concrete (AC) over Class II Aggregate Base (AB). The preliminary flexible pavement layer thickness is as follows:

RECOMMENDED ASPHALT PAVEMENT SECTION LAYER THICKNESS		
Pavement Material	**Recommended Thickness**	
	TI=5.0	**TI=6.5**
Asphalt Concrete Surface Course	3 inches	4 inches
Class II Aggregate Base Course	4 inches	6 inches
Compacted Subgrade Soil	12 inches	12 inches

Asphalt concrete should conform to Sections 203 and 302 of the latest edition of the Standard Specifications for Public Works Construction ("Greenbook"). Class II aggregate base should conform to Section 26 of the Caltrans Standard Specifications, latest edition. The aggregate base course should be compacted to at least 95 percent of the maximum dry density as determined by ASTM Method D 1557.

SOLUBLE SULFATES

Soluble sulfate concentrations of the near surface soil were determined to have "Low" corrosive potential with respect to concrete (20-50 ppm). Accordingly, the use of Type V and/or sulfate resistant mix design should not be necessary. However, soluble sulfate content of the surface soil should be reevaluated after grading and appropriate concrete mix designs should be established based upon post-grading test results.

UTILITY TRENCH BACKFILL

All utility trench backfill should be compacted to a minimum relative compaction of 90 percent. Trench backfill materials should be placed in lifts no greater than six inches in their loose state, moisture conditioned (or air-dried) as necessary to achieve near optimum moisture conditions, and then mechanically compacted in place to a minimum relative compaction of 90 percent. A representative of the project geotechnical consultant should test the backfills to verify adequate compaction.

EXTERIOR CONCRETE FLATWORK

To minimize cracking of concrete flatwork, the subgrade soil below concrete flatwork areas should first be compacted to a minimum relative compaction of 90 percent. A representative of the project geotechnical consultant should observe and verify the density and moisture content of the soil.

DRAINAGE

All final grades should be provided with positive gradients away from foundations to provide rapid removal of surface water runoff to an adequate discharge point. No water should be allowed to be pond on or immediately adjacent to foundation elements. In order to reduce water infiltration into the subgrade soil, surface water should be directed away from building foundations to an adequate discharge point. Subgrade drainage should be evaluated upon completion of the precise grading plans and in the field during grading.

LIMITATIONS

The findings and recommendations presented in this report are based upon an interpolation of the soil conditions between the exploratory bore locations and extrapolation of these conditions throughout the proposed building area. Should conditions encountered during grading appear different than those indicated in this report, this office should be notified.

The use of this report by other parties or for other projects is not authorized. The recommendations of this report are contingent upon monitoring of the grading operation by a representative of Sladden Engineering. All recommendations are considered to be tentative pending our review of the grading operation and additional testing, if indicated. If others are employed to perform any soil testing, this office should be notified prior to such testing in order to coordinate any required site visits by our representative and to assure indemnification of Sladden Engineering.

We recommend that a pre-job conference be held on the site prior to the initiation of site grading. The purpose of this meeting will be to assure a complete understanding of the recommendations presented in this report as they apply to the actual grading performed.

ADDITIONAL SERVICES

Once completed, final project plans and specifications should be reviewed by use prior to construction to confirm that the full intent of the recommendations presented herein have been applied to design and construction. Following review of plans and specifications, observation should be performed by the Soil Engineer during construction to document that foundation elements are founded on/or penetrate into the recommended soil, and that suitable backfill soil is placed upon competent materials and properly compacted at the recommended moisture content.

Tests and observations should be performed during grading by the Soil Engineer or his representative in order to verify that the grading is being performed in accordance with the project specifications. Field density testing shall be performed in accordance with acceptable ASTM test methods. The minimum acceptable degree of compaction should be 90 percent for subgrade soils and 95 percent for Class II aggregate base as obtained by the ASTM D1557-91 test method. Where testing indicates insufficient density, additional compactive effort shall be applied until retesting indicates satisfactory compaction.

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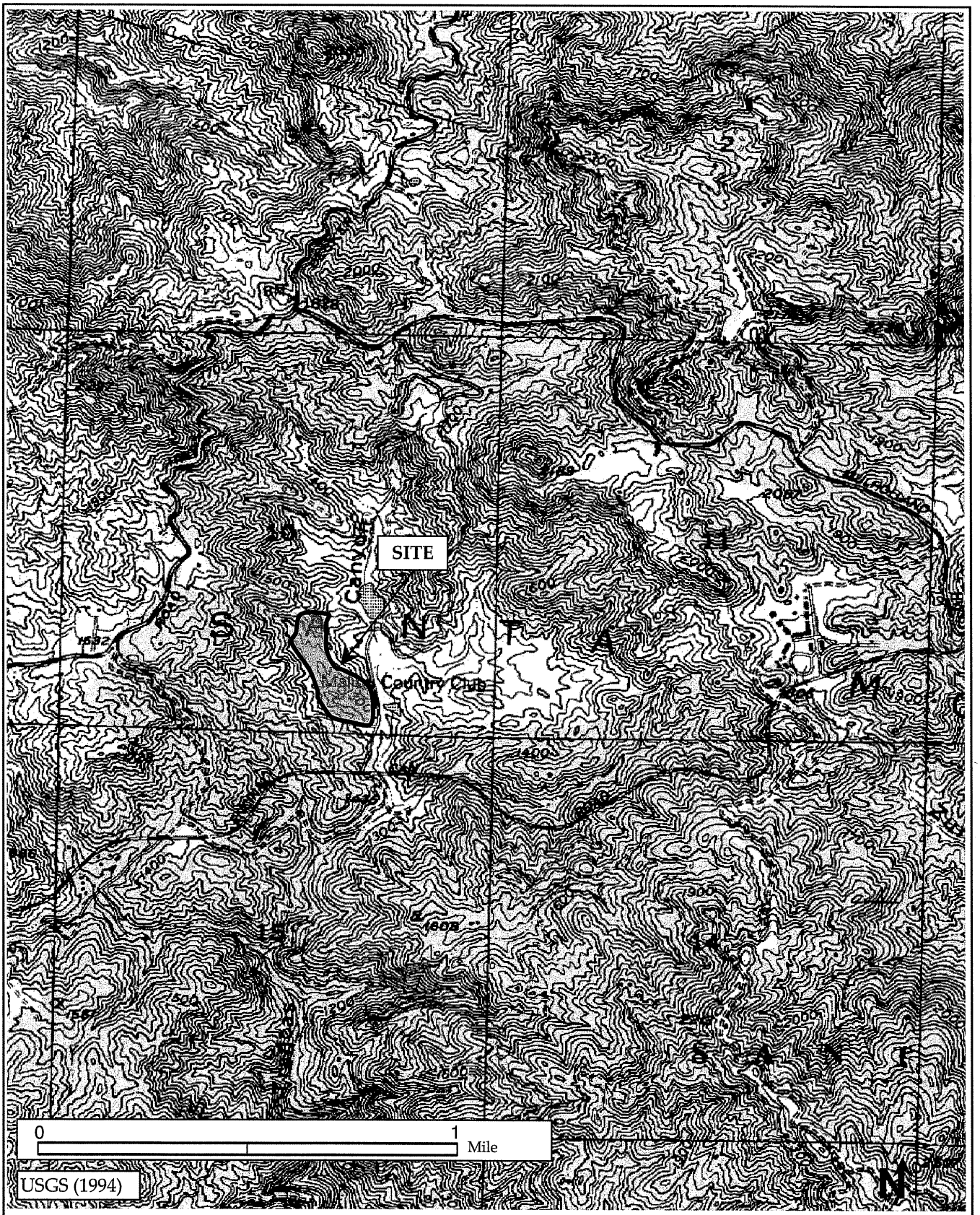
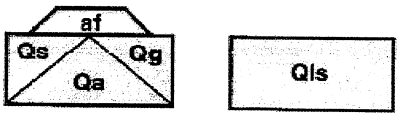
FIGURES

SITE LOCATION MAP
REGIONAL GEOLOGIC MAP
BOREHOLE LOCATION PLAN
SEISMIC HAZARD ZONE MAP



Sladden Engineering	SITE LOCATION MAP	FIGURE 1
	Project Number: 444-12027	
	Report Number: 12-07-050	
	Date: July 16, 2012	

EXPLANATION OF SITE UNITS



SURFICIAL SEDIMENTS

unconsolidated detrital sediments, undissected to partly dissected

Qs *beach sand*
Qg *gravel and sand of major stream channels*
Qa *alluvial gravel, sand and clay of flood plains*
af *artificial cut and fill*
Qls *landslide debris; some may be of late Pleistocene age*

EXTRUSIVE ROCKS

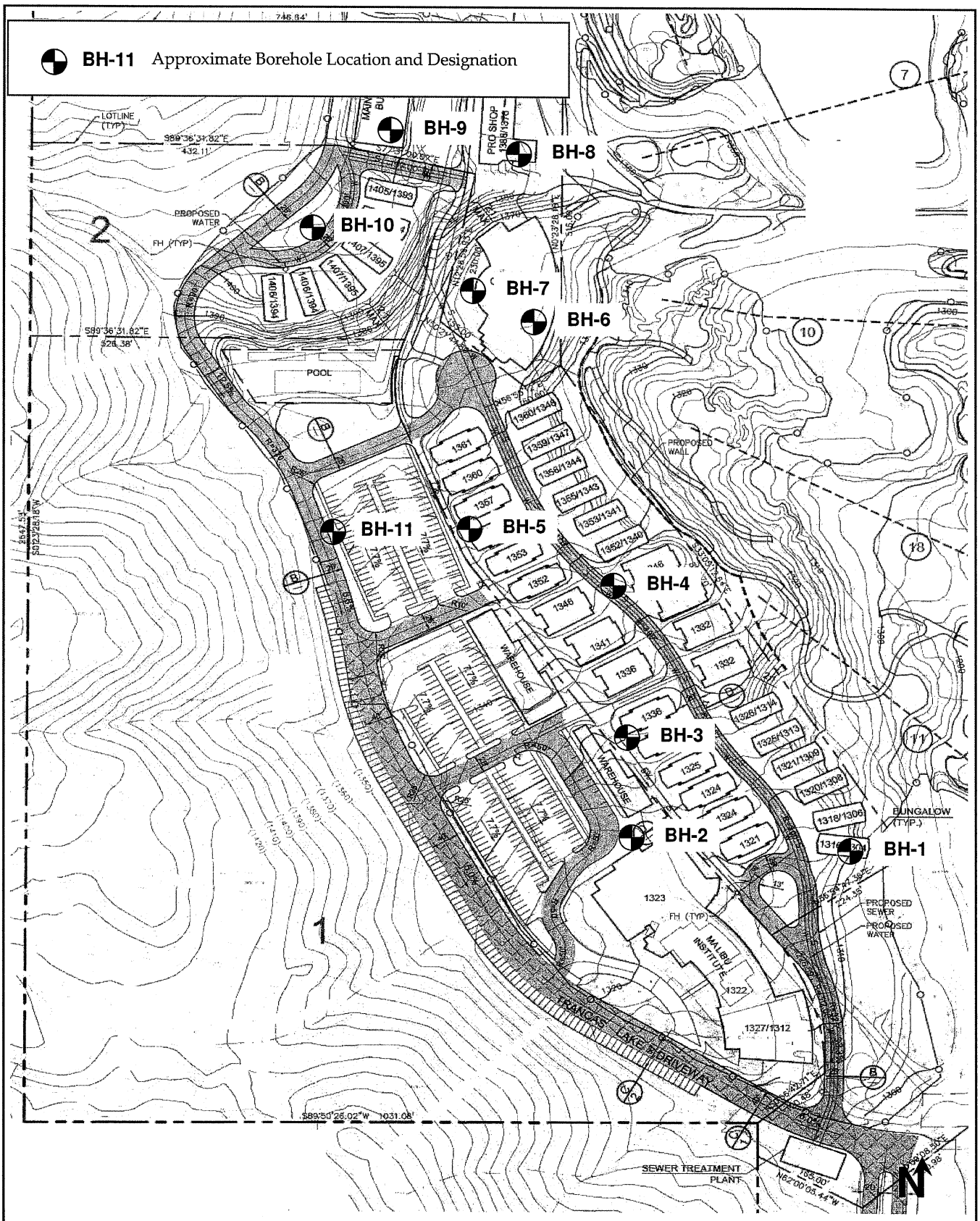
Tcvb *basaltic flows and breccias: black, weathered dark olive brown, fine grained, composed primarily of calcic plagioclase feldspar (average An_{50}) and ferromagnesian minerals: hypersthene or augite, rare olivine and magnetite, (Weigand 1982); some flows amygdaloidal with white amygdules of silica, calcite or analcime; incoherent, crumbly where weathered, weakly resistant to erosion, massive to vaguely bedded; some reddish, in some places unit includes thin lenses 1 or 2 meters thick of dark gray basaltic sandstone, tan arkosic sandstone, and shaly siltstone; basaltic rocks erupted as fluid lavas and probably in part deposited subaerially*

SITE

0 1 Mile

Dibblee (1993)

Sladden Engineering	REGIONAL GEOLOGIC MAP	FIGURE 2
	Project Number: 444-12027	
	Report Number: 12-07-050	
	Date: July 16, 2012	



Sladden Engineering	BOREHOLE LOCATION PLAN	FIGURE 3
	Project Number: 444-12027	
	Report Number: 12-07-050	
	Date: July 16, 2012	

MAP EXPLANATION

Zones of Required Investigation:

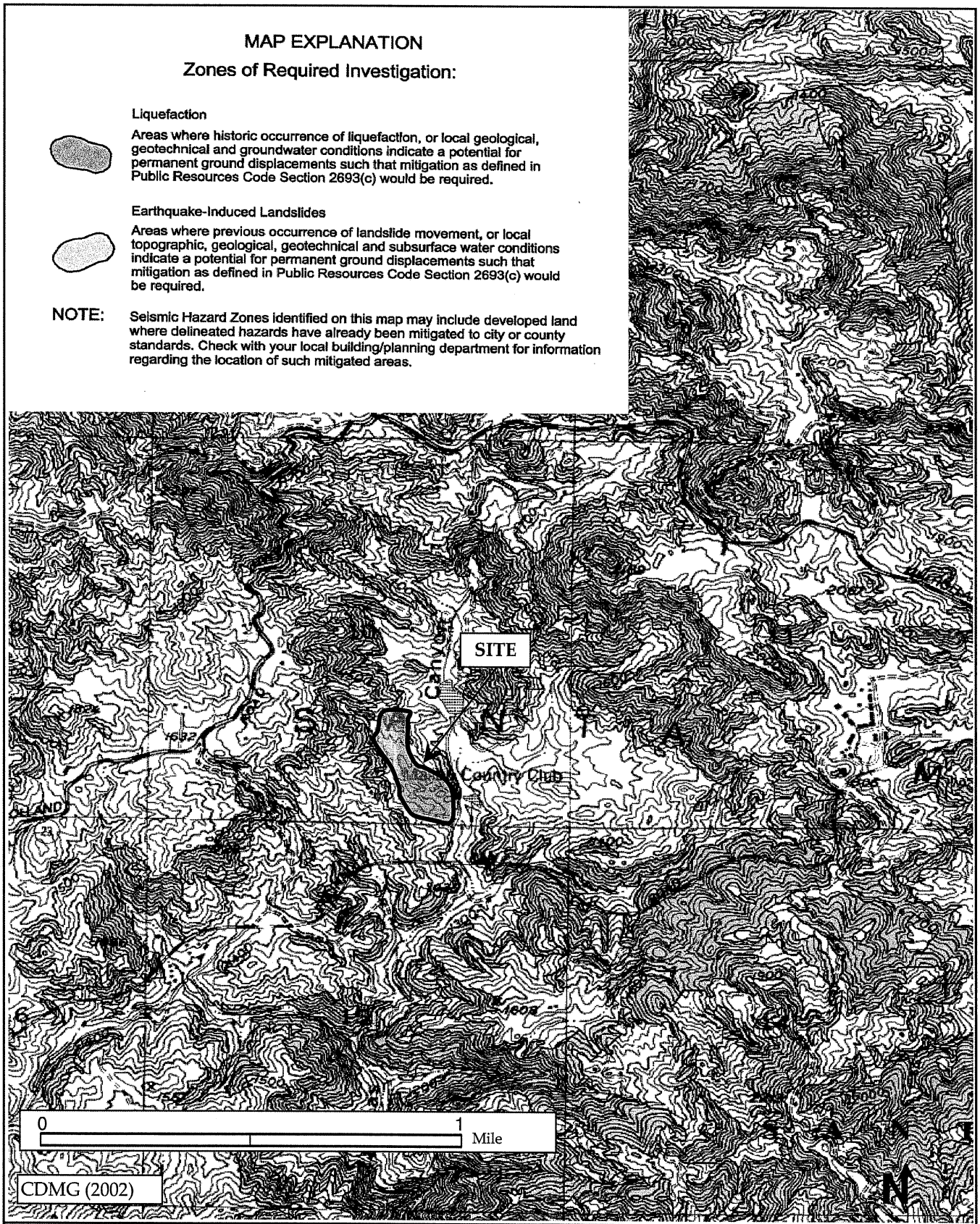
Liquefaction

Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

NOTE: Seismic Hazard Zones identified on this map may include developed land where delineated hazards have already been mitigated to city or county standards. Check with your local building/planning department for information regarding the location of such mitigated areas.



Sladden Engineering

SEISMIC HAZARD ZONE MAP

FIGURE 4

Project Number:	444-12027
Report Number:	12-07-050
Date:	July 16, 2012

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

For our field investigation 11 exploratory bores were excavated on June 4, 2012 utilizing a truck mounted hollow stem auger rig (Mobile B-61). Continuous logs of the materials encountered were made by a representative of Sladden Engineering. Materials encountered in the boreholes were classified in accordance with the Unified Soil Classification System which is presented in this appendix.

Representative undisturbed samples were obtained within our bores by driving a thin-walled steel penetration sampler (California split spoon sampler) or a Standard Penetration Test (SPT) sampler with a 140 pound automatic-trip hammer dropping approximately 30 inches (ASTM D1586). The number of blows required to drive the samplers 18 inches was recorded in 6-inch increments and blowcounts are indicated on the boring logs.

The California samplers are 3.0 inches in diameter, carrying brass sample rings having inner diameters of 2.5 inches. The standard penetration samplers are 2.0 inches in diameter with an inner diameter of 1.5 inches. Undisturbed samples were removed from the sampler and placed in moisture sealed containers in order to preserve the natural soil moisture content. Bulk samples were obtained from the excavation spoils and samples were then transported to our laboratory for further observations and testing.

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			TYPICAL NAMES	
COARSE GRAINED SOILS MORE THAN HALF IS LARGER THAN No.200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No.4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY-GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN No.4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN HALF IS SMALLER THAN No.200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS & VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, CLEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS: LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

EXPLANATION OF BORE LOG SYMBOLS

California Split-spoon Sample

Unrecovered Sample

Standard Penetration Test Sample

Groundwater depth

Note: The stratification lines on the borelogs represent the approximate boundaries between the soil types; the transitions may be gradational.

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1314 ft (MSL)	Bore Hole:	BH-1

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
■	14/27/21	1		11.1	8.1	122.1	2		Gravelly Sand (SP); dark yellowish brown, dry, dense, fine- to coarse-grained (Fill).
■	13/22/8			7.0	8.4		4		Gravelly Sand (SP); dark yellowish brown, dry, medium dense, fine- to coarse-grained (Fill).
							6		
							8		Hard Drilling at 8 Feet bgs.
■	17/32/50-4"			13.2	7.3		10		Aphanite (Conejo Volcanics); moderately strong, moderately weathered; breaks down to Silty Sand (SM) soil type.
							12		
							14		Practical Refusal at ~12 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~8 Feet bgs.
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1325 ft (MSL)	Bore Hole:	BH-2

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
	7/7/8			24.7	11.2		2		Clayey Sand (SC) with gravel; dark yellowish brown, moist, medium dense, fine- to coarse-grained (Fill).
	9/10/7			18.8	10.3		6		Clayey Sand (SC) with gravel; dark yellowish brown, moist, medium dense, fine- to coarse-grained (Fill).
	8/15/17			15.0	10.4	118.9	10		Clayey Sand (SC) with gravel; mottled dark yellowish brown and dark bluish gray, moist, medium dense, fine- to coarse-grained (Qal).
	6/6/5			26.0	13.8		16		Clayey Sand (SC) with gravel; mottled dark yellowish brown and dark bluish gray, moist, medium dense, fine- to coarse-grained (Qal).
	12/18/32			12.1	9.8	125.7	20		Clayey Sand (SC) with gravel; bluish gray, moist, medium dense, fine- to coarse-grained (Qal).
	8/7/12			40.8	23.2		26		Clayey Sand (SC) with gravel; dark olive brown, moist, medium dense, fine- to coarse-grained (Qal).
							28		Practical Bedrock Refusal at ~27 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~27 Feet
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1330 ft (MSL)	Bore Hole:	BH-3

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
	16/17/17			34.0	13.2	117.2	2–4		Clayey Sand (SC); light yellowish brown to olive brown, moist, medium dense, fine- to coarse-grained with gravel (Fill).
	22/50-5"			24.9	9.4	125.4	6–8		Aphanite (Conejo Volcanics); moderately strong, highly weathered; breaks down to Silty Sand (SM) soil type.
	50-5"			20.7	9.0		10–12		Volcanic Breccia (Conejo Volcanics); moderately strong, moderately weathered; breaks down to Silty Sand (SM) - Clayey Sand (SC) soil type.
	50-2"						14–16		No Recovery.
							18		Practical Bedrock Refusal at ~17 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~5 Feet

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1350 ft (MSL)	Bore Hole:	BH-4

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
	12/15/17			15.7	7.2		2		Clayey Sand (SC) with gravel; dark gray; moist, dense, fine to coarse-grained (Fill).
	5/6/20			19.1	10.3		6		Clayey Sand (SC) with gravel; dark gray, moist, medium dense, fine to coarse-grained (Qal).
							8		Gray color change at ~8 Feet bgs.
	50-5"						10		No Recovery.
							14		
	50-1"						16		No Recovery.
							18		Practical Bedrock Refusal at ~15.5 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~8 Feet
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1360 ft (MSL)	Bore Hole:	BH-5

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
■	9/5/6			21.9	9.8		2		Clayey Sand (SC) with gravel; dark yellowish brown, moist, medium dense, fine- to coarse-grained (Fill).
■	4/5/7			24.4	12.9		4		
							6		Clayey Sand (SC) with gravel; dark yellowish brown, moist, medium dense, fine- to coarse-grained (Fill).
							8		
⊠	50-1"						10		Hard Drilling at 9 Feet bgs. No Recovery.
							12		
							14		Practical Bedrock Refusal at ~12.0 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~9 Feet
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1360 ft (MSL)	Bore Hole:	BH-6

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
■	4/5/9			27.7	14.7		2		Clayey Sand (SC); yellowish brown, moist, medium dense, fine- to coarse-grained (Fill).
■	14/21/25			26.9	10.0		6		Clayey Sand (SC); yellowish brown, moist, dense, fine- to coarse-grained (Qal).
							8		Hard Drilling and grayish brown color change at 8.5 Feet bgs.
☒	50-2"						10		No Recovery.
							12		Practical Bedrock Refusal at ~10.5 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~8.5 Feet
							14		
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1368 ft (MSL)	Bore Hole:	BH-7

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
■	9/14/17			27.6	10.0	117.7	2		Clayey Sand (SC); yellowish brown, moist, medium dense, fine- to coarse-grained with gravel (Fill).
							4		
■	6/9/11			21.8	10.5	112.9	6		Clayey Sand (SC); yellowish brown, moist, medium dense, fine- to coarse-grained with gravel (Fill).
							8		Hard Drilling and grayish brown color change at 7.0 Feet bgs.
							10		Practical Bedrock Refusal at ~9.0 Feet bgs.
							12		No Groundwater or Seepage Encountered.
							14		Bedrock Encountered at ~7.0 Feet
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1380 ft (MSL)	Bore Hole:	BH-8

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
	11/13/24			24.6	11.9	119.8	2		Clayey Sand (SC); dark yellowish brown, moist, medium dense, fine- to coarse-grained (Fill).
	15/24/22			19.2	8.9		4		
							6		Clayey Sand (SC); dark yellowish brown, moist, dense, fine- to coarse-grained with gravel (Qal)..
							8		
	12/11/11			12.7	9.6		10		Clayey Sand (SC); dark yellowish brown, moist, medium dense, fine- to coarse-grained with gravel (Qal)..
							12		
							14		
	22/50-5"			7.5	7.8	118.4	16		Aphanite (Conejo Volcanics); moderately strong, moderately weathered; breaks down to Sand (SP) soil type.
							18		Aphanite (Conejo Volcanics); moderately strong, moderately weathered; breaks down to Silty Sand (SM) soil type.
	50-6"			27.5	13.5		20		
							22		Terminated at ~20.5 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~15.0 Feet
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1410 ft (MSL)	Bore Hole:	BH-9

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Turf
	5/9/27			34.3	13.2	121.3	2		Clayey Sand (SC) with gravel; yellowish brown, moist, medium dense, fine-grained (Fill).
							4		
	50-5"			8.8	6.5		6		Aphanite (Conejo Volcanics); moderately strong, moderately weathered; breaks down to Sand (SP) soil type.
							8		
							10		Practical Bedrock Refusal at ~8.0 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~5.0 Feet
							12		
							14		
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1410 ft (MSL)	Bore Hole:	BH-10

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
■	32/33/30			40.5	8.1		2, 4		Clayey Sand (SC); yellowish brown, moist, very dense, fine- to coarse-grained with gravel (Fill).
■	50-6"			31.8	8.4		6, 8		Hard Drilling and grayish brown color change at 7.0 Feet bgs. Aphanite (Conejo Volcanics); moderately strong, moderately weathered; breaks down to Silty Sand (SM) soil type.
							10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Practical Bedrock Refusal at ~9.0 Feet bgs. No Groundwater or Seepage Encountered. Bedrock Encountered at ~7.0 Feet

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

SLADDEN ENGINEERING

BORE LOG

Equipment:	Mobil-B-61	Date Excavated:	6/4/2012
Elevation:	1360 ft (MSL)	Bore Hole:	BH-11

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
									4.5 inches AC
■	9/9/11			24.5	7.5		2–4		Clayey Sand (SC) with gravel; yellowish brown, dry, medium dense, fine- to coarse-grained (Qal).
■	12/17/11			11.9	6.0		6–8		Sand (SP) with gravel; yellowish brown, dry, medium dense, fine- to coarse-grained (Qal).
■	4/5/7			8.8	6.5		10–12		Sand (SP) with gravel; yellowish brown, dry, medium dense, fine- to coarse-grained (Qal).
							14		Aphanite (Conejo Volcanics); moderately strong, moderately
■	50-5"			5.1	10.3		16		weathered; breaks down to Sand (SP) soil type.
							18–50		Practical Bedrock Refusal at ~15.5 Feet bgs. Groundwater Encountered at 13 Feet bgs. Bedrock Encountered at ~13.0 Feet

Completion Notes:

PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB, LOS ANGELES COUNTY, CALIFORNIA

Project No: 444-12027
Report No: 12-07-050

APPENDIX B

LABORATORY TESTING

APPENDIX B

LABORATORY TESTING

Representative bulk and relatively undisturbed soil samples were obtained in the field and returned to our laboratory for additional observations and testing. Laboratory testing was generally performed in two phases. The first phase consisted of testing in order to determine the compaction of the existing natural soil and the general engineering classifications of the soils underlying the site. This testing was performed in order to estimate the engineering characteristics of the soil and to serve as a basis for selecting samples for the second phase of testing. The second phase consisted of soil mechanics testing. This testing including consolidation, shear strength and expansion testing was performed in order to provide a means of developing specific design recommendations based on the mechanical properties of the soil.

CLASSIFICATION AND COMPACTION TESTING

Unit Weight and Moisture Content Determinations: Each undisturbed sample was weighed and measured in order to determine its unit weight. A small portion of each sample was then subjected to testing in order to determine its moisture content. This was used in order to determine the dry density of the soil in its natural condition. The results of this testing are shown on the Bore Logs.

Maximum Density-Optimum Moisture Determinations: Representative soil types were selected for maximum density determinations. This testing was performed in accordance with the ASTM Standard D1557-91, Test Method A. The results of this testing are presented graphically in this appendix. The maximum densities are compared to the field densities of the soil in order to determine the existing relative compaction to the soil.

Classification Testing: Soil samples were selected for classification testing. This testing consists of mechanical grain size analyses. This provides information for developing classifications for the soil in accordance with the Unified Soil Classification System which is presented in the preceding appendix. This classification system categorizes the soil into groups having similar engineering characteristics. The results of this testing is very useful in detecting variations in the soils and in selecting samples for further testing.

SOIL MECHANIC'S TESTING

Expansion Testing: Three (3) bulk samples were selected for Expansion testing. Expansion testing was performed in accordance with the UBC Standard 18-2. This testing consists of remolding 4-inch diameter by 1-inch thick test specimens to a moisture content and dry density corresponding to approximately 50 percent saturation. The samples are subjected to a surcharge of 144 pounds per square foot and allowed to reach equilibrium. At that point the specimens are inundated with distilled water. The linear expansion is then measured until complete.

Direct Shear Tests: Three (3) bulk samples were selected for Direct Shear testing. This test measures the shear strength of the soil under various normal pressures and is used to develop parameters for foundation design and lateral design. Tests were performed using a recompacted test specimen that was saturated prior to tests. Tests were performed using a strain controlled test apparatus with normal pressures ranging from 800 to 2300 pounds per square foot.

