LOS VALLES PROJECT

Draft Environmental Impact Report

Volume XIII – Appendices

SCH No. 2013121056
Project No. 98-034
Revised Vesting Tentative Tract No. 52584
Variance No. 201300003
Conditional Use Permit No. 201300081
Oak Tree Permit No. 201300023
Environmental Assessment No. 201300138

Lead Agency:

County of Los Angeles
Department of Regional Planning
Land Divisions
320 West Temple Street, Room 1362
Los Angeles, CA 90012

Prepared by:

Impact Sciences, Inc.
28 N. Marengo Avenue
Pasadena, CA 91101

March 2016

APPENDIX 5.6-8

Allan E. Seward Engineering Geology, Inc.,
Geologic/Geotechnical In-Grading Report No. 22, November 5, 2008.

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological And Geotechnical Consultants

November 5, 2008 Job No: 08-1617LV-2

Los Valles Company, L.P.
28909 Hasley Canyon Road
Santa Clarita, California 91384

Attention: Mr. Jeff Kaplinski

Subject: **GEOLOGIC/GEOTECHNICAL IN-GRADING REPORT NO. 22**
Grading Operations (GPC No. 04-0802-002)

Project: Tract 52584
Los Valles
Castaic, Los Angeles County, California

References: See end of text

Dear Mr. Kaplinski:

This monthly in-grading report, which is submitted in compliance with the requirements of the County of Los Angeles Department of Public Works Geotechnical and Materials Engineering Division, describes earthwork grading operations performed at the project site from October 6, 2008 through November 5, 2008.

As of September 16, 2008, the rough grading operations at the project site have been stopped. Our field testing and documentation of the existing surface conditions continued until September 19, 2008. Our geologic and geotechnical field services are continuing for items related to the construction of the proposed Forebay Tank, Booster Station and Water Reservoir, illustrated on the Water System Improvements for Tract 52584 Plans for Los Angeles County Waterworks District 36, Val Verde.

1.0 BACKGROUND

Grading operations for the above-referenced project began on January 5, 2007. The grading work is being performed by J.W. Sutter, Inc., in accordance with the recommendations provided in the referenced reports and in accordance with the project grading plans dated December 29, 2006, prepared by Alliance Land Planning and Engineering, Inc. As of March

3, 2008, Land Design Consultants, Inc has replaced Alliance Land Planning as the supervising Civil Engineer of record for the grading operations.

Survey control is being performed by Pinnacle Land Surveying, Inc. Observation of the grading operations and testing of compacted fill materials at the subject site are being performed by representatives of Allan E. Seward Engineering Geology, Inc. (AESEGI).

2.0 GRADING

2.1 Stop Work Notice

The County of Los Angeles grading inspector issued a stop work notice for the rough grading operations on January 9, 2008. This stop work notice for the grading operations was lifted for the eastern portion of the tract on February 26, 2008. The stop work notice was lifted for the western portion of the site on April 29, 2008.

2.2 General

To date, grading operations at the project site have consisted of excavating surficial soil, artificial fill, alluvial deposits, Terrace deposits and Saugus Formation bedrock and placing these materials as compacted fill. These operations have been performed in the following general manner:

1. Vegetation, trash, and other debris were cleared from the areas where earthwork operations were performed.

2. Natural soils and man-placed fills were excavated in order to expose a competent subgrade on which to place fill. Excavation subgrades were observed and selectively tested by a representative of AESEGI and surveyed by the Project Surveyor prior to placement of fill.

3. The subgrade soils were scarified to a depth of about 6 inches, water-treated or air-dried (if required) to achieve a moisture content approximately equal to the Optimum Moisture Content, and mixed in-place. The resulting water-conditioned subgrade soil was then compacted to the required relative compaction (prior to placement of fill).

4. On-site soils were used to construct the compacted fill.

5. Fill soil was placed in lifts using Caterpillar D5, D6, D8, and D10 dozers and Caterpillar 637 and 657 scrapers. The thickness of each fill lift prior to compaction was approximately 8 inches, or less.

6. Water was added using Caterpillar 615 water-pulls and six wheel drive water trucks (at locations where moisture content of fill material was lower than Optimum Moisture Content).

7. Each fill lift was compacted before the subsequent fill lift was placed over it. The fill lifts were compacted using a Caterpillar 824 rubber-tired compactor and Caterpillar 637 and 657 scrapers.

2.3 Subdrains and Backdrains

To date, 42,898 lineal feet of excavations for subdrains and backdrains have been observed by AESEGI. The following pipes (and the associated bedding and backfill) were installed in these excavations:

- 10,193 lineal feet of 4-inch diameter perforated pipe (backdrain)
- 4,773 lineal feet of 4-inch diameter solid pipe (backdrain)
- 12,855 lineal feet of 6-inch diameter perforated pipe (canyon subdrain)
- 343 lineal feet of 6-inch diameter solid pipe (canyon subdrain)
- 7,013 lineal feet of 8-inch diameter perforated pipe (canyon subdrain)
- 543 lineal feet of 8-inch diameter solid pipe (canyon subdrain)
- 6,827 lineal feet of 10-inch diameter perforated pipe (canyon subdrain)
- 351 lineal feet of 10-inch diameter solid pipe (canyon subdrain)

All constructed subdrains were surveyed by the Project Surveyor.

2.4 Field Observation and Testing

Observations and periodic testing of earthworks at the project site were performed by a representative of AESEGI to check compliance of the earthworks with the project plans and specifications. Our field representative at the site provided professional opinions and

recommendations to the Owner based on our observations of the Contractor's work and on subsurface conditions that we observed during earthwork operations.

In-place field density and moisture content tests were performed at least for every 1,000 cubic yards of fill placed and at least for each 2 vertical feet of fill placed. The field density and moisture content tests were performed in accordance with ASTM D1556 (Sand Cone test method), ASTM D2922 (Nuclear Density test method), and ASTM D3017 (Nuclear Moisture test method). At least ten percent of the in-place density tests were performed using the Sand Cone test method.

The required compaction percentage for fill and fill subgrades for this project is at least 85% of Maximum Dry Density, (per ASTM D1557) for non-structural areas of the golf course and at least 90% or 93% for all the remaining areas, depending on depth beneath final grade. At locations where compaction of excavation subgrades or fill was insufficient, the soil was re-worked, re-compacted, re-tested, and determined to be satisfactory prior to placement of additional fill lifts.

Removal and recompaction of Slopewash and Alluvium deposits within Canyons F-4, F-5, F-6, F-7, F8, F-9, F11, and F13 were not yet completed when rough grading operations at the site were halted.

2.5 Tunnels

The over-excavation for Tunnel A has been completed and backfilled to foundation subgrade. Grading construction of the slopes above and adjacent to Tunnel A had not yet been completed when rough grading operations at the site were halted.

The over-excavation for Tunnel B has been completed and backfilled to foundation subgrade. Grading construction of the slopes above and adjacent to Tunnel B had not yet been completed when rough grading operations at the site were halted.

The over-excavation for Tunnel C has been completed and backfilled to foundation subgrade. Also, excavation of the footing foundations of Tunnel C has been completed. However, rebar had not yet been placed within the excavations when the rough grading operations were halted. It is our understanding that construction of the tunnel structure has also been halted.

2.6 Landslides

Grading operations related to removal of Landslide Qls-5 were not yet completed when rough grading operations at the site were halted. Grading operations related to removal of Landslides Qls-1, Qls-2, Qls-3, Qls-4, Qls-7, and Qls-8 have been completed. To date, geologic conditions exposed during removal of the landslide deposits are consistent with the conditions encountered during our exploration of the site. As shown in the grading plan, portions of Landslide Qls-6 will be left in place. Portions of Qls-6 to be left in place will be placed within a Restricted Use Area (RUA). All other landslides at the project site will be completely removed during subsequent grading operations. An Engineering Geologist from our office will observe and document removal of the landslides.

2.7 Cut Slopes

Construction of cut-slopes CS-6, CS-11, CS-23, CS-25, CS-26, and CS-29, was not yet completed when rough grading operations at the site were halted. Construction of the stability fills recommended for cut-slopes CS-14, and CS-18, for a portion of cut-slope CS-19, for a portion of cut-slope CS-23, and for cut-slope CS-35 was not yet completed when rough grading operations at the site were halted. Geologic conditions exposed in the vicinity of the cut slopes are consistent with the conditions encountered during the exploration of the site.

3.0 CONCLUSIONS AND RECOMMENDATIONS

1. All measures necessary for prevention of potential erosion of graded areas during the rainy winter months should be implemented.

2. A report which summarizes relevant geologic/geotechnical aspects of earthworks performed at the project site will be submitted following completion of the grading operations.

3. Additional monthly In-Grading reports will be submitted when the Rough Grading operations resume.

This opportunity to be of service is greatly appreciated. If you have any questions regarding this report, please call us.

Respectfully submitted,

Victor Goethals, CEG 1759
Associate Geologist

Martin J. Goodman, GE 2146
Principal Geotechnical Engineer

The following attachment completes this report:

References

Distribution: (2) Los Valles Company, L.P.
Attn: Mr. Jeff Kaplinski
(3) Land Design Consultants, Inc.
1-Attn: Mr. Chuck Gilman
2-Los Angeles County Department of Public Works Geotechnical and Materials Engineering (Hardcopy and Electronic copy)
Attn: Soils
Attn: Geology

REFERENCES

Reports by Allan E. Seward Engineering Geology

1. **Geologic and Geotechnical Report**
Vesting Tentative Tract map 52584
Castaic, California
Dated January 15, 1999 – JN: 99-1617-4

2. **Geologic and Geotechnical Report – Addendum No. 1**
Response to County Comments (Review Sheet dated 3/3/99, 3/4/99, 5/6/99, 9/9/99 and 9/16/99)
Geologic and Geotechnical Report – Revised Map
Revised Vesting Tentative Tract No. 52584 (Revised 10/99)
Castaic, California
Dated October 22, 1999 – JN: 99-1617-4

3. **Geologic and Geotechnical Report - Addendum No. 2**
Response to County Comments (Review Sheet dated 11/18/99 and 12/28/99)
Castaic, California
Dated March 31, 2000 – JN: 00-1617-4

4. **Geologic and Geotechnical Report – Addendum No. 3**
Vesting Tentative Tract 52584
Response to County Comments (Review Sheets dated 5/4/00 and 5/23/00)
Castaic, California
Dated June 7, 2000 – JN: 00-1617-4

5. **Geologic and Geotechnical Report – Addendum No. 4**
Revised Vesting Tentative Tract 52584 (Revised 12/2000)
Castaic, California
Dated January 9, 2001 – JN: 01-1617-4

6. **Geologic and Geotechnical Report – Addendum No. 5**
Response to Los Angeles County Geologic and Soils Engineering
Review Sheets dated January 27, 2003 and January 28, 2003
Geologic and Geotechnical Report
Amended Vesting Tentative Tract map (dated April 15, 2003)
VTT 52584
Halsey Canyon
Dated April 16, 2003 – JN: 03-1617-4

7. **Geologic and Geotechnical Report – Addendum No. 6**
Response to Los Angeles County Geologic Review Sheet dated July 10, 2003 and Soils Engineering Review Sheet dated July 9, 2003
Geologic and Geotechnical Report
Amended Vesting Tentative Tract map
VTT 52584
Los Valles Company, L.P.
Dated August 27, 2004 – JN: 04-1617LV-4

8. **Geologic and Geotechnical Report**
Review of Rough Grading Plans (Dated July 7, 2004)
Tract 52584
Castaic, County of Los Angeles
September 17, 2004 – JN: 04-1617LV-5

9. **Geologic and Geotechnical Report – Addendum No. 1**
Review of Revised Rough Grading Plans (Dated July 30, 2004)
Tract 52584
Castaic, County of Los Angeles
Dated December 28, 2004 – JN: 04-1617LV-5

10. **Geologic and Geotechnical Report – Addendum No. 2**
Response to Los Angeles County Geologic Review Sheet dated January 26, 2005 and Soils Engineering Review Sheet dated January 27, 2005 (Grading Plan Check No. 0408020002)
Tract 52584
Rough Grading Plans (GPC. No. 0408020002)
Castaic, County of Los Angeles
Dated February 2, 2005 – JN: 05-1617LV-5

11. **Geologic/Geotechnical Report**
Review of Los Valles Golf Tunnel Plans
Tract 52584
Castaic, County of Los Angeles
July 25, 2006 – JN: 06-1617LV-9

REFERENCES

12. **Geologic and Geotechnical Report – Addendum No. 1**
Response to Los Angeles County Geologic Review Sheet dated July 31, 2006 and Soils Engineering review Sheet dated August 3, 2006
(Grading Plan Check No. 0408020002)
Tract Map No. 52584
Los Valles Golf Tunnel Plans (G.P.C. No. 0408020002)
Castaic, County of Los Angles, California
Dated August 30, 2006 – JN: 06-1617LV-9

13. **Geologic and Geotechnical Report – Addendum No. 2**
Response to Los Angeles County Geologic Review Sheet dated October 17, 2006 and Soils Engineering review Sheet dated October 11, 2006
(Grading Plan Check No. 0408020002)
Los Valles Golf Tunnel Plans
(G.P.C. No. 0408020002)
Tract Map No. 52584
Castaic, County of Los Angles, California
Dated November 30, 2006 – JN: 06-1617LV-9

14. **Geologic Report**
Restricted Use Area
Vesting Tract 52584-01, Lots 1 through 62
Castaic, County of Los Angles, California
Dated January 5, 2007 – JN: 07-1617LV-9

15. **Geologic/Geotechnical In-grading Report No. 1**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated February 5, 2007 – JN: 07-1617LV-2

16. **Geologic/Geotechnical In-grading Report No. 2**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated March 5, 2007 – JN: 07-1617LV-2

17. **Geologic/Geotechnical In-grading Report No. 3**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated April 5, 2007 – JN: 07-1617LV-2

18. **Geologic/Geotechnical In-grading Report No. 4**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated May 7, 2007 – JN: 07-1617LV-2

19. **Geologic Report**
Restricted Use Areas
Vesting Tract 52584-02, Lots 1 through 109
Castaic, County of Los Angles, California
Dated May 31, 2007 – JN: 07-1617LV-2

20. **Geologic/Geotechnical In-grading Report No. 5**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated June 5, 2007 – JN: 07-1617LV-2

21. **Geologic/Geotechnical In-grading Report No. 6**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated July 5, 2007 – JN: 07-1617LV-2

22. **Geologic/Geotechnical In-grading Report No. 7**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated August 5, 2007 – JN: 07-1617LV-2

REFERENCES

23. **Geologic/Geotechnical In-grading Report No 8**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated September 5, 2007 – JN: 07-1617LV-2

24. **Geologic/Geotechnical In-grading Report No. 9**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated October 5, 2007 – JN: 07-1617LV-2

25. **Geologic/Geotechnical In-grading Report No. 10**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated November 5, 2007 – JN: 07-1617LV-2

26. **Geologic/Geotechnical In-grading Report No. 11**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated December 5, 2007 – JN: 07-1617LV-2

27. **Geologic/Geotechnical In-grading Report No. 12**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated January 5, 2008 – JN: 08-1617LV-2

28. **Geologic/Geotechnical In-grading Report No. 13**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated February 5, 2008 – JN: 08-1617LV-2

29. **Geologic/Geotechnical In-grading Report No. 14**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated March 5, 2008 – JN: 08-1617LV-2

30. **Geologic/Geotechnical In-grading Report No. 15**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated April 5, 2008 – JN: 08-1617LV-2

31. **Geologic/Geotechnical In-grading Report No. 16**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated May 5, 2008 – JN: 08-1617LV-2

32. **Geologic/Geotechnical In-grading Report No. 17**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated June 5, 2008 – JN: 08-1617LV-2

33. **Geologic/Geotechnical In-grading Report No. 18**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated July 5, 2008 – JN: 08-1617LV-2

34. **Geologic/Geotechnical In-grading Report No. 19**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated August 5, 2008 – JN: 08-1617LV-2

REFERENCES

35. **Geologic/Geotechnical In-grading Report No. 20**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated September 5, 2008 – JN: 08-1617LV-2

36. **Geologic/Geotechnical In-grading Report No. 21**
Grading Operations (GPC No. 0408020002)
Tract 52584
Los Valles
Castaic, County of Los Angles, California
Dated October 5, 2008 – JN: 08-1617LV-2

APPENDIX 5.6-9

Allan E. Seward Engineering Geology, Inc.,
Geologic and Geotechnical Report, June 7, 2013

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological And Geotechnical Consultants

GEOLOGIC AND GEOTECHNICAL REPORT – ADDENDUM NO. 7
Review of Revised Vesting Tentative Tract Map, dated June 4, 2013

Vesting Tentative Tract Map No. 52584
Los Valles
Castaic, County of Los Angeles, California

Prepared for:

SFI Los Valles, LLC
C/o iStar Financial
4350 Von Karman Avenue, Suite 225
Newport Beach, CA 92660

Job No: 13-1617is-4
Dated June 7, 2013

27825 Smyth Drive, Valencia, California 91355 661-294-0065 FAX 661-294-0833

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References

Summary of Landslides **Table 1**
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Cross Section Inventory List **Table 3**

APPENDIX A – Cross Sections
Cross Sections 2-2’ through 9-9’, 17-17’, 18-18’, 22-22’through 25-25’, 28-28’, 33-33’, 34-34’, 43-43’, 48-48’through 62-62’

APPENDIX B – Slope Stability Analysis
- Slope Stability Analysis Results **Table B1**
- Gross Slope Stability Analyses Computer Output (51 sheets)

APPENDIX C - Maps (in pockets)
Geologic/Geotechnical Maps (1”=100’), Sheets 3, 4 & 5

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological And Geotechnical Consultants

June 7, 2013 Job No: 13-1617is-4

SFI Los Valles LLC
C/o iStar Financial
4350 Von Karman Avenue, Suite 225
Newport Beach, CA 92660

Attention: Mr. Allan Barrett

Subject: **GEOLOGIC AND GEOTECHNICAL REPORT – ADDENDUM NO. 7**
Review of Revised Vesting Tentative Tract Map dated June 4, 2013

Project: Vesting Tentative Tract Map No. 52584
Los Valles
Castaic, County of Los Angeles, California

References: At End of Text

Mr. Barrett:

This report presents our opinions on the existing geologic and geotechnical conditions on Vesting Tentative Tract Map (VTTM) No. 52584 relative to the Revised Vesting Tentative Tract Map dated June 4, 2013 and their effects on the proposed development. This report is supplementary to our previous reports dated 1/15/99, 10/22/99, 3/31/00, 6/7/00, 1/9/01, 4/16/03 and 8/27/04 (see references), hereinafter called "previous reports", for VTTM 52584 and the conclusions and recommendations presented therein are still applicable except where they are superseded in this report.

1.0 SCOPE OF WORK

The scope of work completed during the preparation of this report included the following tasks:

1. Geologic/geotechnical review of Revised Vesting Tentative Tract Map No 52584 dated June 4, 2013 prepared by Land Design Consultants, Inc.
2. Coordination with the Supervising Civil Engineer, Land Design Consultants, Inc.

3. Preparation of Geologic/Geotechnical Maps using the revised Vesting Tentative Tract Map dated June 4, 2013, Sheets 3 through 5, at a scale of 1 in equals 100 ft as the base maps. We make no representation as to the accuracy of these base maps.
4. Preparation of Table 1 – Summary of Landslides addressing the status and recommendations for remaining landslides.
5. Preparation of Table 2 – Summary of Cut Slopes addressing the revised cut slopes and new cut slopes on the revised Vesting Tentative Tract Map.
6. Preparation of cross sections and revisions to existing cross sections to reflect existing grades and proposed design grades. Also, preparation of Table 3 – Cross Section Inventory List describing the status of previously presented cross sections in our report dated August 27, 2004 (see ref. 8) and listing new cross sections.
7. Slope stability analyses of proposed and modified grades, including cut slopes, natural slopes and fill slopes where appropriate. Based on the results, the need for tentative stabilization measures was explored.
8. Removal of building setbacks, previously recommended for mitigation of the potential for future ground rupture due to faulting, based on review of existing geologic data and geologic observations during the Rough Grading operations at the site.
9. Geologic and geotechnical engineering analyses and preparation of Conclusions and Recommendations based on the existing site conditions and future use intended.
10. Preparation of this Geologic and Geotechnical report for submittal to the Los Angeles County Department of Public Works Geotechnical and Materials Engineering Division.

2.0 BACKGROUND

Geologic and geotechnical aspects of the Vesting Tentative Tract Map No. 52584 were addressed in our previous reports listed in the references. The Los Angeles County Department of Public Works Geotechnical Materials Engineering Division (GMED) recommended approval of the Vesting Tentative Tract Map (VTTM) dated 7/19/04 in their geologic and soils engineering review sheets dated October 26, 2004. A subsequent revision to the VTTM dated 2/2/05 was approved by GMED in their geologic and soils engineering review sheets dated February 7, 2005 and February 16, 2005, respectively. The VTTM dated 2/2/05 is hereinafter called "previous Vesting Tentative Tract Map". This office prepared Geologic and Geotechnical reports (see references) addressing the Rough Grading Plan *(GPC No. 04-0802-002)*. The Rough Grading operations began on January 5, 2007 and this firm was retained to perform observation and testing during the site grading and construction.

On March 3, 2008, Land Design Consultants, Inc. replaced Alliance Land Planning as the Supervising Civil Engineer of record for the Rough Grading operations. However, the Rough Grading operations were halted on September 16, 2008. During the Rough Grading operations the eastern portion of the site was significantly graded. Field testing and documentation of the grading operations and geologic conditions continued until September 19, 2008. Our geologic and geotechnical services continued for items related to the construction of the proposed Forebay Tank, Booster Station and Water Reservoir, illustrated on the Water System Improvements for Tract 52584 Plans for Los Angeles County Waterworks District 36, Val Verde.

3.0 REVISIONS TO THE VTTM 52584

Review of the revised Vesting Tentative Tract Map 52584 dated June 4, 2013 indicates that minor to moderate revisions to proposed grades for the eastern portion of the site and a new design for the western portion of the site from the previous Vesting Tentative Tract Map within our report dated August 27, 2004 (see ref. 8). Moderate changes occur on the locations, gradients, heights and orientations to many of the proposed cut slopes which in turn have affected the configuration of the natural slopes adjacent to the development. Revisions to the residential lot layout and the street alignments are indicated as well. In addition the golf course has been eliminated. The lot layout, lot designations and the total number of residential lots have been revised. For specific details on lot designations see the Lotting Summary on the revised Vesting Tentative Tract Map. The revised Vesting Tentative Tract Map 52584 dated June 4, 2013 is hereinafter called revised VTTM.

The proposed grading concept for the revised VTTM is illustrated on the attached Geologic/Geotechnical Maps (Sheets 3, 4 and 5). Proposed grading will consist of cutting areas and filling of canyon areas to produce a series of pad areas, which generally rise in grade toward the north. Cut and fill slopes are proposed on the revised VTTM between pad areas and adjacent to natural areas. The previous maximum cut slope (CS-15) height was approximately 150 feet, but this cut slope has been eliminated by the revised VTTM design grades. The maximum fill-slope height is approximately 180 feet located adjacent to Hayward Drive, which was constructed during the Rough grading operations. The maximum proposed cut slope (CS-6) height is approximately 90 ft and the maximum proposed fill slope height is approximately 90 ft in the vicinity of Lots 179 through 183. The maximum proposed vertical cut from existing grade is approximately 120 feet in the vicinity of Lot 129. The maximum proposed fill (thickness) over existing grades is approximately 55 feet in the vicinity of Lot 191.

4.0 GENERALIZED GEOLOGIC AND GEOTECHNICAL SUBSURFACE CONDITIONS AND SOIL PROPERTIES

4.1 SUBSURFACE DATA AND LABORATORY TESTING

The previous subsurface exploration and laboratory testing results are presented in the referenced reports. No additional subsurface exploration or laboratory testing was performed for this evaluation of the revised VTTM. The subsurface explorations that were removed during the Rough Grading operations are not shown on the Geologic/Geotechnical Maps.

4.2 GEOLOGY

Details of geologic units and structure at the site are provided in the previous reports for VTTM 52584. Since the site was partially graded the details of the compacted fill placed during the Rough Grading operations is presented below. The distribution of these geologic units and geologic contacts shown on the Geologic/Geotechnical Maps has been revised from the previous report (see ref. 8) to reflect the conditions observed when the Rough Grading operations were halted.

4.2.1 Compacted fill (Cf) and non-structural Compacted fill (Cf_{NS})

The limits of compacted fill (Cf) and non-structural compacted fill (Cf_{NS}) placed during the previous Rough grading operations are delineated on the Geologic/Geotechnical Maps. The areas designated as compacted fill (Cf) are where unsuitable materials were removed and minimum density of compacted fill achieved in the fill areas is at least 90% (93% for fills deeper than 40 ft) of Maximum Dry Density (per ASTM Test Method D1557).

The areas designated as non-structural compacted fill (Cf_{NS}) are where minimal removal of unsuitable materials (generally a depth of 3 ft or less) were performed and a lesser compaction of at least 85% of Maximum Dry Density was accepted. This was limited to the fill areas that were designated as Golf Course on the previous VTTM.

Proposed grades for this development will tie into these existing compacted fills. The non-structural compacted fills are not suitable for support of structures. Removal depth recommendations for the non-structural compacted fill in areas proposed for lots on the revised VTTM and for disturbed compacted fills due to weathering, desiccation, erosion, etc. will be evaluated at the Grading Plan stage.

4.3 DEBRIS FLOW HAZARDS

Potential debris flow hazard for the natural slopes adjacent to the proposed development have been evaluated. In order to mitigate potential debris flow hazards, a series of debris

basins are proposed on the revised VTTM. In addition debris (impact) walls are recommended adjacent to Lots 478 and 497. These locations have been delineated on the Geologic/Geotechnical Map (Sheet 4). The debris wall locations should be incorporated into the revised VTTM. Debris basins have been designed below the larger canyons and swales which are proposed to remain adjacent to the pad areas for complete containment.

5.0 POTENTIAL GROUND RUPTURE HAZARD

5.1 BACKGROUND

Review of the Earthquake Fault Zone Maps provided in the California Department of Conservation, Division of Mines and Geology, Special Publication 42 indicates that there are not any known active faults within the Study Area, per Alquist-Priolo criteria.

Previous subsurface investigations completed by this firm for our VTTM study issued in 1999 (see reference list at end of text) for the subject site identified a fault zone (labeled as Zone of Tectonic Deformation) consisting of a series of faults trending roughly east-west to south-east on the southern portion of the site. The faults are located along the north dipping fold limb between the anticline and syncline fold axis. Based on the structural trend and orientation of the faulting, we opined that they are structurally associated with the Holser fault which is located approximately 0.7 of a mile to the south within Parcel Maps 19784 and 60030. The Alquist-Priolo Special Studies Zones Map does not consider the Holser fault as active but the Los Angeles County Safety Element (Leighton, 1990) does classify it as active. Even though no evidence of Holocene activity was encountered a building setback for habitable structures was designated in our 1999 report to mitigate potential ground rupture hazard for these faults based on this work and the potential association to the Holser fault.

Since the 1999 report for the site, subsequent geologic investigations evaluating the activity of the Holser fault by this firm and others indicate no evidence of Holocene activity. As a result of these investigations the Los Angeles County Department of Public Works is not requiring building setbacks for the Holser fault.

5.2 SUMMARY OF PRIOR FAULT INVESTIGATION ON THE SUBJECT SITE

Review of aerial photographs listed in our 1999 report did not reveal evidence for any strong lineaments on trend with the faulting encountered on the subject site. A total of 5,924 lineal feet of trench was excavated to evaluate the location and lateral extent of faulting. These trench logs were presented in our report dated 1/15/1999 and hence are not included herein. We documented faults as explored in Trenches T-10, T-11, T-12, T-23, T-24 and T-155. The faulting identified in our trenches was observed within the Saugus

Formation bedrock. The deformation typically consisted of strongly sheared, north-dipping mudstone and claystone beds and moderate to low angle faults, which primarily dip to the south. Fault orientation data gathered during our investigation indicates that the faults are not continuous between the exploratory trenches; therefore a Zone of Tectonic Deformation was delineated that encompass the documented faults. The intensity of faulting in this zone dissipates towards the east as indicated in Trenches T-23 and T-24. The faults did not extend into overlying terrace deposits or associated soil. However, the terrace deposit bedding exposed in Trench No. T-11 (See Plate XIV within our 1/15/1999 report) is apparently warped from horizontal up to 23° adjacent to a strongly sheared, reddish-brown clayey siltstone unit of the Saugus Formation. This terrace deposit is roughly 80 ft above the active Hasley Canyon drainage. A similar terrace deposit located on TPM 18108 with a base elevation of approximately 40 ft above the Hasley Canyon flood plain is aged at 100,000 to 125,000 years old (personal communication with Dr. Perry Ehlig and Dr. Roy Shlemon, see ref. 9). In addition, the terrace deposits on Airport Mesa located south of the Santa Clara River have a base elevation of 180 to 200 ft above the active Santa Clara River. Based on Dr. Roy Shlemon's soil stratigraphic dating (see ref. 10), the terrace deposits and associated soil horizons are a minimum ~100,000-yr age. Shlemon (2001) suggested that the soils may represent some ~200,000 years of weathering. Based on the elevated nature of the terrace deposit on the site and correlation with age dating of other terrace deposits in the area, it is our opinion that this terrace is ~100,000 years old. Accordingly, no evidence of Holocene activity was encountered during our investigation in 1999.

5.3 Observations during Rough grading operations

During the prior Rough grading operations on the subject site geologic observations and mapping confirmed that the faults observed within the Saugus Formation bedrock did not extend into any of the surficial units (i.e. soil, slopewash and alluvial) and Quaternary terrace deposits. No evidence of Holocene activity was encountered during the Rough grading operations performed in 2007 and 2008.

5.4 Conclusions

Based on lack evidence for recent activity on the Holser fault, no evidence of recent activity on faults documented during our investigation in 1999, and no evidence of recent activity observed during the Rough grading operations, we opine that none of the fault traces on the subject site have produced surface ground rupture during the Holocene (~last 11,000 yrs). CGS Special Publication 42 defines an active fault as one which has had surface displacement within Holocene time (about the last 11,000 years). Accordingly the

faults observed on the subject site are not considered active as defined by California regulations. We therefore find that the **building setbacks** recommended to mitigate potential ground rupture hazard for these faults in our January 15, 1999 report are **not required** for standard commercial and residential development according to current State of California criteria.

6.0 GENERAL CONCLUSIONS AND RECOMMENDATIONS

6.1 FEASIBILITY OF DEVELOPMENT

The revised Vesting Tentative Tract Map No. 52584 dated June 4, 2013 is feasible for development from the standpoint of geologic/geotechnical conditions provided our recommendations are followed and implemented during construction. The conclusions and recommendations presented within our previous reports listed in the references are still applicable, except where they are superseded in this report.

6.2 REVISION TO RECOMMENDED REMOVAL DEPTHS

The revised VTTM proposes fills in canyon areas for residential development that were designated as Golf Course areas on the previous VTTM. Therefore, the recommended removal depths for alluvial and surficial materials in proposed fill areas have been revised from our previous reports. The recommended removal depths are based on the prior subsurface exploration, laboratory test data and observations during the Rough grading operations. Recommended removal depths for unsuitable soils, exclusive of landslide material, range from 1 to 15 feet below existing grades. The recommended depth of removals is shown on the Geologic/Geotechnical Maps. Recommendations for landslides are presented in **Table 1 – Summary of Landslides** and are shown on the Geologic/Geotechnical Maps.

The non-structural compacted fills (Cf_{NS}) are recommended for removal in areas now proposed for lots. In addition, alluvial, slopewash and weathered bedrock that are unsuitable for support of structures that are remaining below the non-structural compacted fills are recommended for removal and to be replaced as a compacted fill. The recommended removal depths of unsuitable material below the non-structural fills in areas proposed for lots are shown on the Geologic/Geotechnical Maps.

6.3 PROPOSED CUT SLOPES

6.3.1 Designation of Cut Slopes

On the previous VTTM 39 cut slopes were designated as CS-1 through CS-39. During the review of the previous Rough Grading Plan designations CS-40 through CS-46 were added to 7 cut slopes. Some of these previous designated cut slopes have been

eliminated by the revised VTTM grading design. For clarity when referencing the August 27, 2004 report (see ref. 8) and continuity, we have designated new cut slopes greater than 25 feet in height in sequence with the previous designations as CS-47 through CS-60 on the Geologic/Geotechnical Maps. Below is a summary of previously designated cut slopes and their status relative to the revised VTTM.

9 No change: CS-11, CS-26, CS-27, CS-28, CS-31, CS-35, CS-40, CS-41 and CS-43

24 Eliminated: CS-1, CS-2, CS-3, CS-4, CS-5, CS-9, CS-10, CS-12, CS-13, CS-14, CS-15, CS-17, CS-18, CS-21, CS-22, CS-33, CS-34, CS-36, CS-37, CS-39, CS-42, CS-44, CS-45 and CS-46.

13 Revised: CS-6, CS-7, CS-8, CS-16, CS-19, CS-20, CS-23, CS-24, CS-25, CS-29, CS-30, CS-32 and CS-38

14 New: CS-47 through CS-60

The previous cut slope designations are not shown on the Geologic/Geotechnical Maps for cut slopes that have been eliminated by the revised VTTM. The cut slopes that are not being affected by the revised VTTM were previously evaluated for slope stability analyses (see ref. 8) and indicated that these cut slopes satisfy the Los Angeles County factor of safety requirements for slope stability for static and pseudostatic conditions.

6.3.2 Revised and New Cut Slopes

We have identified thirteen (13) revisions to previously designated cut slopes and fourteen (14) new proposed cut slopes (greater than 25 feet in height) on the revised VTTM and have designated them on the Geologic/Geotechnical Maps. The slope geometry, anticipated geologic conditions and recommended mitigation, if necessary, for each slope are presented in **Table 2 – Summary of Cut Slopes** located at the end of the text, and are shown on the Geologic/Geotechnical Maps. Pertinent cross sections presented within the August 27, 2004 report have been revised and new cross sections have been constructed to illustrate the anticipated geologic/geotechnical conditions relative to the revised VTTM design (see **Table 3 – Cross Section Inventory List**). The revised and new cut slopes were evaluated and critical slopes that were analyzed within **Appendix B** satisfy the Los Angeles County factor of safety requirements for slope stability for static and pseudostatic conditions. See **Appendix B** for details.

If any of the smaller proposed cut slopes (less than 25± feet in height) have adverse geologic or grading configurations (fill over cut) they can be mitigated if necessary with a standard 15 to 20-foot wide keyway (depending on the proposed cut slope height) and benching similar to a Stability Fill.

All permanent cut slopes should be constructed at a slope ratio not steeper than 2:1 (horizontal to vertical). All permanent cut slopes exposing alluvium should be constructed as a stability fill.

6.3.3 Existing Cut Slopes

Three existing cut slopes associated with adjacent VTTM 20685 and located adjacent to Hasley Canyon Road were designated as ECS-1, ECS-2 and ECS-3. Existing Cut-slope ECS-1 was removed during the previous Rough Grading operations. The more critical Existing Cut-slope ECS-2 was previously analyzed (see ref. 8) and indicates that this slope satisfies the County of Los Angeles minimum factor of safety requirements for slope stability under static and pseudostatic conditions.

6.4 NATURAL SLOPES

We have updated our slope stability analyses of the natural slopes proposed on the subject site relative to revised VTTM design grades. The natural slopes have gradients ranging from 5:1 to ½:1 (h:v). We have revised pertinent cross sections to illustrate the most critical conditions (daylighted bedding and/or steeper than 2:1). The natural slopes evaluated within **Appendix B** satisfy the Los Angeles County factor of safety requirements for slope stability under static and pseudostatic conditions. See **Appendix B** for details.

6.5 PROPOSED FILL SLOPES

Review of the revised VTTM indicates that fill slopes are proposed at gradients of 2:1 (h:v) or flatter. The maximum proposed fill slope height is ~90 ft at a 2:1 gradient on the revised VTTM design grades. The previous VTTM maximum proposed fill slope height was ~150 ft, which was constructed during the Rough grading operations. Slope stability analyses previously performed (see ref. 8) on this 2:1 fill slope, which is considered to be the most critical fill slope (located at Cross Section 31-31'), indicates that proposed fill slopes on the revised VTTM satisfy the Los Angeles County factor of safety requirements for slope stability under static and pseudostatic conditions.

6.6 DEEP FILL AREAS

The design grading of the subject site proposes some areas of deep fills (deeper than 40 feet). Per L.A. County Grading Code, the minimum compaction requirement for fills placed deeper than 40 ft from proposed grade is at least 93 percent of Maximum Dry Density (per ASTM Test Method D1557). Due to the susceptibility of deeper fills to have a higher degree of settlement over time than thin fills, it is recommended that settlement

monitoring be performed for some of the deeper fill areas. Delineation of fills deeper than 40 ft and settlement monument locations should be performed at the Grading Plan stage.

6.7 LANDSLIDES

Eight landslides were originally mapped on the previous VTTM and designated as Landslides Qls-1 through Qls-8. The landslides involve bedrock of the Saugus Formation and terrace deposits, and most were transitional failures along clay-rich bedding planes toward a daylighted slope. Landslides Qls-1 through Qls-4, Qls-7 and Qls-8 were completed removed during the previous Rough Grading operations. Landslide Qls-5 (Sheet 5) will be completely removed by the proposed grades (see Cross Section 33-33'). Landslide Qls-6 (Sheet 5) was partially removed during the Rough Grading operations. Cross Section 34-34' illustrates the Landslide Qls-6 geometry, underlying geologic structure, existing grades and the revised VTTM design grades. Previous slope stability analysis performed on Cross Section 34-34'presented indicate that this landslide satisfies the Los Angeles County minimum factor of safety requirement for gross slope stability. The previous VTTM design grade (see ref. 8) is considered more critical than revised VTTM design grades, therefore no additional analyses were performed. No structures are proposed over this landslide however, we have designated a **Building Setback** encompassing the remaining portions of this landslide. This building setback will need to be shown as a **Restricted Use Area** on the Final Map. **Table 1 – Summary of Landslides** has been revised in order to reflect the revised VTTM design grades and landslide that were complete removed by the Rough grading operations.

6.8 RESTRICTED USE AREAS

The remaining portion of Landslide Qls-6 is recommended to be placed in a Restricted Use Area (RUA). This area is noted on the Geologic/Geotechnical Maps and will need to be shown on the Final Map.

6.9 OIL AND GAS WELLS

Review of the 2003 Munger Map book and the California Department of Conservation Division of Oil, Gas and Geothermal Resources (DOGGR) web page map (DOMSWRBMAP) indicates that **ten oil wells** are present within the project limits. Oil well records on file with the DOGGR were obtained for each well. All of these wells have been abandoned, however the DOGGR will require review of the original abandonment files relative to the proposed development and possibly require re-abandonment to the latest DOGGR requirements. We have included the abandonment records for these wells after the references. For approximate locations of these oil wells, see the

Geologic/Geotechnical Maps. The following table tabulates the names and status of the existing oil wells on the subject site.

OIL WELL	DATE ABANDONED
Burns Crist #8	5/20/03
Burns Crist #9	5/20/03
Burns Crist #10	5/20/03
Burns Crist #12	5/20/03
Sadd #4	5/20/03
Sadd #5	5/20/03
Sadd #6	5/20/03
Sadd #7	5/20/03
Sadd #8	5/20/03
Sadd #9	5/20/03

If any leaking or undocumented oil wells are encountered during grading operations, their locations should be surveyed and the current well conditions evaluated immediately. Soils in the vicinity of the oil wells could be contaminated with petroleum products spilled during operations of the wells. If petroleum products are encountered during the grading operations they should be evaluated by those qualified for environmental assessments.

Per the requirements of the County of Los Angeles Building Code Chapter 1, Section 110.4 Methane Gas Hazard, building or structures within 200 ft of an oil well need to be designed according to recommendations contained in a report prepared by a qualified licensed engineer. However, evaluation of an oil well by a licensed petroleum engineer and determination that they are properly abandoned for buildings or structures located within 200 ft, but at least 25 ft away from an oil well, may be sufficient for issuance of building permits.

7.0 DESIGN CONSIDERATIONS AND RECOMMENDATIONS

Preliminary foundation recommendations presented in the previous report remains applicable, except for the parameters for calculation of the California Building Code (CBC) response spectrum (2010 edition). The revised parameters are provided below.

- Site Class = D [CBC, Table 1613A.5.2]
- F_a = 1.0 [CBC, Table 1613.5.3 (1)]
- F_v = 1.5 [CBC, Table 1613.5.3 (2)]
- S_s = 2.323g
- S_1 = 0.736g

The values for S_s and S_1 listed above were obtained using the Seismic Hazard Curves and Uniform Hazard Response Spectra computer program developed by the United States Geologic Survey (USGS).

8.0 LOS ANGELES COUNTY 111 STATEMENT

In compliance with Section 111 of the Los Angeles County Building Code, it is the finding of this firm that the proposed development designated on the revised Vesting Tentative Tract Map 52584 will be safe against hazard from landslide, settlement or slippage and will not affect off-site property provided that all our recommendations are incorporated into the Grading Plan and implemented during construction.

9.0 GEOLOGIST AND GEOTECHNICAL ENGINEER OF RECORD

This report has been prepared assuming that Allan E. Seward Engineering Geology, Inc. will refine all geology and geotechnical data, as required, for the Grading Plan phase of this project. If this work is performed by another party, that party must review this report, assume full responsibility for recommendations contained herein, and assume the title of responsibility as "Geologist/Geotechnical Engineer of Record" for the specific work.

At the Grading Stage, representatives of the Geology/Geotechnical Engineer of Record should be present to observe all grading operations. A report presenting the results of those observations and related testing should be issued upon completion of the operations. All footing excavations should be observed by a representative of the Geologist/Geotechnical Engineer of Record prior to placing steel or pouring concrete into the excavations.

10.0 LIMITATIONS

This report has been prepared by Allan E. Seward Engineering geology, Inc. for the exclusive use of SFI Los Valles, LLC and their design consultants for the specific site discussed herein. This report should not be considered transferable. Prior to use by others, we should be notified, as additional work may be required to update this report.

In the event that any modifications in the design or location of the proposed development, as discussed herein, are planned, the conclusions and recommendations contained in this report will require a written review by this firm with respect to the planned modifications.

The proposed development is located in southern California, a geologically and tectonically active region, where large magnitude, potentially destructive earthquakes are common. Therefore, ground motions from moderate or large magnitude earthquakes could affect the site during the design life of the proposed structure(s).

Typically, faulting is confined to the area adjacent to a known fault. However, absolute assurance against future fault displacement in other areas is not possible in tectonically active regions because new faults can form over time and long inactive (pre-Holocene) faults may be reactivated in response to evolving tectonic stresses and geologic conditions in the earth's crust. Therefore, the location and magnitude of new ground surface ruptures during a seismic event cannot be anticipated.

In performing these professional services, this firm has used the degree of care and skill ordinarily exercised, under similar circumstances by reputable engineering geologists and geotechnical engineers practicing in this or similar localities. The data presented in this report are based on the results of pertinent field and laboratory testing. It should be recognized that subsurface conditions can vary in time, and laterally, and with depth at a given site and the conclusions and recommendations presented in this report are based on our observations and testing. Therefore, our **conclusions** and **recommendations** are **professional opinions** and are **not meant** to be a control of nature. We make no other **warranty,** either **expressed** or **implied**.

This report may not be duplicated without the written consent of this firm.

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This opportunity to be of service is appreciated. Please contact us if you would like to discuss this report further.

Respectfully submitted,

Eric J. Seward, CEG 2110
Principal Engineering Geologist
Vice President

Kevin P. Callahan, MS, GE 2989
Geotechnical Engineer

The following attachments and appendices complete this report.

References
Summary of Landslides **Table 1**
Summary of Cut Slopes **Table 2**
Cross Section Inventory List **Table 3**

APPENDIX A – Cross Sections
Cross Sections 2-2' through 9-9', 17-17', 18-18', 22-22'through 25-25', 28-28', 33-33', 34-34', 43-43', 48-48'through 62-62'

APPENDIX B – Slope Stability Analysis
- Slope Stability Analysis Results **Table B1**
- Gross Slope Stability Analyses Computer Output (51 sheets)

APPENDIX C - Maps (in pockets)
Geologic/Geotechnical Maps (1"=100'), Sheets 3, 4 & 5

Distribution: (1) SFI Los Valles, LLC (1 stamped, wet signed copy and 3 CD's in PDF format)
Attn: Mr. Allen Barrett
(3) Land Design Consultants, Inc.
1 - Attn: Mr. Chuck Gilman (1 CD PDF format, electronic copy only)
2 - Los Angeles County Department of Public Works Geotechnical and Materials Engineering (2 stamped, wet signed copies and 1 CD in PDF format)

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REFERENCES

Published

CDCDMG, 1997, Guidelines for evaluating and mitigating seismic hazards in California: California Department of Conservation Division of Mines and Geology Special Publication 117.

CGS, 2002, Seismic Hazard Zone Report for the Val Verde 7.5-Minute Quadrangle, Los Angeles and Ventura Counties, California: Seismic Hazard Zone Report 076.

Hart, E.W., 2007, Fault-rupture hazard zones in California: California Geologic Survey Special Publication 42, 42 p.

Leighton & Associates, Inc., 1990, L.A. County General Plan - Safety Element, including Technical Appendices: Volumes 1 and 2.

www.maps.conservation.ca.gov/doms/doms-app.html (Division of Oil, Gas and Geothermal Resources).

By Allan E. Seward Engineering Geology, Inc.

1. **Geologic and Geotechnical Report**
   Vesting Tentative Tract 52584
   Castaic, California
   Dated January 15, 1999 – JN: 98-1617-4

2. **Geologic and Geotechnical Report – Addendum No. 1**
   Response to County Comments (Review Sheets dated 3/3/99, 3/4/99, 5/6/99, 9/9/99 and 9/16/99)
   Geologic and Geotechnical Report – Revised Map
   Revised Vesting Tentative Tract No. 52584 (Revised 10/99)
   Castaic, California
   Dated October 22, 1999 – JN: 99-1617-4

3. **Geologic and Geotechnical Report - Addendum No. 2**
   Response to County Comments (Review Sheets dated 11/18/99 and 12/28/99)
   Castaic, California
   Dated March 31, 2000 – JN: 00-1617-4

4. **Geologic and Geotechnical Report – Addendum No. 3**
   Vesting Tentative Tract 52584
   Response to County Comments (Review Sheets dated 5/4/00 and 5/23/00)
   Castaic, California
   Dated June 7, 2000 – JN: 00-1617-4

5. **Geologic and Geotechnical Report – Addendum No. 4**
   Revised Vesting Tentative Tract 52584 (Revised 12/2000)
   Castaic, California
   Dated January 9, 2001 – JN: 01-1617-4

7. **Geologic and Geotechnical Report – Addendum No. 4 (sic)**
   Response to L.A. County Review Sheets dated 1/27/03 and 1/28/03 for VTT 52584
   Geologic and Geotechnical Report
   Amended Vesting Tentative Tract Map 52584 (dated April 15, 2003)
   Halsey Canyon
   VTT 52584
   Castaic, California
   Dated April 16, 2003 – JN: 03-1617-4

REFERENCES

8. **Geologic and Geotechnical Report – Addendum No. 6**
Response to Los Angeles County Geologic Review Sheet dated July 10, 2003 and Soils Engineering Review Sheet dated July 9, 2003
Geologic and Geotechnical Report
Amended Vesting Tentative Tract Map (Undated)
Vesting Tentative Tract Map No. 52584
Castaic, County of Los Angeles, California
Dated August 27, 2004 – JN: 04-1617LV-4

9. **Holser Fault Investigation**
TPM 18108
Castaic, California
Dated April 12, 2000 – JN: 00-1219-9

10. **Geologic Report**
Fault Investigation for Airport Mesa Area
Portion of Mesa east, VTT 61105, Newhall Ranch
Castaic, California
Dated July 20, 2004 – JN: 04-1703H-1

11. **Geologic/Geotechnical Report**
Observation and Testing of Compacted Fill
Water System Improvement Plans for Tract 52584
Los Angeles County Waterworks District No. 36, Val Verde
Los Valles
Castaic, Los Angeles County, California
Dated February 23, 2012 – JN: 04-1617LV-2

12. **Geologic and Geotechnical Report**
Review of Rough Grading Plans (Dated July 7, 2004)
Tract No. 52584
Castaic, County of Los Angeles, California
Dated September 17, 2004 – JN: 04-1617LV-5

13. **Geologic and Geotechnical Report – Addendum No. 1**
Response to Los Angeles County Geologic Review Sheet dated November 1, 2004 and Soils Engineering Review Sheet dated November 9, 2004
(Grading Plan Check No. 0408020002)
Geologic and Geotechnical Report
Review of Revised Grading Plans (Dated July 30, 2004)
Tract Map No. 52584
Rough Grading Plans (G.P.C. No. 0408020002)
Castaic, County of Los Angeles, California
Dated December 28, 2004 – JN: 04-1617LV-5

14. **Geologic and Geotechnical Report – Addendum No. 2**
Response to Los Angeles County Geologic Review Sheet dated January 26, 2005 and Soils Engineering Review Sheet dated January 27, 2005
(Grading Plan Check No. 0408020002)
Tract Map No. 52584
Rough Grading Plans (G.P.C. No. 0408020002)
Castaic, County of Los Angeles, California
Dated February 2, 2005 – JN: 05-1617LV-5

Table 1 - SUMMARY OF LANDSLIDES

LANDSLIDE DESIGNATION	PLATE NO.	COMMENTS AND MITIGATION
Qls-5	I and II	Landslide located near the entry to the proposed development east of Lot 276. Cross Section 33-33' illustrates the landslide geometry, proposed grades, existing grades and underlying geologic structure. This landslide will be completely removed by the proposed cut (grading design).
Qls-6	I	Landslide located north of Hasley Canyon Road and east of the entry to the proposed development from Hasley Canyon Road. Cross Section 34-34' illustrates the landslide geometry, underlying geologic structure, existing grades and the proposed tentative tract map grades. Slope stability analysis performed on cross section 34-34' with the pervious tentative tract map grades indicate this landslide satisfies the Los Angeles County minimum factor of safety requirement for slope stability. No structures are proposed over this landslide however, we have designated a **Building Setback** around this landslide that will need to be shown as a **Restricted Use Area** on the Final Map.

Table 2 - SUMMARY OF CUT SLOPES

Proposed Cut-slope CS-6

Location: Sheet 3 of 5 – North of Lots 3-6

Direction Slope Faces: Southwest

Slope Parameters: 97± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 4-4'

Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping 24° towards the south. Slope stability analysis on Cross Section 4-4' indicates this slope satisfies the Los Angeles County minimum safety factor requirement of 1.50. **Calculated grossly stable**.

Mitigation Measures: Not required.

Proposed Cut-slope CS-7

Location: Sheet 3 of 5 – Northwest of Lots 1, 2 and 490-493

Direction Slope Faces: South and southeast

Slope Parameters: 72± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 6-6' & 59-59'

Anticipated Geologic Conditions: This slope was constructed with a stability fill at the lower western side of the slope during the Rough Grading operations. The revised design modifies the lower portion of the graded slope. Anticipated to expose bedrock (TQs) with bedding dipping an average of 30° towards the south, which is steeper than the cut slope face. Previous slope stability analysis performed on Cross Section 6-6' indicates this slope satisfies the Los Angeles County minimum factor of safety requirement of 1.50. **Calculated grossly stable**. The slope should be evaluated in more detail during the grading plan stage to determine the adequacy of the existing fill keyway and thickness of fill to remain behind the proposed slope face.

Mitigation Measures: Recommended that this slope be evaluated at the Grading Plan stage in order to determine adequacy of the existing fill keyways and fill thicknesses.

Proposed Cut-slope CS-8

Location: Sheet 4 of 5 – North of Lots 481 and 482

Direction Slope Faces: South

Slope Parameters: 72± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 8-8'

Anticipated Geologic Conditions: This slope was constructed during the Rough Grading operations. The revised design lowers the toe of the slope approximately 10 to 15 feet. This slope is anticipated to expose bedrock (TQs) with bedding dipping an average of 32° towards the south which is steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e.

Table 2 - SUMMARY OF CUT SLOPES

Cut Slope CS-6) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.

Mitigation Measures: Not required.

Proposed Cut-slope CS-16

Location: Sheet 5 of 5 – South of Lots 289 - 291

Direction Slope Faces: Southwest

Slope Parameters: 55± feet high with 2:1 (h:v) slope gradient

Cross Sections: None

Anticipated Geologic Conditions: This slope was constructed as a stability fill during the Rough Grading operations. The revised design lowers the toe of the slope approximately 10 to 15 feet. Anticipated to expose compacted fill (Cf) and bedrock (TQs) with bedding dipping into the proposed slope face. Comparison of the slope parameters and geologic conditions of this slope to more critical proposed cut slopes that satisfy the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by inspection**. This slope is located within the zone of tectonic deformation and there may be a potential for the slope to be surficially unstable due to adverse geologic conditions. However, this slope will have a fill over cut in bedrock (TQs) configuration[i].

Mitigation Measures: Recommended **Stability fill** utilizing at least 30 ft wide by 3 ft deep keyway to mitigate the fill over cut.

Proposed Cut-slope CS-19

Location: Sheet 5 of 5 – South of Lots 305-310

Direction Slope Faces: Southwest

Slope Parameters: 52± feet high with 2:1 (h:v) slope gradient

Cross Sections: None

Anticipated Geologic Conditions: This slope was constructed as stability fill during the Rough Grading operations. The revised design lowers toe of the slope approximately 10 feet. Anticipated to expose compacted fill (Cf), non-structural compacted fill (Cf_{NS}) and bedrock (TQs) with bedding dipping into the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to more critical proposed cut slopes that satisfy the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by inspection**. This slope is located within the zone of tectonic deformation and there may be a potential for the slope to be surficially unstable due to adverse geologic conditions. However, this slope will have a fill over cut in bedrock (TQs) configuration.

Table 2 - SUMMARY OF CUT SLOPES

Mitigation Measures: Recommended **Stability fill** utilizing at least 30 ft wide by 3 ft deep keyway to mitigate the fill over cut and to remove the non-structural compacted fill.

Proposed Cut-slope CS-20

Location: Sheet 5 of 5 – North of Lots 292-295
Direction Slope Faces: South to southeast
Slope Parameters: 34± feet high with a 2:1 (h:v) slope gradient
Cross Sections: None
Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping neutral to slightly into the proposed cut slope face for the western portion of this slope. The eastern portion of this slope will expose non-structural compacted fill (Cf_{NS}). The bedrock portion of the slope is geologically **grossly stable by inspection**. The non-structural compacted fill (Cf_{NS}) is not considered surficially stable.
Mitigation Measures: Recommended **Stability fill** utilizing at least 15 ft wide by 3 ft deep keyway for the eastern portion of the slope to remove the non-structural compacted fill.

Proposed Cut-slope CS-23

Location: Sheet 5 of 5 – East of Lots 317-324
Direction Slope Faces: West to northwest
Slope Parameters: 55± feet high with a 2:1 (h:v) slope gradient
Cross Sections: 43-43'
Anticipated Geologic Conditions: A portion of original designed Cut-slope CS-23 was constructed as stability fill during the Rough Grading operations. This slope is anticipated to expose compacted fill (Cf), non-structural compacted fill (Cf_{NS}) and bedrock (TQs) with bedding dipping neutral to a daylighted at an apparent dip of 13° out of the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-6) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that the bedrock portions of this slope will also satisfy minimum safety factor requirements. The northern portion of this slope will expose compacted fill (Cf), from the previous constructed stability fill, over cut in bedrock (TQs). This portion of the slope should be evaluated during the grading operations to determine if non-structural compacted fill (Cf_{NS}) is remaining in the slope face.
Mitigation Measures: Recommended **Stability fill** utilizing at least 25 ft wide by 3 ft deep keyway for the northern portion of the slope to mitigate the fill over cut. Recommend removal of non-structural compacted fill (Cf_{NS}) if it is exposed in the slope face and re-construct as a Stability fill.

Table 2 - SUMMARY OF CUT SLOPES

Proposed Cut-slope CS-24

Location: Sheet 5 of 5 – West of Lots 298-304

Direction Slope Faces: West to northwest

Slope Parameters: 75± feet high with 2:1 (h:v) slope gradient

Cross Sections: None

Anticipated Geologic Conditions: Anticipated to expose non-structural compacted fill (Cf_{NS}), compacted fill (Cf) and bedrock (TQs) with bedding dipping neutral to the proposed slope face. Previously evaluated Landslide Qls-3 has been completely removed during the Rough Grading operations. **Grossly stable by inspection**. There is a potential for a fill over cut bedrock. This slope should be evaluated during the grading operations to determine if a fill over cut and if non-structural compacted fill (Cf_{NS}) is remaining in the slope face.

Mitigation Measures: Recommend that a **Stability fill** be constructed to mitigate fill over cut, if present. Recommend removal of non-structural compacted fill (Cf_{NS}) if exposed in the slope face and replace as compacted fill.

Proposed Cut-slope CS-25

Location: Sheet 4 of 5 – Northeast of Lot 478

Direction Slope Faces: Southwest

Slope Parameters: 80± feet high with a 2:1(h:v) slope gradient

Cross Sections: 9-9'

Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding daylighted at an apparent dip of 23° out of the proposed cut slope face. Slope stability analysis on Cross Section 9-9' indicates this slope satisfies the Los Angeles County minimum factor of safety requirement of 1.50. **Calculated grossly stable**.

Mitigation Measures: Not required.

Proposed Cut-slope CS-29

Location: Sheet 5 of 5 – South of Lots 311-324

Direction Slope Faces: South to southeast

Slope Parameters: 55± feet high with 2:1 slope gradient

Cross Sections: 48-48' & 49-49'

Anticipated Geologic Conditions: This slope is anticipated to expose compacted fill (Cf), non-structural compacted fill (Cf_{NS}) and bedrock (TQs) with bedding dipping into the proposed slope face. **Grossly stable by inspection**. The non-structural compacted fill (Cf_{NS}) is not considered surficially stable. The western portion of the slope will expose fill over cut in bedrock. The compacted fill (Cf) portions of the slope should be evaluated in more detail during the grading plan stage for potential sliver fills within the existing slope face.

Table 2 - SUMMARY OF CUT SLOPES

Mitigation Measures: Recommend that a **Stability fill** utilizing at least 30 ft by 5 ft deep keyway for the western portion of the slope and at least 25 ft by 3 ft deep keyway for the northern portion of the slope to mitigate fill over cut, removal of the non-structural compacted fill (Cf_{NS}) and sliver fills.