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Maximum Density/Optimum Moisture

ASTM D698/D1557

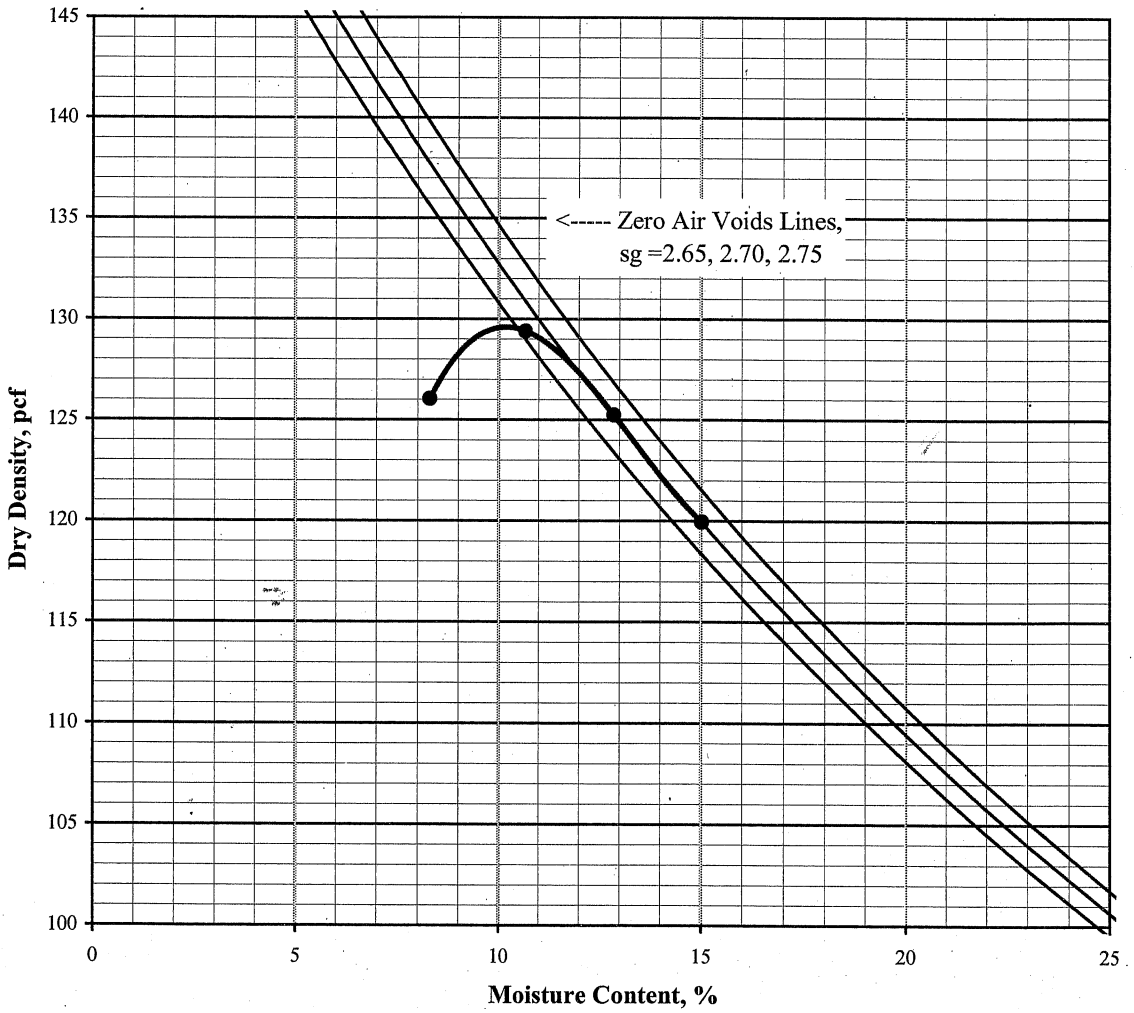
Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample Location: BH-1 Bulk 1 @ 0-5'
Description: Dark Brown Gravel w/Clay & Sand (GP-GC)

June 14, 2012

ASTM D-1557 A
Rammer Type: Machine

Maximum Density: 146 pcf
Optimum Moisture: 7%
Corrected for Oversize (ASTM D4718)

Sieve Size	% Retained
3/4"	
3/8"	
#4	60.9



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Maximum Density/Optimum Moisture

ASTM D698/D1557

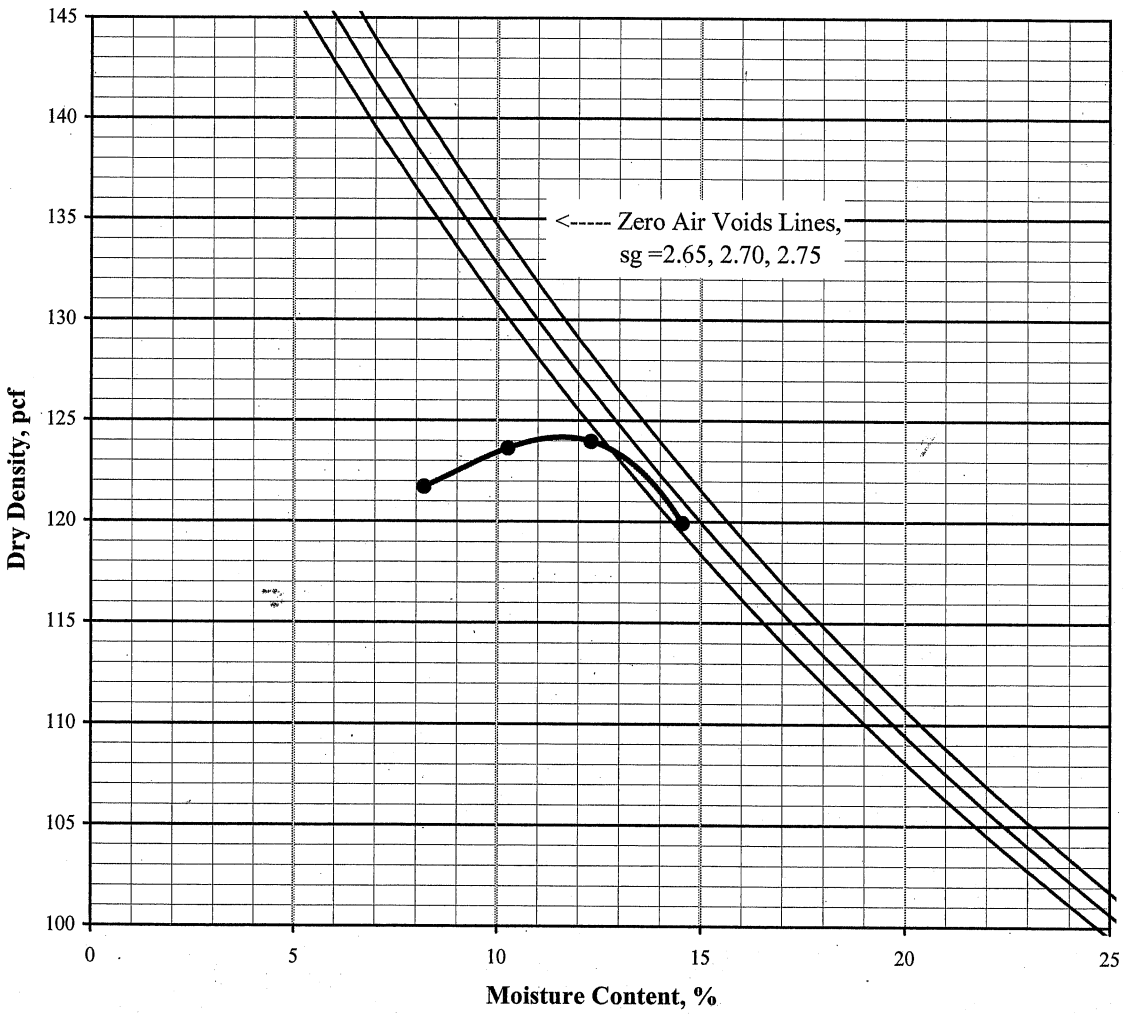
Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample Location: BH-4 Bulk 2 @ 0-5'
Description: Dark Brown Clayey Sand w/Gravel (SC)

June 14, 2012

ASTM D-1557 A
Rammer Type: Machine

Maximum Density: 134.5 pcf
Optimum Moisture: 9%
Corrected for Oversize (ASTM D4718)

Sieve Size	% Retained
3/4"	
3/8"	
#4	32.3



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Maximum Density/Optimum Moisture

ASTM D698/D1557

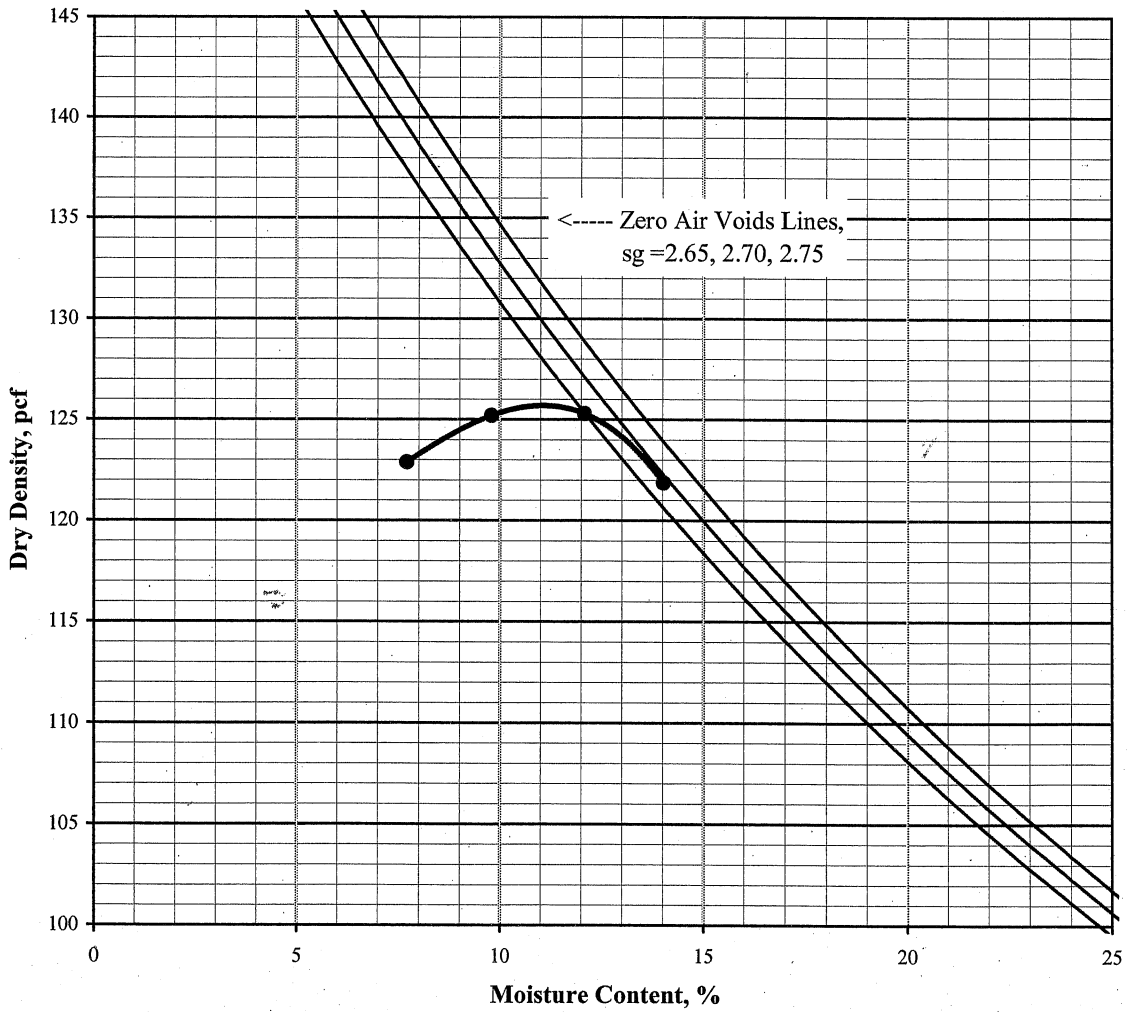
Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample Location: BH-6 Bulk 3 @ 0-5'
Description: Dark Brown Clayey Sand (SC)

June 14, 2012

ASTM D-1557 A
Rammer Type: Machine

Maximum Density: 130 pcf
Optimum Moisture: 10%
Corrected for Oversize (ASTM D4718)

Sieve Size	% Retained
3/4"	
3/8"	
#4	13.7



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Expansion Index

ASTM D 4829

Job Number: 444-12027

June 14, 2012

Job Name: Malibu Golf Club

Lab ID Number: LN6-12208

Sample ID: BH-1 Bulk 1 @ 0-5'

Soil Description: Dark Brown Gravel w/Clay & Sand (GP-GC)

Wt of Soil + Ring:	574.8
Weight of Ring:	193.2
Wt of Wet Soil:	381.6
Percent Moisture:	9.4%
Sample Height, in	0.95
Wet Density, pcf:	121.7
Dry Denstiy, pcf:	111.3

% Saturation:	49.3

Expansion **Rack # 1**

Date/Time	6/7/2012	12:30 PM
Initial Reading	0.0000	
Final Reading	0.0280	

Expansion Index **28**

(Final - Initial) x 1000

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Expansion Index

ASTM D 4829

June 14, 2012

Job Number: 444-12027

Job Name: Malibu Golf Club

Lab ID Number: LN6-12208

Sample ID: BH-4 Bulk 2 @ 0-5'

Soil Description: Dark Brown Clayey Sand w/Gravel (SC)

Wt of Soil + Ring:	566.2
Weight of Ring:	195.2
Wt of Wet Soil:	371.0
Percent Moisture:	10.1%
Sample Height, in	0.95
Wet Density, pcf:	118.3
Dry Denstiy, pcf:	107.5

% Saturation:	48.0

Expansion **Rack # 1**

Date/Time	6/13/2012	1:25 PM
Initial Reading	0.0000	
Final Reading	0.0598	

Expansion Index **60**

(Final - Initial) x 1000

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Expansion Index

ASTM D 4829

June 14, 2012

Job Number: 444-12027
Job Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample ID: BH-6 Bulk 3 @ 0-5'
Soil Description: Dark Brown Clayey Sand (SC)

Wt of Soil + Ring:	569.2
Weight of Ring:	193.2
Wt of Wet Soil:	376.0
Percent Moisture:	10.5%
Sample Height, in	0.95
Wet Density, pcf:	119.9
Dry Denstiy, pcf:	108.5

% Saturation:	51.3

Expansion **Rack # 4**

Date/Time	6/13/2012	1:46 PM
Initial Reading	0.0000	
Final Reading	0.0546	

Expansion Index **55**

(Final - Initial) x 1000

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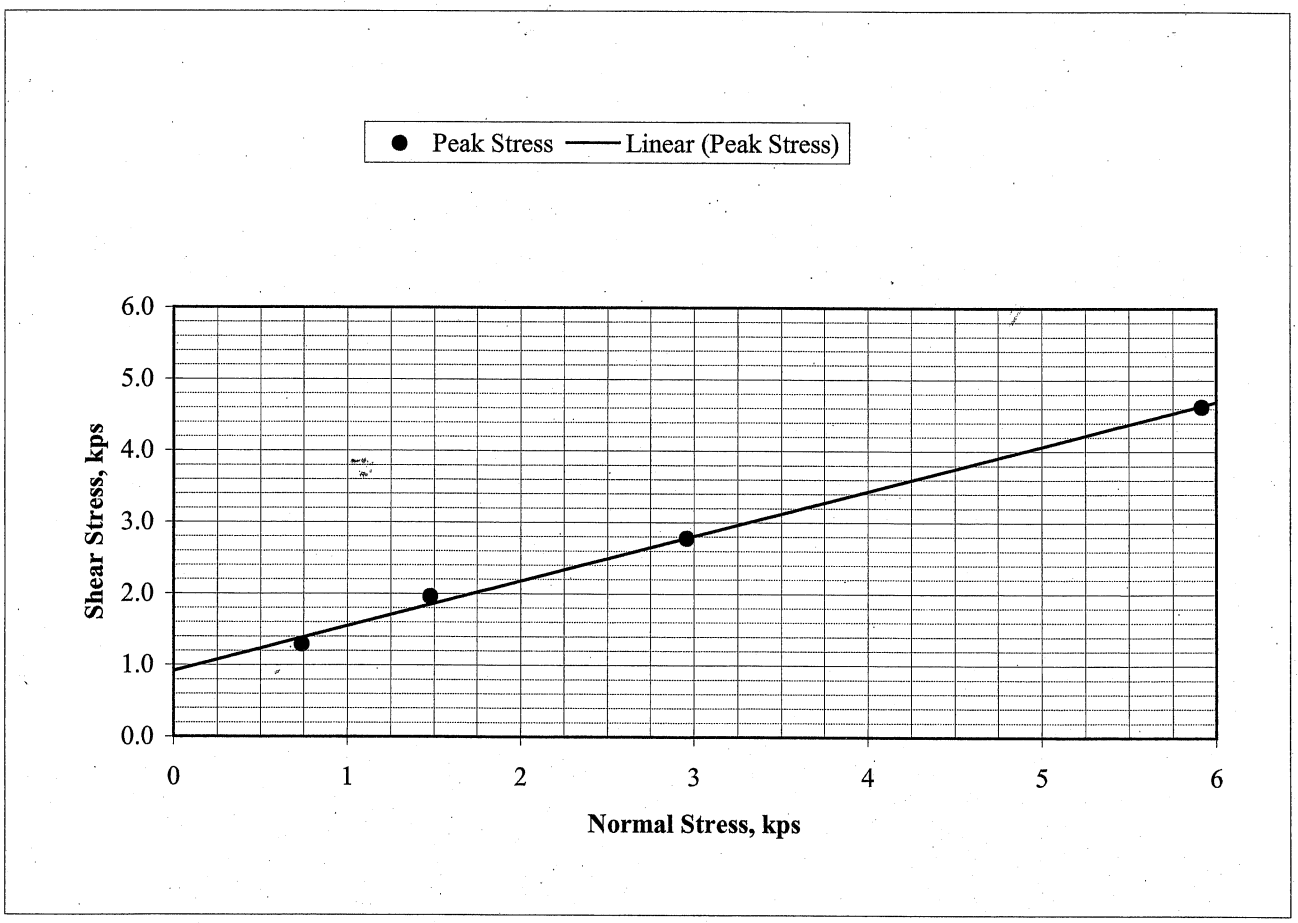
Direct Shear ASTM D 3080-04
(modified for unconsolidated condition)

Job Number:	444-12027		June 14, 2012
Job Name	Malibu Golf Club		Initial Dry Density: 117.1 pcf
Lab ID No.	LN6-12208		Initial Mosture Content: 10.8 %
Sample ID	BH-1 Bulk1 @ 0-5'		Peak Friction Angle (Ø): 32°
Classification	Dark Brown Gravel w/Clay & Sand (GP-GC)		Cohesion (c): 920 psf
Sample Type	Remolded @ 90% of Maximum Density		

Test Results	1	2	3	4	Average
Moisture Content, %	14.7	14.7	14.7	14.7	14.7
Saturation, %	90.5	90.5	90.5	90.5	90.5
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	1.291	1.957	2.775	4.625	



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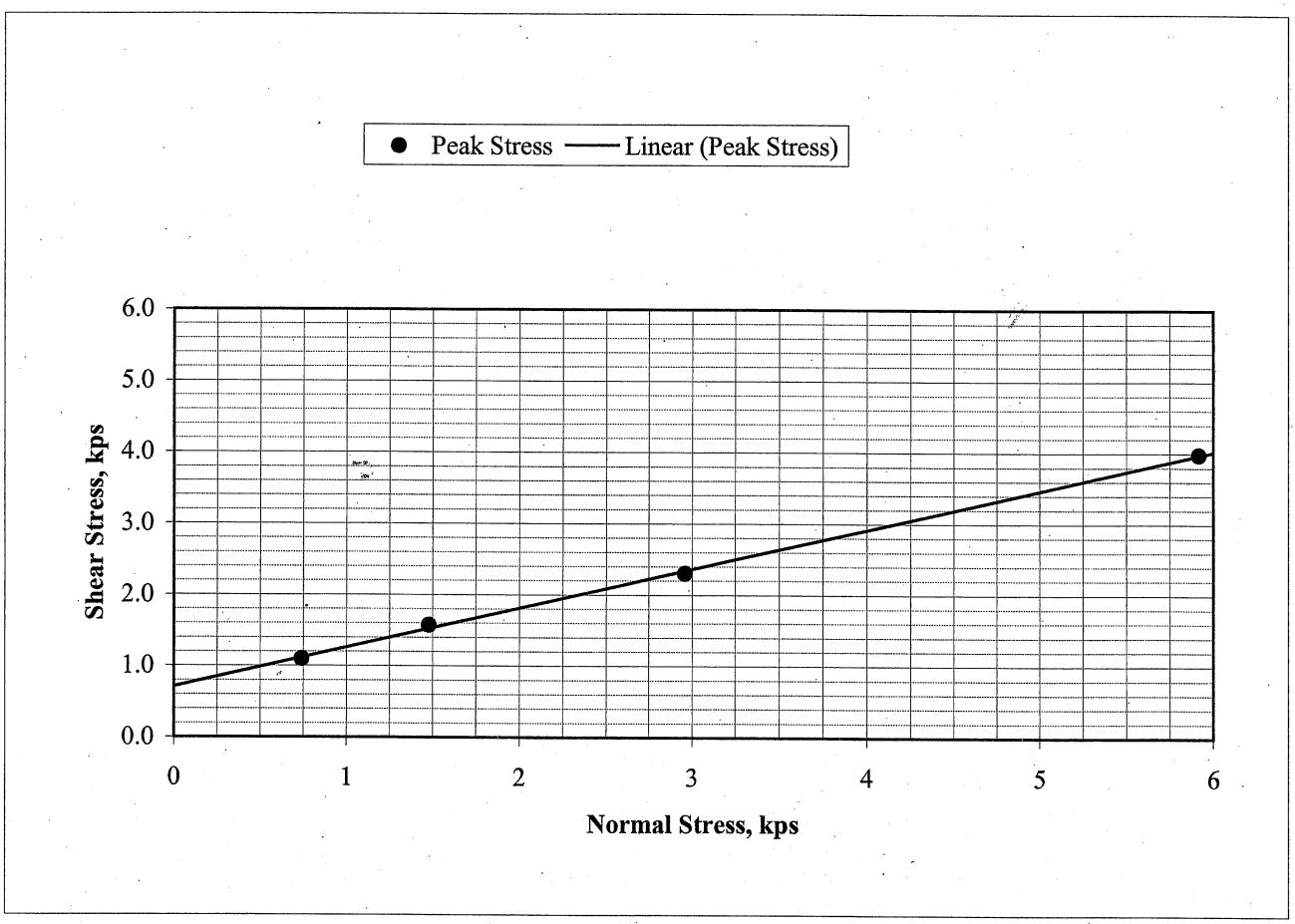
Direct Shear ASTM D 3080-04
(modified for unconsolidated condition)

Job Number:	444-12027
Job Name	Malibu Golf Club
Lab ID No.	LN6-12208
Sample ID	BH-4 Bulk 2 @ 0-5'
Classification	Dark Brown Clayey Sand w/Gravel (SC)
Sample Type	Remolded @ 90% of Maximum Density

June 14, 2012
Initial Dry Density: 111.7 pcf
Initial Mosture Content: 11.5 %
Peak Friction Angle (Ø): 29°
Cohesion (c): 710 psf

Test Results	1	2	3	4	Average
Moisture Content, %	17.8	17.8	17.8	17.8	17.8
Saturation, %	94.4	94.4	94.4	94.4	94.4
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	1.097	1.570	2.302	3.979	



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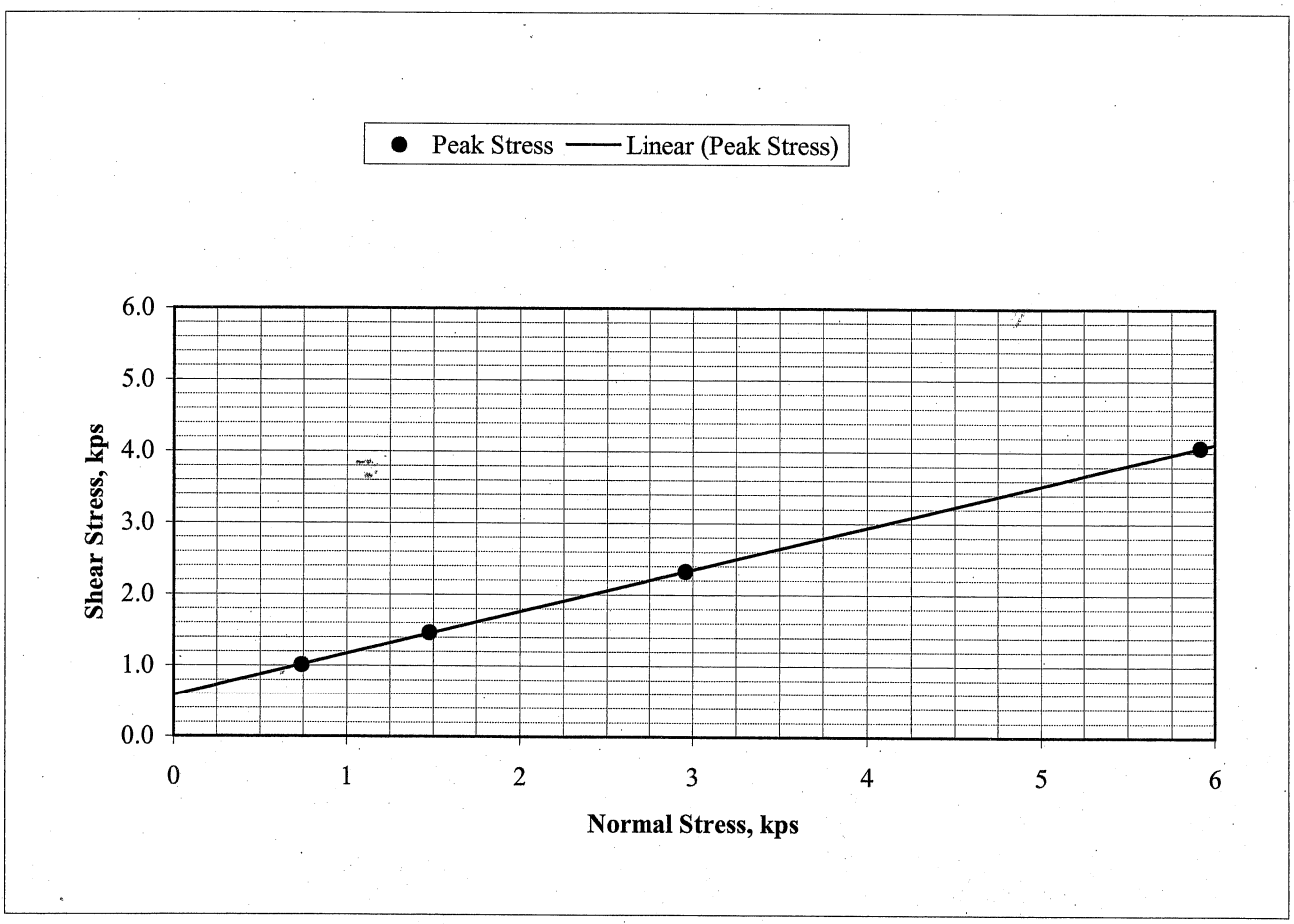
Direct Shear ASTM D 3080-04
(modified for unconsolidated condition)

Job Number:	444-12027
Job Name	Malibu Golf Club
Lab ID No.	LN6-12208
Sample ID	BH-6 Bulk 3 @ 0-5'
Classification	Dark Brown Clayey Sand (SC)
Sample Type	Remolded @ 90% of Maximum Density

June 14, 2012
Initial Dry Density: 111.7 pcf
Initial Mosture Content: 11.5 %
Peak Friction Angle (Ø): 30°
Cohesion (c): 580 psf

Test Results	1	2	3	4	Average
Moisture Content, %	17.8	17.8	17.8	17.8	17.8
Saturation, %	94.4	94.4	94.4	94.4	94.4
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	1.011	1.463	2.323	4.065	



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Gradation

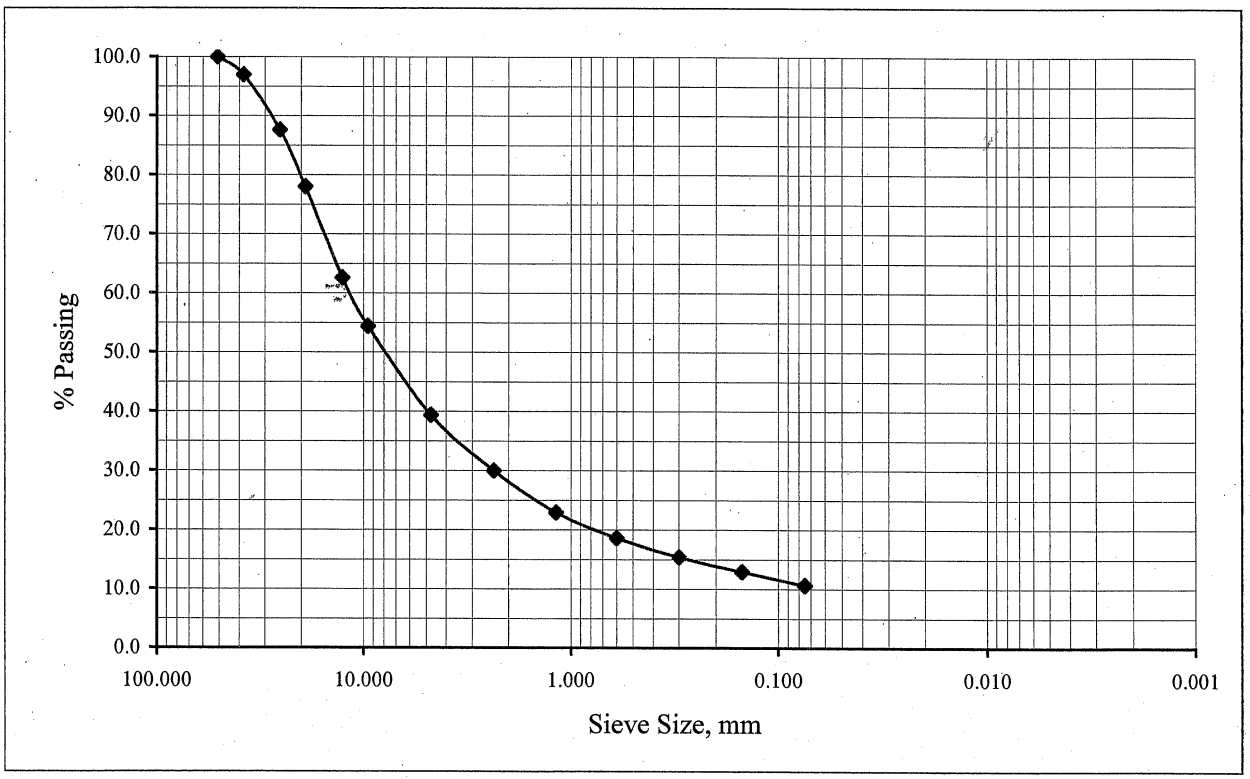
ASTM C117 & C136

Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample ID: BH-1 Bulk 1 @ 0-5'

June 14, 2012

Soil Classification: GP-GC

Sieve Size, in	Sieve Size, mm	Percent Passing
2"	50.8	100.0
1 1/2"	38.1	97.0
1"	25.4	87.6
3/4"	19.1	78.0
1/2"	12.7	62.6
3/8"	9.53	54.3
#4	4.75	39.3
#8	2.36	29.9
#16	1.18	22.9
#30	0.60	18.6
#50	0.30	15.4
#100	0.15	12.9
#200	0.075	10.6



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Gradation

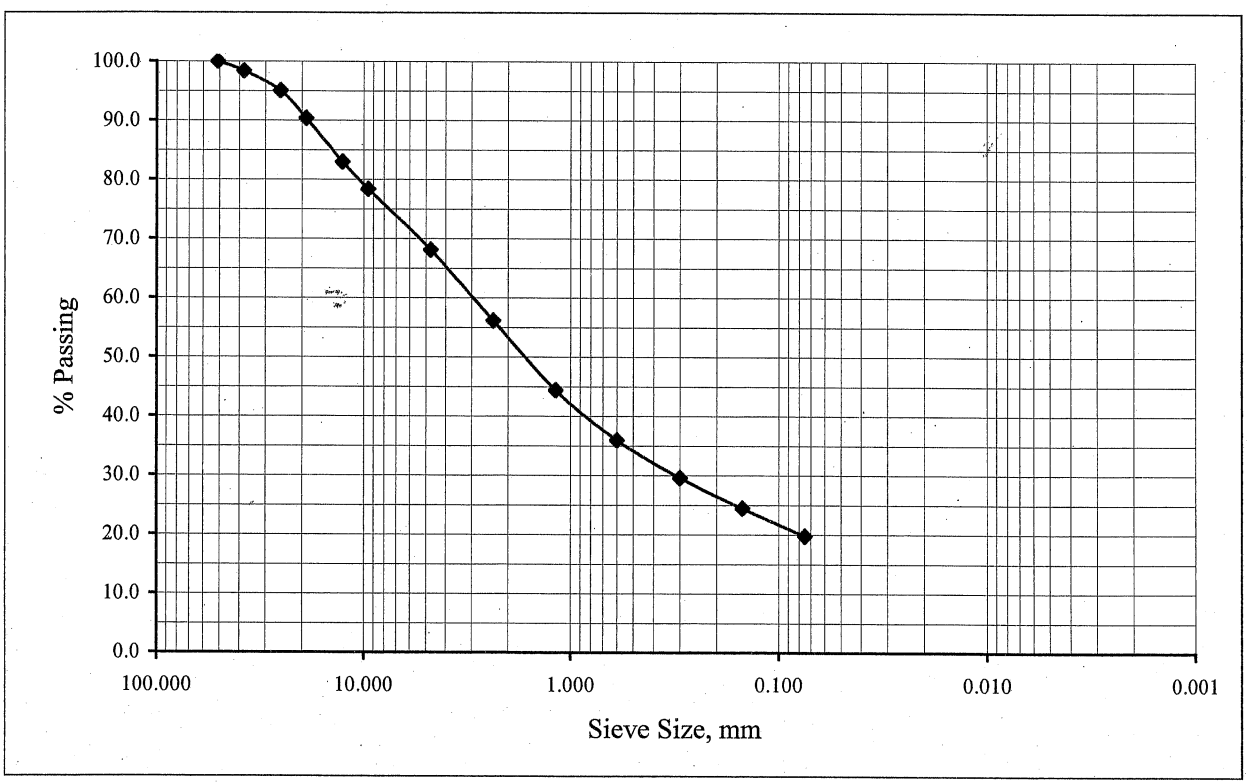
ASTM C117 & C136

Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample ID: BH-4 Bulk 2 @ 0-5'

June 14, 2012

Soil Classification: SC

Sieve Size, in	Sieve Size, mm	Percent Passing
2"	50.8	100.0
1 1/2"	38.1	98.3
1"	25.4	95.0
3/4"	19.1	90.3
1/2"	12.7	83.0
3/8"	9.53	78.4
#4	4.75	68.1
#8	2.36	56.1
#16	1.18	44.4
#30	0.60	36.0
#50	0.30	29.5
#100	0.15	24.4
#200	0.075	19.7



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Gradation

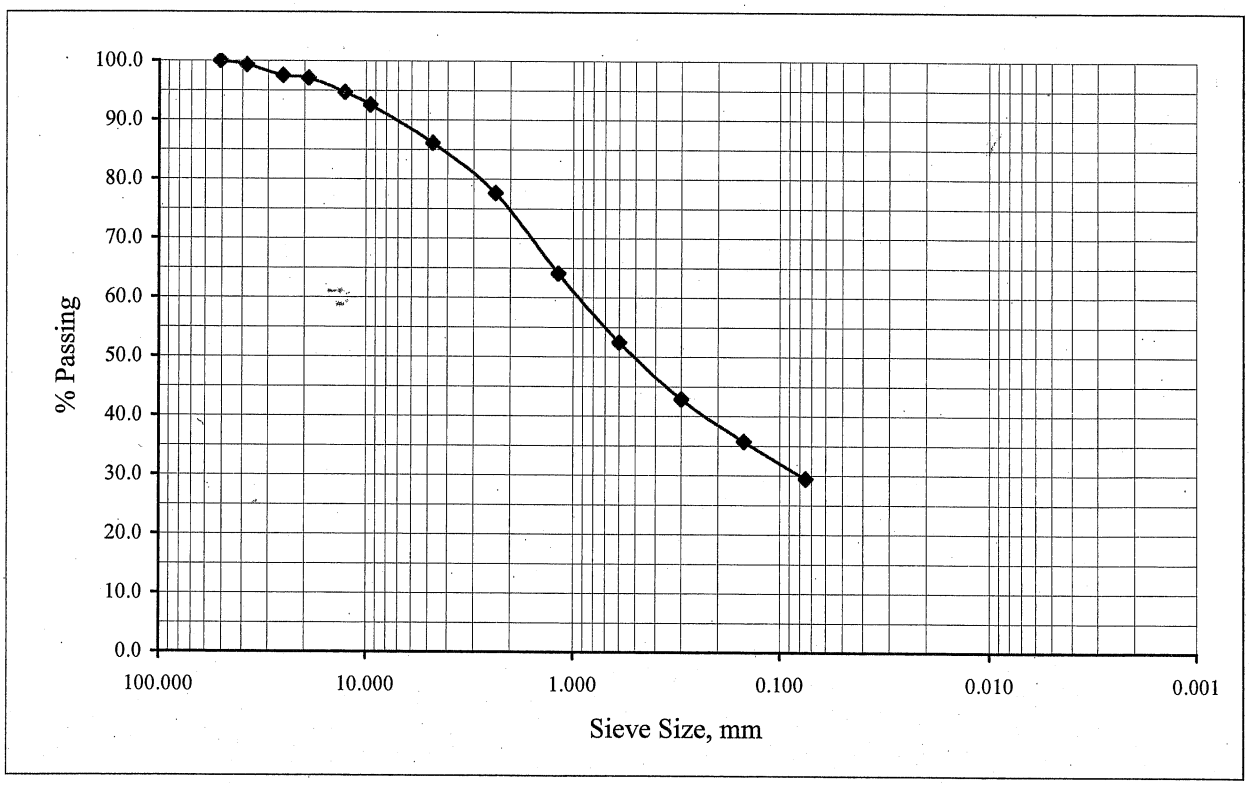
ASTM C117 & C136

Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample ID: BH-6 Bulk 3 @ 0-5'

June 14, 2012

Soil Classification: SC

Sieve Size, in	Sieve Size, mm	Percent Passing
2"	50.8	100.0
1 1/2"	38.1	99.3
1"	25.4	97.5
3/4"	19.1	97.1
1/2"	12.7	94.6
3/8"	9.53	92.5
#4	4.75	86.0
#8	2.36	77.6
#16	1.18	64.0
#30	0.60	52.4
#50	0.30	42.9
#100	0.15	35.7
#200	0.075	29.4



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Gradation

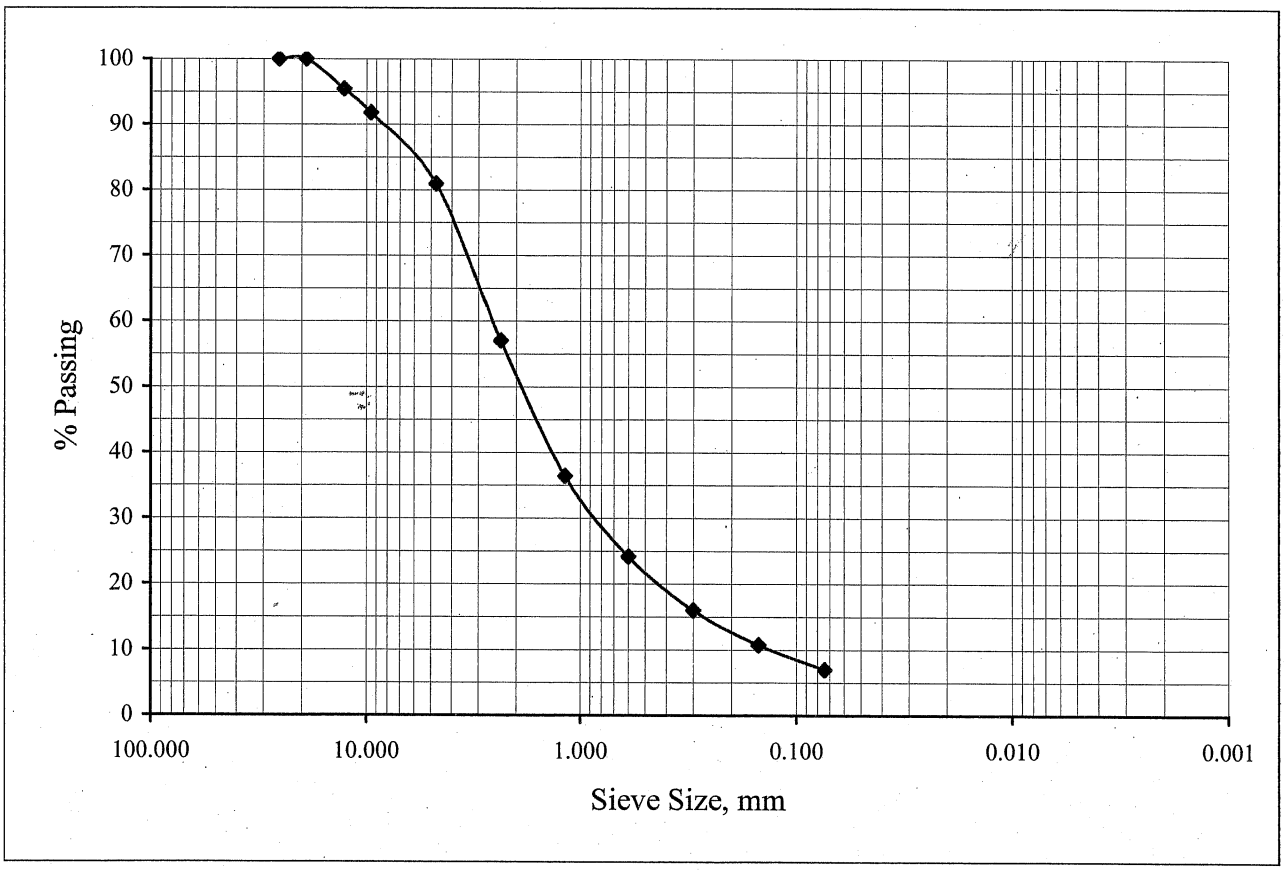
ASTM C117 & C136

Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample ID: BH-1 R-2 @ 5'

June 14, 2012

Soil Classification: SW-SC

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	95.4
3/8"	9.53	91.8
#4	4.75	80.9
#8	2.36	57.0
#16	1.18	36.4
#30	0.60	24.2
#50	0.30	16.0
#100	0.15	10.7
#200	0.074	7.0



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Gradation

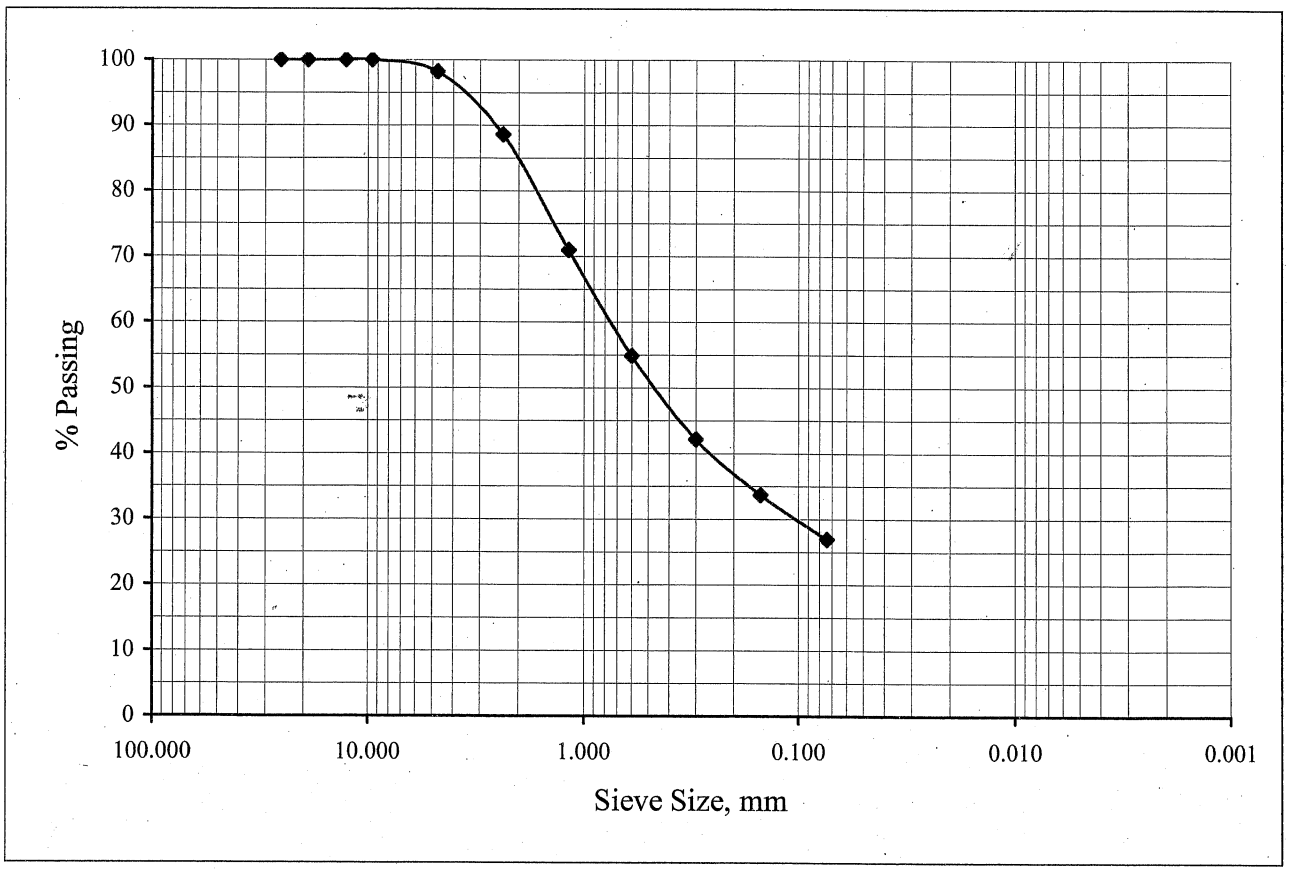
ASTM C117 & C136

Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample ID: BH-6 S-2 @ 5'

June 14, 2012

Soil Classification: SC

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	98.2
#8	2.36	88.6
#16	1.18	70.9
#30	0.60	54.8
#50	0.30	42.2
#100	0.15	33.7
#200	0.074	26.9



Sladden Engineering

450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

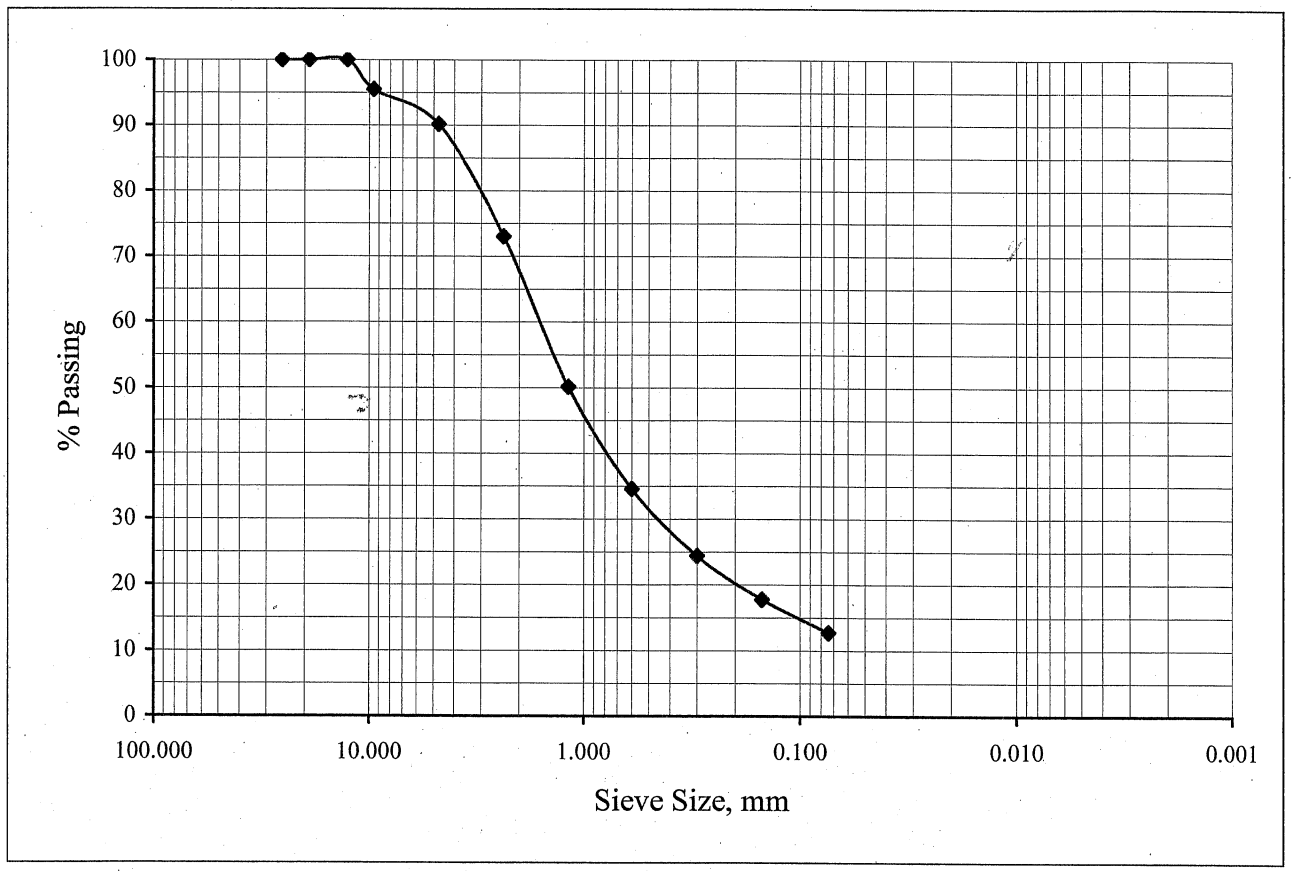
ASTM C117 & C136

Project Number: 444-12027
Project Name: Malibu Golf Club
Lab ID Number: LN6-12208
Sample ID: BH-8 S-3 @ 10'

June 14, 2012

Soil Classification: SC

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	95.5
#4	4.75	90.2
#8	2.36	73.0
#16	1.18	50.1
#30	0.60	34.6
#50	0.30	24.4
#100	0.15	17.8
#200	0.074	12.7



Sladden Engineering

6782 Stanton Ave., Suite A, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
45090 Golf Center Pkwy, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Date: June 14, 2012

Account No.: 444-12027

Customer: Malibu Associates, LLC

Location: Malibu Golf Club

Analytical Report

Corrosion Series

	pH per CA 643	Soluble Sulfates per CA 417 ppm	Soluble Chloride per CA 422 ppm	Min. Resistivity per CA 643 ohm-cm
BH-1 @ 0-5'	8.5	20	60	1,600
BH-4 @ 0-5'	8.0	50	50	1,300
BH-6 @ 05'	7.8	50	60	1,400

APPENDIX C

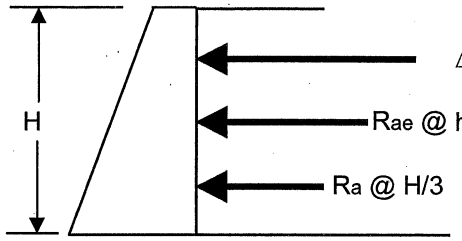
RETAINING WALLS – SEISMIC DESIGN

DYNAMIC LATERAL LOADING - Cantilevered Wall with Level Backfill

H = 12 FEET Φ = 32 ° γeq = 130 PCF Amax = 0.15 g

δ = 10 ° Ka = 0.29 Kae = 0.38

Ra = 2670 LBF/FT Rae = 3587 LBF/FT ΔRae = 917 LBF/FT

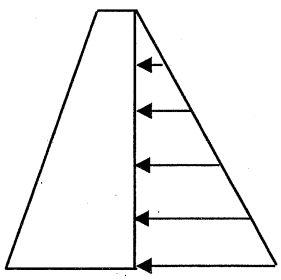


h' = 4.8 FEET FROM WALL BASE

Rae = 3.59 KIP/FOOT

Mot = 17.3 KIP-FEET/FOOT

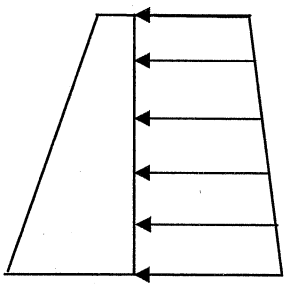
SUMMARY



Pa = 445 PSF

ACTIVE PRESSURE BEHIND WALL

+

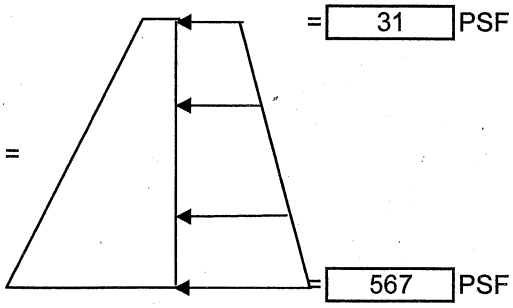


Pmin = 31 PSF

Pmax = 122 PSF

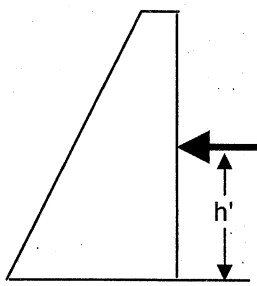
DYNAMIC PRESSURE BEHIND WALL

TOTAL PRESSURE



OR

EQUIVALENT FORCE



Sladden Engineering

45-090 Golf Center Parkway, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
6782 Stanton Avenue, Suite A, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863
800 E. Florida Avenue, Suite 200, Hemet, CA 92543 (951) 766-8777 Fax (951) 766-8778

February 25, 2013

Project No. 444-12027
13-02-012

Malibu Associates, LLC
c/o RCE Consultants, Inc.
23332 Mill Creek Drive, Suite 205
Laguna Hills, California 92653

Project: The Malibu Institute
Proposed Renovations and Expansion
Malibu Golf Club
Tentative Tract Map No. 71735
901 Encinal Canyon Road
Los Angeles County, California

Subject: Response to County of Los Angeles Department of Public Works, Geotechnical and Materials Engineering Division; Geologic Review Sheet dated 11/2/2012 and Soils Engineering Review Sheet dated 12/11/2012

Reference: "Geotechnical Investigation, The Malibu Institute, Proposed Renovations and Expansion, Malibu Golf Club, 901 Encinal Canyon Road, Los Angeles County, California" prepared by Sladden Engineering dated July 16, 2012; Project Number 444-12027, Report Number 12-07-050.

Sladden Engineering (Sladden) is pleased to submit this letter in response to comments made by the County of Los Angeles' geologic and geotechnical reviewers following the review of the above referenced Geotechnical Investigation report. The information contained in this letter is intended to supplement the information presented in the above referenced report.

COMMENTS AND RESPONSES

The County of Los Angeles' review comments are presented herein followed by our responses. Copies of the County of Los Angeles' comment memos dated 11/1/2012 and 12/11/12 are included in Appendix A.

GEOLOGIC REVIEW SHEET

Comment 1:

Provide a geologic report that complies with the provisions of the "Manual for Preparation of Geotechnical Reports" prepared by the County of Los Angeles, Department of Public Works, (available on the internet at http://dpw.lacounty.gov/gmed/manual.pdf).

Response 1:

Sladden is familiar with the "Manual for Preparation of Geotechnical Reports" (MPGR). It is our opinion that collectively the previously submitted Geotechnical Investigation report and the response items presented herein sufficiently address the criteria outlined within the MPGR - Section 2.1 General Guidelines. It should be noted that our initial work on the project site was restricted to the southwest (approximately 21 acre) section of the site where new development has been proposed (see attached Sheets). It is our understanding that with the exception of some re-grading of the golf course areas, the remaining portions of TTM 71735 will remain undeveloped open space. No substantial land use changes are proposed for the remainder of the site.

Comment 2:

Provide a geologic map that is based on the Tentative Map.

Response 2:

In response to the reviewer comments we have included a Landslide Exhibit (Sheet 1), Reconnaissance Level Geologic Map (Sheet 2) and Cross-Sections (Sheet 3) that are based upon the Tentative Map prepared by RCE Consulting (RCE).

Comment 3:

Provide a geologic map and cross-sections that depict the proposed development, existing development, geologic, and groundwater conditions underlying the site.

Response 3:

The geologic map and cross-sections relative to the proposed development are attached.

Comment 4:

Provide geologic cross sections and stability analyses for all slopes (proposed and natural) steeper than 2:1. Where there is a potential for daylighted bedding, provide continuous stratigraphy, and translational stability analyses based on strength data from the weakest material identified.

Response 4:

The geologic cross-sections prepared for this response include depictions of the existing natural slopes and proposed slopes to be constructed in conjunction with the proposed development. As evidenced by the cross-sections, the proposed slopes will be constructed at slope angles of 2 to 1 (horizontal to vertical) or flatter. The existing natural ascending slope that forms the southwestern edge of the proposed development area is comprised of volcanic bedrock that is considered grossly stable in the current natural slope configuration. Because the bedrock is generally massive in nature, no significant bedding or continuous stratigraphy was mapped (observed) during our site mapping.

Comment 5:

Evaluate debris flow potential for each building area located below a swale or steep natural slope. Provide mitigation recommendations as necessary. Show recommended mitigation on the geologic map.

Response 5:

As previously indicated, the natural bedrock hillsides that form the western edge of the development area are comprised of bedrock with minimal residual soil and vegetation. Based upon the site conditions adjacent to the proposed development areas, it is our opinion that the potential for debris flows impacting the building areas is "negligible". It should be noted that the Storm Drain Design Study prepared for the project by Triad/Holmes Associates includes the evaluation of potential erosion, sediment transport/deposition and debris transport that may potentially impact the Malibu Institute property including the proposed development area. A copy of the Triad/Holmes Storm Drain Design Study is included in Appendix B. The proposed storm water mitigation measures include runoff corridors and debris basins. The proposed runoff corridors and debris basins are located within golf course areas that are beyond the proposed development areas.

Comment 6:

Depict all geotechnical hazards appropriately on the geologic map, including mapped landslides.

Response 6:

Sladden has reviewed black and white stereo-photo pairs in order to identify potential geologic hazards on and immediately adjacent to the proposed development area. The following table provides a list of the historical photos reviewed for our geologic hazards assessment of the subject property.

Table 1, Aerial Photographs Reviewed

Date	Photo Numbers	Scale	Source
10-18-98	C128-26 – 38, 39	1"=2000'	CAP
7-11-95	C115-26 – 12, 13	1"=2000'	CAP
5-13-93	C89-21 – 195, 196	1"=2000'	CAP
5-25-90	C81-98 – 61, 62	1"=2000'	CAP
1-27-86	F-427, 428	1"=2000'	CAP
5-12-79	FCLA-5 – 147, 148	1"=2000'	CAP
3-80*	VEN – 8 – 14	1"=2000'	CAP
4-20-72	107-13 – 5, 6	1"=2000'	CAP

Note:
*Single Photo
CAP – Continental Aerial Photo

As part of our geologic hazards evaluation of the proposed development area, Sladden has reviewed Campbell et al (1996) and Dibblee (1993) (Figure 1 and Figure 2, respectively). Both publications show similar geologic materials underlying the subject site, however, Campbell et al (1996) illustrates a number of possible landslides that may lie within the subject Tentative Tract Map boundaries. The mapped landslides of Campbell et al (1996) are shown on the attached Landslide Exhibit (Sheet 1).

Sladden has attempted to verify the mapped landslide locations of Campbell et al (1996) through aerial photo review and our field reconnaissance conducted on January 17, 2013. Although a few locations exhibit weak geomorphic characteristics indicative of shallow slope failures or rock topples, these mapped landslide areas could not be verified. These mapped landslide areas are not located within the proposed development area and should not affect the planned development.

Based on our work at the subject property the hillsides immediately adjacent to the proposed development area consist of volcanic bedrock. The bedrock material appears massive, competent and does not appear to be susceptible to either shallow or deep-seated slope instability.

Comment 7:

All unmitigated landslides must be placed in a Restricted Use Area on the geotechnical map and the final Subdivision map.

Response 7:

The mapped landslides of Campbell et al (1996) are located in existing open space areas that are not proposed for future development.

Comment 8:

The consultants should at a minimum use and reference the following geologic publication: Geologic Map of The Point Dume Quadrangle, Los Angeles County, California (Campbell and others, 1996; USGS Map GQ-1747).

Response 8:

Please see Geologic Response number 6.

Comment 9:

The electronic version of the geotechnical report was illegible (Figures 1, 2 and 4). Provide a legible PDF of the geotechnical report.

Response 9:

A PDF version of the Geotechnical Investigation report and this response letter have been provided with this memo.

Comment 10:

According to the State of California Board for Professional Engineers, Land Surveyors, and Geologists, as of November 11, 2012, Mr. Matthew Cohrt does not appear to be licensed as an Engineering Geologist. Provide a geotechnical report that is signed by an engineering geologist that is certified by the State of California.

Response 10:

The referenced Geotechnical Investigation report and this response have been prepared by Registered Professional Geologist Mr. Matt Cohrt with the assistance of Certified Engineering Geologist Mr. Layne Richins as evidenced by the signatures on this response letter.

Comment 11:

Provide geologic cross-sections that illustrate the proposed seepage pits (including expansion area) with respect to artificial fill and geologic units. Show the anticipated path and saturation from the effluent based on hydrogeology of the site. Discuss the path of migration of effluent and whether daylighting of the effluent will occur.

Response 11:

The current plans indicate that the proposed development will be serviced by a private on-site sewage collection and treatment system currently in design. Preliminary plans indicate that the new wastewater disposal system will also service the existing buildings and the existing sewage disposal system(s) will be abandoned in conjunction with the proposed new construction. The preliminary on-site wastewater disposal system plans prepared by EPD Consultants, Inc. are included in Appendix C. It is our understanding that the plans are currently under review by the Los Angeles County Department of Environmental Health.

SOILS ENGINEERING REVIEW SHEET

Comment 1:

The soils report does not address the entire subdivision. Provide a soils report, with sufficient subsurface exploration data, pertinent test results and analyses, which addresses and evaluates the site and the proposed development. The report must comply with the provisions of "Manual for Preparation of Geotechnical Reports" prepared by County of Los Angeles, Department of Public Works. The Manual is available on the Internet at the following address: http://dpw.lacountv.clov/gmed/Manual.pdf.

Response 1:

The geotechnical investigation summarized within our report was initially limited to the proposed Malibu Institute development area occupying approximately 21 acres of the Malibu Country Club property. The remainder of the grading proposed in conjunction with the development of the Malibu Institute concept is limited to golf course modifications with no structural significance. The geologic conditions of the remainder of the property within the Tract Map boundaries have been evaluated in response to L.A. review comments.

Comment 2:

Provide static, seismic and surficial slope stability analyses for all slopes steeper than 2:1 gradient. Also, provide a geotechnical cross-section, for each section analyzed, showing the critical failure plane used in the analyses. Indicate the various shear strength parameters used in the analyses, in the appropriate segments of each failure plane. Show locations of the cross sections used in slope stability analyses on the geotechnical map. Recommend mitigation if factors of safety are below County minimum standards.

Response 2:

The geologic cross-sections prepared for this response include depictions of the existing natural slopes and proposed slopes to be constructed in conjunction with the proposed development. As evidenced by the cross-sections, the proposed slopes will be constructed at slope angles of 2 to 1 (horizontal to vertical) or flatter. The existing natural ascending slope that forms the southwestern edge of the proposed development area is comprised of volcanic bedrock that is considered grossly stable in the current natural slope configuration. Because the bedrock is generally massive in nature, no significant bedding or continuous stratigraphy was mapped (observed) during our site reconnaissance.

Comment 3:

Provide stress-strain curves to substantiate the shear strength parameters to be used in slope stability analyses. Residual shear strength parameters must be used in static and surficial slope stability analyses. Indicate the type of shear strength parameters (i.e. residual, peak, repeated reshear, etc.) used in the slope stability analyses.

Response 3:

The shear strength parameters presented within the referenced report represent peak strength values that are considered appropriate when determining bearing pressures and lateral values for use in structural design. Because the planned development does not include slopes steeper than 2 to 1 horizontal to vertical (except for bedrock slopes previously discussed), residual shear strength values that would be appropriate for use in slope stability analyses were not presented.

Comment 4:

Specifically address all potential debris flow hazards and surficial failures at the subject site. Provide recommendations for mitigation measures, as necessary. Show all recommended grading and/or mitigation measures (i.e. debris basins etc.) on the geotechnical maps, as necessary.

Response 4:

As previously indicated, the natural bedrock hillsides that form the western edge of the development area are comprised of bedrock with minimal residual soil and vegetation. Based upon the site conditions adjacent to the proposed development areas, it is our opinion that the potential for debris flows impacting the building areas is "negligible". It should be noted that the Storm Drain Design Study prepared for the project by Triad/Holmes Associates includes the evaluation of erosion, sediment transport/deposition and debris transport that may impact the Malibu Institute property as well as the proposed development area.

A copy of the Triad/Holmes Storm Drain Design Study is included in Appendix B. The proposed storm water mitigation measures include runoff corridors and debris basins. The proposed runoff corridors and debris basins are located within the golf course areas that are beyond the proposed development areas.

Comment 5:

Provide data on the possible adverse impact of the private sewage disposal systems) relative to site stability and adjacent properties. Discuss the path of migration of the effluent and whether ponding or daylighting of the effluent will occur. Stability calculations must consider the effect of ponding/perched groundwater.

Response 5:

The current plans indicate that the proposed development will be serviced by a new private on-site wastewater collection and treatment system currently in design. Preliminary plans indicate that the new wastewater disposal system will also service the existing buildings and the existing sewage disposal system(s) will be abandoned in conjunction with the proposed new construction. The preliminary on-site wastewater disposal system plans prepared by EPD Consultants, Inc. are included in Appendix C.

Comment 6:

Show the following on the geotechnical map:

a. All existing and proposed grading.
b. All geotechnical cross sections.
c. Approximate limits and depth of removal and recompaction of landslides and landslide debris, if applicable.
d. Location of all keyways of buttress/stabilization fills, if applicable.
e. Grading required for construction of all proposed buttress/stabilization fills, if applicable.
f. All recommended grading and mitigation measures regarding potential debris flow, as necessary.
g. Location of "Restricted Use Areas)", as necessary.
h. All recommended mitigation measures, as necessary.

Response 6:

A geotechnical map has been prepared utilizing the Tentative Tract Map and Grading Exhibit prepared by RCE Consulting. The previously discussed geologic map includes cross-sections. Because no landslides exist within the proposed development area, the removal of landslide debris should not be necessary. The locations of keyways along the toe of the proposed engineered fill slopes are indicated on the geotechnical map.

Comment 7:

Requirements of the Geology Section are attached.

Response 7:

The geologic comments have been addressed within this report.

Comment 8:

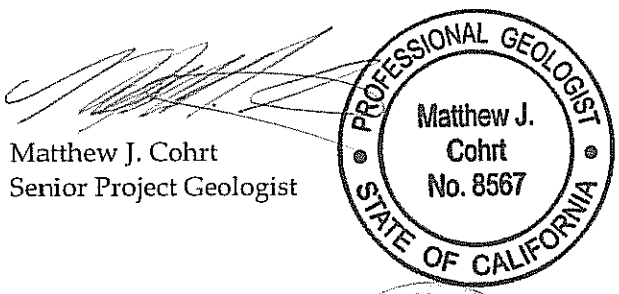
Include a copy of this review sheet with your response.

Response 8:

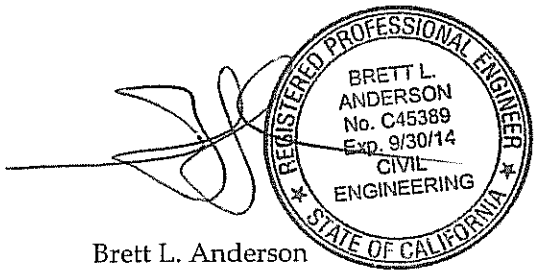
The Los Angeles County Geologic Review Sheet and Soils Engineering Review Sheet are attached.

Sladden Engineering appreciates this opportunity to be of continued service to you on this project. Please contact our office, if you have any questions regarding this letter or the referenced report..