Proposed Cut-slope CS-30

Location: Sheet 4 of 5 – North of Lot 452-454 and west of Lots 450-443
Direction Slope Faces: East to southeast
Slope Parameters: 165± feet high with 2:1 slope gradient
Cross Sections: 25-25', 26-26', 27-27', 61-61' & 62-62'
Anticipated Geologic Conditions: This slope was constructed during the Rough Grading operations including a water tank pad located at the northern portion of the slope adjacent to Cut-slope CS-26. Landslide Qls-1 has been completely removed and replaced with compacted fill. The revised design cuts into the lower portion of this slope and includes a new water tank pad adjacent to the existing water tank pad. It is anticipated that the new design will expose compacted fill (Cf) and bedrock (TQs) dipping towards the south. Slope stability analysis presented in the previous VTTM on Cross Section 27-27' (most critical), including the complete removal of Landside Qls-1, indicate this cut slope satisfies the Los Angeles County minimum factor of safety requirement of 1.50. **Calculated grossly stable**. The depth of proposed cuts to existing compacted fill is minor, but this slope should be evaluated in more detail during the grading plan stage to determine adequacy of existing fill keyways and thicknesses of fill to remain behind the proposed slope face.
Mitigation Measures: Recommended that this slope be evaluated at the Grading Plan stage in order to determine adequacy of the existing fill keyways and fill thicknesses.

Proposed Cut-slope CS-32

Location: Sheet 4 of 5 – Southeast of Lots 452-468
Direction Slope Faces: South and southeast
Slope Parameters: 30± feet high with a 2:1 slope gradient
Cross Sections: 22-22', 23-23' & 24-24'
Anticipated Geologic Conditions: This slope is anticipated to expose compacted fill (Cf). However, the eastern portion of this slope is a sliver fill and may transition to fill over cut bedrock. The bedrock (TQs) bedding is dipping into the proposed slope face. **Grossly stable by inspection**. Areas of proposed cuts in existing compacted fill should be evaluated during the grading plan stage to determine adequacy of existing fill thicknesses behind the slope face (i.e. sliver fills) and fill over cut bedrock.
Mitigation Measures: Recommended that this slope be evaluated in more detail at Rough Grading Plan stage.

Table 2 - SUMMARY OF CUT SLOPES

Proposed Cut-slope CS-38

Location: Sheet 3 of 5 – North of Lots 209 & 210
Direction Slope Faces: South and Southwest
Slope Parameters: 45± feet high with a 2:1 (h:v) slope gradient
Cross Sections: 17-17'
Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding strikes parallel to the slope face with 30° dips to the south, which are steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-6) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.
Mitigation Measures: Not required.

Proposed Cut-slope CS-47

Location: Sheet 3 of 5 – Northern portion of Barcelona Drive
Direction Slope Faces: East to southeast
Slope Parameters: 30± feet high with a 2:1 (h:v) slope gradient
Cross Sections: 50-50'
Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding oriented neutral to the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-11) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.
Mitigation Measures: Not required.

Proposed Cut-slope CS-48

Location: Sheet 3 of 5 – Northern portion of Barcelona Drive
Direction Slope Faces: West
Slope Parameters: 70± feet high with a 2:1 (h:v) slope gradient
Cross Sections: 50-50'
Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding oriented neutral to the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-11) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.
Mitigation Measures: Not required.

Table 2 - SUMMARY OF CUT SLOPES

Proposed Cut-slope CS-49

Location: Sheet 3 of 5 – North of Lots 25 & 26
Direction Slope Faces: South
Slope Parameters: 30± feet high with a 2:1 (h:v) slope gradient
Cross Sections: none
Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping approximately 30° towards the south to southeast, which is steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-6) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.
Mitigation Measures: Not required.

Proposed Cut-slope CS-50

Location: Sheet 3 of 5 – North of Lots 22-24
Direction Slope Faces: South
Slope Parameters: 55± feet high with a 2:1 (h:v) slope gradient
Cross Sections: 51-51'
Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping approximately 30° towards the south to southeast, which is steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-6) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.
Mitigation Measures: Not required.

Proposed Cut-slope CS-51

Location: Sheet 3 of 5 – North of Lots 58 & 66
Direction Slope Faces: Southwest
Slope Parameters: 29± feet high with a 2:1 (h:v) slope gradient
Cross Sections: None
Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping approximately 30° towards the south to southeast, which is steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-55) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.
Mitigation Measures: Not required.

Table 2 - SUMMARY OF CUT SLOPES

Proposed Cut-slope CS-52

Location: Sheet 3 of 5 – South of Lots 91-99

Direction Slope Faces: Southwest

Slope Parameters: 30± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 52-52' & 53-53'

Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping 28° to 30° towards the south to southeast with an apparent dip of 28°, which is steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-55) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.

Mitigation Measures: Not required.

Proposed Cut-slope CS-53

Location: Sheet 3 of 5 – South of Lots 112-121

Direction Slope Faces: South

Slope Parameters: 29± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 53-53' & 54-54'

Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping 28° to 30° towards the south to southeast with an apparent dip of 28°, which is steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-55) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.

Mitigation Measures: Not required.

Proposed Cut-slope CS-54

Location: Sheet 3 of 5 – South of Lots 139-146

Direction Slope Faces: South

Slope Parameters: 30± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 18-18'

Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs) with bedding dipping 28° to 30° towards the south to southeast with an apparent dip of 28°, which is steeper than the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-55) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that

Table 2 - SUMMARY OF CUT SLOPES

this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.

Mitigation Measures: Not required.

Proposed Cut-slope CS-55

Location: Sheet 3 of 5 – North of Lots 214-227

Direction Slope Faces: Southwest

Slope Parameters: 46± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 18-18'

Anticipated Geologic Conditions: Anticipated to expose bedrock (TQs). The axial trace of a syncline is anticipated to be exposed within the proposed slope face. The syncline hinge is anticipated to be broad with a plunge to the east (i.e. into the slope face). The bedrock (TQs) bedding is anticipated to be dipping 0° to 30˚ south at the vicinity of Lots 214 – 222 and dipping 0° to 40˚ north at the vicinity of Lots 222-227. Slope stability analysis on Cross Section 18-18' indicates this slope satisfies the Los Angeles County minimum factor of safety requirement of 1.50. **Calculated grossly stable**. This slope is located within the zone of tectonic deformation and there may be a potential for the slope to be surficially unstable due to adverse geologic conditions.

Mitigation Measures: Recommended that this slope be evaluated during Rough Grading operations relative to the competency of the bedrock. If it is determined that this slope is subject to surficial instability, then this slope can be constructed as a stability fill.

Proposed Cut-slope CS-56

Location: Sheet 3 of 5 – South of Lots 228, 234, 235 & 244

Direction Slope Faces: Southwest and southeast

Slope Parameters: 47± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 55-55'

Anticipated Geologic Conditions: Anticipated to expose deformed and faulted bedrock (TQs) with bedding predominantly dipping 62° to 90˚ towards the north. This slope is anticipated to be **grossly stable**. However, this slope is located within the zone of tectonic deformation and there may be a potential for the slope to be surficially unstable due to adverse geologic conditions.

Mitigation Measures: Recommended that this slope be evaluated during rough grading operations relative to the competency of the bedrock. If it is determined that this slope is subject to surficial instability, then this sloped can be constructed as a stability fill.

Table 2 - SUMMARY OF CUT SLOPES

Proposed Cut-slope CS-57

Location: Sheet 5 of 5 – North of Lots 256-263

Direction Slope Faces: South to southwest

Slope Parameters: 48± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 55-55'

Anticipated Geologic Conditions: Anticipated to expose deformed and faulted TQs bedrock with bedding predominantly dipping 62° to 90˚ towards the north. This slope is anticipated to be **grossly stable**. However, this slope is located within the zone of tectonic deformation and there may be a potential for the slope to be surficially unstable due to adverse geologic conditions.

Mitigation Measures: Recommended that this slope be evaluated during rough grading operations relative to the competency of the bedrock. If it is determined that this slope is subject to surficial instability, then this sloped can be constructed as a stability fill.

Proposed Cut-slope CS-58

Location: Sheet 3 and 5 of 5 – North and southwest of Lot 284

Direction Slope Faces: Northwest to southwest

Slope Parameters: 40± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 56-56'

Anticipated Geologic Conditions: Anticipated to expose deformed and faulted TQs bedrock predominantly dipping 62° to 90˚ towards the north. The west-facing portion of this slope will have a fill over cut bedrock configuration. This slope is anticipated to be **grossly stable**. However, this slope is also located within the zone of tectonic deformation and there may be a potential for the slope to be surficially unstable due to adverse geologic conditions.

Mitigation Measures: Recommend that a **Stability fill** utilizing at least 25 ft wide by 5 ft deep keyway to mitigate fill over cut for the west-facing portion of the slope. Recommended that the northwest-facing portion of the slope be evaluated during Rough Grading operations relative to the competency of the bedrock. If it is determined that this slope is subject to surficial instability, then this sloped can be constructed as a stability fill.

Proposed Cut-slope CS-59

Location: Sheet 4 of 5 – South of Lots 338-344

Direction Slope Faces: South to southwest to west

Slope Parameters: 100± feet high with a 2:1 (h:v) slope gradient

Cross Sections: 57-57', 58-58' & 60-60'

Anticipated Geologic Conditions: This slope area was originally graded during the Rough Grading operations. The west-facing portion of the proposed slope is anticipated to expose compacted fill (Cf). **Grossly stable by inspection**. The eastern portion of the south to

Table 2 - SUMMARY OF CUT SLOPES

southwest-facing slope is anticipated to expose both compacted fill (Cf), non-structural compacted fill (Cf_{NS}) and bedrock (TQs) with bedding dipping into the proposed cut slope face. **Grossly stable by inspection**. However, this portion of the slope will have a fill over cut bedrock configuration.

Mitigation Measures: No mitigation required for the west-facing portion of the slope. Recommended a **Stability fill** utilizing at least 30 ft wide by 3 ft deep keyway starting at the lowest most terrace bench to mitigate the fill over cut for the south to southwest-facing portion of the slope.

Proposed Cut-slope CS-60

Location: Sheet 5 of 5 – South of Lots 312-314

Direction Slope Faces: North

Slope Parameters: 30± feet high with a 2:1 (h:v) slope gradient

Cross Sections: None

Anticipated Geologic Conditions: This slope is anticipated to expose bedrock (TQs) with bedding daylighted at a dip of 10° out of the proposed cut slope face. Comparison of the slope parameters and geologic conditions of this slope to a more critical proposed cut slope (i.e. Cut Slope CS-6) that satisfies the Los Angeles County minimum factor of safety requirement of 1.50 indicates that this slope will also satisfy minimum safety factor requirements. **Grossly stable by comparison**.

Mitigation Measures: No mitigation required.

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[i] Per the County of Los Angeles Building Code Section J107 – Fills (2011 edition), when fill is to be placed over a cut a key shall be provided which is at least 10 feet in width and 2 feet in depth. The area beyond the toe of fill shall be sloped for sheet overflow or a paved drain shall be constructed thereon.

Table 3 - CROSS SECTION INVENTORY LIST

Our report dated August 27, 2004 (see ref. 8) that addressed the previous VTTM contained 45 cross sections (1-1' through 45-45'). Based on the revised VTTM the prior cross section have either been eliminated (i.e. obsolete) or revised or required no change. Cross sections that the revised VTTM grading design results in no change, the changes to proposed grades are minor or the changes by inspection have no impact on prior analyses are not presented in this report. In addition 15 new cross sections (48-48' through 62-62') have been prepared to address revised or new cut slopes. Below is summary of the status of previous and new cross sections.

Cross Sections (not included)

13 Eliminated cross sections:

1-1', 15-15', 16-16', 19-19', 29-29', 30-30', 36-36', 38-38', 40-40' 41-41', 42-42', 44-44' and 45-45'.

12 No revisions to cross sections:

10-10', 11-11', 12-12', 13-13', 14-14', 20-20', 21-21', 26-26', 27-27', 31-31', 32-32', 35-35', 37-37' and 39-39'.

Cross Sections (presented)

17 Revised cross sections:

2-2', 3-3', 4-4', 5-5', 6-6', 7-7', 8-8', 9-9', 17-17', 18-18', 22-22', 23-23', 24-24', 25-25', 28-28', 33-33', 34-34' and 43-43'

15 New Cross Sections

48-48', 49-49', 50-50', 51-51', 52-52', 53-53', 54-54', 55-55', 56-56' 57-57', 58-58', 59-59', 60-60', 61-61' and 62-62'

Cross Sections that were calculated or re-calculated relative to slope stability

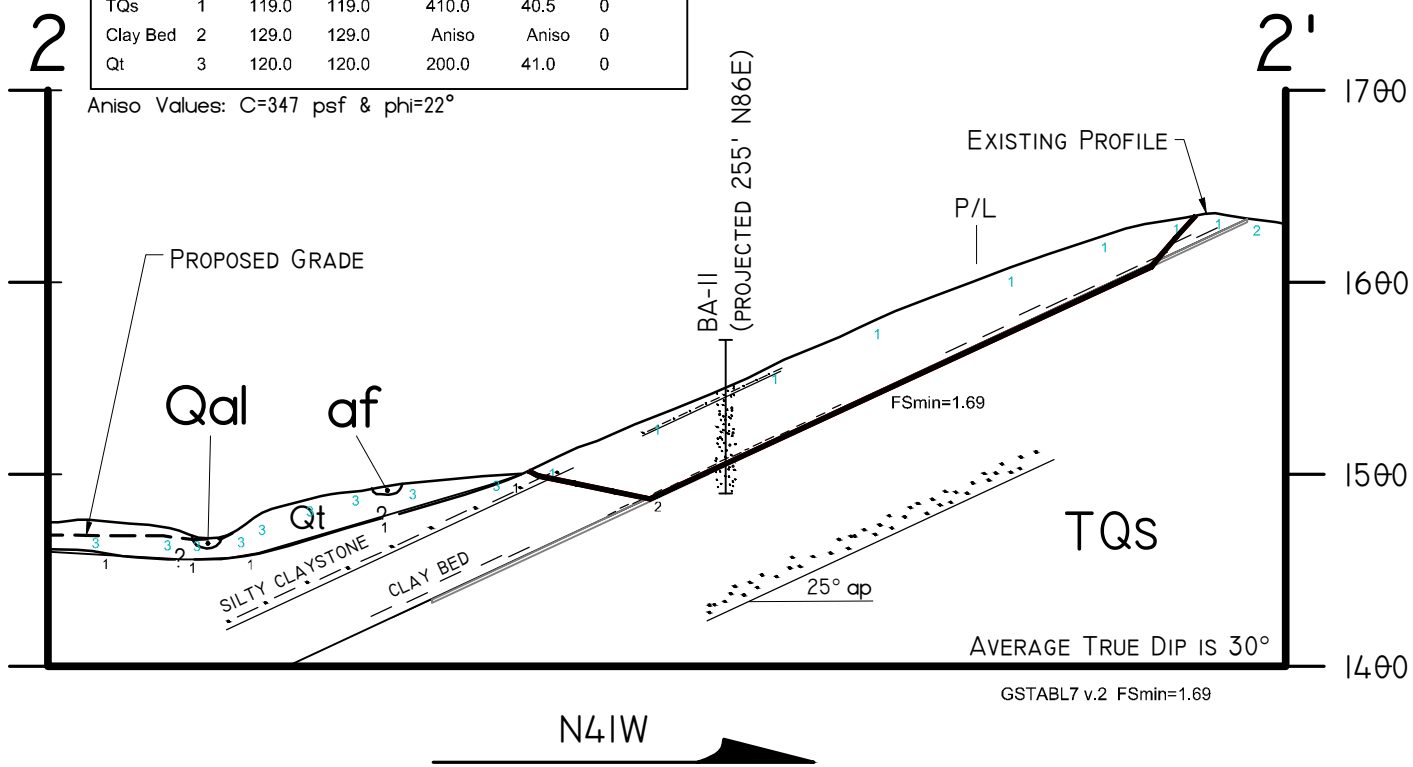
2-2', 3-3', 4-4', 5-5', 9-9', 18-18' and 28-28'

Appendix A

#	FS
a	1.69

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
TQs	1	119.0	119.0	410.0	40.5	0
Clay Bed	2	129.0	129.0	Aniso	Aniso	0
Qt	3	120.0	120.0	200.0	41.0	0

Aniso Values: C=347 psf & phi=22°



ALLAN E. SEWARD
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Geological and Geotechnical Consultants

CROSS SECTION 2-2'

JOB NO.: 13-16171S-4

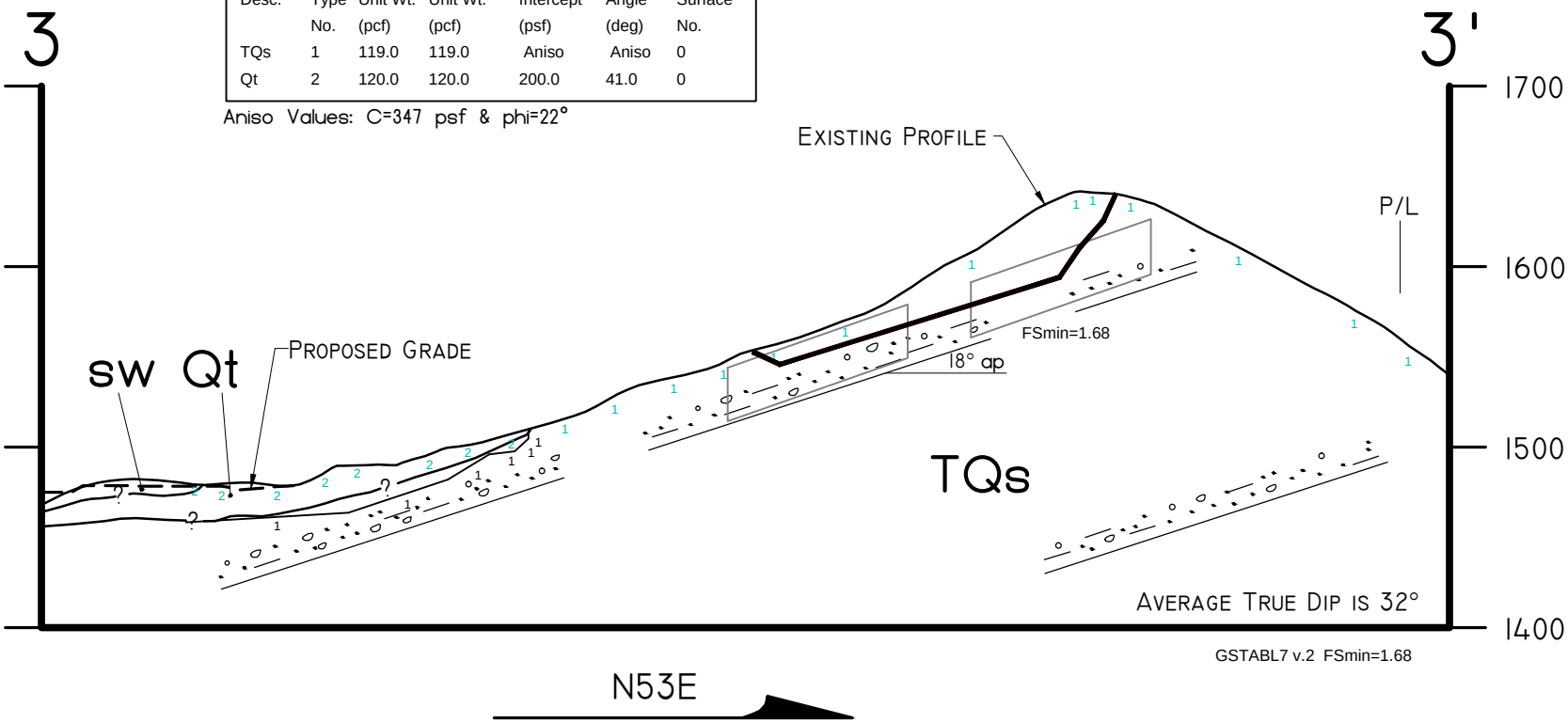
DATE: 6/7/13

SCALE: 1"=100' (H=V)

#	FS
a	1.68

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
TQs	1	119.0	119.0	Aniso	Aniso	0
Qt	2	120.0	120.0	200.0	41.0	0

Aniso Values: C=347 psf & phi=22°



ALLAN E. SEWARD
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CROSS SECTION 3-3'

JOB NO.: 13-16171S-4

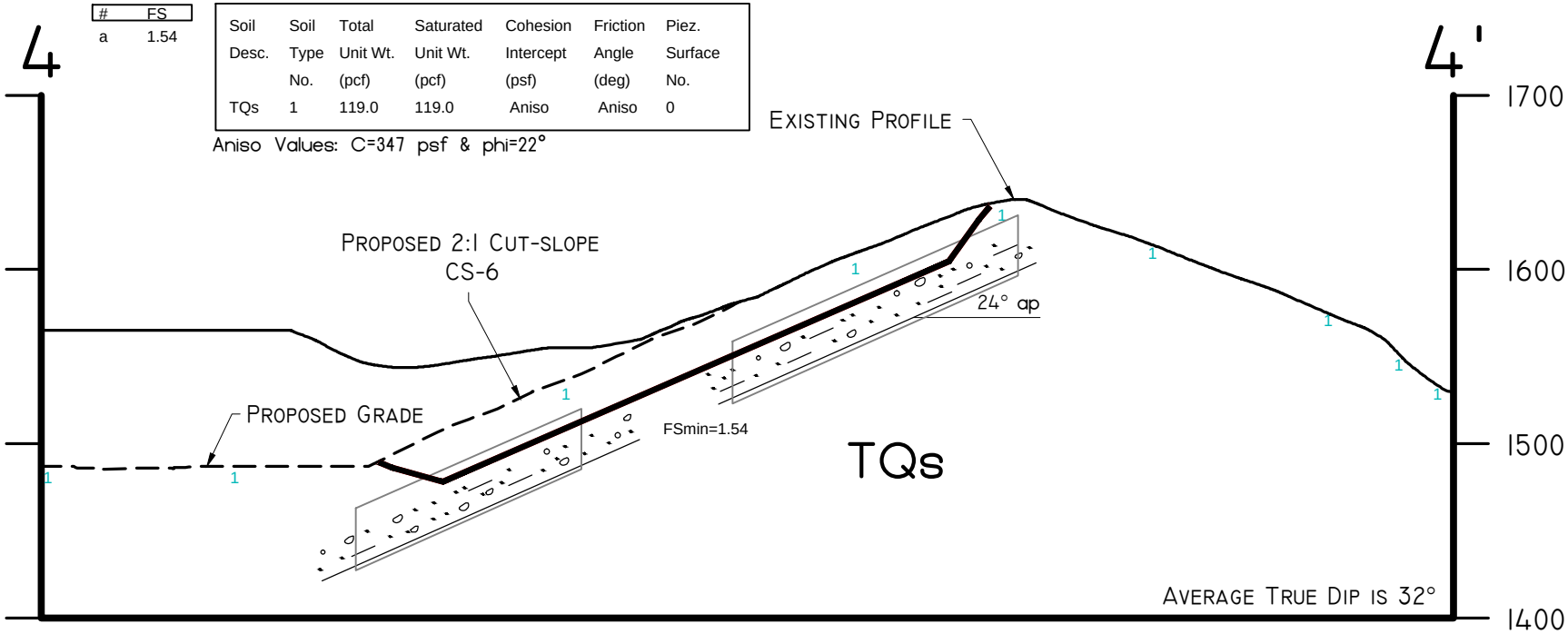
DATE: 6/7/13

SCALE: 1"=100' (H=V)

#	FS
a	1.54

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
TQs	1	119.0	119.0	Aniso	Aniso	0

Aniso Values: C=347 psf & phi=22°



GSTABL7 v.2 FSmin=1.54

N37E

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CROSS SECTION 4-4'

JOB NO.: 13-16171S-4

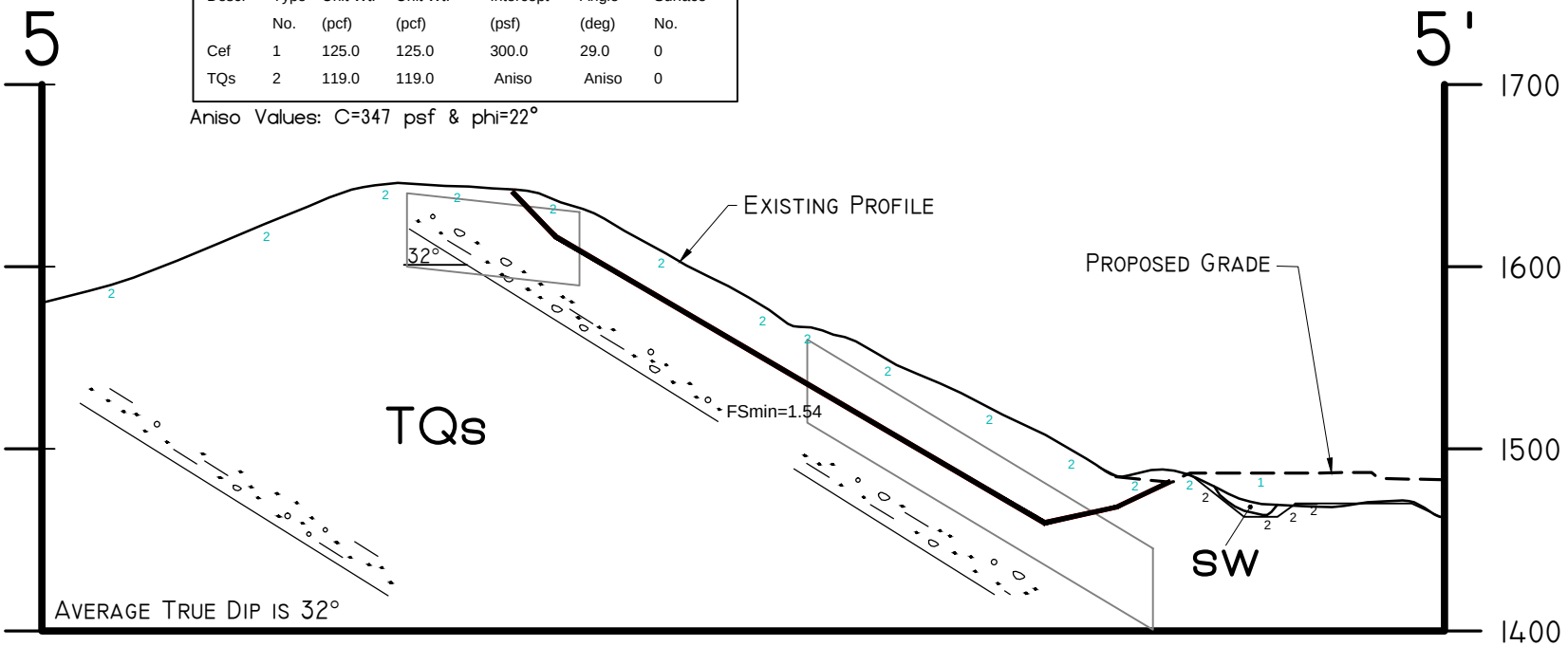
DATE: 6/7/13

SCALE: 1"=100' (H=V)

#	FS
a	1.54

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Cef	1	125.0	125.0	300.0	29.0	0
TQs	2	119.0	119.0	Aniso	Aniso	0

Aniso Values: C=347 psf & phi=22°



GSTABL7 v.2 FSmin=1.54

N5E

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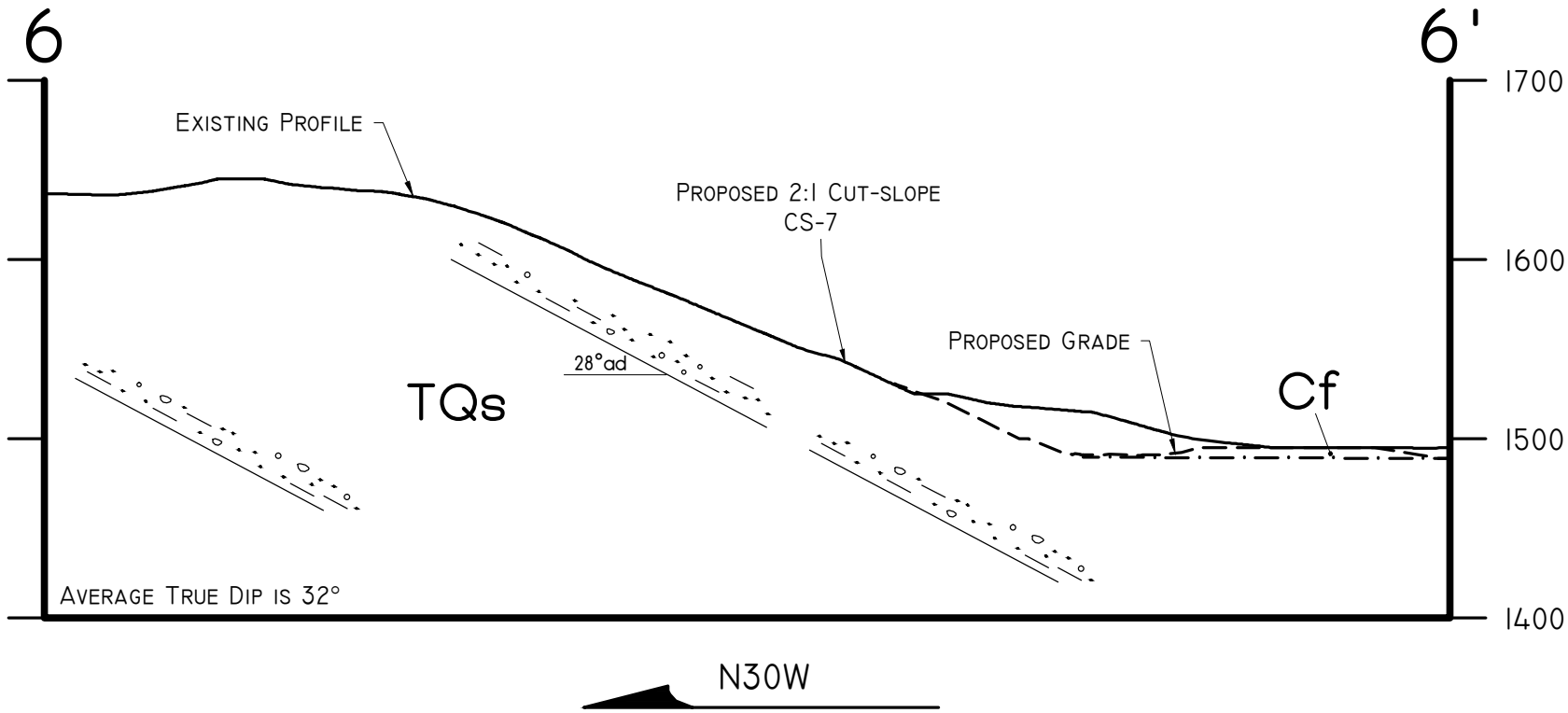
CROSS SECTION 5-5'

JOB NO.: 13-16171S-4

DATE: 6/7/13

SCALE: 1"=100' (H=V)



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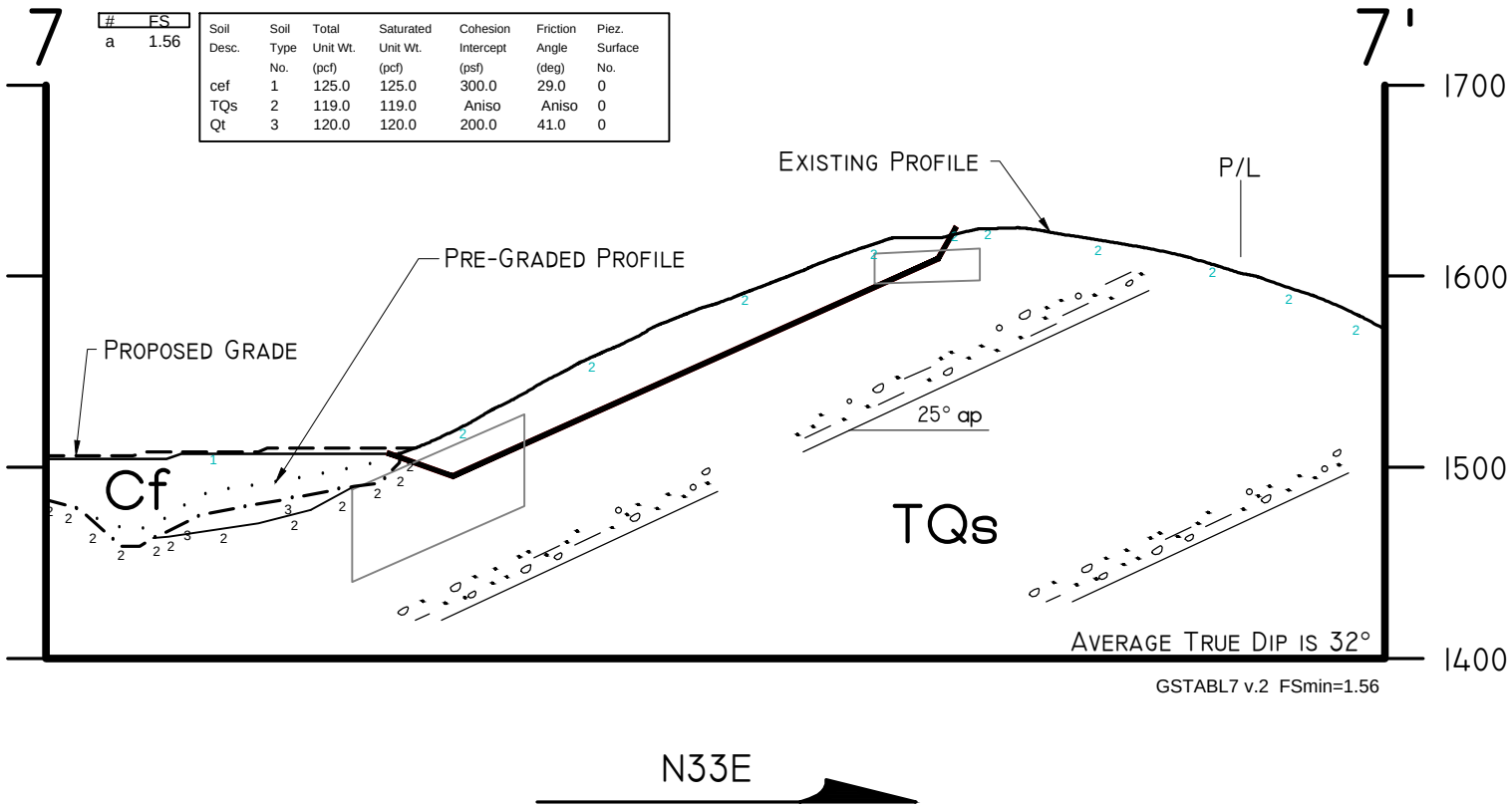
Cross Section 6-6'

Job No.: 13-16171S-4

Date: 6/7/13

Scale: 1"=100' (H=V)



#	FS
a	1.56

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
cef	1	125.0	125.0	300.0	29.0	0
TQs	2	119.0	119.0	Aniso	Aniso	0
Qt	3	120.0	120.0	200.0	41.0	0

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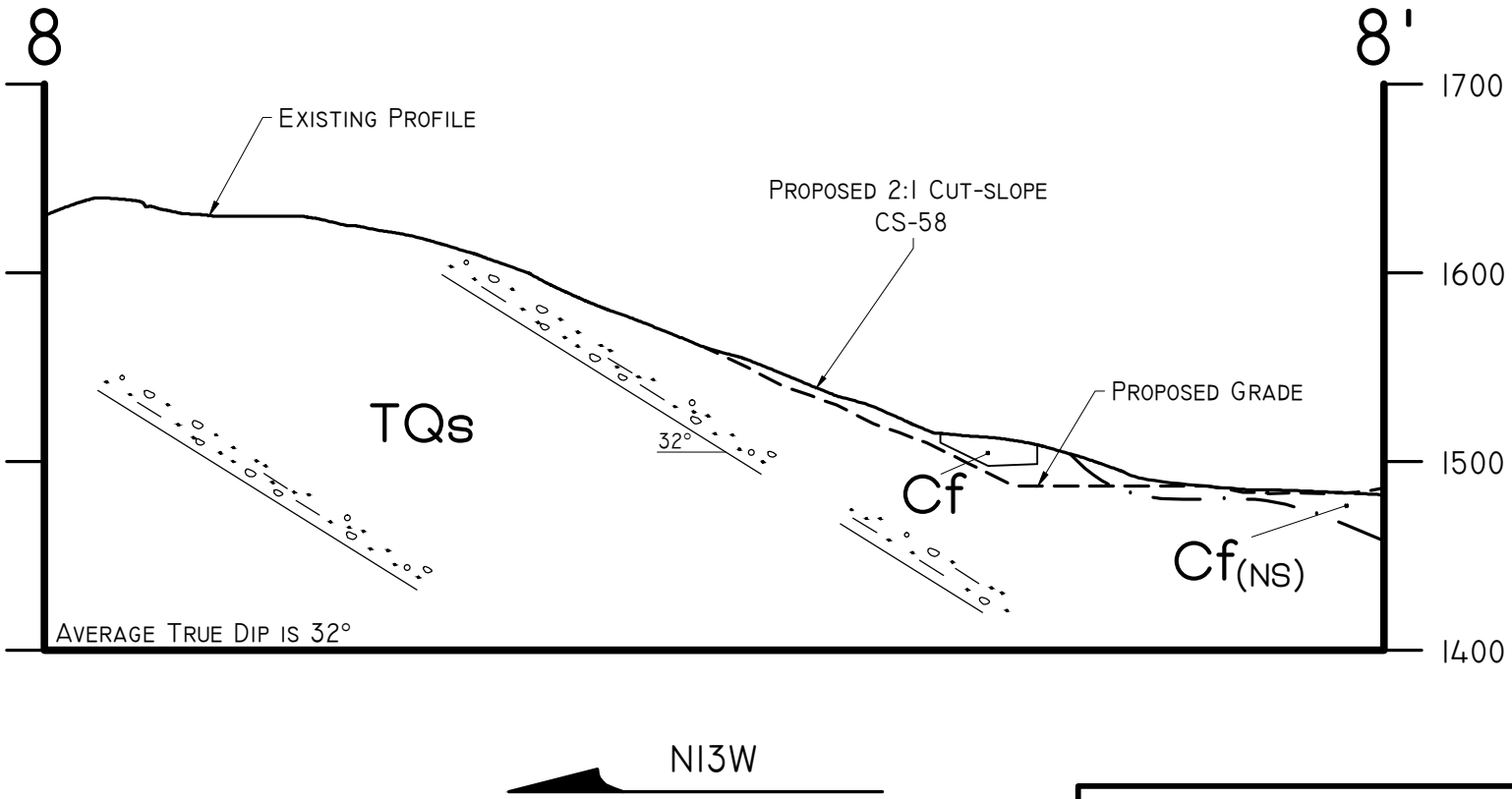
CROSS SECTION 7-7'

JOB NO.: 13-16171S-4

DATE: 6/7/13

SCALE: 1"=100' (H=V)



ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
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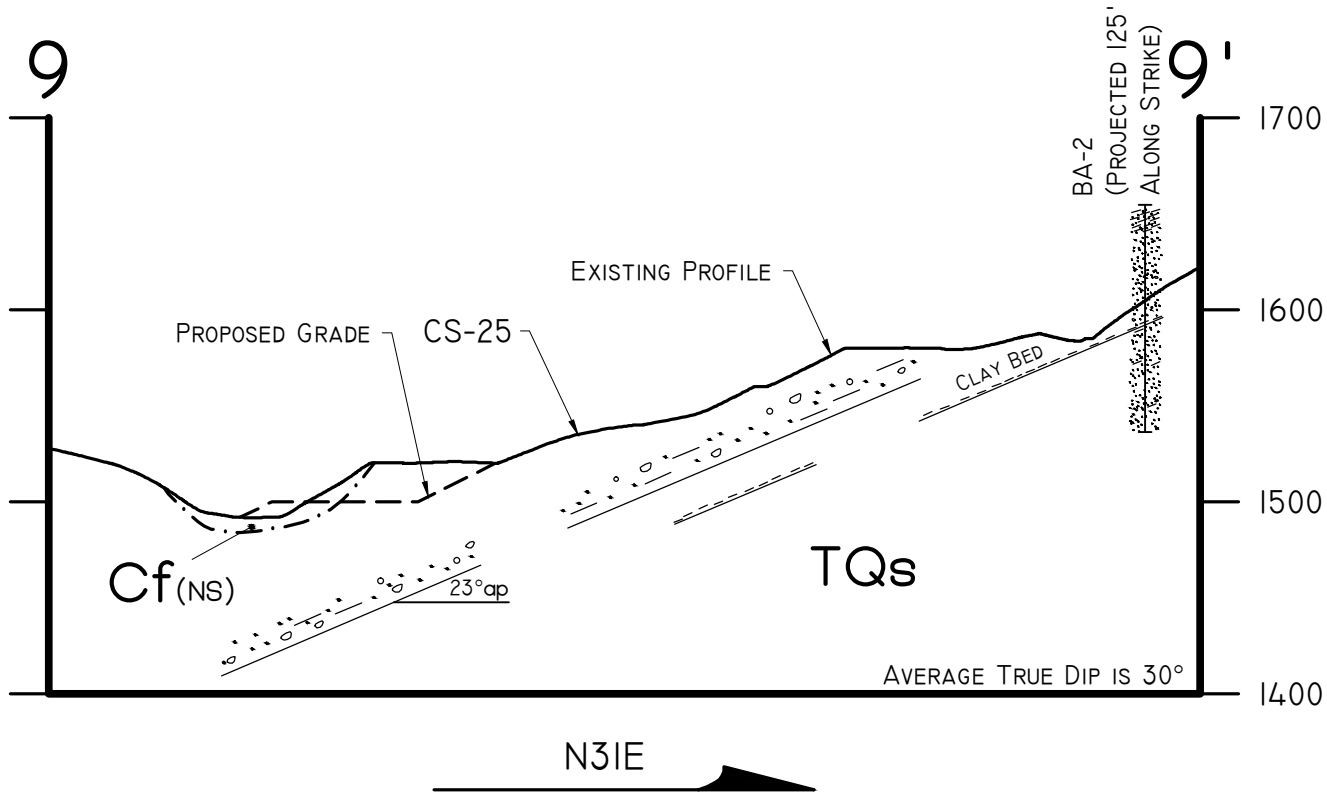
CROSS SECTION 8-8'

JOB NO.: 13-16171S-4

DATE: 6/7/13

SCALE: 1"=100' (H=V)

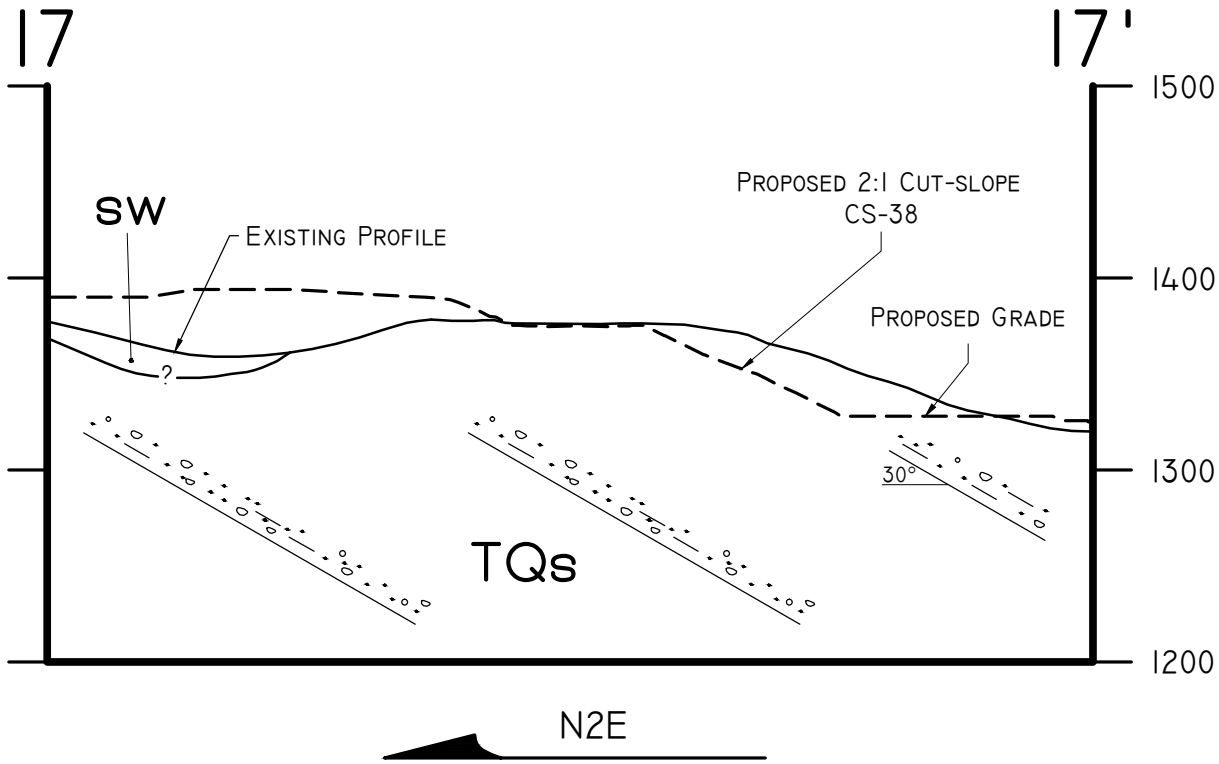


ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 9-9'

JOB NO.: 13-16171S-4

DATE: 6/7/13 | SCALE: 1"=100' (H=V)



ALLAN E. SEWARD
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Geological and Geotechnical Consultants

CROSS SECTION 17-17'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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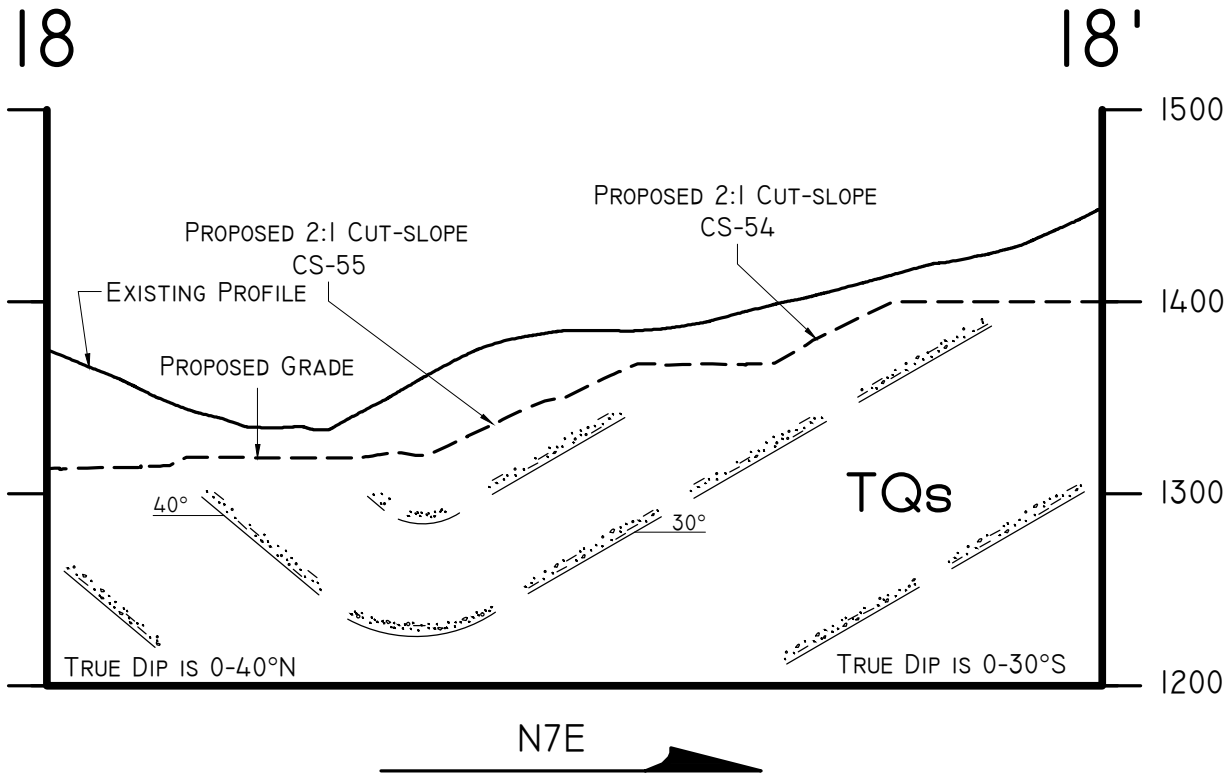

Allan E. Seward
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Cross Section 18-18'

Job No.: 13-16171S-4

Date: 6/7/13

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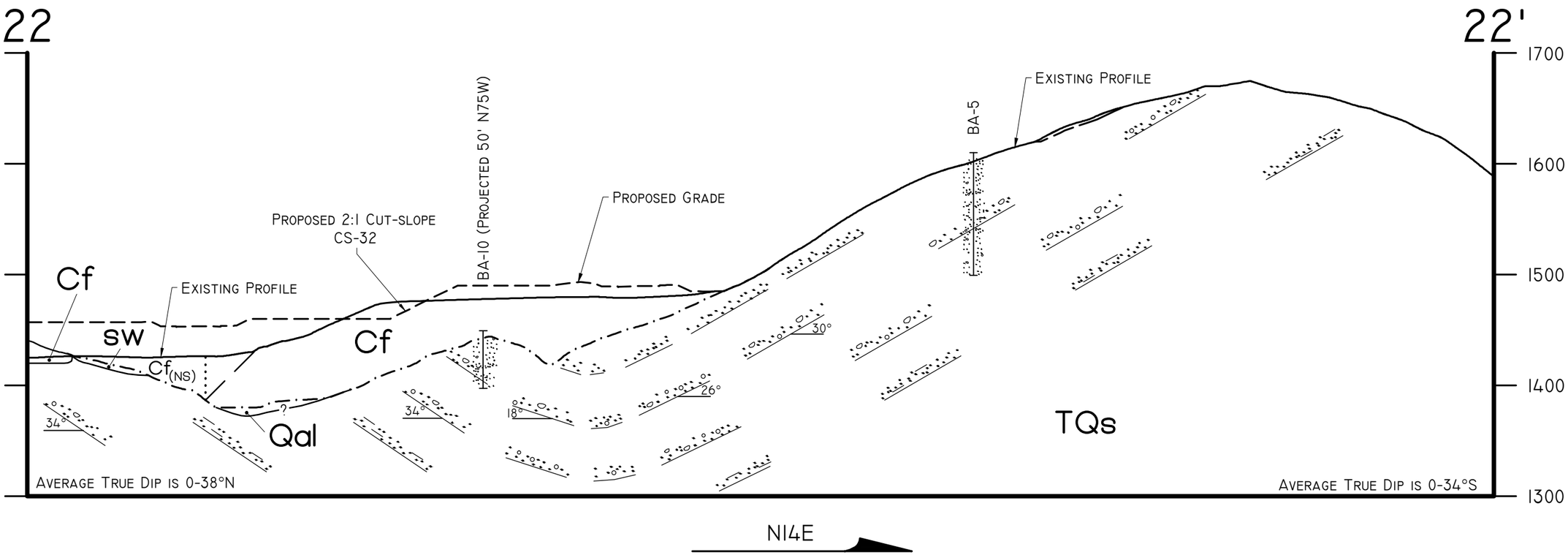

Allan E. Seward
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Geological and Geotechnical Consultants

Cross Section 22-22'

Job No.: 13-16171S-4

Date: 6/7/13

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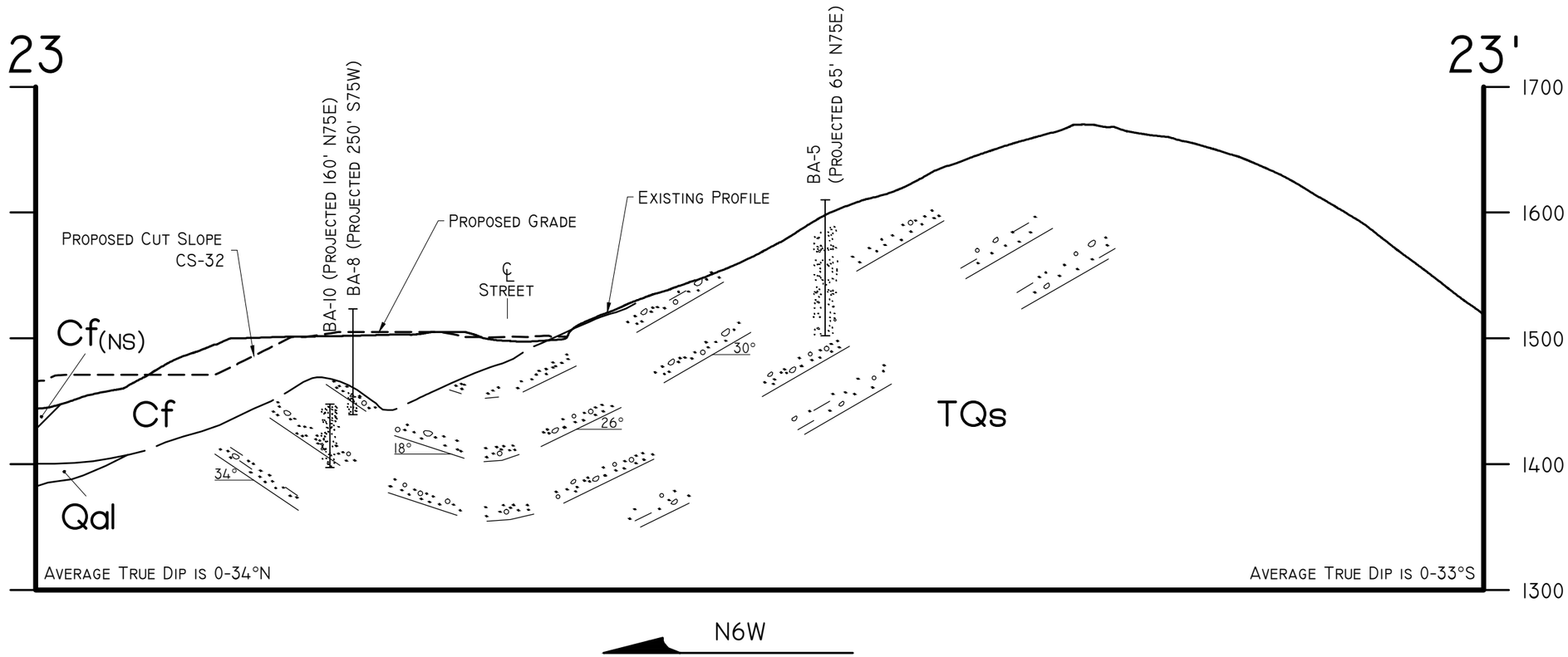

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 23-23'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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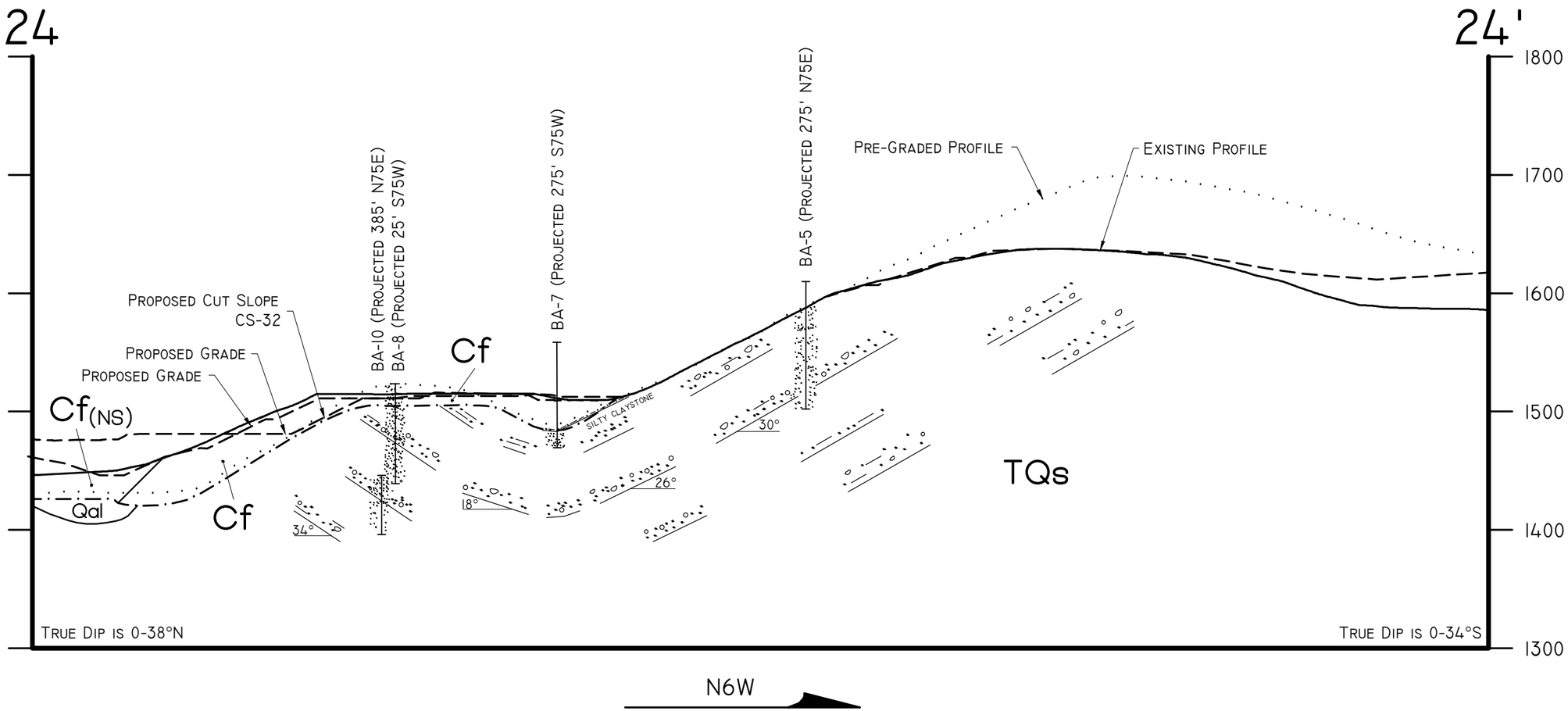