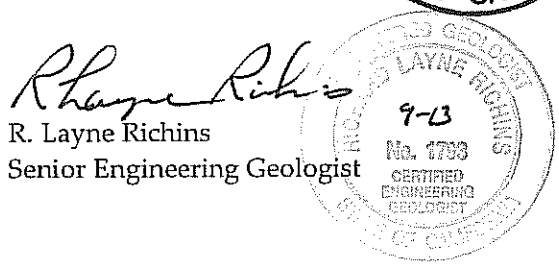
Respectfully submitted,
SLADDEN ENGINEERING



Matthew J. Cohrt
Senior Project Geologist



Brett L. Anderson
Principal Engineer



R. Layne Richins
Senior Engineering Geologist

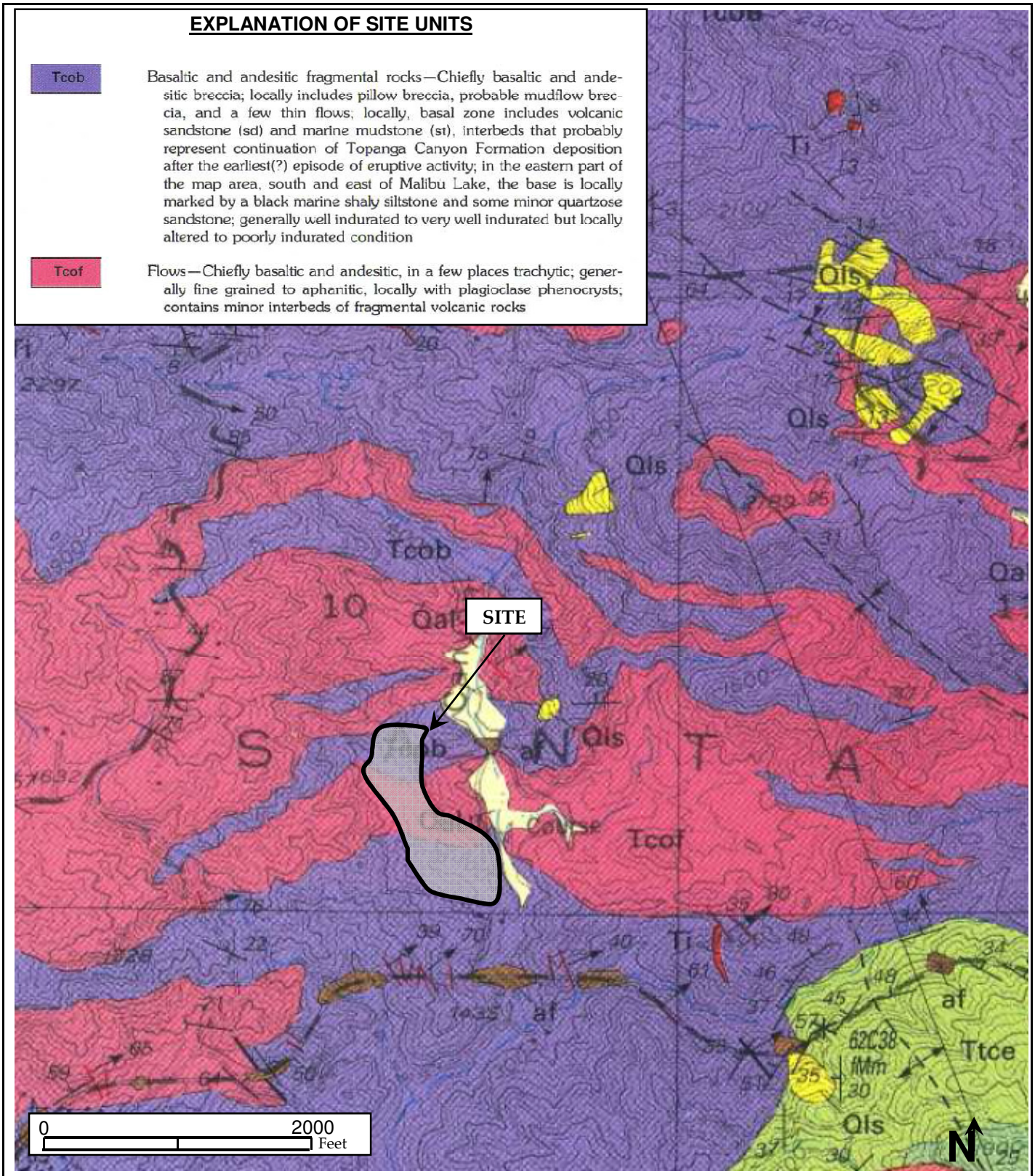
Letter/mc

Copies: 4/Addressee

EXPLANATION OF SITE UNITS

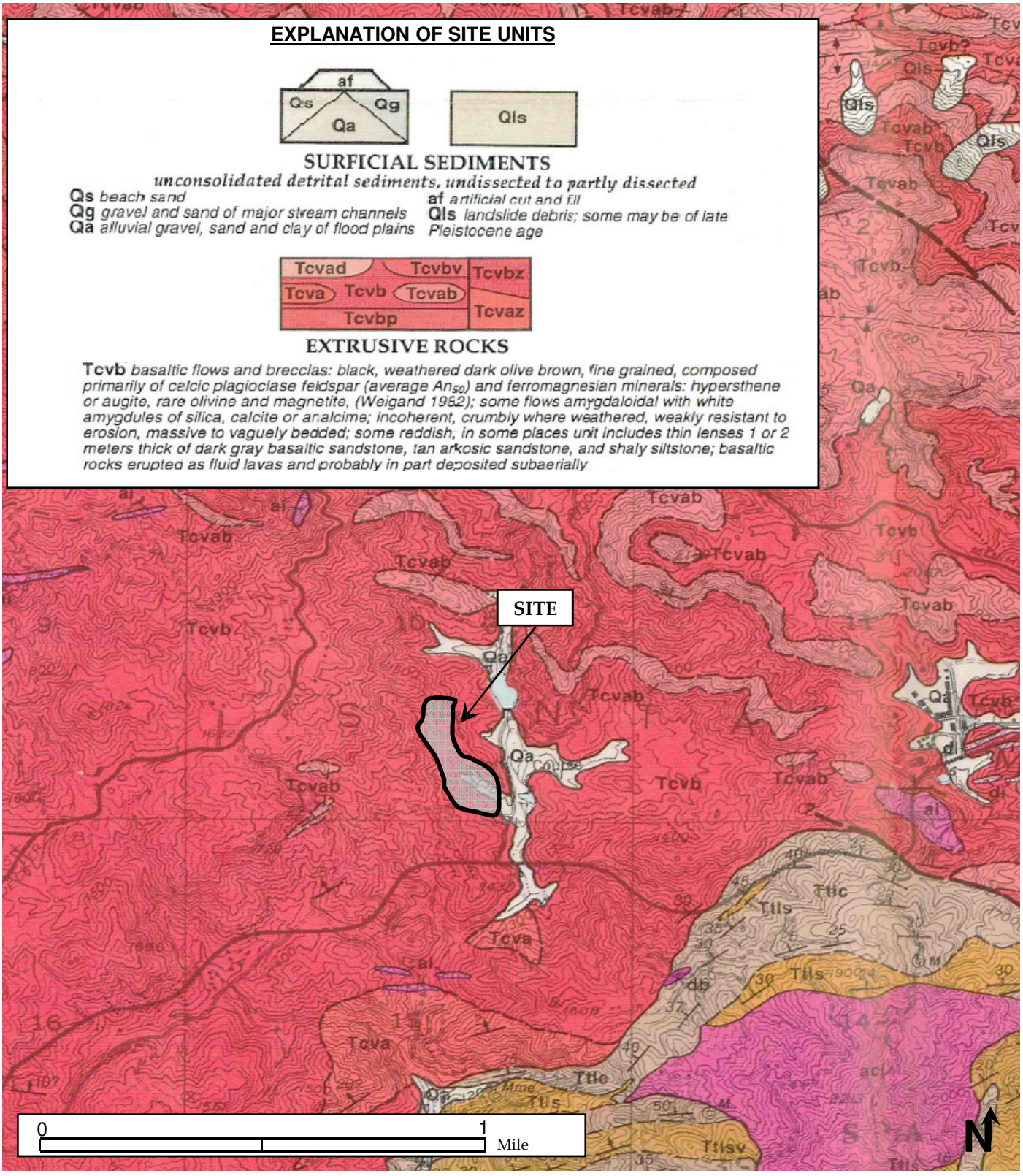
Tcob — Basaltic and andesitic fragmental rocks—Chiefly basaltic and andesitic breccia; locally includes pillow breccia, probable mudflow breccia, and a few thin flows; locally, basal zone includes volcanic sandstone (sd) and marine mudstone (st), interbeds that probably represent continuation of Topanga Canyon Formation deposition after the earliest(?) episode of eruptive activity; in the eastern part of the map area, south and east of Malibu Lake, the base is locally marked by a black marine shaly siltstone and some minor quartzose sandstone; generally well indurated to very well indurated but locally altered to poorly indurated condition

Tcof — Flows—Chiefly basaltic and andesitic, in a few places trachytic; generally fine grained to aphanitic, locally with plagioclase phenocrysts; contains minor interbeds of fragmental volcanic rocks



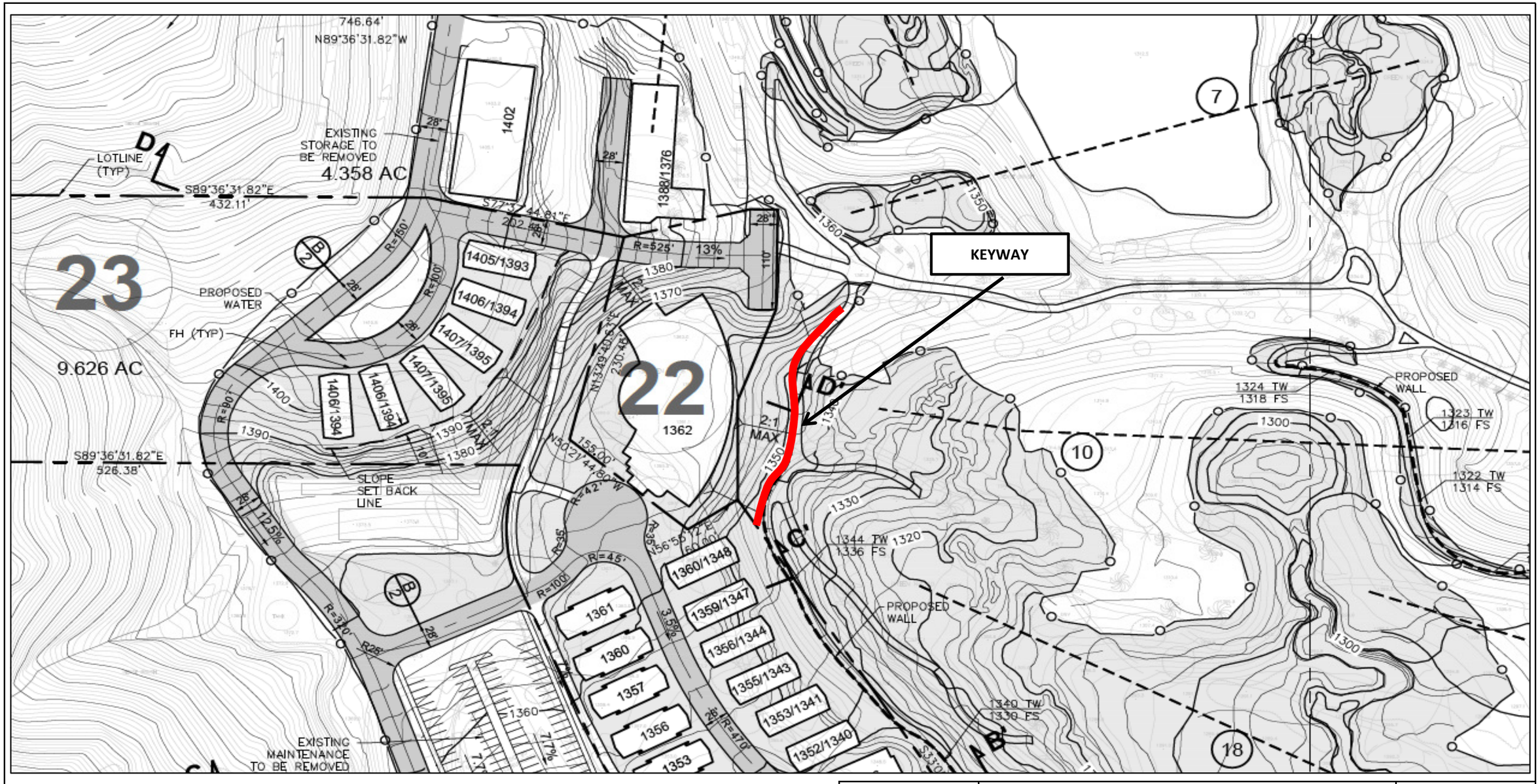
Ref: Campbell, R.H., Bacherby, B.A., Yerkes, R.F., Schoellhamer, J.E., Birkeland, P.W., Wentworth, C.M., 1996, Geologic Map of the Point Dume Quadrangle, Los Angeles County, California; U.S.G.S.

Sladden Engineering	REGIONAL GEOLOGIC MAP		FIGURE 1
	Project Number:	444-12027	
	Report Number:	13-02-012	
	Date:	February 25, 2013	



Ref: Dibblee, T.W. and Ehrenspeck, H.E., 1993, Geologic Map of the Point Dume Quadrangle, Los Angeles and Ventura Counties, California.

Sladden Engineering	REGIONAL GEOLOGIC MAP	FIGURE 2
	Project Number: 444-12027	
	Report Number: 13-02-012	
	Date: February 25, 2013	



Sladden Engineering	PROPOSED KEYWAY	FIGURE 3
	Project Number: 444-12027	
	Report Number: 13-02-012	
	Date: February 25, 2013	

APPENDIX A

COUNTY OF LOS ANGELES REVIEW SHEETS

County of Los Angeles Department of Public Works
GEOTECHNICAL AND MATERIALS ENGINEERING DIVISION
GEOLOGIC REVIEW SHEET
900 So. Fremont Ave., Alhambra, CA 91803
TEL. (626) 458-4925

DISTRIBUTION
__ Geologist
1 Soils Engineer
1 GMED File
1 Subdivision

TENTATIVE TRACT MAP 71735
SUBDIVIDER Malibu Associates LLC
ENGINEER RCE Consultants
GEOLOGIST & SOILS ENGINEER Sladden Engineering

TENTATIVE MAP DATED 7/26/12 (Revision and Exhibit)
LOCATION Malibu

REPORT DATE 7/16/12

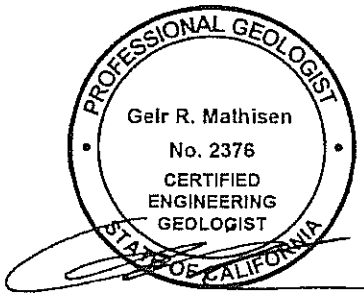
Additional reports on file for 901 Encinal Canyon Road: Irvine Soils Engineering, Inc.: 8/26/85, 8/20/85, 7/12/85, 2/19/85; Coastal Valley Soils Engineering, Inc.: 5/14/86, 1/17/86, 10/11/85.

The Regional Planning Commission, developer, and engineer are advised that:

PRIOR TO RECOMMENDING APPROVAL OF THE TENTATIVE TRACT OR PARCEL MAP:

1. Provide a geologic report that complies with the provisions of the "Manual for Preparation of Geotechnical Reports" prepared by the County of Los Angeles, Department of Public Works, (available on the internet at http://dpw.lacounty.gov/gmed/manual.pdf).
2. Provide a geologic map that is based on the Tentative Map.
3. Provide a geologic map and cross-sections that depict the proposed development, existing development, geologic, and groundwater conditions underlying the site.
4. Provide geologic cross sections and stability analyses for all slopes (proposed and natural) steeper than 2:1. Where there is a potential for daylighted bedding, provide continuous stratigraphy, and translational stability analyses based on strength data from the weakest material identified.
5. Evaluate debris flow potential for each building area located below a swale or steep natural slope. Provide mitigation recommendations as necessary. Show recommended mitigation on the geologic map.
6. Depict all geotechnical hazards appropriately on the geologic map, including mapped landslides.
7. All unmitigated landslides must be placed in a Restricted Use Area on the geotechnical map and the final Subdivision map.
8. The consultants should at a minimum use and reference the following geologic publication: Geologic Map of The Point Dume Quadrangle, Los Angeles County, California (Campbell and others, 1996; USGS Map GQ-1747).
9. The electronic version of the geotechnical report was illegible (Figures 1, 2 and 4). Provide a legible PDF of the geotechnical report.
10. According to the State of California Board for Professional Engineers, Land Surveyors, and Geologist, as of November 11, 2012, Mr. Matthew Cohrt does not appear to be licensed as an Engineering Geologist. Provide a geotechnical report that is signed by an engineering geologist that is certified by the State of California.
11. Provide geologic cross-sections that illustrate the proposed seepage pits (including expansion area) with respect to artificial fill and geologic units. Show the anticipated path and saturation from the effluent based on hydrogeology of the site. Discuss the path of migration of effluent and whether daylighting of the effluent will occur.
12. The Soils Engineering review dated 12/11/12 is attached.

NOTE Provide a copy of this review with your resubmittal



Reviewed by _____ Date 11/1/12
Geir Mathisen

Please complete a Customer Service Survey at http://dpw.lacounty.gov/go/gmedsurvey

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
GEOTECHNICAL AND MATERIALS ENGINEERING DIVISION

SOILS ENGINEERING REVIEW SHEET

Address: 900 S. Fremont Ave., Alhambra, CA 91803
Telephone: (626) 458-4925
Fax: (626) 458-4913

District Office —
Job Number GMTR
Sheet 1 of 2

Review No. 1

Tentative Tract Map	71735
Location	Malibu
Developer/Owner	Malibu Associates LLC
Engineer/Architect	RCE Consultants
Soils Engineer	Sladden Engineering (444-12027)
Geologist	Sladden Engineering

DISTRIBUTION:
1 Drainage
1 Grading
1 Geo/Soils Central File
___ District Engineer
___ Geologist
1 Soils Engineer
1 Engineer/Architect

Review of:

Tentative Tract Map and Exhibit Dated By Regional Planning **10/31/12 (rev.)**
Soils Engineering and Geologic Report Dated **7/16/12**
Previous Review Sheet Dated 11/26/12

ACTION:

Tentative Map feasibility is not recommended for approval.

REMARKS:

1. The soils report does not address the entire subdivision. Provide a soils report, with sufficient subsurface exploration data, pertinent test results and analyses, which addresses and evaluates the site and the proposed development. The report must comply with the provisions of **"Manual for Preparation of Geotechnical Reports"** prepared by County of Los Angeles, Department of Public Works. The Manual is available on the Internet at the following address: *http://dpw.lacounty.gov/gmed/Manual.pdf*

2. Provide static, seismic and surficial slope stability analyses for all slopes steeper than 2:1 gradient. Also, provide a geotechnical cross-section, for each section analyzed, showing the critical failure plane used in the analyses. Indicate the various shear strength parameters used in the analyses, in the appropriate segments of each failure plane. Show locations of the cross sections used in slope stability analyses on the geotechnical map. Recommend mitigation if factors of safety are below County minimum standards.

3. Provide stress-strain curves to substantiate the shear strength parameters to be used in slope stability analyses. Residual shear strength parameters must be used in static and surficial slope stability analyses. Indicate the type of shear strength parameters (i.e. residual, peak, repeated reshear, etc.) used in the slope stability analyses.

4. Specifically address all potential debris flow hazards and surficial failures at the subject site. Provide recommendations for mitigation measures, as necessary. Show all recommended grading and/or mitigation measures (i.e. debris basins etc.) on the geotechnical maps, as necessary.

5. Provide data on the possible adverse impact of the private sewage disposal system(s) relative to site stability and adjacent properties. Discuss the path of migration of the effluent and whether ponding or daylighting of the effluent will occur. Stability calculations must consider the effect of ponding/perched groundwater.

6. Show the following on the geotechnical map:
   a. All existing and proposed grading.
   b. All geotechnical cross sections.
   c. Approximate limits and depth of removal and recompaction of landslides and landslide debris, if applicable.
   d. Location of all keyways of buttress/stabilization fills, if applicable.
   e. Grading required for construction of all proposed buttress/stabilization fills, if applicable.
   f. All recommended grading and mitigation measures regarding potential debris flow, as necessary.
   g. Location of "Restricted Use Area(s)", as necessary.
   h. All recommended mitigation measures, as necessary.

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
GEOTECHNICAL AND MATERIALS ENGINEERING DIVISION

SOILS ENGINEERING REVIEW SHEET

Tentative Parcel Map No. 71735

REMARKS (cont.):

7. Requirements of the Geology Section are attached.

8. Include a copy of this review sheet with your response.

NOTE(S) TO THE PLAN CHECKER/BUILDING AND SAFETY DISTRICT ENGINEER:
ON-SITE SOILS ARE CORROSIVE TO FERROUS METALS.

REGISTERED PROFESSIONAL ENGINEER
JEREMY CHUN YIN WAN
No. GE 2549
Exp. 6-30-13
GEOTECHNICAL
STATE OF CALIFORNIA

Reviewed by _____ Date 12/11/12

Please complete a Customer Service Survey at http://dpw.lacounty.gov/gmedsurvey.
NOTICE: Public safety, relative to geotechnical subsurface exploration, shall be provided in accordance with current codes for excavations, inclusive of the Los Angeles County Code, Chapter 11.48, and the State of California, Title 8, Construction Safety Orders.

RESPONSE TO COUNTY OF LOS ANGELES
THE MALIBU INSTITUTE
PROPOSED RENOVATIONS AND EXPANSION
MALIBU GOLF CLUB
901 ENCINAL CANYON ROAD
LOS ANGELES COUNTY, CALIFORNIA

-Prepared By-

Sladden Engineering

6782 Stanton Avenue, Suite A
Buena Park, California 90621
(714) 523-0952

Sladden Engineering

45-090 Golf Center Parkway, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
6782 Stanton Avenue, Suite A, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863
800 E. Florida Avenue, Suite 200, Hemet. CA 92543 (951) 766-8777 Fax (951) 766-8778

July 22, 2013

Project No. 444-12027
13-07-065

Malibu Associates, LLC
c/o RCE Consultants, Inc.
23332 Mill Creek Drive, Suite 205
Laguna Hills, California 92653

Project: The Malibu Institute
Proposed Renovations and Expansion
Malibu Golf Club
Tentative Tract Map No. 71735
901 Encinal Canyon Road
Los Angeles County, California

Subject: Response to County of Los Angeles Department of Public Works, Geotechnical and Materials Engineering Division; Geologic Review Sheet dated 7/1/2013 and Soils Engineering Review Sheet dated 6/26/2013.

Reference: "Geotechnical Investigation, The Malibu Institute, Proposed Renovations and Expansion, Malibu Golf Club, 901 Encinal Canyon Road, Los Angeles County, California" prepared by Sladden Engineering dated July 16, 2012; Project Number 444-12027, Report Number 12-07-050.
"Response to County of Los Angeles Department of Public Works, Geotechnical and Materials Engineering Division; Geologic Review Sheet dated 11/2/2012 and Soils Engineering Review Sheet dated 12/11/2012" prepared by Sladden Engineering dated February 25, 2013; Project No. 444-12017, Report No. 13-02-012.
"Response to County of Los Angeles Department of Public Works, Geotechnical and Materials Engineering Division; Geologic Review Sheet dated 4/11/2013 and Soils Engineering Review Sheet dated 4/22/2013" prepared by Sladden Engineering dated May 30, 2013; Project No. 444-12027, Report Number 13-05-044.

Sladden Engineering (Sladden) is pleased to submit this letter in response to the most recent comments made by the County of Los Angeles' geologic and geotechnical reviewers following the review of the above referenced response to geotechnical and geologic review comments dated May 30, 2013. The information contained in this letter is intended to supplement the information presented in the above referenced reports.

COMMENT RESPONSES

Our responses to the County of Los Angeles' review comments are presented herein followed by our responses. Copies of the County of Los Angeles' comment memos dated 7/1/2013 and 6/26/2013 are attached.

Comment 1:
Show the following on the geotechnical map:

a. Location of proposed keyway, as shown in Figure 3 (prev. Figure 1) of the report dated 2/25/13.
b. All recommended mitigation measures, as necessary.

Response 1:
As requested, we have revised the attached Reconnaissance Level Geologic Map to reflect the keyway location. A PDF copy of the revised map is also included with this submittal.

No additional mitigation measures are recommended at this time.

Sladden Engineering appreciates this opportunity to be of continued service to you on this project. Please contact our office, if you have any questions regarding this letter or the referenced report..

Respectfully submitted,
SLADDEN ENGINEERING

Matthew J. Cohrt
Senior Project Geologist

PROFESSIONAL GEOLOGIST
Matthew J. Cohrt
No. 8567
STATE OF CALIFORNIA

Brett L. Anderson
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
BRETT L. ANDERSON
No. C45389
Exp. 9/30/14
CIVIL
ENGINEERING
STATE OF CALIFORNIA

Copies:4/Addressee

County of Los Angeles Department of Public Works
GEOTECHNICAL AND MATERIALS ENGINEERING DIVISION
GEOLOGIC REVIEW SHEET
900 So. Fremont Ave., Alhambra, CA 91803
TEL. (626) 458-4925

DISTRIBUTION
1 Geologist
__ Soils Engineer
1 GMED File
1 Subdivision

TENTATIVE TRACT MAP 71735
SUBDIVIDER Malibu Associates LLC
ENGINEER RCE Consultants
GEOLOGIST & SOILS ENGINEER Sladden Engineering

TENTATIVE MAP DATED 7/26/12 (Revision and Exhibit)
LOCATION Malibu
REPORT DATE 5/30/13, 2/25/13, 7/16/12

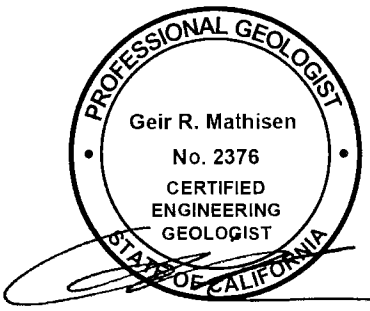
Additional reports on file for 901 Encinal Canyon Road: Irvine Soils Engineering, Inc.: 8/26/85, 8/20/85, 7/12/85, 2/19/85; Coastal Valley Soils Engineering, Inc.: 5/14/86, 1/17/86, 10/11/85.

The Regional Planning Commission, developer, and engineer are advised that:

PRIOR TO RECOMMENDING APPROVAL OF THE TENTATIVE TRACT OR PARCEL MAP:

1. The Soils Engineering review dated 6/26/13 is attached.

NOTE Provide a copy of this review with your resubmittal



Reviewed by _____ Date 7/1/13
Geir Mathisen

Please complete a Customer Service Survey at http://dpw.lacounty.gov/go/gmedsurvey
71735, TM6 NA

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
GEOTECHNICAL AND MATERIALS ENGINEERING DIVISION

SOILS ENGINEERING REVIEW SHEET

Address: 900 S. Fremont Ave., Alhambra, CA 91803
Telephone: (626) 458-4925
Fax: (626) 458-4913

District Office --
PCA GMTR
Sheet 1 of 1

Review No. 3

DISTRIBUTION:
___ Drainage
___ Grading
___ Geo/Soils Central File
___ District Engineer
___ Geologist
___ Soils Engineer
___ Engineer/Architect

Tentative Tract Map	71735
Location	Malibu
Developer/Owner	Malibu Associates LLC
Engineer/Architect	RCE Consultants
Soils Engineer	Sladden Engineering
Geologist	Sladden Engineering

Review of:

Tentative Tract Map Dated by Regional Planning 10/31/12
Geotechnical Engineering Report Dated **5/30/13**, 2/25/13, 7/16/12
Previous Review Sheet Dated 4/22/13

ACTION:

Tentative Map feasibility is not recommended for approval.

REMARKS:

As previously requested:

1. Show the following on the geotechnical map:
   a. Location of proposed keyway, as shown in Figure 3 (prev. Figure 1) of the report dated 2/25/13.
   b. All recommended mitigation measures, as necessary.

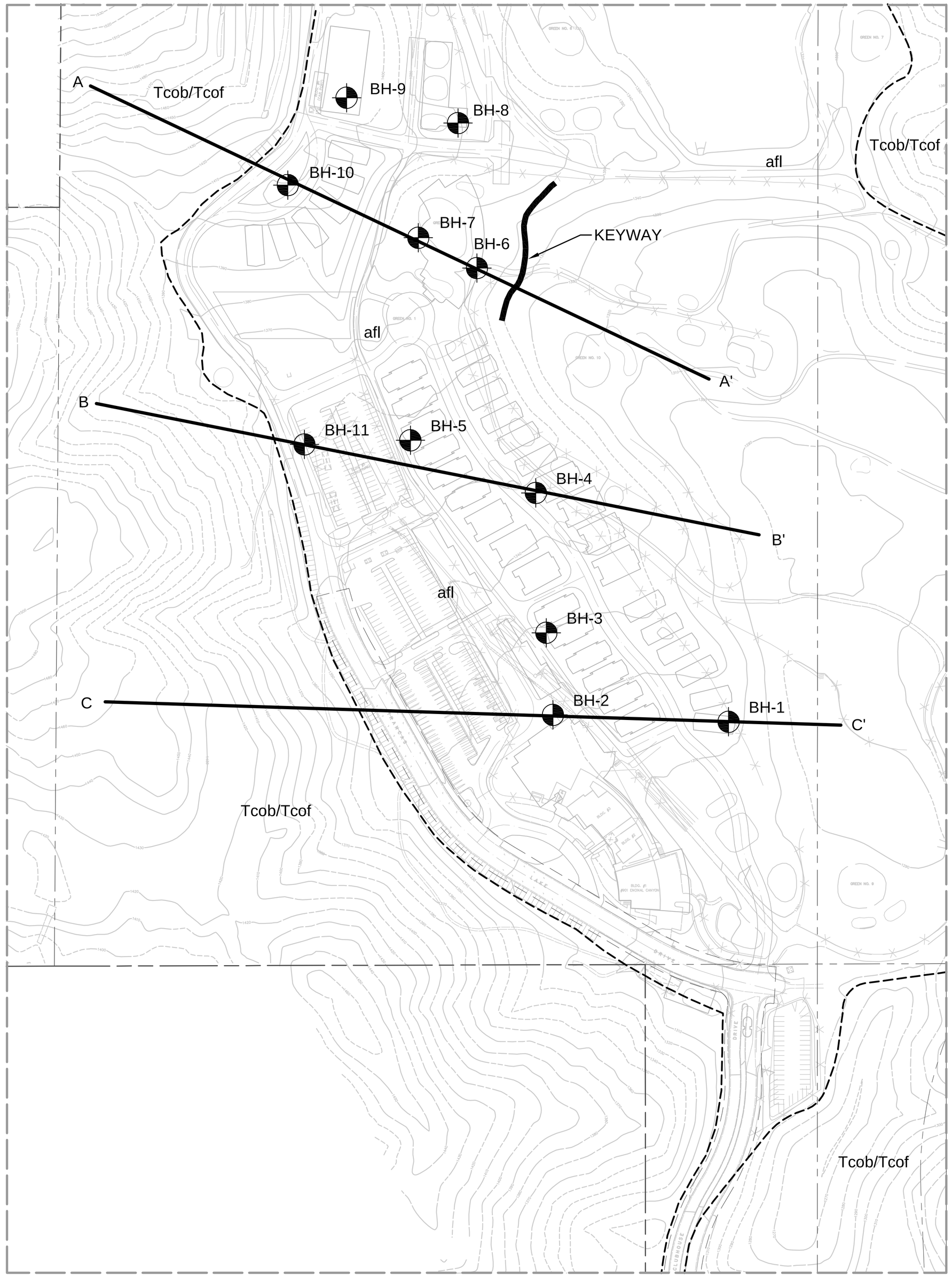
2. Requirements of the Geology Section are attached.

3. Include a copy of this review sheet with your response.

REGISTERED PROFESSIONAL ENGINEER
ERICK DEL BOSQUE
NO. 76607
EXP: 12/31/14
CIVIL
STATE OF CALIFORNIA

Prepared by _____ Date 6/26/13
Erick del Bosque

Please complete a Customer Service Survey at http://dpw.lacounty.gov/go/gmedsurvey.
NOTICE: Public safety, relative to geotechnical subsurface exploration, shall be provided in accordance with current codes for excavations, inclusive of the Los Angeles County Code, Chapter 11.48, and the State of California, Title 8, Construction Safety Orders.



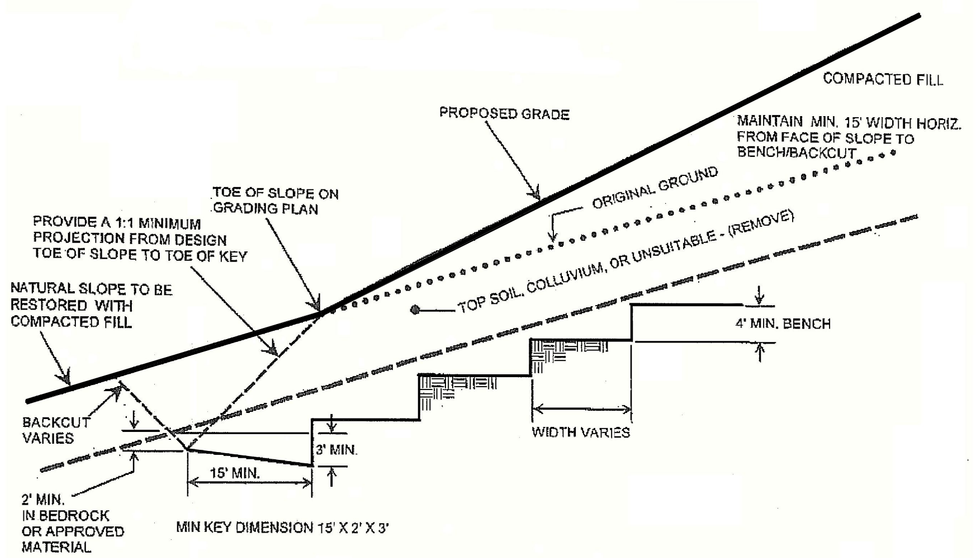
LEGEND

BH-11	Approximate Borehole location and designation (Sladden, 2012)
X — X'	Geologic cross-section location (typ)
afl	Artificial fill or disturbed soil
Tcob/Tcof	Conejo Volcanics: volcanic breccia and basaltic and andesitic flows (after Campbell et al, 1996); undifferentiated.
	Lithologic contact; approximate location

References:

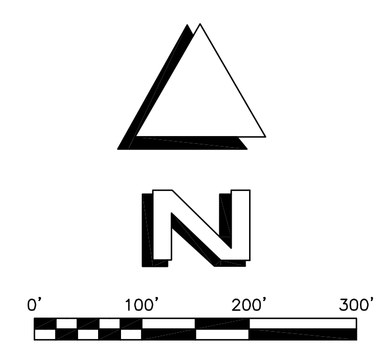
Campbell, R.H. Backerby, B.A., Yerkes, R.F., Schoellhamer, J.E., Birkeland, P.W., Wentworth, C.M., 1996, Geologic Map of the Point Dume Quadrangle, Los Angeles County, California; U.S. Geological Survey.

Sladden Engineering (Sladden), 2012, Geotechnical Investigation, The Malibu Institute, Proposed Renovations and Expansion, Malibu Golf Club, 901 Encinal Canyon Road, Los Angeles County, California, Project No. 444-12027, Report No. 12-07-050.



SIDE HILL FILL DETAIL
(Natural Slopes 5:1 or Steeper)

Sladden Engineering



2 OF 3 SHEETS

FILE NO.

COUNTY OF LOS ANGELES

M 1 M 265

F.N.

W.O.

RECONNAISSANCE LEVEL GEOLIGIC MAP

APPROVED BY:

DATE:

PREPARED UNDER THE SUPERVISION OF:

DATE:

SCALE: 1" = 100'

DATE: 07-02-13

ENGINEER:

SLADDEN ENGINEERING

Date: 25 Jul 13 - 8:08 am
File: \\TCDSERVER-PC\Users\Public\00 Jobs\Tcom\13-003 Malibu Golf Center\Exhibit\Malibu Golf Exhibit.dwg
User: TT

Appendix F

Phase I Environmental Assessment, E2 Environmental, November 5, 2012 and January 13, 2006

Limitations

This does not qualify as a Phase 1 ESA under ASTM International's (formerly American Society for Testing and Materials (ASTM)) Practice E1527-05 and All Appropriate Inquiry (AAI) Rule.

Issues considered outside the scope of the ASTM Standard and this update include: asbestos-containing materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, and high voltage power lines.

Updated Records Review

Various databases were searched by Environmental Data Resources (EDR) and E2 personnel to help identify environmental conditions in connection with the subject site and adjoining properties. The accuracy and completeness of records varies among information sources and there is generally an overlap of coverage between Federal, State, Regional, and Local agency records. Refer to the EDR Report (provided as Attachment 1) for a complete list of the Federal, State, Regional, and Local agency records searched by EDR.

EDR Records Search Results – Subject Site

As is consistent with the 2006 Phase 1 ESA, the subject site was reported as listed on only the HAZNET database for the handling and disposal of "Unspecified oil-containing waste".

E2 Records Search Results – Subject Site

GeoTracker – Water Discharge Requirements (WDR) – Open Case 12/21/2012

The State of California Water Resources Control Board (CWRCB) operates and maintains its GeoTracker website (http://geotracker.waterboards.ca.gov/) as the Water Boards' data management system for managing sites that impact ground water. E2 found the following documents hosted on GeoTracker.

- Application/Report of Waste Discharge General Information Form for Waste Discharge Requirements or NPDES Permit dated November 1, 2011.
- California Regional Water Quality Control Board (CRWQCB) – Los Angeles Region letter dated March 15, 2012, and titled "INCOMPLETE APPLICATION FOR WASTE DISCHARGE REQUIREMENTS – MALIBU ASSOCIATES, LLC, THE MALIBU INSTITUTE, 901 ENCINAL CANYON ROAD, MALIBU, CALIFORNIA (FILE NO. 11-199).

Pond Water Quality and Sediment Characterization Report, Dated February 8, 2006

Through a review of its own records on the site, E2 found information about site pond water quality and sediment characterization. On January 18, 2006, E2 field personnel collected water and sediment samples from four of the on site ponds to characterize water quality and sediment conditions at the site. The samples were analyzed for pesticides,

herbicides, metals, PCBs, coliform, and a number of parameters designed to characterize general water quality. A summary of the analysis is as follows:

- *Water Quality* - No pesticides, herbicides, or PCBs were detected at concentrations above laboratory reporting limits. Coliform detections were below recommended levels for recreational use and typical for the environment. Nitrogen and phosphate levels were above conditional use permit limits but were within historical results for the site. The report states: "If over-fertilization of the golf course were occurring, these levels would probably be much higher."
- *Pond Sediment Results* – No pesticides, herbicides, or PCBs were detected at concentrations above laboratory reporting limits. Coliform detections were below recommended levels for recreational use and typical for the environment. Total metal results were all below the Title 22 limits for classifying a material as a hazardous waste.

EDR Records Search Results – Adjoining/Surrounding Sites

Adjoining/surrounding sites were not identified in the recent search of records by EDR. However, in the 2006 records search report obtained as 2006 Phase I ESA, 7 listings were found associated with 2 street addresses (427 S. Encinal Canyon Road and 433 S. Encinal Canyon Road). Both of these addresses appear to be associated with a single property, the Camp Miller-Kilpatrick facility. *See the 2006 report for detailed information on these listings.*

Questionnaire

E2 submitted a questionnaire to Malibu Associates, LLC, who forwarded it to Dan Meherin, the General Manager of the Malibu Golf Club. Mr. Meherin has worked at the site for over 20 years and, therefore, was best suited to provide the information.

Upon review of the responses to the questionnaire, E2 found nothing that would indicate a new (since 2006) recognized environmental condition (REC). It was documented that the property changed ownership in 2006 when acquired by Malibu Associates, LLC. A copy of the completed questionnaire is provided as Attachment 2.

Site Visit and Interviews

A representative from E2 conducted a site visit on September 26, 2012, at the subject property. Mr. Ron Davis (Malibu Institute Project Manager), Mr. Dan Meherin (Malibu Golf Club General Manager), and Mr. Nathan Radwick (Malibu Golf Club Superintendent) were present during the site visit. The objective of the site visit was to interview site personnel and to identify any recent potential areas of concern and changes in the property use since the Phase I ESA was performed in 2006. At the request of Mr. Tom Hix of Malibu Associates, LLC, E2 additionally assessed the *Caretakers Cottage* and the *Hunting Lodge* (two structures, not a part of the 2006 assessment). Photographs taken during the site visit are included as Attachment 3.

Site Personnel Interview

E2 interviewed Mr. Davis, Mr. Meherin, and Mr. Radwick to gain additional knowledge of the site not already conveyed in the questionnaire. None of the persons interviewed knew of any past, present, or potential environmental conditions that could affect the value of the property. The property use has remained the same since 2006 with structures undergoing slight remodeling. Part of the property is planned for re-development.

Site Condition Assessment – Changes in Areas Previously Assessed

Fuel aboveground storage tanks (ASTs)

Some staining was observed on the top and over the side of the AST marked as containing diesel fuel. *See Attachment 3 – Site Photos, Photo#1.*

Used oil and grease drums

Used oil and grease drums have been placed on secondary containment pallets. *See Attachment 3 – Site Photos, Photos: #2 and #3.*

Pesticide Storage Container

A steel guard was added across the bottom of the door as a barrier to stop liquid spills and dry-tracking from exiting the door. A spill kit was observed in the storage area. *See Attachment 3 – Site Photos, Photos: #4 and #5.*

Site Condition Assessment – Caretakers Cottage

According to Mr. Davis, current resident of the Caretakers Cottage, the cottage was constructed in the late 1920s. The cottage property consists of a single-story (approximately 900 square foot) residential structure and a shed. In the cottage, the tile and wood flooring appears to be newer. The structures appear to be in good condition. Potable water is provided by the local water agency, and wastewater is handled by a septic tank and associated leach field. To the best of Mr. Davis's knowledge, no septic system testing has been conducted. No odors were observed at the time of the site visit. A newer-looking pole-mounted electrical transformer exists at the site (see Attachment 3 – Site Photos, Photo#6); no staining was observed on the transformer, pole, or around the pole; therefore, PCB releases are not suspected.

Due to the age of the construction, the possibility of lead and/or asbestos-containing materials exists.

Site Condition Assessment – Hunting Lodge

A dilapidated, two-story, 12-room, wood residential structure known as the *Hunting Lodge* was, according to Mr. Davis, built in the late 1920s and has been unoccupied for approximately 10 years. The exterior is stucco and appears to be intact. Some remodeling had occurred as the windows had been replaced and are indicative of the style used 10 to 15 years ago.

Upon entering the structure, it was observed that the floor was not entirely sound and was covered in rat feces and urine. Subsequently, the E2 field scientist determined that any further examination of the interior was unsafe due to physical and potential biological hazards.

Due to the age of the construction, the possibility of lead and/or asbestos-containing materials exists. Due to the large amounts of rat feces and urine observed, there may be a potential biological hazard.

Summary of Findings

This Environmental Site Assessment Information Update for the subject property has resulted in the following findings that differ from or were not a part of the Phase 1 ESA performed in 2006 for the site:

- The property changed ownership in 2006 and is currently owned by Malibu Associates, LLC.
- No surrounding properties (within normally prescribed radii) were reported in the EDR Radius Search Report.
- Results from onsite pond water and sediment testing conducted in 2006 showed that respective pesticides, herbicides, metals, PCBs, and coliform concentrations were either non-detect and/or well below levels considered to be hazardous to the environment.
- Secondary containment has been added to storage of drums containing used oil and grease.
- A spill barrier and spill kit has been added to the container/shed used to store pesticides and herbicides.
- Staining was observed on top of and down the sides of the diesel fuel AST.
- For the Caretaker's Cottage and Hunting Lodge: due to the age of their construction, the possibility exists for the presence of lead and/or asbestos-containing construction materials.

Conclusions and Recommendations

We have performed this ESA Information Update for the Malibu Golf Club in Malibu, California, according to our contract with Mr. Tom Hix of Malibu Associates, LLC. This information update has revealed no additional evidence of recognized environmental conditions (RECs) as documented in the original Phase I ESA conducted in 2006.

The assessment of the Caretaker's Cottage and Hunting Lodge, not addressed in the previous Phase I ESA has revealed the following additional potential RECs:

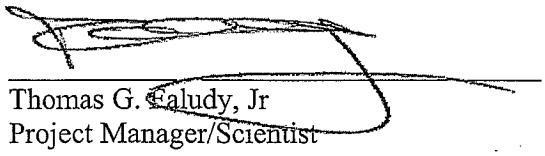
- The presence and/or absence of lead and asbestos-containing construction materials are unknown at the Caretaker's Cottage and Hunting Lodge. Due to the age of the buildings, in the event of a planned demolition, new-construction, re-development, or renovation, it is recommended that appropriate samples be collected and analyzed.
- The presence of large amounts of rat feces and urine in the Hunting Lodge potentially poses a biological hazard (e.g., hantavirus). Prior to the commencement of activity, it is recommended that workers wear appropriate personal protection equipment. Appropriate biological samples should be collected and analyzed.

Closing Remarks and Signature

E2, Environmental, Inc. appreciates the opportunity to be of service. If you have any questions regarding this report or need additional information, please do not hesitate to contact me at (949) 440-1006.

Respectfully submitted,

E2 ENVIRONMENTAL, INC.



Thomas G. Faludy, Jr
Project Manager/Scientist

TGF:ss
O:\2100s\2136-Malibu Phase1Update\MalibuGC_Proposal_v1tgf.doc

Attachments

Attachment 1: EDR Records Search Report
Attachment 2: Questionnaire
Attachment 3: Site Photographs

Attachment 1

EDR Records Search Report

Malibu Golf Club
901 Encinal Canyon Road
Malibu, CA 90265

Inquiry Number: 3413999.2s
September 21, 2012

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

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Orphan Summary	9
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Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-8
Physical Setting Source Map Findings	A-10
Physical Setting Source Records Searched	A-12

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

901 ENCINAL CANYON ROAD
MALIBU, CA 90265

COORDINATES

Latitude (North):	34.0895000 - 34° 5' 22.20"
Longitude (West):	118.8557000 - 118° 51' 20.52"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	328795.0
UTM Y (Meters):	3773439.2
Elevation:	1319 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	34118-A7 POINT DUME, CA
Most Recent Revision:	1999

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	2009, 2010
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
MALIBU COUNTRY CLUB 901 ENCINIL CANYON RD MALIBU, CA 90265	HAZNET	N/A

EXECUTIVE SUMMARY

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System
WDS..... Waste Discharge System

State and tribal leaking storage tank lists

LUST..... Geotracker's Leaking Underground Fuel Tank Report
SLIC..... Statewide SLIC Cases
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST..... Active UST Facilities
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land
FEMA UST..... Underground Storage Tank Listing

State and tribal voluntary cleanup sites

VCP..... Voluntary Cleanup Program Properties
INDIAN VCP..... Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL..... Clandestine Drug Labs
HIST Cal-Sites..... Historical Calsites Database
SCH..... School Property Evaluation Program
Toxic Pits..... Toxic Pits Cleanup Act Sites
AOCONCERN..... San Gabriel Valley Areas of Concern
CDL..... Clandestine Drug Labs
US HIST CDL..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST..... Facility Inventory Database

HIST UST..... Hazardous Substance Storage Container Database
SWEEPS UST..... SWEEPS UST Listing

Local Land Records

LIENS 2..... CERCLA Lien Information
LUCIS..... Land Use Control Information System
LIENS..... Environmental Liens Listing
DEED..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
MCS..... Military Cleanup Sites Listing

Other Ascertainable Records

RCRA-NonGen..... RCRA - Non Generators
DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
MINES..... Mines Master Index File
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
SSTS..... Section 7 Tracking Systems
ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
FINDS..... Facility Index System/Facility Registry System
RAATS..... RCRA Administrative Action Tracking System
CA BOND EXP. PLAN..... Bond Expenditure Plan
UIC..... UIC Listing
NPDES..... NPDES Permits Listing
Cortese..... "Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE..... Hazardous Waste & Substance Site List
Notify 65..... Proposition 65 Records
LA Co. Site Mitigation..... Site Mitigation List
DRYCLEANERS..... Cleaner Facilities
LOS ANGELES CO. HMS..... HMS: Street Number List
WIP..... Well Investigation Program Case List
ENF..... Enforcement Action Listing
EMI..... Emissions Inventory Data
INDIAN RESERV..... Indian Reservations
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
PROC..... Certified Processors Database
MWMP..... Medical Waste Management Program Listing

COAL ASH DOE---------- Steam-Electric Plant Operation Data
COAL ASH EPA---------- Coal Combustion Residues Surface Impoundments List
HWT---------- Registered Hazardous Waste Transporter Database
HWP---------- EnviroStor Permitted Facilities Listing
FINANCIAL ASSURANCE---- Financial Assurance Information Listing
2020 COR ACTION---------- 2020 Corrective Action Program List
PRP---------- Potentially Responsible Parties
EPA WATCH LIST---------- EPA WATCH LIST
US FIN ASSUR---------- Financial Assurance Information
PCB TRANSFORMER------- PCB Transformer Registration Database

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants---- EDR Proprietary Manufactured Gas Plants
EDR Historical Auto Stations-- EDR Proprietary Historic Gas Stations
EDR Historical Cleaners------ EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

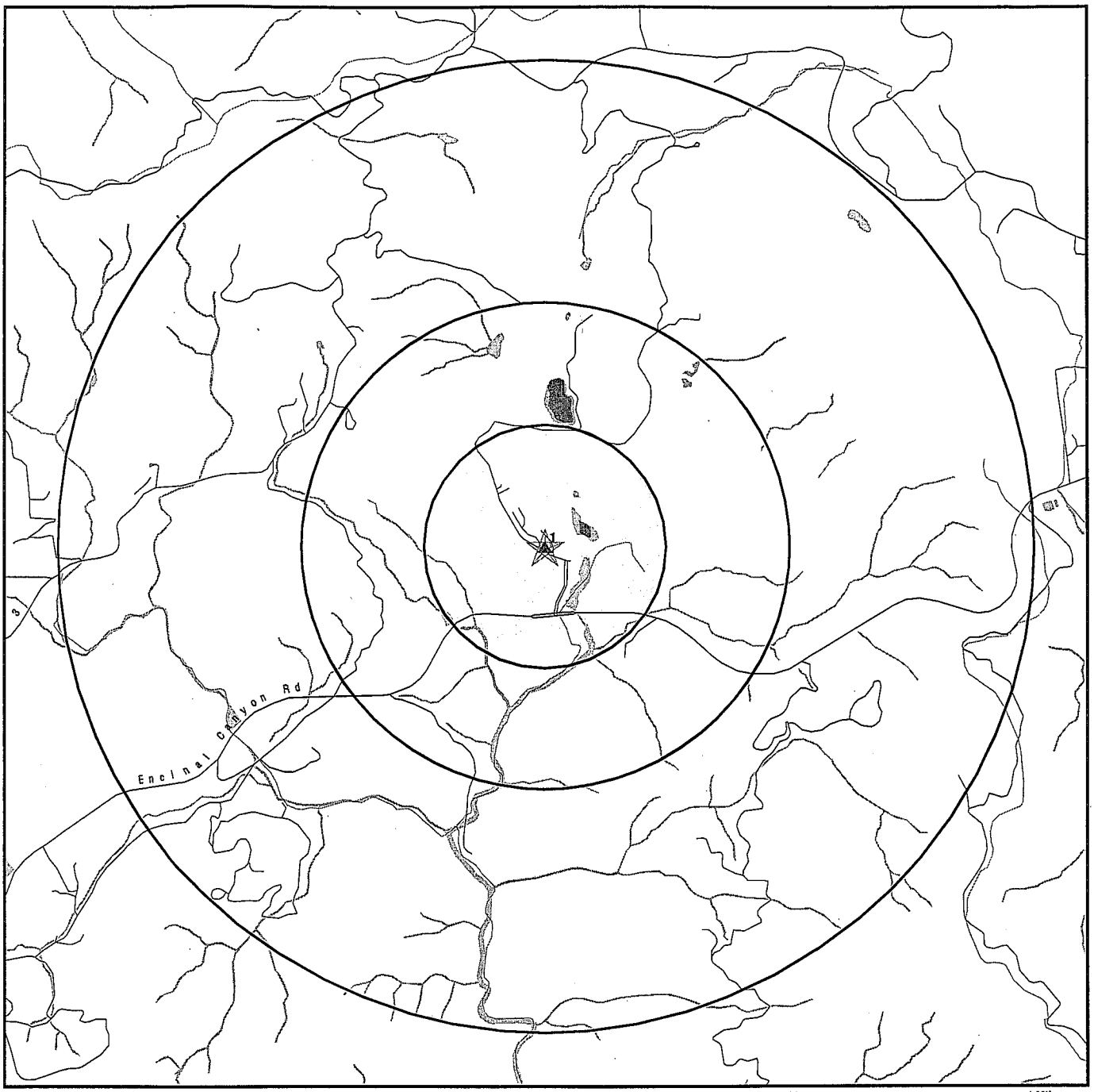
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 29 records.

Site Name	Database(s)
LAKE LINDERO COUNTRY CLUB	ENF
MALIBU UNITED METHODIST CHURCH	ENF
MALIBU COUNTRY MART SHOPPING CENTE	ENF
MALIBU VILLAGE SHOPPING CENTER	ENF
MALIBU LA COSTA OWNER ASSOC #1	ENF
MALIBU WWRP	ENF, WDS
LA CO FD CAMP #13	HIST CORTESE
HUGHES AIRCRAFT COMPANY	HIST CORTESE
MALIBU MASONRY SUPPLY INC	NPDES
VINTAGE RANCHO MALIBU	NPDES
LA CO FD FIRE STA #071	SWEEPS UST
LA COUNTY FIRE STATION #99	SWEEPS UST
LOS ANGELES CO CALABASAS LDF #5	CERC-NFRAP, RCRA-NonGen, FINDS
QMM RCAG	HIST UST
S C E MALIBU SUBSTATION	HAZNET
DPR MALIBU CREEK STATE PARK	HAZNET
DPW - MALIBU YARD EPD	HAZNET
MALIBU DISCOUNT PHOTO	HAZNET
MALIBU PARK SCHOOL	HAZNET
MALIBU POINT CONDO HOA	HAZNET
DPR MALIBU LAGOON STATE BEACH	HAZNET
24334 MALIBU ROAD	ERNS
MALIBU BEACH	ERNS
MALIBU BEACH AT WEBB ST	ERNS
OFF THE COAST OF MAILIBU MALIBU	ERNS
1000 YRDS OFF OF MALIBU BEACH	ERNS
MALIBU MESA WWRP	WDS
MALIBU CREEK & LAGOON	LOS ANGELES CO. HMS
LA CO DPW SEWER MALIBU PLANT	LOS ANGELES CO. HMS

OVERVIEW MAP - 3413999.2s



0 1/4 1/2 1 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Malibu Golf Club ADDRESS: 901 Encinal Canyon Road Malibu CA 90265 LAT/LONG: 34.0895 / 118.8557	CLIENT: E2 Environmental CONTACT: Tom Faludy INQUIRY #: 3413999.2s DATE: September 21, 2012 3:07 pm

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DETAIL MAP - 3413999.2s

0 1/16 1/8 1/4 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Malibu Golf Club	CLIENT:	E2 Environmental
ADDRESS:	901 Encinal Canyon Road Malibu CA 90265	CONTACT:	Tom Faludy
		INQUIRY #:	3413999.2s
LAT/LONG:	34.0895 / 118.8557	DATE:	September 21, 2012 3:08 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	1.000		0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
AOCONCERN	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
SWEEPS UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
LA Co. Site Mitigation	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
LOS ANGELES CO. HMS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP	1	NR	NR	NR	NR	NR	1
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
FINANCIAL ASSURANCE	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR PROPRIETARY RECORDS								
EDR Proprietary Records								
Manufactured Gas Plants	1.000		0	0	0	0	NR	0
EDR Historical Auto Stations	0.250		0	0	NR	NR	NR	0
EDR Historical Cleaners	0.250		0	0	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
Target Property
Actual: 1319 ft.

MALIBU COUNTRY CLUB
901 ENCINIL CANYON RD
MALIBU, CA 90265

HAZNET **S104580545**
N/A

HAZNET:

Year:	1999
Gepaid:	CAL000172729
Contact:	CALIFORNIA FUJI INTERNATIONAL
Telephone:	8188896680
Mailing Name:	Not reported
Mailing Address:	901 ENCINIL CANYON RD
Mailing City,St,Zip:	MALIBU, CA 902650000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.025
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000172729
Contact:	CALIFORNIA FUJI INTERNATIONAL
Telephone:	8188896680
Mailing Name:	Not reported
Mailing Address:	901 ENCINIL CANYON RD
Mailing City,St,Zip:	MALIBU, CA 902650000
Gen County:	Los Angeles
TSD EPA ID:	TND000772186
TSD County:	0
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Disposal, Other
Tons:	0.1251
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000172729
Contact:	CALIFORNIA FUJI INTERNATIONAL
Telephone:	8188896680
Mailing Name:	Not reported
Mailing Address:	901 ENCINIL CANYON RD
Mailing City,St,Zip:	MALIBU, CA 902650000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	0.1668
Facility County:	Los Angeles

Count: 29 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
AGOURA	S106094259	S C E MALIBU SUBSTATION	KANAN RD AND FRONTAGE RD	91301	HAZNET
AGOURA	S103638032	DPR MALIBU CREEK STATE PARK	187654 MULHOLLAND HWY	91301	HAZNET
AGOURA	1000102022	LOS ANGELES CO CALABASAS LDF #5	26919 W VENTURA BLVD	91301	CERC-NFRAP, RCRA-NonGen, FINDS
AGOURA HILLS	S111212683	LAKE LINDERO COUNTRY CLUB	5719 LALE LINDERO DR	91301	ENF
LOS ANGELES COUNTY	2011977249	24334 MALIBU ROAD	24334 MALIBU ROAD		ERNS
MALIBU	S106092493	DPW - MALIBU YARD EPD	23533 W CIVIC CENTER DR	90265	HAZNET
MALIBU	S100632025	MALIBU DISCOUNT PHOTO	390 CROSS CREEK RD	90265	HAZNET
MALIBU	S111215452	MALIBU MASONRY SUPPLY INC	3730 CROSS CRK		NPDES
MALIBU	S111216794	VINTAGE RANCHO MALIBU	ENCINAL CYN		NPDES
MALIBU	S105024841	LA CO FD CAMP #13	1250 ENCINAL CANYON RD	90265	HIST CORTESE
MALIBU	S106852525	MALIBU CREEK & LAGOON	MALIBU CRK		LOS ANGELES CO. HMS
MALIBU	99642448	MALIBU BEACH	MALIBU BEACH		ERNS
MALIBU	94376316	MALIBU BEACH AT WEBB ST	MALIBU BEACH AT WEBB ST	90265	ERNS
MALIBU	S105024842	HUGHES AIRCRAFT COMPANY	3011 MALIBU CANYON RD	90265	HIST CORTESE
MALIBU	S102802244	MALIBU PARK SCHOOL	60237 MORNING VIEW DR	90265	HAZNET
MALIBU	S111212806	MALIBU UNITED METHODIST CHURCH	30128 MORNING VIEW		ENF
MALIBU	S111212802	MALIBU COUNTRY MART SHOPPING CENTE	W OF CROSS CRK		ENF
MALIBU	S111212807	MALIBU VILLAGE SHOPPING CENTER	E OF CROSS CRK		ENF
MALIBU	2010927882	OFF THE COAST OF MAILIBU MALIBU	OFF THE COAST OF MAILIBU MALIB		ERNS
MALIBU	S105254899	MALIBU MESA WWRP	245255 PACIFIC COAST HWY	90265	WDS
MALIBU	S105083502	MALIBU POINT CONDO HOA	26168 PACIFIC	90265	HAZNET
MALIBU	S106928382	LA CO FD FIRE STA #071	28722 W PACIFIC CST HWY	90265	SWEEPS UST
MALIBU	S106928425	LA COUNTY FIRE STATION #99	32550 W PACIFIC CST HWY	90265	SWEEPS UST
MALIBU	S105088653	DPR MALIBU LAGOON STATE BEACH	23200 PAFIFIC COAST HWY	90265	HAZNET
MALIBU	S111212803	MALIBU LA COSTA OWNER ASSOC #1	3850 RAMBLA PACIFICO	90265	ENF
MALIBU	U001563471	QMM RCAG	SADDLE PEAK RD., MALIBU MTS.	90265	HIST UST
MALIBU	S106571318	MALIBU WWRP	3260 VISTA PACIFICA ST	90265	ENF, WDS
MALIBU	S111827498	LA CO DPW SEWER MALIBU PLANT	3620 S VISTA PACIFICA ST		LOS ANGELES CO. HMS
MALIBU	90164923	1000 YRDS OFF OF MALIBU BEACH	1000 YRDS OFF OF MALIBU BEACH		ERNS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 06/07/2012
Date Data Arrived at EDR: 07/05/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 06/07/2012
Date Data Arrived at EDR: 07/05/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 06/07/2012
Date Data Arrived at EDR: 07/05/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/27/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 08/28/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing
A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010
Date Data Arrived at EDR: 01/11/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/13/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/28/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 08/28/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 08/19/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 132

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 04/02/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 08/06/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 08/06/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/21/2012
Date Data Arrived at EDR: 05/22/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 30

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/20/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Quarterly

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/28/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 07/19/2012
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 07/19/2012
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 05/25/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/16/2012
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/12/2012
Date Data Arrived at EDR: 05/09/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 62

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/03/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 07/19/2012
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/06/2012
Number of Days to Update: 18

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-5092
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 07/16/2012
Number of Days to Update: 69

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/28/2011
Date Data Arrived at EDR: 11/29/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 42

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 02/28/2012
Date Data Arrived at EDR: 02/29/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 76

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/12/2012
Date Data Arrived at EDR: 05/02/2012
Date Made Active in Reports: 07/16/2012
Number of Days to Update: 75

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/03/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/12/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 08/06/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 02/17/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 42

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/25/2012
Date Data Arrived at EDR: 06/25/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/20/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/11/2012
Date Data Arrived at EDR: 06/14/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 22

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/19/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 07/09/2012
Date Data Arrived at EDR: 07/12/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 56

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/03/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/16/2012
Date Data Arrived at EDR: 06/12/2012
Date Made Active in Reports: 07/16/2012
Number of Days to Update: 34

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/17/2012
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 08/06/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/14/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/06/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/29/2012
Next Scheduled EDR Contact: 12/17/2012
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/16/2012
Date Data Arrived at EDR: 03/26/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/27/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/02/2012
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/11/2012
Date Data Arrived at EDR: 06/12/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 24

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/11/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 04/01/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 03/28/2012
Date Data Arrived at EDR: 05/01/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 24

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 08/03/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 07/19/2012
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 49

Source: State Water Quality Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing
The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 07/19/2012
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Varies

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/19/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/10/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/01/2012
Date Data Arrived at EDR: 07/24/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 56

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 02/27/2012
Date Data Arrived at EDR: 03/14/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 92

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/12/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/28/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/04/2012
Next Scheduled EDR Contact: 12/17/2012
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 131

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/20/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/29/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Every 4 Years

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/22/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/22/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/27/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/19/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/10/2012
Date Data Arrived at EDR: 01/12/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/11/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 79

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/11/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 08/31/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of underground control injection wells.

Date of Government Version: 12/09/2011
Date Data Arrived at EDR: 02/29/2012
Date Made Active in Reports: 04/04/2012
Number of Days to Update: 35

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/19/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 05/21/2012
Date Data Arrived at EDR: 05/22/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/20/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/02/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/11/2012
Number of Days to Update: 69

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 01/19/2012
Date Data Arrived at EDR: 01/19/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 33

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 14

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/16/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/29/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/19/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 07/19/2012
Next Scheduled EDR Contact: 11/05/2012
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/24/2012
Date Data Arrived at EDR: 06/05/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/14/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/13/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 02/27/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/19/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: N/A

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Varies

FINANCIAL ASSURANCE 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 06/01/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 08/03/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

FINANCIAL ASSURANCE 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/23/2012
Date Data Arrived at EDR: 05/24/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 43

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/14/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Varies

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/31/2012
Date Data Arrived at EDR: 06/01/2012
Date Made Active in Reports: 07/31/2012
Number of Days to Update: 60

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/28/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/16/2012
Date Data Arrived at EDR: 07/17/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/17/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Quarterly

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/14/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 07/16/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 06/01/2012
Date Data Arrived at EDR: 06/12/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 24

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/10/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/03/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/11/2012
Date Data Arrived at EDR: 06/14/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 22

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/19/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 04/03/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Semi-Annually

Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 04/03/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 06/13/2012
Date Data Arrived at EDR: 06/14/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 22

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 08/06/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/09/2012
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/29/2012
Date Data Arrived at EDR: 05/29/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 23

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/16/2012
Next Scheduled EDR Contact: 10/26/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/23/2012
Date Data Arrived at EDR: 07/26/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 42

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/05/2012
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 09/13/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 12/29/2011
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 19

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/17/2012
Next Scheduled EDR Contact: 11/05/2012
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 07/24/2012
Date Data Arrived at EDR: 07/27/2012
Date Made Active in Reports: 09/14/2012
Number of Days to Update: 49

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/17/2012
Next Scheduled EDR Contact: 11/05/2012
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 07/12/2012
Date Data Arrived at EDR: 07/23/2012
Date Made Active in Reports: 08/02/2012
Number of Days to Update: 10

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/12/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 07/24/2012
Date Data Arrived at EDR: 07/31/2012
Date Made Active in Reports: 09/14/2012
Number of Days to Update: 45

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 07/23/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Semi-Annually

NAPA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/29/2012
Next Scheduled EDR Contact: 12/17/2012
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 12/17/2012
Data Release Frequency: No Update Planned

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/02/2012
Date Data Arrived at EDR: 08/13/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 24

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/02/2012
Date Data Arrived at EDR: 08/13/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 24

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/02/2012
Date Data Arrived at EDR: 08/13/2012
Date Made Active in Reports: 09/14/2012
Number of Days to Update: 32

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/12/2012
Date Data Arrived at EDR: 06/13/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 23

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 07/18/2012
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 49

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/25/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 07/18/2012
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/06/2012
Number of Days to Update: 18

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/25/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 04/16/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 22

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/13/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2012
Date Data Arrived at EDR: 04/17/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 21

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/13/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 05/30/2012
Date Data Arrived at EDR: 05/31/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 36

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 08/13/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/09/2010
Date Data Arrived at EDR: 09/15/2010
Date Made Active in Reports: 09/29/2010
Number of Days to Update: 14

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 39

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/25/2012
Date Data Arrived at EDR: 06/27/2012
Date Made Active in Reports: 07/31/2012
Number of Days to Update: 34

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/09/2012
Date Data Arrived at EDR: 07/16/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 52

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/19/2012
Date Data Arrived at EDR: 06/20/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 16

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/13/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 06/04/2012
Date Data Arrived at EDR: 06/08/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 28

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 09/04/2012
Next Scheduled EDR Contact: 12/17/2012
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/15/2012
Date Data Arrived at EDR: 05/15/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 10

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 08/07/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/18/2012
Date Data Arrived at EDR: 06/21/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 15

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/13/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/18/2012
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 14

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/13/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 03/31/2012
Date Data Arrived at EDR: 06/29/2012
Date Made Active in Reports: 08/09/2012
Number of Days to Update: 41

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/11/2012
Date Data Arrived at EDR: 06/12/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 24

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 09/05/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 42

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/24/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/14/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 06/28/2012
Date Data Arrived at EDR: 08/02/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 35

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/30/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 06/27/2012
Date Data Arrived at EDR: 06/29/2012
Date Made Active in Reports: 07/31/2012
Number of Days to Update: 32

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 06/29/2012
Date Data Arrived at EDR: 07/09/2012
Date Made Active in Reports: 08/02/2012
Number of Days to Update: 24

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 08/20/2012
Date Data Arrived at EDR: 08/20/2012
Date Made Active in Reports: 09/20/2012
Number of Days to Update: 31

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/20/2012
Next Scheduled EDR Contact: 12/03/2012
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/19/2012
Next Scheduled EDR Contact: 10/29/2012
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/09/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 36

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/09/2012
Next Scheduled EDR Contact: 11/19/2012
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/23/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 57

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/19/2012
Next Scheduled EDR Contact: 11/05/2012
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/31/2012
Number of Days to Update: 39

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/23/2012
Next Scheduled EDR Contact: 12/10/2012
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/15/2011
Number of Days to Update: 27

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/18/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