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 24-24'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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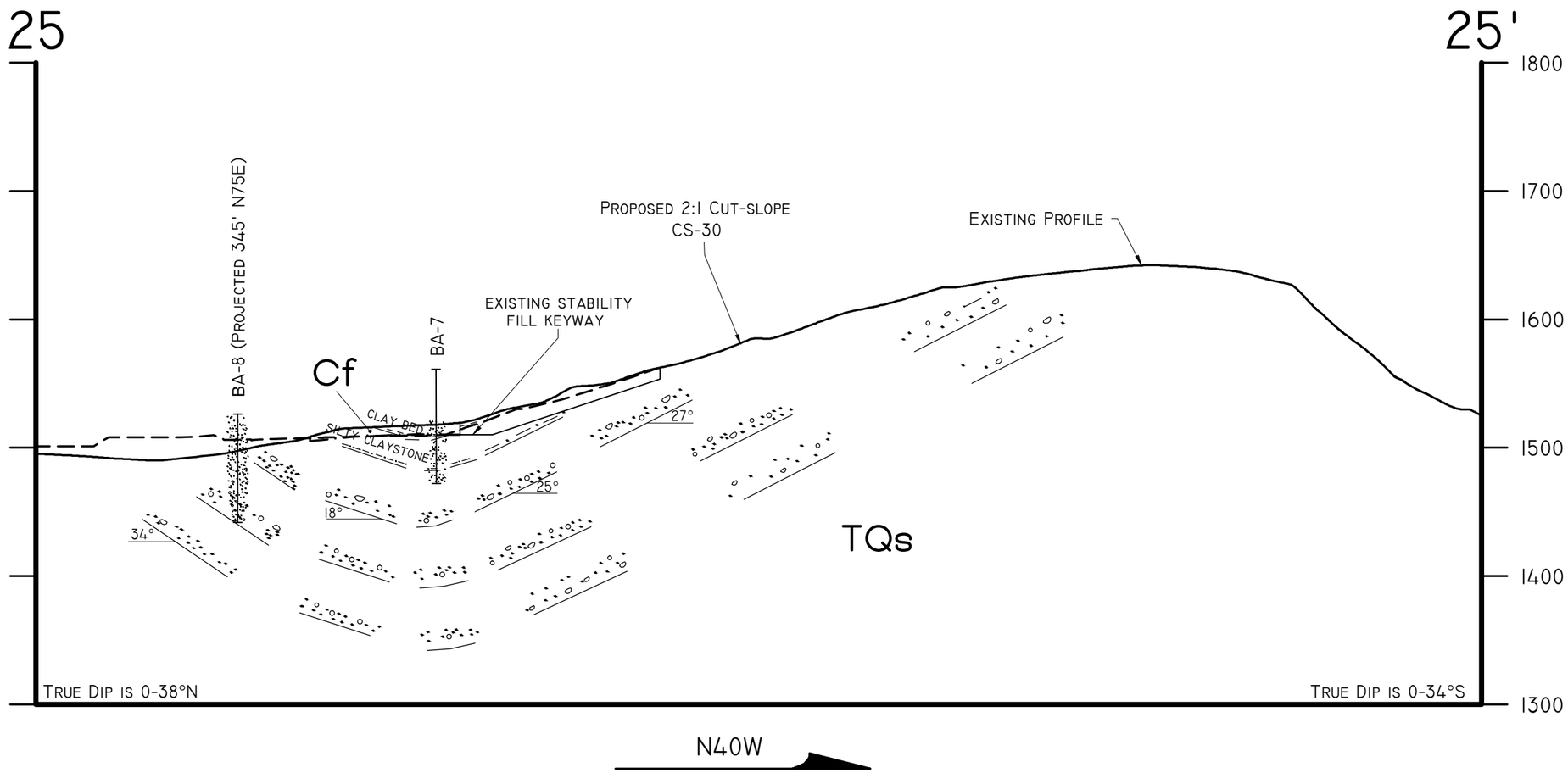

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 25-25'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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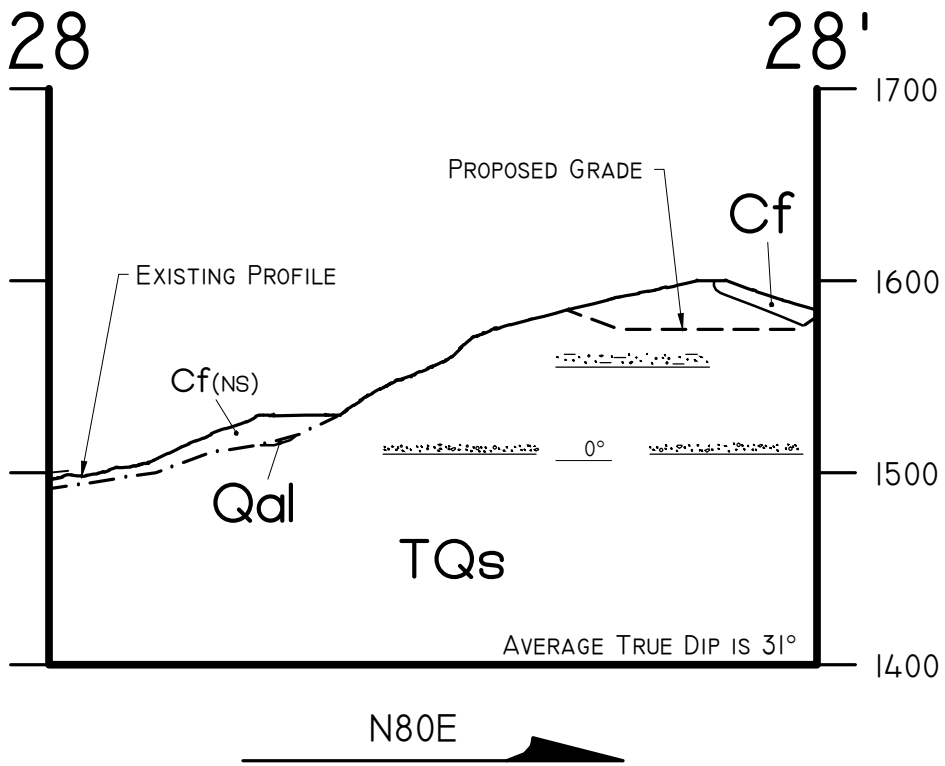


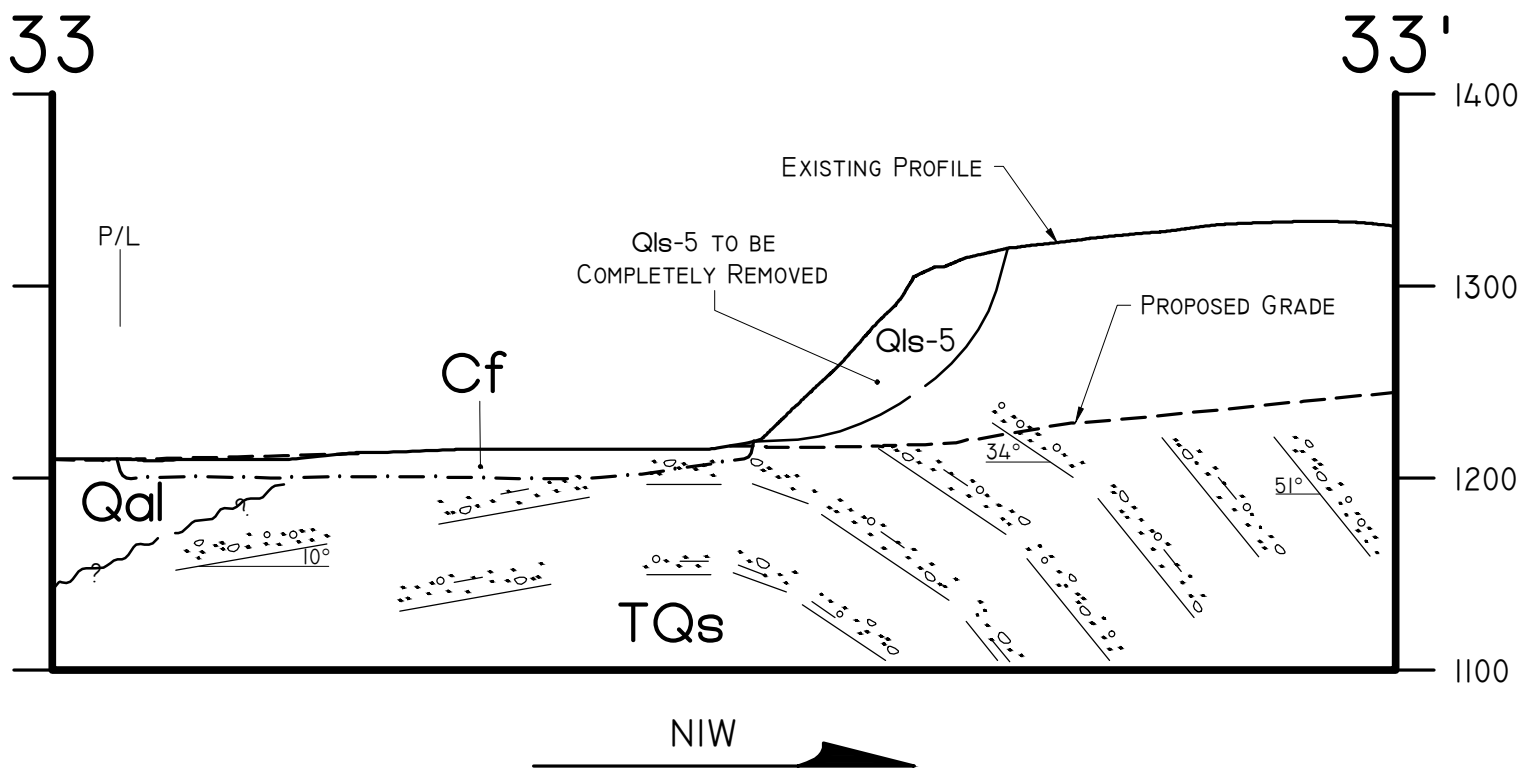
ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

Cross Section 28-28'

Job No.: 13-16171S-4

Date: 6/7/13

Scale: 1"=100' (H=V)



ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 33-33'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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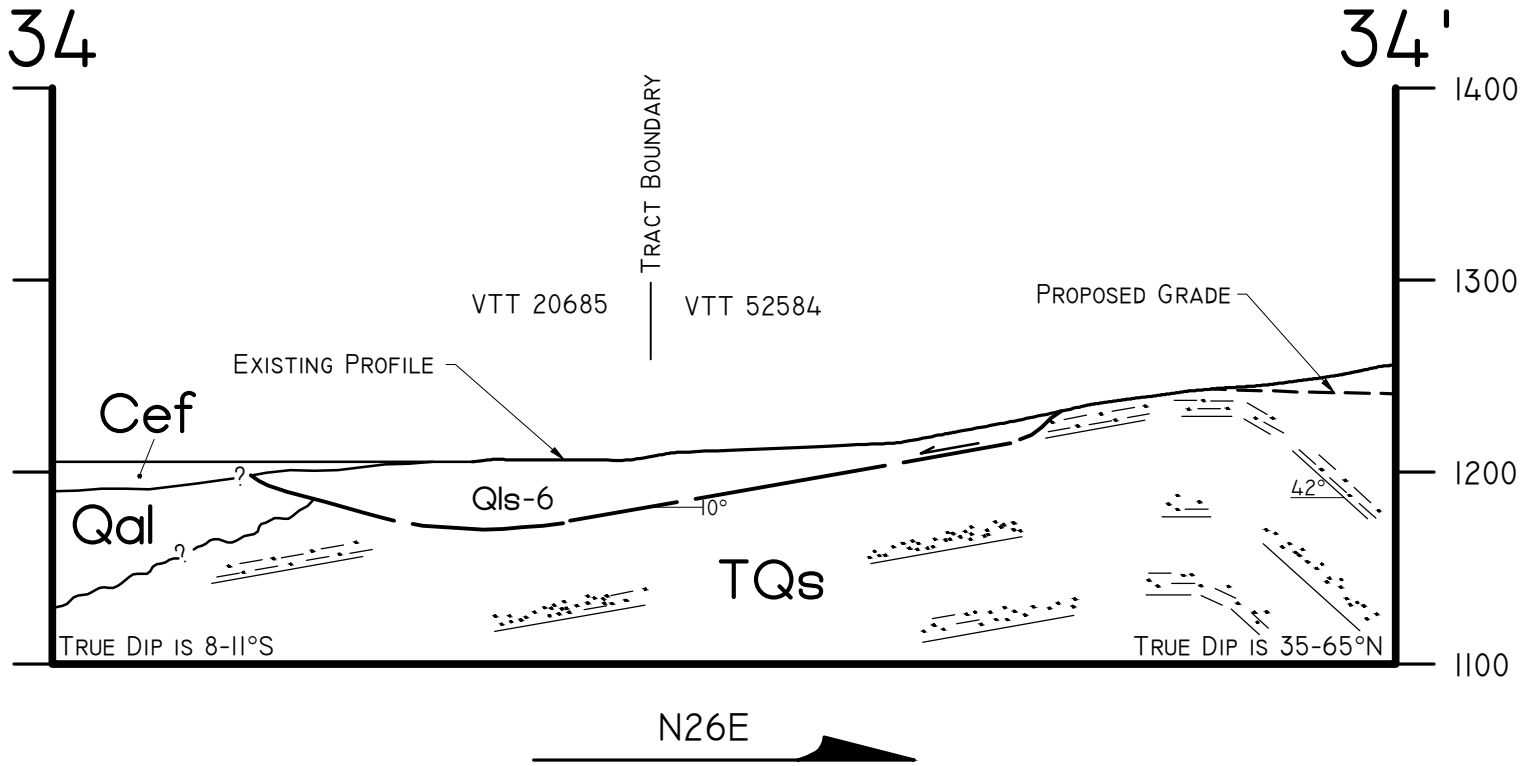

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 34-34'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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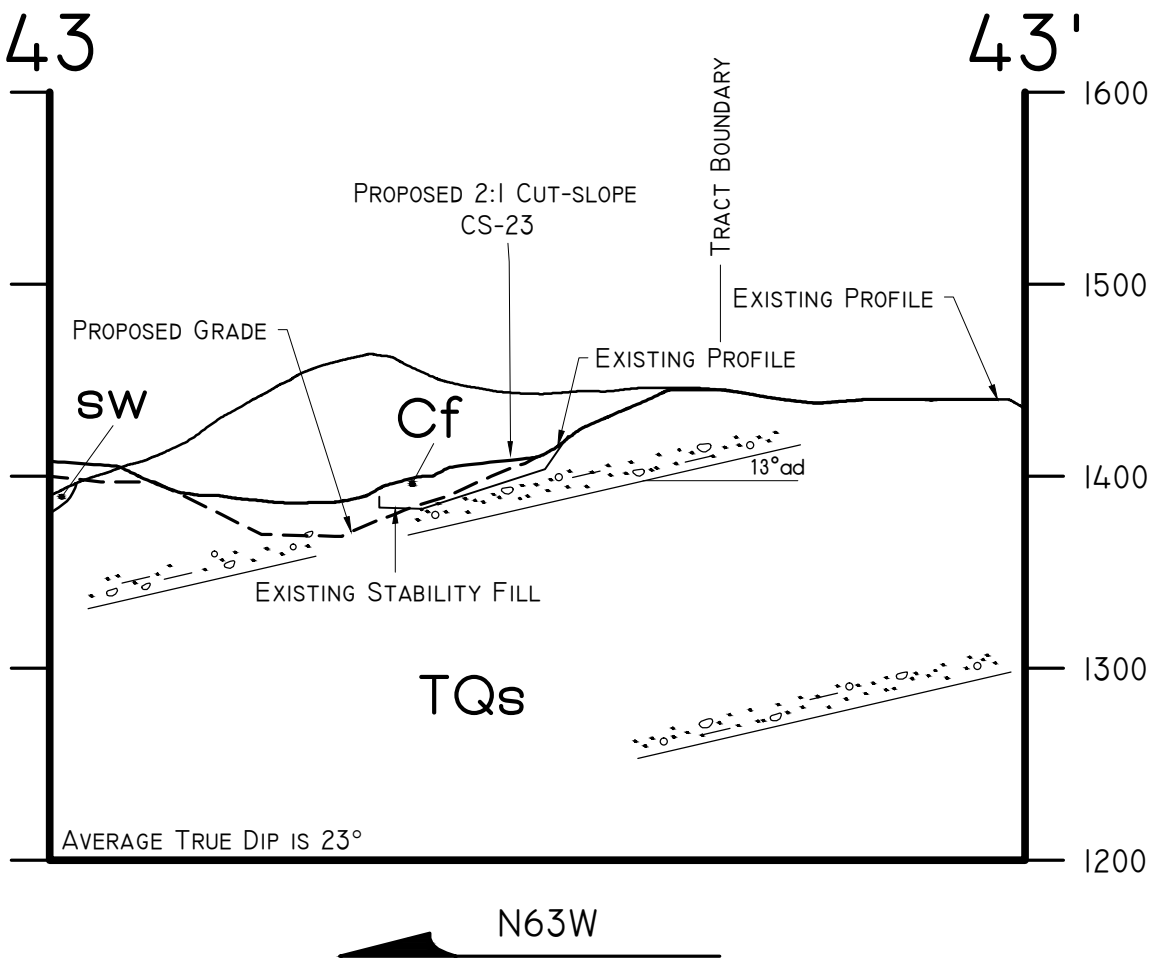

Allan E. Seward
Engineering Geology, Inc.
Geological and Geotechnical Consultants

Cross Section 43-43'

Job No.: 13-16171S-4

Date: 6/7/13

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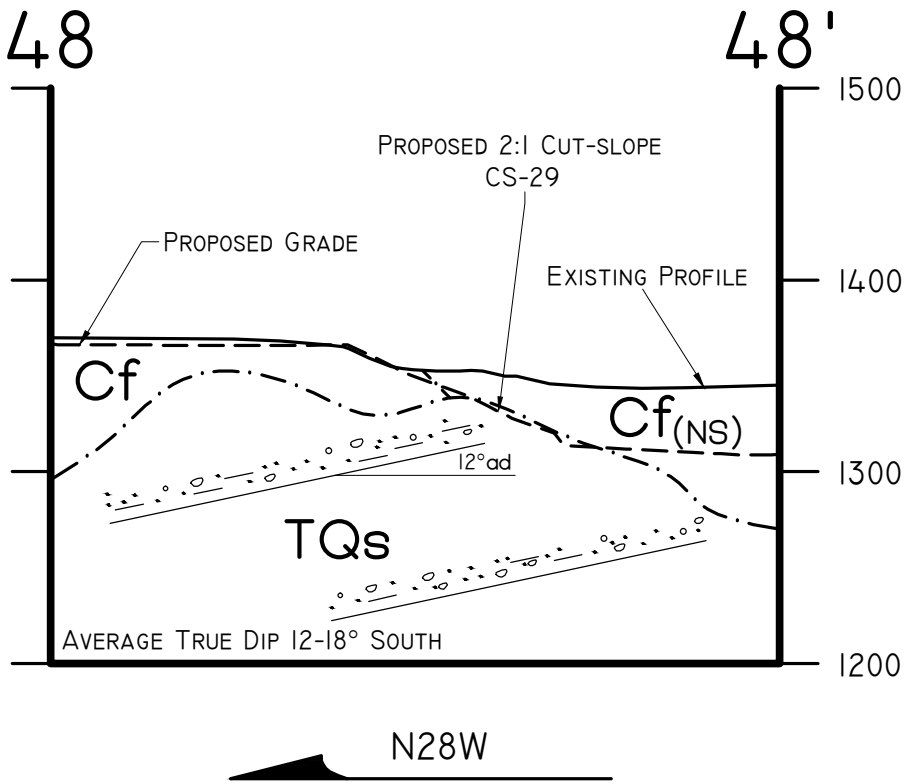

Allan E. Seward
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Geological and Geotechnical Consultants

Cross Section 48-48'

Job No.: 13-16171S-4

Date: 6/7/13

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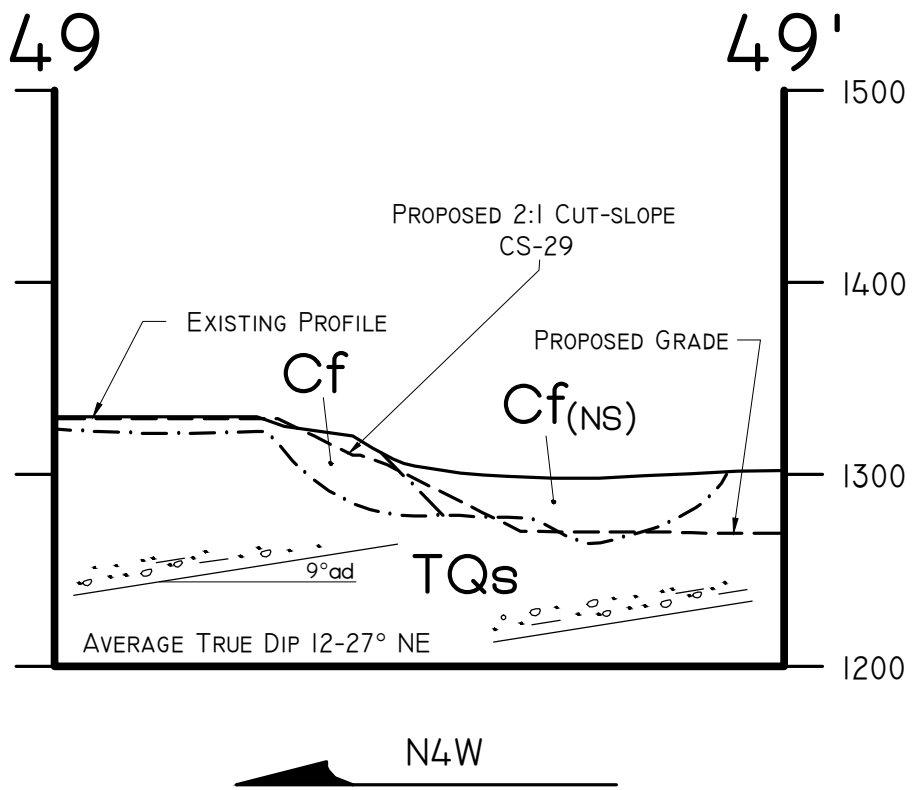

Allan E. Seward
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Cross Section 49-49'

Job No.: 13-16171S-4

Date: 6/7/13

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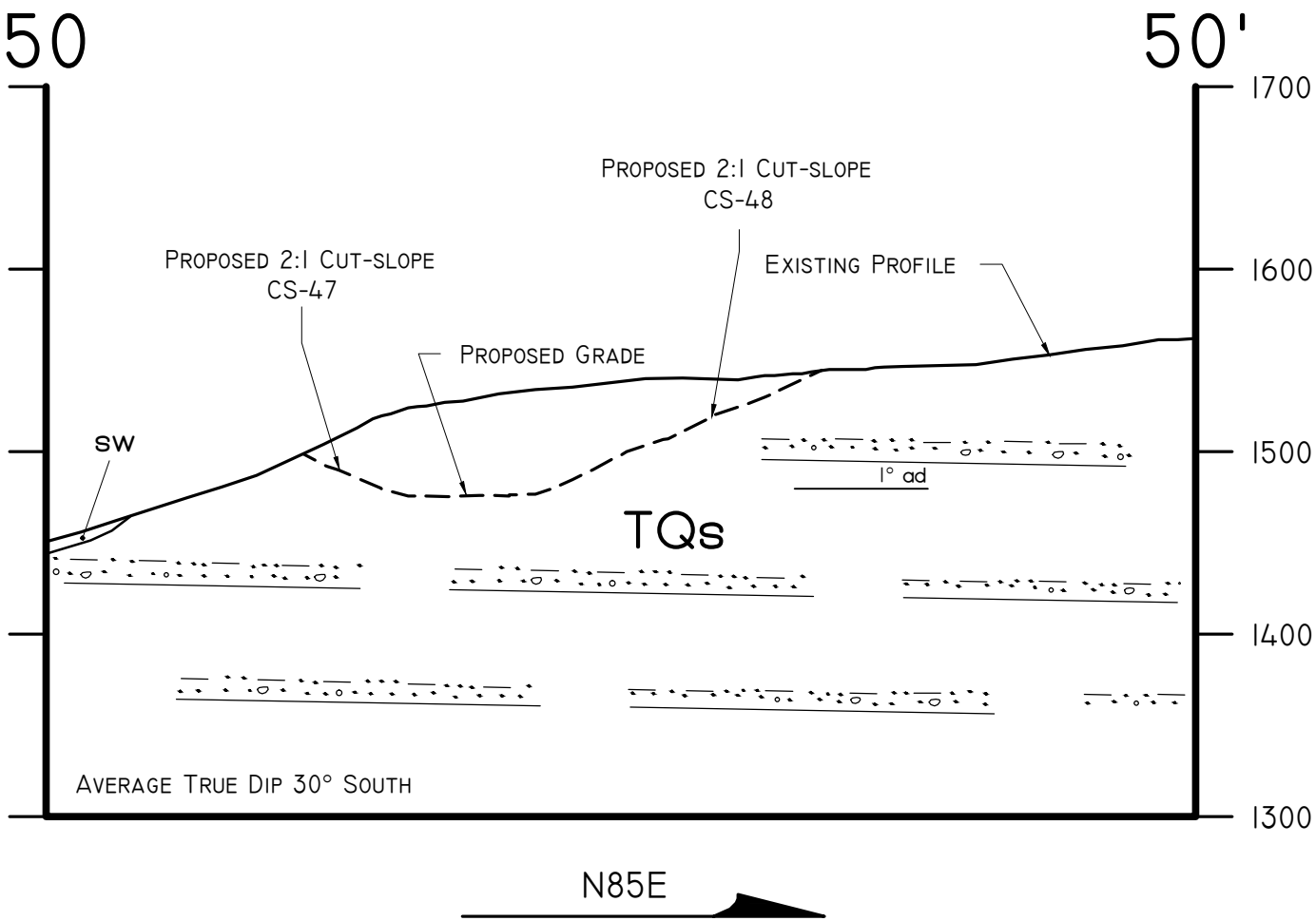

Allan E. Seward
Engineering Geology, Inc.
Geological and Geotechnical Consultants

Cross Section 50-50'

Job No.: 13-16171S-4

Date: 6/7/13

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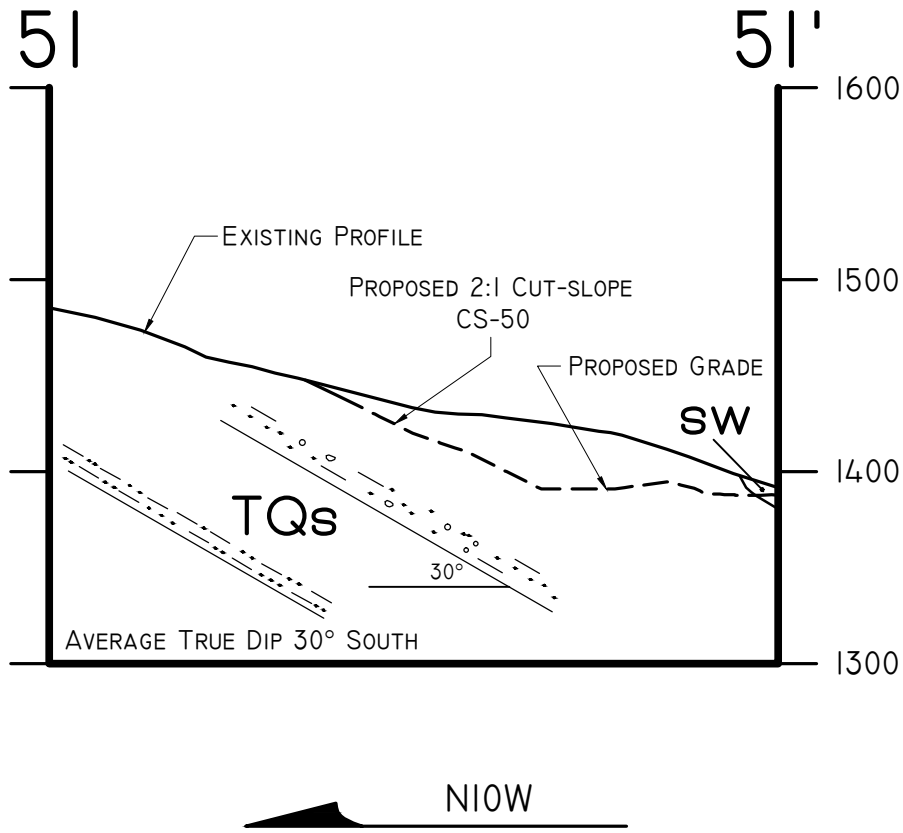

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 51-51'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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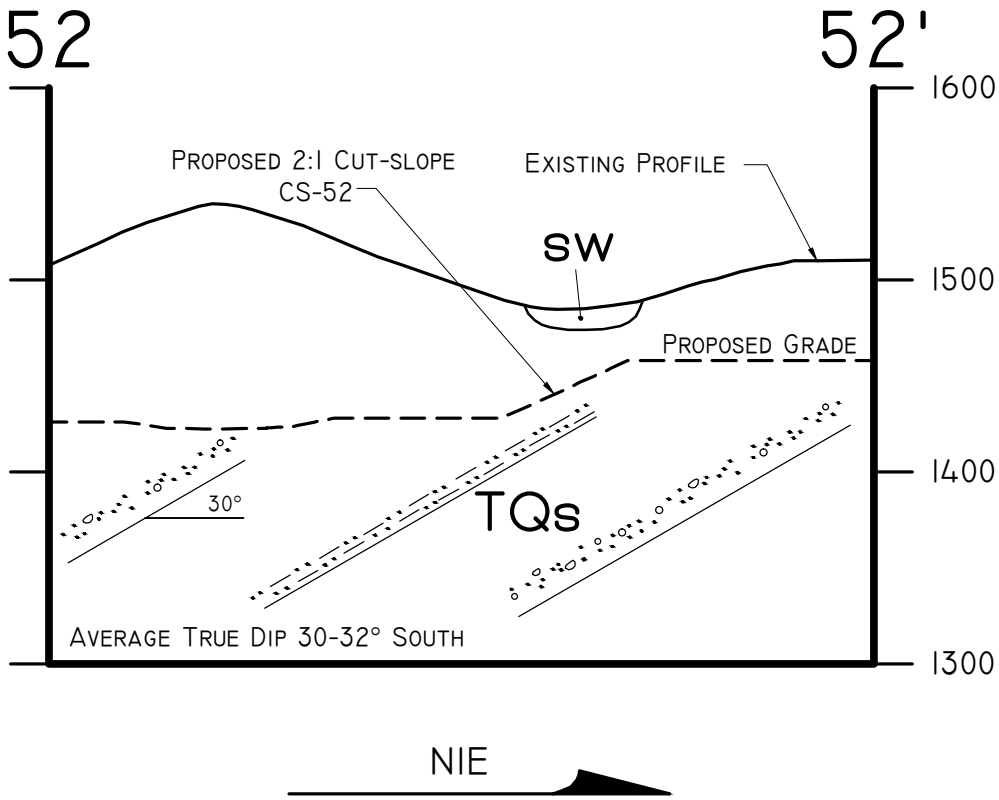

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 52-52'

JOB NO.: 13-16171S-4

DATE: 6/7/13

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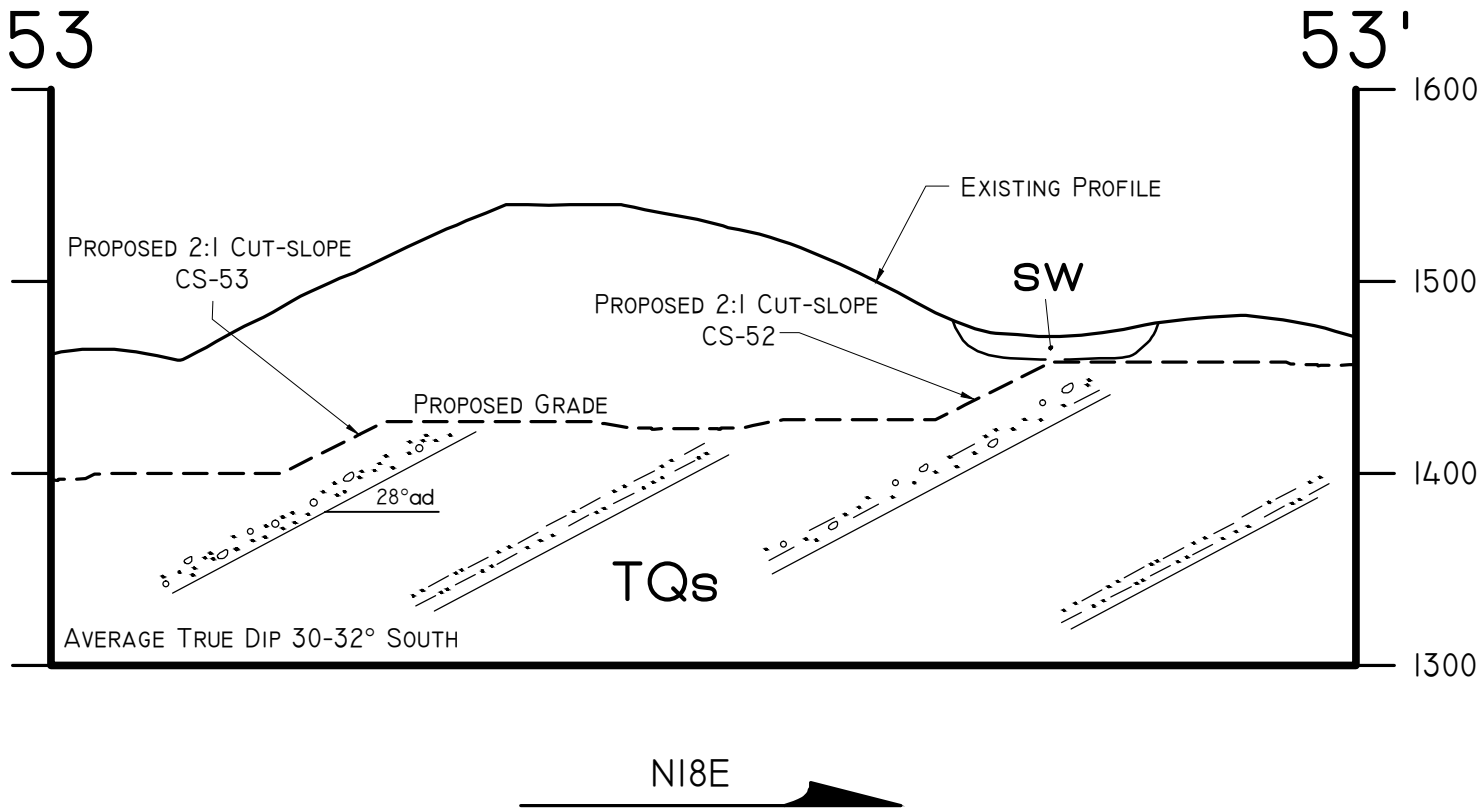

Allan E. Seward
Engineering Geology, Inc.
Geological and Geotechnical Consultants

Cross Section 53-53'

Job No.: 13-16171S-4

Date: 6/7/13

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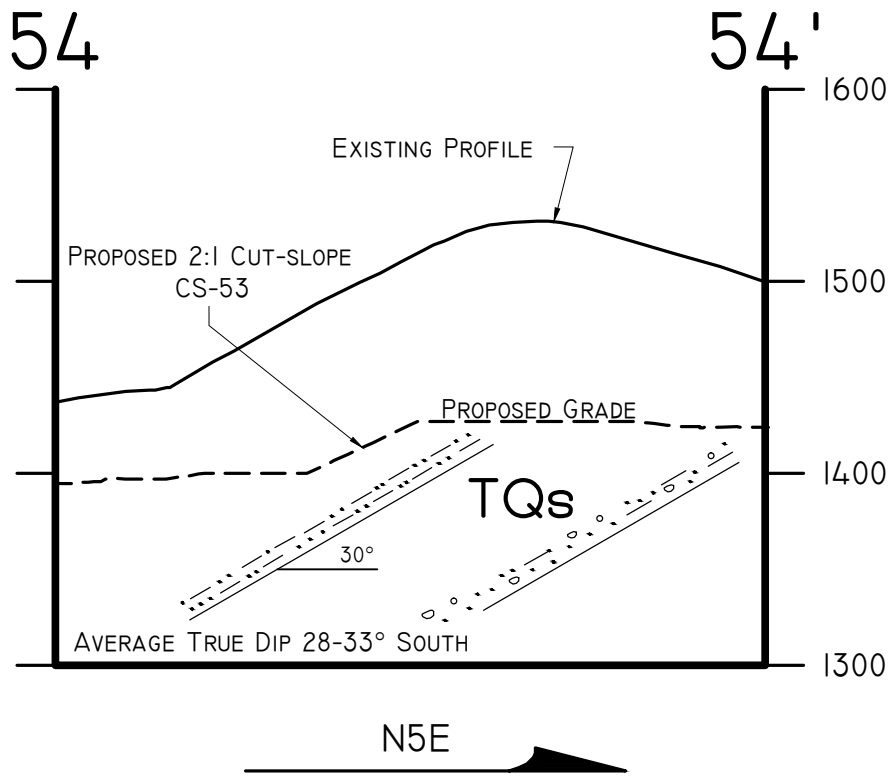

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 54-54'

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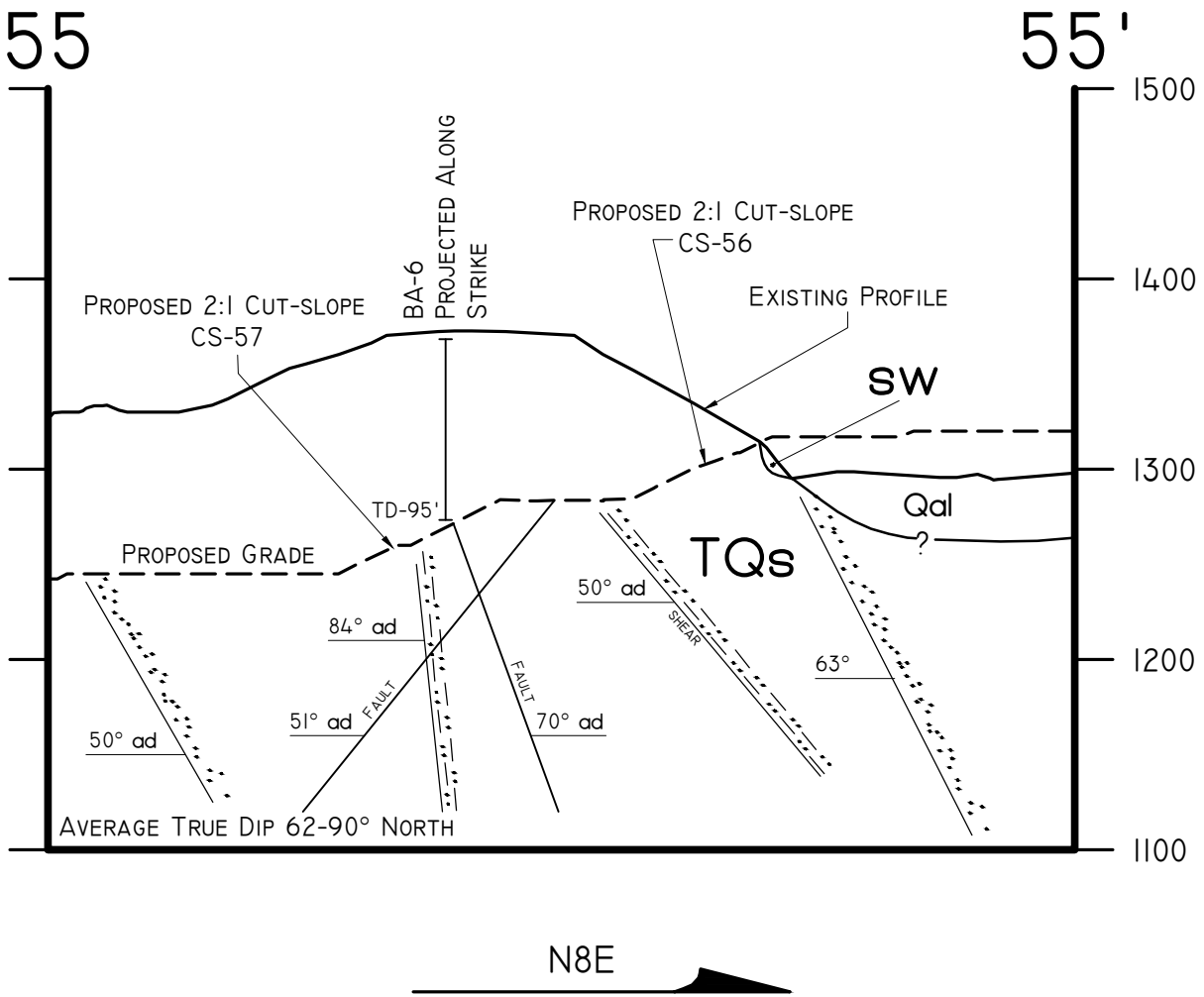

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 55-55'

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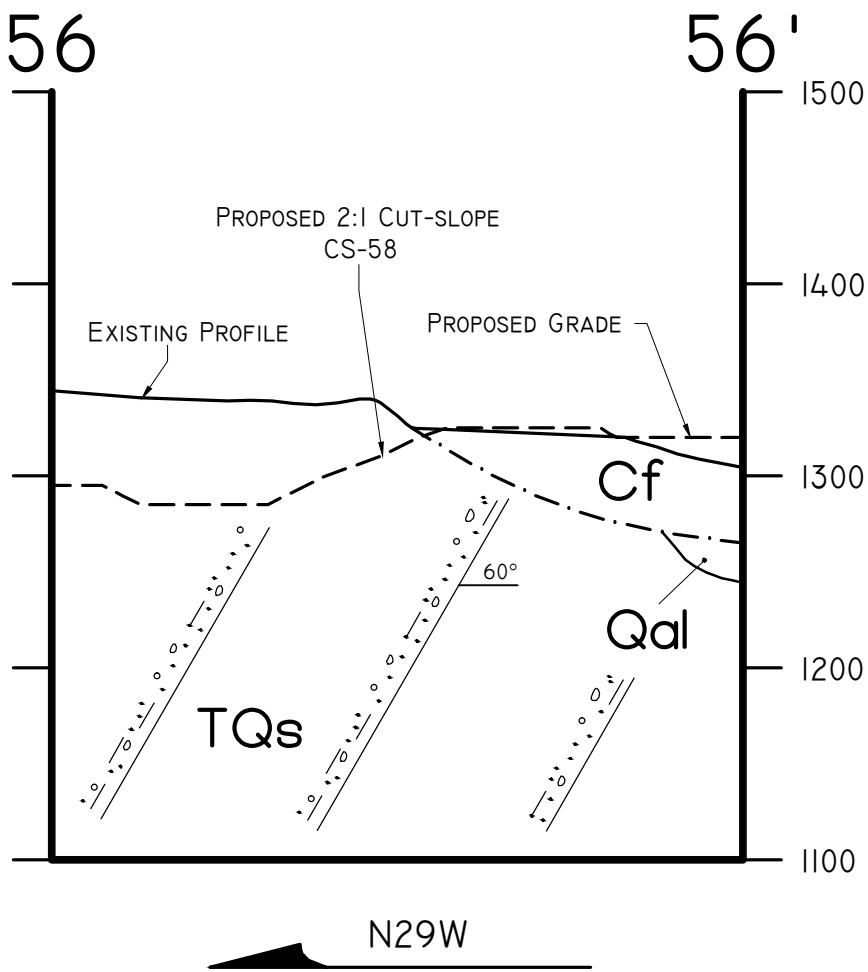

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 56-56'

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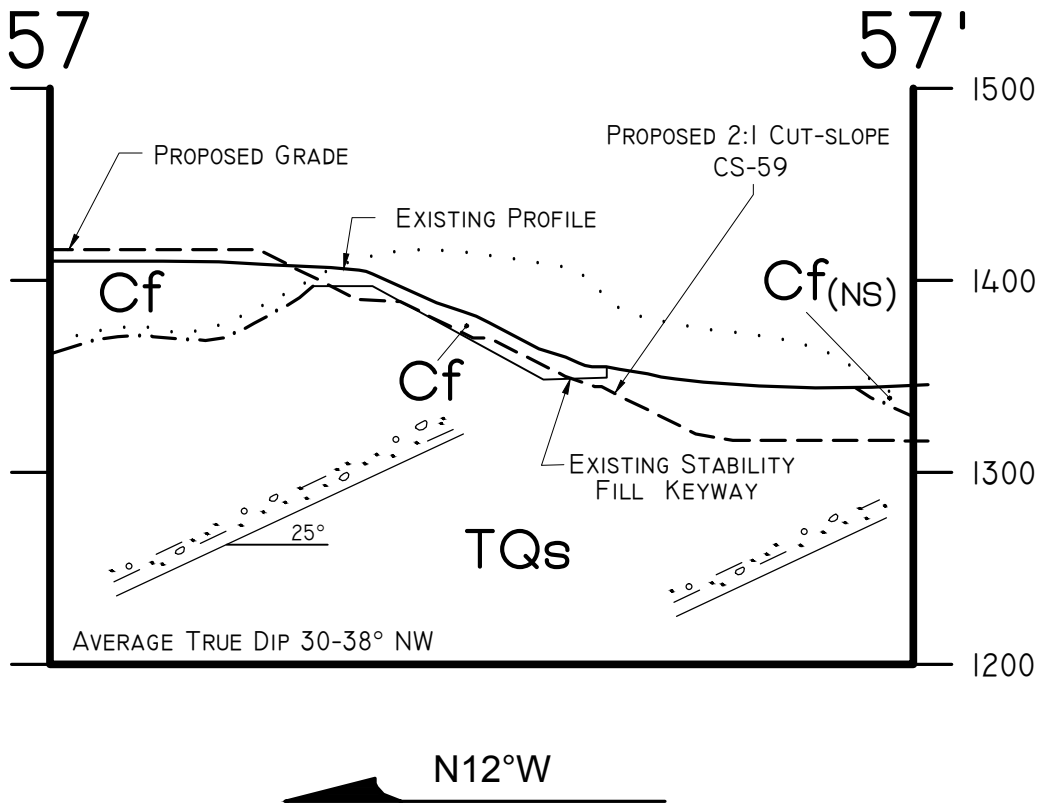

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Engineering Geology, Inc.
Geological and Geotechnical Consultants

Cross Section 57-57'

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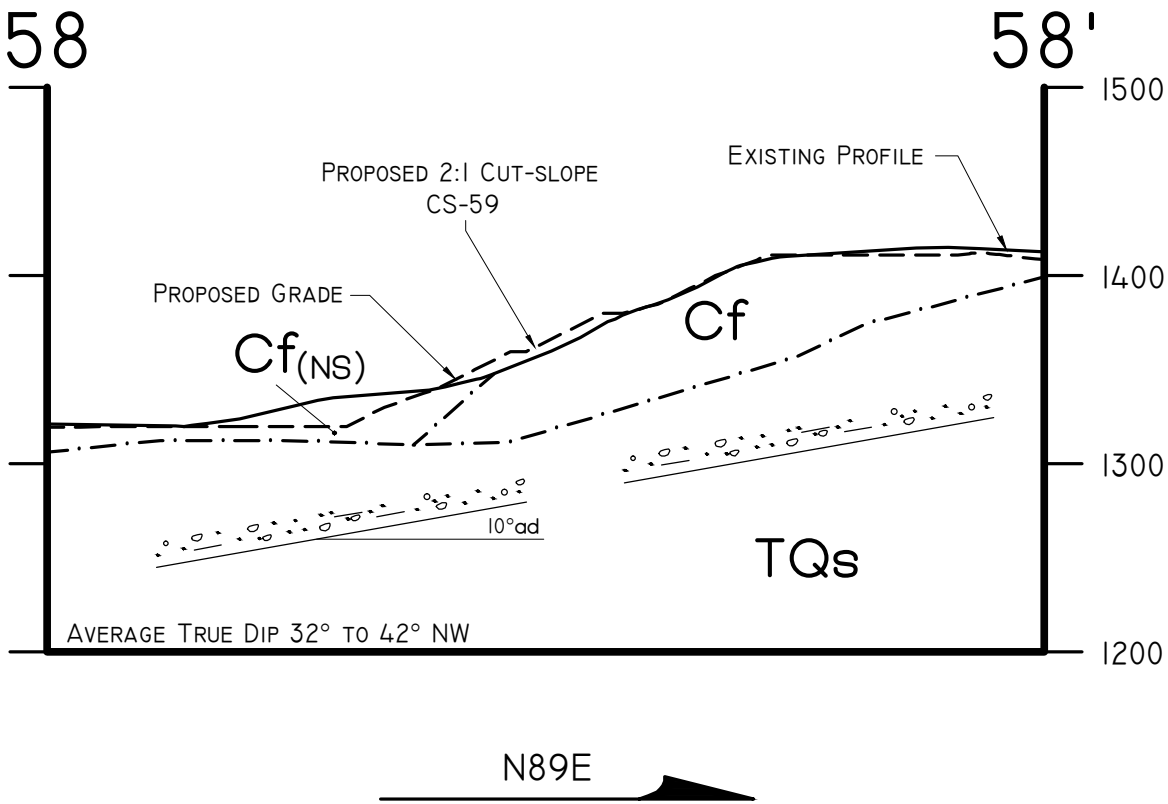

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

Cross Section 58-58'

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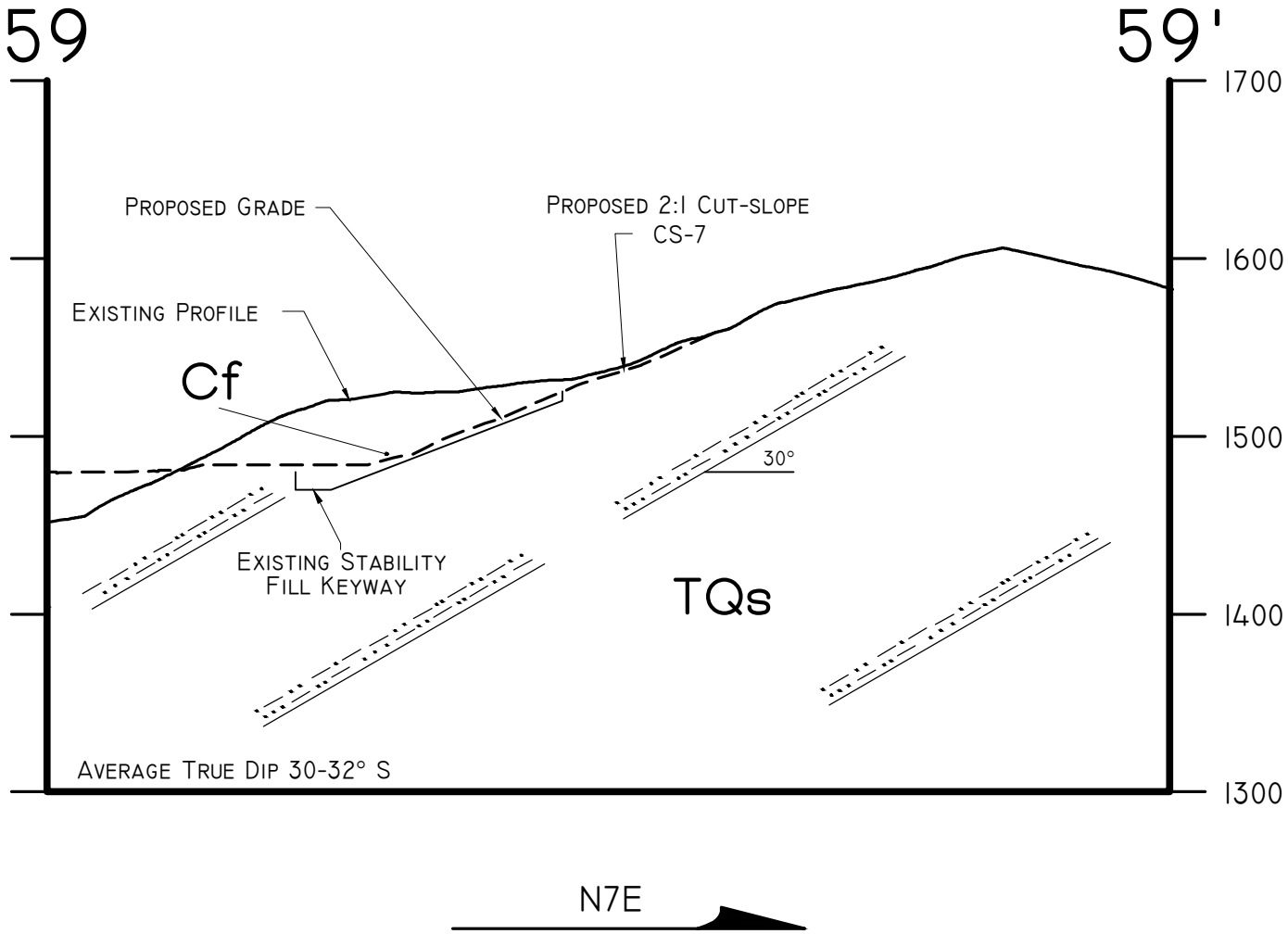

ALLAN E. SEWARD
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Geological and Geotechnical Consultants

Cross Section 59-59'

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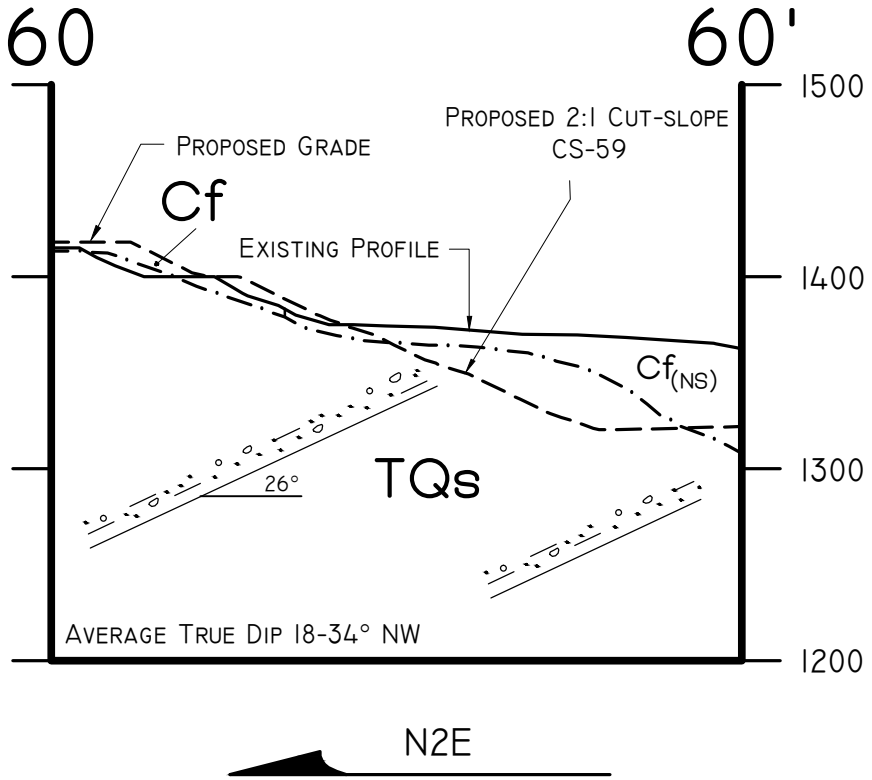

Allan E. Seward
Engineering Geology, Inc.
Geological and Geotechnical Consultants

Cross Section 60-60'

Job No.: 13-16171S-4

Date: 6/7/13

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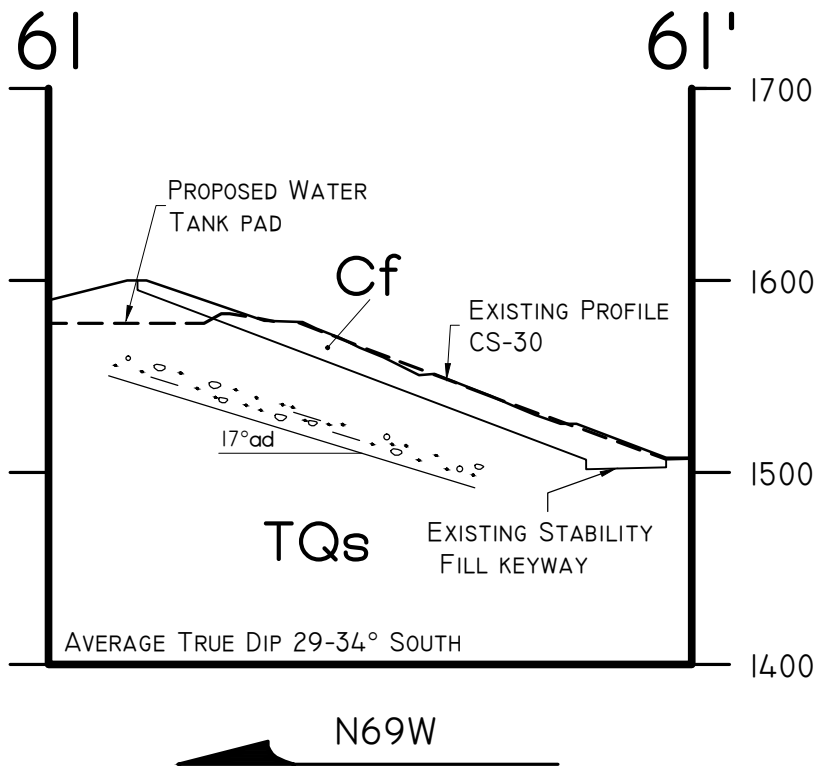

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

Cross Section 61-61'

Job No.: 13-16171S-4

Date: 6/7/13

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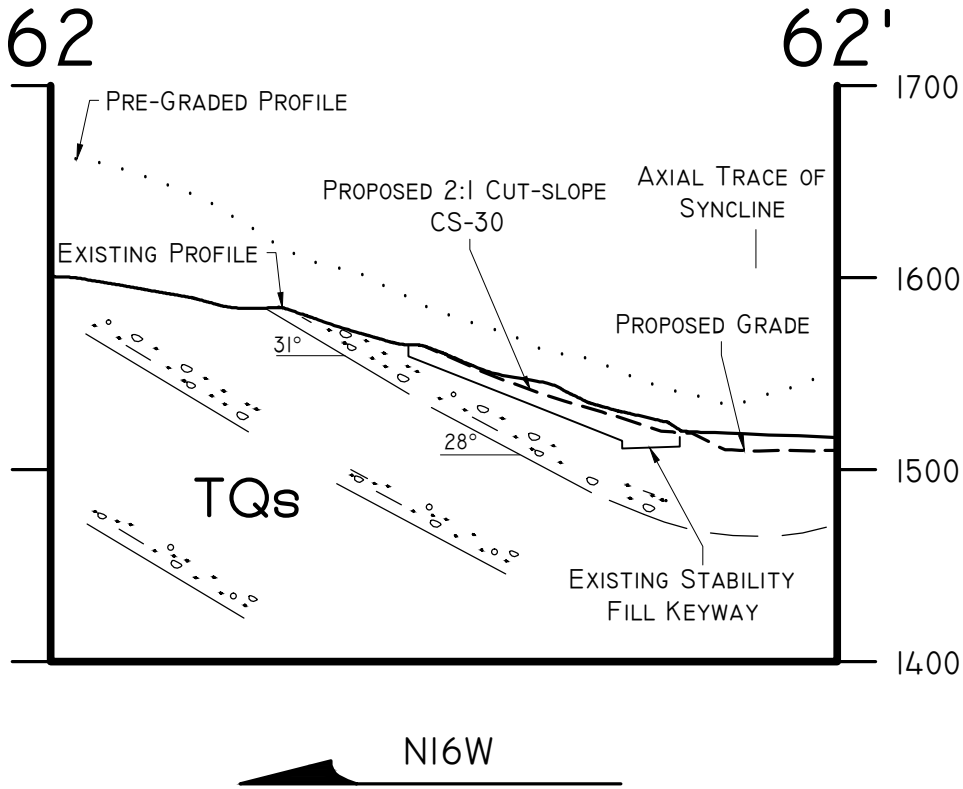


ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

CROSS SECTION 62-62'

JOB NO.: 13-16171S-4

DATE: 6/7/13

SCALE: 1"=100' (H=V)

Appendix B

APPENDIX B

SLOPE STABILITY ANALYSES

General

Analyses were performed to evaluate the stability of revised critical cut slopes and natural slopes shown on the Revised Vesting Tentative Tract Map 52584. The stability analyses utilized revised cross sections new cross sections constructed to illustrate the design revisions and critical structural geometries and maximum slope heights for each slope that was evaluated. Our stability analyses of critical slopes included evaluation of gross stability under static and pseudostatic (i.e. with an imposed pseudostatic simulated load) loading conditions. The results of our stability analyses are summarized in **Table B1**. Slope stability diagrams graphically illustrating the results of our analyses for each cross section analyzed are attached for review. Critical failure surfaces (factor of safety 1.70 or less) were plotted on our Cross Sections in **Appendix A**.