MALIBU GOLF CLUB
901 ENCINAL CANYON ROAD
MALIBU, CA 90265

TARGET PROPERTY COORDINATES

Latitude (North):	34.0895 - 34° 5' 22.20"
Longitude (West):	118.8557 - 118° 51' 20.52"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	328795.0
UTM Y (Meters):	3773439.2
Elevation:	1319 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	34118-A7 POINT DUME, CA
Most Recent Revision:	1999

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

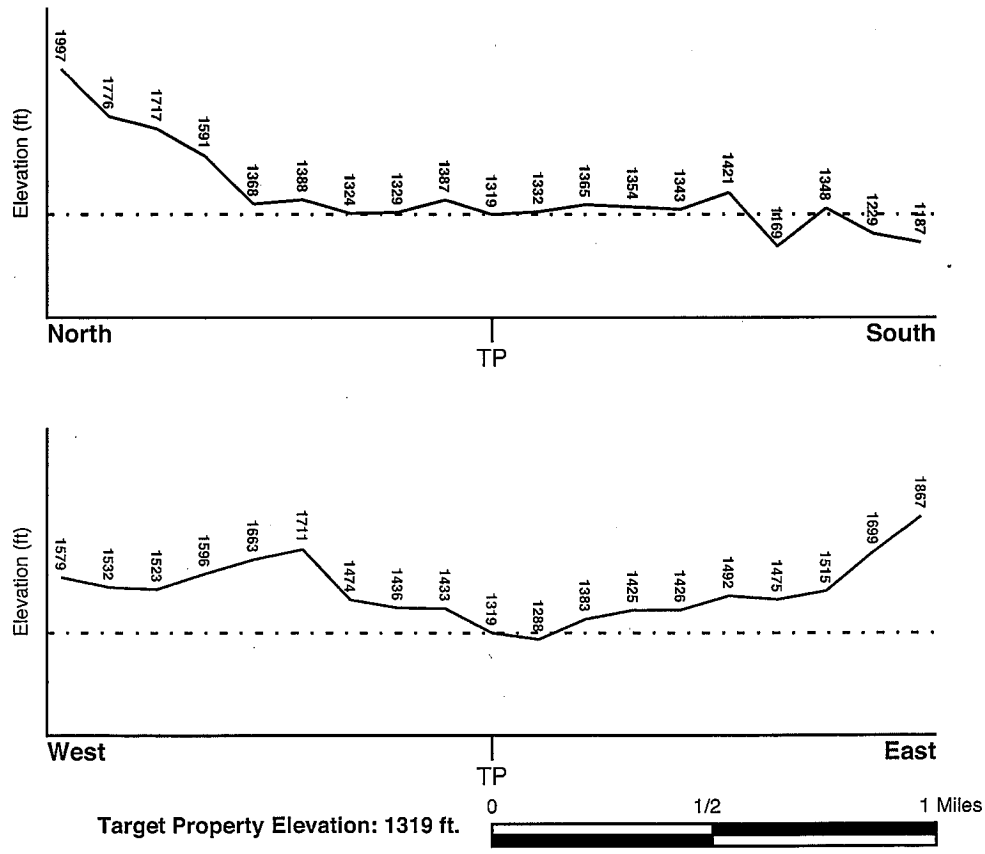
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ESE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
LOS ANGELES, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06037C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
POINT DUME	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

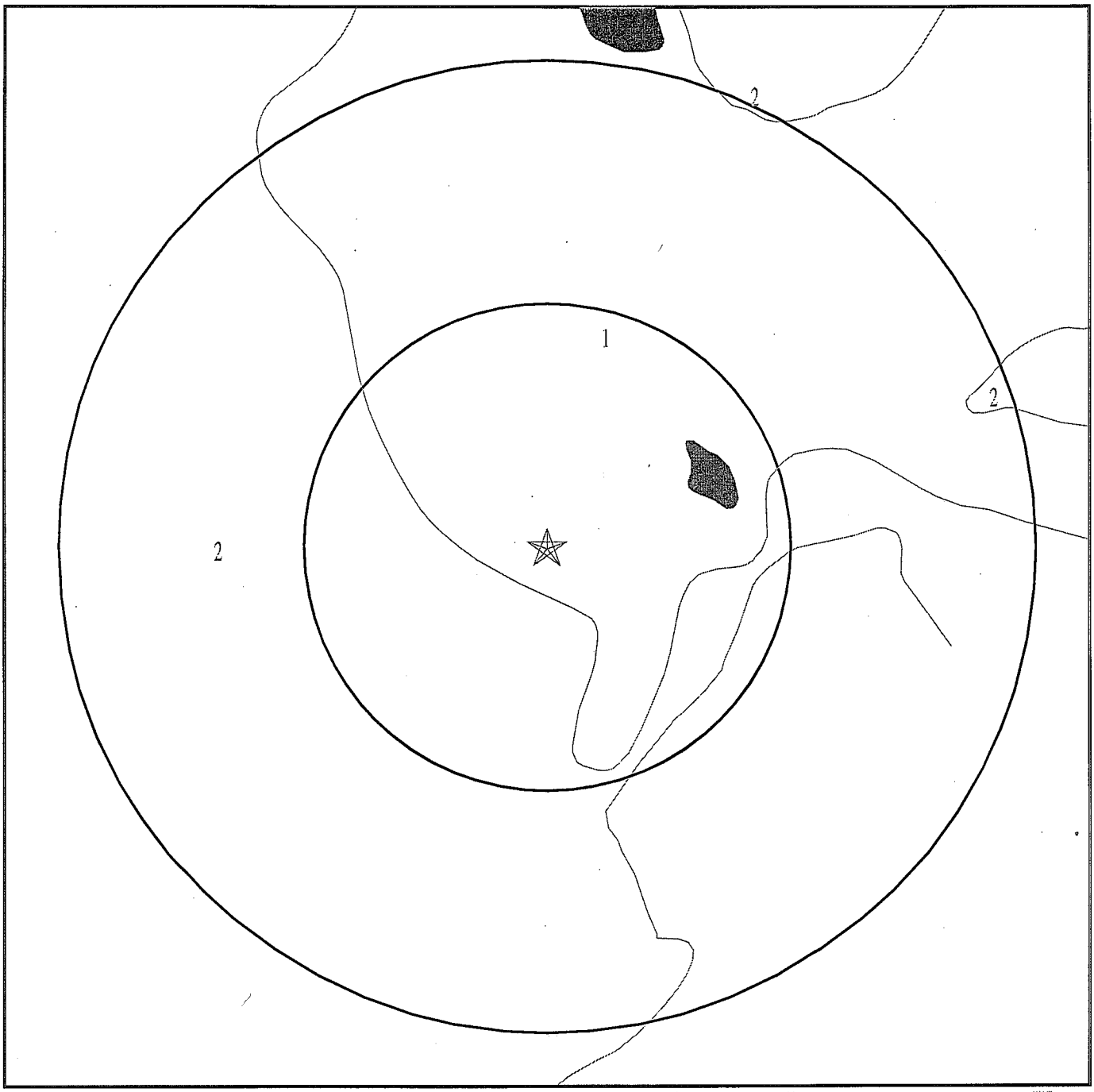
Era:	Cenozoic
System:	Tertiary
Series:	Miocene volcanic rocks
Code:	Tmv *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Volcanic Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 3413999.2s



☆ Target Property
SSURGO Soil
Water

SITE NAME:	Malibu Golf Club	CLIENT:	E2 Environmental
ADDRESS:	901 Encinal Canyon Road Malibu CA 90265	CONTACT:	Tom Faludy
		INQUIRY #:	3413999.2s
LAT/LONG:	34.0895 / 118.8557	DATE:	September 21, 2012 3:09 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Xerorthents

Soil Surface Texture: loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	3 inches	loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.06 Min: 0	Max: Min:
2	3 inches	51 inches	loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.06 Min: 0	Max: Min:
3	51 inches	51 inches	weathered bedrock	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: 0.06 Min: 0	Max: Min:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: Cotharin

Soil Surface Texture: slightly decomposed plant material

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	slightly decomposed plant material	Not reported	Not reported	Max: 0.06 Min: 0	Max: Min:
2	1 inches	9 inches	loam	Not reported	Not reported	Max: 0.06 Min: 0	Max: Min:
3	9 inches	11 inches	loam	Not reported	Not reported	Max: 0.06 Min: 0	Max: Min:
4	11 inches	11 inches	weathered bedrock	Not reported	Not reported	Max: 0.06 Min: 0	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

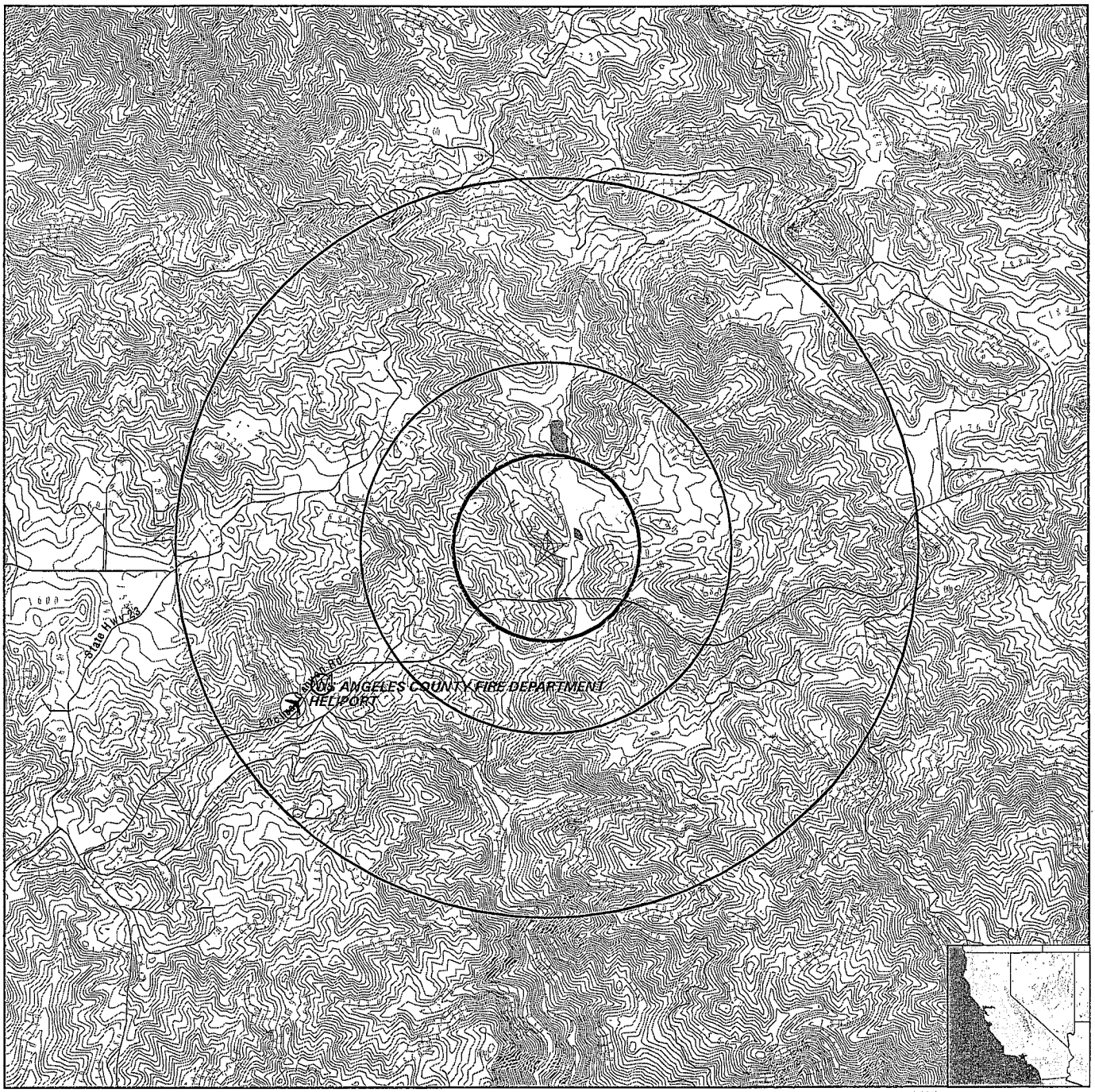
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	1518	1/2 - 1 Mile WSW

PHYSICAL SETTING SOURCE MAP - 3413999.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME: Malibu Golf Club ADDRESS: 901 Encinal Canyon Road Malibu CA 90265 LAT/LONG: 34.0895 / 118.8557	CLIENT: E2 Environmental CONTACT: Tom Faludy INQUIRY #: 3413999.2s DATE: September 21, 2012 3:08 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
1 **WSW** **1/2 - 1 Mile** **Higher**		**CA WELLS**	**1518**

Water System Information:

Prime Station Code:	01S/19W-15E01 S	User ID:	MET
FRDS Number:	1910806001	County:	Los Angeles
District Number:	15	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340503.9 1185155.8	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	1910806		
System Name:	MALIBU CONSERVATION CAMP		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
90265	69	9

Federal EPA Radon Zone for LOS ANGELES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for LOS ANGELES COUNTY, CA

Number of sites tested: 63

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.711 pCi/L	98%	2%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.933 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Attachment 2

Questionnaire

KEY SITE MANAGER AND/OR OWNER
ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

The objective of this questionnaire is to obtain information indicating recognized environmental conditions in connection with the property. The questions should be answered in good faith and to the extent reasonably ascertainable based on observations, site records, and knowledge of or experience with operations on the property. This questionnaire is based on *40 CFR, Part 312 Standards and Practices for All Appropriate Inquiries; Final Rule* dated November 1, 2005 and ASTM E 1527-05 *Standard Practices for Environmental Site Assessments: Phase I Environmental Site Assessment Process* dated November 2005.

This questionnaire was completed by:	
Key Site Manager or Owner Name:	**Owner: Malibu Associates LLC – Tom Hix**
Key Site Manager or Owner Title:	**Key Site Manager: Dan Meherin**
Relationship to the Property:	**General Manager**
Company/Firm:	**Malibu Golf Club**
Address:	**901 Encinal Canyon Rd, Malibu, CA 90265**
Telephone:	**(W) 818 889-6086**
Date Completed:	**Tuesday, September 25, 2012**
Prepare's Name (if not completed by key site manager or owner):	**Prepared by site manager**
Preparer's Address:	**N/A**
Preparer's Telephone:	**(W) 818 889-6086 (M) 805 404-2104**

Owner/preparer represents that to the best of their knowledge the following statements and facts are true and correct and to the best of their actual knowledge, no material facts have been suppressed or misstated.

Signature:	*Date:*
	9·25·2012
Signature:	*Date:*

Date: _____

environmental

A. **Can you provide copies of any site plans, or site maps? If yes, please provide copies.**
We do have the original site plans for the existing buildings but not for the course itself.

B. **What is the nature of this business? What are the operations/processes that are performed here?**
The property is an 18 hole championship golf course and restaurant with full food and beverage service.

C. **How long has the business been in operation at the present location(s)?**
1977

D. **Do you have any knowledge regarding previous tenants/owners? Please elaborate and provide contact information, if possible.**
The original owner in 1977 was a Japanese religious group called Perfect Liberty. They sold to a Japanese business group in the mid to late 80s called California Fuji International, Inc. Our current owner, Malibu Associates LLC, purchased the property in April of 2006. I do not have any contact info for the previous owners.

E. **Are chemicals used at this site? If so, what chemicals and in what quantities (usage)?**
Yes. Chemicals are used on the golf course. Chemicals and their usage and quantities can be found on file at the course in copies of the monthly pesticide use reports that are sent to the Los Angeles County Agricultural Commission.

1. Where and how are they stored? In what quantities?

Date: _____

They are stored in the chemical storage container at the top of hill behind the maintenance facility. Quantities are dry bags no larger than 50 lbs and liquid containers no larger than 5 gallons.

2. Can you provide Material Safety Data Sheets (MSDS's)?
   Yes. We have MSDS's for all chemicals on site. They are located in the maintenance facility by our "daily board" and also inside the chemical storage container itself.

F. Are there underground or aboveground storage tanks for fuel, chemicals, or other liquids?
Yes. There are multiple ASTs on the property that store liquid fuels, propane gas and water. To my knowledge, there are no USTs on property.

1. If so, what type, size, locations(s), and for what products? Mark on plans, if available.
   There is one 1000 gallon AST for unleaded gasoline and one 500 gallon AST for diesel fuel located at the maintenance facility. There is one 1,150 gallon steel AST and two 500 gallon ASTs for the storage of liquid propane. One of the 500 gallon ASTs and the 1,150 gallon AST are located south and northwest, respectively from the club house buildings. The remaining 500 gallon AST is located on the southwest side of the maintenance building. One 70,000 gallon steel AST for the storage of water pumped from onsite wells is located northwest of the maintenance building.

2. When were the tanks last tested? What were the results?
   The So Cal AQMD was recently onsite to inspect the ASTs for gasoline and propane. We are currently compliant and hold all necessary permits. These permits can be found either on the tanks themselves or in the offices.

3. What are the ages of the tanks?
   The ASTs for gasoline and diesel were installed in 1994.

Date: _____

4. Can you provide copies of the relevant permits?
   Yes. See response to question #2 above.

5. To your knowledge, have there been any leaks from these tanks?
   No

6. Do the tanks possess leak protection systems?
   They are all located on secure sites. For example, the ASTs for gasoline and diesel fuel are secured to a concrete pad built into the base of an unpaved steep slope. A concrete block wall and berm surround the tank pads. The ASTs for propane are also set on concrete pads and surrounded by concrete walls.

G. Are there any above-ground or underground pipelines/product lines on your property?
Yes. Our irrigation lines for the course and club house are all underground.

What is the source of potable water?
The source of our potable water is the Las Virgenes Municipal Water District. The mainline begins just left of the 3rd fairway.

H. Does the site have any septic systems or cesspools?
Yes. There are 6 underground septic tanks with leech fields on the property. One tank is located east of the club house building. One tank is located south of the maintenance building. Two are located on the golf course near the restrooms. One is located at the "hunting lodge" and the last is located at the "care-taker's cottage."

I. Does this facility discharge water or waste to a sewer, storm drain, or to surface water?
No

Date: _____

1. If wastewater discharge is to a sewer, are there discharge restrictions imposed by permitting agency?

2. Does the facility have an NPDES permit? Please provide a copy.

J. Is there any form of waste treatment used on-site?
Yes. Septic systems.

Date: _____

K. How is waste disposed?

1. Solid? ***Weekly trash and recycling pick-up.***

2. Liquid? ***None***

3. Hazardous waste? ***Used oil and grease are properly stored until proper agencies come on-site to remove.***

4. Mixed waste?
   None

5. Does the facility have any waste treatment or disposal permits? ***None on record.***

L. Are you aware of any visible staining of the ground surface, pavement, etc?
No

M. Is there a restaurant or kitchen area?
Yes

Date: _____

1. Does it have grease traps?
   Yes

2. What type of fuels are used?
   The gas stove burners, oven, deep fryer and char broiler are all powered by one of ASTs of propane.

N. Are there incinerators, smokestacks, or other possible sources of air pollution on-site? (How many, where located, descriptions)
No

1. Do these sources possess any pollution control devices? (Type)

2. Does the facility hold any AQMD/APCD (California only) or other air emissions permits?
   We have AQMD permits for the char broiler in the kitchen and AST for gasoline located in the maintenance facility.

O. Are there any transformers, capacitors on site or are you aware of any other possible source of PCBs?
Not 100% certain ... There appears to be 2 above ground transformers (one is located behind the restaurant and 1 is located by the water storage tank) and 1 underground transformer located by the maintenance building.

1. If so, what are their locations, identifications, and ages?
   See above.

Date: _____

P. What type of fuel source is used for heating and cooling of the buildings? (for example, heating oil, gas electric, radiators from steam boiler fueled by gas etc.)
Heaters use propane and A/C uses electricity.

Q. Are there any wells (monitoring wells, dry wells, irrigation wells, injection wells, abandoned wells, oil wells, water wells, or other wells) on the property?
Yes. There are 6 operating water wells on property.

1. If so, what are their ages and purposes?
   They were installed in the mid to late 70s to provide irrigation for the golf course.

R. Is there underground parking?
No

1. If so, how is the parking structure drained?

S. Is there landscaping?
Yes. There is landscaping around the club house.

1. If so, are you aware of any use of pesticides/fumigants/etc? (Nature, frequency, on-site storage?)
   Yes. There are used and stored in the same manner and location as those used on the course itself.

Date: _____

T. **Are you aware of any known leaks, spills, or any other deliberate or involuntary releases of chemicals or fuels from this site or adjacent sites?**
No

U. **Are you aware of any Federal, State, or local agency investigations for violations of environmental laws? Any civil proceedings for environmental degradation?**
No

V. **Are you aware of any environmental site assessment reports or environment compliance audit reports associated with the property?**
Annual water quality reports are taken.

W. **Are there any existing reports regarding this facility? (Includes geotechnical, asbestos, radon gas, natural gas detection, geologic hazards, environmental, and others). Please provide a list or copies if possible.**
No

X. **Are you aware of any safety plans, preparedness and prevention plans, spill prevention, countermeasure and control plans, storm water control plans, community right-to-know plans, or risk assessments associated with the property? Please provide a list or copies if possible.**
We have an injury and illness prevention plan, a pesticide safety plan and a hazard communication and respiratory protection program.

Date: _____

e2 environmental

Y. Are you aware of any Environmental Liens or Activity and use Limitations (AULs) relating to the property?
No

Z. Are you aware of any reports regarding hydrogeologic conditions on the property or surrounding area?
No

AA. Do you have any knowledge that fill dirt has been brought onto the property that originated from a contaminated site or fill dirt of unknown origin?
No

BB. Are you aware of any past or present pits, ponds, or lagoons located on the property
There are 4 ponds located on the property. The first is located between holes 5 and 6. The second and largest is located between holes 6 and 7. The third is a small pond and is located between holes 9 and 10 and the last pond is located between 9 fairway and 9 green.

Notes and Comments:

Date: _____

Date: _____

e2 environmental

Date: _____

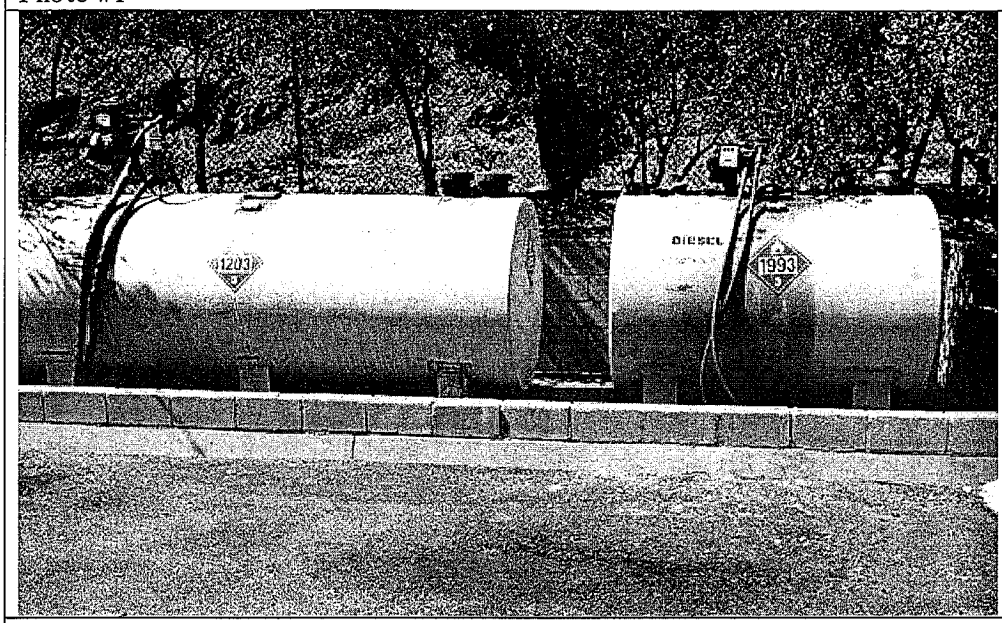
e2 environmental

Attachment 3

Site Photographs

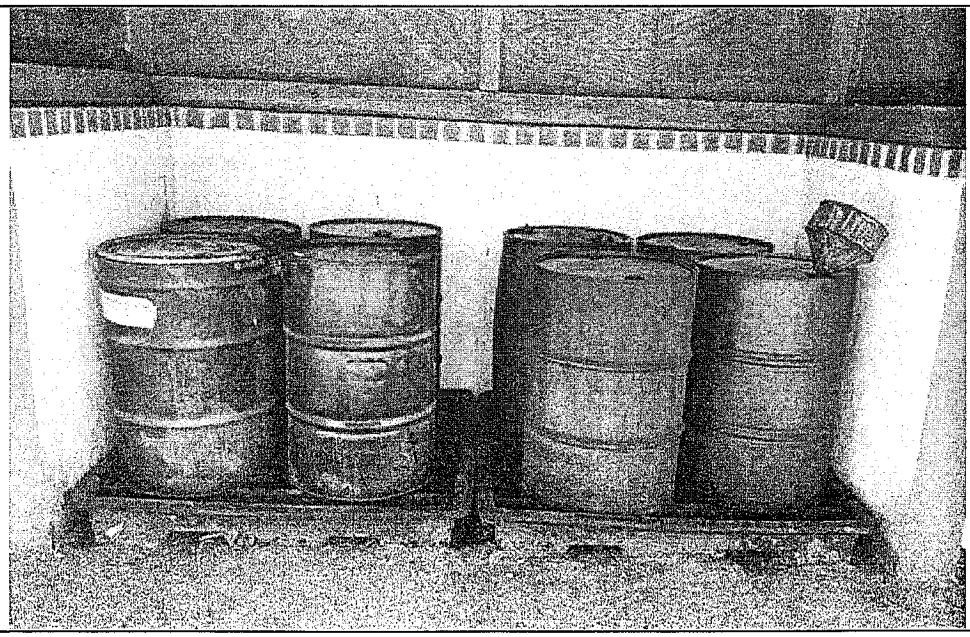
Attachment 3 – Site Photos

Photo #1



Fuels - aboveground storage tanks (ASTs)

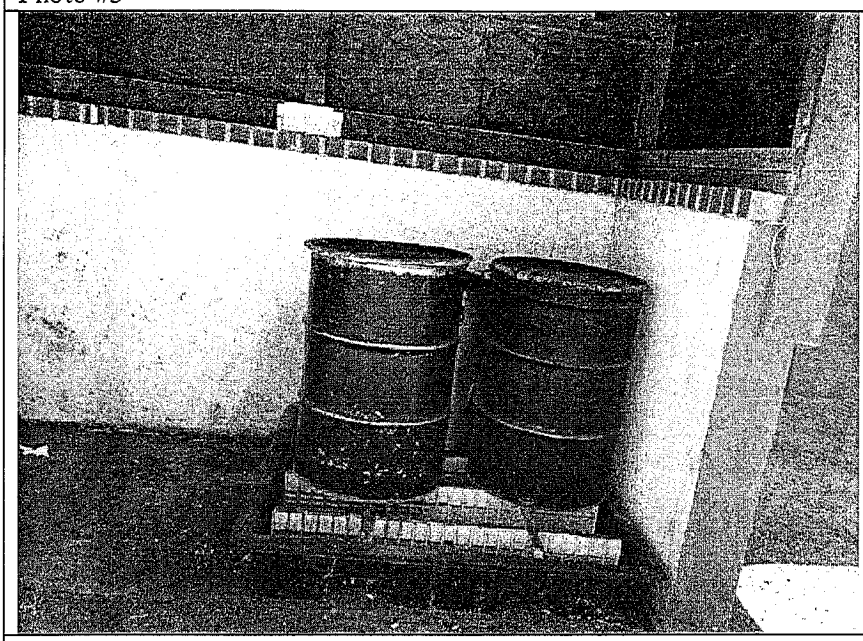
Photo #2



Secondary containment implemented for used oil and grease drums

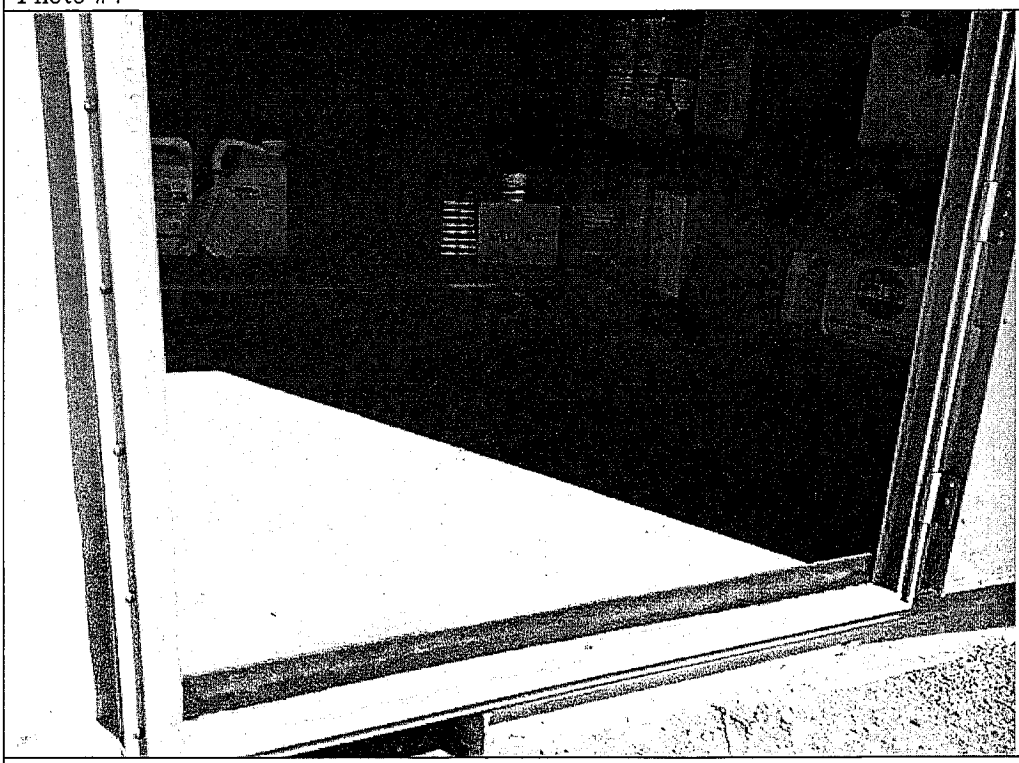
Attachment 3 – Site Photos

Photo #3



Secondary containment implemented for used oil and grease drums

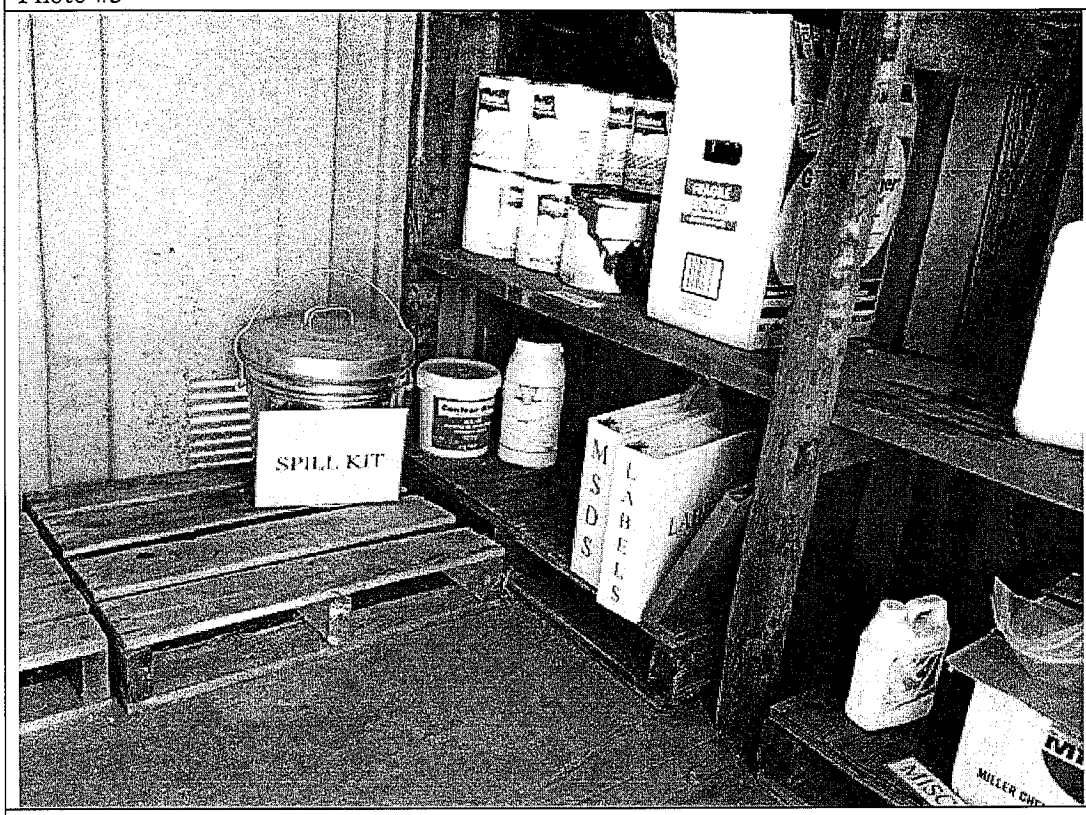
Photo #4



Pesticide storage – spill leak barrier

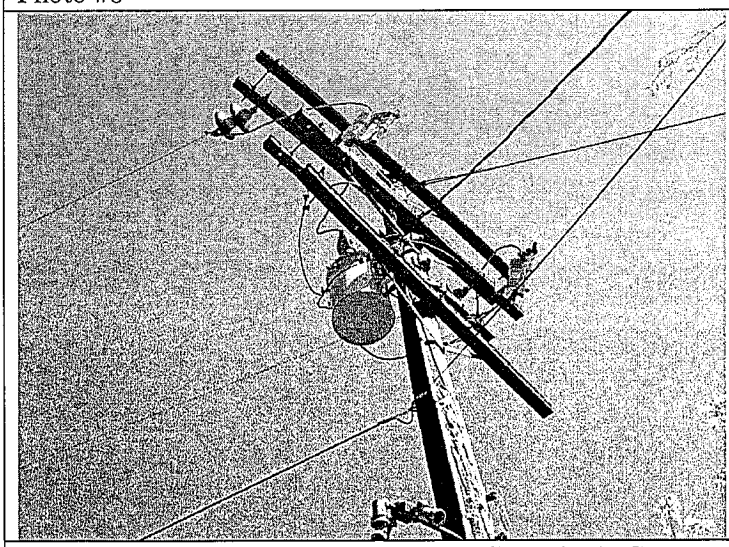
Attachment 3 – Site Photos

Photo #5



Pesticide storage – Spill Kit

Photo #6



Pole-mounted electrical transformer at Caretaker's Cottage

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

Malibu Country Club
901 Encinal Canyon Drive
Malibu, California 90265

January 13, 2006

PREPARED FOR

SCOTT S. POLLARD, ESQ
4041 MacArthur Blvd., Suite 140
Newport Beach, California 92660

PREPARED BY

E2 Environmental, Inc.
15375 Barranca Parkway, Suite F-106
Irvine, California 92618-2207

Project No. 2003.001

January 13, 2006 Project No. 2003.001

Scott S. Pollard, Esq.
4041 MacArthur Blvd., Suite 140
Newport Beach, California 92660

Phase I Environmental Site Assessment Report
Malibu Country Club
901 Encinal Canyon Road
Malibu, California 90265

Dear Mr. Pollard:

Enclosed are three copies of the Phase I Environmental Site Assessment Report for the subject site. As we discussed, the appendices, which are more than 300 pages in length, are included on the attached CD.

If you have any questions or require additional information, please do not hesitate to call the undersigned at (949) 453-8085.

Respectfully submitted,

E2 ENVIRONMENTAL, INC.

Michael Higuchi
Senior Project Manager

cc: Jo Polverari, Hix Rubenstein

X:\2003\Phase I ESA - 01-06\Phase I ESA Malibu CC.doc

15375 Barranca Parkway • Suite F-106 • Irvine, California 92618-2207
www.e2env.com • info@e2env.com • 949-453-8085 • FAX 949-453-0733

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LIST OF ABBREVIATIONS AND ACRONYMS

AAI	all appropriate inquiries
APN	assessor's parcel number
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
AWP	Annual Work plan Sites
CA BOND EXP PLAN	Bond Expenditure Plan
CA FID UST	Facility Inventory Database
CAL-SITES	California Cal-Sites Database
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CORRACTS	Corrective Action Report
CORTESE	Cortese Hazardous Waste and Substance Sites Lists
E2	E2 Environmental, Inc.
EDR	Environmental Data Resources
ENF	violation and enforcement
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
HAZNET	Facility and Manifest Data
HIST UST	Hazardous Substance Storage Container Database
LQG	large quantity generator
LUST	Leaking Underground Storage Tank Information System
pCi/L	picoCuries per liter
NFRAP	No Further Remedial Action Planned
NOTIFY 65	Proposition 65 Records
NPL	National Priority List
PCB	polychlorinated biphenyl
PWS	Public Water Systems
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RWQCB	Regional Water Quality Control Board
SQG	small quantity generator
SWF/LF	Soil Waste Information System
SWIS	California Solid Waste Information System
TSDF	treatment, storage, and disposal facility
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey

UST	underground storage tank
VCP	Voluntary Cleanup Program
WIP	Well Investigation Program
WMUDS/SWAT	Waste Management Unit Database

1.0 INTRODUCTION

This report documents the results of a Phase I Environmental Site Assessment (ESA) of the Malibu Country Club (property) located at 901 Encinal Canyon Road in Malibu, California. E2 Environmental, Inc. (E2) was retained by Scott S. Pollard, Esq. to conduct this ESA.

1.1 PURPOSE

The objective of this assessment was to provide information regarding known or potential environmental issues at the subject site. The assessment is intended to identify conditions indicative of releases and threatened releases of hazardous substances on, at, or to the subject property. This Phase I ESA is a review of available site information to identify potential liabilities as well as information gaps that require additional investigation.

1.2 BASIS FOR ASSESSMENT

In November 2005, the United States Environmental Protection Agency (USEPA) established federal standards and practices for establishing due diligence in evaluating a property's environmental conditions and assessing potential liability for contamination prior to purchase. The regulation was published in the Federal Register as referenced below:

> *Federal Register - Part III Environmental Protection Agency, 40 Code of Federal Regulations (CFR) Part 312 Standards and Practices for* ***All Appropriate Inquiries (AAI);*** *Final Rule* dated November 1, 2005

This regulation is commonly referred to as the AAI Rule. The AAI Rule must be followed by persons receiving federal Brownfield grants and any property buyer seeking eligibility for defenses against federal Superfund (Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]) liability as an "innocent landowner," "contiguous property owner," or "bona fide prospective purchaser."

The American Society for Testing and Materials (ASTM) standard for conducting Phase I Environmental Assessments, Standard E 1527-05, (ASTM, 2005) was developed in collaboration with USEPA to meet the standards of the AAI Rule, and is widely used by buyers, sellers, and developers of real estate as the standard for commercial due diligence. The ASTM standard provides detailed steps for completion of an AAI-compliant environmental assessment. The ASTM standard is referenced below:

> *ASTM Standard Designation E 1527-05 - Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* dated November 2005.

The AAI Rule becomes effective on November 1, 2006, one year from the date it was published. Until the effective date, compliance with the older ASTM standard (E 1527-00) is acceptable to USEPA to meet the requirements of all appropriate inquiries. After November 1, 2006, USEPA will accept compliance with either the AAI Rule or ASTM E 1527-05.

This Phase I ESA was performed in accordance with the AAI Rule and in general accordance with ASTM E 1527-05.

1.3 SCOPE OF WORK

The following scope of work is consistent with the AAI Rule (40 CFR, Part 312 – specific parts noted below). The scope of work included:

- Interviews with past and present owners, operators and occupants for the purpose of gathering information regarding the potential for contamination at the site (Part 312.23).
- Review of ownership and title records, historical aerial photographs, U.S. Geological Survey (USGS) historical topographic maps, and city directories that cover the subject site vicinity in order to determine previous uses and occupancies of the property since the property was first developed (Part 312.24).
- Review of recorded land title records for the subject site to identify current and previous property owners, land leases, and environmental cleanup liens (Part 312.25).
- Review of federal, state, tribal and local agency database records for known hazardous toxic substance contamination associated with the site and the area surrounding the site (Part 312.26).
- Review of agency files for the subject property and surrounding area (Part 312.26).
- Visual inspection of the site and surrounding area (Part 312.27).
- Interview the prospective buyer to gather information relative to any specialized knowledge or experience (Part 312.28); the relationship of the purchase price to the value of the property if not contaminated (Part 312.29) and any commonly known or reasonably ascertainable information on contamination exists (Part 312.30).
- Review of maps, drawings, and other documents that provided information on current and past activities for the subject site and surrounding area (Part 312.30).
- Evaluation of the degree of obviousness of the presence or likely presence of contamination at the property and the ability to detection the contamination (Part 312.31).
- Identification of data gaps that affect the ability of the environmental professional to identify conditions indicative of releases or threatened releases of hazardous substances (Part 312.21).
- Identification of potential problem areas (Part 312.21).
- Preparation of a report summarizing the findings (Part 312.21).

E2's scope of work did not include collecting or testing of any samples. No subsurface exploration/sampling or surface mapping (except as described herein) was performed by E2 as a part of this study.

1.4 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The work completed in preparation of this report was intended to uncover *significant and obvious* environmental issues related to the subject site. No environmental assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions; however, this assessment is intended to reduce uncertainty regarding the potential for recognized environmental conditions in connection with the property.

The scope of this assessment, as outlined above, is limited to the review of available records and historical aerial photographs, observations made during site visits, and interviews with knowledgeable persons. As a result, our conclusions are based primarily upon information provided by others.

The focus of this assessment was to establish the likelihood of hazardous substance contamination resulting from past and current use of the site and, where such information was immediately available, for adjacent properties. Consequently, this assessment does not highlight the presence of the following unless they were of concern and documented in the files we reviewed:

- Naturally occurring toxic or hazardous substances in the subsurface geologic materials and ground water.
- Toxicity of substances common in current habitable environments, such as stored household products, building materials, and/or consumables.
- Contaminant concentrations that are currently below regulatory action limits, but may exceed future limits due to the dynamic nature of the environmental regulations.

1.5 USER RELIANCE

In compliance with AAI Rule, Part 312.20, this environmental site assessment may be considered valid for a period of one year after its publication. However, after a period of 180 days following publication, these listed components must be conducted or updated, prior to the date of property sale/acquisition:

- Interviews with past and present owners, operators, and occupants;
- Searches for recorded environmental cleanup liens;
- Reviews of federal, tribal, state and local government records;
- Visual inspection of the facility and of adjoining properties; and
- The declaration by the environmental professional.

2.0 SITE DESCRIPTION

2.1 SITE LOCATION

This report covers the property located in Los Angeles County at 901 Encinal Canyon Road, Malibu, California (hereto referred to as *the property, site, or subject site*). The subject site is approximately 627 acres and is located south of Highway 23 (Mulholland Highway) and north of Encinal Canyon Road and within the boundaries of the Santa Monica Mountains National Recreation Area. A site location map and site plan is presented in Figures 1 and 2.

2.2 DESCRIPTION OF SITE

2.2.1 Current Use of Property

The subject site currently houses the Malibu Country Club, which includes an 18-hole golf course completed in 1977, and a 15,600 square feet clubhouse that was renovated in 1986. The site also contains two homes located on Mulholland Highway.

2.2.2 Description of Structures, Roads, and Other Improvements

The country club has an 18-hole golf course and pertinent facilities, clubhouse, restaurant, snack shop, pro shop, material storage areas, a 100,000-gallon water tank, maintenance facilities, two residences, parking lots, two ponds, and landscaping and asphalt/paved areas throughout the site. The county club and golf course were completed in 1977 and the clubhouse was renovated in 1986.

2.2.3 Description of Heating/Cooling Systems and Utilities

The clubhouse and pro shop have central heating and cooling. These systems use a combination of propane and electricity.

The primary utilities are an on-site septic system that is used for handling sewage treatment and disposal, propane, Southern California Edison (SCE) for electricity, and SBC Communications for telephone. Potable water is purchased from the Las Virgenes Municipal Water District (LVMWD), and additional ground water is pumped from five on-site water wells

2.3 LEGAL DESCRIPTION OF SITE

The site consists of approximately 627.3 acres and includes the following Assessor Parcel Numbers (APNs) while a legal description for each parcel is presented in the Stewart Title of California, Inc. Preliminary Report dated October 3, 2005 and presented in Appendix A:

Assessor's Parcel #	Zoning	Land Use	Net Acres
2058-015-003	A-1-20	Vacant	1.73
2058-015-012	RPD-5-0.2U-DP	Vacant	29.59
2058-015-013	A-1-5	Vacant	0.31
2058-015-037	A-1-10	Vacant	4.28

4471-001-005	RPD-1-1U-DP	Vacant	38.28
4471-001-018	RPD-1-1U-DP	Vacant	40.00
4471-001-019	RPD-1-1U-DP	Vacant	10.00
4471-001-024	RPD-1-1U-DP	Vacant	29.41
4471-001-027	RPD-1-1U-DP	Vacant	36.55
4471-001-028	RPD-1-1U-DP	Vacant	30.05
4471-001-029	RPD-1-1U-DP	Vacant	7.61
4471-002-007	RPD-1-1U-DP	Golf Course (Portion)	48.15
4471-002-010	RPD-1-1U-DP	Golf Course	80.00
4471-002-011	RPD-1-1U-DP	Golf Course	80.00
4471-003-010	RPD-5-0.2U-DP	Vacant	3.13
4471-003-011	RPD-1-1U-DP	Vacant	39.14
4471-003-014	RPD-1-1U-DP	Golf Course (Portion)	130.52
4471-021-028	A-1-1	Vacant	13.85
4471-021-033	RPD-1-1U-DP	Golf Course	2.07
4471-021-034	A-1-1	Golf Course	2.63
	Total Site (includes golf course)		**627.3**

An aerial topographic map showing the APNs is presented in Appendix A.

2.4 HISTORIC USES OF THE PROPERTY

Historic uses of the property were determined from review of historical aerial photographs, historical topographic maps, insurance maps (where available), city directory listings (where available), title documents, interviews and questionnaires provided by knowledgeable personnel, and review of historical reports prepared by others.

Prior to the development of the Malibu Country Club in 1976 the subject site was undeveloped. Aerial photos dating from 1928 to 1976 appear to show the site as undeveloped. A 1976 photograph shows grading operations being performed on the golf course. Historical topographic maps dating from 1903 to 1967 shows the subject site as undeveloped land while the 1981 topographic map shows the subject site as a golf course. Additional information regarding the history of the site is presented in Section 3.0.

2.5 ADJOINING PROPERTIES

The site is located in the Santa Monica Mountains National Recreation Area with adjoining properties in this same area. A map of the Santa Monica Mountains National Recreation Area is presented in Appendix B. The property is bounded by:

- Isolated residences in the ridges and hills above the property to the north, west and east, and
- Vacant undeveloped land within the boundaries of the Santa Monica Mountains National Recreation Area to the south.

An overview map, which illustrates the subject site and vicinity, is included in the Environmental Data Resources, Inc. (EDR) report in Appendix C

2.6 PHYSICAL SETTING

2.6.1 Geology

The subject site is located at the head of Trancas Canyon with Trancas Creek, a perennial stream. Trancas Canyon in north/south trending canyon that drains into Pacific Ocean, about 1.5 miles west of Point Dume.

Trancas Canyon is near the center of the east/west trending Santa Monica Mountains. The Santa Monica Mountains are part of the Transverse Ranges Province that extends from Point Arguello and San Miguel Island eastward approximately 300 miles to the mountains of Joshua Tree National Park where the province merges with the Mojave and Colorado Deserts, spanning 10 to 50 miles north/south (Dibblee, 1982a; Yerkes et al., 1965; Norris and Webb, 1990). The Transverse Ranges Provinces have been described as narrow band of east/west trending mountains and valleys that are transverse to the adjacent northwest trending provinces (Dibblee, 1982a). The northern and southern boundaries of this province are defined by Santa Ynez and Santa Monica Fault zones (Yerkes et al., 1965). Most of the province is mountainous with elevations as high as 10,000 feet above sea level.

The eastern segment of the Santa Monica Mountains is characterized by having an exposed Mesozoic crystalline core of continental schist and slates that have granitic intrusions. The basement rocks are overlain by Cretaceous and Tertiary age rocks composed of mostly sedimentary formations that form a west-plunging anticline. Most of the sedimentary rocks are of marine origin with the exception of the terrestrial Early Miocene Sespe Formation. During the Middle Miocene, a period of volcanism produced approximately 10,000 feet of volcanics in the western segment of the Santa Monica Mountains (Dibblee, 1982b). The Conejo Volcanics are composed primarily of basalt and andesite with minor amounts of dacite (Dibblee, 1982b; Dibblee, 1993, Campbell et al., 1996). The assemblage is composed of debris-flow breccias (lahars), flows, tuff-breccias, and volcanic agglomerates. Most of the volcanics are of submarine origin, as commonly demonstrated with the pillow-structure in the basalt flows (Dibblee, 1982b).

2.6.2 Local Geology

According to Dibblee (1993), the property site is situated on Quaternary alluvial deposits and Middle Miocene volcanic rocks. Alluvial deposits are limited to the areas immediately adjacent to the streams present in the canyon with the surrounding hills composed of volcanic rocks.

2.6.2.1 Quaternary Alluvial Deposits

The alluvial deposits are described by Dibblee (1993) as "alluvial gravels, sand and clay of flood plains." The widest extent of alluvial deposits is about 400 feet, just south of the larger of the two lakes. The thickness of the alluvial deposits is unknown.

2.6.2.2 Middle Miocene Volcanics

For the purposes of this project, bedrock refers to the solid rock that underlies loose material, such as soil, sand, clay, or gravel.

Dibblee (1993) mapped the bedrock present as the Middle Miocene Conejo Volcanics. The bedrock present at the property site was mapped as mostly basaltic flows and breccias with minor occurrences of andestic breccias present in the northern and northeastern hills surrounding the country club Dibblee (1993). Basalt is an igneous rock composed primarily of plagioclase and calcium rich pyroxenes occurring in about equal proportions. Andesite (also igneous rocks) is composed primarily of plagioclase (sodium aluminum silicate), hornblende (calcium magnesium aluminum silicate), pyroxene (magnesium/iron aluminum silicate), and biotite (potassium iron magnesium aluminum silicate). A flow is a group of sheets or beds of lava that were formed by a single eruption of outpouring. Breccias are flows characterized by large angular broken rocks cemented by finer-grained material.

2.6.3 Local Surface Hydrology

The site is situated at the start of the Trancas Canyon, with the golf course surrounded by steep hills.

To help control overland flow and prevent flooding on the site, there are a number of catch basins and lined channels around the perimeter of the property. The catch basins collect the overland flow, which allow the water to infiltrate direct excess water to watercourses. Concrete V-shaped channels on the slopes collect overland flow from the surrounding hills and directflow to the watercourses or catch basins.

Mr. Norihisa Koda, the general manager of the country club, indicated that the property only experienced minor amount of flooding along the main stream on the site during the heavy rains of spring 2005.

There are four lakes present on the golf course, all man made. One of the lakes is fed by springs along its northern shore.

2.6.4 Local Subsurface Hydrology

On the country club property, there are five ground water production wells used for irrigation of the golf course. According to Mr. Efrain Barragan, the golf course superintendent, the wells are approximately 1,000- to 1,100-feet deep and produce between 20 to 60 gallons per minute. He said four of the five wells go dry after a day, but the highest producing well can be pumped for several days before it goes dry. Pumped water is stored in a 15,000 gallon steel water tank located on the property. No boring logs, pump test data, or water analytical data was provided.

3.0 SITE HISTORY

3.1 HISTORIC AERIAL PHOTOGRAPHS AND TOPOGRAPHIC MAPS

Available aerial photographs (flown in 1928, 1947, 1952, 1964, 1976, 1990, 1994, and 2002) of the site and the surrounding region, within an approximate 1-mile radius of the site, were obtained from EDR and reviewed. Historical USGS 7.5-minute Topographic Quadrangles for 1903, 1921, 1947, 1951, 1967, 1981, 1994, and 1995 were obtained from EDR and reviewed. The collection of aerial photographs and USGS maps are included in Appendix D. Pertinent features observed on the maps and aerial photographs are summarized in chronological order below:

1903: The 1903 USGS topographic map, at a scale of 1:125,000, shows the subject site and surrounding area as undeveloped land in the Santa Monica Mountains. In the southern-half of the subject site an east/west trending dirt road with houses on both sides is shown, lying north of the current Encinal Road. These two houses lie approximately in the center of property. A dirt trail is present on the northern and northeastern side of the subject site that the future Mulholland Highway will roughly follow.

1921: The 1921 USGS topographic map, at a scale of 1:62,500, is similar to the 1903 map in that it shows the subject site and surrounding area as undeveloped land in the Santa Monica Mountains.

1928: The 1928, 1 inch to 500 feet scale aerial photograph shows the subject site as undeveloped. A few dirt trails along the ridges and valleys are present within the subject site. All the hills are covered with brush vegetation, whereas the stream bottoms are grass covered in a few trees and brushes. In the hills just north of the subject site, one home is visible.

1947: The 1947 USGS topographic map, at a scale of 1:50,000, shows the subject site and surrounding area as undeveloped land in the Santa Monica Mountains. To the west of the subject site, Decker Road has been completed, and just north of the subject site, an unnamed paved road is shown in the same location of the currently named Mulholland Highway. The dirt road present in the southern-half of the subject property is shown as a dirt trail with both previously visible houses gone. There is a north/south dirt trail starting from the unnamed paved road north of the subject site that intersects with the east/west trending dirt trail in the southern-half of the subject site. In the hills on the northern end of the subject site, there is a dirt road leading to a house, just above the future golf course. There is also a dirt road from Decker Road, leading to a house just south of the subject site.

1947: The 1947, 1 inch to 666 feet scale aerial photograph shows the subject site as undeveloped. The homes north of the subject site appear more developed with a large developed home just west of the site along Decker Road.

1951: The 1921 USGS topographic map, at a scale of 1:24,000, shows the subject site and surrounding area as undeveloped land in the Santa Monica Mountains. To the north of the subject site, Mulholland Highway is labeled. A paved road from Mulholland Highway leads to three homes in the hills north of the future golf course. To the south of the subject site, there are two homes shown at the end of a dirt road that connects to Decker Road.

1952: The 1952, 1 inch to 555 feet scale aerial photograph shows the subject site as undeveloped land.

1964: The 1964, 1 inch to 666 feet scale aerial photograph shows some development at the subject site. Two man-made lakes are present with the larger of the two at the northern end of the subject site. Both lakes have linear earthen mounds on their southern end. North of the large lake and on the eastern edge of the subject property, there are structures present. All through the subject site and in the hills surrounding the site, there are dirt trails and roads. There is an east/west fence line demarking the southern property boundary of the subject site, just north of Encinal Road.

1967: The photo-revised 1967 USGS topographic map, at a scale of 1:24,000, shows the subject site and surrounding area as undeveloped land in the Santa Monica Mountains. To the north of the subject site, Mulholland Highway is labeled. A paved road from Mulholland Highway leads to three homes in the hills north of the future golf course. From this paved road, there is dirt road trending south that connects to the paved Encinal Road. Connected to the dirt road, there are several dirt trails of varying quality that continue west with one of them connecting to Decker Road. South of the subject site and south of Encinal Road, there are two homes. Within the subject site, there are two lakes shown.

1976: The 1976, 1 inch to 666 feet scale aerial photograph shows grading of the golf course underway. It appears that some of the soil being used for the golf course was coming from a borrow area on the west side of the property site, just off Decker Road. There is one building/trailer present on the southern end of the property site, just north of Encinal Road.

1981: The photo-revised 1981 USGS topographic map, at a scale of 1:24,000, shows the subject site developed as a golf course. On the southern end of the subject site, there are two buildings shown. The two lakes are shown with the larger of the two to the north and the smaller lake to the south.

1990: The 1990, 1 inch to 666 feet scale aerial photograph shows the completed golf course with clubhouse and maintenance buildings. There are four ponds on the site with three of them on the northern portion of the site and one near the clubhouse in the southern portion of the site.

1994: The photo-revised 1994 USGS topographic map, at a scale of 1:24,000, shows the subject site developed as Malibu Country Club.

1994: The 1994, 1 inch to 666 feet scale aerial photograph is similar to the 1990 photo, which shows the completed golf course with clubhouse and maintenance buildings.

1995: The 1995 USGS topographic map, at a scale of 1:24,000, shows the subject site developed as Malibu Country Club.

2002: The 2002, 1 inch to 666 feet scale aerial photograph is similar to the 1994 photo, which shows the completed golf course with clubhouse and maintenance buildings.

3.2 CITY DIRECTORY LISTINGS

A review of historical city directory listings was conducted by EDR to identify the names and locations of businesses operating at the subject site and surrounding areas. Business directories including city, cross reference, and telephone directories were reviewed.

A copy of the EDR city directory search results is included in Appendix E.

3.2.1 Subject Site

There were no listings identified for the subject property address from the search of historical city business directories.

3.2.2 Surrounding Sites

No surrounding sites were identified in the historical business directory search.

3.3 SANBORN® MAPS

No Sanborn® Map coverage was available for the area as reported by EDR. A copy of the EDR search results is included in Appendix F.

3.4 PROPERTY OWNERSHIP

CB Richard Ellis (CBRE) provided E2 with a preliminary title report for the Malibu Country Club dated October 03, 2005, created by Stewart Title of California, Inc. This report documents the current owner of the property as California Fuji International, Inc., a California Corporation. The parent company is Tokyo Leisure Development Company located in Tokyo, Japan.

The preliminary title report does not identify any environmental liens for the property. Several easements are reported for the property. These easements are for public roads and highways, private roads, aboveground and underground electrical lines and poles, slopes, ingress and egress, storm drains, and water pipelines. A copy of the Stewart report is included as Appendix A. No information regarding potential past environmental impacts at the site could be obtained from the title report.

The following text is from a brochure on the property that was supplied by CBRE that provides historical information regarding property ownership:

"The Malibu Country Club is owned by the California Fuji International Inc., A California Corporation. The Parent Company, Tokyo Leisure Development Company, Ltd., is based in Tokyo, Japan. Tokyo Leisure Development Company purchased the property in 1988 from the Church of Perfect Liberty (PL). The religious organization PL was originally founded in Japan in 1924 and their motto is "Life is Art." It is not surprising that an organization with this motto would select this pristine region of Southern California as a retreat. The Church of Perfect Liberty purchased the property in 1975 from Arch and Eleanor Oboler.

Shortly afterwards, William Francis Bell Jr. was selected to design a world-class golf course and completed the project in 1977. By 1985, PL received approvals to build a clubhouse and develop a residential community around the golf course. The plan for a residential community was shelved and the land remained undeveloped for the past 20 years with only the golf course, clubhouse, and 2 residential structures located on the approximate 627.30 acres of land."

4.0 RECORDS REVIEW

Databases were searched by EDR to help identify environmental conditions in connection with the subject site and adjoining properties. All sources of information required by the AAI Rule, Part 312.26 were included in the search as well as many others. The accuracy and completeness of records varies among information sources and there is generally an overlap of coverage between Federal, State, Regional, and Local agency records.

4.1 SUMMARY OF FEDERAL, STATE, LOCAL AND TRIBAL AGENCY DATABASE RECORDS

The following table provides a listing the database records searched along with a short description of the database.

Table 1
Listing of Databases Searched

Type	Database Acronym	Database Description
Federal	NPL	National Priority List sites (USEPA Superfund program sites)
	Proposed NPL	Proposed National Priority List sites (USEPA)
	Delisted NPL	National Priority List deletion sites (USEPA)
	NPL Liens	Federal Superfund Lien sites (USEPA)
	CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System Sites (USEPA)
	CERC-NFRAP	CERCLIS sites with No Further Remedial Action Planned (USEPA)
	CORRACTS	Corrective Action Report sites (hazardous waste handlers with corrective action activity from USEPA)
	RCRA – TSDF	Resource Conservation and Recovery Act – Treatment, Storage and Disposal Facilities (USEPA)
	RCRA – LQG	Resource Conservation and Recovery Act – Large Quantity Generators (USEPA)
	RCRA – SQG	Resource Conservation and Recovery Act – Small Quantity Generators (USEPA)
	ERNS	Emergency Response Notification System sites (reported releases of oil and hazardous substances from the National Response Center)
	HMIRS	Hazardous Materials Information Reporting System sites (hazardous material spill incident reports to Department of Transportation)
	US ENG CONTROLS	United States Engineering Controls sites (USEPA listing of sites with engineering controls)
	US INST CONTROL	United States Institutional Controls sites (USEPA listing of sites with institutional controls)
	DOD	Department of Defense sites (United States Geological Services [USGS] listing of DOD sites greater than 640 acres)
	FUDS	Formerly Used Defense sites (Army Corps of Engineers listing)

Type	Database Acronym	Database Description
	US BROWNFIELDS	United States Brownfields sites (USEPA)
	CONSENT	Superfund (CERCLA) Consent Decree sites (from Department of Justice)
	ROD	Record of Decision sites (USEPA Superfund)
	UMTRA	Uranium Mill Tailings sites (Department of Energy)
	ODI	Open Dump Inventory sites (USEPA)
	TRIS	Toxic Chemical Release Inventory System sites (USEPA)
	TSCA	Toxic Substance Control Act sites (USEPA)
	FTTS INSP	FIFRA/TSCA Track System – FIFRA (Federal Insecticide, Fungicide & Rodenticide Act) - TSCA (Toxic Substances Control Act) (USEPA)
	SSTS	Section 7 Tracking System sites (Section 7 of FIFRA) (USEPA)
	PADS	PCB Activity Database System sites (USEPA)
	MLTS	Material Licensing Tracking System sites (radioactive materials tracked by the Nuclear Regulatory Commission)
	MINES	Mines Master Index File sites (mines open or active since 1971 by Mine Safety and Health Administration)
	FINDS	Facility Index System/Facility Registry System sites (USEPA)
	RAATS	RCRA Administrative Action Tracking System sites (enforcement actions – USEPA)
State and Local	AWP	Annual Workplan sites (known hazardous waste sites by Department of Toxic Substances Control [DTSC])
	Cal-Sites	Calsites Database sites (DTSC potential or confirmed hazardous substance release sites)
	Toxic Pits	Toxic Pits Cleanup Act sites (state water resources control board [SWRCB])
	CA BOND EXP PLAN	California Bond Expenditure Plan sites (Department of Health Services)
	NFA	No Further Action Determination sites (DTSC)
	NFE	Properties Needing Further Evaluation (DTSC)
	REF	Unconfirmed properties Referred to Another Agency (DTSC)
	SCH	School Property Evaluation Program sites (DTSC)
	LUST	Leaking Underground Storage Tank sites (Regional Water Quality Control Boards)
	SWF/LF (SWIS)	Solid Waste Information System (Integrated Waste Management Board's listing of active, close and inactive landfills and facilities)
	WMUDS/SWAT	Waste Management Unit Database (SWRCB)
	CORTESE	Hazardous Waste & Substances Site list (Office of Emergency Information)
	SLIC	Statewide Spills, Leaks, Investigation and Cleanup databases (SWRCB)
	UST	Active Underground Storage Tank sites (SWRCB)
	CA FID UST	Facility Inventory Database (DTSC's historical listing of active and inactive UST sites)
	SWRCY	Recycler Database (Department of Conservation's listing of recycling facilities)
	AST	Aboveground Petroleum Storage Tank Facilities (SWRCB)

Type	Database Acronym	Database Description
	SWEEPS UST	Statewide Environmental Evaluation and Planning System UST Listing (SWRCB)
	CHRMIRS	California Hazardous Material Incident Report System (Office of Emergency Services)
	Notify 65	Proposition 65 Records (SWRCB notifications of releases which could impact drinking water)
	LA Co. Site Mitigation	Site Mitigation List for Los Angeles County
	DEED	Deed Restriction Listing (DTSC)
	VCP	Voluntary Cleanup Program Properties (DTSC)
	CLEANERS	Cleaner Facilities (DTSC)
	WIP	Well Investigation Program Case List (Los Angeles RWQCB)
	LOS ANGELES CO HMS	Industrial Waste and Underground Storage Tank Sites (Los Angeles Department of Public Works – street number listing)
	EMI	Emissions Inventory Data (California Air Resources Board)
Tribal	INDIAN RESERV	Indian Reservations (USGS listing greater than 640 acres)
	INDIAN LUST	Leaking Underground Storage Tanks on Indian Land (USEPA)
	INDIAN UST	Underground Storage Tanks on Indian Land (USEPA)
EDR	Gas Stations/Dry Cleaners	Gas Stations and Dry Cleaners from national business directories
Proprietary	COAL GAS	Former manufactured gas (coal gas) sites

4.1.1 EDR Search for Subject Site

The EDR search of the federal, state, local, tribal or proprietary databases identified the subject site on the HAZNET database for handling of oil-containing wastes. The subject site was not listed on any of the other searched databases.

4.1.2 EDR Search for Sites within a 1-Mile Radius

A total of seven listings that are associated with two street addresses within a 1-mile radius of the subject site were identified. Table 2 below summarizes these listings. The complete EDR database search results are included in Appendix C.

Table 2
Database Summary of Surrounding Sites

EDR Map ID	Site Address	Site Name(s) Listed in Database	Databases Listed	Distance and Direction from Subject Site and Relative Elevation	Case Data and Status
A2	427 Encino Canyon Road	LA County/Internal Services Dept	HAZNET	½ - 1 mile, South, lower	Asbestos-containing wastes, disposal, landfill

EDR Map ID	Site Address	Site Name(s) Listed in Database	Databases Listed	Distance and Direction from Subject Site and Relative Elevation	Case Data and Status
A3	427 Encino Canyon Road South	LA County Probation-Miller Kilpatrick	LUST	½ - 1 mile, South, lower	UST data exists for the site; Hydrocarbon leak; Identified 8/18/1999, Soil only; Abatement method - OT
A4	427 S. Encino Canyon Road	LA Department of Public Works	HAZNET	½ - 1 mile, South, lower	Waste oil and mixed oil to recycler
A5	427 Encino Canyon Road	Camp Kilpatrick	HIST UST	½ - 1 mile, South, lower	One UST, storage of product – diesel, no year for installation
A6	433 S. Encino Canyon Road	Camp Miller-Kilpatrick	CA WDS	½ - 1 mile, South, lower	Local wastewater treatment facility for domestic sewage, design flow 0.045 MGD
A7	433 Encino Canyon Road	Camp Miller	HIST UST	½ - 1 mile, South, lower	One UST, storage of product – regular, installed 1962
A8	433 Encino Canyon Road	City of Los Angeles-Internal Services Dept	HAZNET	½ - 1 mile, South, lower	Asbestos-containing wastes, disposal, landfill

4.1.3 EDR Orphan Sites

Forty one additional sites were identified in the EDR search, but due to poor or inadequate address information their locations could not be identified. These sites are considered orphan sites and a review of the available site location information indicates that none of the sites are within a 1-mile search radius of the subject property; additional information regarding these sites' locations and status was not reasonably ascertainable.