Based upon review of new and revised cross sections and on the results of stability analyses performed for critical slopes, factors of safety for gross stability of the revised slopes, as designed per, comply with County of Los Angeles minimum factors of safety and are not anticipated to require remedial measures.

Geometry and Groundwater

As shown on the respective cross sections, the analyzed geometries of cut slopes included removal of bedrock and terrace deposits and adding compacted fill to achieve the proposed grades, or remedial grades as needed on portions of the slopes. Anticipated removal depths were shown on the cross sections in **Appendix A** only if integral to slope stability calculations. Analyses included cross-bedding and potential adverse bedding with dips ranging from neutral to 32 degrees depending on geologic data obtained near each cross section.

Review of groundwater data in the vicinity and exploratory trench and boring log data indicates that the proposed cut slopes in bedrock are above historic high groundwater levels and no perched groundwater was observed within the bedrock on hillsides or within our exploratory borings and trenches in bedrock. Ground water was modeled using an assumed pore-pressure parameter (ru of 0.10) in the slope stability where a potential source for future ground water existed directly up gradient (updip) of the slope being analyzed.

Backdrains are recommended for all Stability Fill slopes.

APPENDIX B

Analysis Approach and Sections Analyzed

The gross stability of the proposed revised cut and natural slopes was evaluated. Slope cases representing the critical proposed grades and subsurface conditions were selected for stability analyses. Critical conditions for stability included potential adverse bedding, slope height, slope gradient, and/or anticipated future groundwater. Based on our analyses, the respective factors of safety for gross slope stability, presented in **Table B1**, are the lowest values obtained.

Shear Strength Parameters

In general, the shear strength parameters presented below were utilized in the slope stability analyses performed on revised slopes and are the same as the values presented and utilized in our August 27, 2004 report. It should be noted that due to the overall coarse grained nature of the bedrock on the site that well developed planar surfaces are relatively rare. However, we searched for potential bedding planes in the critical cross sections analyzed where no data from subsurface exploration was available. Specified planes of weakness were modeled where encountered in subsurface explorations.

Summary of Design Shear Strength Values

MATERIALS	UNIT WT (PCF)	STATIC		PSEUDOSTATIC	
		PHI (DEG.)	COHESION (PSF)	PHI (DEG.)	COHESION (PSF)
Bedrock (TQs), bedding plane (silty claystone, clay beds and silty claystone BA-11)	129	22	347	27	1168
Bedrock (TQs), cross bedding	119	40.5	410	42	880
Terrace Deposits (Qt)	120	41	200	42	290
Compacted Fill (Cf)	125	29	300	32	316
Non-Structural Compacted Fill (Cf_{NS})	125	25	200	25	200
Alluvium (Qal)	119	34	169	38	338

Non-structural compacted fill (Cf_{NS}) placed during rough grading operations is illustrated on a portion of Cross Section 28-28'. Shear strength parameters presented above for Cf_{NS} were assumed due to the limited amount of this material shown on critical cross sections and the negligible impact it has on the stability analyses.

APPENDIX B

Methods of Analysis

The computer program GSTABL7, originally written by Purdue University and updated by Garry H. Gregory, Gregory Geotechnical Software was used for the analyses. This program computes the minimum factor of safety from trial failure surfaces using limit equilibrium methods of analysis. In many cases, exit of slip planes at the ground surface is not known. For this report, GSTABL7 method was used to determine breakage of slip planes through upper layers and their exit at the ground surface where the failure surface is unknown. Static and pseudostatic minimum safety factors corresponding to the complete planar and circular slip surfaces were evaluated using Janbu's method of analyses.

The pseudostatic procedure introduces a static horizontal force equal to a "seismic" (pseudostatic) coefficient times the weight of individual slices in addition to other forces acting on the slice. The seismic coefficient is an empirical number which in no way models actual seismic forces. However, the pseudostatic method provides some indication of stability or instability. We selected a seismic coefficient of 0.15 for our analyses in accordance with Los Angeles County Guidelines.

Conclusion

The analyzed revised cut slopes and natural slopes comply with Los Angeles County minimum requirements for gross stability under static and pseudostatic loading conditions provided our recommendations are followed and incorporated into project construction. The results of the stability analyses are summarized in **Table B1**.

The following attachments complete this Appendix.

Slope Stability Analyses Results — Table B1
Slope Stability Diagrams and Data Sheets for Run No. 1 through 17

Table B1 – SLOPE STABILITY ANALYSES RESULTS

Cross Section	File Name	Slope Designation	Analyzed Plane	Method	Factor of Safety		Comments	Run No.
					Static	Pseudostatic[1] (Coeff = 0.15)		
2-2′	T2S1B T2PS1B	Natural slope	Lower specified bedding plane	Janbu	1.69	1.20	Critical surface. Bedding plane analyses of lower specified clay bed. Along-bedding values of c=347 psf and phi=22° were used.	1 2
2-2′	T2S1A	Natural slope	Upper specified bedding plane	Janbu	2.48	-	Bedding plane analyses of upper specified silty claystone bed using along-bedding values of c=347 psf and phi=22°. Pseudostatic is not critical and therefore not analyzed.	3
3-3′	T3S1B T3PS1B	Natural slope	Bedding plane search, upper area	Janbu	1.68	1.18	Critical surface. Search in upper portion of slope. Along-bedding values of c=347 psf and phi=22° were used.	4 5
3-3′	T3S1A T3PS1A	Natural slope	Bedding plane search	Janbu	1.69	1.17	Search along entire length of slope. Along-bedding values of c=347 psf and phi=22° were used.	6 7
4-4′	T4S1A T4PS1A	Cut Slope CS-6	Bedding plane search	Janbu	1.54	1.10	Critical surface. Along-bedding values of c=347 psf and phi=22° were used.	8 9
5-5′	T5S1A T5PS1A	Natural Slope	Bedding plane search	Janbu	1.54	1.14	Critical surface. Along-bedding values of c=347 psf and phi=22° were used. Bedding variance ranges from 30° to 33° based on 24 attitudes exposed in adjacent cut-slopes and stability fill keyways during grading operations.	10 11

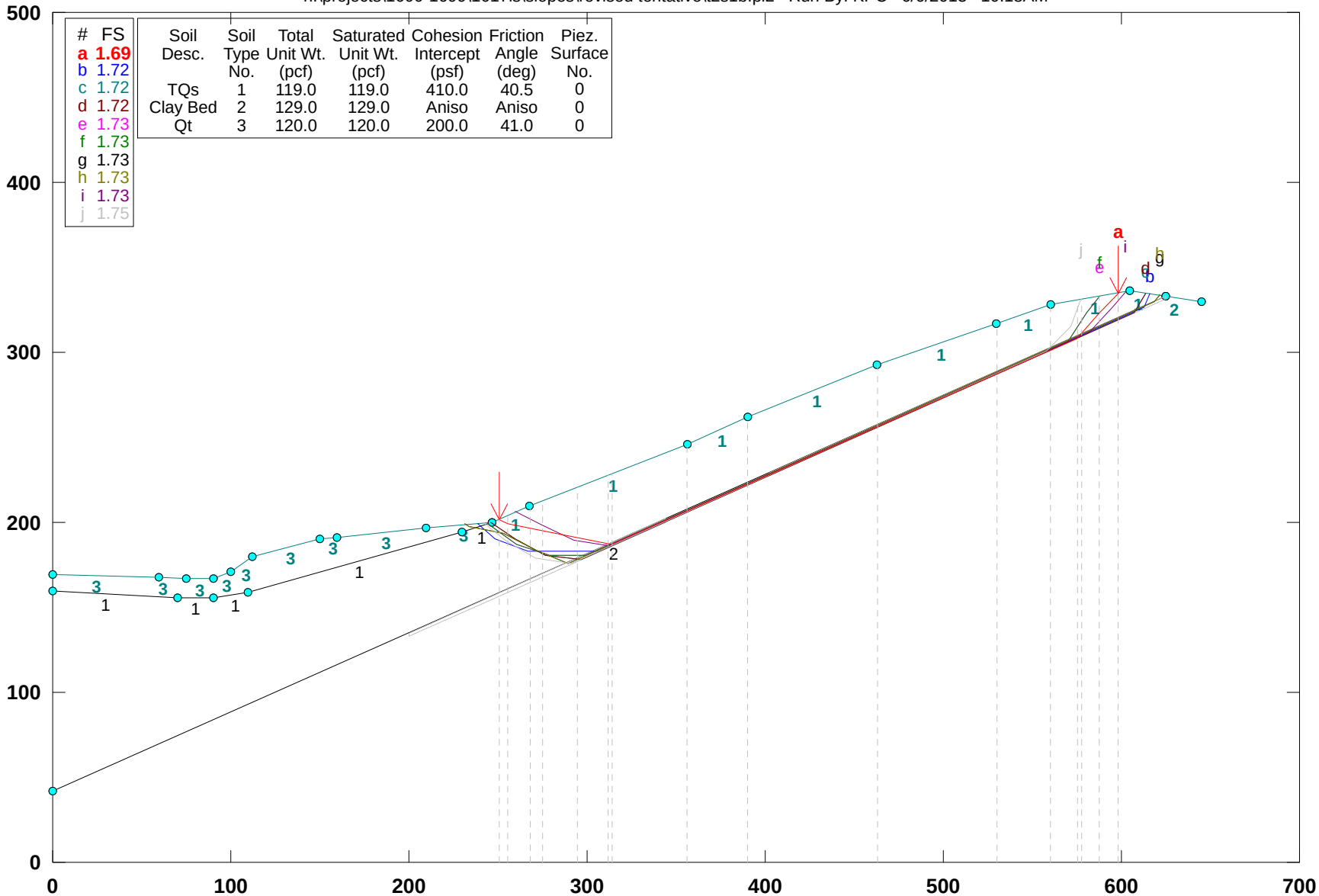
[1] Peak shear strength values were not utilized.

Table B1 – SLOPE STABILITY ANALYSES RESULTS

Cross Section	File Name	Slope Designation	Analyzed Plane	Method	Factor of Safety		Comments	Run No.
					Static	Pseudostatic[1] (Coeff = 0.15)		
9-9′	T9S1B	Cut Slope CS-25	Bedding plane search	Janbu	2.23	-	Critical surface. Bedding plane search limited by boring data. Along-bedding values of c=347 psf and phi=22° were used. Pseudostatic is not critical and therefore not analyzed.	12
9-9′	T9S1A	Cut Slope CS-25	Specified bedding plane	Janbu	2.72	-	Analysis along specified clay plane using along-bedding values of c=347 psf and phi=22°.	13
18-18′	T18S1B T18PS1B	Cut Slope CS-55	Bedding plane search	Janbu	1.91	1.41	Critical surface. Search limited to Cut Slope CS-55.	14 15
18-18′	T18S2A	Cut Slopes CS-54 and CS-55	Bedding plane search	Janbu	2.40	-	Search expanded to include Cut Slopes CS-54 and CS-55.	16
28-28′	T28S1A	Natural Slope	Circular	Janbu	2.00	-	Critical surface. Circular search of natural slope including potential failure planes beneath proposed water tank. Pseudostatic is not critical and therefore not analyzed.	17

T.T. 52584, 2-2'; static; planar; search along lower clay plane

n:\projects\1600-1699\1617is\slopes\revised tentative\t2s1b.pl2 Run By: KPC 6/6/2013 10:18AM



#	FS
a	1.69
b	1.72
c	1.72
d	1.72
e	1.73
f	1.73
g	1.73
h	1.73
i	1.73
j	1.75

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
TQs	1	119.0	119.0	410.0	40.5	0
Clay Bed	2	129.0	129.0	Aniso	Aniso	0
Qt	3	120.0	120.0	200.0	41.0	0

GSTABL7 v.2 FSmin=1.69

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 1

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/6/2013
 Time of Run:              10:18AM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t2s1b.
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t2s1b.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t2s1b.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 2-2'; static; planar;
                       search along lower clay plane
 BOUNDARY COORDINATES
    18 Top   Boundaries
    24 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     169.00      60.00     168.00        3
     2         60.00     168.00      75.00     167.00        3
     3         75.00     167.00      90.00     167.00        3
     4         90.00     167.00     100.00     171.00        3
     5        100.00     171.00     112.00     180.00        3
     6        112.00     180.00     150.00     190.00        3
     7        150.00     190.00     160.00     191.00        3
     8        160.00     191.00     210.00     197.00        3
     9        210.00     197.00     247.00     200.00        3
    10        247.00     200.00     268.00     210.00        1
    11        268.00     210.00     356.00     246.00        1
    12        356.00     246.00     390.00     262.00        1
    13        390.00     262.00     463.00     293.00        1
    14        463.00     293.00     530.00     317.00        1
    15        530.00     317.00     560.00     328.00        1
    16        560.00     328.00     605.00     336.00        1
    17        605.00     336.00     625.00     333.00        1
    18        625.00     333.00     645.00     330.00        2
    19          0.00     160.00      70.00     156.00        1
    20         70.00     156.00      90.00     156.00        1
    21         90.00     156.00     110.00     159.00        1
    22        110.00     159.00     230.00     194.00        1
    23        230.00     194.00     247.00     200.00        1
    24          0.00      42.00     625.00     333.00        2
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  3 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   129.0    129.0    1650.0     17.0    0.00       0.0      0
   3   120.0    120.0     200.0     41.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  2 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
```

Range No.	Direction Limit (deg)	Intercept (psf)	Angle (deg)
1	23.0	410.00	40.50
2	27.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 20.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	200.00	134.00	344.00	201.00	2.00
2	402.00	228.00	625.00	332.00	2.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 500
Statistical Data On All Valid FS Values:
FS Max = 3.278 FS Min = 1.694 FS Ave = 2.207
Standard Deviation = 0.312 Coefficient of Variation = 14.12 %
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	250.58	201.71
2	255.26	199.36
3	274.85	195.34
4	294.36	190.91
5	313.90	186.65
6	575.23	307.92
7	587.50	323.71
8	598.13	334.78

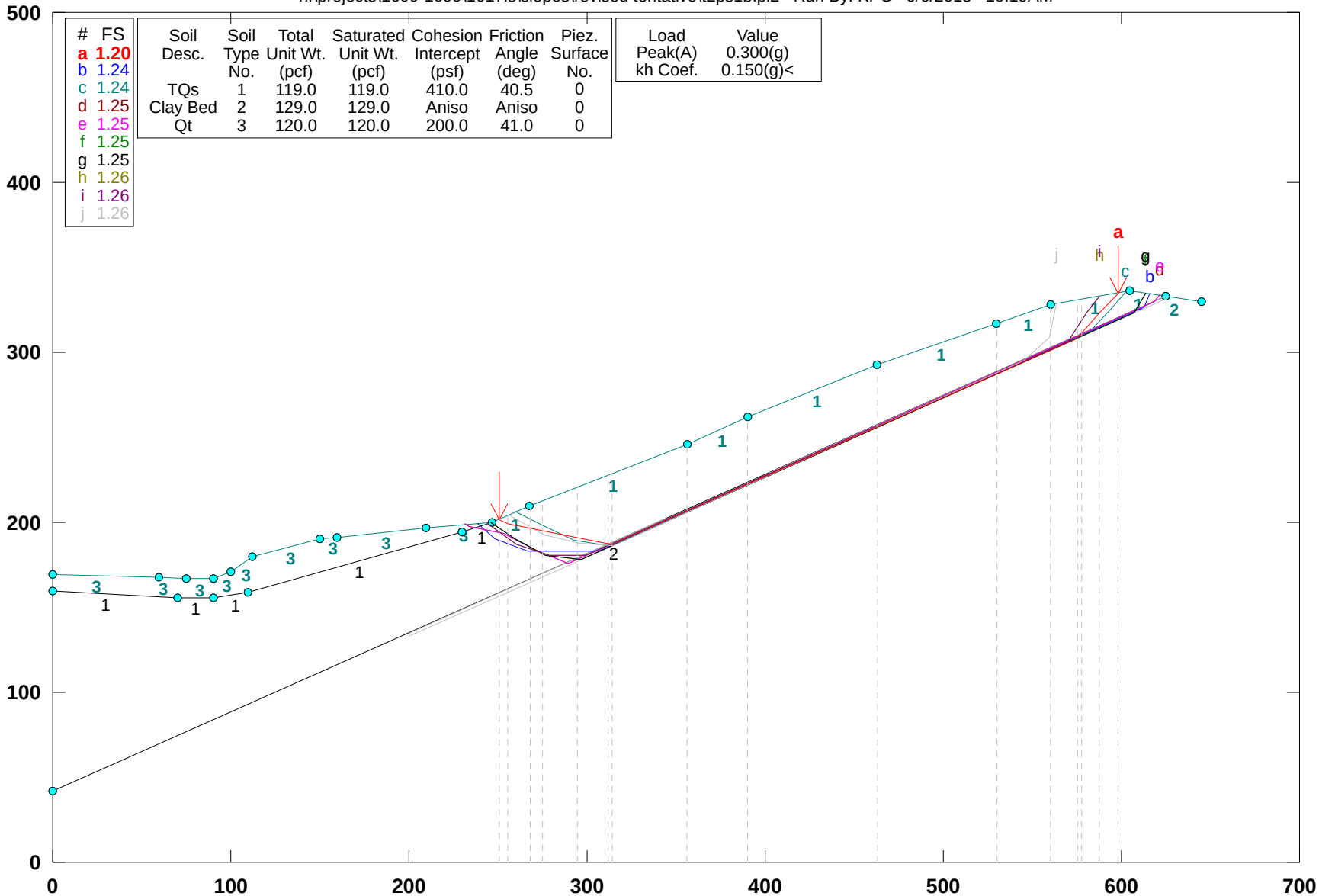
Factor of Safety
*** 1.694 ***

Individual data on the 15 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.7	1274.9	0.0	0.0	0.	0.	0.0	0.0	0.0
2	12.7	13517.9	0.0	0.0	0.	0.	0.0	0.0	0.0
3	6.9	12526.9	0.0	0.0	0.	0.	0.0	0.0	0.0
4	19.5	54931.5	0.0	0.0	0.	0.	0.0	0.0	0.0
5	17.3	72880.4	0.0	0.0	0.	0.	0.0	0.0	0.0
6	2.2	10851.7	0.0	0.0	0.	0.	0.0	0.0	0.0
7	42.1	205917.8	0.0	0.0	0.	0.	0.0	0.0	0.0
8	34.0	162078.7	0.0	0.0	0.	0.	0.0	0.0	0.0
9	73.0	336529.7	0.0	0.0	0.	0.	0.0	0.0	0.0
10	67.0	269210.9	0.0	0.0	0.	0.	0.0	0.0	0.0
11	30.0	102692.5	0.0	0.0	0.	0.	0.0	0.0	0.0
12	15.2	45527.5	0.0	0.0	0.	0.	0.0	0.0	0.0
13	2.3	5969.2	0.0	0.0	0.	0.	0.0	0.0	0.0
14	9.9	17402.0	0.0	0.0	0.	0.	0.0	0.0	0.0
15	10.6	5805.5	0.0	0.0	0.	0.	0.0	0.0	0.0

T.T. 52584, 2-2'; pseudo; planar; search along lower clay plane

n:\projects\1600-1699\1617is\slopes\revised tentative\t2ps1b.pl2 Run By: KPC 6/6/2013 10:19AM



GSTABL7 v.2 FSmin=1.20

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 2

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                                  ***  GSTABL7  ***
                        ** GSTABL7 by Garry H. Gregory, P.E. **
    ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
                 (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                      SLOPE STABILITY ANALYSIS SYSTEM
        Modified Bishop, Simplified Janbu, or GLE Method of Slices.
        (Includes Spencer & Morgenstern-Price Type Analysis)
        Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
        Nonlinear Undrained Shear Strength, Curved Phi Envelope,
        Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
        Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/6/2013
 Time of Run:              10:19AM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t2ps1b.
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t2ps1b.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t2ps1b.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 2-2'; pseudo; planar;
                       search along lower clay plane
 BOUNDARY COORDINATES
    18 Top   Boundaries
    24 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     169.00      60.00     168.00        3
     2         60.00     168.00      75.00     167.00        3
     3         75.00     167.00      90.00     167.00        3
     4         90.00     167.00     100.00     171.00        3
     5        100.00     171.00     112.00     180.00        3
     6        112.00     180.00     150.00     190.00        3
     7        150.00     190.00     160.00     191.00        3
     8        160.00     191.00     210.00     197.00        3
     9        210.00     197.00     247.00     200.00        3
    10        247.00     200.00     268.00     210.00        1
    11        268.00     210.00     356.00     246.00        1
    12        356.00     246.00     390.00     262.00        1
    13        390.00     262.00     463.00     293.00        1
    14        463.00     293.00     530.00     317.00        1
    15        530.00     317.00     560.00     328.00        1
    16        560.00     328.00     605.00     336.00        1
    17        605.00     336.00     625.00     333.00        1
    18        625.00     333.00     645.00     330.00        2
    19          0.00     160.00      70.00     156.00        1
    20         70.00     156.00      90.00     156.00        1
    21         90.00     156.00     110.00     159.00        1
    22        110.00     159.00     230.00     194.00        1
    23        230.00     194.00     247.00     200.00        1
    24          0.00      42.00     625.00     333.00        2
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  3 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   129.0    129.0    1650.0     17.0    0.00       0.0      0
   3   120.0    120.0     200.0     41.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  2 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
```

No.	(deg)	(psf)	(deg)
1	23.0	410.00	40.50
2	27.0	347.00	22.00
3	90.0	410.00	40.50

```
ANISOTROPIC SOIL NOTES:
   (1) An input value of 0.01 for C and/or Phi will cause Aniso
       C and/or Phi to be ignored in that range.
   (2) An input value of 0.02 for Phi will set both Phi and
       C equal to zero, with no water weight in the tension crack.
   (3) An input value of 0.03 for Phi will set both Phi and
       C equal to zero, with water weight in the tension crack.
Specified Peak Ground Acceleration Coefficient (A) =   0.300(g)
Specified Horizontal Earthquake Coefficient (kh) =   0.150(g)
Specified Vertical Earthquake Coefficient (kv) =   0.000(g)
Specified Seismic Pore-Pressure Factor =   0.000
Janbus Empirical Coef is being used for the case of  c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Sliding Block Surfaces, Has Been
Specified.
 500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of
Sliding Block Is  20.0
```

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	200.00	134.00	344.00	201.00	2.00
2	402.00	228.00	625.00	332.00	2.00

```
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Simplified Janbu Method * *
      Total Number of Trial Surfaces Evaluated =   500
      Statistical Data On All Valid FS Values:
         FS Max =   2.352   FS Min =   1.199   FS Ave =   1.614
         Standard Deviation =    0.202   Coefficient of Variation =   12.53 %
      Failure Surface Specified By  8 Coordinate Points
```

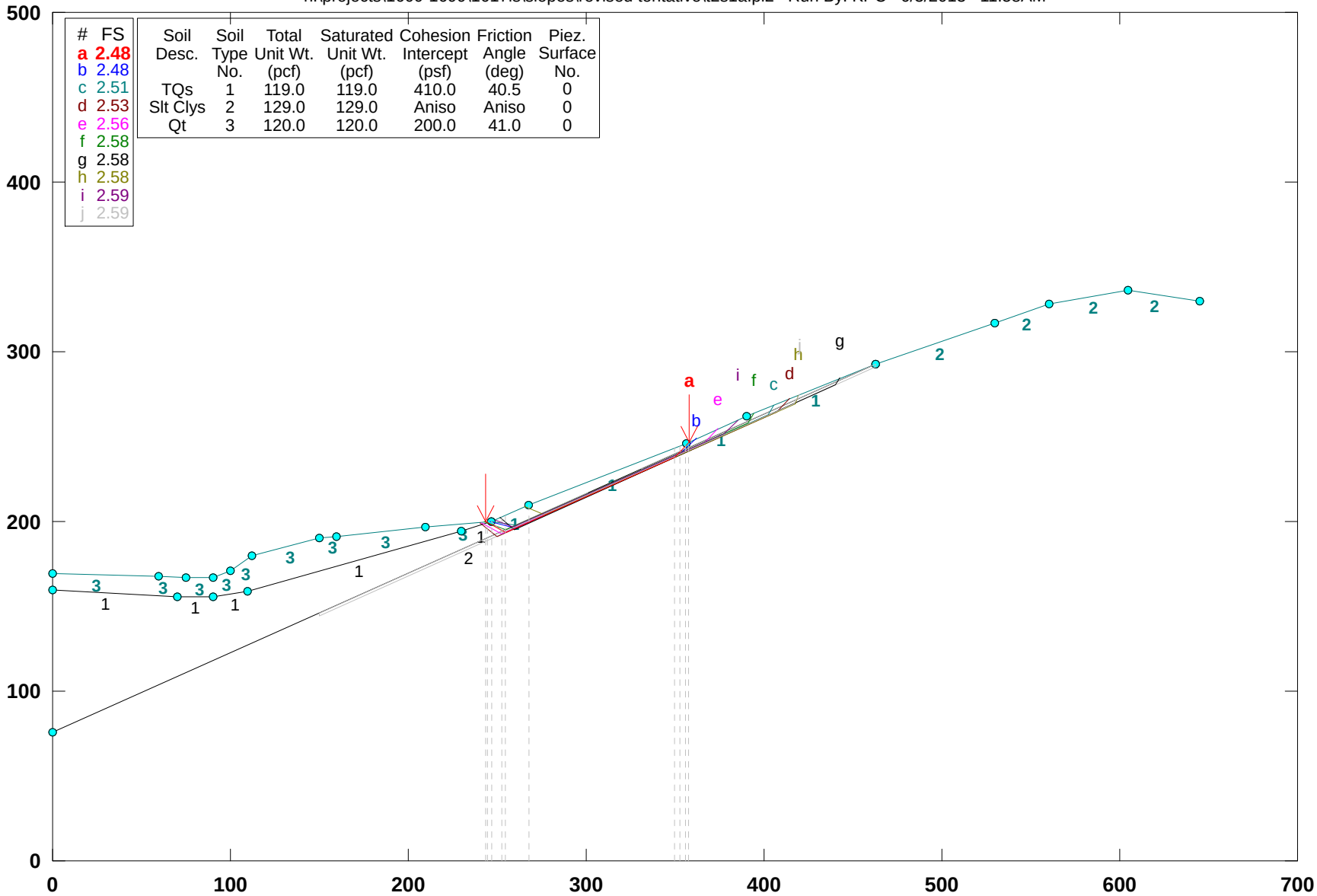
Point No.	X-Surf (ft)	Y-Surf (ft)
1	250.58	201.71
2	255.26	199.36
3	274.85	195.34
4	294.36	190.91
5	313.90	186.65
6	575.23	307.92
7	587.50	323.71
8	598.13	334.78

```
         Factor of Safety
        ***    1.199   ***
      Individual data on the    15  slices
```

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.7	1274.9	0.0	0.0	0.	0.	191.2	0.0	0.0
2	12.7	13517.9	0.0	0.0	0.	0.	2027.7	0.0	0.0
3	6.9	12526.9	0.0	0.0	0.	0.	1879.0	0.0	0.0
4	19.5	54931.5	0.0	0.0	0.	0.	8239.7	0.0	0.0
5	17.3	72880.4	0.0	0.0	0.	0.	10932.1	0.0	0.0
6	2.2	10851.7	0.0	0.0	0.	0.	1627.8	0.0	0.0
7	42.1	205917.8	0.0	0.0	0.	0.	30887.7	0.0	0.0
8	34.0	162078.7	0.0	0.0	0.	0.	24311.8	0.0	0.0
9	73.0	336529.7	0.0	0.0	0.	0.	50479.5	0.0	0.0
10	67.0	269210.9	0.0	0.0	0.	0.	40381.6	0.0	0.0
11	30.0	102692.5	0.0	0.0	0.	0.	15403.9	0.0	0.0
12	15.2	45527.5	0.0	0.0	0.	0.	6829.1	0.0	0.0
13	2.3	5969.2	0.0	0.0	0.	0.	895.4	0.0	0.0
14	9.9	17402.0	0.0	0.0	0.	0.	2610.3	0.0	0.0
15	10.6	5805.5	0.0	0.0	0.	0.	870.8	0.0	0.0

T.T. 52584, 2-2'; static; planar; upper silty claystone bed

n:\projects\1600-1699\1617is\slopes\revised tentative\t2s1a.pl2 Run By: KPC 6/3/2013 11:58AM



GSTABL7 v.2 FSmin=2.48

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 3

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/3/2013
 Time of Run:              11:58AM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t2s1a.
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t2s1a.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t2s1a.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 2-2'; static; planar;
                       upper silty claystone bed
 BOUNDARY COORDINATES
    17 Top   Boundaries
    23 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     169.00      60.00     168.00        3
     2         60.00     168.00      75.00     167.00        3
     3         75.00     167.00      90.00     167.00        3
     4         90.00     167.00     100.00     171.00        3
     5        100.00     171.00     112.00     180.00        3
     6        112.00     180.00     150.00     190.00        3
     7        150.00     190.00     160.00     191.00        3
     8        160.00     191.00     210.00     197.00        3
     9        210.00     197.00     247.00     200.00        3
    10        247.00     200.00     268.00     210.00        1
    11        268.00     210.00     356.00     246.00        1
    12        356.00     246.00     390.00     262.00        1
    13        390.00     262.00     463.00     293.00        1
    14        463.00     293.00     530.00     317.00        2
    15        530.00     317.00     560.00     328.00        2
    16        560.00     328.00     605.00     336.00        2
    17        605.00     336.00     645.00     330.00        2
    18          0.00     160.00      70.00     156.00        1
    19         70.00     156.00      90.00     156.00        1
    20         90.00     156.00     110.00     159.00        1
    21        110.00     159.00     230.00     194.00        1
    22        230.00     194.00     247.00     200.00        1
    23          0.00      76.00     463.00     293.00        2
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  3 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   129.0    129.0     347.0     22.0    0.00       0.0      0
   3   120.0    120.0     200.0     41.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  2 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
```

No.	(deg)	(psf)	(deg)
1	23.0	410.00	40.50
2	27.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 20.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	150.00	145.00	301.00	216.00	2.00
2	331.00	230.00	463.00	292.00	2.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 500
Statistical Data On All Valid FS Values:
FS Max = 5.849 FS Min = 2.482 FS Ave = 3.921
Standard Deviation = 0.938 Coefficient of Variation = 23.91 %
Failure Surface Specified By 4 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	243.65	199.73
2	254.72	193.25
3	349.78	237.97
4	357.70	246.80

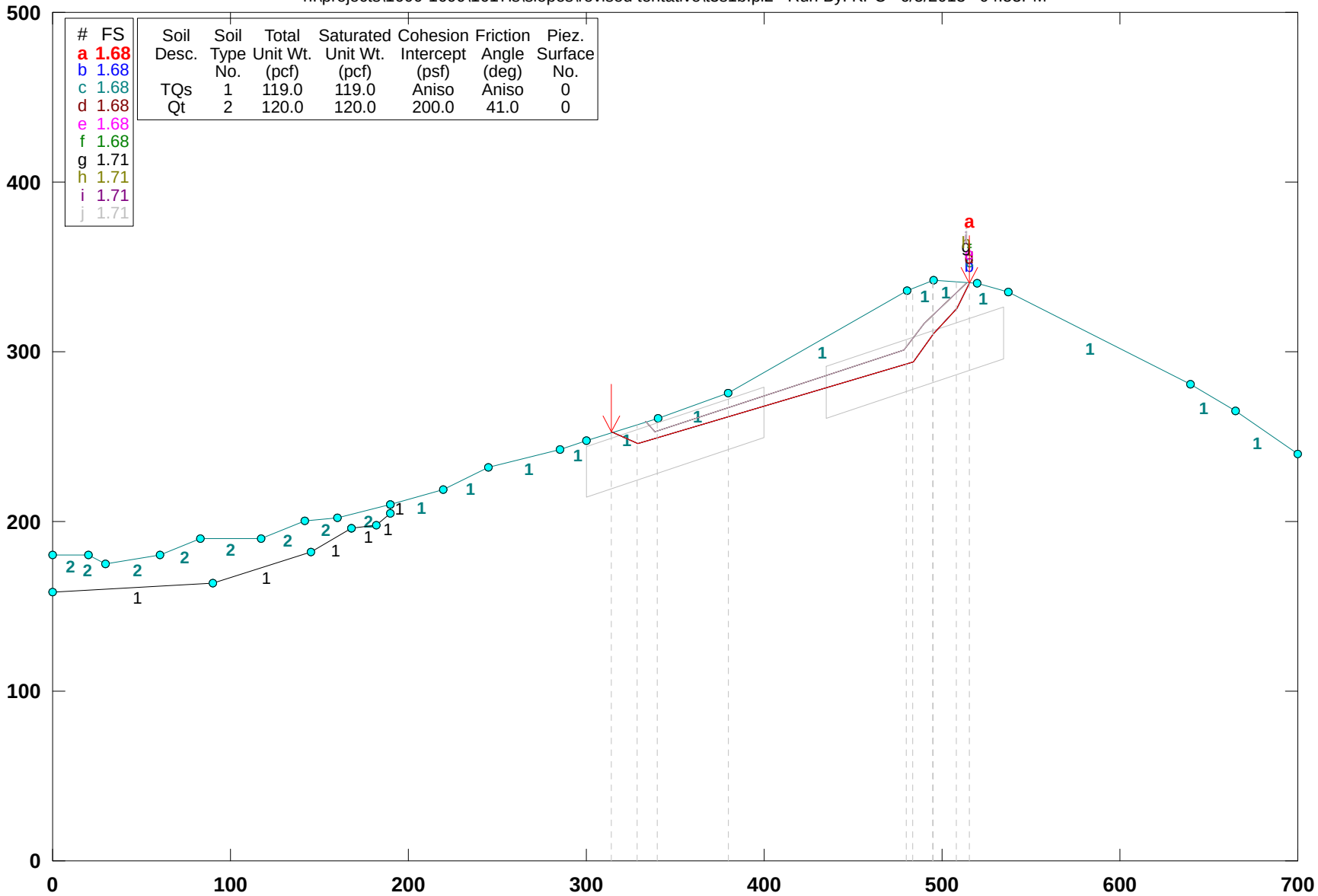
Factor of Safety
*** 2.482 ***

Individual data on the 9 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	1.0	37.7	0.0	0.0	0.	0.	0.0	0.0	0.0
2	2.4	408.4	0.0	0.0	0.	0.	0.0	0.0	0.0
3	5.7	3565.1	0.0	0.0	0.	0.	0.0	0.0	0.0
4	2.0	2273.3	0.0	0.0	0.	0.	0.0	0.0	0.0
5	13.3	16809.8	0.0	0.0	0.	0.	0.0	0.0	0.0
6	81.8	79459.2	0.0	0.0	0.	0.	0.0	0.0	0.0
7	3.0	1627.2	0.0	0.0	0.	0.	0.0	0.0	0.0
8	3.2	838.2	0.0	0.0	0.	0.	0.0	0.0	0.0
9	1.7	110.6	0.0	0.0	0.	0.	0.0	0.0	0.0

T.T. 52584, 3-3'; planar; static; search thru upper portion of slope

n:\projects\1600-1699\1617is\slopes\revised tentative\t3s1b.pl2 Run By: KPC 6/5/2013 04:53PM



GSTABL7 v.2 FSmin=1.68

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 4

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/5/2013
 Time of Run:              04:53PM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3s1b.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3s1b.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t3s1b.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 3-3'; planar; static;
                       search thru upper portion of slope
 BOUNDARY COORDINATES
    21 Top   Boundaries
    27 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     180.00      20.00     180.00        2
     2         20.00     180.00      30.00     175.00        2
     3         30.00     175.00      60.00     180.00        2
     4         60.00     180.00      83.00     190.00        2
     5         83.00     190.00     117.00     190.00        2
     6        117.00     190.00     142.00     200.00        2
     7        142.00     200.00     160.00     202.00        2
     8        160.00     202.00     190.00     210.00        2
     9        190.00     210.00     220.00     219.00        1
    10        220.00     219.00     245.00     232.00        1
    11        245.00     232.00     285.00     242.00        1
    12        285.00     242.00     300.00     248.00        1
    13        300.00     248.00     340.00     261.00        1
    14        340.00     261.00     380.00     276.00        1
    15        380.00     276.00     480.00     336.00        1
    16        480.00     336.00     495.00     342.00        1
    17        495.00     342.00     520.00     340.00        1
    18        520.00     340.00     537.00     335.00        1
    19        537.00     335.00     640.00     281.00        1
    20        640.00     281.00     665.00     265.00        1
    21        665.00     265.00     700.00     240.00        1
    22        168.00     196.00     182.00     198.00        1
    23        182.00     198.00     190.00     205.00        1
    24        190.00     205.00     190.10     210.00        1
    25          0.00     158.00      90.00     164.00        1
    26         90.00     164.00     145.00     182.00        1
    27        145.00     182.00     168.00     196.00        1
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  2 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   120.0    120.0     200.0     41.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  1 Is Anisotropic
```

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	16.0	410.00	40.50
2	19.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
2500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 20.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	300.00	229.00	400.00	264.00	30.00
2	435.00	276.00	535.00	311.00	30.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 2500
Statistical Data On All Valid FS Values:
FS Max = 4.482 FS Min = 1.680 FS Ave = 2.671
Standard Deviation = 0.524 Coefficient of Variation = 19.63 %
Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	314.19	252.61
2	328.73	245.81
3	483.60	294.30
4	494.95	310.77
5	508.10	325.84
6	515.44	340.36

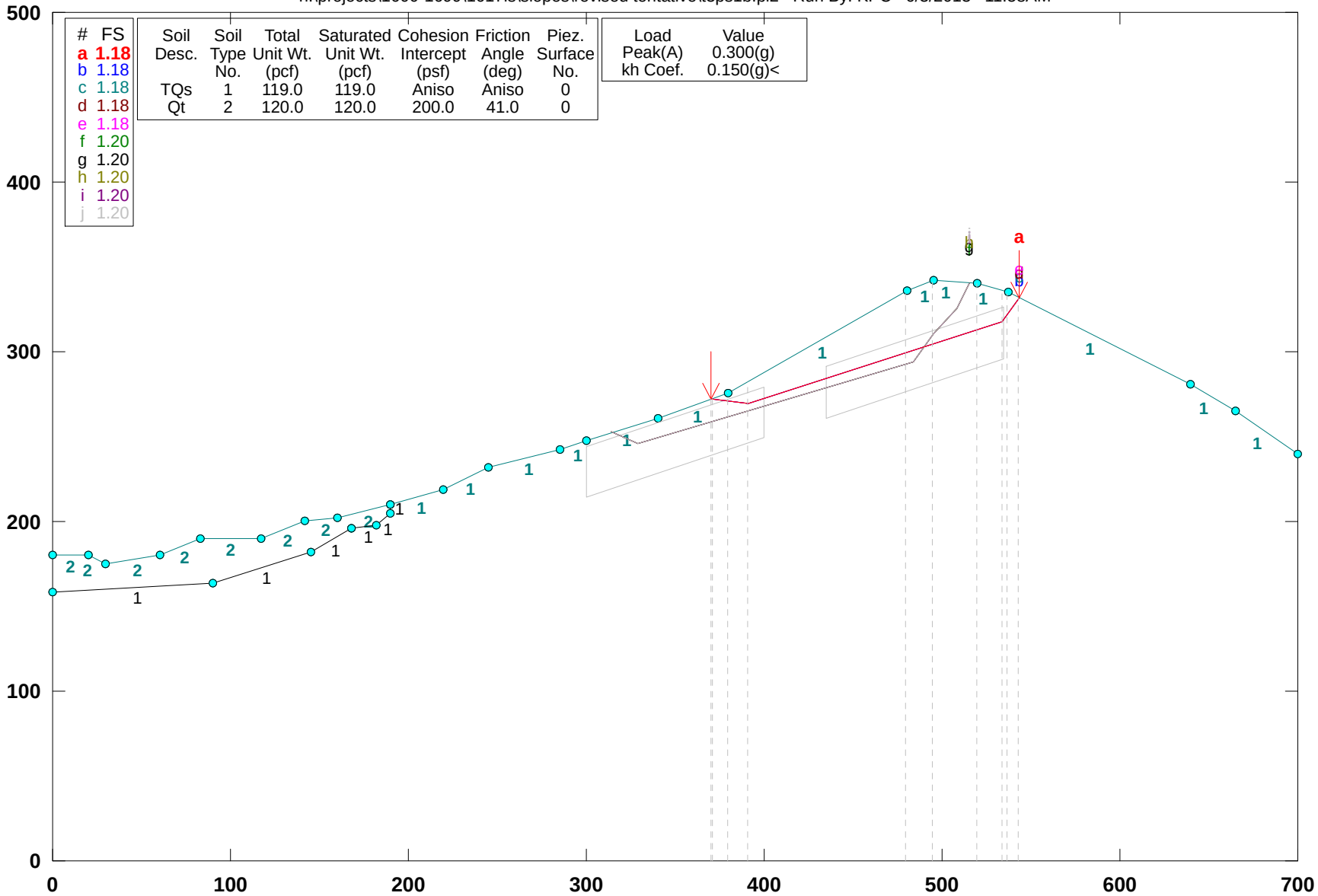
Factor of Safety
*** 1.680 ***

Individual data on the 9 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	14.5	9974.0	0.0	0.0	0.	0.	0.0	0.0	0.0
2	11.3	15555.1	0.0	0.0	0.	0.	0.0	0.0	0.0
3	40.0	61416.4	0.0	0.0	0.	0.	0.0	0.0	0.0
4	100.0	338973.5	0.0	0.0	0.	0.	0.0	0.0	0.0
5	3.6	18427.1	0.0	0.0	0.	0.	0.0	0.0	0.0
6	11.3	50178.8	0.0	0.0	0.	0.	0.0	0.0	0.0
7	0.1	203.9	0.0	0.0	0.	0.	0.0	0.0	0.0
8	13.1	36068.2	0.0	0.0	0.	0.	0.0	0.0	0.0
9	7.3	6604.2	0.0	0.0	0.	0.	0.0	0.0	0.0

T.T. 52584, 3-3'; planar; pseudo; search thru upper portion of slope

n:\projects\1600-1699\1617is\slopes\revised tentative\t3ps1b.pl2 Run By: KPC 6/3/2013 11:58AM



GSTABL7 v.2 FSmin=1.18

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 5

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/3/2013
 Time of Run:              11:58AM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3ps1b.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3ps1b.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t3ps1b.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 3-3'; planar; pseudo;
                       search thru upper portion of slope
 BOUNDARY COORDINATES
    21 Top   Boundaries
    27 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     180.00      20.00     180.00        2
     2         20.00     180.00      30.00     175.00        2
     3         30.00     175.00      60.00     180.00        2
     4         60.00     180.00      83.00     190.00        2
     5         83.00     190.00     117.00     190.00        2
     6        117.00     190.00     142.00     200.00        2
     7        142.00     200.00     160.00     202.00        2
     8        160.00     202.00     190.00     210.00        2
     9        190.00     210.00     220.00     219.00        1
    10        220.00     219.00     245.00     232.00        1
    11        245.00     232.00     285.00     242.00        1
    12        285.00     242.00     300.00     248.00        1
    13        300.00     248.00     340.00     261.00        1
    14        340.00     261.00     380.00     276.00        1
    15        380.00     276.00     480.00     336.00        1
    16        480.00     336.00     495.00     342.00        1
    17        495.00     342.00     520.00     340.00        1
    18        520.00     340.00     537.00     335.00        1
    19        537.00     335.00     640.00     281.00        1
    20        640.00     281.00     665.00     265.00        1
    21        665.00     265.00     700.00     240.00        1
    22        168.00     196.00     182.00     198.00        1
    23        182.00     198.00     190.00     205.00        1
    24        190.00     205.00     190.10     210.00        1
    25          0.00     158.00      90.00     164.00        1
    26         90.00     164.00     145.00     182.00        1
    27        145.00     182.00     168.00     196.00        1
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  2 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   120.0    120.0     200.0     41.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  1 Is Anisotropic
```

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	16.0	410.00	40.50
2	19.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Specified Peak Ground Acceleration Coefficient (A) = 0.300(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000
Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
2500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 20.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	300.00	229.00	400.00	264.00	30.00
2	435.00	276.00	535.00	311.00	30.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 2500
Statistical Data On All Valid FS Values:
FS Max = 3.091 FS Min = 1.180 FS Ave = 1.913
Standard Deviation = 0.356 Coefficient of Variation = 18.58 %
Failure Surface Specified By 5 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	370.55	272.45
2	371.38	271.88
3	391.20	269.22
4	534.16	317.70
5	543.29	331.70

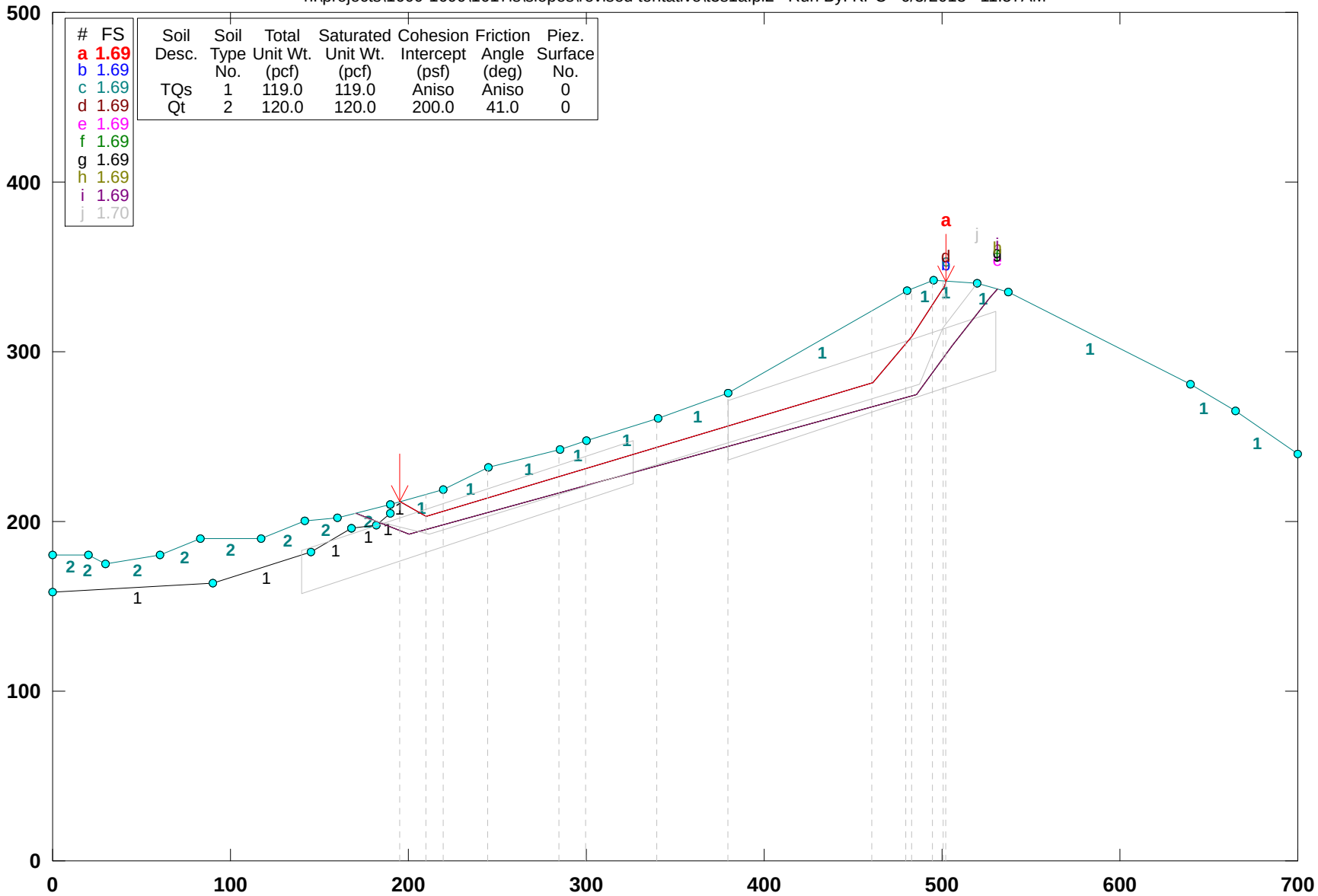
Factor of Safety
*** 1.180 ***

Individual data on the 9 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	0.8	44.2	0.0	0.0	0.	0.	6.6	0.0	0.0
2	8.6	3161.5	0.0	0.0	0.	0.	474.2	0.0	0.0
3	11.2	12521.7	0.0	0.0	0.	0.	1878.3	0.0	0.0
4	88.8	265080.8	0.0	0.0	0.	0.	39762.1	0.0	0.0
5	15.0	66268.2	0.0	0.0	0.	0.	9940.2	0.0	0.0
6	25.0	96218.7	0.0	0.0	0.	0.	14432.8	0.0	0.0
7	14.2	38123.6	0.0	0.0	0.	0.	5718.5	0.0	0.0
8	2.8	5245.6	0.0	0.0	0.	0.	786.8	0.0	0.0
9	6.3	4849.0	0.0	0.0	0.	0.	727.3	0.0	0.0

T.T. 52584, 3-3'; planar; static; search thru entire slope

n:\projects\1600-1699\1617is\slopes\revised tentative\t3s1a.pl2 Run By: KPC 6/3/2013 11:57AM



GSTABL7 v.2 FSmin=1.69

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 6

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
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 Analysis Run Date:        6/3/2013
 Time of Run:              11:57AM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3s1a.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3s1a.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t3s1a.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 3-3'; planar; static;
                       search thru entire slope
 BOUNDARY COORDINATES
    21 Top   Boundaries
    27 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     180.00      20.00     180.00        2
     2         20.00     180.00      30.00     175.00        2
     3         30.00     175.00      60.00     180.00        2
     4         60.00     180.00      83.00     190.00        2
     5         83.00     190.00     117.00     190.00        2
     6        117.00     190.00     142.00     200.00        2
     7        142.00     200.00     160.00     202.00        2
     8        160.00     202.00     190.00     210.00        2
     9        190.00     210.00     220.00     219.00        1
    10        220.00     219.00     245.00     232.00        1
    11        245.00     232.00     285.00     242.00        1
    12        285.00     242.00     300.00     248.00        1
    13        300.00     248.00     340.00     261.00        1
    14        340.00     261.00     380.00     276.00        1
    15        380.00     276.00     480.00     336.00        1
    16        480.00     336.00     495.00     342.00        1
    17        495.00     342.00     520.00     340.00        1
    18        520.00     340.00     537.00     335.00        1
    19        537.00     335.00     640.00     281.00        1
    20        640.00     281.00     665.00     265.00        1
    21        665.00     265.00     700.00     240.00        1
    22        168.00     196.00     182.00     198.00        1
    23        182.00     198.00     190.00     205.00        1
    24        190.00     205.00     190.10     210.00        1
    25          0.00     158.00      90.00     164.00        1
    26         90.00     164.00     145.00     182.00        1
    27        145.00     182.00     168.00     196.00        1
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  2 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   120.0    120.0     200.0     41.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  1 Is Anisotropic
```

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	16.0	410.00	40.50
2	19.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
2500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 35.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	140.00	170.00	326.00	235.00	25.00
2	380.00	254.00	530.00	306.00	35.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 2500
Statistical Data On All Valid FS Values:
FS Max = 5.603 FS Min = 1.693 FS Ave = 2.851
Standard Deviation = 0.703 Coefficient of Variation = 24.65 %
Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	195.50	211.65
2	210.19	203.07
3	460.85	281.66
4	483.30	308.51
5	501.02	338.69
6	502.50	341.40

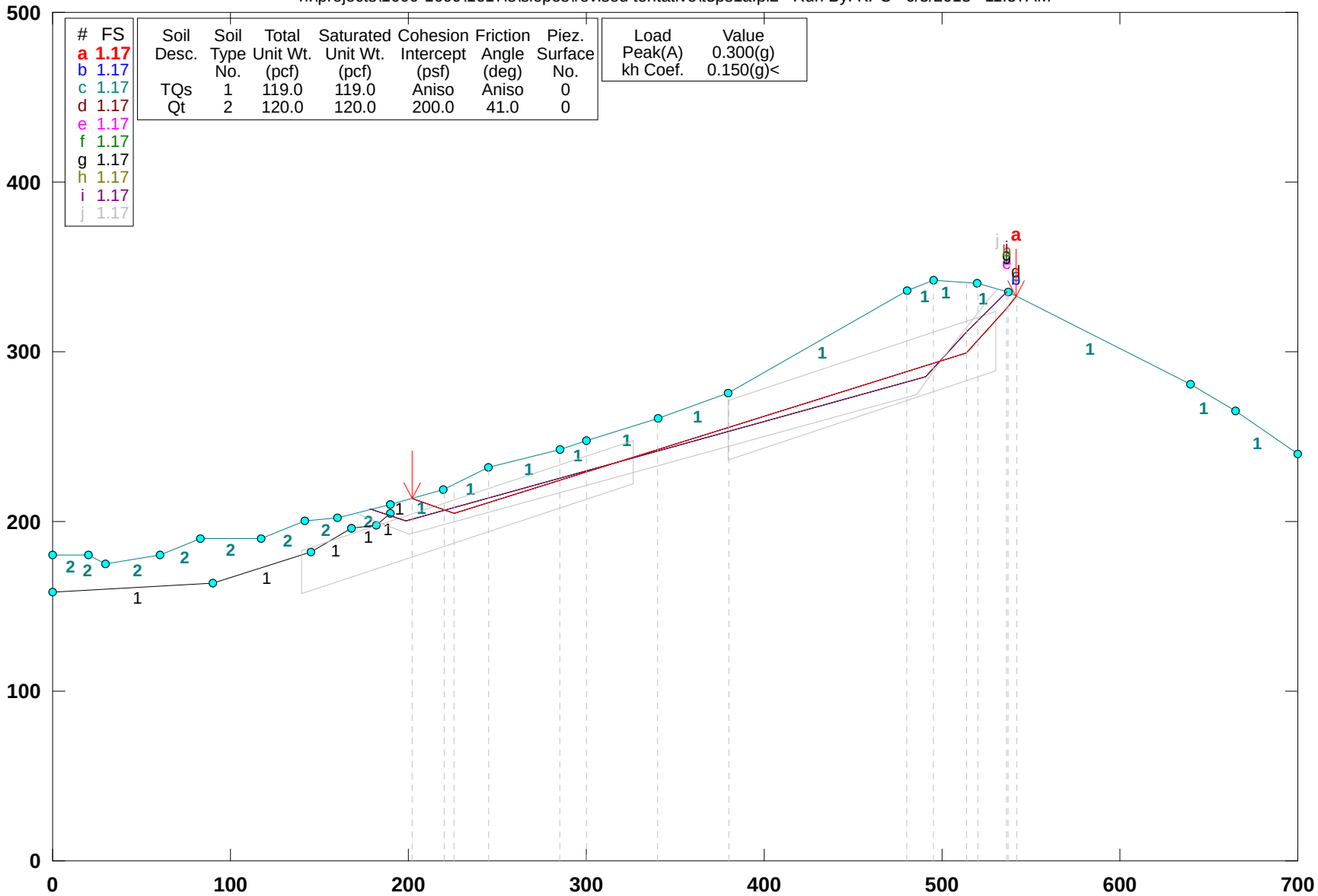
Factor of Safety
*** 1.693 ***

Individual data on the 13 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	14.7	11357.0	0.0	0.0	0.	0.	0.0	0.0	0.0
2	9.8	15083.6	0.0	0.0	0.	0.	0.0	0.0	0.0
3	25.0	45930.2	0.0	0.0	0.	0.	0.0	0.0	0.0
4	40.0	79723.5	0.0	0.0	0.	0.	0.0	0.0	0.0
5	15.0	28785.4	0.0	0.0	0.	0.	0.0	0.0	0.0
6	40.0	80938.4	0.0	0.0	0.	0.	0.0	0.0	0.0
7	40.0	87880.1	0.0	0.0	0.	0.	0.0	0.0	0.0
8	80.9	300868.8	0.0	0.0	0.	0.	0.0	0.0	0.0
9	19.1	84648.3	0.0	0.0	0.	0.	0.0	0.0	0.0
10	3.3	11835.9	0.0	0.0	0.	0.	0.0	0.0	0.0
11	11.7	29496.7	0.0	0.0	0.	0.	0.0	0.0	0.0
12	6.0	5872.8	0.0	0.0	0.	0.	0.0	0.0	0.0
13	1.5	249.4	0.0	0.0	0.	0.	0.0	0.0	0.0

T.T. 52584, 3-3'; planar; pseudo; search thru entire slope

n:\projects\1600-1699\1617is\slopes\revised tentative\t3ps1a.pl2 Run By: KPC 6/3/2013 11:57AM