4.2 AGENCY FILE REVIEW

4.2.1 Los Angeles Regional Water Quality Control Board Records

A record review request was submitted to Cindy Flores of the Los Angeles Regional Water Quality Control Board (LARWQCB) on December 14, 2005. A copy of the request is presented in Appendix G.

The request covered the UST, WIP, SLIC, Storm water, NPDES, Landfills, WDRs, and enforcement divisions of the LARWQCB. Responses in the form of voice mails and e-mails indicated that no records exist for the subject site.

4.2.2 City of Malibu Records

A record review request was submitted to Gail Sumpter of the City of Malibu on December 14, 2005, Appendix G. E-mail from Ms. Sumpter on December 14, 2005 reported

that the subject site is not in the City of Malibu but located in the unconsolidated area of Los Angeles County.

4.2.3 Los Angeles County Records

EDR found no data for the subject site in a search of Los Angeles County Listing of Solid Waste Facilities, Industrial Waste and Underground Storage Tank Sites, and Site Mitigation List.

A record review request was submitted to Michael Tripp of Los Angeles County on December 20, 2005, Appendix G. Mr. Tripp has not yet replied to our request. A response was received from the Los Angeles County Public Health Department that was related to the restaurant. Since these files are not considered part of an environmental concern, the files were not reviewed.

If E2 receives any additional correspondence from this agency that changes the conclusions of this report, an amendment letter will be prepared.

4.3 GROUND WATER AND OIL PRODUCTION WELLS

The following federal and state databases were searched by EDR for water and oil well information:

- EPA Public Water Systems Data (PWS);
- EPA Public Water Systems Violation and Enforcement Data (PWS ENF);
- USGS Water Wells;
- California Drinking Water Quality Database; and
- California Department of Conservation, Oil and Gas Well Locations for Districts 2, 3, 5, and 6.

These databases did not identify any established oil field or known oil wells located on or near the site. According to the EDR report (Appendix C) there is one ground water production well known to be within a 1-mile radius of the site. Water well data is summarized in Table 3 below.

Table 3
Summary of Water Well Data

Well I.D.	Well Owner/Operator	Well Status	Well Statistics and Data	Distance and Direction from Subject Site
FRDS # 1910806001 WELL 01	Unknown/MET	Active Raw	System Name is Malibu Conservation Camp	1/2 to 1 mile SW

No data were found indicating that these water wells have been impacted by any unauthorized release. Refer to the EDR Report in Appendix C for additional well system and analytical data.

During the site visit, a total of six ground water wells were found on the property. Five of the wells are used intermittently for irrigation of the golf course only. One additional well was abandoned shortly after installation in the late 1970s or early 1980s due to insufficient ground water yield. Additional information on these wells is presented in Section 5.0

4.4 FLOODING AND DRAINAGE

The EDR search of the Federal Emergency Management Agency (FEMA) Flood Zones indicates that the subject site does not lie within a FEMA 100-year or 500-year flood zone. The Flood Plain Panel for the subject site is 0650430754B.

Standing or pooled water or evidence of past occurrence thereof was not observed anywhere on the site except west and adjacent to golf hole No. 2 where an approximately one acre flat-graded area is used as a flood spill-over basin for the golf course.

Surface drainage within the golf course is designed to flow towards the creek and/or the four ponds. Drains connected to underground piping that lead to the creek bed are present throughout the golf course to facilitate drainage. An underground septic tank/leech field is located near the east end of the clubhouse. Natural drainage from the surrounding undeveloped portions of the property either percolates into the subsurface or flows directly onto the golf course or above ground concrete storm water gutters. The storm water gutters that surround the developed portions of the property flow directly onto the golf course or paved parking areas. Surface drainage from the paved portions of the property flow to above ground concrete gutters or below ground storm drains that eventually lead to the creek.

4.5 NATIONAL WETLANDS

The EDR search of the National Wetland Inventory identified that there is a wetland site located at the subject site, Appendix C. The wetland site, the large pond, is classified by the US Fish and Wildlife as a PUBHh wetland: unconsolidated bottom, permanently flooded, impounded area.

4.6 RADON GAS

Radon information for Los Angeles County was obtained from the California Department of Health Services California Radon database, and the USEPA National Radon Database. The USEPA indicates that the subject site lies within Federal EPA Radon Zone 2. Zone 2 is characterized as having indoor average radon levels of between 2 picoCuries per liter of air (pCi/L) and 4 pCi/L. The USEPA recommends avoiding long-term exposure to radon levels greater than 4pCi/L.

5.0 INFORMATION FROM SITE VISIT AND INTERVIEWS

On December 23, 2005, E2 personnel conducted a site visit at the subject site and surrounding area. The objective of the site visit was to identify potential areas of concern that might warrant further Phase II investigation. The visit included guided walkthroughs of facility structures and exterior areas while documenting observations with field notes and photographs. A reconnaissance of the surrounding area to observe adjacent property uses was also conducted. Representatives for the property owner and Malibu Country Club who were present for much of the site visit at the property included Mr. Norihisa Koda, General Manager; Mr. Danny Meherin, Director of Golf; and Mr. Efrain Barragan, Golf Course Superintendent.

In addition to hosting the site visit, Mr. Koda and Mr. Barragan completed an Owner/Occupant Interview Questionnaire. A copy of the questionnaire is included as Appendix H.

The information presented in the following sections was largely developed from observations made during the site visit, from the written interview responses in the questionnaire, and from questions posed to Mr. Koda, Mr. Meherin, and Mr. Barragan during the site visit. A map of the property showing the site layout is shown in Figure 2. Photographs taken during the site visit are presented in Appendix I.

A list of hazardous substances reported/observed at the site and material safety data sheets (MSDS) for select hazardous materials is presented in Appendix J.

5.1 HAZARDOUS SUBSTANCE USAGE AND CONTAINERS

5.1.1 Subject Site

Based on information obtained from persons familiar with the site, hazardous materials and waste are stored and used at the site and there has been no history of illegal disposal, storage, or handling of hazardous substances on the subject site. Hazardous materials are used at the site in operations involving facility/equipment maintenance, landscaping, and food services. These site operations also generate small quantities of hazardous waste in the form of used grease and oil.

Hazardous substances are generally stored and used from their original containers. However, some materials such as lubricants, oils, fuels, pesticides, herbicides, and fertilizers are transferred into other containers for use at the site. Containers used for storage of hazardous materials and waste at the site generally include ASTs, USTs, 55 gallon steel or poly drums, 5 gallon buckets/canisters, and plastic or metal containers that are less than 5 gallons in size. Drums were observed stored in garage areas, storage huts, and open areas. Smaller containers were observed stored in a 20-ft long steel storage container, closets, cabinets, or on shelves/counters in usage areas.

Fertilizers, compost, and other growing agents were observed stored in their original sacks in the steel storage container and in open areas. Stockpiles of compost and fertilizer were also

observed stored in concrete bays. Hazardous material and waste containers observed at the site in multiple or significant quantities are listed in Appendix J.

5.1.2 Surrounding Sites

The developed portions of the property are generally surrounded by undeveloped terrain that includes the Santa Monica Mountains National Recreation Area. A few isolated residences were also observed on the ridges and hills above the property. Encinal Canyon Road is adjacent to much of the southernmost property lines. No potential environmental concerns related to hazardous materials storage or usage was observed on adjacent properties, although access to these properties was limited. Site personnel present during the site visit reported no past or present environmental concerns with adjacent properties.

5.2 STORAGE TANKS

Seven ASTs were observed at the property for storage of liquid fuels, propane gas, and water. During the site visit, Mr. Barragan stated that to the best of his knowledge USTs have not been used at the site for storage of hazardous substances such as fuels. Photographs of the storage tanks discussed hereafter are shown in Appendix I.

5.2.1 Fuel ASTs

One 1,000 gallon AST for storage of gasoline and one 500 gallon AST for storage of diesel fuel were observed at the site near the west exterior of the maintenance building. Hazardous material placards were present on each tank. The tanks are constructed of double-wall steel. According to tags on the tanks, they were constructed by Advanced Tank Manufacturing, Inc. in March 1994 and April 1994 for the 500 gallon AST (tank no. 870289) and 1,000 gallon AST (tank. no. 670290), respectively. Both tanks are secured to an uncovered concrete pad built into the base of an unpaved steep slope. A concrete block wall and berm surround the tank pad. A drain hole in the berm was not plugged. The drain hole bleeds onto asphaltic concrete pavement that is incased within an older concrete berm that was cracked and broken in places. Fuel is pumped directly from the ASTs into equipment or fuel canisters using the nozzles attached to each tank. No cracks, holes, or leaks were observed on the exterior of the tanks. No obvious staining or degradation of the underlying concrete pad was observed. Oil-like stains were present on the asphaltic concrete surface within the older concrete berm. A current Hazardous Materials Disclosure Permit issued by the Los Angeles County Fire Department was on display inside the maintenance building.

5.2.2 Propane ASTs

One 1,150 gallon steel AST and two 500 gallon steel ASTs for storage of liquid propane were observed at the site. One of the 500 gallon ASTs and the 1,150 gallon AST are located south and northwest, respectively, from the club house buildings. The remaining 500 gallon AST is located on the southwest side of the maintenance building. Hazardous material placards were present on each tank. Each tank is secured to a concrete pad and surrounded by a block wall and steel gate. Underground piping is used to deliver the propane to adjacent facilities for use with cooking and

heating. No cracks, holes, leaks or unusual staining were observed on the exterior of the tank and on the surface areas beneath and directly adjacent to the tank.

5.2.3 Irrigation Water AST

One 15,000 gallon steel AST for storage of water pumped from the onsite wells was observed at the site. The tank is located northwest of the maintenance building. The tank sits on a concrete pad. Water stored in this tank is used for irrigation purposes on the golf course. No signs of leaks or unusual staining were observed on the exterior of the tank and on the unpaved areas directly adjacent to the tank.

5.3 Underground Septic Tanks

A total of three underground septic tanks with leech fields are known to be present at the site. One tank is located east of the club house building, one tank is located south of the maintenance building, and one tank is located on the golf course. According to Mr. Koda, there have been no known leaks or overflows from their septic tank systems. No unusual odors or muddy/wet surfaces were observed in the vicinity of the septic tanks during the site visit.

Two additional septic tank systems may be associated with the two residential structures on the property; information regarding the waste disposal systems for these structures has not been provided for this assessment.

5.4 Grease Trap

A 150-lb capacity subterranean grease trap was observed outside and immediately north of the club house building. Used grease from the nearby kitchen is flushed into the trap through underground piping. The grease is removed from the tank periodically as needed by Enviro-Tech of Santa Clarita, California. No unusual odors or stains were observed on the surface area surrounding the grease trap.

5.5 Hazardous Materials Storage Container

A 20-feet long steel storage container is used at the site to store various hazardous materials used for golf course and facility maintenance. The container is isolated on the west side of the property approximately 200 feet west of the tee box for golf hole No. 2. Signs on the container identified it as a poison storage area and the container is locked except when loading or unloading materials. Various pesticides, herbicides, fungicides, fertilizers, and growing agents are stored in this structure.

According to Mr. Barragan, spent pesticide, herbicide, and fungicide containers are removed from the site by vendors when they deliver new materials. The interior was well kept and devoid of obvious spills or unusual staining. No unusual stains or stressed vegetation were observed in the area around the storage container, and no spent hazardous material containers were observed outside the storage unit.

Hazardous materials observed to be stored in this container in significant quantities are listed in Appendix J.

5.6 MAINTENANCE BUILDING

Hazardous materials were observed stored in and around the maintenance building for use with golf course/facility landscaping, maintenance, equipment, and vehicles. The interior of the building has a concrete foundation while the adjacent exterior surfaces are a combination of asphaltic concrete and unpaved areas. Industrial and commercial chemicals were primarily located in multiple storage areas including an interior storage room adjacent to the employee break room, shelves/counters in the garage area, a fire-proof cabinet adjacent to the fuel ASTs, and an exterior drum storage area.

A list of hazardous materials in significant quantities observed or reported to be stored in and around the maintenance building is listed in Appendix J.

5.6.1 Garage and Break Room Storage Areas

Hazardous materials stored and used in the garage and break room storage area of the maintenance building include used oil, unused lubricants/grease, degreasing agents, antifreeze, plastic pipe cement, adhesives, paint, pesticides, gasoline, and diesel. The materials were contained in drums, <1 gallon metal or plastic canisters, fuel cans, and 5 gallon buckets. Isolated oil-like stains were present on the concrete surface within the garage and the paved exterior of the building to the west and south.

A list of hazardous substances in significant quantities observed to be stored in these areas is listed in Appendix J.

5.6.2 Outdoor Fuel Storage Cabinet

An outdoor fire proof metal fuel storage cabinet is used to store diesel and gasoline canisters for use with vehicles and equipment. The cabinet is located next to the fuel ASTs. Approximately 15 fuel canisters were observed inside the cabinet or on the ground adjacent to it. No unusual staining was observed on the immediate surface area surrounding the cabinet.

5.6.3 Used Oil and Paint Storage

A total of 11 drums containing used oil and grease were observed stored in wood huts less than 100 feet southeast of the maintenance building. Five used empty drums and ten empty or near empty 5 gallon paint containers were also stored at this location. The used oil and grease drums were stored on either wood pallets or plastic sump-pallets underlain by an unpaved surface. Some drums were not covered with lids and dark gray to black oil-like stains were observed on the ground surface beneath and around the pallets. The site general manager and the superintendent reported that used oil and grease are periodically removed from the site by a hazardous substances transporter.

5.7 COMPOST HEAPS

Fertilizer and compost heaps were observed approximately 500 feet north-northwest of the maintenance building adjacent to an unpaved road. The heaps were lying on uncovered concrete pads surrounded by concrete block walls on three sides. Fertilizer and compost from these heaps is used for golf course and facility landscaping. The heaps appeared organized and well kept.

5.8 POLY CHLORINATED BIPHENYLS (PCBS)

Above ground power transformers that may contain PCBs were not observed on or adjacent to the subject site. Transformers located on the site are located in underground vaults. However, the age of these transformers and whether they contain PCB materials was not known.

5.9 SOLID WASTE DISPOSAL

There is no indication that illegal or unreported dumping of solid waste has degraded the site. There are a number of dumpsters at various locations on the subject site. All dumpsters appeared well maintained. No hazardous material containers were observed inside the dumpsters. Solid waste removal at the site is managed by the Los Angeles County Sanitation District.

5.10 ASBESTOS AND LEAD-BASED PAINT

No investigation was performed to determine the presence of asbestos or lead-based paint at the subject site. Given the age of the development, the presence of these materials is considered unlikely.

5.11 WATER AND OIL PRODUCTION WELLS

According to Mr. Barragan, six ground water production wells were installed at various locations throughout the site in the mid to late 1970s to produce water for irrigation purposes. One of the production wells was abandoned shortly after installation due to very low yield. Generally, the yield from these wells is reported to be sufficient only to provide seasonal water supplements to the potable water irrigation system used year-round. Mr. Barragan also indicated the wells are deep with one or more wells having a total depth of approximately 1,100 feet below ground surface. Additional construction details were not made available for inclusion in this report. There are no known oil production wells at the site or neighboring properties.

5.12 STREAM AND PONDS

Trancas Creek, a perennial stream, and four ponds lie within the property boundaries. Much of the surface drainage at the site flows to the stream, which has undergone some flood control engineering throughout the site. The ponds are small in size (less than one acre) and located along the path of the stream. No signs of illegal dumping were observed in or along the banks of the ponds and stream. According to the general manager, there have been no pollution violations levied against the Malibu Country Club for pesticide, herbicide, and fertilizer contamination of the stream or downgradient watershed.

Chemical testing was last performed on the incoming and outgoing stream water at the site in October 2004. The results of this testing indicated that pesticides were not detected in the outgoing stream water sample. A copy of the laboratory results from the County of Los Angeles, Department of Agricultural Commissioner/Weights and Measures are included in Appendix H.

6.0 INFORMATION PROVIDED BY PROSPECTIVE PURCHASER/USER

In order to qualify for the AAI Rule defense, Part 312.22 indicates that the prospective purchaser or user of the ESA must conduct the following inquiries and may provide the information associated with the inquiries to the environmental professional conducting the assessment to be included in the report.

- Searches for recorded environmental cleanup liens against the subject property (unless otherwise obtained by the environmental professional);
- Specialized knowledge of the subject property, the conditions of adjoining property and any other experience relevant to the inquiry for the purpose of identifying conditions indicative of releases or threatened releases;
- The relationship of the purchase price to the value of the property, if the property was not contaminated; and
- Any commonly known or reasonably ascertainable information about the property.

A questionnaire was developed in ASTM 1527-05 to cover these items, along with the addition of a few others. In order to satisfy the requirement, the questionnaire presented in Appendix K, was submitted to Mr. Scott Pollard, representative of the purchaser of the property. To date, this questionnaire has not been completed and received from Mr. Pollard.

7.0 SUMMARY OF FINDINGS

This Phase I ESA for the subject property has resulted in the following general findings:

- The property is currently occupied by the Malibu Country Club, which operates an 18-hole golf course, restaurant, pro shop, snack bar, and two residences.
- Based on the review of historical aerial photographs and topographic maps, the site was generally undeveloped except for a few isolated residences within the current property boundaries prior to the development of the golf course and country club house in 1977.
- Of the agency databases searched, the subject site was identified only in the HAZNET database for handling of oil-containing wastes.
- There are two properties listed in agency databases within a 1-mile radius of the subject site. Evaluation of these records indicates that the listed sites are located at lower elevations than the site, and are unlikely to have adversely impacted the subject site.
- There are no recognized hazardous waste generators, handlers, or storage facilities within a 1-mile radius that are out of compliance with State and Federal regulations and that could environmentally impact the site or human health.
- The review of the title report did not identify any environmental liens but did identify easements. These easements are for utilities and roads.
- Impacts of pesticide and fertilizer contamination to stream water downgradient of the site were not evident in chemical testing performed in October 2004.
- Based on the site visit, the only area of concern regarding hazardous materials use, storage and disposal is surficial contamination observed in the used drum storage area near the maintenance building. Oil-like stains were observed on the unpaved surface in this area.
- No areas of concern were observed on adjacent properties.

8.0 DISCUSSION RELATIVE TO DATA GAPS

The AAI Rule requires that the environmental professional:

1. Identify data gaps that remain after the conduct of all required activities;
2. Identify the sources of information consulted to address such data gaps; and
3. Comment upon the significance of such data gaps with regard to his or her ability to identify conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the property.

Based on the completion of this Phase 1 ESA, E2 has not identified any data gaps.

9.0 CONCLUSIONS AND RECOMMENDATIONS

We have performed this *Phase I Environmental Site Assessment Report* for the Malibu Country Club in Malibu, California in conformance with the scope and limitations of the AAI Rule (40 CFR Part 312) and have generally followed the more stringent standards of ASTM E 1527-05. Any deviations from the AAI Rule are noted in Section 11.0. This assessment has revealed no evidence of *recognized environmental conditions* (RECs) in connection with the property, except for the following:

- Fuel ASTs are situated on a concrete pad with limited secondary containment. Upon closure or demolition, the underlying concrete should be inspected and underlying soil samples should be collected for chemical analyses if staining or other evidence of leaks or spills are found.

- A grease trap is present near the club house for storage of waste cooking grease and oil. Upon closure or demolition, this trap should be inspected, and underlying soil samples should be collected for chemical analyses if staining or evidence of cracks or leaks are found.

- Used oil and grease drums in the vicinity of the maintenance building are stored on pallets in unpaved areas without adequate secondary containment, allowing spills or releases of stored materials to reach underlying soil. Oil-like stains were in fact observed on the ground surface adjacent to these drums. Visibly stained soils should be excavated and removed for appropriate offsite disposal, and underlying soil samples should be collected for chemical analyses if additional staining or evidence of spills is found.

- The hazardous materials storage container used for storage of pesticides, herbicides, fungicides, and fertilizer is situated on an unpaved area with no secondary containment. Consequently, spills or releases of stored chemicals may reach underlying soil. Secondary containment and a spill response kit should be provided to control any spills or leaks in this area. Upon closure or demolition, the underlying soil should be inspected and soil samples should be collected for chemical analyses if staining or other evidence of leaks or spills is found.

- Five active and one abandoned ground water production wells are located on the property. Should these wells no longer be used for providing water supplements for irrigation purposes they should be properly abandoned in accordance with State law and local agency requirements.

- The site has a history of pesticide and fertilizer use to maintain the golf course landscape. Should the golf course be redeveloped for residential or commercial use, the underlying soil should be inspected and soil samples should be collected for chemical analyses to determine if there has been an impact to subsurface soil from these potentially hazardous substances. Based on results of stream water testing

performed in October 2004, it is unlikely that usage of pesticides and fertilizers at the site have adversely impacted the surface watershed downgradient of the site.

Since there was no direct evidence of significant fuel or hazardous materials releases, a Phase II Assessment (chemical analysis of surface or subsurface soil and/or water) at the subject site is not considered necessary at this time. The surficial stained soil located in the drum storage area should be removed and properly disposed of off site.

10.0 DEVIATIONS

There were no deviations to the AAI Rule.

11.0STATEMENT AND SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

11.1 STATEMENT OF QUALIFICATIONS ACCORDING TO 40 CFR PART 312

The following statement is required to comply with the AAI Rule, 40 CFR Part 312.21.

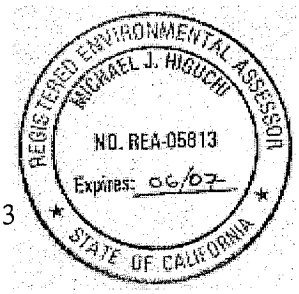
> "I declare that, to the best of my professional knowledge and believe, I meet the definition of Environmental Professional as defined in §312.10 of this part"
>
> I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

11.2 CLOSING REMARKS AND SIGNATURE

E2, Environmental, Inc. appreciates the opportunity to be of service. If you have any questions regarding this report or need additional information, please do not hesitate to contact the undersigned.

Respectfully submitted,

E2 ENVIRONMENTAL, INC.



Michael Higuchi, R.E.A. No. 5813
Senior Project Manager

12.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

Michael Higuchi is a Certified Engineering Geologist, Registered Civil Engineer, and Registered Environmental Assessor in the State of California (Nos. 1879, 58992, and 5813, respectively). Mr. Higuchi currently possesses over fourteen years experience in researching and preparing Phase I Environmental Site Assessments.

13.0 REFERENCES

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Figures

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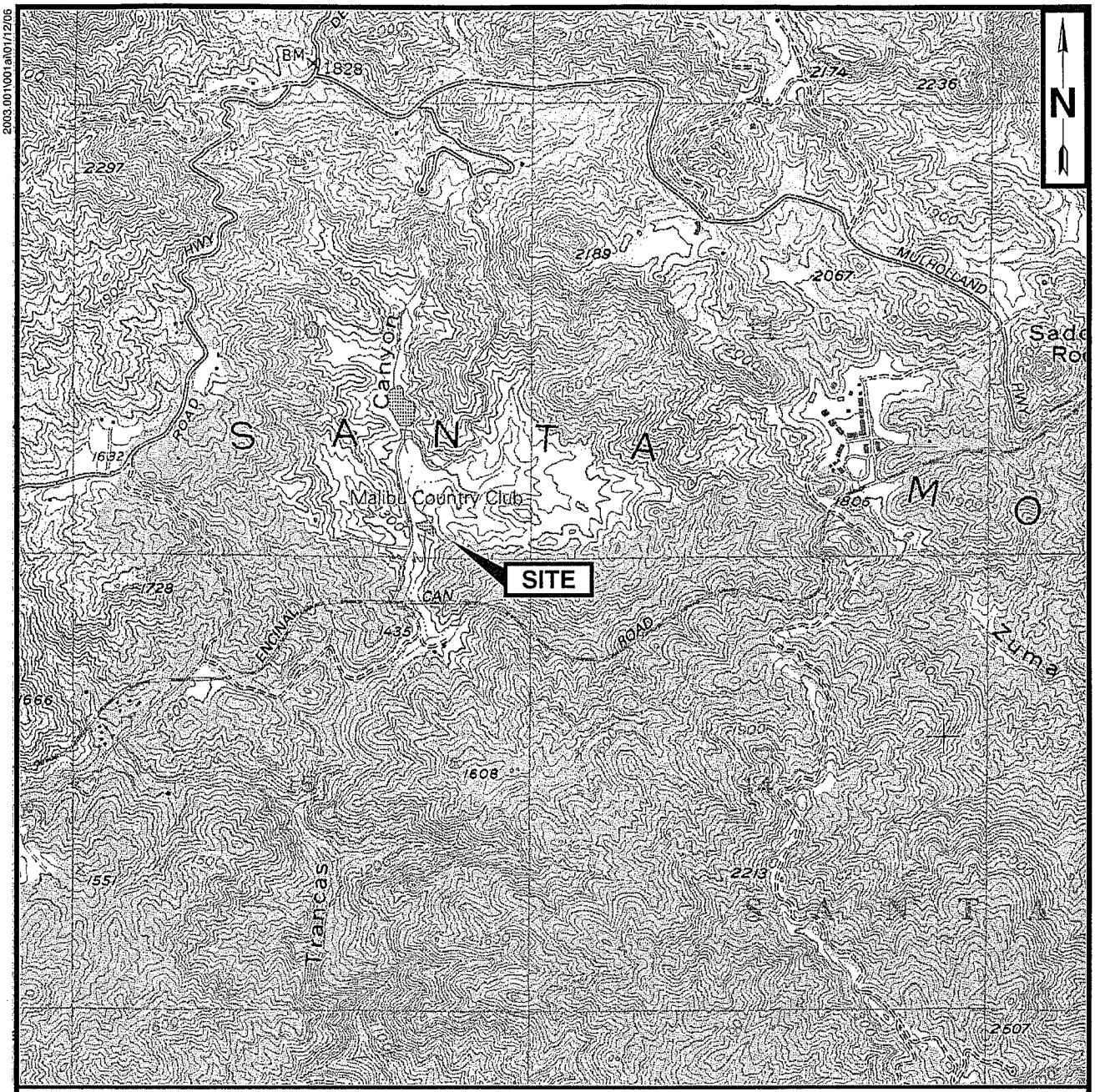
2003.001\001a\01/12/06



0 2000 4000 FEET

APPROXIMATE SCALE

FIGURE 1

SITE LOCATION MAP

MALIBU COUNTRY CLUB
MALIBU, CALIFORNIA

PREPARED FOR

SCOTT S. POLLARD, ESQ.
NEWPORT BEACH, CALIFORNIA

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REFERENCE:
7.5 MINUTE ENVIRONMENTAL DATA RESOURCES
REVISED: 1966-1994

2000.001\002\01/12/06

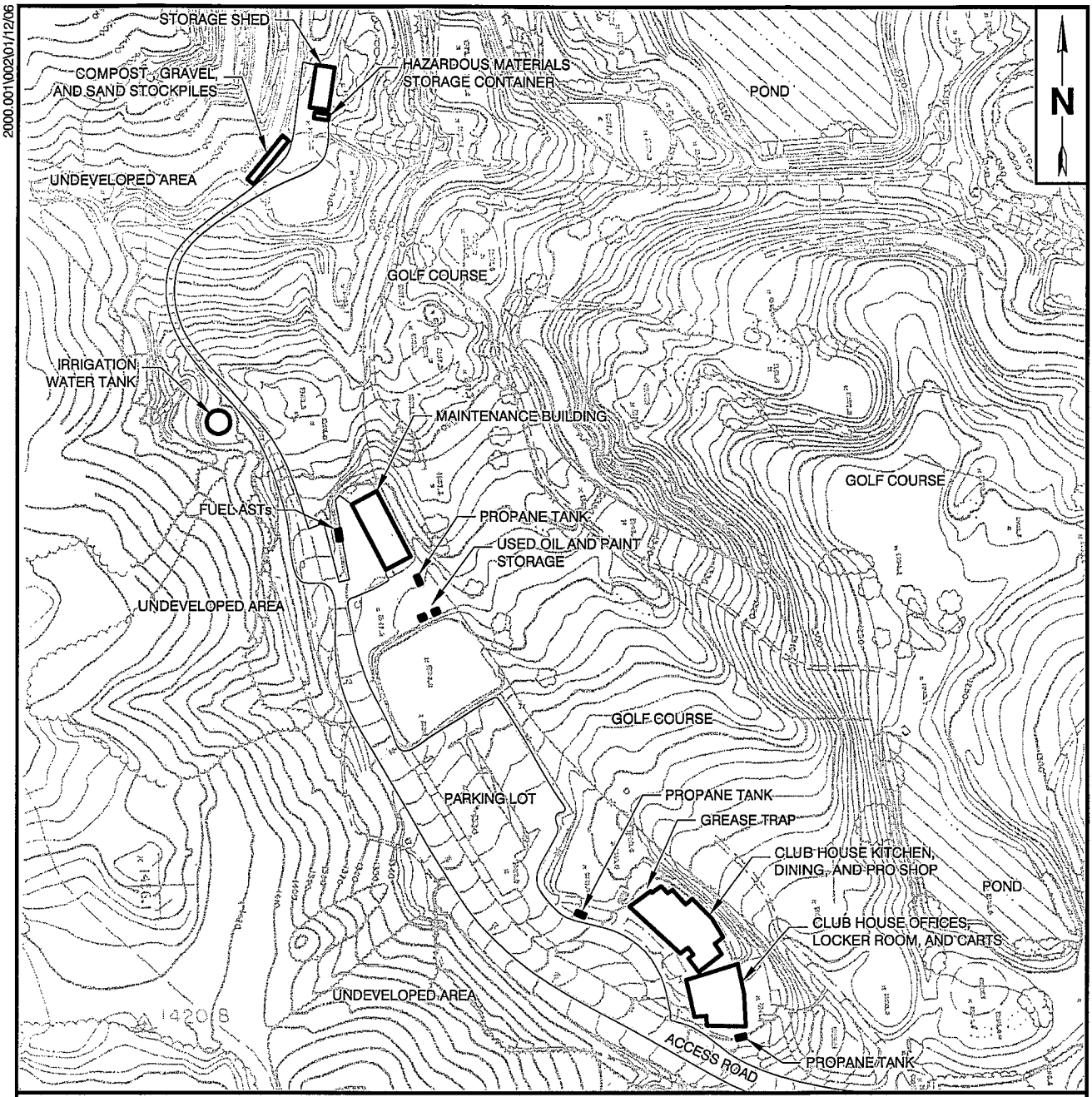

FIGURE 2

PARTIAL SITE PLAN

MALIBU COUNTRY CLUB
MALIBU, CALIFORNIA

PREPARED FOR

SCOTT S. POLLARD, ESQ.
NEWPORT BEACH, CALIFORNIA

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REFERENCE:
MALIBU COUNTRY CLUB

APPENDICES (PROVIDED ON THE ATTACHED CD)

APPENDIX A:	PRELIMINARY TITLE REPORT AND AERIAL TOPOGRAPHY MAP
APPENDIX B:	SANTA MONICA RECREATION AREA MAP
APPENDIX C:	EDR REPORT
APPENDIX D:	HISTORICAL AERIAL PHOTOGRAPHS AND USGS TOPOGRAPHIC MAPS
APPENDIX E:	EDR CITY DIRECTORY ABSTRACT
APPENDIX F:	EDR SANBORN® MAP INFORMATION
APPENDIX G:	FILE REQUESTS
APPENDIX H:	OWNER/OPERATOR INTERVIEW QUESTIONNAIRE AND TENDERED DOCUMENTS
APPENDIX I:	SITE PHOTOGRAPHS
APPENDIX J:	LIST OF REPORTED/OBSERVED HAZARDOUS SUBSTANCES AND SELECT MATERIAL SAFETY DATA SHEETS
APPENDIX K:	PROSPECTIVE BUYER/USER QUESTIONNAIRE

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November 5, 2012

(via email)
Project# 2136.100

Attention: Mr. Tom Hix
Malibu Associates, LLC
480 San Antonio Road, Suite 205
Mountain View, CA 94040

Environmental Site Assessment Information Update
Malibu Golf Club
Malibu, California

Dear Mr. Hix:

Pursuant to your request, E2 Environmental, Inc. (E2) is pleased to submit this Environmental Site Assessment (ESA) Information Update for the Malibu Golf Club (formerly the Malibu Country Club and herein referred to as *"the site"*, *"the property"*, or *"the subject site"*) located at 901 Encinal Canyon Road in Malibu, California. The information provided hereafter is presented as an update to the findings presented in the E2-authored, American Society for Testing and Materials (ASTM)-compliant, Phase I Environmental Site Assessment Report (Phase 1 ESA) dated January 13, 2006 for the subject site.

Scope of Work

The scope of work completed in preparation of this report, as presented in our proposal/contract, was intended to identify *significant and obvious* environmental issues related to the subject site since the Phase I ESA was completed in 2006 and is as follows:

- Conducted a site visit (September 26, 2012) in accordance to the ASTM standard for Phase 1 ESAs;
- Interviewed appropriate site personnel;
- Submitted to Malibu Associates, LLC a questionnaire regarding recent (since 2006) site activities and characteristics to be filled out by appropriate Malibu Golf Club employee(s) and/or other personnel deemed appropriate by Malibu Associates, LLC;
- Obtained and reviewed a records search of federal, state, and local agency databases for information pertaining to the site and surrounding area; and
- Analyzed information gathered as a result of this effort to update the 2006 Phase 1 ESA. Documented findings, which indicate known or suspected "recognized environmental conditions (RECs)" as defined by ASTM, in an ESA Information Update Report.