GSTABL7 v.2 FSmin=1.17

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 7

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
Analysis Run Date:        6/3/2013
Time of Run:              11:57AM
Run By:                   KPC
Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3ps1a.in
Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t3ps1a.OUT
Unit System:              English
Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t3ps1a.PLT
PROBLEM DESCRIPTION:  T.T. 52584, 3-3'; planar; pseudo;
                      search thru entire slope
BOUNDARY COORDINATES
   21 Top   Boundaries
   27 Total Boundaries
Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
   No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
    1          0.00     180.00      20.00     180.00        2
    2         20.00     180.00      30.00     175.00        2
    3         30.00     175.00      60.00     180.00        2
    4         60.00     180.00      83.00     190.00        2
    5         83.00     190.00     117.00     190.00        2
    6        117.00     190.00     142.00     200.00        2
    7        142.00     200.00     160.00     202.00        2
    8        160.00     202.00     190.00     210.00        2
    9        190.00     210.00     220.00     219.00        1
   10        220.00     219.00     245.00     232.00        1
   11        245.00     232.00     285.00     242.00        1
   12        285.00     242.00     300.00     248.00        1
   13        300.00     248.00     340.00     261.00        1
   14        340.00     261.00     380.00     276.00        1
   15        380.00     276.00     480.00     336.00        1
   16        480.00     336.00     495.00     342.00        1
   17        495.00     342.00     520.00     340.00        1
   18        520.00     340.00     537.00     335.00        1
   19        537.00     335.00     640.00     281.00        1
   20        640.00     281.00     665.00     265.00        1
   21        665.00     265.00     700.00     240.00        1
   22        168.00     196.00     182.00     198.00        1
   23        182.00     198.00     190.00     205.00        1
   24        190.00     205.00     190.10     210.00        1
   25          0.00     158.00      90.00     164.00        1
   26         90.00     164.00     145.00     182.00        1
   27        145.00     182.00     168.00     196.00        1
Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  2 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
  1   119.0    119.0     410.0     40.5    0.00       0.0      0
  2   120.0    120.0     200.0     41.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
Soil Type  1 Is Anisotropic
```

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	16.0	410.00	40.50
2	19.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Specified Peak Ground Acceleration Coefficient (A) = 0.300(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000
Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
2500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 35.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	140.00	170.00	326.00	235.00	25.00
2	380.00	254.00	530.00	306.00	35.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 2500
Statistical Data On All Valid FS Values:
FS Max = 3.296 FS Min = 1.170 FS Ave = 1.991
Standard Deviation = 0.455 Coefficient of Variation = 22.84 %
Failure Surface Specified By 5 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	202.01	213.60
2	225.54	204.39
3	513.66	298.82
4	536.07	325.70
5	541.89	332.43

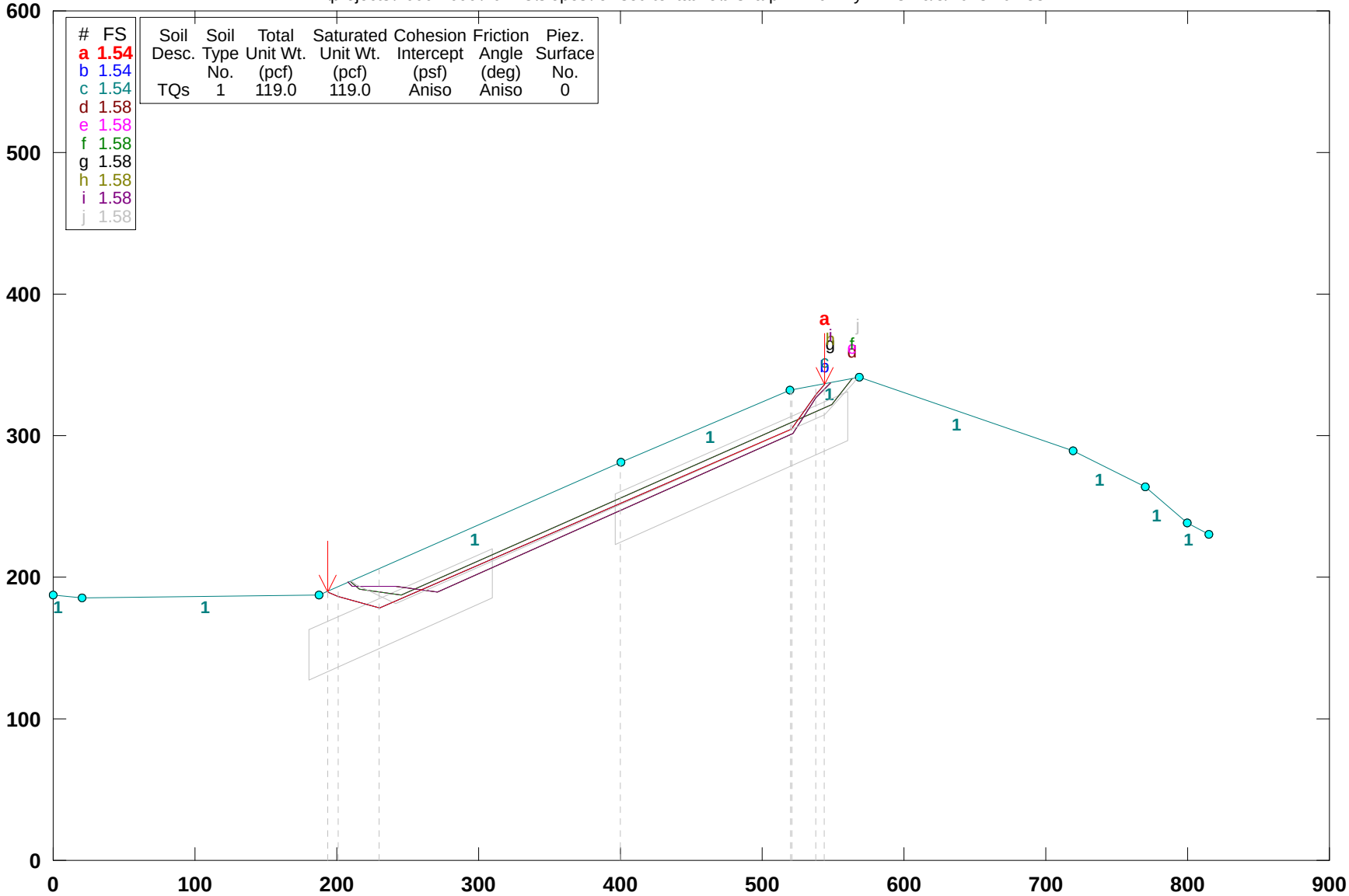
Factor of Safety
*** 1.170 ***

Individual data on the 14 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	18.0	13318.9	0.0	0.0	0.	0.	1997.8	0.0	0.0
2	5.5	9868.9	0.0	0.0	0.	0.	1480.3	0.0	0.0
3	19.5	44833.6	0.0	0.0	0.	0.	6725.0	0.0	0.0
4	40.0	93663.5	0.0	0.0	0.	0.	14049.5	0.0	0.0
5	15.0	33315.5	0.0	0.0	0.	0.	4997.3	0.0	0.0
6	40.0	91158.9	0.0	0.0	0.	0.	13673.8	0.0	0.0
7	40.0	95395.5	0.0	0.0	0.	0.	14309.3	0.0	0.0
8	100.0	411723.7	0.0	0.0	0.	0.	61758.6	0.0	0.0
9	15.0	87024.2	0.0	0.0	0.	0.	13053.6	0.0	0.0
10	18.7	101003.1	0.0	0.0	0.	0.	15150.5	0.0	0.0
11	6.3	28400.9	0.0	0.0	0.	0.	4260.1	0.0	0.0
12	16.1	41267.6	0.0	0.0	0.	0.	6190.1	0.0	0.0
13	0.9	980.5	0.0	0.0	0.	0.	147.1	0.0	0.0
14	4.9	2396.8	0.0	0.0	0.	0.	359.5	0.0	0.0

T.T. 52584, 4-4'; CS-6; static; planar; grade at toe lowered by 10'

n:\projects\1600-1699\1617is\slopes\revised tentative\t4s1a.pl2 Run By: KPC 6/5/2013 04:53PM



GSTABL7 v.2 FSmin=1.54

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

Run No. 8

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/5/2013
 Time of Run:              04:53PM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t4s1a.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t4s1a.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t4s1a.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 4-4'; CS-6; static; planar;
                       grade at toe lowered by 10'
 BOUNDARY COORDINATES
     9 Top   Boundaries
     9 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     187.00      20.00     185.00        1
     2         20.00     185.00     187.00     187.00        1
     3        187.00     187.00     400.00     281.00        1
     4        400.00     281.00     520.00     332.00        1
     5        520.00     332.00     568.00     341.00        1
     6        568.00     341.00     719.00     289.00        1
     7        719.00     289.00     770.00     264.00        1
     8        770.00     264.00     800.00     238.00        1
     9        800.00     238.00     815.00     230.00        1
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  1 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  1 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
    No.            (deg)            (psf)         (deg)
     1              23.0            410.00         40.50
     2              25.0            347.00         22.00
     3              90.0            410.00         40.50
 ANISOTROPIC SOIL NOTES:
    (1) An input value of 0.01 for C and/or Phi will cause Aniso
        C and/or Phi to be ignored in that range.
    (2) An input value of 0.02 for Phi will set both Phi and
        C equal to zero, with no water weight in the tension crack.
    (3) An input value of 0.03 for Phi will set both Phi and
        C equal to zero, with water weight in the tension crack.
 Janbus Empirical Coef is being used for the case of  c & phi both > 0
 A Critical Failure Surface Searching Method, Using A Random
 Technique For Generating Sliding Block Surfaces, Has Been
 Specified.
 1500 Trial Surfaces Have Been Generated.
```

2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of
Sliding Block Is 30.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	180.00	145.00	310.00	203.00	35.00
2	396.00	241.00	560.00	314.00	35.00

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 1500
Statistical Data On All Valid FS Values:
FS Max = 4.066 FS Min = 1.535 FS Ave = 2.693
Standard Deviation = 0.544 Coefficient of Variation = 20.22 %
Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	193.63	189.92
2	201.02	186.72
3	229.92	178.67
4	521.03	304.68
5	537.86	329.52
6	543.85	336.47

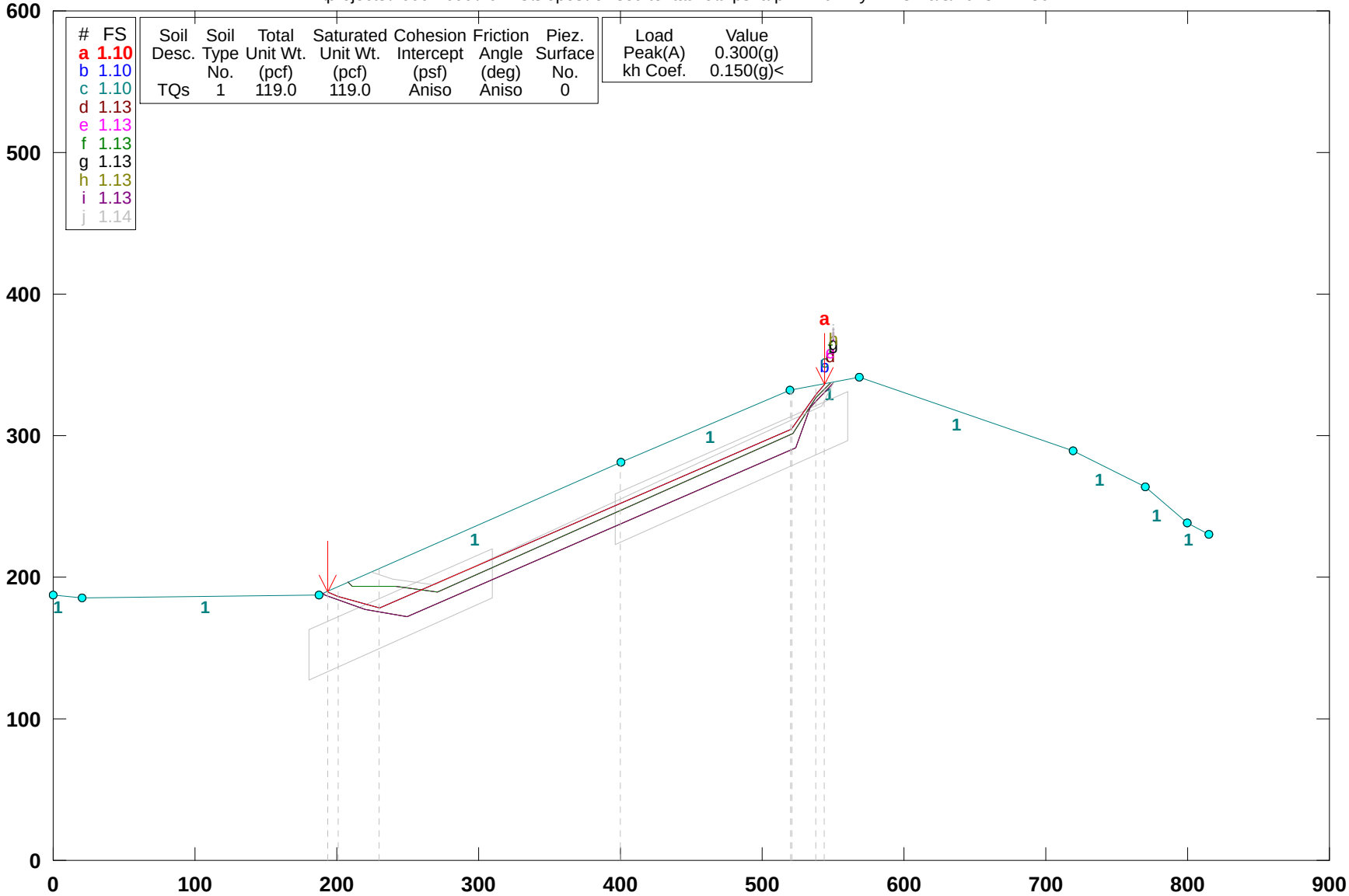
Factor of Safety
*** 1.535 ***

Individual data on the 7 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	7.4	2844.4	0.0	0.0	0.	0.	0.0	0.0	0.0
2	28.9	58019.5	0.0	0.0	0.	0.	0.0	0.0	0.0
3	170.1	566515.4	0.0	0.0	0.	0.	0.0	0.0	0.0
4	120.0	403193.0	0.0	0.0	0.	0.	0.0	0.0	0.0
5	1.0	3393.8	0.0	0.0	0.	0.	0.0	0.0	0.0
6	16.8	33369.6	0.0	0.0	0.	0.	0.0	0.0	0.0
7	6.0	2076.8	0.0	0.0	0.	0.	0.0	0.0	0.0

T.T. 52584, 4-4'; CS-6; pseudo; planar; grade at toe lowered by 10'

n:\projects\1600-1699\1617is\slopes\revised tentative\t4ps1a.pl2 Run By: KPC 6/3/2013 11:36AM



GSTABL7 v.2 FSmin=1.10

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

Run No. 9

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/3/2013
 Time of Run:              11:36AM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t4ps1a.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t4ps1a.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t4ps1a.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 4-4'; CS-6; pseudo; planar;
                       grade at toe lowered by 10'
 BOUNDARY COORDINATES
     9 Top   Boundaries
     9 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     187.00      20.00     185.00        1
     2         20.00     185.00     187.00     187.00        1
     3        187.00     187.00     400.00     281.00        1
     4        400.00     281.00     520.00     332.00        1
     5        520.00     332.00     568.00     341.00        1
     6        568.00     341.00     719.00     289.00        1
     7        719.00     289.00     770.00     264.00        1
     8        770.00     264.00     800.00     238.00        1
     9        800.00     238.00     815.00     230.00        1
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  1 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  1 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
    No.            (deg)            (psf)         (deg)
     1              23.0            410.00         40.50
     2              25.0            347.00         22.00
     3              90.0            410.00         40.50
 ANISOTROPIC SOIL NOTES:
    (1) An input value of 0.01 for C and/or Phi will cause Aniso
        C and/or Phi to be ignored in that range.
    (2) An input value of 0.02 for Phi will set both Phi and
        C equal to zero, with no water weight in the tension crack.
    (3) An input value of 0.03 for Phi will set both Phi and
        C equal to zero, with water weight in the tension crack.
 Specified Peak Ground Acceleration Coefficient (A) =   0.300(g)
 Specified Horizontal Earthquake Coefficient (kh) =   0.150(g)
 Specified Vertical Earthquake Coefficient (kv) =   0.000(g)
 Specified Seismic Pore-Pressure Factor =   0.000
 Janbus Empirical Coef is being used for the case of  c & phi both > 0
```

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Sliding Block Surfaces, Has Been
Specified.
1500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of
Sliding Block Is 30.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	180.00	145.00	310.00	203.00	35.00
2	396.00	241.00	560.00	314.00	35.00

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 1500
Statistical Data On All Valid FS Values:
FS Max = 2.811 FS Min = 1.096 FS Ave = 1.924
Standard Deviation = 0.360 Coefficient of Variation = 18.72 %
Failure Surface Specified By 6 Coordinate Points

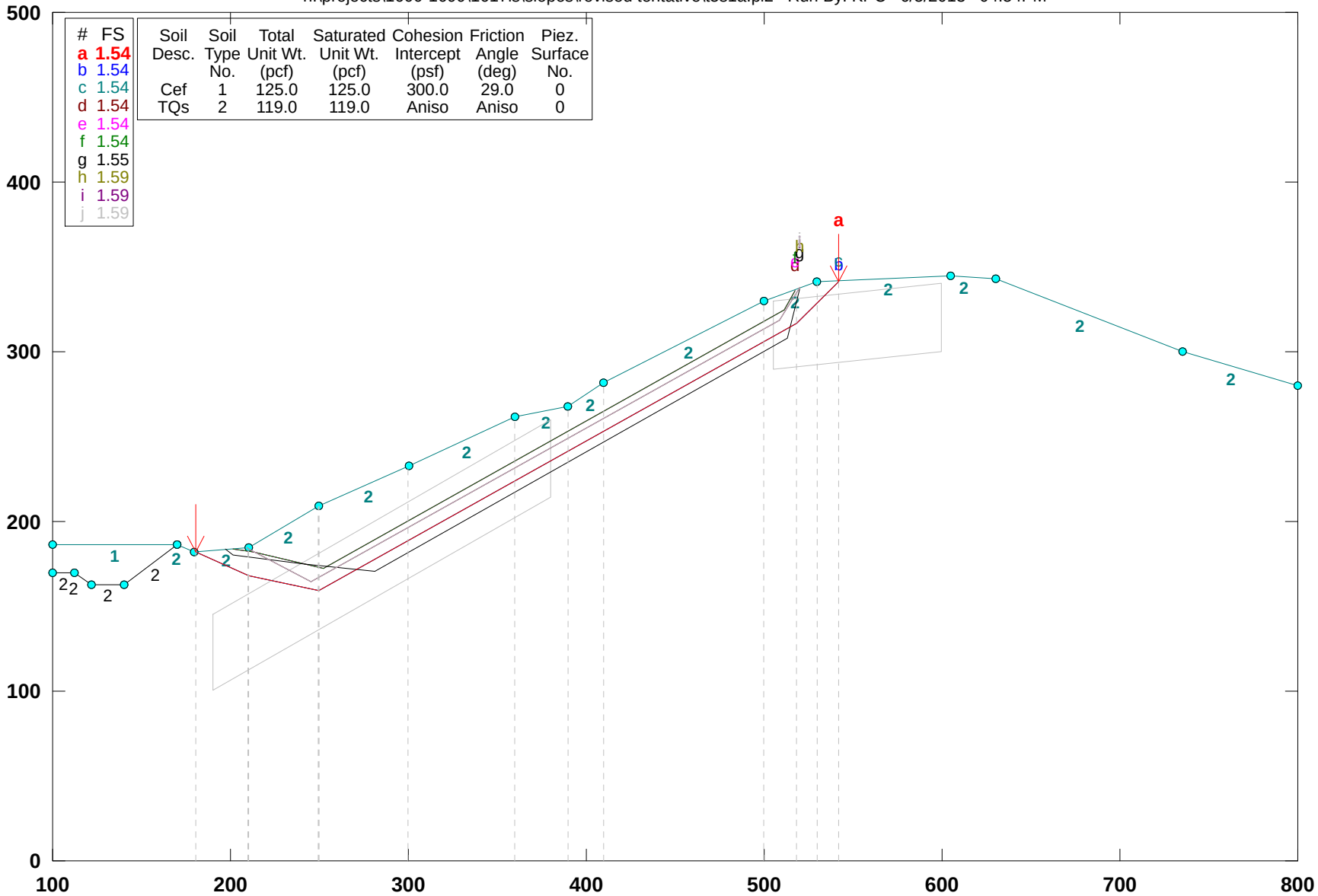
Point No.	X-Surf (ft)	Y-Surf (ft)
1	193.63	189.92
2	201.02	186.72
3	229.92	178.67
4	521.03	304.68
5	537.86	329.52
6	543.85	336.47

Factor of Safety
*** 1.096 ***
Individual data on the 7 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	7.4	2844.4	0.0	0.0	0.	0.	426.7	0.0	0.0
2	28.9	58019.5	0.0	0.0	0.	0.	8702.9	0.0	0.0
3	170.1	566515.4	0.0	0.0	0.	0.	84977.3	0.0	0.0
4	120.0	403193.0	0.0	0.0	0.	0.	60478.9	0.0	0.0
5	1.0	3393.8	0.0	0.0	0.	0.	509.1	0.0	0.0
6	16.8	33369.6	0.0	0.0	0.	0.	5005.4	0.0	0.0
7	6.0	2076.8	0.0	0.0	0.	0.	311.5	0.0	0.0

T.T. 52584, 5-5'; static; planar; 150' high natural slope

n:\projects\1600-1699\1617is\slopes\revised tentative\t5s1a.pl2 Run By: KPC 6/5/2013 04:54PM



GSTABL7 v.2 FSmin=1.54

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 10

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
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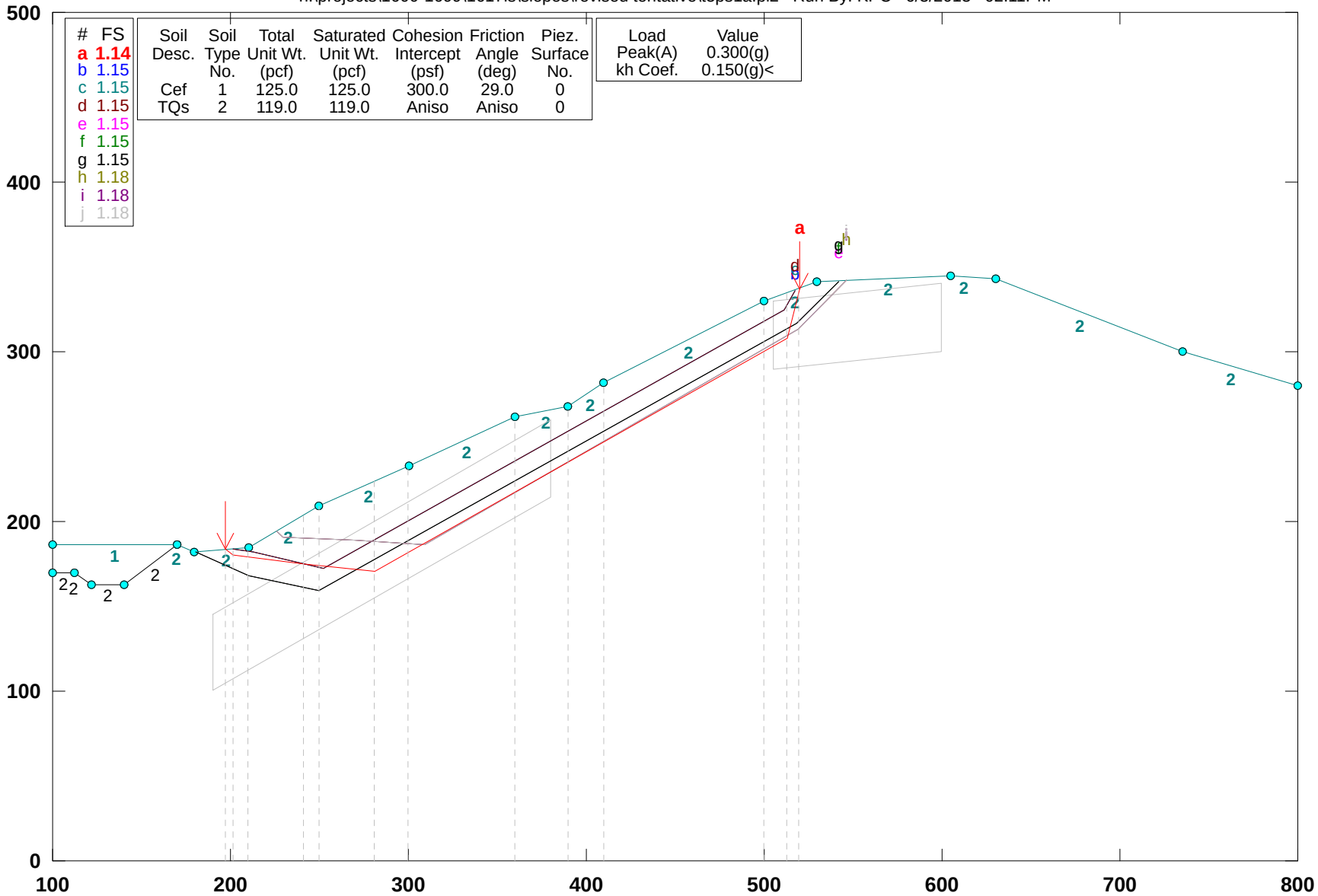
*******************************************************************************
                   SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
Analysis Run Date:        6/5/2013
Time of Run:              04:54PM
Run By:                   KPC
Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t5s1a.in
Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t5s1a.OUT
Unit System:              English
Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t5s1a.PLT
PROBLEM DESCRIPTION:  T.T. 52584, 5-5'; static; planar;
                      150' high natural slope
BOUNDARY COORDINATES
   14 Top   Boundaries
   18 Total Boundaries
Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
   No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
    1        100.00     186.00     170.00     186.00        1
    2        170.00     186.00     180.00     182.00        2
    3        180.00     182.00     210.00     185.00        2
    4        210.00     185.00     250.00     209.00        2
    5        250.00     209.00     300.00     233.00        2
    6        300.00     233.00     360.00     262.00        2
    7        360.00     262.00     390.00     268.00        2
    8        390.00     268.00     410.00     282.00        2
    9        410.00     282.00     500.00     330.00        2
   10        500.00     330.00     530.00     341.00        2
   11        530.00     341.00     605.00     345.00        2
   12        605.00     345.00     630.00     343.00        2
   13        630.00     343.00     735.00     300.00        2
   14        735.00     300.00     800.00     280.00        2
   15        100.00     170.00     112.00     170.00        2
   16        112.00     170.00     122.00     163.00        2
   17        122.00     163.00     140.00     163.00        2
   18        140.00     163.00     170.00     186.00        2
Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  2 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
  1   125.0    125.0     300.0     29.0    0.00       0.0      0
  2   119.0    119.0     410.0     40.5    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
Soil Type  2 Is Anisotropic
Number Of Direction Ranges Specified =  3
Direction    Counterclockwise     Cohesion     Friction
  Range       Direction Limit    Intercept       Angle
   No.            (deg)            (psf)         (deg)
    1              30.0             410.00         40.50
    2              33.0             347.00         22.00
    3              90.0             410.00         40.50
ANISOTROPIC SOIL NOTES:
   (1) An input value of 0.01 for C and/or Phi will cause Aniso
```

```
          C and/or Phi to be ignored in that range.
      (2) An input value of 0.02 for Phi will set both Phi and
          C equal to zero, with no water weight in the tension crack.
      (3) An input value of 0.03 for Phi will set both Phi and
          C equal to zero, with water weight in the tension crack.
   Janbus Empirical Coef is being used for the case of  c & phi both > 0
   A Critical Failure Surface Searching Method, Using A Random
   Technique For Generating Sliding Block Surfaces, Has Been
   Specified.
   1500 Trial Surfaces Have Been Generated.
   2 Boxes Specified For Generation Of Central Block Base
   Length Of Line Segments For Active And Passive Portions Of
   Sliding Block Is  40.0
   Box        X-Left     Y-Left    X-Right    Y-Right      Height
   No.         (ft)       (ft)       (ft)       (ft)        (ft)
    1         190.00     123.00     380.00     237.00      45.00
    2         505.00     310.00     600.00     320.00      40.00
   Following Are Displayed The Ten Most Critical Of The Trial
         Failure Surfaces Evaluated. They Are
         Ordered - Most Critical First.
         * * Safety Factors Are Calculated By The Simplified Janbu Method * *
         Total Number of Trial Surfaces Evaluated =  1500
         Statistical Data On All Valid FS Values:
            FS Max =   3.789   FS Min =   1.536   FS Ave =   2.683
            Standard Deviation =    0.403   Coefficient of Variation =   15.01 %
         Failure Surface Specified By  5 Coordinate Points
           Point      X-Surf      Y-Surf
            No.        (ft)        (ft)
             1        180.67      182.07
             2        210.39      167.74
             3        249.50      159.36
             4        518.38      316.74
             5        542.12      341.65
                Factor of Safety
               ***    1.536   ***
              Individual data on the    12  slices
                        Water  Water     Tie     Tie     Earthquake
                        Force  Force    Force   Force       Force   Surcharge
Slice  Width   Weight    Top    Bot     Norm     Tan     Hor     Ver    Load
 No.    (ft)    (lbs)   (lbs)  (lbs)    (lbs)   (lbs)   (lbs)   (lbs)   (lbs)
  1     29.3   29802.3     0.0     0.0       0.      0.     0.0     0.0      0.0
  2      0.4     802.2     0.0     0.0       0.      0.     0.0     0.0      0.0
  3     39.1  155551.9     0.0     0.0       0.      0.     0.0     0.0      0.0
  4      0.5    2921.1     0.0     0.0       0.      0.     0.0     0.0      0.0
  5     50.0  277970.0     0.0     0.0       0.      0.     0.0     0.0      0.0
  6     60.0  292915.6     0.0     0.0       0.      0.     0.0     0.0      0.0
  7     30.0  114899.8     0.0     0.0       0.      0.     0.0     0.0      0.0
  8     20.0   65572.8     0.0     0.0       0.      0.     0.0     0.0      0.0
  9     90.0  282300.1     0.0     0.0       0.      0.     0.0     0.0      0.0
 10     18.4   48131.5     0.0     0.0       0.      0.     0.0     0.0      0.0
 11     11.6   22176.7     0.0     0.0       0.      0.     0.0     0.0      0.0
 12     12.1    8697.8     0.0     0.0       0.      0.     0.0     0.0      0.0
```

T.T. 52584, 5-5'; pseudo; planar; 150' high natural slope

n:\projects\1600-1699\1617is\slopes\revised tentative\t5ps1a.pl2 Run By: KPC 6/3/2013 02:11PM



GSTABL7 v.2 FSmin=1.14

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

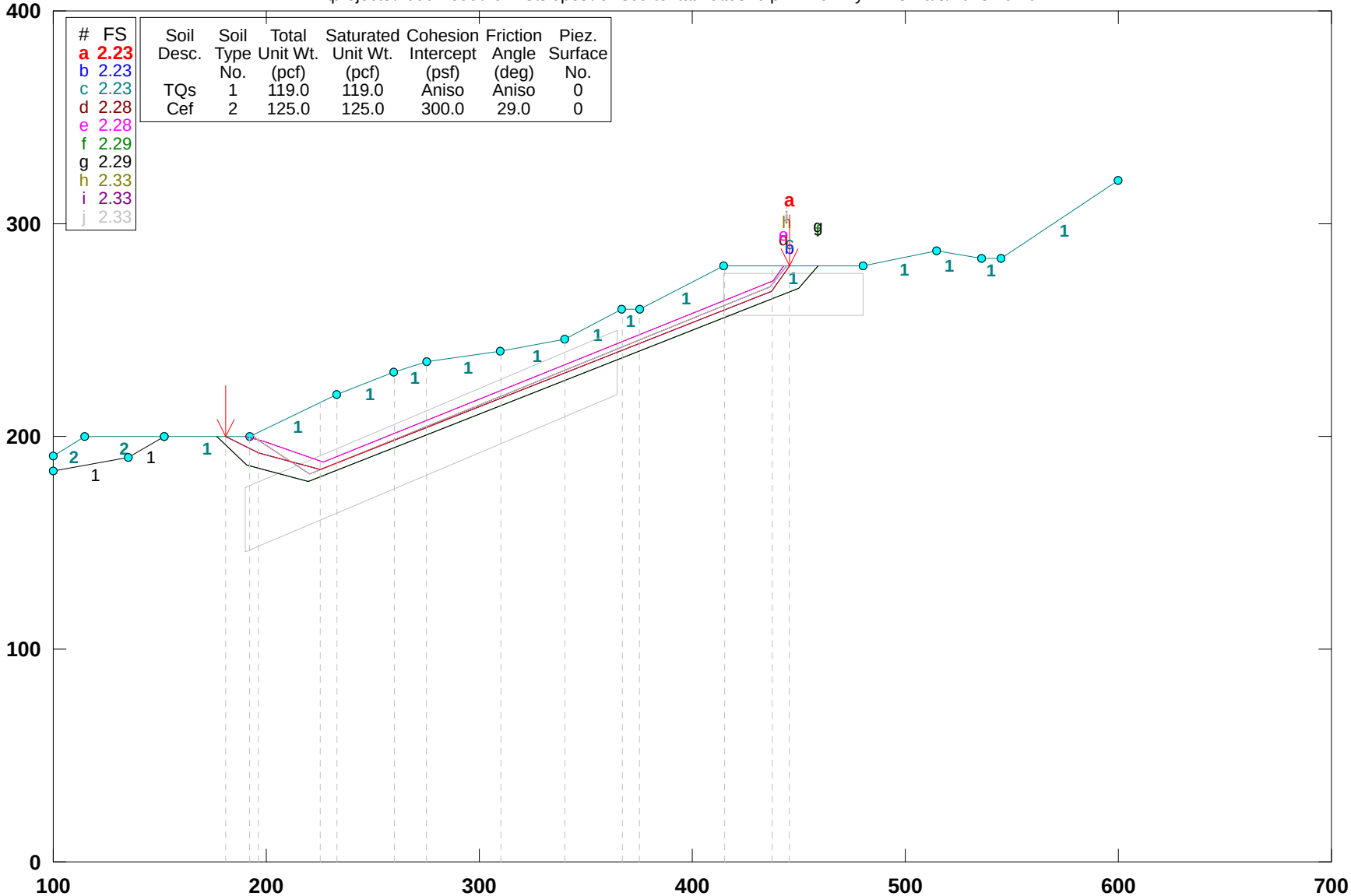
Run No. 11

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                   SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
Analysis Run Date:        6/3/2013
Time of Run:              02:11PM
Run By:                   KPC
Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t5ps1a.in
Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t5ps1a.OUT
Unit System:              English
Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t5ps1a.PLT
PROBLEM DESCRIPTION:  T.T. 52584, 5-5'; pseudo; planar;
                      150' high natural slope
BOUNDARY COORDINATES
   14 Top   Boundaries
   18 Total Boundaries
Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
   No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
    1        100.00     186.00     170.00     186.00        1
    2        170.00     186.00     180.00     182.00        2
    3        180.00     182.00     210.00     185.00        2
    4        210.00     185.00     250.00     209.00        2
    5        250.00     209.00     300.00     233.00        2
    6        300.00     233.00     360.00     262.00        2
    7        360.00     262.00     390.00     268.00        2
    8        390.00     268.00     410.00     282.00        2
    9        410.00     282.00     500.00     330.00        2
   10        500.00     330.00     530.00     341.00        2
   11        530.00     341.00     605.00     345.00        2
   12        605.00     345.00     630.00     343.00        2
   13        630.00     343.00     735.00     300.00        2
   14        735.00     300.00     800.00     280.00        2
   15        100.00     170.00     112.00     170.00        2
   16        112.00     170.00     122.00     163.00        2
   17        122.00     163.00     140.00     163.00        2
   18        140.00     163.00     170.00     186.00        2
Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  2 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
  1   125.0    125.0     300.0     29.0    0.00       0.0      0
  2   119.0    119.0     410.0     40.5    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
Soil Type  2 Is Anisotropic
Number Of Direction Ranges Specified =  3
Direction    Counterclockwise     Cohesion     Friction
  Range       Direction Limit    Intercept       Angle
   No.            (deg)            (psf)         (deg)
    1              30.0             410.00         40.50
    2              33.0             347.00         22.00
    3              90.0             410.00         40.50
ANISOTROPIC SOIL NOTES:
   (1) An input value of 0.01 for C and/or Phi will cause Aniso
```

```
        C and/or Phi to be ignored in that range.
    (2) An input value of 0.02 for Phi will set both Phi and
        C equal to zero, with no water weight in the tension crack.
    (3) An input value of 0.03 for Phi will set both Phi and
        C equal to zero, with water weight in the tension crack.
  Specified Peak Ground Acceleration Coefficient (A) =   0.300(g)
  Specified Horizontal Earthquake Coefficient (kh) =   0.150(g)
  Specified Vertical Earthquake Coefficient (kv) =   0.000(g)
  Specified Seismic Pore-Pressure Factor =   0.000
  Janbus Empirical Coef is being used for the case of  c & phi both > 0
  A Critical Failure Surface Searching Method, Using A Random
  Technique For Generating Sliding Block Surfaces, Has Been
  Specified.
  1500 Trial Surfaces Have Been Generated.
  2 Boxes Specified For Generation Of Central Block Base
  Length Of Line Segments For Active And Passive Portions Of
  Sliding Block Is  40.0
  Box        X-Left     Y-Left    X-Right    Y-Right      Height
  No.         (ft)       (ft)       (ft)       (ft)        (ft)
   1         190.00     123.00     380.00     237.00      45.00
   2         505.00     310.00     600.00     320.00      40.00
  Following Are Displayed The Ten Most Critical Of The Trial
        Failure Surfaces Evaluated. They Are
        Ordered - Most Critical First.
        * * Safety Factors Are Calculated By The Simplified Janbu Method * *
        Total Number of Trial Surfaces Evaluated =  1500
        Statistical Data On All Valid FS Values:
           FS Max =   2.557   FS Min =   1.144   FS Ave =   1.934
           Standard Deviation =    0.255   Coefficient of Variation =   13.20 %
        Failure Surface Specified By  6 Coordinate Points
          Point      X-Surf      Y-Surf
           No.        (ft)        (ft)
            1        197.38      183.74
            2        201.63      180.68
            3        241.25      175.16
            4        280.95      170.30
            5        512.95      308.33
            6        519.64      337.20
               Factor of Safety
             ***    1.144   ***
            Individual data on the    12  slices
                      Water  Water     Tie     Tie     Earthquake
                      Force  Force    Force   Force       Force   Surcharge
Slice  Width   Weight    Top    Bot     Norm     Tan     Hor     Ver    Load
 No.    (ft)    (lbs)   (lbs)  (lbs)    (lbs)   (lbs)   (lbs)   (lbs)   (lbs)
  1      4.3     882.7     0.0     0.0       0.      0.   132.4     0.0      0.0
  2      8.4    4468.9     0.0     0.0       0.      0.   670.3     0.0      0.0
  3     31.2   63364.4     0.0     0.0       0.      0.  9504.7     0.0      0.0
  4      8.8   33062.5     0.0     0.0       0.      0.  4959.4     0.0      0.0
  5     31.0  162940.9     0.0     0.0       0.      0. 24441.1     0.0      0.0
  6     19.0  118920.9     0.0     0.0       0.      0. 17838.1     0.0      0.0
  7     60.0  342868.9     0.0     0.0       0.      0. 51430.3     0.0      0.0
  8     30.0  138322.5     0.0     0.0       0.      0. 20748.4     0.0      0.0
  9     20.0   80612.4     0.0     0.0       0.      0. 12091.9     0.0      0.0
 10     90.0  344280.3     0.0     0.0       0.      0. 51642.1     0.0      0.0
 11     12.9   42981.7     0.0     0.0       0.      0.  6447.3     0.0      0.0
 12      6.7   10509.1     0.0     0.0       0.      0.  1576.4     0.0      0.0
```

T.T. 52584, 9-9'; CS-25; static; planar;search above clay plane

n:\projects\1600-1699\1617is\slopes\revised tentative\t9s1b.pl2 Run By: KPC 6/3/2013 04:04PM



GSTABL7 v.2 FSmin=2.23

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

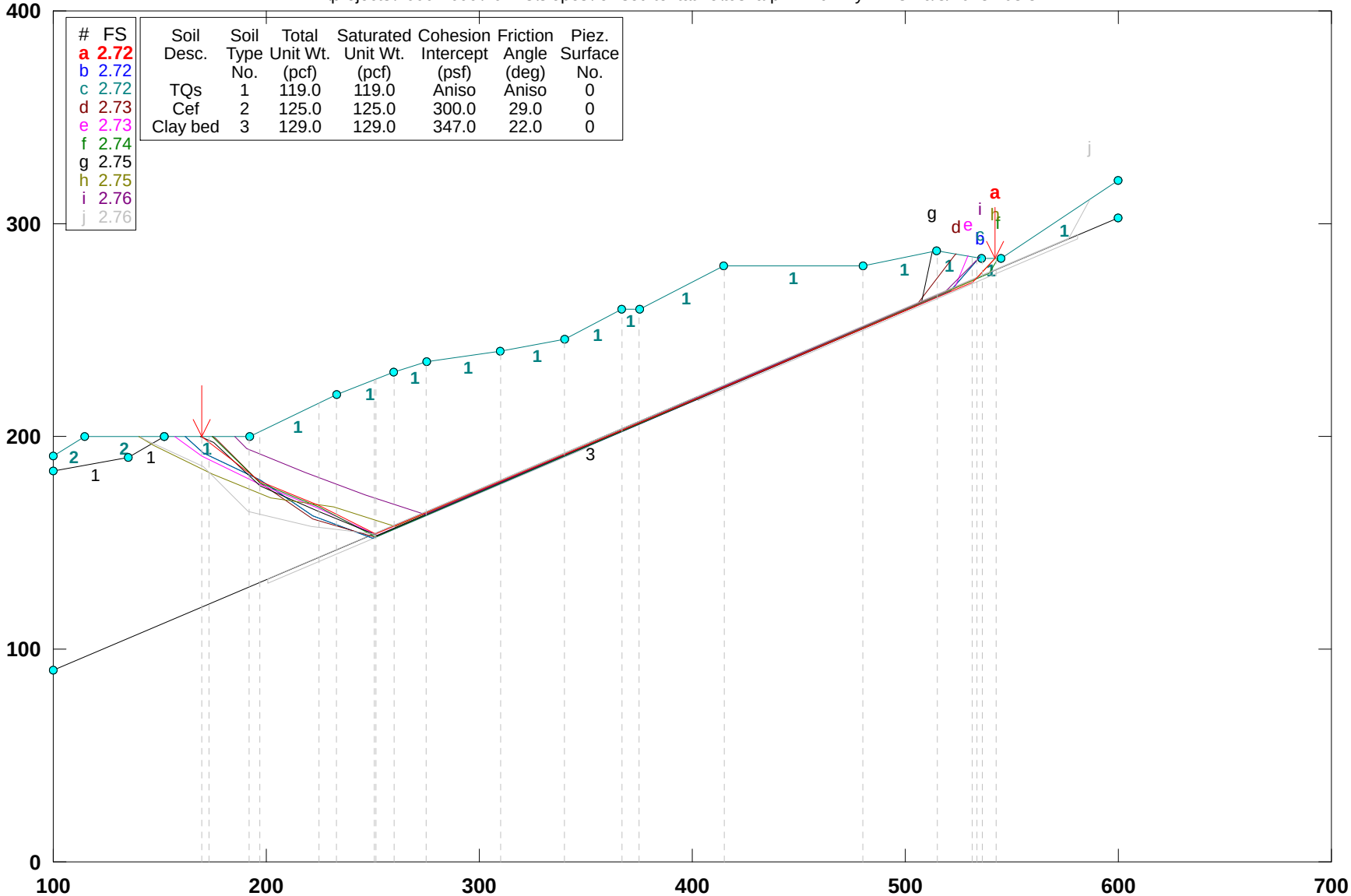
Run No. 12

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                   SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/3/2013
 Time of Run:              04:04PM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t9s1b.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t9s1b.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t9s1b.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 9-9'; CS-25; static; planar;
                       search above clay plane
 BOUNDARY COORDINATES
    16 Top   Boundaries
    18 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1        100.00     191.00     115.00     200.00        2
     2        115.00     200.00     152.00     200.00        2
     3        152.00     200.00     192.00     200.00        1
     4        192.00     200.00     233.00     220.00        1
     5        233.00     220.00     260.00     230.00        1
     6        260.00     230.00     275.00     235.00        1
     7        275.00     235.00     310.00     240.00        1
     8        310.00     240.00     340.00     246.00        1
     9        340.00     246.00     367.00     260.00        1
    10        367.00     260.00     375.00     260.00        1
    11        375.00     260.00     415.00     280.00        1
    12        415.00     280.00     480.00     280.00        1
    13        480.00     280.00     515.00     287.00        1
    14        515.00     287.00     536.00     284.00        1
    15        536.00     284.00     545.00     284.00        1
    16        545.00     284.00     600.00     320.00        1
    17        100.00     184.00     135.00     190.00        1
    18        135.00     190.00     152.00     200.00        1
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  2 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   125.0    125.0     300.0     29.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  1 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
    No.            (deg)            (psf)         (deg)
     1              21.5             410.00         40.50
     2              23.5             347.00         22.00
     3              90.0             410.00         40.50
 ANISOTROPIC SOIL NOTES:
    (1) An input value of 0.01 for C and/or Phi will cause Aniso
```

```
          C and/or Phi to be ignored in that range.
      (2) An input value of 0.02 for Phi will set both Phi and
          C equal to zero, with no water weight in the tension crack.
      (3) An input value of 0.03 for Phi will set both Phi and
          C equal to zero, with water weight in the tension crack.
   Janbus Empirical Coef is being used for the case of  c & phi both > 0
   A Critical Failure Surface Searching Method, Using A Random
   Technique For Generating Sliding Block Surfaces, Has Been
   Specified.
   1500 Trial Surfaces Have Been Generated.
   2 Boxes Specified For Generation Of Central Block Base
   Length Of Line Segments For Active And Passive Portions Of
   Sliding Block Is  30.0
   Box        X-Left     Y-Left    X-Right    Y-Right      Height
   No.         (ft)       (ft)       (ft)       (ft)        (ft)
    1         190.00     161.00     365.00     235.00      30.00
    2         415.00     267.00     480.00     267.00      20.00
   Following Are Displayed The Ten Most Critical Of The Trial
         Failure Surfaces Evaluated. They Are
         Ordered - Most Critical First.
         * * Safety Factors Are Calculated By The Simplified Janbu Method * *
         Total Number of Trial Surfaces Evaluated =  1500
         Statistical Data On All Valid FS Values:
            FS Max =   6.483   FS Min =   2.230   FS Ave =   4.176
            Standard Deviation =    0.753   Coefficient of Variation =   18.04 %
         Failure Surface Specified By  5 Coordinate Points
           Point      X-Surf      Y-Surf
            No.        (ft)        (ft)
             1        180.78      200.00
             2        196.13      191.85
             3        225.19      184.41
             4        437.31      268.07
             5        445.41      280.00
                Factor of Safety
               ***    2.230   ***
              Individual data on the    13  slices
                        Water  Water     Tie     Tie     Earthquake
                        Force  Force    Force   Force       Force   Surcharge
Slice  Width   Weight    Top    Bot     Norm     Tan     Hor     Ver    Load
 No.    (ft)    (lbs)   (lbs)  (lbs)    (lbs)   (lbs)   (lbs)   (lbs)   (lbs)
  1     11.2    3972.3     0.0     0.0       0.      0.     0.0     0.0      0.0
  2      4.1    3961.6     0.0     0.0       0.      0.     0.0     0.0      0.0
  3     29.1   72524.1     0.0     0.0       0.      0.     0.0     0.0      0.0
  4      7.8   29857.4     0.0     0.0       0.      0.     0.0     0.0      0.0
  5     27.0  103408.0     0.0     0.0       0.      0.     0.0     0.0      0.0
  6     15.0   56052.7     0.0     0.0       0.      0.     0.0     0.0      0.0
  7     35.0  110549.1     0.0     0.0       0.      0.     0.0     0.0      0.0
  8     30.0   68632.6     0.0     0.0       0.      0.     0.0     0.0      0.0
  9     27.0   57785.0     0.0     0.0       0.      0.     0.0     0.0      0.0
 10      8.0   17215.0     0.0     0.0       0.      0.     0.0     0.0      0.0
 11     40.0   88620.1     0.0     0.0       0.      0.     0.0     0.0      0.0
 12     22.3   43352.9     0.0     0.0       0.      0.     0.0     0.0      0.0
 13      8.1    5749.6     0.0     0.0       0.      0.     0.0     0.0      0.0
```

T.T. 52584, 9-9'; CS-25; static; planar;clay bed at depth

n:\projects\1600-1699\1617is\slopes\revised tentative\t9s1a.pl2 Run By: KPC 6/3/2013 03:37PM



GSTABL7 v.2 FSmin=2.72

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

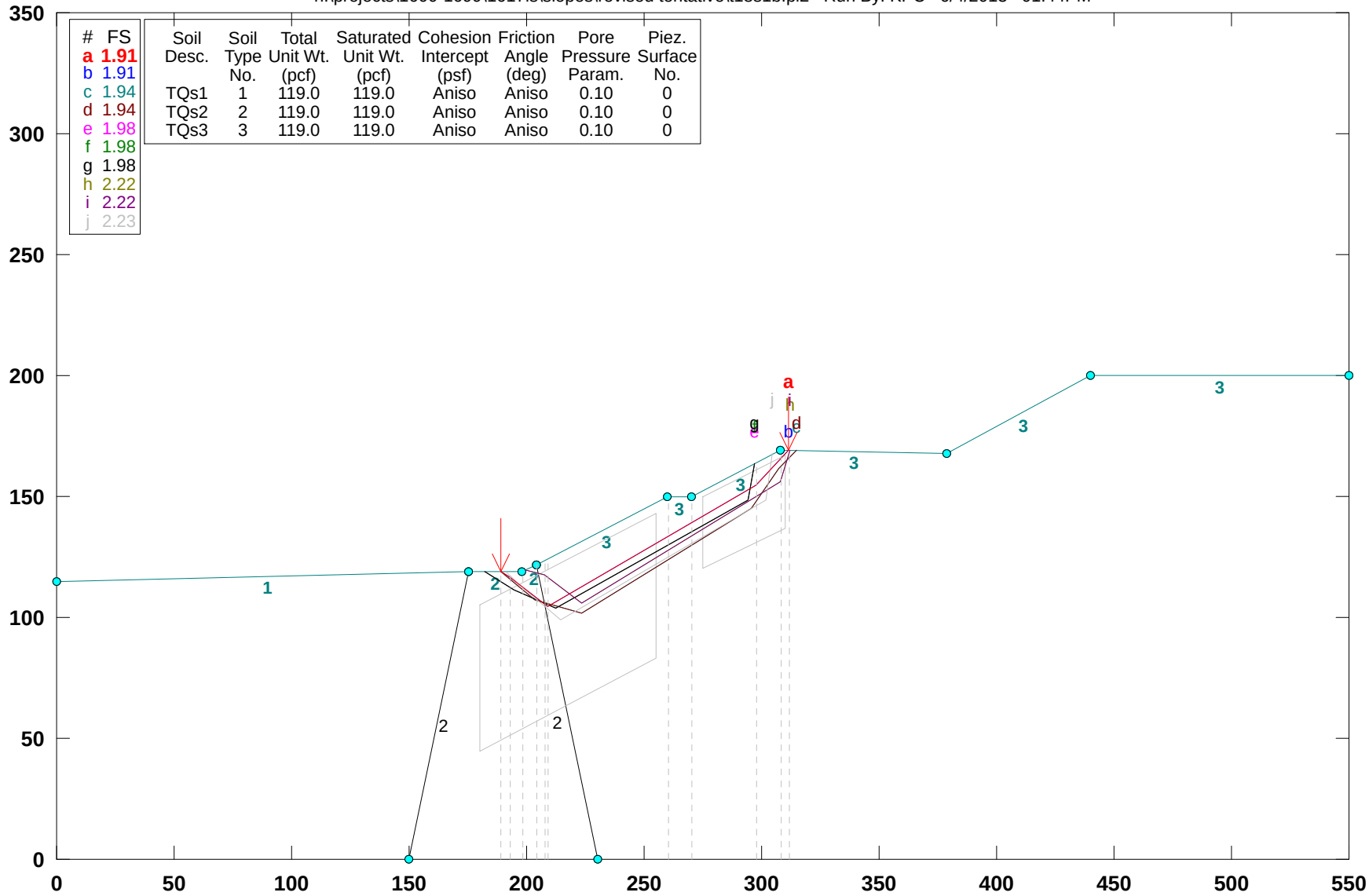
Run No. 13

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/3/2013
 Time of Run:              03:37PM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t9s1a.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t9s1a.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t9s1a.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 9-9'; CS-25; static; planar;
                       clay bed at depth
 BOUNDARY COORDINATES
    16 Top   Boundaries
    19 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1        100.00     191.00     115.00     200.00        2
     2        115.00     200.00     152.00     200.00        2
     3        152.00     200.00     192.00     200.00        1
     4        192.00     200.00     233.00     220.00        1
     5        233.00     220.00     260.00     230.00        1
     6        260.00     230.00     275.00     235.00        1
     7        275.00     235.00     310.00     240.00        1
     8        310.00     240.00     340.00     246.00        1
     9        340.00     246.00     367.00     260.00        1
    10        367.00     260.00     375.00     260.00        1
    11        375.00     260.00     415.00     280.00        1
    12        415.00     280.00     480.00     280.00        1
    13        480.00     280.00     515.00     287.00        1
    14        515.00     287.00     536.00     284.00        1
    15        536.00     284.00     545.00     284.00        1
    16        545.00     284.00     600.00     320.00        1
    17        100.00     184.00     135.00     190.00        1
    18        135.00     190.00     152.00     200.00        1
    19        100.00      90.00     600.00     303.00        3
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  3 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.00       0.0      0
   2   125.0    125.0     300.0     29.0    0.00       0.0      0
   3   129.0    129.0     347.0     22.0    0.00       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     1 soil type(s)
 Soil Type  1 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
    No.            (deg)            (psf)         (deg)
     1             21.5             410.00         40.50
     2             23.5             347.00         22.00
     3             90.0             410.00         40.50
```

```
ANISOTROPIC SOIL NOTES:
   (1) An input value of 0.01 for C and/or Phi will cause Aniso
       C and/or Phi to be ignored in that range.
   (2) An input value of 0.02 for Phi will set both Phi and
       C equal to zero, with no water weight in the tension crack.
   (3) An input value of 0.03 for Phi will set both Phi and
       C equal to zero, with water weight in the tension crack.
Janbus Empirical Coef is being used for the case of  c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Sliding Block Surfaces, Has Been
Specified.
 500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of
Sliding Block Is  30.0
Box        X-Left     Y-Left    X-Right    Y-Right      Height
No.         (ft)       (ft)       (ft)       (ft)        (ft)
 1         201.00     132.00     351.00     196.00       2.00
 2         403.00     218.00     581.00     294.00       2.00
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Simplified Janbu Method * *
      Total Number of Trial Surfaces Evaluated =   500
      Statistical Data On All Valid FS Values:
         FS Max =   4.731   FS Min =   2.721   FS Ave =   3.279
         Standard Deviation =    0.358   Coefficient of Variation =   10.93 %
      Failure Surface Specified By  7 Coordinate Points
        Point      X-Surf      Y-Surf
         No.        (ft)        (ft)
          1        169.77      200.00
          2        173.18      197.05
          3        197.06      178.90
          4        224.79      167.46
          5        251.53      153.84
          6        531.36      272.43
          7        542.46      284.00
             Factor of Safety
            ***    2.721   ***
           Individual data on the    20  slices
                     Water  Water     Tie     Tie     Earthquake
                     Force  Force    Force   Force       Force   Surcharge
Slice  Width   Weight    Top    Bot     Norm     Tan     Hor     Ver    Load
 No.    (ft)    (lbs)   (lbs)  (lbs)    (lbs)   (lbs)   (lbs)   (lbs)   (lbs)
  1      3.4     597.9     0.0     0.0       0.      0.     0.0     0.0      0.0
  2     18.8   22615.9     0.0     0.0       0.      0.     0.0     0.0      0.0
  3      5.1   12297.1     0.0     0.0       0.      0.     0.0     0.0      0.0
  4     27.7  118974.2     0.0     0.0       0.      0.     0.0     0.0      0.0
  5      8.2   51397.0     0.0     0.0       0.      0.     0.0     0.0      0.0
  6     17.8  136490.1     0.0     0.0       0.      0.     0.0     0.0      0.0
  7      0.8    6540.0     0.0     0.0       0.      0.     0.0     0.0      0.0
  8      8.5   73447.6     0.0     0.0       0.      0.     0.0     0.0      0.0
  9     15.0  128430.7     0.0     0.0       0.      0.     0.0     0.0      0.0
 10     35.0  276392.1     0.0     0.0       0.      0.     0.0     0.0      0.0
 11     30.0  207397.6     0.0     0.0       0.      0.     0.0     0.0      0.0
 12     27.0  180001.0     0.0     0.0       0.      0.     0.0     0.0      0.0
 13      8.0   52940.9     0.0     0.0       0.      0.     0.0     0.0      0.0
 14     40.0  263915.8     0.0     0.0       0.      0.     0.0     0.0      0.0
 15     65.0  334205.8     0.0     0.0       0.      0.     0.0     0.0      0.0
 16     35.0  106325.5     0.0     0.0       0.      0.     0.0     0.0      0.0
 17     16.4   33063.8     0.0     0.0       0.      0.     0.0     0.0      0.0
 18      2.2    2833.4     0.0     0.0       0.      0.     0.0     0.0      0.0
 19      2.5    2417.8     0.0     0.0       0.      0.     0.0     0.0      0.0
 20      6.5    2590.1     0.0     0.0       0.      0.     0.0     0.0      0.0
```

T.T. 52584, 18-18'; CS-55; static; planar; critical surface

n:\projects\1600-1699\1617is\slopes\revised tentative\t18s1b.pl2 Run By: KPC 6/4/2013 01:44PM



GSTABL7 v.2 FSmin=1.91

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

Run No. 14

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
Analysis Run Date:        6/4/2013
Time of Run:              01:44PM
Run By:                   KPC
Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t18s1b.in
Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t18s1b.OUT
Unit System:              English
Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t18s1b.PLT
PROBLEM DESCRIPTION:  T.T. 52584, 18-18'; CS-55; static;
                      planar; critical surface
BOUNDARY COORDINATES
    9 Top   Boundaries
   11 Total Boundaries
Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
   No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
    1          0.00     115.00     175.00     119.00        1
    2        175.00     119.00     198.00     119.00        2
    3        198.00     119.00     204.00     122.00        2
    4        204.00     122.00     260.00     150.00        3
    5        260.00     150.00     270.00     150.00        3
    6        270.00     150.00     308.00     169.00        3
    7        308.00     169.00     379.00     168.00        3
    8        379.00     168.00     440.00     200.00        3
    9        440.00     200.00     550.00     200.00        3
   10        150.00       0.00     175.00     119.00        2
   11        204.00     122.00     230.00       0.00        2
Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  3 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
  1   119.0    119.0     410.0     40.5    0.10       0.0      0
  2   119.0    119.0     410.0     40.5    0.10       0.0      0
  3   119.0    119.0     410.0     40.5    0.10       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
    3 soil type(s)
Soil Type  1 Is Anisotropic
Number Of Direction Ranges Specified =  3
Direction    Counterclockwise     Cohesion     Friction
  Range       Direction Limit    Intercept       Angle
   No.            (deg)            (psf)         (deg)
    1            -41.0             410.00         40.50
    2            -39.0             347.00         22.00
    3             90.0             410.00         40.50
Soil Type  2 Is Anisotropic
Number Of Direction Ranges Specified =  3
Direction    Counterclockwise     Cohesion     Friction
  Range       Direction Limit    Intercept       Angle
   No.            (deg)            (psf)         (deg)
    1            -41.0             410.00         40.50
    2             29.0             347.00         22.00
    3             90.0             410.00         40.50
```

Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	29.0	410.00	40.50
2	31.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
1000 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 20.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	180.00	75.00	255.00	113.00	60.00
2	275.00	135.00	310.00	152.00	30.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 1000
Statistical Data On All Valid FS Values:
FS Max = 9.328 FS Min = 1.912 FS Ave = 4.097
Standard Deviation = 1.080 Coefficient of Variation = 26.36 %
Failure Surface Specified By 5 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	188.77	119.00
2	192.74	116.66
3	208.78	104.71
4	297.51	154.77
5	311.52	168.95

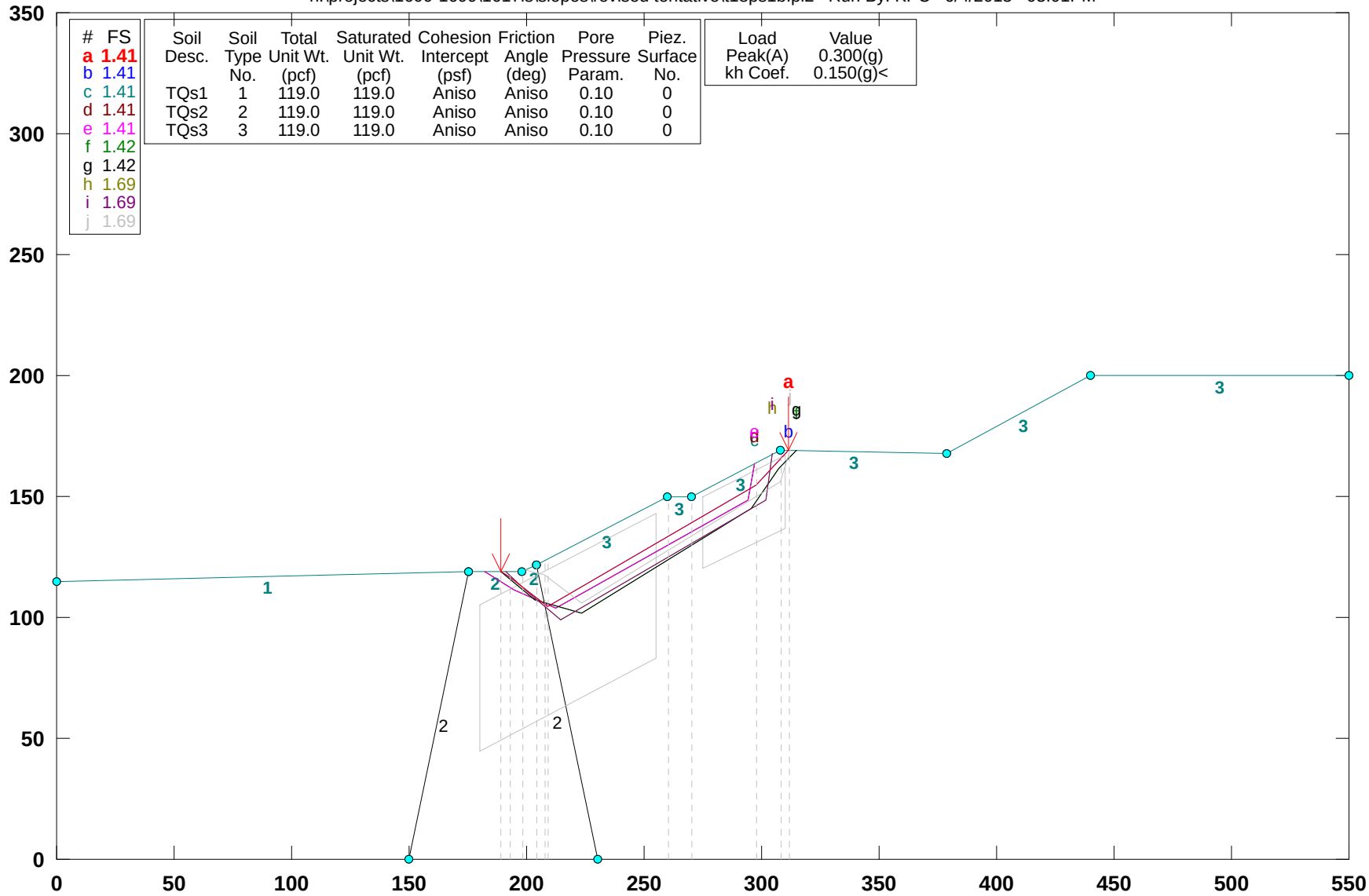
Factor of Safety
*** 1.912 ***

Individual data on the 10 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.0	552.7	0.0	64.1	0.	0.	0.0	0.0	0.0
2	5.3	2689.0	0.0	335.4	0.	0.	0.0	0.0	0.0
3	6.0	7134.8	0.0	889.8	0.	0.	0.0	0.0	0.0
4	3.5	6578.3	0.0	820.4	0.	0.	0.0	0.0	0.0
5	1.3	2922.5	0.0	364.5	0.	0.	0.0	0.0	0.0
6	51.2	109930.8	0.0	12622.1	0.	0.	0.0	0.0	0.0
7	10.0	16148.4	0.0	1854.1	0.	0.	0.0	0.0	0.0
8	27.5	32292.7	0.0	3707.8	0.	0.	0.0	0.0	0.0
9	10.5	7863.0	0.0	1118.7	0.	0.	0.0	0.0	0.0
10	3.5	755.3	0.0	107.5	0.	0.	0.0	0.0	0.0

T.T. 52584, 18-18'; CS-55; pseudo; planar; critical surface

n:\projects\1600-1699\1617is\slopes\revised tentative\t18ps1b.pl2 Run By: KPC 6/4/2013 03:01PM



GSTABL7 v.2 FSmin=1.41

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

GSTABL7

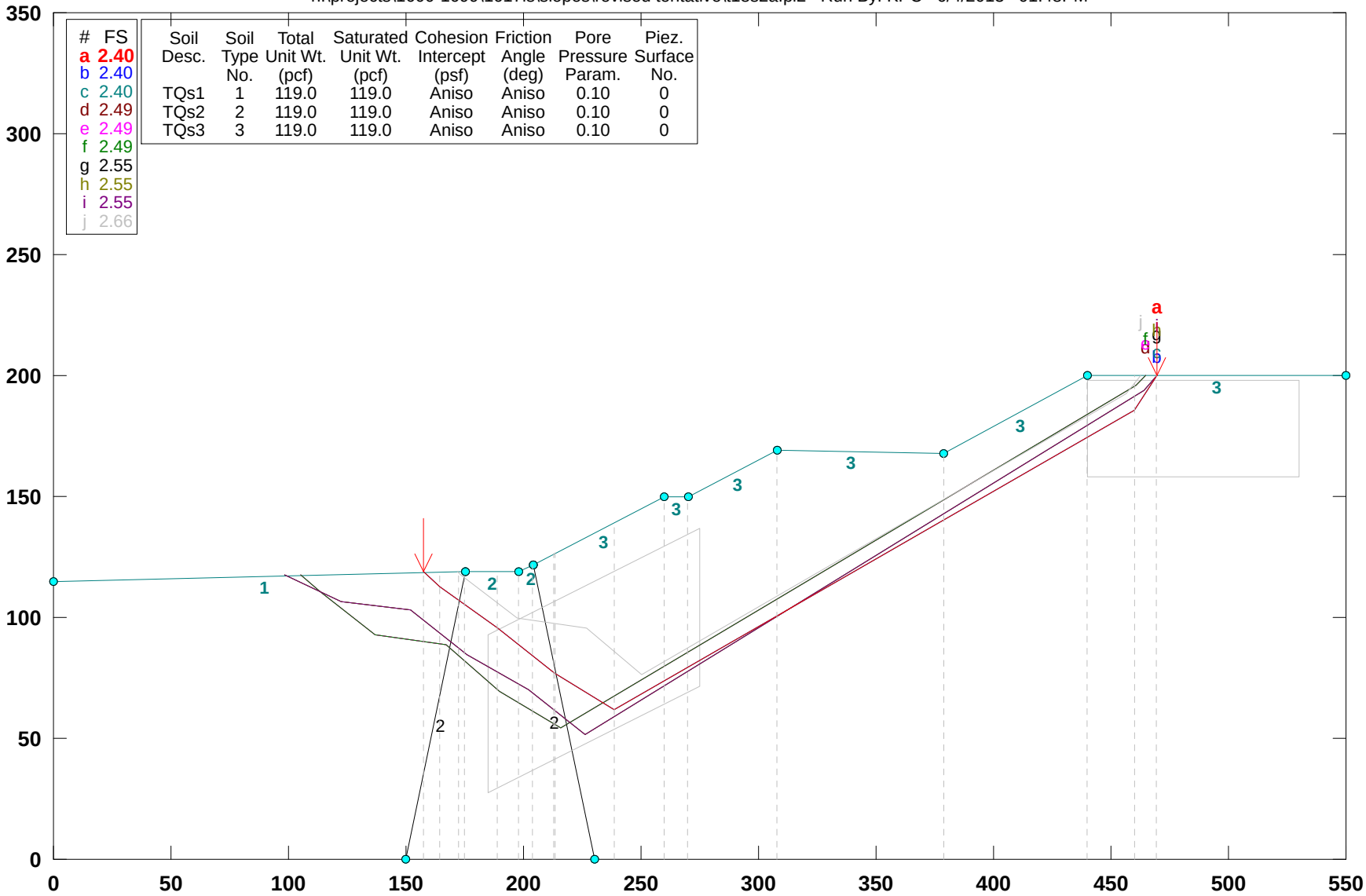
Run No. 15

```
                                   ***  GSTABL7  ***
                         ** GSTABL7 by Garry H. Gregory, P.E. **
       ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
                   (All Rights Reserved-Unauthorized Use Prohibited)
    ******************************************************************************
                        SLOPE STABILITY ANALYSIS SYSTEM
           Modified Bishop, Simplified Janbu, or GLE Method of Slices.
           (Includes Spencer & Morgenstern-Price Type Analysis)
           Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
           Nonlinear Undrained Shear Strength, Curved Phi Envelope,
           Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
           Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
    ******************************************************************************
    Analysis Run Date:        6/4/2013
    Time of Run:              03:01PM
    Run By:                   KPC
    Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t18ps1b.in
    Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised
Tentative\t18ps1b.OUT
    Unit System:              English
    Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t18ps1b.PLT
    PROBLEM DESCRIPTION:  T.T. 52584, 18-18'; CS-55; pseudo;
                          planar; critical surface
    BOUNDARY COORDINATES
        9 Top   Boundaries
       11 Total Boundaries
    Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
       No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
        1          0.00     115.00     175.00     119.00        1
        2        175.00     119.00     198.00     119.00        2
        3        198.00     119.00     204.00     122.00        2
        4        204.00     122.00     260.00     150.00        3
        5        260.00     150.00     270.00     150.00        3
        6        270.00     150.00     308.00     169.00        3
        7        308.00     169.00     379.00     168.00        3
        8        379.00     168.00     440.00     200.00        3
        9        440.00     200.00     550.00     200.00        3
       10        150.00       0.00     175.00     119.00        2
       11        204.00     122.00     230.00       0.00        2
    Default Y-Origin = 0.00(ft)
    Default X-Plus Value = 0.00(ft)
    Default Y-Plus Value = 0.00(ft)
   ISOTROPIC SOIL PARAMETERS
     3 Type(s) of Soil
    Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
    Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
     No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
      1   119.0    119.0     410.0     40.5    0.10       0.0      0
      2   119.0    119.0     410.0     40.5    0.10       0.0      0
      3   119.0    119.0     410.0     40.5    0.10       0.0      0
   ANISOTROPIC STRENGTH PARAMETERS
        3 soil type(s)
    Soil Type  1 Is Anisotropic
    Number Of Direction Ranges Specified =  3
    Direction    Counterclockwise     Cohesion     Friction
      Range       Direction Limit    Intercept       Angle
       No.            (deg)            (psf)         (deg)
        1            -41.0             410.00         40.50
        2            -39.0             347.00         22.00
        3             90.0             410.00         40.50
    Soil Type  2 Is Anisotropic
    Number Of Direction Ranges Specified =  3
    Direction    Counterclockwise     Cohesion     Friction
      Range       Direction Limit    Intercept       Angle
       No.            (deg)            (psf)         (deg)
        1            -41.0             410.00         40.50
        2             29.0             347.00         22.00
```

```
      3              90.0             410.00         40.50
   Soil Type  3 Is Anisotropic
   Number Of Direction Ranges Specified =  3
   Direction    Counterclockwise     Cohesion     Friction
     Range       Direction Limit    Intercept       Angle
      No.            (deg)            (psf)         (deg)
       1             29.0             410.00         40.50
       2             31.0             347.00         22.00
       3             90.0             410.00         40.50
   ANISOTROPIC SOIL NOTES:
      (1) An input value of 0.01 for C and/or Phi will cause Aniso
          C and/or Phi to be ignored in that range.
      (2) An input value of 0.02 for Phi will set both Phi and
          C equal to zero, with no water weight in the tension crack.
      (3) An input value of 0.03 for Phi will set both Phi and
          C equal to zero, with water weight in the tension crack.
   Specified Peak Ground Acceleration Coefficient (A) =   0.300(g)
   Specified Horizontal Earthquake Coefficient (kh) =   0.150(g)
   Specified Vertical Earthquake Coefficient (kv) =   0.000(g)
   Specified Seismic Pore-Pressure Factor =   0.000
   Janbus Empirical Coef is being used for the case of  c & phi both > 0
   A Critical Failure Surface Searching Method, Using A Random
   Technique For Generating Sliding Block Surfaces, Has Been
   Specified.
   1000 Trial Surfaces Have Been Generated.
   2 Boxes Specified For Generation Of Central Block Base
   Length Of Line Segments For Active And Passive Portions Of
   Sliding Block Is  20.0
   Box        X-Left     Y-Left    X-Right    Y-Right      Height
   No.         (ft)       (ft)       (ft)       (ft)        (ft)
    1         180.00      75.00     255.00     113.00      60.00
    2         275.00     135.00     310.00     152.00      30.00
   Following Are Displayed The Ten Most Critical Of The Trial
         Failure Surfaces Evaluated. They Are
         Ordered - Most Critical First.
         * * Safety Factors Are Calculated By The Simplified Janbu Method * *
         Total Number of Trial Surfaces Evaluated =  1000
         Statistical Data On All Valid FS Values:
            FS Max =   4.667   FS Min =   1.408   FS Ave =   2.772
            Standard Deviation =    0.566   Coefficient of Variation =   20.42 %
         Failure Surface Specified By  5 Coordinate Points
           Point      X-Surf      Y-Surf
            No.        (ft)        (ft)
             1        188.77      119.00
             2        192.74      116.66
             3        208.78      104.71
             4        297.51      154.77
             5        311.52      168.95
                Factor of Safety
              ***    1.408   ***
             Individual data on the    10  slices
                       Water  Water     Tie     Tie     Earthquake
                       Force  Force    Force   Force       Force   Surcharge
Slice  Width   Weight    Top    Bot     Norm     Tan     Hor     Ver    Load
 No.    (ft)    (lbs)   (lbs)  (lbs)    (lbs)   (lbs)   (lbs)   (lbs)   (lbs)
  1      4.0     552.7     0.0    64.1       0.      0.    82.9     0.0      0.0
  2      5.3    2689.0     0.0   335.4       0.      0.   403.3     0.0      0.0
  3      6.0    7134.8     0.0   889.8       0.      0.  1070.2     0.0      0.0
  4      3.5    6578.3     0.0   820.4       0.      0.   986.8     0.0      0.0
  5      1.3    2922.5     0.0   364.5       0.      0.   438.4     0.0      0.0
  6     51.2  109930.8     0.0 12622.1       0.      0. 16489.6     0.0      0.0
  7     10.0   16148.4     0.0  1854.1       0.      0.  2422.3     0.0      0.0
  8     27.5   32292.7     0.0  3707.8       0.      0.  4843.9     0.0      0.0
  9     10.5    7863.0     0.0  1118.7       0.      0.  1179.5     0.0      0.0
 10      3.5     755.3     0.0   107.5       0.      0.   113.3     0.0      0.0
```

T.T. 52584, 18-18'; CS-54 & 55; static; planar

n:\projects\1600-1699\1617is\slopes\revised tentative\t18s2a.pl2 Run By: KPC 6/4/2013 01:48PM



GSTABL7 v.2 FSmin=2.40

Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0

Run No. 16

```
                    ***  GSTABL7  ***
            ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
 Analysis Run Date:        6/4/2013
 Time of Run:              01:48PM
 Run By:                   KPC
 Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t18s2a.in
 Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t18s2a.OUT
 Unit System:              English
 Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t18s2a.PLT
 PROBLEM DESCRIPTION:  T.T. 52584, 18-18'; CS-54 & 55; static;
                       planar
 BOUNDARY COORDINATES
     9 Top   Boundaries
    11 Total Boundaries
 Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          0.00     115.00     175.00     119.00        1
     2        175.00     119.00     198.00     119.00        2
     3        198.00     119.00     204.00     122.00        2
     4        204.00     122.00     260.00     150.00        3
     5        260.00     150.00     270.00     150.00        3
     6        270.00     150.00     308.00     169.00        3
     7        308.00     169.00     379.00     168.00        3
     8        379.00     168.00     440.00     200.00        3
     9        440.00     200.00     550.00     200.00        3
    10        150.00       0.00     175.00     119.00        2
    11        204.00     122.00     230.00       0.00        2
 Default Y-Origin = 0.00(ft)
 Default X-Plus Value = 0.00(ft)
 Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  3 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
   1   119.0    119.0     410.0     40.5    0.10       0.0      0
   2   119.0    119.0     410.0     40.5    0.10       0.0      0
   3   119.0    119.0     410.0     40.5    0.10       0.0      0
ANISOTROPIC STRENGTH PARAMETERS
     3 soil type(s)
 Soil Type  1 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
    No.            (deg)            (psf)         (deg)
     1            -41.0             410.00         40.50
     2            -39.0             347.00         22.00
     3             90.0             410.00         40.50
 Soil Type  2 Is Anisotropic
 Number Of Direction Ranges Specified =  3
 Direction    Counterclockwise     Cohesion     Friction
   Range       Direction Limit    Intercept       Angle
    No.            (deg)            (psf)         (deg)
     1            -41.0             410.00         40.50
     2             29.0             347.00         22.00
     3             90.0             410.00         40.50
 Soil Type  3 Is Anisotropic
```

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	29.0	410.00	40.50
2	31.0	347.00	22.00
3	90.0	410.00	40.50

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

Janbus Empirical Coef is being used for the case of c & phi both > 0
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.
1500 Trial Surfaces Have Been Generated.
2 Boxes Specified For Generation Of Central Block Base
Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 30.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	185.00	60.00	275.00	104.00	65.00
2	440.00	178.00	530.00	178.00	40.00

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Simplified Janbu Method * *
Total Number of Trial Surfaces Evaluated = 1500
Statistical Data On All Valid FS Values:
FS Max = 5.412 FS Min = 2.397 FS Ave = 3.996
Standard Deviation = 0.421 Coefficient of Variation = 10.52 %
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	157.54	118.60
2	164.46	112.58
3	188.95	95.26
4	212.97	77.27
5	238.78	61.99
6	460.17	185.68
7	469.44	200.00

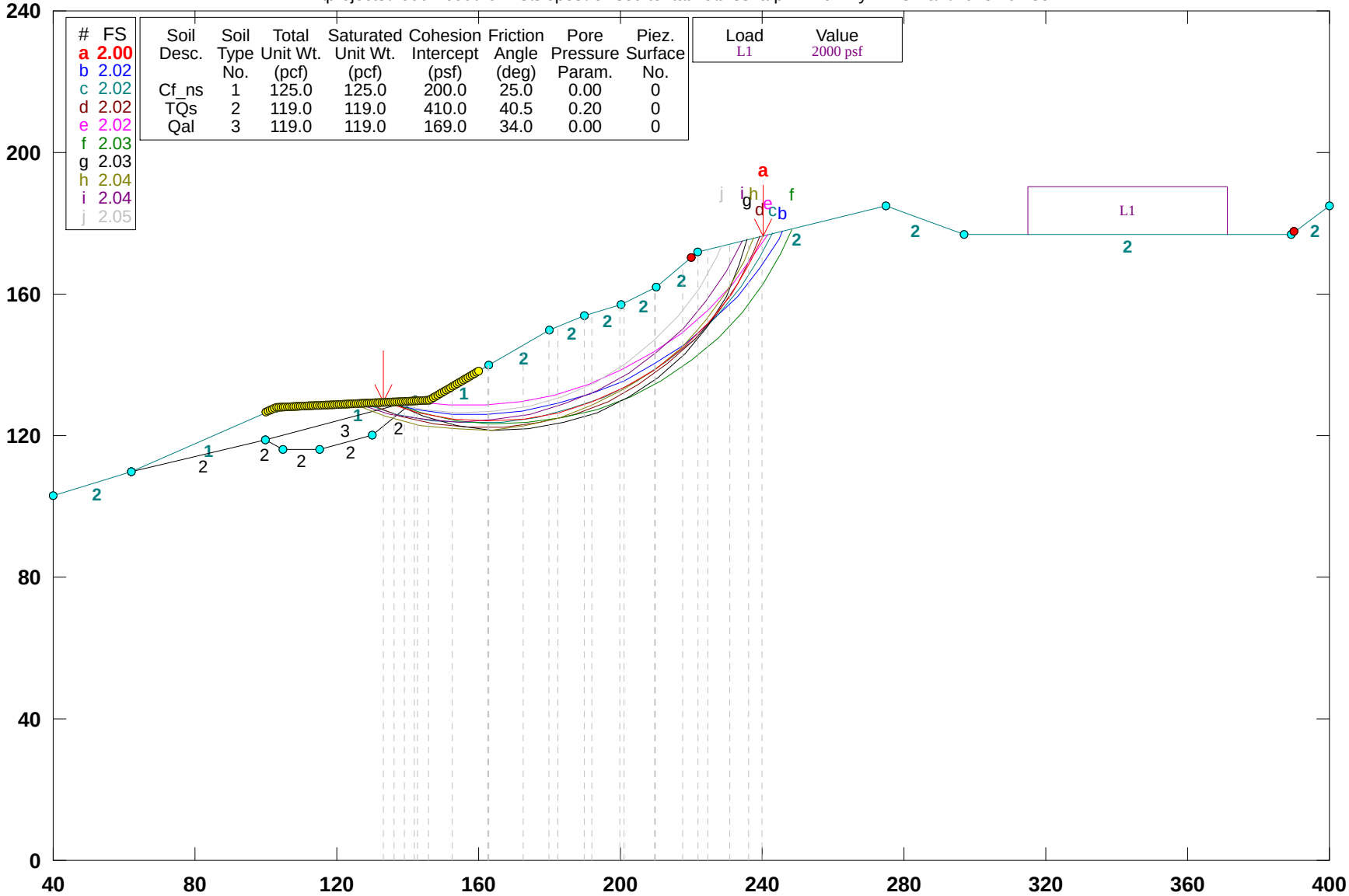
Factor of Safety
*** 2.397 ***

Individual data on the 16 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	6.9	2545.6	0.0	337.5	0.	0.	0.0	0.0	0.0
2	8.0	8670.4	0.0	1061.8	0.	0.	0.0	0.0	0.0
3	2.5	3911.5	0.0	479.0	0.	0.	0.0	0.0	0.0
4	14.0	31234.1	0.0	3825.1	0.	0.	0.0	0.0	0.0
5	9.0	29201.9	0.0	3648.6	0.	0.	0.0	0.0	0.0
6	6.0	24464.6	0.0	3056.7	0.	0.	0.0	0.0	0.0
7	9.0	46528.3	0.0	5813.4	0.	0.	0.0	0.0	0.0
8	0.6	3822.5	0.0	444.2	0.	0.	0.0	0.0	0.0
9	25.2	190667.1	0.0	22155.2	0.	0.	0.0	0.0	0.0
10	21.2	193836.5	0.0	22203.9	0.	0.	0.0	0.0	0.0
11	10.0	87296.0	0.0	9999.7	0.	0.	0.0	0.0	0.0
12	38.0	314048.1	0.0	35974.1	0.	0.	0.0	0.0	0.0
13	71.0	405545.0	0.0	46455.0	0.	0.	0.0	0.0	0.0
14	61.0	193265.3	0.0	22138.4	0.	0.	0.0	0.0	0.0
15	20.2	47874.2	0.0	5484.0	0.	0.	0.0	0.0	0.0
16	9.3	7904.4	0.0	1453.3	0.	0.	0.0	0.0	0.0

TT 52584, 28-28'; water tank site; circular; static

n:\projects\1600-1699\1617is\slopes\revised tentative\t28s1a.pl2 Run By: KPC 6/4/2013 02:55PM



GSTABL7 v.2 FSmin=2.00

Safety Factors Are Calculated By The Simplified Janbu Method

Run No. 17

```
                    ***  GSTABL7  ***
          ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **
              (All Rights Reserved-Unauthorized Use Prohibited)
*******************************************************************************
                  SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*******************************************************************************
Analysis Run Date:        6/4/2013
Time of Run:              02:55PM
Run By:                   KPC
Input Data Filename:      N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t28s1a.in
Output Filename:          N:\Projects\1600-1699\1617is\Slopes\Revised Tentative\t28s1a.OUT
Unit System:              English
Plotted Output Filename:  N:\Projects\1600-1699\1617is\SloRevised Tentative\t28s1a.PLT
PROBLEM DESCRIPTION:  TT 52584, 28-28'; water tank site;
                      circular; static
BOUNDARY COORDINATES
   13 Top   Boundaries
   19 Total Boundaries
Boundary     X-Left     Y-Left    X-Right    Y-Right    Soil Type
   No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
    1         40.00     103.00      62.00     110.00        2
    2         62.00     110.00     103.00     128.00        1
    3        103.00     128.00     146.00     130.00        1
    4        146.00     130.00     163.00     140.00        1
    5        163.00     140.00     180.00     150.00        2
    6        180.00     150.00     190.00     154.00        2
    7        190.00     154.00     200.00     157.00        2
    8        200.00     157.00     210.00     162.00        2
    9        210.00     162.00     222.00     172.00        2
   10        222.00     172.00     275.00     185.00        2
   11        275.00     185.00     297.00     177.00        2
   12        297.00     177.00     389.00     177.00        2
   13        389.00     177.00     400.00     185.00        2
   14         62.00     110.00     100.00     119.00        2
   15        100.00     119.00     142.00     130.00        3
   16        100.00     119.00     105.00     116.00        2
   17        105.00     116.00     115.00     116.00        2
   18        115.00     116.00     130.00     120.00        2
   19        130.00     120.00     142.00     130.00        2
Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)
ISOTROPIC SOIL PARAMETERS
  3 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore   Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.  (pcf)    (pcf)     (psf)     (deg)    Param.   (psf)     No.
  1   125.0    125.0     200.0     25.0    0.00       0.0      0
  2   119.0    119.0     410.0     40.5    0.20       0.0      0
  3   119.0    119.0     169.0     34.0    0.00       0.0      0
BOUNDARY LOAD(S)
     1 Load(s) Specified
Load        X-Left      X-Right     Intensity     Deflection
 No.         (ft)         (ft)        (psf)          (deg)
  1         315.00       371.00       2000.0          0.0
NOTE - Intensity Is Specified As A Uniformly Distributed
       Force Acting On A Horizontally Projected Surface.
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
1000 Trial Surfaces Have Been Generated.
```

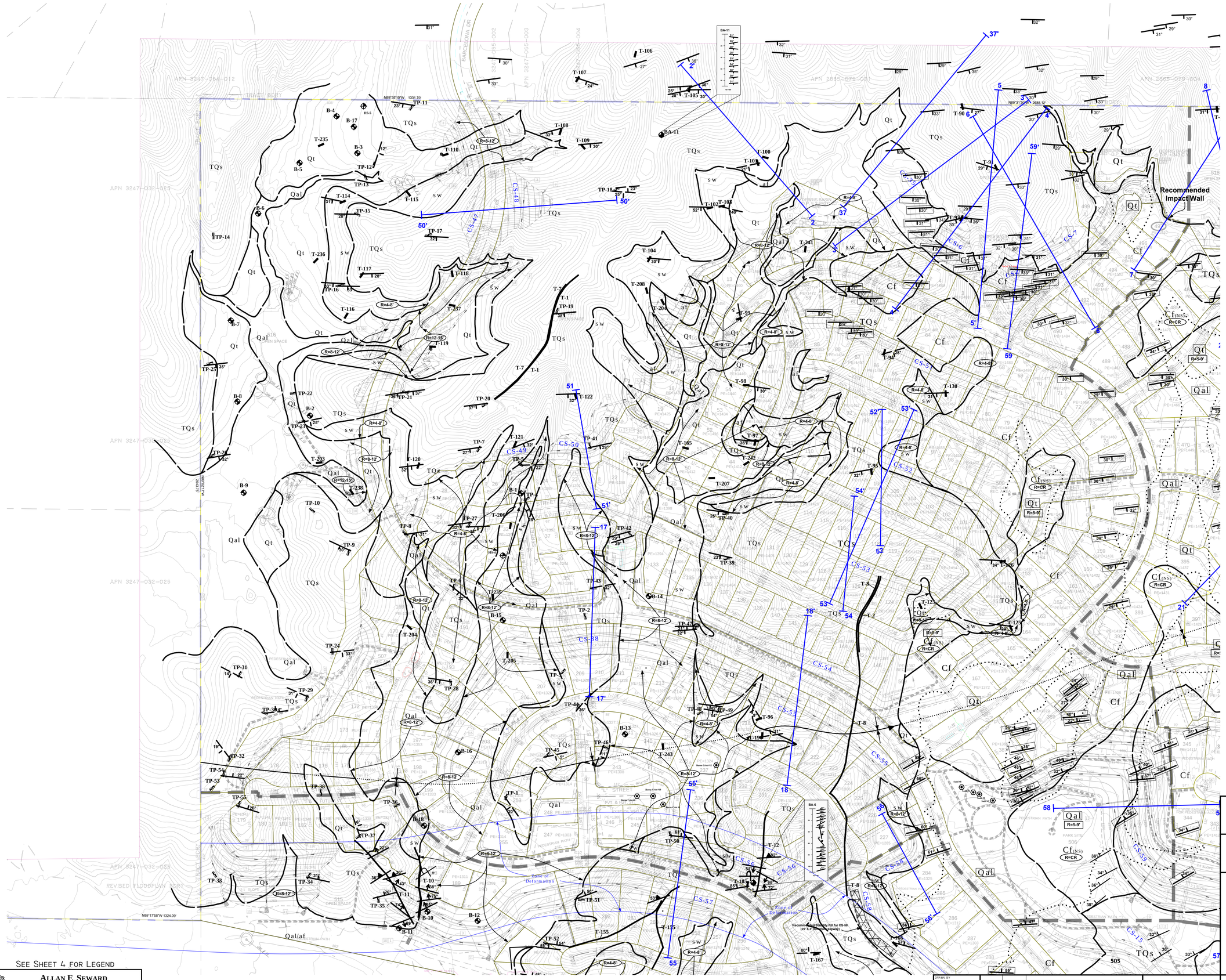
```
  10 Surface(s) Initiate(s) From Each Of   100 Points Equally Spaced
Along The Ground Surface Between  X = 100.00(ft)
                              and  X = 160.00(ft)
Each Surface Terminates Between   X = 220.00(ft)
                             and   X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is  Y =      0.00(ft)
10.00(ft) Line Segments Define Each Trial Failure Surface.
Restrictions Have Been Imposed Upon The Angle Of Initiation.
The Angle Has Been Restricted Between The Angles Of -45.0
And  20.0 deg.
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Simplified Janbu Method * *
      Total Number of Trial Surfaces Evaluated =  1000
      Statistical Data On All Valid FS Values:
         FS Max =   5.258   FS Min =   2.004   FS Ave =   3.092
         Standard Deviation =    0.700   Coefficient of Variation =   22.65 %
      Failure Surface Specified By 14 Coordinate Points
```

Point No.	X-Surf (ft)	Y-Surf (ft)
1	133.33	129.41
2	142.90	126.50
3	152.74	124.74
4	162.73	124.17
5	172.71	124.80
6	182.54	126.60
7	192.10	129.56
8	201.23	133.64
9	209.81	138.78
10	217.71	144.90
11	224.84	151.92
12	231.07	159.74
13	236.34	168.24
14	240.15	176.45

```
          Factor of Safety
         ***    2.004   ***
        Individual data on the    23  slices
```

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	3.0	193.1	0.0	0.0	0.	0.	0.0	0.0	0.0
2	2.9	538.5	0.0	0.0	0.	0.	0.0	0.0	0.0
3	2.8	861.1	0.0	180.0	0.	0.	0.0	0.0	0.0
4	0.9	359.9	0.0	0.0	0.	0.	0.0	0.0	0.0
5	3.1	1436.4	0.0	0.0	0.	0.	0.0	0.0	0.0
6	6.7	5597.5	0.0	0.0	0.	0.	0.0	0.0	0.0
7	10.0	15531.3	0.0	0.0	0.	0.	0.0	0.0	0.0
8	0.3	534.2	0.0	0.0	0.	0.	0.0	0.0	0.0
9	9.7	21215.5	0.0	4251.3	0.	0.	0.0	0.0	0.0
10	7.3	19426.4	0.0	3950.2	0.	0.	0.0	0.0	0.0
11	2.5	7310.4	0.0	1486.5	0.	0.	0.0	0.0	0.0
12	7.5	21958.4	0.0	4598.2	0.	0.	0.0	0.0	0.0
13	2.1	6252.8	0.0	1309.4	0.	0.	0.0	0.0	0.0
14	7.9	23030.2	0.0	5044.8	0.	0.	0.0	0.0	0.0
15	1.2	3491.6	0.0	764.8	0.	0.	0.0	0.0	0.0
16	8.6	24040.5	0.0	5603.9	0.	0.	0.0	0.0	0.0
17	0.2	533.8	0.0	135.0	0.	0.	0.0	0.0	0.0
18	7.7	21384.9	0.0	5408.7	0.	0.	0.0	0.0	0.0
19	4.3	11834.5	0.0	3322.9	0.	0.	0.0	0.0	0.0
20	2.8	7366.7	0.0	2068.4	0.	0.	0.0	0.0	0.0
21	6.2	13086.5	0.0	4196.4	0.	0.	0.0	0.0	0.0
22	5.3	6814.8	0.0	2590.0	0.	0.	0.0	0.0	0.0
23	3.8	1651.5	0.0	784.0	0.	0.	0.0	0.0	0.0

Appendix C



SEE SHEET NO. 4

Line Table: Alignments		
Line #	Length	Direction

Curve Table: Alignments		
Curve #	Radius	Length

GRAPHIC SCALE
(IN FEET)
100 50 0 100 200 300

OWNER/DEVELOPER:
SFI LOS VALLES LLC
10960 WILSHIRE BLVD., SUITE 1260 LOS ANGELES, CA 90024
PH: (310) 315-5566 FAX: (310) 315-7017

LEGAL DESCRIPTION:
SEE SHEET NO. 2

MAJOR LAND DIVISION REVISED VESTING TENTATIVE TRACT MAP NO. 052584

IN THE UNINCORPORATED TERRITORY OF COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

SEE SHEET 4 FOR LEGEND

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

GEOLOGIC/GEOTECHNICAL MAP

DATE: 6/7/13	JOB No.: 13-1617IS-4
SCALE: 1" = 100'	CAD FILE: AES TTM Map
SHEET 3	GEOLOGY BY: VCG/EJS; DRAWN BY: VCG/JCH; REVISED:

DRAWN BY	LDC
CHECKED BY	C.G.
DESIGNED BY	LDC

DATE CHANGED	CHANGED BY	REVISION

REGISTERED PROFESSIONAL ENGINEER CHARLES A. GILMAN No. 54155 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

PREPARED BY:
LAND DESIGN CONSULTANTS, INC.
Land Planning, Civil Engineering, Surveying & Environmental Services
2700 Foothill Blvd., Suite 200, Pasadena, California 91107
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http://www.ldcla.com

Charles A. Gilman, R.C.E. No. C54155 — 06-04-2013 DATE

LDC

Project. No. 11018-001

SHEET 3 OF 5

G:\1018.IV xref\Lan Wide\xport xrefs\xrefs\13.06.07 TM\AES TM Map.dwg Jun 10, 2013 1:32 pm JHOSOI

SEE SHEET NO. 3

SEE SHEET NO. 5

LEGEND

$Cf_{(NS)}$	Non-Structural Compacted Fill
Cf	Compacted Fill
af	Artificial Fill *
sw	Slopewash
Qal	Quaternary Alluvium *
Qls-8	Quaternary Landslide
Qt	Quaternary Terrace Deposits *
TQs	Saugus Formation
	Geologic Contact; Dotted where concealed
	Trace of Anticline, showing direction of plunge; Dotted where concealed
	Trace of Syncline, showing direction of plunge; Dotted where concealed
70° 39'	Strike and Dip of Bedding *
	Horizontal Bedding in Qt Deposits
52°	Approximate Strike and Dip of Bedding *
15°	Strike and Dip of Slide Plane
77°	Strike and Dip of Overturned Bedding
79°	Strike and Dip of Fault
46°	Strike and Dip of Shear *
62 62'	Geologic Cross Section
RW-1	Approximate Location of Rotary Wash Boring
BA-11	Approximate Location of Exploratory Bucket-Auger Boring
B-18	Approximate Location of Exploratory Bucket-Auger Boring from AES Report dated 10/30/87
HS-5	Approximate Location of Exploratory Hollow-Stem-Auger Boring
Sadd #9	Approximate Location of Existing Oil/Gas Well
T-259	Approximate Location of Exploratory Trench
TP-55	Approximate Location of Test Pit from AES Report dated 10/30/87
CS-60	Cut Slope Designation
ECS-3	Existing Cut Slope Designation
R=12-16'	Estimated Removal Depth
R=5-9'	Estimated Removal Depth after complete removal of non-structural Compacted Fill (Cf_{NS})
R=CR	Areas of Recommended complete removal of non-structural Compacted Fill (Cf_{NS})
	Approximate Keyway Location for Stability Fill (20' x 3' min. keyway)
	Recommended Impact Wall

* Symbol is enclosed by a box where concealed by Cf or Cf_{NS}

N

GRAPHIC SCALE
(IN FEET)
100 50 0 100 200 300

OWNER/DEVELOPER:

SFI LOS VALLES LLC
10960 WILSHIRE BLVD., SUITE 1260 LOS ANGELES, CA 90024
PH: (310) 315-5566 FAX: (310) 315-7017

LEGAL DESCRIPTION:

SEE SHEET NO. 2

MAJOR LAND DIVISION
REVISED
VESTING TENTATIVE TRACT MAP NO.
052584
IN THE UNINCORPORATED TERRITORY OF COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

GEOLOGIC/GEOTECHNICAL MAP

DATE: 6/7/13		JOB NO.: 13-061713-G
SCALE: 1" = 100'		CAD FILE: AES TTM MAP
SHEET 4	GEOLOGY BY: VCG/EJS	REVISED:
	DRAWN BY: VCG/JCH	

DRAWN BY LDC			
CHECKED BY C.G.			
DESIGNED BY LDC			
	DATE CHANGED	CHANGED BY	REVISION

REGISTERED PROFESSIONAL ENGINEER CHARLES A. GILMAN No. 54155 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

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Charles A. Gilman, R.C.E. No. C54155 — 06-04-2013 DATE

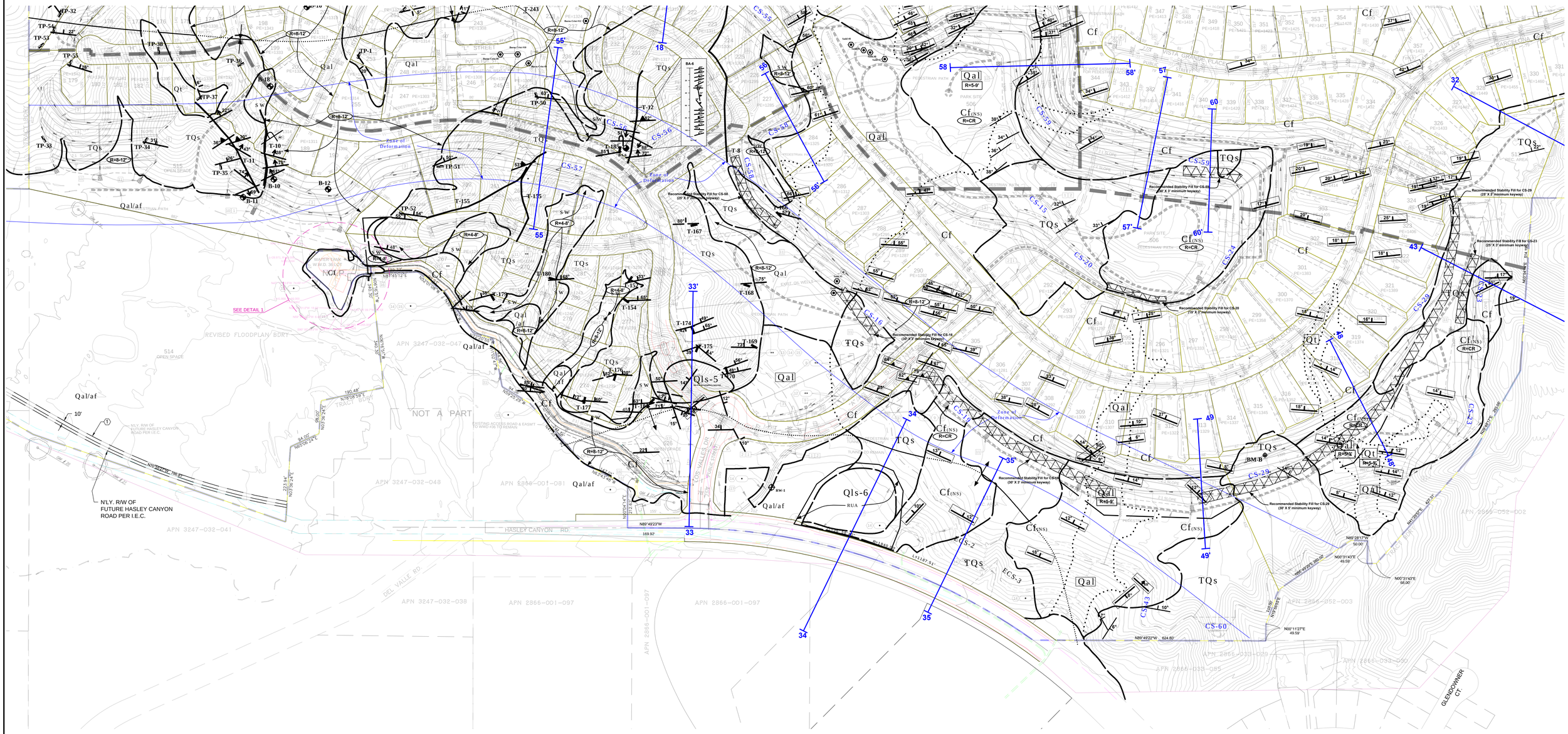
LDC

Project. No. 11018-001

SHEET 4 OF 5

SEE SHEET NO. 3

SEE SHEET NO. 4

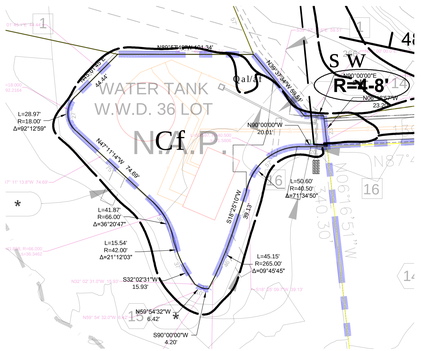


Line Table: Alignments

Line #	Length	Direction

Curve Table: Alignments

Curve #	Radius	Length



LEGAL DESCRIPTION:
LOT 62 OF TRACT NO. 52584-01 AS RECORDED IN BOOK 1329, PG. 53 THROUGH 68 INCLUSIVE OF MAPS.

DETAIL 1
SCALE: 1" = 40'

GRAPHIC SCALE
(IN FEET)
100 50 0 100 200 300

SEE SHEET 4 FOR LEGEND

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.
Geological and Geotechnical Consultants

GEOLOGIC/GEOTECHNICAL MAP

DATE: 6/7/13		JOB NO.: 13-16171S-G
SCALE: 1" = 100'		CAD FILE: AES TTM Map
SHEET 5	GEOLOGY BY: VCG/EJS	REVISED:
	DRAWN BY: VCG/JCH	

OWNER/DEVELOPER:
SFI LOS VALLES LLC
10960 WILSHIRE BLVD, SUITE 1260 LOS ANGELES, CA 90024
PH: (310) 315-5566 FAX: (310) 315-7017

LEGAL DESCRIPTION:
SEE SHEET NO. 2

MAJOR LAND DIVISION
REVISED
VESTING TENTATIVE TRACT MAP NO.
052584
IN THE UNINCORPORATED TERRITORY OF COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

DRAWN BY: LDC			
CHECKED BY: C.G.			
DESIGNED BY: LDC			
	DATE CHANGED	CHANGED BY	REVISION

REGISTERED PROFESSIONAL ENGINEER CHARLES A. GILMAN No. 54155 Exp. 12-31-13 CIVIL STATE OF CALIFORNIA

PREPARED BY:
LAND DESIGN CONSULTANTS, INC.
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http://www.ldcla.com

Charles A. Gilman, R.C.E. No. C54155 — 06-04-2013 DATE

LDC

Project. No. 11018-001

SHEET 5 OF 5

APPENDIX 5.7-1

CalEEMod Output – Annual Calculations

Los Valles Tract Map

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Recreational Swimming Pool	2.05	1000sqft
Single Family Housing	497	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	12	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics - 2022 full buildout

Land Use - assumes swimming pool is 25 meters by 25 meters, there is one swimming pool per each of the 7 lots

Construction Phase - Grading 1/1/14 - 10/31/14 Trenching 6/1/14-2/28/15 Paving 6/1/14-2/28/15 Building 3/1/15-3/1/21 Coatings 3/1/15-3/1/21

Off-road Equipment - 12 scrapers, 6 dozers, 1 loader and 1 tractor and 1 blade

Off-road Equipment - 2 excavators, 2 loaders, 2 roller, 1 paving machine, 10 dump trucks of asphalt

Off-road Equipment -

Woodstoves - There would be no woodstoves or fireplaces constructed.

Mobile Land Use Mitigation -

Area Mitigation - There would be no hearths, low VOC cleaning supplies, low VOC paint

Energy Mitigation - exceed title 24 by 15%, install high efficiency lighting

Water Mitigation - low flow appliances and water efficient irrigation

Off-road Equipment -

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	5.51	45.65	22.80	0.05	4.49	1.94	6.43	2.21	1.94	4.15	0.00	4,909.66	4,909.66	0.45	0.00	4,919.05
2015	1.27	4.53	4.66	0.01	0.30	0.30	0.60	0.00	0.30	0.31	0.00	745.04	745.04	0.06	0.00	746.40
2016	1.33	4.20	4.83	0.01	0.33	0.27	0.60	0.00	0.27	0.27	0.00	788.98	788.98	0.06	0.00	790.30
2017	1.26	3.81	4.68	0.01	0.33	0.24	0.57	0.00	0.24	0.24	0.00	780.83	780.83	0.06	0.00	782.02
2018	1.21	3.47	4.58	0.01	0.33	0.21	0.54	0.00	0.21	0.21	0.00	778.91	778.91	0.05	0.00	780.01
2019	1.16	3.15	4.48	0.01	0.33	0.18	0.51	0.00	0.18	0.18	0.00	774.31	774.31	0.05	0.00	775.32
2020	1.12	2.87	4.40	0.01	0.33	0.16	0.49	0.00	0.16	0.16	0.00	772.95	772.95	0.04	0.00	773.88
2021	0.17	0.41	0.69	0.00	0.05	0.02	0.07	0.00	0.02	0.02	0.00	123.46	123.46	0.01	0.00	123.60
Total	**13.03**	**68.09**	**51.12**	**0.11**	**6.49**	**3.32**	**9.81**	**2.21**	**3.32**	**5.54**	**0.00**	**9,674.14**	**9,674.14**	**0.78**	**0.00**	**9,690.58**

2.1 Overall Construction

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	5.51	45.65	22.80	0.05	4.36	1.94	6.30	2.21	1.94	4.15	0.00	4,909.66	4,909.66	0.45	0.00	4,919.05
2015	1.27	4.53	4.66	0.01	0.01	0.30	0.32	0.00	0.30	0.31	0.00	745.04	745.04	0.06	0.00	746.40
2016	1.33	4.20	4.83	0.01	0.01	0.27	0.28	0.00	0.27	0.27	0.00	788.98	788.98	0.06	0.00	790.30
2017	1.26	3.81	4.68	0.01	0.01	0.24	0.25	0.00	0.24	0.24	0.00	780.83	780.83	0.06	0.00	782.02
2018	1.21	3.47	4.58	0.01	0.01	0.21	0.22	0.00	0.21	0.21	0.00	778.91	778.91	0.05	0.00	780.01
2019	1.16	3.15	4.48	0.01	0.01	0.18	0.19	0.00	0.18	0.18	0.00	774.31	774.31	0.05	0.00	775.32
2020	1.12	2.87	4.40	0.01	0.01	0.16	0.17	0.00	0.16	0.16	0.00	772.95	772.95	0.04	0.00	773.88
2021	0.17	0.41	0.69	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.00	123.46	123.46	0.01	0.00	123.60
Total	**13.03**	**68.09**	**51.12**	**0.11**	**4.42**	**3.32**	**7.75**	**2.21**	**3.32**	**5.54**	**0.00**	**9,674.14**	**9,674.14**	**0.78**	**0.00**	**9,690.58**

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	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Energy	0.11	0.97	0.41	0.01		0.00	0.08		0.00	0.08	0.00	2,151.28	2,151.28	0.07	0.04	2,164.55
Mobile	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
Waste						0.00	0.00		0.00	0.00	120.64	0.00	120.64	7.13	0.00	270.35
Water						0.00	0.00		0.00	0.00	0.00	189.68	189.68	1.00	0.03	219.33
Total	**6.87**	**7.72**	**34.32**	**0.08**	**7.37**	**0.38**	**7.86**	**0.12**	**0.36**	**0.60**	**120.64**	**7,910.53**	**8,031.17**	**8.40**	**0.07**	**8,228.02**

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	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Energy	0.10	0.84	0.36	0.01		0.00	0.07		0.00	0.07	0.00	1,918.12	1,918.12	0.06	0.03	1,929.97
Mobile	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
Waste						0.00	0.00		0.00	0.00	120.64	0.00	120.64	7.13	0.00	270.35
Water						0.00	0.00		0.00	0.00	0.00	160.95	160.95	0.80	0.02	184.72
Total	**6.86**	**7.59**	**34.27**	**0.08**	**7.37**	**0.38**	**7.85**	**0.12**	**0.36**	**0.59**	**120.64**	**7,648.64**	**7,769.28**	**8.19**	**0.05**	**7,958.83**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 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					4.35	0.00	4.35	2.21	0.00	2.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	5.10	43.03	20.63	0.04		1.75	1.75		1.75	1.75	0.00	4,567.53	4,567.53	0.41	0.00	4,576.22
Total	**5.10**	**43.03**	**20.63**	**0.04**	**4.35**	**1.75**	**6.10**	**2.21**	**1.75**	**3.96**	**0.00**	**4,567.53**	**4,567.53**	**0.41**	**0.00**	**4,576.22**

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	0.03	0.03	0.33	0.00	0.07	0.00	0.07	0.00	0.00	0.00	0.00	52.01	52.01	0.00	0.00	52.07
Total	**0.03**	**0.03**	**0.33**	**0.00**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.00**	**52.01**	**52.01**	**0.00**	**0.00**	**52.07**

3.2 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					4.35	0.00	4.35	2.21	0.00	2.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	5.10	43.03	20.63	0.04		1.75	1.75		1.75	1.75	0.00	4,567.53	4,567.53	0.41	0.00	4,576.22
Total	**5.10**	**43.03**	**20.63**	**0.04**	**4.35**	**1.75**	**6.10**	**2.21**	**1.75**	**3.96**	**0.00**	**4,567.53**	**4,567.53**	**0.41**	**0.00**	**4,576.22**

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	0.03	0.03	0.33	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	52.01	52.01	0.00	0.00	52.07
Total	**0.03**	**0.03**	**0.33**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**52.01**	**52.01**	**0.00**	**0.00**	**52.07**

3.3 Trenching - 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	0.00	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**

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	0.06	0.60	0.40	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	99.86	99.86	0.00	0.00	99.91
Worker	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	**0.06**	**0.60**	**0.40**	**0.00**	**0.03**	**0.02**	**0.05**	**0.00**	**0.02**	**0.02**	**0.00**	**99.86**	**99.86**	**0.00**	**0.00**	**99.91**

3.3 Trenching - 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	0.00	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 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	0.06	0.60	0.40	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.00	99.86	99.86	0.00	0.00	99.91
Worker	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	**0.06**	**0.60**	**0.40**	**0.00**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**99.86**	**99.86**	**0.00**	**0.00**	**99.91**

3.3 Trenching - 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	0.00	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**

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	0.01	0.15	0.10	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	27.47	27.47	0.00	0.00	27.48
Worker	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	**0.01**	**0.15**	**0.10**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**27.47**	**27.47**	**0.00**	**0.00**	**27.48**

3.3 Trenching - 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	0.00	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 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	0.01	0.15	0.10	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	27.47	27.47	0.00	0.00	27.48
Worker	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	**0.01**	**0.15**	**0.10**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**27.47**	**27.47**	**0.00**	**0.00**	**27.48**

3.4 Paving - 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	0.32	1.97	1.28	0.00		0.17	0.17		0.17	0.17	0.00	164.09	164.09	0.03	0.00	164.64
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.32**	**1.97**	**1.28**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**164.09**	**164.09**	**0.03**	**0.00**	**164.64**

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	0.02	0.17	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	26.17	26.17	0.00	0.00	26.20
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.03**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**26.17**	**26.17**	**0.00**	**0.00**	**26.20**

3.4 Paving - 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	0.32	1.97	1.28	0.00		0.17	0.17		0.17	0.17	0.00	164.09	164.09	0.03	0.00	164.64
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.32**	**1.97**	**1.28**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**164.09**	**164.09**	**0.03**	**0.00**	**164.64**

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	0.02	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.17	26.17	0.00	0.00	26.20
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**26.17**	**26.17**	**0.00**	**0.00**	**26.20**

3.4 Paving - 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	0.08	0.51	0.35	0.00		0.04	0.04		0.04	0.04	0.00	45.04	45.04	0.01	0.00	45.18
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.08**	**0.51**	**0.35**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**45.04**	**45.04**	**0.01**	**0.00**	**45.18**

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	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.03	7.03	0.00	0.00	7.04
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**7.03**	**7.03**	**0.00**	**0.00**	**7.04**

3.4 Paving - 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	0.08	0.51	0.35	0.00		0.04	0.04		0.04	0.04	0.00	45.04	45.04	0.01	0.00	45.18
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.08**	**0.51**	**0.35**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**45.04**	**45.04**	**0.01**	**0.00**	**45.18**

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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.03	7.03	0.00	0.00	7.04
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.03**	**7.03**	**0.00**	**0.00**	**7.04**

3.5 Building - 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	0.52	3.47	2.72	0.01		0.22	0.22		0.22	0.22	0.00	429.20	429.20	0.04	0.00	430.09
Total	**0.52**	**3.47**	**2.72**	**0.01**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**429.20**	**429.20**	**0.04**	**0.00**	**430.09**

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	0.09	0.09	1.03	0.00	0.23	0.01	0.24	0.00	0.01	0.01	0.00	173.64	173.64	0.01	0.00	173.84
Total	**0.09**	**0.09**	**1.03**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**	**0.00**	**173.64**	**173.64**	**0.01**	**0.00**	**173.84**

3.5 Building - 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	0.52	3.47	2.72	0.01		0.22	0.22		0.22	0.22	0.00	429.20	429.20	0.04	0.00	430.09
Total	**0.52**	**3.47**	**2.72**	**0.01**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**429.20**	**429.20**	**0.04**	**0.00**	**430.09**

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	0.09	0.09	1.03	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	173.64	173.64	0.01	0.00	173.84
Total	**0.09**	**0.09**	**1.03**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**173.64**	**173.64**	**0.01**	**0.00**	**173.84**

3.5 Building - 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	0.57	3.77	3.22	0.01		0.23	0.23		0.23	0.23	0.00	511.51	511.51	0.05	0.00	512.48
Total	**0.57**	**3.77**	**3.22**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**511.51**	**511.51**	**0.05**	**0.00**	**512.48**

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	0.10	0.10	1.14	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	203.49	203.49	0.01	0.00	203.71
Total	**0.10**	**0.10**	**1.14**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**203.49**	**203.49**	**0.01**	**0.00**	**203.71**

3.5 Building - 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	0.57	3.77	3.22	0.01		0.23	0.23		0.23	0.23	0.00	511.51	511.51	0.05	0.00	512.48
Total	**0.57**	**3.77**	**3.22**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**511.51**	**511.51**	**0.05**	**0.00**	**512.48**

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	0.10	0.10	1.14	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	203.49	203.49	0.01	0.00	203.71
Total	**0.10**	**0.10**	**1.14**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**203.49**	**203.49**	**0.01**	**0.00**	**203.71**

3.5 Building - 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					
Off-Road	0.52	3.41	3.19	0.01		0.20	0.20		0.20	0.20	0.00	509.55	509.55	0.04	0.00	510.43
Total	**0.52**	**3.41**	**3.19**	**0.01**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**509.55**	**509.55**	**0.04**	**0.00**	**510.43**

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	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	0.10	0.09	1.04	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	198.44	198.44	0.01	0.00	198.64
Total	**0.10**	**0.09**	**1.04**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**198.44**	**198.44**	**0.01**	**0.00**	**198.64**

3.5 Building - 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					
Off-Road	0.52	3.41	3.19	0.01		0.20	0.20		0.20	0.20	0.00	509.55	509.55	0.04	0.00	510.43
Total	**0.52**	**3.41**	**3.19**	**0.01**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**509.55**	**509.55**	**0.04**	**0.00**	**510.43**

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	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	0.10	0.09	1.04	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	198.44	198.44	0.01	0.00	198.64
Total	**0.10**	**0.09**	**1.04**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**198.44**	**198.44**	**0.01**	**0.00**	**198.64**

3.5 Building - 2018

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	0.47	3.10	3.18	0.01		0.18	0.18		0.18	0.18	0.00	511.51	511.51	0.04	0.00	512.32
Total	**0.47**	**3.10**	**3.18**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.32**

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	0.09	0.09	0.97	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	195.10	195.10	0.01	0.00	195.29
Total	**0.09**	**0.09**	**0.97**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**195.10**	**195.10**	**0.01**	**0.00**	**195.29**

3.5 Building - 2018

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	0.47	3.10	3.18	0.01		0.18	0.18		0.18	0.18	0.00	511.51	511.51	0.04	0.00	512.32
Total	**0.47**	**3.10**	**3.18**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.32**

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	0.09	0.09	0.97	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	195.10	195.10	0.01	0.00	195.29
Total	**0.09**	**0.09**	**0.97**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**195.10**	**195.10**	**0.01**	**0.00**	**195.29**

3.5 Building - 2019

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	0.43	2.81	3.16	0.01		0.15	0.15		0.15	0.15	0.00	511.51	511.51	0.04	0.00	512.25
Total	**0.43**	**2.81**	**3.16**	**0.01**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.25**

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	0.09	0.08	0.90	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	191.26	191.26	0.01	0.00	191.44
Total	**0.09**	**0.08**	**0.90**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**191.26**	**191.26**	**0.01**	**0.00**	**191.44**

3.5 Building - 2019

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	0.43	2.81	3.16	0.01		0.15	0.15		0.15	0.15	0.00	511.51	511.51	0.04	0.00	512.25
Total	**0.43**	**2.81**	**3.16**	**0.01**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.25**

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	0.09	0.08	0.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	191.26	191.26	0.01	0.00	191.44
Total	**0.09**	**0.08**	**0.90**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**191.26**	**191.26**	**0.01**	**0.00**	**191.44**

3.5 Building - 2020

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	0.40	2.56	3.15	0.01		0.13	0.13		0.13	0.13	0.00	513.47	513.47	0.03	0.00	514.15
Total	**0.40**	**2.56**	**3.15**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**513.47**	**513.47**	**0.03**	**0.00**	**514.15**

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	0.08	0.07	0.84	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	188.39	188.39	0.01	0.00	188.56
Total	**0.08**	**0.07**	**0.84**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**188.39**	**188.39**	**0.01**	**0.00**	**188.56**

3.5 Building - 2020

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	0.40	2.56	3.15	0.01		0.13	0.13		0.13	0.13	0.00	513.47	513.47	0.03	0.00	514.15
Total	**0.40**	**2.56**	**3.15**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**513.47**	**513.47**	**0.03**	**0.00**	**514.15**

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	0.08	0.07	0.84	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	188.39	188.39	0.01	0.00	188.56
Total	**0.08**	**0.07**	**0.84**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**188.39**	**188.39**	**0.01**	**0.00**	**188.56**

3.5 Building - 2021

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	0.06	0.37	0.50	0.00		0.02	0.02		0.02	0.02	0.00	82.31	82.31	0.00	0.00	82.41
Total	**0.06**	**0.37**	**0.50**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**82.31**	**82.31**	**0.00**	**0.00**	**82.41**

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	0.13	0.00	0.04	0.00	0.05	0.00	0.00	0.00	0.00	29.83	29.83	0.00	0.00	29.85
Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.04**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**29.83**	**29.83**	**0.00**	**0.00**	**29.85**

3.5 Building - 2021

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	0.06	0.37	0.50	0.00		0.02	0.02		0.02	0.02	0.00	82.31	82.31	0.00	0.00	82.41
Total	**0.06**	**0.37**	**0.50**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**82.31**	**82.31**	**0.00**	**0.00**	**82.41**

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	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.83	29.83	0.00	0.00	29.85
Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**29.83**	**29.83**	**0.00**	**0.00**	**29.85**

3.6 Coatings - 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					
Archit. Coating	0.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.21	0.00		0.02	0.02		0.02	0.02	0.00	27.92	27.92	0.00	0.00	28.00
Total	**0.53**	**0.28**	**0.21**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**27.92**	**27.92**	**0.00**	**0.00**	**28.00**

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	0.02	0.02	0.21	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	34.73	34.73	0.00	0.00	34.77
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**34.73**	**34.73**	**0.00**	**0.00**	**34.77**

3.6 Coatings - 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					
Archit. Coating	0.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.21	0.00		0.02	0.02		0.02	0.02	0.00	27.92	27.92	0.00	0.00	28.00
Total	**0.53**	**0.28**	**0.21**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**27.92**	**27.92**	**0.00**	**0.00**	**28.00**

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	0.02	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.73	34.73	0.00	0.00	34.77
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**34.73**	**34.73**	**0.00**	**0.00**	**34.77**

3.6 Coatings - 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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**0.64**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

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	0.02	0.02	0.23	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	40.70	40.70	0.00	0.00	40.74
Total	**0.02**	**0.02**	**0.23**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**40.70**	**40.70**	**0.00**	**0.00**	**40.74**

3.6 Coatings - 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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**0.64**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

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	0.02	0.02	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.70	40.70	0.00	0.00	40.74
Total	**0.02**	**0.02**	**0.23**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**40.70**	**40.70**	**0.00**	**0.00**	**40.74**

3.6 Coatings - 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	0.58					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.15	33.15	0.00	0.00	33.23
Total	**0.62**	**0.28**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.15**	**33.15**	**0.00**	**0.00**	**33.23**

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	0.02	0.02	0.21	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	39.69	39.69	0.00	0.00	39.73
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**39.69**	**39.69**	**0.00**	**0.00**	**39.73**

3.6 Coatings - 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	0.58					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.15	33.15	0.00	0.00	33.23
Total	**0.62**	**0.28**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.15**	**33.15**	**0.00**	**0.00**	**33.23**

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	0.02	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.69	39.69	0.00	0.00	39.73
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**39.69**	**39.69**	**0.00**	**0.00**	**39.73**

3.6 Coatings - 2018

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.35
Total	**0.63**	**0.26**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.35**

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	0.02	0.02	0.19	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	39.02	39.02	0.00	0.00	39.06
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**39.02**	**39.02**	**0.00**	**0.00**	**39.06**

3.6 Coatings - 2018

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.35
Total	**0.63**	**0.26**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.35**

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	0.02	0.02	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.02	39.02	0.00	0.00	39.06
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**39.02**	**39.02**	**0.00**	**0.00**	**39.06**

3.6 Coatings - 2019

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.24	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.34
Total	**0.62**	**0.24**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.34**

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	0.02	0.02	0.18	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	38.25	38.25	0.00	0.00	38.29
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**38.25**	**38.25**	**0.00**	**0.00**	**38.29**

3.6 Coatings - 2019

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.24	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.34
Total	**0.62**	**0.24**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.34**

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	0.02	0.02	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.25	38.25	0.00	0.00	38.29
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**38.25**	**38.25**	**0.00**	**0.00**	**38.29**

3.6 Coatings - 2020

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.22	0.24	0.00		0.01	0.01		0.01	0.01	0.00	33.41	33.41	0.00	0.00	33.46
Total	**0.62**	**0.22**	**0.24**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**33.41**	**33.41**	**0.00**	**0.00**	**33.46**

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	0.00	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	0.02	0.01	0.17	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	37.68	37.68	0.00	0.00	37.71
Total	**0.02**	**0.01**	**0.17**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**37.68**	**37.68**	**0.00**	**0.00**	**37.71**

3.6 Coatings - 2020

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.22	0.24	0.00		0.01	0.01		0.01	0.01	0.00	33.41	33.41	0.00	0.00	33.46
Total	**0.62**	**0.22**	**0.24**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**33.41**	**33.41**	**0.00**	**0.00**	**33.46**

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	0.00	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	0.02	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.68	37.68	0.00	0.00	37.71
Total	**0.02**	**0.01**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**37.68**	**37.68**	**0.00**	**0.00**	**37.71**

3.6 Coatings - 2021

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	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.36	5.36	0.00	0.00	5.36
Total	**0.09**	**0.03**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.36**	**5.36**	**0.00**	**0.00**	**5.36**

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	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.97	5.97	0.00	0.00	5.97
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.97**	**5.97**	**0.00**	**0.00**	**5.97**

3.6 Coatings - 2021

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	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.36	5.36	0.00	0.00	5.36
Total	**0.09**	**0.03**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.36**	**5.36**	**0.00**	**0.00**	**5.36**

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	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.97	5.97	0.00	0.00	5.97
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.97**	**5.97**	**0.00**	**0.00**	**5.97**

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	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
Unmitigated	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
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
Recreational Swimming Pool	67.51	42.78	54.80	112,339	112,339
Single Family Housing	4,756.29	5,009.76	4358.69	13,449,956	13,449,956
Total	4,823.80	5,052.54	4,413.49	13,562,295	13,562,295

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
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	940.36	940.36	0.04	0.02	946.25
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,028.73	1,028.73	0.05	0.02	1,035.18
NaturalGas Mitigated	0.10	0.84	0.36	0.01		0.00	0.07		0.00	0.07	0.00	977.76	977.76	0.02	0.02	983.71
NaturalGas Unmitigated	0.11	0.97	0.41	0.01		0.00	0.08		0.00	0.08	0.00	1,122.55	1,122.55	0.02	0.02	1,129.38
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					
Recreational Swimming Pool	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
Single Family Housing	2.10357e+007	0.11	0.97	0.41	0.01		0.00	0.08		0.00	0.08	0.00	1,122.55	1,122.55	0.02	0.02	1,129.38
Total		**0.11**	**0.97**	**0.41**	**0.01**		**0.00**	**0.08**		**0.00**	**0.08**	**0.00**	**1,122.55**	**1,122.55**	**0.02**	**0.02**	**1,129.38**

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					
Recreational Swimming Pool	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
Single Family Housing	1.83226e+007	0.10	0.84	0.36	0.01		0.00	0.07		0.00	0.07	0.00	977.76	977.76	0.02	0.02	983.71
Total		**0.10**	**0.84**	**0.36**	**0.01**		**0.00**	**0.07**		**0.00**	**0.07**	**0.00**	**977.76**	**977.76**	**0.02**	**0.02**	**983.71**

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			
Recreational Swimming Pool	0					0.00	0.00	0.00	0.00
Single Family Housing	3.53672e+006					1,028.73	0.05	0.02	1,035.18
Total						**1,028.73**	**0.05**	**0.02**	**1,035.18**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Recreational Swimming Pool	0					0.00	0.00	0.00	0.00
Single Family Housing	3.23291e+006					940.36	0.04	0.02	946.25
Total						**940.36**	**0.04**	**0.02**	**946.25**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	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	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Unmitigated	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
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	0.35					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	3.24					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	0.00	0.00	0.00	0.00	0.00
Landscaping	0.23	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Total	**3.82**	**0.09**	**7.57**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**12.36**	**12.36**	**0.01**	**0.00**	**12.61**

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	0.35					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	3.24					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	0.00	0.00	0.00	0.00	0.00
Landscaping	0.23	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Total	**3.82**	**0.09**	**7.57**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**12.36**	**12.36**	**0.01**	**0.00**	**12.61**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					160.95	0.80	0.02	184.72
Unmitigated					189.68	1.00	0.03	219.33
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			
Recreational Swimming Pool	0.121243 / 0.0743105					0.70	0.00	0.00	0.81
Single Family Housing	32.3816 / 20.4145					188.98	1.00	0.03	218.51
Total						**189.68**	**1.00**	**0.03**	**219.32**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Recreational Swimming Pool	0.0969948 / 0.0697776					0.59	0.00	0.00	0.68
Single Family Housing	25.9052 / 19.1692					160.35	0.80	0.02	184.04
Total						**160.94**	**0.80**	**0.02**	**184.72**

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					120.64	7.13	0.00	270.35
Unmitigated					120.64	7.13	0.00	270.35
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			
Recreational Swimming Pool	11.68					2.37	0.14	0.00	5.31
Single Family Housing	582.61					118.26	6.99	0.00	265.04
Total						**120.63**	**7.13**	**0.00**	**270.35**

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			
Recreational Swimming Pool	11.68					2.37	0.14	0.00	5.31
Single Family Housing	582.61					118.26	6.99	0.00	265.04
Total						**120.63**	**7.13**	**0.00**	**270.35**

9.0 Vegetation

APPENDIX 5.7-2

CalEEMod Output – Mitigated Annual Calculations

Los Valles Tract Map

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Recreational Swimming Pool	2.05	1000sqft
Single Family Housing	497	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	12	**Precipitation Freq (Days)**	31		

1.3 User Entered Comments

Project Characteristics - 2022 full buildout

Land Use - assumes swimming pool is 25 meters by 25 meters, there is one swimming pool per each of the 7 lots

Construction Phase - Grading 1/1/14 - 10/31/14 Trenching 6/1/14-2/28/15 Paving 6/1/14-2/28/15 Building 3/1/15-3/1/21 Coatings 3/1/15-3/1/21

Off-road Equipment - 12 scrapers, 6 dozers, 1 loader and 1 tractor and 1 blade

Off-road Equipment - 2 excavators, 2 loaders, 2 roller, 1 paving machine, 10 dump trucks of asphalt

Off-road Equipment -

Woodstoves - There would be no woodstoves or fireplaces constructed.

Mobile Land Use Mitigation -

Area Mitigation - There would be no hearths, low VOC cleaning supplies, low VOC paint

Energy Mitigation - exceed title 24 by 15%, install high efficiency lighting

Water Mitigation - low flow appliances and water efficient irrigation

Off-road Equipment -

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	5.51	45.65	22.80	0.05	4.49	1.94	6.43	2.21	1.94	4.15	0.00	4,909.66	4,909.66	0.45	0.00	4,919.05
2015	1.27	4.53	4.66	0.01	0.30	0.30	0.60	0.00	0.30	0.31	0.00	745.04	745.04	0.06	0.00	746.40
2016	1.33	4.20	4.83	0.01	0.33	0.27	0.60	0.00	0.27	0.27	0.00	788.98	788.98	0.06	0.00	790.30
2017	1.26	3.81	4.68	0.01	0.33	0.24	0.57	0.00	0.24	0.24	0.00	780.83	780.83	0.06	0.00	782.02
2018	1.21	3.47	4.58	0.01	0.33	0.21	0.54	0.00	0.21	0.21	0.00	778.91	778.91	0.05	0.00	780.01
2019	1.16	3.15	4.48	0.01	0.33	0.18	0.51	0.00	0.18	0.18	0.00	774.31	774.31	0.05	0.00	775.32
2020	1.12	2.87	4.40	0.01	0.33	0.16	0.49	0.00	0.16	0.16	0.00	772.95	772.95	0.04	0.00	773.88
2021	0.17	0.41	0.69	0.00	0.05	0.02	0.07	0.00	0.02	0.02	0.00	123.46	123.46	0.01	0.00	123.60
Total	**13.03**	**68.09**	**51.12**	**0.11**	**6.49**	**3.32**	**9.81**	**2.21**	**3.32**	**5.54**	**0.00**	**9,674.14**	**9,674.14**	**0.78**	**0.00**	**9,690.58**

2.1 Overall Construction

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	5.51	45.65	22.80	0.05	4.36	1.94	6.30	2.21	1.94	4.15	0.00	4,909.66	4,909.66	0.45	0.00	4,919.05
2015	1.27	4.53	4.66	0.01	0.01	0.30	0.32	0.00	0.30	0.31	0.00	745.04	745.04	0.06	0.00	746.40
2016	1.33	4.20	4.83	0.01	0.01	0.27	0.28	0.00	0.27	0.27	0.00	788.98	788.98	0.06	0.00	790.30
2017	1.26	3.81	4.68	0.01	0.01	0.24	0.25	0.00	0.24	0.24	0.00	780.83	780.83	0.06	0.00	782.02
2018	1.21	3.47	4.58	0.01	0.01	0.21	0.22	0.00	0.21	0.21	0.00	778.91	778.91	0.05	0.00	780.01
2019	1.16	3.15	4.48	0.01	0.01	0.18	0.19	0.00	0.18	0.18	0.00	774.31	774.31	0.05	0.00	775.32
2020	1.12	2.87	4.40	0.01	0.01	0.16	0.17	0.00	0.16	0.16	0.00	772.95	772.95	0.04	0.00	773.88
2021	0.17	0.41	0.69	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.00	123.46	123.46	0.01	0.00	123.60
Total	**13.03**	**68.09**	**51.12**	**0.11**	**4.42**	**3.32**	**7.75**	**2.21**	**3.32**	**5.54**	**0.00**	**9,674.14**	**9,674.14**	**0.78**	**0.00**	**9,690.58**

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	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Energy	0.11	0.97	0.41	0.01		0.00	0.08		0.00	0.08	0.00	2,151.28	2,151.28	0.07	0.04	2,164.55
Mobile	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
Waste						0.00	0.00		0.00	0.00	120.64	0.00	120.64	7.13	0.00	270.35
Water						0.00	0.00		0.00	0.00	0.00	189.68	189.68	1.00	0.03	219.33
Total	**6.87**	**7.72**	**34.32**	**0.08**	**7.37**	**0.38**	**7.86**	**0.12**	**0.36**	**0.60**	**120.64**	**7,910.53**	**8,031.17**	**8.40**	**0.07**	**8,228.02**

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	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Energy	0.10	0.84	0.36	0.01		0.00	0.07		0.00	0.07	0.00	1,918.12	1,918.12	0.06	0.03	1,929.97
Mobile	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
Waste						0.00	0.00		0.00	0.00	120.64	0.00	120.64	7.13	0.00	270.35
Water						0.00	0.00		0.00	0.00	0.00	160.95	160.95	0.80	0.02	184.72
Total	**6.86**	**7.59**	**34.27**	**0.08**	**7.37**	**0.38**	**7.85**	**0.12**	**0.36**	**0.59**	**120.64**	**7,648.64**	**7,769.28**	**8.19**	**0.05**	**7,958.83**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 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					4.35	0.00	4.35	2.21	0.00	2.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	5.10	43.03	20.63	0.04		1.75	1.75		1.75	1.75	0.00	4,567.53	4,567.53	0.41	0.00	4,576.22
Total	**5.10**	**43.03**	**20.63**	**0.04**	**4.35**	**1.75**	**6.10**	**2.21**	**1.75**	**3.96**	**0.00**	**4,567.53**	**4,567.53**	**0.41**	**0.00**	**4,576.22**

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	0.03	0.03	0.33	0.00	0.07	0.00	0.07	0.00	0.00	0.00	0.00	52.01	52.01	0.00	0.00	52.07
Total	**0.03**	**0.03**	**0.33**	**0.00**	**0.07**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.00**	**52.01**	**52.01**	**0.00**	**0.00**	**52.07**

3.2 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					4.35	0.00	4.35	2.21	0.00	2.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	5.10	43.03	20.63	0.04		1.75	1.75		1.75	1.75	0.00	4,567.53	4,567.53	0.41	0.00	4,576.22
Total	**5.10**	**43.03**	**20.63**	**0.04**	**4.35**	**1.75**	**6.10**	**2.21**	**1.75**	**3.96**	**0.00**	**4,567.53**	**4,567.53**	**0.41**	**0.00**	**4,576.22**

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	0.03	0.03	0.33	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	52.01	52.01	0.00	0.00	52.07
Total	**0.03**	**0.03**	**0.33**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**52.01**	**52.01**	**0.00**	**0.00**	**52.07**

3.3 Trenching - 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	0.00	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**

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	0.06	0.60	0.40	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	99.86	99.86	0.00	0.00	99.91
Worker	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	**0.06**	**0.60**	**0.40**	**0.00**	**0.03**	**0.02**	**0.05**	**0.00**	**0.02**	**0.02**	**0.00**	**99.86**	**99.86**	**0.00**	**0.00**	**99.91**

3.3 Trenching - 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	0.00	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 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	0.06	0.60	0.40	0.00	0.00	0.02	0.02	0.00	0.02	0.02	0.00	99.86	99.86	0.00	0.00	99.91
Worker	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	**0.06**	**0.60**	**0.40**	**0.00**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**99.86**	**99.86**	**0.00**	**0.00**	**99.91**

3.3 Trenching - 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	0.00	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**

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	0.01	0.15	0.10	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	27.47	27.47	0.00	0.00	27.48
Worker	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	**0.01**	**0.15**	**0.10**	**0.00**	**0.01**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**27.47**	**27.47**	**0.00**	**0.00**	**27.48**

3.3 Trenching - 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	0.00	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 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	0.01	0.15	0.10	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	27.47	27.47	0.00	0.00	27.48
Worker	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	**0.01**	**0.15**	**0.10**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**27.47**	**27.47**	**0.00**	**0.00**	**27.48**

3.4 Paving - 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	0.32	1.97	1.28	0.00		0.17	0.17		0.17	0.17	0.00	164.09	164.09	0.03	0.00	164.64
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.32**	**1.97**	**1.28**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**164.09**	**164.09**	**0.03**	**0.00**	**164.64**

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	0.02	0.17	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	26.17	26.17	0.00	0.00	26.20
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.03**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**26.17**	**26.17**	**0.00**	**0.00**	**26.20**

3.4 Paving - 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	0.32	1.97	1.28	0.00		0.17	0.17		0.17	0.17	0.00	164.09	164.09	0.03	0.00	164.64
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.32**	**1.97**	**1.28**	**0.00**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**164.09**	**164.09**	**0.03**	**0.00**	**164.64**

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	0.02	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.17	26.17	0.00	0.00	26.20
Total	**0.01**	**0.02**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**26.17**	**26.17**	**0.00**	**0.00**	**26.20**

3.4 Paving - 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	0.08	0.51	0.35	0.00		0.04	0.04		0.04	0.04	0.00	45.04	45.04	0.01	0.00	45.18
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.08**	**0.51**	**0.35**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**45.04**	**45.04**	**0.01**	**0.00**	**45.18**

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	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.03	7.03	0.00	0.00	7.04
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**7.03**	**7.03**	**0.00**	**0.00**	**7.04**

3.4 Paving - 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	0.08	0.51	0.35	0.00		0.04	0.04		0.04	0.04	0.00	45.04	45.04	0.01	0.00	45.18
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.08**	**0.51**	**0.35**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**45.04**	**45.04**	**0.01**	**0.00**	**45.18**

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	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.03	7.03	0.00	0.00	7.04
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.03**	**7.03**	**0.00**	**0.00**	**7.04**

3.5 Building - 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	0.52	3.47	2.72	0.01		0.22	0.22		0.22	0.22	0.00	429.20	429.20	0.04	0.00	430.09
Total	**0.52**	**3.47**	**2.72**	**0.01**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**429.20**	**429.20**	**0.04**	**0.00**	**430.09**

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	0.09	0.09	1.03	0.00	0.23	0.01	0.24	0.00	0.01	0.01	0.00	173.64	173.64	0.01	0.00	173.84
Total	**0.09**	**0.09**	**1.03**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**	**0.00**	**173.64**	**173.64**	**0.01**	**0.00**	**173.84**

3.5 Building - 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	0.52	3.47	2.72	0.01		0.22	0.22		0.22	0.22	0.00	429.20	429.20	0.04	0.00	430.09
Total	**0.52**	**3.47**	**2.72**	**0.01**		**0.22**	**0.22**		**0.22**	**0.22**	**0.00**	**429.20**	**429.20**	**0.04**	**0.00**	**430.09**

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	0.09	0.09	1.03	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	173.64	173.64	0.01	0.00	173.84
Total	**0.09**	**0.09**	**1.03**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**173.64**	**173.64**	**0.01**	**0.00**	**173.84**

3.5 Building - 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	0.57	3.77	3.22	0.01		0.23	0.23		0.23	0.23	0.00	511.51	511.51	0.05	0.00	512.48
Total	**0.57**	**3.77**	**3.22**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**511.51**	**511.51**	**0.05**	**0.00**	**512.48**

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	0.10	0.10	1.14	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	203.49	203.49	0.01	0.00	203.71
Total	**0.10**	**0.10**	**1.14**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**203.49**	**203.49**	**0.01**	**0.00**	**203.71**

3.5 Building - 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	0.57	3.77	3.22	0.01		0.23	0.23		0.23	0.23	0.00	511.51	511.51	0.05	0.00	512.48
Total	**0.57**	**3.77**	**3.22**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**511.51**	**511.51**	**0.05**	**0.00**	**512.48**

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	0.10	0.10	1.14	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	203.49	203.49	0.01	0.00	203.71
Total	**0.10**	**0.10**	**1.14**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**203.49**	**203.49**	**0.01**	**0.00**	**203.71**

3.5 Building - 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					
Off-Road	0.52	3.41	3.19	0.01		0.20	0.20		0.20	0.20	0.00	509.55	509.55	0.04	0.00	510.43
Total	**0.52**	**3.41**	**3.19**	**0.01**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**509.55**	**509.55**	**0.04**	**0.00**	**510.43**

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	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	0.10	0.09	1.04	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	198.44	198.44	0.01	0.00	198.64
Total	**0.10**	**0.09**	**1.04**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**198.44**	**198.44**	**0.01**	**0.00**	**198.64**

3.5 Building - 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					
Off-Road	0.52	3.41	3.19	0.01		0.20	0.20		0.20	0.20	0.00	509.55	509.55	0.04	0.00	510.43
Total	**0.52**	**3.41**	**3.19**	**0.01**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**509.55**	**509.55**	**0.04**	**0.00**	**510.43**

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	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	0.10	0.09	1.04	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	198.44	198.44	0.01	0.00	198.64
Total	**0.10**	**0.09**	**1.04**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**198.44**	**198.44**	**0.01**	**0.00**	**198.64**

3.5 Building - 2018

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	0.47	3.10	3.18	0.01		0.18	0.18		0.18	0.18	0.00	511.51	511.51	0.04	0.00	512.32
Total	**0.47**	**3.10**	**3.18**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.32**

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	0.09	0.09	0.97	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	195.10	195.10	0.01	0.00	195.29
Total	**0.09**	**0.09**	**0.97**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**195.10**	**195.10**	**0.01**	**0.00**	**195.29**

3.5 Building - 2018

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	0.47	3.10	3.18	0.01		0.18	0.18		0.18	0.18	0.00	511.51	511.51	0.04	0.00	512.32
Total	**0.47**	**3.10**	**3.18**	**0.01**		**0.18**	**0.18**		**0.18**	**0.18**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.32**

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	0.09	0.09	0.97	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	195.10	195.10	0.01	0.00	195.29
Total	**0.09**	**0.09**	**0.97**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**195.10**	**195.10**	**0.01**	**0.00**	**195.29**

3.5 Building - 2019

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	0.43	2.81	3.16	0.01		0.15	0.15		0.15	0.15	0.00	511.51	511.51	0.04	0.00	512.25
Total	**0.43**	**2.81**	**3.16**	**0.01**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.25**

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	0.09	0.08	0.90	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	191.26	191.26	0.01	0.00	191.44
Total	**0.09**	**0.08**	**0.90**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**191.26**	**191.26**	**0.01**	**0.00**	**191.44**

3.5 Building - 2019

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	0.43	2.81	3.16	0.01		0.15	0.15		0.15	0.15	0.00	511.51	511.51	0.04	0.00	512.25
Total	**0.43**	**2.81**	**3.16**	**0.01**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**511.51**	**511.51**	**0.04**	**0.00**	**512.25**

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	0.09	0.08	0.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	191.26	191.26	0.01	0.00	191.44
Total	**0.09**	**0.08**	**0.90**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**191.26**	**191.26**	**0.01**	**0.00**	**191.44**

3.5 Building - 2020

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	0.40	2.56	3.15	0.01		0.13	0.13		0.13	0.13	0.00	513.47	513.47	0.03	0.00	514.15
Total	**0.40**	**2.56**	**3.15**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**513.47**	**513.47**	**0.03**	**0.00**	**514.15**

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	0.08	0.07	0.84	0.00	0.28	0.01	0.29	0.00	0.01	0.01	0.00	188.39	188.39	0.01	0.00	188.56
Total	**0.08**	**0.07**	**0.84**	**0.00**	**0.28**	**0.01**	**0.29**	**0.00**	**0.01**	**0.01**	**0.00**	**188.39**	**188.39**	**0.01**	**0.00**	**188.56**

3.5 Building - 2020

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	0.40	2.56	3.15	0.01		0.13	0.13		0.13	0.13	0.00	513.47	513.47	0.03	0.00	514.15
Total	**0.40**	**2.56**	**3.15**	**0.01**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**513.47**	**513.47**	**0.03**	**0.00**	**514.15**

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	0.08	0.07	0.84	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	188.39	188.39	0.01	0.00	188.56
Total	**0.08**	**0.07**	**0.84**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**188.39**	**188.39**	**0.01**	**0.00**	**188.56**

3.5 Building - 2021

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	0.06	0.37	0.50	0.00		0.02	0.02		0.02	0.02	0.00	82.31	82.31	0.00	0.00	82.41
Total	**0.06**	**0.37**	**0.50**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**82.31**	**82.31**	**0.00**	**0.00**	**82.41**

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	0.13	0.00	0.04	0.00	0.05	0.00	0.00	0.00	0.00	29.83	29.83	0.00	0.00	29.85
Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.04**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**29.83**	**29.83**	**0.00**	**0.00**	**29.85**

3.5 Building - 2021

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	0.06	0.37	0.50	0.00		0.02	0.02		0.02	0.02	0.00	82.31	82.31	0.00	0.00	82.41
Total	**0.06**	**0.37**	**0.50**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**82.31**	**82.31**	**0.00**	**0.00**	**82.41**

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	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.83	29.83	0.00	0.00	29.85
Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**29.83**	**29.83**	**0.00**	**0.00**	**29.85**

3.6 Coatings - 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					
Archit. Coating	0.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.21	0.00		0.02	0.02		0.02	0.02	0.00	27.92	27.92	0.00	0.00	28.00
Total	**0.53**	**0.28**	**0.21**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**27.92**	**27.92**	**0.00**	**0.00**	**28.00**

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	0.02	0.02	0.21	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	34.73	34.73	0.00	0.00	34.77
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.05**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**34.73**	**34.73**	**0.00**	**0.00**	**34.77**

3.6 Coatings - 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					
Archit. Coating	0.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.21	0.00		0.02	0.02		0.02	0.02	0.00	27.92	27.92	0.00	0.00	28.00
Total	**0.53**	**0.28**	**0.21**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**27.92**	**27.92**	**0.00**	**0.00**	**28.00**

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	0.02	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.73	34.73	0.00	0.00	34.77
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**34.73**	**34.73**	**0.00**	**0.00**	**34.77**

3.6 Coatings - 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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**0.64**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

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	0.02	0.02	0.23	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	40.70	40.70	0.00	0.00	40.74
Total	**0.02**	**0.02**	**0.23**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**40.70**	**40.70**	**0.00**	**0.00**	**40.74**

3.6 Coatings - 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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.31	0.25	0.00		0.03	0.03		0.03	0.03	0.00	33.28	33.28	0.00	0.00	33.36
Total	**0.64**	**0.31**	**0.25**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.36**

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	0.02	0.02	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.70	40.70	0.00	0.00	40.74
Total	**0.02**	**0.02**	**0.23**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**40.70**	**40.70**	**0.00**	**0.00**	**40.74**

3.6 Coatings - 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	0.58					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.15	33.15	0.00	0.00	33.23
Total	**0.62**	**0.28**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.15**	**33.15**	**0.00**	**0.00**	**33.23**

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	0.02	0.02	0.21	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	39.69	39.69	0.00	0.00	39.73
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**39.69**	**39.69**	**0.00**	**0.00**	**39.73**

3.6 Coatings - 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	0.58					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.28	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.15	33.15	0.00	0.00	33.23
Total	**0.62**	**0.28**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.15**	**33.15**	**0.00**	**0.00**	**33.23**

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	0.02	0.02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.69	39.69	0.00	0.00	39.73
Total	**0.02**	**0.02**	**0.21**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**39.69**	**39.69**	**0.00**	**0.00**	**39.73**

3.6 Coatings - 2018

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.35
Total	**0.63**	**0.26**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.35**

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	0.02	0.02	0.19	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	39.02	39.02	0.00	0.00	39.06
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**39.02**	**39.02**	**0.00**	**0.00**	**39.06**

3.6 Coatings - 2018

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.35
Total	**0.63**	**0.26**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.35**

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	0.02	0.02	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.02	39.02	0.00	0.00	39.06
Total	**0.02**	**0.02**	**0.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**39.02**	**39.02**	**0.00**	**0.00**	**39.06**

3.6 Coatings - 2019

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.24	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.34
Total	**0.62**	**0.24**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.34**

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	0.02	0.02	0.18	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	38.25	38.25	0.00	0.00	38.29
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**38.25**	**38.25**	**0.00**	**0.00**	**38.29**

3.6 Coatings - 2019

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.24	0.24	0.00		0.02	0.02		0.02	0.02	0.00	33.28	33.28	0.00	0.00	33.34
Total	**0.62**	**0.24**	**0.24**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**33.28**	**33.28**	**0.00**	**0.00**	**33.34**

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	0.02	0.02	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.25	38.25	0.00	0.00	38.29
Total	**0.02**	**0.02**	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**38.25**	**38.25**	**0.00**	**0.00**	**38.29**

3.6 Coatings - 2020

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.22	0.24	0.00		0.01	0.01		0.01	0.01	0.00	33.41	33.41	0.00	0.00	33.46
Total	**0.62**	**0.22**	**0.24**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**33.41**	**33.41**	**0.00**	**0.00**	**33.46**

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	0.00	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	0.02	0.01	0.17	0.00	0.06	0.00	0.06	0.00	0.00	0.00	0.00	37.68	37.68	0.00	0.00	37.71
Total	**0.02**	**0.01**	**0.17**	**0.00**	**0.06**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**37.68**	**37.68**	**0.00**	**0.00**	**37.71**

3.6 Coatings - 2020

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	0.59					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.22	0.24	0.00		0.01	0.01		0.01	0.01	0.00	33.41	33.41	0.00	0.00	33.46
Total	**0.62**	**0.22**	**0.24**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**33.41**	**33.41**	**0.00**	**0.00**	**33.46**

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	0.00	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	0.02	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.68	37.68	0.00	0.00	37.71
Total	**0.02**	**0.01**	**0.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**37.68**	**37.68**	**0.00**	**0.00**	**37.71**

3.6 Coatings - 2021

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	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.36	5.36	0.00	0.00	5.36
Total	**0.09**	**0.03**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.36**	**5.36**	**0.00**	**0.00**	**5.36**

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	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.97	5.97	0.00	0.00	5.97
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.97**	**5.97**	**0.00**	**0.00**	**5.97**

3.6 Coatings - 2021

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	0.09					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.36	5.36	0.00	0.00	5.36
Total	**0.09**	**0.03**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.36**	**5.36**	**0.00**	**0.00**	**5.36**

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	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.97	5.97	0.00	0.00	5.97
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.97**	**5.97**	**0.00**	**0.00**	**5.97**

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	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
Unmitigated	2.94	6.66	26.34	0.07	7.37	0.38	7.74	0.12	0.36	0.48	0.00	5,557.21	5,557.21	0.19	0.00	5,561.18
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
Recreational Swimming Pool	67.51	42.78	54.80	112,339	112,339
Single Family Housing	4,756.29	5,009.76	4358.69	13,449,956	13,449,956
Total	4,823.80	5,052.54	4,413.49	13,562,295	13,562,295

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
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	940.36	940.36	0.04	0.02	946.25
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,028.73	1,028.73	0.05	0.02	1,035.18
NaturalGas Mitigated	0.10	0.84	0.36	0.01		0.00	0.07		0.00	0.07	0.00	977.76	977.76	0.02	0.02	983.71
NaturalGas Unmitigated	0.11	0.97	0.41	0.01		0.00	0.08		0.00	0.08	0.00	1,122.55	1,122.55	0.02	0.02	1,129.38
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					
Recreational Swimming Pool	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
Single Family Housing	2.10357e+007	0.11	0.97	0.41	0.01		0.00	0.08		0.00	0.08	0.00	1,122.55	1,122.55	0.02	0.02	1,129.38
Total		**0.11**	**0.97**	**0.41**	**0.01**		**0.00**	**0.08**		**0.00**	**0.08**	**0.00**	**1,122.55**	**1,122.55**	**0.02**	**0.02**	**1,129.38**

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					
Recreational Swimming Pool	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
Single Family Housing	1.83226e+007	0.10	0.84	0.36	0.01		0.00	0.07		0.00	0.07	0.00	977.76	977.76	0.02	0.02	983.71
Total		**0.10**	**0.84**	**0.36**	**0.01**		**0.00**	**0.07**		**0.00**	**0.07**	**0.00**	**977.76**	**977.76**	**0.02**	**0.02**	**983.71**

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			
Recreational Swimming Pool	0					0.00	0.00	0.00	0.00
Single Family Housing	3.53672e+006					1,028.73	0.05	0.02	1,035.18
Total						**1,028.73**	**0.05**	**0.02**	**1,035.18**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Recreational Swimming Pool	0					0.00	0.00	0.00	0.00
Single Family Housing	3.23291e+006					940.36	0.04	0.02	946.25
Total						**940.36**	**0.04**	**0.02**	**946.25**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	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	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Unmitigated	3.82	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
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	0.35					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	3.24					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	0.00	0.00	0.00	0.00	0.00
Landscaping	0.23	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Total	**3.82**	**0.09**	**7.57**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**12.36**	**12.36**	**0.01**	**0.00**	**12.61**

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	0.35					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	3.24					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	0.00	0.00	0.00	0.00	0.00
Landscaping	0.23	0.09	7.57	0.00		0.00	0.04		0.00	0.04	0.00	12.36	12.36	0.01	0.00	12.61
Total	**3.82**	**0.09**	**7.57**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**12.36**	**12.36**	**0.01**	**0.00**	**12.61**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					160.95	0.80	0.02	184.72
Unmitigated					189.68	1.00	0.03	219.33
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			
Recreational Swimming Pool	0.121243 / 0.0743105					0.70	0.00	0.00	0.81
Single Family Housing	32.3816 / 20.4145					188.98	1.00	0.03	218.51
Total						**189.68**	**1.00**	**0.03**	**219.32**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Recreational Swimming Pool	0.0969948 / 0.0697776					0.59	0.00	0.00	0.68
Single Family Housing	25.9052 / 19.1692					160.35	0.80	0.02	184.04
Total						**160.94**	**0.80**	**0.02**	**184.72**

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					120.64	7.13	0.00	270.35
Unmitigated					120.64	7.13	0.00	270.35
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			
Recreational Swimming Pool	11.68					2.37	0.14	0.00	5.31
Single Family Housing	582.61					118.26	6.99	0.00	265.04
Total						**120.63**	**7.13**	**0.00**	**270.35**

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			
Recreational Swimming Pool	11.68					2.37	0.14	0.00	5.31
Single Family Housing	582.61					118.26	6.99	0.00	265.04
Total						**120.63**	**7.13**	**0.00**	**270.35**

9.0 Vegetation

APPENDIX 5.8-1

Los Angeles County Fire Department "No Further Action" letter for the AEO Lease – Burns/Crist Lease Area

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

Refer reply to
Health Hazardous Materials Division
5825 Rickenbacker Rd.
Commerce CA 90040-302

March 29, 2010

Amber Sakai
Los Valles Land & Golf, LLC.
28909 Hasley Canyon Road
Santa Clarita, CA 91384

Dear Ms. Sakai:

FORMER AEO/BURNS-CHRIST LEASE AREA, 28801 HASLEY CANYON ROAD, CASTAIC, CA 91384 (SMU FILE # 04-604/RO0000103)

This Department has completed a review of the "Remedial Excavation Report", dated March 9, 2010, submitted by your consultant, Stratus. Based on information provided in the report and with the provision that the information was accurate and representative of existing conditions, we concur with your consultant that the known site contamination has been satisfactorily mitigated for the current use and no further action is required in the area of the former AEO/ Burns-Christ Lease. The Site Mitigation Unit of this Department has no further requirement or restriction relating to this area at this time.

This letter, however, does not relieve you of any liability under the California Health and Safety Code, the State Water Code, or other applicable laws and regulations, nor does it relieve you of responsibility for any unidentified conditions or future operations that could pose an environmental concern. In addition, as stated in previous correspondence, dated May 29, 2004, you may be required to re-install groundwater monitoring wells in this area. Placement of the re-installed groundwater monitoring wells will be in areas that will best define the plume, including the source area. Therefore, future site development should not impede the protection of groundwater, nor prohibit ideal placement of groundwater monitoring wells. Groundwater wells shall be re-installed as soon as grading activities are concluded in order to begin quarterly monitoring of groundwater. Be advised that either this Department or the Regional Water Quality Control Board (RWQCB) may require long term monitoring since petroleum hydrocarbon contaminated soil extends to groundwater and remains in place in the North Pad of the SADD lease.

This "no further action" does not apply to the SADD Lease North or South Pads. In addition, the Health Hazardous Material Division has no authority over methane gas or other oilfield-related issues, therefore all activities and concerns relating to these issues are subject to approval/comment by Los Angeles County Building and Safety Department, and/or other state or local agencies. Therefore, this Department defers all methane gas issues to these agencies. If you have any questions, please feel free to call Kim Clark at (323) 890-4114.

Very truly yours,

Shahin Nourishad

SHAHIN NOURISHAD, SUPERVISOR
SITE MITIGATION UNIT
HEALTH HAZARDOUS MATERIALS DIVISION

SN:kc

cc: Henry Ames, Stratus
Leslie Cozby, County of Los Angeles – Dept of Public Works

APPENDIX 5.8-2

Los Angeles County Fire Department "No Further Action" letter for the SADD Lease – North Pad and at the SADD Lease - South Pad Areas

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

Refer reply to
Health Hazardous Materials Division
5825 Rickenbacker Rd.
Commerce CA 90040-302

April 21, 2010

Jeff Kaplinsky
Los Valles Land & Golf, LLC.
28909 Hasley Canyon Road
Santa Clarita, CA 91384

Dear Mr. Kaplinsky:

FORMER SADD LEASES NORTH AND SOUTH PADS, 28801 HASLEY CANYON ROAD, CASTAIC, CA 91384 (SMU FILE # 04-604/RO0000103)

This Department has completed a review of the "Closure Report for the Former SADD Lease North and South Pads", dated March 2010, submitted by your consultant, ERM. Based on information provided in the report and with the provision that the information was accurate and representative of existing conditions, we concur with your consultant that the known site contamination has been satisfactorily mitigated for the proposed use of a golf course and no further action is required in the area of the former "north" or "south" pad of the SADD lease. It should also be noted that a health risk assessment (HRA) was prepared for the subject site and reviewed by Office of Environmental Health Hazard Assessment (OEHHA). Upon review of the HRA by OEHHA they concurred with the findings in the HRA that the "north and south pad" area was suitable for development as a golf course and that the passive venting system that is located in this area does not represent a hazard to golfers, nearby residences or future site workers. In addition, the vapor barrier that is present in the "north pad" will further prevent any migration of potential contaminants that may be present in soil gas. The Site Mitigation Unit of this Department has no further requirement or restriction relating to this area at this time.

This letter, however, does not relieve you of any liability under the California Health and Safety Code, the State Water Code, or other applicable laws and regulations, nor does it relieve you of responsibility for any unidentified conditions or future operations that could pose an environmental concern. You are also required to notify all future property owners/tenants of the petroleum hydrocarbon contamination that is present at depth. In addition, as stated in previous correspondence, dated May 29, 2004, you may be required to re-install groundwater monitoring wells in this area. Placement of the re-installed groundwater monitoring wells will be in areas that will best define the plume, including the source area. Therefore, future site development should not impede the protection of groundwater, nor prohibit ideal placement of groundwater monitoring wells. Groundwater wells shall be re-installed as soon as grading activities are concluded in order to begin quarterly monitoring of groundwater. Be advised that either this Department or the Regional Water Quality Control Board (RWQCB) may require long term monitoring since petroleum hydrocarbon contaminated soil extends to groundwater and remains in place in the "north pad" of the SADD lease.

You are further advised that the Health Hazardous Material Division has no authority over methane gas or other oilfield-related issues, therefore all activities and concerns relating to these issues are subject to approval/comment by Los Angeles County Building and Safety Department, and/or other state or local agencies. Therefore, this Department defers all methane gas issues to these agencies. If you have any questions, please feel free to call Kim Clark at (323) 890-4114.

Very truly yours,

SHAHIN NOURISHAD, SUPERVISOR
SITE MITIGATION UNIT
HEALTH HAZARDOUS MATERIALS DIVISION

SN:kc

cc: Truong Mai, ERM
Leslie Cozby, County of Los Angeles – Dept of Public Works

APPENDIX 5.8-3

Health Risk Assessment by Environmental Resources Management, Inc.

Environmental Resources Management

3 Hutton Centre
Suite 600
Santa Ana, CA 92707
(714) 430-1476
(714) 436-2940 (fax)

31 May 2006

Via U.S. & Electronic Mail

Ms. Kim Clark
County of Los Angeles Fire Department
Health Hazardous Materials Division
5825 Rickenbacker Road
Commerce, California 90040-3027

Subject: Site Summary Report
28801 Hasley Canyon Road
Castaic, California

Dear Ms. Clark:

As requested by the Los Angeles County Fire Department (LACFD), ERM-West, Inc. (ERM), on behalf of Los Valles Company, Inc. (Los Valles), is submitting a site summary report to document site investigation and remediation activities conducted at the Los Valles site in Castaic, California. The overall purpose of this cover letter and report is to summarize environmental activities completed at the site and to provide justification for transitioning site remediation activities from an active to a passive phase.

The 432-acre site is located along the north flank of Hasley Canyon, approximately 3 miles northwest of the city of Santa Clarita and east of Sloan Canyon, in the Castaic Hills area of the western San Gabriel Mountains. The site is largely undeveloped, but contains a number of graded dirt roads and three approximately one-acre graded areas (pads) that were historically used to support oil production activities. A total of ten oil wells were previously operated on the pads. The oil production wells, installed in the 1970s or 1980s, were closed and properly abandoned in April 2003. The California Department of Oil and Gas (D.O.G.) reviewed closure reports and issued written approval for the well closures. Previous oil production activities resulted in potential environmental impacts at these three areas. The three former production areas are referred to as:

1. AEO Lease – Burns/Crist (AEO Pad);
2. SADD Lease – North Pad; and
3. SADD Lease - South Pad.

Los Valles is in the process of developing the site as a residential and recreational, mixed-use development consisting of single-family, custom luxury homes and a championship golf course. No homes are proposed above the areas containing impacted soil. The land directly above the impacted areas will be used for the planned golf course.

Since early 2003, Los Valles has completed the following tasks to evaluate impacted materials at the site:

- Abandonment and closure of oil wells;
- Phase I Environmental Site Assessment;
- Limited Phase II Site Investigation;
- Pipeline removal; and
- Investigation of subsurface petroleum hydrocarbon impacts.

Total petroleum hydrocarbon (TPH) impacted soil was identified at the site, primarily at the SADD Lease – North Pad. A Remedial Action Plan (RAP) was prepared and approved by the LACFD in 2004 to propose remedial activities designed to address impacted soil present at the site. The overall objective of the remediation program was to eliminate potential exposure to constituents of concern (COCs).

Potential exposure pathways to COCs, based on proposed land use, included

- Direct contact with impacted soil;
- Ingestion of impacted soil;
- Inhalation of impacted air; and
- Ingestion of impacted groundwater.

A combination of concentration (conservative baseline target objectives) and performance-based criteria was used to determine when remediation activities would be complete, such as:

- Mass removal;
- Asymptotic recovery during best available technology application; and
- Risk reduction/elimination.

To achieve the RAP objectives, a set of interrelated remediation activities was proposed, including excavation, active soil venting, passive soil venting, and groundwater monitoring. Excavation activities were intended to minimize the dermal and soil ingestion pathways by removing the potential for direct contact to future site users and construction workers. Active and passive soil venting addresses the inhalation and groundwater ingestion pathways, as well as groundwater protection by removing the mobile COCs.

The RAP proposed soil excavation up to 10 feet below ground surface for the impacted areas. To remediate the remaining impacted soil, a soil venting program was proposed for both the North and South Pads. Two phases were proposed for the soil venting program, (1) an active phase where a soil vapor extraction (SVE) system extracted vapors, via vacuum, from the soil through a network of vapor extraction wells for treatment; and (2) a passive phase where the wells are simply vented to the atmosphere. Transitioning from active to passive venting would occur once active venting reaches asymptotic levels for influent concentration and mass removal rates. A groundwater well installation and monitoring program was proposed to assess groundwater quality.

To date, Los Valles has completed the following remedial activities:

- Excavation and off-site disposal of shallow impacted soil;
- Installation of a vapor barrier at the bottom of the excavation and directly over the residual impacted soil;
- Installation and operation of an active soil venting system (i.e., SVE and treatment system);
- Evaluation of current potential health risks related to residual impacted soil; and
- Groundwater monitoring.

The completed excavation and backfilling activities created a minimum of 10 feet of buffer soil from the shallowest residual impacted soil from potential receptors, in effect, eliminating the direct contact with impacted soil and ingestion of impacted soil exposure pathways. The excavation activities covered minor stained soil at the AEO Pad and over 1,000 cubic yards of shallow soil at the SADD Lease-North and South Pads. Additionally, shallow pipelines were removed throughout the site.

The vapor barrier and active soil venting activities completed to date greatly reduced the potential risks to future site receptors (including nearby residences, golf course workers and visitors, and construction workers) from an inhalation of impacted air perspective. Active soil venting activities were performed at the SADD Lease-North Pad, which removed over 14,600 pounds of hydrocarbons from the subsurface. Mass removal rates and system influent concentrations have decreased by approximately 90 percent or greater and have reached asymptotic conditions.

A screening-level health risk assessment (HRA) was conducted to evaluate whether passive venting of residual impacted soil would pose a health risk to future site users or occupants, considering the proposed golf course and residential development. It should be noted that no residential structures would be built over the impacted areas. The HRA concluded that the maximum predicted individual excess carcinogenic risks at all modeled locations would be well below the Office of Environmental Health Hazards Assessment (OEHHA) recommended significance level. Correspondingly, the non-carcinogenic chronic and acute hazard indices predicted in this analysis have also been shown to be orders of magnitude below the OEHHA recommended significance level. As such, the passive venting of the soil gas wells in the SADD Lease-North and South Pads are not predicted to cause any significant health risk to future residents, workers, or guests during the construction or operation of the proposed golf course.

Los Valles recognizes that the ingestion of impacted groundwater exposure pathway has not been addressed in this letter or attached report. Los Valles has conducted groundwater monitoring at the site since early 2003 and has only observed low (less than the drinking water standards) and sporadic detections of TPH constituents at the site. Los Valles understands that it will need to contact the Regional Water Quality Control Board (RWQCB) to resolve this issue once the soil impacts are addressed with the LACFD.

In summary, impacted soil was identified and characterized at the Los Valles site. Remedial activities have been performed to remove and reduce contaminant mass. A HRA provided confirmation that residual impacted soil poses no significant risks to future site users. In addition, monitoring has demonstrated that groundwater is not significantly impacted and the continuation of the active system will have no net benefit to groundwater quality beneath the site. At this time, Los Valles requests that the LACFD approve the shutdown of the active soil venting system and transitioning to the passive venting phase.

As discussed previously with the LACFD, Los Valles will perform a final round of sampling at the site. This sampling event will consist of two components:

1. Soil sampling at four to six locations, at multiple depths, at the SADD Lease North Pad; and
2. Confirmation soil vapor sampling from all existing passive venting wells.

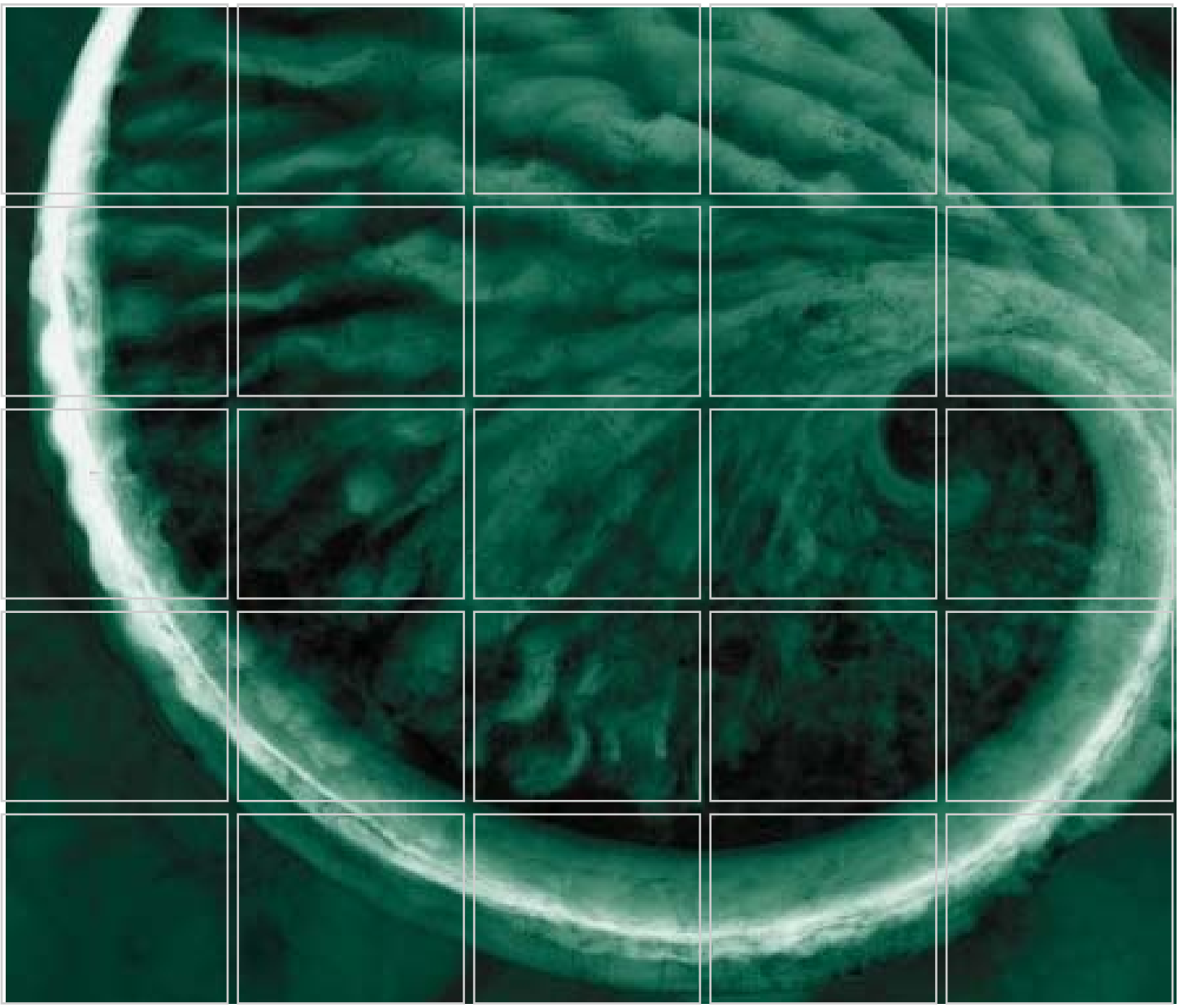
Los Valles and ERM understand that the LACFD will work with OEHHA to review this document. Submittal of this document is consistent with discussions between the LACFD and Los Valles/ERM in late 2005 and May 2006. We look forward to your response. We will also coordinate the field sampling schedule with the LACFD. If you have any questions regarding this project, please contact me at (714) 430-1476.

Sincerely,

Truong Mai, P.E.
Partner

TTM/taa/0021456.40

cc: Mr. Jeff Kaplinski, Los Valles Company, Inc.
Ms. Amber Sakai, Los Valles Company, Inc.



Site Summary Report

Prepared for:
Los Valles Company, Inc.

April 2006

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ERM

Los Valles Company, Inc.

Site Summary Report

April 2006

Project No. 0021456.40

Truong Mai, P.E.
Project Manager

Mauricio Paz
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Environmental Resources Management
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1.0 INTRODUCTION

On behalf of Los Valles Company, Inc. (Los Valles), ERM-West, Inc., (ERM) has prepared this summary report for the Los Valles site in Castaic, California. The Los Angeles County Fire Department (LACFD), as the lead agency for this site, requested that Los Valles submit this summary report.

This report summarizes investigation and remediation activities conducted at the Los Valles site to date. These activities have addressed the bulk of the impacted surface and subsurface contamination at the site. As such, Los Valles is submitting this report to request a transition from active soil venting operations to passive soil venting at the site, thus allowing the site to be redeveloped unimpeded.

Since early 2003, Los Valles has completed the following tasks to evaluate and address impacted materials at the Site:

- Abandonment and closure of oil wells;
- Phase I environmental site assessment (ESA);
- Limited Phase II site investigation;
- Pipeline removal;
- Investigation of subsurface petroleum hydrocarbon impacts;
- Development of a remedial approach;
- Excavation and off-site disposal of shallow impacted soil;
- Installation and operation of an active soil venting system (i.e., soil vapor extraction and treatment system);
- Groundwater monitoring; and
- Evaluation of current potential health risks related to residual impacted soil.

This report is organized as follows:

- Section 2.0 describes site characteristics, background, and proposed land use;
- Section 3.0 discusses previous investigation activities;

- Section 4.0 presents the remediation approach and activities completed;
- Section 5.0 summarizes the health risk assessment;
- Section 6.0 presents conclusions and recommendations; and
- Section 7.0 provides references.

2.0 SITE BACKGROUND

2.1 GENERAL SITE DESCRIPTION AND HISTORY

The 432-acre site is located along the north flank of Hasley Canyon, approximately 3 miles northwest of the city of Santa Clarita and east of Sloan Canyon, in the Castaic Hills area of the western San Gabriel Mountains. Figure 1 shows the site location.

The site is largely undeveloped, but contains a number of graded dirt roads and three approximately one-acre graded areas (pads) that were historically used to support oil production activities. A total of ten oil wells previously operated on the pads. The oil production wells, installed in the 1970s or 1980s, were closed and properly abandoned in April 2003. The California Department of Oil and Gas (D.O.G.) reviewed closure reports and issued written approval for the well closures.

Previous oil production activities resulted in potential environmental impacts at these three areas. The three former production areas, as shown on Figure 2, are referred to as:

1. AEO Lease – Burns/Crist (AEO Pad);
2. SADD Lease – North Pad; and
3. SADD Lease - South Pad.

2.2 SURFACE DRAINAGE, GEOLOGY, AND HYDROGEOLOGY

Four small canyons drain southward across the Site into the Hasley Canyon Wash, then into Castaic Creek to the east, and finally into the Santa Clara River. The tributary streams are incised into the alluvium indicating fairly recent rejuvenation. All of the streams on the property, including Hasley Canyon Wash, are seasonally intermittent.

Recent-age alluvium is present within the canyons. The Saugus Formation outcrops along the ridges and underlays the alluvium in the canyons throughout the general area of the Site. Groundwater is extracted from the Saugus Formation and used for a variety of purposes in the Santa Clarita area. It is estimated that the Saugus Formation stores approximately 1 million acre-feet of water, and that it has historically

supplied between 7,500 and 15,000 acre-feet of water annually. An additional 10,000 to 20,000 acre-feet of water per year will be extracted from the Saugus Formation through new wells to support planned development activities in the area. Although groundwater is present at the Site at depths of approximately 50 to 100 feet below ground surface (bgs), usable groundwater has reportedly been extracted from much greater depths (approximately 3,000 feet bgs).

Other water supply sources in the Santa Clarita area include the alluvial aquifer associated with the Santa Clarita River (located 2 miles east of the Site) and water imported from the State Water Project. As of 1999, The Los Angeles County Waterworks District No. 36 provided imported water to approximately 827 connections in the Hasley Canyon and Val Verde areas.

2.3 PROPOSED LAND USE

Los Valles is in the process of developing the Site as a residential and recreational mixed-use development consisting of single-family custom luxury homes and a championship golf course. The development plan is shown on Figure 3. As presented on Figure 3, no homes are proposed above the areas containing impacted soil. The land directly above the impacted areas will be used for the planned golf course.

3.0 SUMMARY OF INVESTIGATION ACTIVITIES

This section presents a summary of relevant environmental activities performed. Two main phases of investigation occurred at the site:

- Phase I ESA, limited Phase II site investigation, and pipeline removal; and
- Evaluation of subsurface petroleum hydrocarbon impacts.

3.1 PHASE I ENVIRONMENTAL SITE ASSESSMENT, LIMITED PHASE II SITE INVESTIGATION, AND PIPELINE REMOVAL

A Phase I ESA, limited Phase II site investigation, and pipeline removal were conducted at the site by California Environmental Geologist and Engineers, Inc. (CEGE) prior to December 2003. Following closure and sign off by D.O.G., CEGE was retained by Ervin, Cohen & Jessup (a law firm) on behalf of its client Hasley Canyon Land Company, LLC, to remove certain subsurface pipelines and further investigate and document site conditions. Stained and odorous soil was discovered when CEGE removed the pipelines at the SADD lease pads in June and July of 2003. Subsequent subsurface investigations by CEGE revealed three distinct areas of soil contaminated with petroleum hydrocarbons (reported as unrefined crude and a diluent product), ranging from depths of 10 bgs to 90 feet bgs and in concentration from below analytical detection limits to 24,000 milligrams per kilogram (mg/kg) total petroleum hydrocarbons (TPH). Lower concentrations of benzene, toluene, ethylbenzene, and xylenes were also observed. A single groundwater grab sample was collected at 100 feet below grade. The benzene concentration was reported to be 43 micrograms per liter (µg/L) and low levels of gasoline-range hydrocarbons were detected in soils at this location.

3.2 EVALUATION OF SUBSURFACE PETROLEUM HYDROCARBON IMPACTS

Based on the results obtained by CEGE, Los Valles retained ERM to further evaluate the nature and extent of the potentially impacted soil and groundwater. ERM performed subsequent soil, soil gas, and groundwater investigations. In addition, pipeline removal activities associated with the

former production areas at the former AEO Lease Pad were also performed. These activities are discussed separately below.

3.2.1 *Abandoned Pipeline Removal*

Starting on 17 December 2003, CEGE removed pipelines within the project site, all of which were located within the AEO Lease Pad area and along the road leading towards the active off-site oil production facility north of Hasley Canyon Road. ERM was present at the Site during a majority of CEGE's field activities to observe and document any staining associated with the excavations.

Staining was observed at two locations within the AEO Lease Pad Area, one in the southwest corner on the pad and the other approximately 90 feet west of the first location. No stained areas were observed outside of the AEO Lease Pad area during pipeline removal activities. All pipelines were removed except for approximately 100 feet near the southern property boundary of the Site, which was not removed because other utilities reportedly crossed the pipeline in this area and, therefore, the safe removal of the pipeline was not feasible.

To confirm that the pipeline did not impact underlying soils along the southern property boundary, soil vapor samples were collected on 12 February 2004 near the site perimeter at the former pipeline location. Figure 4 shows the extent of the removed pipeline and locations of the soil vapor samples.

3.2.2 *Trenching Operations*

On 21 January 2004, three exploratory trenches were excavated to remove stained soil observed during the pipeline removal activities at the AEO Lease Pad area. A backhoe was used to excavate three trenches (designated as Trench 1, 2, and 3) to depths of approximately 15 feet, 5.2 feet, and 14.5 feet, respectively. Figure 5 shows the soil boring locations and trench areas at the AEO Lease Pad area. Stained soil removed during these efforts was stockpiled on site, wrapped in visqueen, and subsequently disposed of off site.

3.2.3 *Soil Vapor Monitoring*

A total of 74 soil vapor samples were collected at 30 different locations as follows:

- AEO Lease – Burns/Crist – Nine samples were collected from three locations at depths of 5 to 20 feet bgs (Figure 4);
- SADD Lease-North Pad – Twenty-seven samples were collected from ten locations, at depths of 5 to 20 feet bgs, as shown on Figure 6; and
- SADD Lease-South Pad – Twenty-two samples were collected from eight locations, at depths of 5 to 20 feet bgs, as shown on Figure 7.
- Adjacent to the off-site active oil production area - Sixteen samples were collected from eight locations at depths of 10 to 20 feet bgs, as shown on Figure 8.

Samples selected for laboratory analysis were analyzed by H&P Mobile Geochemistry or Del Mar Analytical for one or more of the following constituents:

- Volatile organic compounds (VOCs) in accordance with United States Environmental Protection Agency (USEPA) Method 8260;
- Methane, fixed gases, and hydrogen sulfide, in accordance with American Standard Testing Methods Method 1945-96 and methane by USEPA Method 8015M;
- Total Petroleum Hydrocarbons as gasoline by USEPA Method 8015M;
- Methane, carbon dioxide, oxygen, and barometric pressure measure by Landtech, Model 6EM2000; and
- Hydrogen sulfide measured by Jerome, Model 631-X.

In addition, 11 surface soil samples were collected (eight samples at the SADD Lease pads, two samples of an unknown tar-like material, and a background sample as shown on Figure 9. Finally, 23 soil borings were drilled to collect soil samples from the SADD Lease pads and the AEO Lease Pad. Figures 10 and 11 show the locations of all soil borings.

3.2.4 *Groundwater Monitoring*

Figure 12 shows a total of eight ground water monitoring wells that were installed at the three pads:

- AEO Lease–Burns/Crist – One monitoring well installed on the pad area.
- SADD Lease-North Pad – Three monitoring wells installed on the pad area; and

- SADD Lease-South Pad – Two monitoring wells installed on the pad area, and two wells west of the south pad area.

3.2.5 *Results*

The results of these activities indicated the following:

- Chemical analyses conducted on numerous soil and groundwater samples did not detect the presence of any chemicals of concern (COCs) other than those typically associated with petroleum hydrocarbons.
- The petroleum hydrocarbons present at the Site contain a relatively low volatile content, and occur at or near the three former production areas.
- Following targeted soil excavation, remaining soil impacts at the AEO Lease–Pad are minimal and do not warrant additional remedial actions.
- Limited soil impacts at both the SADD Lease–North and South Pads warrant additional remedial actions.
- No contaminants were detected above their Maximum Contaminant Level or USEPA Region IX Tap Water Preliminary Remediation Goals (PRGs) in the groundwater samples.

The sampling results for the contaminants mentioned above are summarized in Tables 1 through 5. Also, a detailed discussion of the investigation results, sample locations, and sampling methods is presented in the *Evaluation of Subsurface Petroleum Hydrocarbon Impacts-Former Oil Production Pad Areas* (ERM, 2004a).

4.0 REMEDIAL APPROACH AND ACTIVITIES

This section presents a summary of relevant remedial activities performed at the site. These activities include:

- Development of a Remedial Action Plan (RAP);
- Soil excavation and pipeline removal;
- Groundwater monitoring; and
- Active soil venting and treatment.

4.1 REMEDIAL ACTION PLAN

A RAP (ERM, 2004c) was prepared (and approved by the LACFD) to propose remedial activities designed to address impacted soil present at the site. The overall objective of the remediation program was to eliminate potential exposure to COCs.

Potential exposure pathways of COCs, based on proposed land use, included ingestion of impacted soil and groundwater, direct contact with impacted soil, and inhalation of impacted air. A combination of concentration and performance-based criteria was used to determine when remediation activities would be complete, such as:

- Mass removal;
- Asymptotic recovery during best available technology application; and
- Risk reduction/elimination.

Preliminary clean-up levels were developed to provide conservative baseline target objectives for VOCs. Factors may be modified based on subsequent monitoring of performance-based criteria during active remedial implementation. Clean-up levels were calculated for benzene, toluene, ethylbenzene and xylenes (BTEX). These calculations are presented in Appendix A (Tables A1-A8). Figures 13 and 14 provide analytical results for soil sampling from previous investigations (to May 2004); those results that are shaded exceeded the preliminary clean-up levels calculated for BTEX.

To achieve the RAP objectives, a set of interrelated remediation activities was proposed, including excavation, active soil venting, passive soil

venting, and groundwater monitoring. Excavation activities were intended to minimize the dermal and soil ingestion pathways by removing the potential for direct contact to future site users and construction workers. Active and passive soil venting addresses the inhalation and groundwater ingestion pathways, as well as groundwater protection by removing the mobile COCs.

The RAP proposed soil excavation up to 10 ft bgs for the impacted areas. To remediate the remaining impacted soil, a soil venting program was proposed for both North and South Pads. Two phases were proposed for the soil venting program, an active phase where a soil vapor extraction (SVE) system (shown on Figure 15) extracted vapors via vacuum from the soil through a network of vapor extraction wells for treatment, and a passive phase where the wells are simply vented to the atmosphere. Transitioning from active to passive vent would occur once active venting reaches asymptotic levels for influent concentration and mass removal rates. A groundwater well installation and monitoring program was proposed to assess groundwater quality.

4.2 SOIL EXCAVATIONS

4.2.1 Excavation Activities and Pipeline Removal

On 2 June 2004, soil excavation activities commenced at the SADD Lease-North and South Pads. The upper 10 feet of soil was removed in both excavations, using an excavator, and stockpiled adjacent to the excavations. During excavation activities, abandoned steel pipelines ranging in size from 1- to 2-inches in diameter and containing residual product, were uncovered at approximately 3 feet bgs and extending under the adjacent access roads. A total of approximately 2,500 feet of abandoned pipeline was removed (Figures 16 and 17). Stained soil was observed in several small areas under the pipeline joints. All stained soil encountered was removed and added to the excavation stockpile. In general, VOC concentrations were not detected with the photoionization detector and there was no visual staining observed in the pipeline trenches during soil screening. The trenches were backfilled with the native soil.

To confirm the extent of impacted soil associated with the pipelines in the north end of the South Pad excavation area, three trenches were excavated north of the South Pad excavation (Figure 18).

Confirmation samples were collected from all excavation walls and bottoms. Results of these samples are discussed in Section 4.2.2.

Upon completion of the sidewall and bottom sampling, the North Pad excavation was lined with a vapor barrier consisting of 60-mil high-density polyethylene and then backfilled with fill sand.

The South Pad excavation was backfilled with a combination of clean excavated soil and fill sand. The fill material was placed in the excavation in 1-foot lifts to the surface and wheel rolled with the bucket loader.

4.2.2 *Results*

Confirmation sampling activities for the SADD Lease – North Pad were performed under the supervision of LACFD personnel, who prescribed the sampling locations and analysis. Sample results are summarized in Tables 6 through 10 and shown on Figures 18 and 19. The laboratory report and chain-of-custody forms can be found in the *Summary Report, Los Valles Land & Golf, LLC.* (ERM, 2004b).

Table 6 and Figure 18 show that VOCs were detected in three of the eight excavation soil samples; however, the concentrations did not exceed the USEPA's PRGs for residential soil.

Table 7 and Figure 18 indicate that TPHs as diesel and motor oil were detected in all of the excavation soil samples except NP-SSW. Detected concentrations of TPH as diesel ranged from 1.2 mg/kg to 2,100 mg/kg. Detected concentrations of TPH as motor oil ranged from 1.8 to 640 mg/kg. Results of the TPH analyses were compared to the Regional Water Quality Control Board soil screening levels (SSLs) for TPH-impacted soil located within approximately 20 to 150 feet above groundwater. Concentrations of TPH as diesel in bottom samples (NP-NBS and NP-SBS) exceeded the SSL.

As shown in Table 8 and on Figure 18, naphthalene was detected at a concentration of 4,700 μg/kg in soil sample NP-SBS collected from the bottom of the excavation. No other Polynuclear Aromatic Hydrocarbons were detected in the confirmation samples.

Polychlorinated Biphenyls were not detected in the confirmation soil samples, as illustrated on Figure 19 and in Table 9.

As shown on Figure 19 and in Table 10, metals were detected in all of the excavation soil samples; however, the concentrations did not exceed the PRGs for residential soil.

The report recommended the installation of three vapor extraction wells to remediate the remaining subsurface soil, deeper than approximately 10 feet bgs. The recommended design was a triple screen extraction well (screen intervals at 10 to 20 feet bgs, 30 to 50 feet bgs, and 50 to 75 feet bgs) to optimize soil remediation efforts by extracting vapors at different depth intervals.

4.3 GROUNDWATER MONITORING SUMMARY

Groundwater monitoring at the Site was conducted from December 2003 to December 2004 (four quarterly sampling events were performed during this period). At the request of the LACFD, an extra monitoring event was performed in May 2005 before well decommission. Table 11 shows results for all sampling events.

Based on Table 11, all monitoring wells, with the exception of MW-4, appear to be free of contaminants. Although hydrocarbon constituents, including ethylbenzene, xylenes, propylbenzene, and naphthalene, were detected sporadically in MW-4, the detected concentrations have only been marginally above the detection limits and much less than the Maximum Contaminant Levels.

4.3.1 Monitoring Wells Decommission

Historically, the groundwater sample results indicate that the contamination from the soil has not migrated to the groundwater. For that reason, ERM obtained permission to decommission the eight monitoring wells at the Site. The monitoring wells were properly destroyed on 25 to 27 May 2005. Each of the eight wells was drilled out to total depth as required by the County of Los Angeles. To seal the boreholes, neat cement was pumped through a pipe from the bottom to the top in each borehole. Table 12 shows the former well construction details and groundwater level data collected during the abovementioned period of time.

4.4 *SOIL VAPOR EXTRACTION SYSTEM PERFORMANCE SUMMARY*

In August 2004, ERM installed three multi-port vapor venting wells at the Site. Two wells, designated as VW-1 and VW-2, were installed within the footprint of the excavation at the North Pad and a third well (VW-3) was installed approximately 20 feet north of MW-4 at the South Pad. Well locations at the North and South Pads are shown on Figures 20 and 21, respectively. Wells VW-1 and VW-2 were constructed identically, with screened sections at 10 to 30 feet bgs, 35 to 55 feet bgs, and 60 to 80 feet bgs. Because the depth to groundwater is shallower at the South Pad, well VW-3 was constructed with only two screened sections at 10 to 30 feet bgs and 35 to 55 feet bgs.

Following the first round of vapor samples collected in August 2004, it was determined that low hydrocarbon concentration in South Pad (VW-3) soil vapor did not warrant an active SVE system, thus no SVE system was installed at the South Pad. On the other hand, soil vapor samples collected from the North Pad contained benzene, toluene, and xylenes at concentrations greater than the screening levels, thus an active SVE program was warranted for the North Pad.

During active soil venting, ERM collected and analyzed periodic soil vapor samples for evaluation of the system's effectiveness. Vapor analytical results (Table 13) indicate that the active soil venting system influent concentrations and mass removal rates appear to have reached asymptotic conditions. The COC concentrations in the individual vapor extraction wells decreased significantly since startup of the active soil venting system, as shown in Table 13 and on Figure 22. Similarly, the system influent concentrations, shown in Table 14, reduced considerably compared to prior to system operation start-up. To date, the active soil venting system has removed and treated approximately 14,647 pounds of hydrocarbons, as shown in Table 15.

Los Valles and ERM believe that, during the 12 months of active soil vapor extraction, COC concentrations have reduced to levels where passive soil venting may be appropriate. In order to obtain necessary information to prepare a risk assessment, Los Valles and ERM, with LACFD concurrence, collected vapor samples during system shutdown to evaluate rebounding and off-gas concentrations from the well. This data was then used to conduct a HRA.

5.0 HEALTH RISK ASSESSMENT

To confirm that active soil venting tasks have reduced potential health risks at the site adequately and transitioning to the passive venting phase is appropriate, a HRA (ERM, 2006a) was conducted. Soil vapor samples representative of passive soil venting conditions were collected to provide a basis for the risk evaluation. Specifically, the HRA focuses on the passive venting of vapors from partially treated soil at the Former SADD Lease Pads after the development of the property. The HRA report was submitted to the LACFD in February 2006. Following review of the HRA report, the LACFD requested that Los Valles submit this site summary report. The entire HRA report, as initially submitted to the LACFD, is included as Appendix B. The section summarizes the HRA Report.

The screening HRA is used to conservatively assess the potential for carcinogenic risk and non-carcinogenic health effects from the passive venting of residual impacted soil at the SADD Lease-North and South Pads on near-by future residents, golf-course workers, and golf course guests. The HRA includes the development of air toxic emission rates, model analysis of exposure, and the predicted health impacts from the continuous low-level releases into the atmosphere.

5.1 HEALTH RISK ASSESSMENT METHODOLOGY

In order to assess the impacts from the passive well emissions, mass emissions are required to conduct exposure modeling. Mass emissions can be calculated from soil gas concentrations. For the purpose of this model, it is assumed that all vent piping will be bundled at one location for both the North and South Pads, and a single point source will be used to model each location. The soil gas concentrations at each depth for VW-1 and VW-2 will be averaged to define the soil gas concentration in the emissions development for the North Pad source. Similarly, all depths from VW-3 will be used to calculate the average soil gas for the South Pad source. The most current measurements were used to represent current and future soil gas estimates.

For the purposes of the HRA, the SCREEN3 model was utilized to assess maximum ground-level concentrations. This model has been approved by the USEPA and the California Air Resources Board (CARB) for use in assessing air quality impacts for regulatory purposes. The model

calculates maximum 1-hour concentrations from single sources at specified receptor locations for selected hypothetical, worst-case meteorological conditions. Long-term exposure in this assessment was estimated by applying a 1-hour to annual peak-to-mean ratio of 0.1, as specified by CARB, to the 1-hour maximum concentration. This has been shown to be a conservatively high estimate of long-term impacts. Short-term exposure (1-hour) will be determined by the maximum 1-hour predicted concentration from all meteorological conditions.

Four specific receptors were selected for analysis. These include: 1) the closest future residential location to the North Pad source; 2) the closest tee box to the North Pad source; 3) the closest future resident to the South Pad source; and 4) the closest tee box to the South Pad source. It is assumed that the tee boxes will be the location where the highest likely exposure will be to both workers and guests. Since distances vary between the North Pad and South Pad sources with respect to the four sensitive receptor locations, eight distances were modeled, four relative to each source.

For long-term residential risk exposure, Office of Environmental Health Hazard Assessment (OEHHA) suggests a conservative estimate of 24 hours per day, 350 days per year, for a 70-year period. OEHHA also suggests that a residential inhalation rate of 302 liters per kilogram-day (l/kg-day) be used. Due to the unique aspects of the workplace at the golf course, as recommended by OEHHA, the inhalation rate of 149 l/kg-day was used. In addition, the recommended values of 8 hours per day, 5 days per week, and 49 weeks per year (a total of 245 days per year) were used with the modification that, over any given year, the worker is expected to be at each hole only 1/18 of the time (on an annual basis). Finally, the over worker exposure is assumed to be 40 years, as recommended by OEHHA. There is no guidance on risk exposures for golf course guests; therefore, as a conservative estimate, it was assumed that a golfer would play the course once per week, 52 weeks per year for a period of 20 years. At any hole, the time spent for tee-off was assumed to be 15 minutes.

For the estimation of carcinogenic risk and non-carcinogenic chronic and acute health effects, only BTEX are identified on the OEHHA air toxic list. Benzene has the potential for carcinogenic risk and chronic/acute health effects. Toluene and xylene have the potential for both chronic and acute non-carcinogenic health effects. Ethylbenzene is only identified for the potential of non-carcinogenic chronic health effects.

For more information on the methodology and assumptions used in the HRA Report, refer to Appendix B, where the report is attached in its entirety.

5.2 *HEALTH RISK ASSESSMENT RESULTS*

Overall, the results of the preliminary screening HRA indicate that the carcinogenic risks and non-carcinogenic chronic and acute health effects are below recognized safe health levels. Detailed reporting of the HRA results obtained can be found in Appendix B.

5.3 *HEALTH RISK ASSESSMENT CONCLUSIONS*

Based upon the results of the HRA, the maximum predicted individual excess carcinogenic risks at all modeled locations will be well below the OEHHA recommended significance level. Correspondingly, the non-carcinogenic chronic and acute hazard indices predicted in this analysis have also been shown to be orders of magnitude below the OEHHA recommended significance level. As such, the passive venting of the soil gas wells in the SADD Lease-North and South Pads are not predicted to cause any significant health risk to future residents, workers, or guests during the construction or operation of the proposed golf course.

6.0 CONCLUSIONS

Based on the results of the investigation, remediation activities, and health risk evaluation conducted to date, the following conclusions can be made:

- Hydrocarbon-impacted soil warranting remediation was identified and characterized at the site. A remedial approach was developed to address the impacts and reduce potential health and environmental risks. This approach comprised of shallow soil excavation and off site disposal, active and passive soil venting, and groundwater monitoring.
- Shallow soil excavation and off site disposal have been completed under LACFD oversight. The excavation activities covered minor stained soil at the AEO Pad and over 1,000 cubic yards of shallow soil at the SADD Lease-North and South Pads. Los Valles also installed a soil vapor barrier at the bottom of the excavation at the SADD Lease-North Pad, directly over the deeper residual impacted soils, to minimize potential upward vertical migration of soil vapors from the deeper impacts. Additionally, shallow pipelines were removed throughout the site.
- Active soil venting activities were performed at the SADD Lease-North Pad and removed over 14,600 pounds of hydrocarbons from the subsurface. Mass removal rates and system influent concentrations have decreased by approximately 90 percent or greater and appear to have reached asymptotic conditions.
- Site-wide groundwater monitoring indicates that minimal impact to groundwater has occurred. Low hydrocarbon concentrations were only sporadically detected over five separate site-wide monitoring events spanning approximately 18 months. Most of the eight monitoring wells contained no detectable hydrocarbon concentrations over the entire monitoring period.
- A HRA was conducted to evaluate whether passive venting of residual impacted soil would pose a health risk to future site users or occupants, considering the proposed golf course and residential redevelopment of the Site. It should be noted that no residential structures would be built over the impacted areas. All impacted areas will be incorporated as features of the golf course. The HRA concluded that the maximum predicted individual excess carcinogenic risks at all modeled locations would be well below the OEHHA recommended significance level. Correspondingly, the non-

carcinogenic chronic and acute hazard indices predicted in this analysis have also been shown to be orders of magnitude below the OEHHA recommended significance level. As such, the passive venting of the soil gas wells in the SADD Lease-North and South Pads are not predicted to cause any significant health risk to future residents, workers, or guests during the construction or operation of the proposed golf course.

In summary, impacted soil was identified and characterized. Remedial activities have been performed to remove and reduce contaminant mass. A HRA provided confirmation that residual impacted soil poses no significant risks to future site users. At this time, Los Valles requests that the LACFD approve the permanent shutdown of the active soil venting system and transitioning to the passive venting phase. Consistent with previous discussions with the LACFD, Los Valles will perform a final round of sampling at the site. This sampling event will consist of two components:

1. Soil sampling at four to six locations, at multiple depths, at the SADD Lease North Pad; and
2. Confirmation soil vapor sampling from all existing passive venting wells.

Los Valles will coordinate the field schedule with the LACFD over the next few weeks.

7.0 REFERENCES

ERM. 2004a. Evaluation of Subsurface Petroleum Hydrocarbon Impacts, Former Oil Production Pad Areas, Hasley Canyon Development Site.

ERM. 2004b. Summary Report, Los Valles Land & Golf, LLC.

ERM. 2004c. Remedial Action Plan, Former SADD Lease Site.

ERM. 2006. Health Risk Assessment Report.

Figures

Figures

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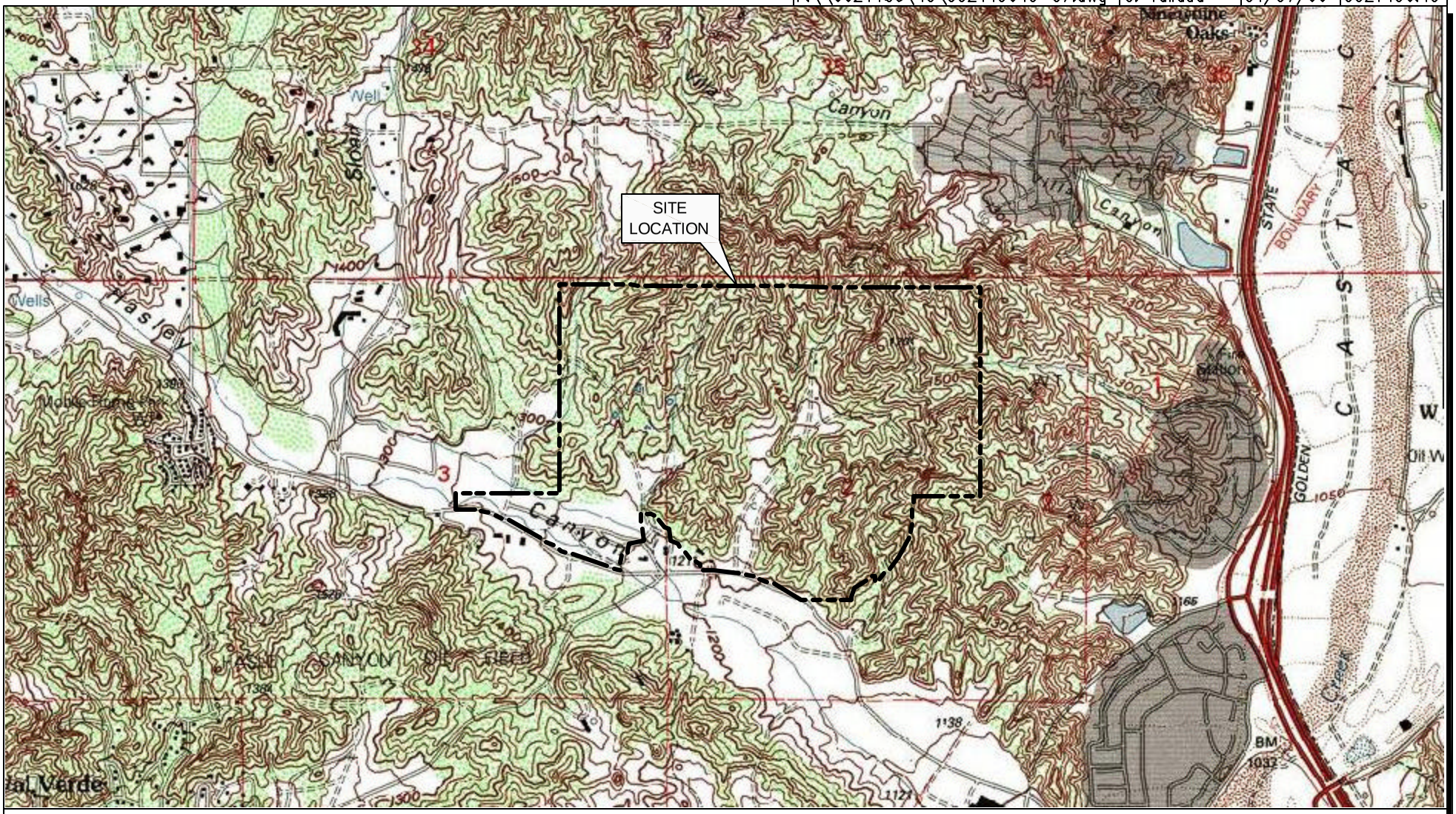

References:
Seamless U.S.G.S. 7.5 Minute Topographic Series
Map created with TOPO!® © 2001
National Geographic Holdings

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0 900' 1800' 3600'

SCALE IN FEET

Figure 1

Site Location Map

Los Valles Land & Golf, LLC

Los Angeles County, California

ERM *04/06*

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Drawn By: C. Tallada
Date: 04/07/06
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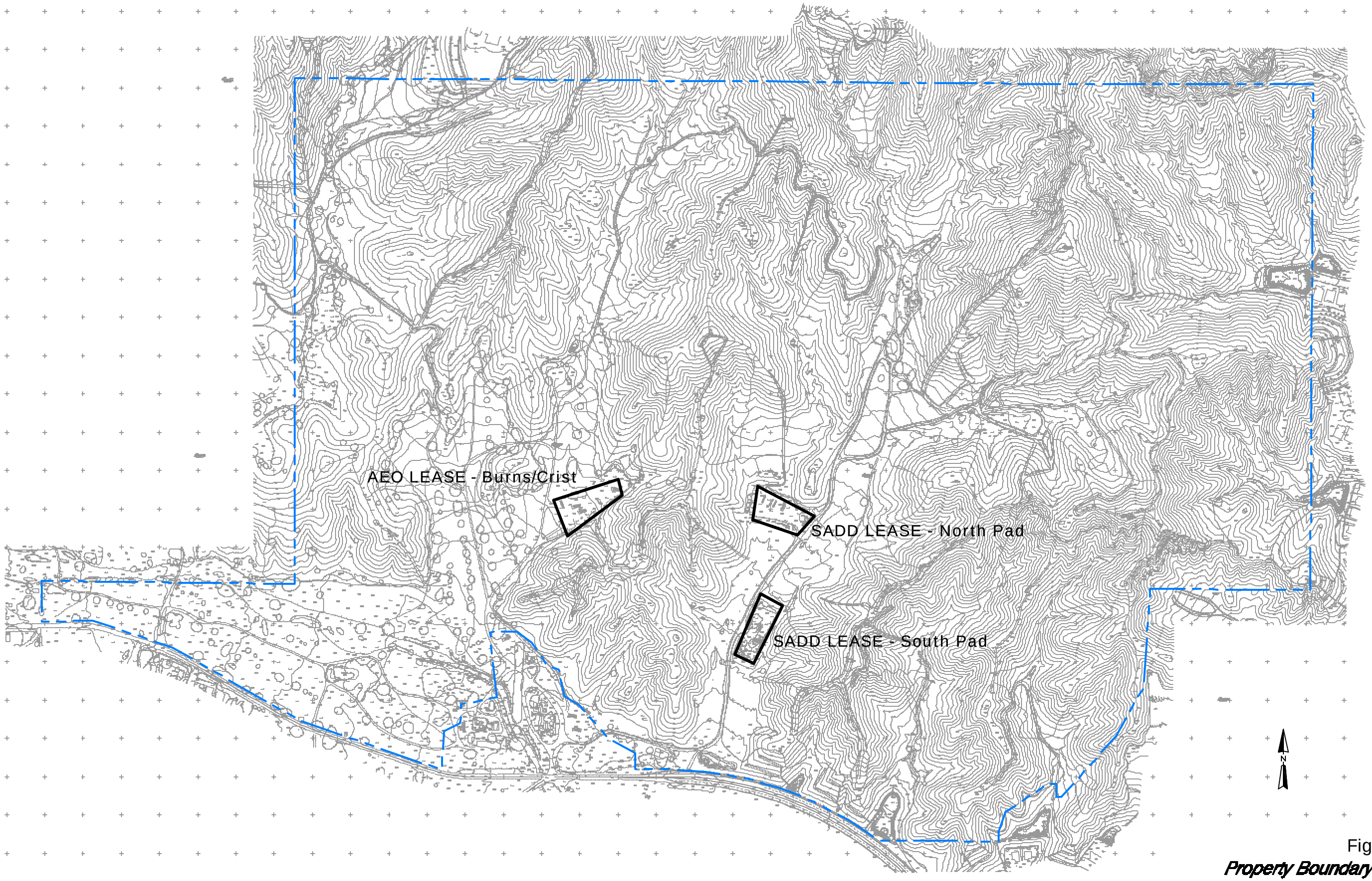

Figure 2

Property Boundary Map
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

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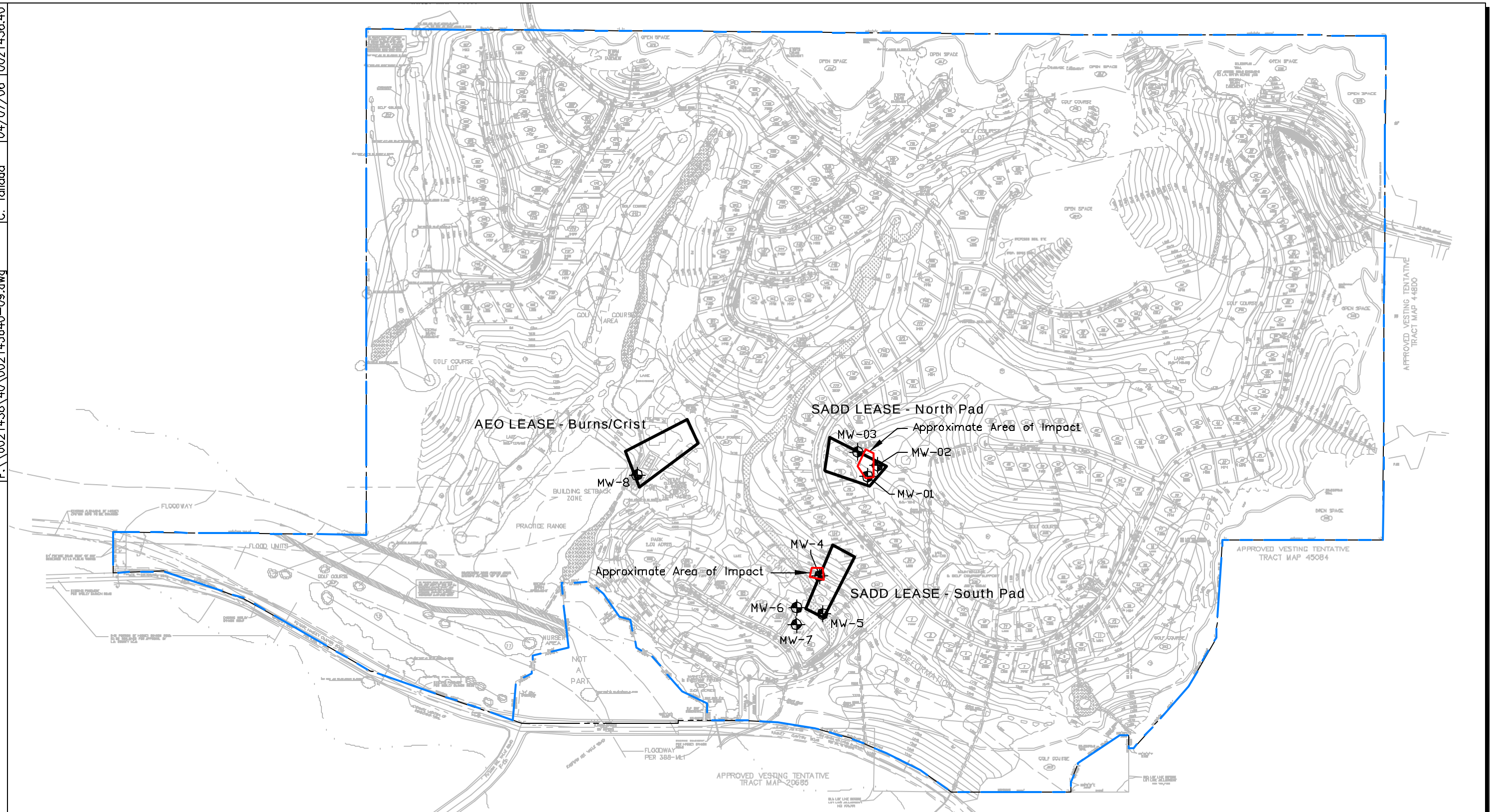

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0 250' 500' 1000'

SCALE IN FEET

Figure 3

Proposed Land Use

Los Valles Land & Golf, LLC

Los Angeles County, California

ERM *04/06*

Project No. 0021456.40
Date: 04/13/06
Drawn By: C. Tallada
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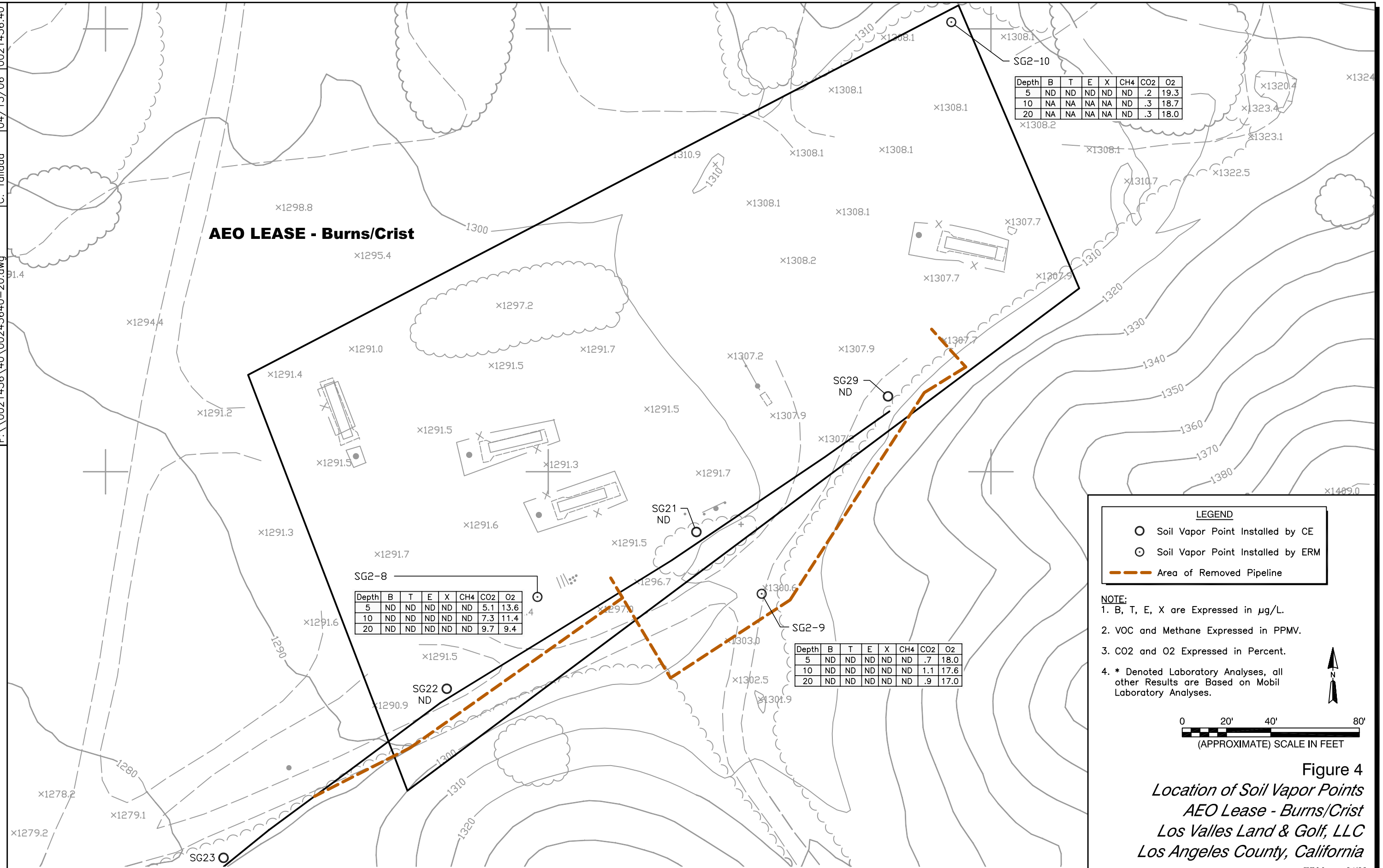

Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	.2	19.3
10	NA	NA	NA	NA	ND	.3	18.7
20	NA	NA	NA	NA	ND	.3	18.0

Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	5.1	13.6
10	ND	ND	ND	ND	ND	7.3	11.4
20	ND	ND	ND	ND	ND	9.7	9.4

Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	.7	18.0
10	ND	ND	ND	ND	ND	1.1	17.6
20	ND	ND	ND	ND	ND	.9	17.0

Figure 4
Location of Soil Vapor Points
AEO Lease - Burns/Crist
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

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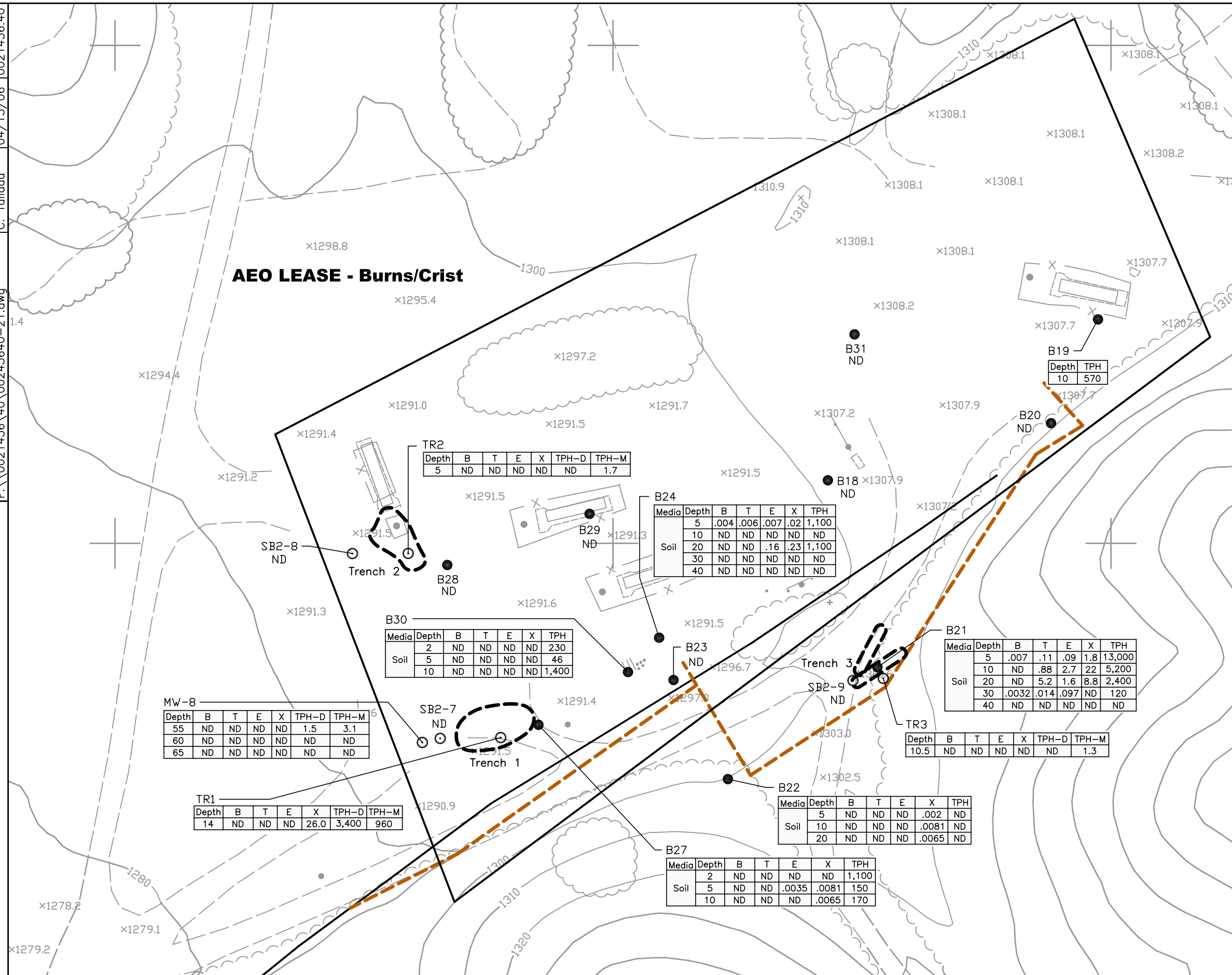

B19		
Depth	TPH	
10	570	

TR2						
Depth	B	T	E	X	TPH–D	TPH–M
5	ND	ND	ND	ND	ND	1.7

B24						
Media	Depth	B	T	E	X	TPH
Soil	5	.004	.006	.007	.02	1,100
	10	ND	ND	ND	ND	ND
	20	ND	ND	.16	.23	1,100
	30	ND	ND	ND	ND	ND
	40	ND	ND	ND	ND	ND

B30						
Media	Depth	B	T	E	X	TPH
Soil	2	ND	ND	ND	ND	230
	5	ND	ND	ND	ND	46
	10	ND	ND	ND	ND	1,400

MW-8						
Depth	B	T	E	X	TPH–D	TPH–M
55	ND	ND	ND	ND	1.5	3.1
60	ND	ND	ND	ND	ND	ND
65	ND	ND	ND	ND	ND	ND

TR1						
Depth	B	T	E	X	TPH–D	TPH–M
14	ND	ND	ND	26.0	3,400	960

B21						
Media	Depth	B	T	E	X	TPH
Soil	5	.007	.11	.09	1.8	13,000
	10	ND	.88	2.7	22	5,200
	20	ND	5.2	1.6	8.8	2,400
	30	.0032	.014	.097	ND	120
	40	ND	ND	ND	ND	ND

TR3						
Depth	B	T	E	X	TPH–D	TPH–M
10.5	ND	ND	ND	ND	ND	1.3

B22						
Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	.002	ND
	10	ND	ND	ND	.0081	ND
	20	ND	ND	ND	.0065	ND

B27						
Media	Depth	B	T	E	X	TPH
Soil	2	ND	ND	ND	ND	1,100
	5	ND	ND	.0035	.0081	150
	10	ND	ND	ND	.0065	170

LEGEND

- Location of Soil Boring Installed by CE
- Location of Soil Boring Installed by ERM
- Area of Removed Pipeline
- Trench Area
- B = Benzene
- T = Toluene
- E = Ethylbenzene
- X = Xylene
- ND = Not Detected
- TPH = Total Petroleum Hydrocarbons
- TPH–D = TPH in Diesel Range
- TPH–M = TPH in Motor Oil Range

NOTE:
Soil Results in mg/kg

N

0 20' 40' 80'
(APPROXIMATE) SCALE IN FEET

Figure 5
Location of Soil Borings
AEO Lease - Burns/Crist
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

Project No. 0021456.40
Date: 04/13/06
Drawn By: C. Tallada
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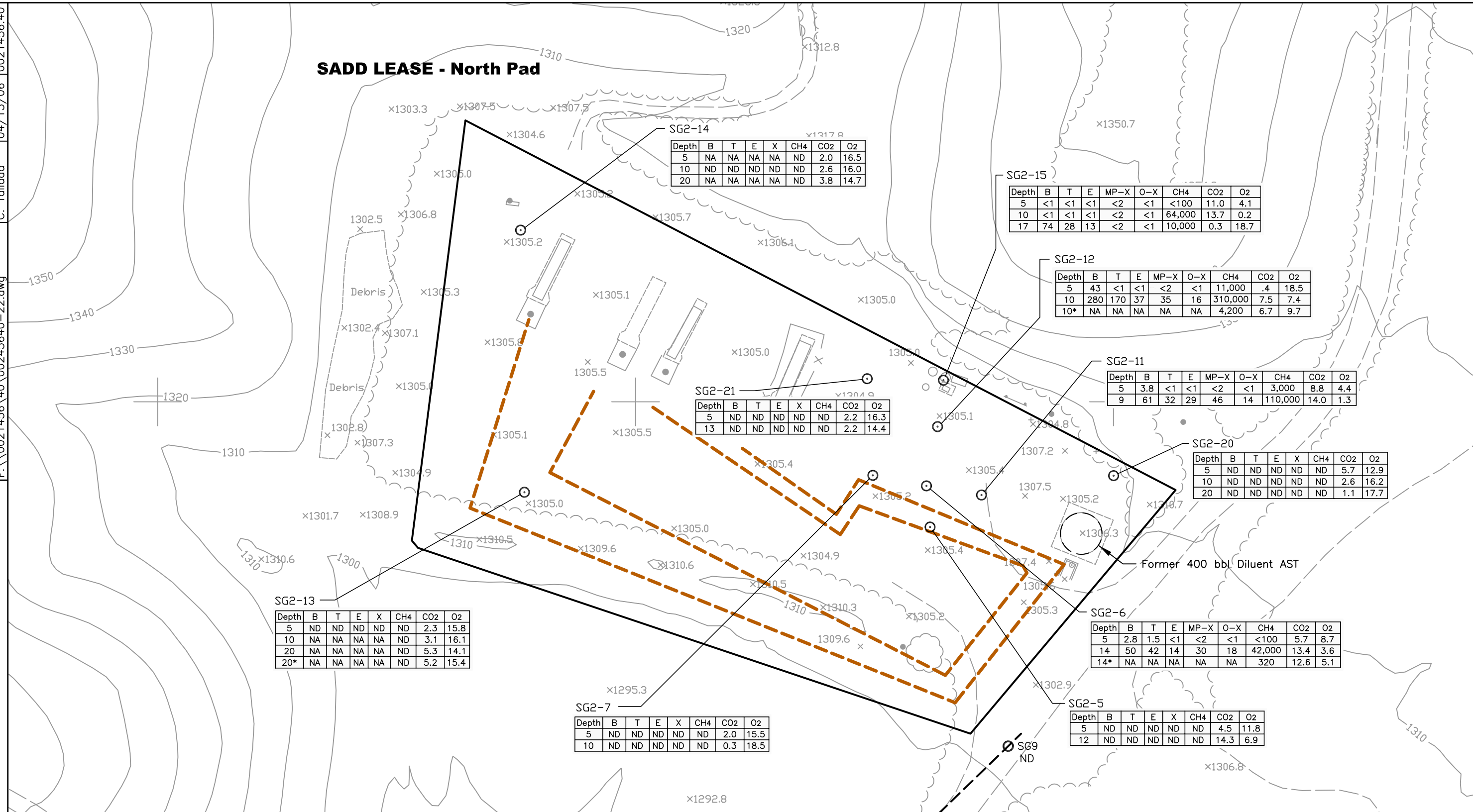

SG2-14							
Depth	B	T	E	X	CH4	CO2	O2
5	NA	NA	NA	NA	ND	2.0	16.5
10	ND	ND	ND	ND	ND	2.6	16.0
20	NA	NA	NA	NA	ND	3.8	14.7

SG2-15								
Depth	B	T	E	MP-X	O-X	CH4	CO2	O2
5	<1	<1	<1	<2	<1	<100	11.0	4.1
10	<1	<1	<1	<2	<1	64,000	13.7	0.2
17	74	28	13	<2	<1	10,000	0.3	18.7

SG2-12								
Depth	B	T	E	MP-X	O-X	CH4	CO2	O2
5	43	<1	<1	<2	<1	11,000	.4	18.5
10	280	170	37	35	16	310,000	7.5	7.4
10*	NA	NA	NA	NA	NA	4,200	6.7	9.7

SG2-11								
Depth	B	T	E	MP-X	O-X	CH4	CO2	O2
5	3.8	<1	<1	<2	<1	3,000	8.8	4.4
9	61	32	29	46	14	110,000	14.0	1.3

SG2-21							
Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	2.2	16.3
13	ND	ND	ND	ND	ND	2.2	14.4

SG2-20							
Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	5.7	12.9
10	ND	ND	ND	ND	ND	2.6	16.2
20	ND	ND	ND	ND	ND	1.1	17.7

SG2-13							
Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	2.3	15.8
10	NA	NA	NA	NA	ND	3.1	16.1
20	NA	NA	NA	NA	ND	5.3	14.1
20*	NA	NA	NA	NA	ND	5.2	15.4

SG2-6								
Depth	B	T	E	MP-X	O-X	CH4	CO2	O2
5	2.8	1.5	<1	<2	<1	<100	5.7	8.7
14	50	42	14	30	18	42,000	13.4	3.6
14*	NA	NA	NA	NA	NA	320	12.6	5.1

SG2-7							
Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	2.0	15.5
10	ND	ND	ND	ND	ND	0.3	18.5

SG2-5							
Depth	B	T	E	X	CH4	CO2	O2
5	ND	ND	ND	ND	ND	4.5	11.8
12	ND	ND	ND	ND	ND	14.3	6.9

LEGEND

- Soil Vapor Point Installed by CE
- Soil Vapor Point Installed by ERM
- Area of Removed Pipeline

Consentrations Expressed in Methane PPMV

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
NA = Not Analyzed
ND = Not Detected

NOTE:
1. B, T, E, X are Expressed in µg/L.
2. VOC and Methane Expressed in PPMV.
3. CO2 and O2 Expressed in Percent.
4. * Denoted Laboratory Analyses, all other Results are Based on Mobil Laboratory Analyses.

Figure 6
Location of Soil Vapor Points
SADD Lease - North Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

CAD File:	Drawn By:	Date:	Project No.
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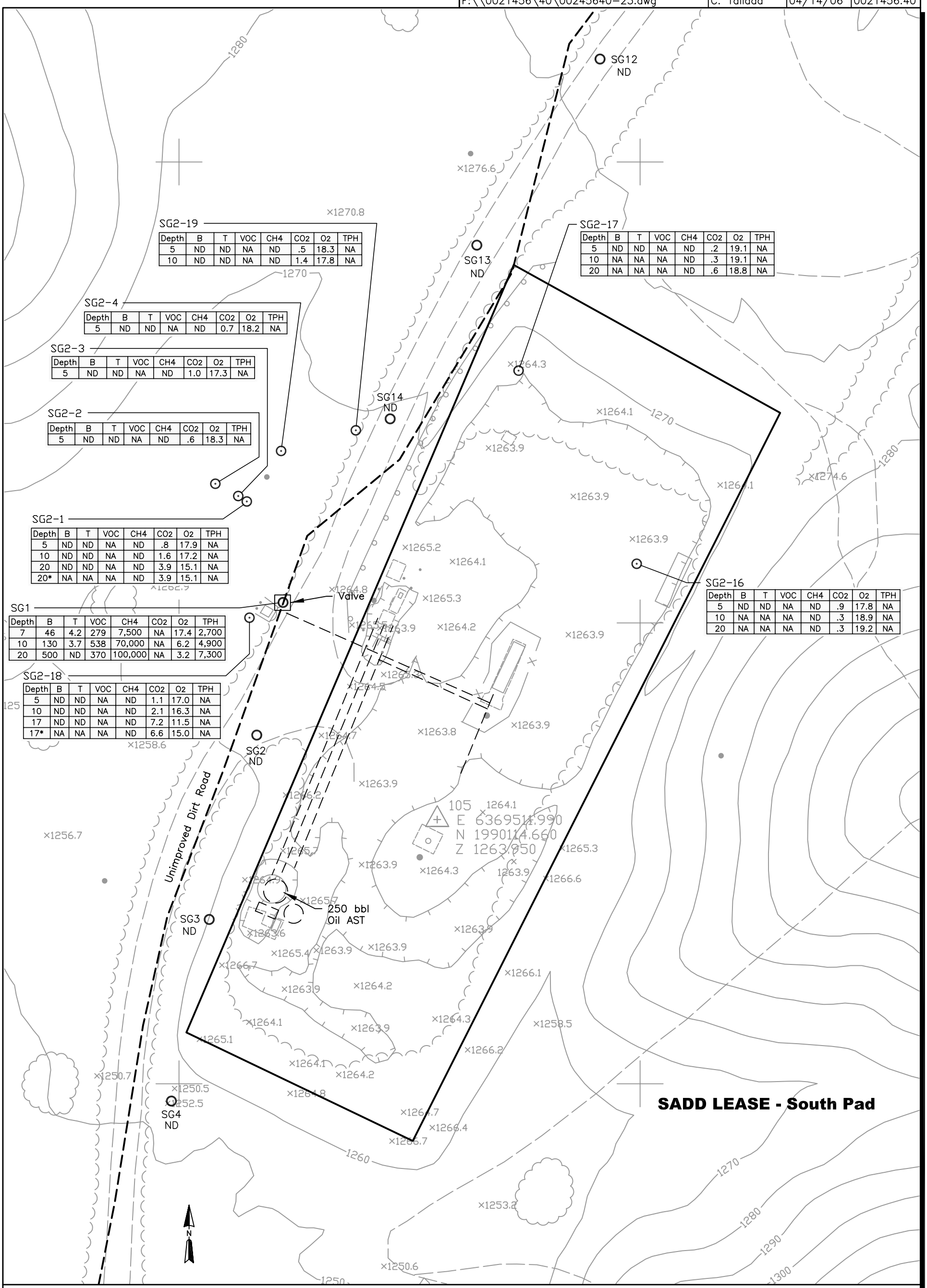


SG2-19

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	.5	18.3	NA
10	ND	ND	NA	ND	1.4	17.8	NA

SG2-17

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	.2	19.1	NA
10	NA	NA	NA	ND	.3	19.1	NA
20	NA	NA	NA	ND	.6	18.8	NA

SG2-4

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	0.7	18.2	NA

SG2-3

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	1.0	17.3	NA

SG2-2

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	.6	18.3	NA

SG2-1

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	.8	17.9	NA
10	ND	ND	NA	ND	1.6	17.2	NA
20	ND	ND	NA	ND	3.9	15.1	NA
20*	NA	NA	NA	ND	3.9	15.1	NA

SG1

Depth	B	T	VOC	CH4	CO2	O2	TPH
7	46	4.2	279	7,500	NA	17.4	2,700
10	130	3.7	538	70,000	NA	6.2	4,900
20	500	ND	370	100,000	NA	3.2	7,300

SG2-18

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	1.1	17.0	NA
10	ND	ND	NA	ND	2.1	16.3	NA
17	ND	ND	NA	ND	7.2	11.5	NA
17*	NA	NA	NA	ND	6.6	15.0	NA

SG2-16

Depth	B	T	VOC	CH4	CO2	O2	TPH
5	ND	ND	NA	ND	.9	17.8	NA
10	NA	NA	NA	ND	.3	18.9	NA
20	NA	NA	NA	ND	.3	19.2	NA

LEGEND

- Soil Vapor Point Installed by CE
- Soil Vapor Point Installed by ERM
- Area of Removed Pipeline

CH4 = Methane
VOC = Volatile Organic Compound
B = Benzene
T = Toluene
ND = Not Detected
NA = Mot Analyzed
CO2 = Carbon Dioxide
O2 = Oxygen

NOTE:
1. B, T, E, X are Expressed in µg/L.
2. VOC and Methane Expressed in PPMV.
3. CO2 and O2 Expressed in Percent.
4. * Denoted Laboratory Analyses, all other Results are Based on Mobil Laboratory Analyses.

Figure 7
Location of Soil Vapor Points
SADD Lease - South Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

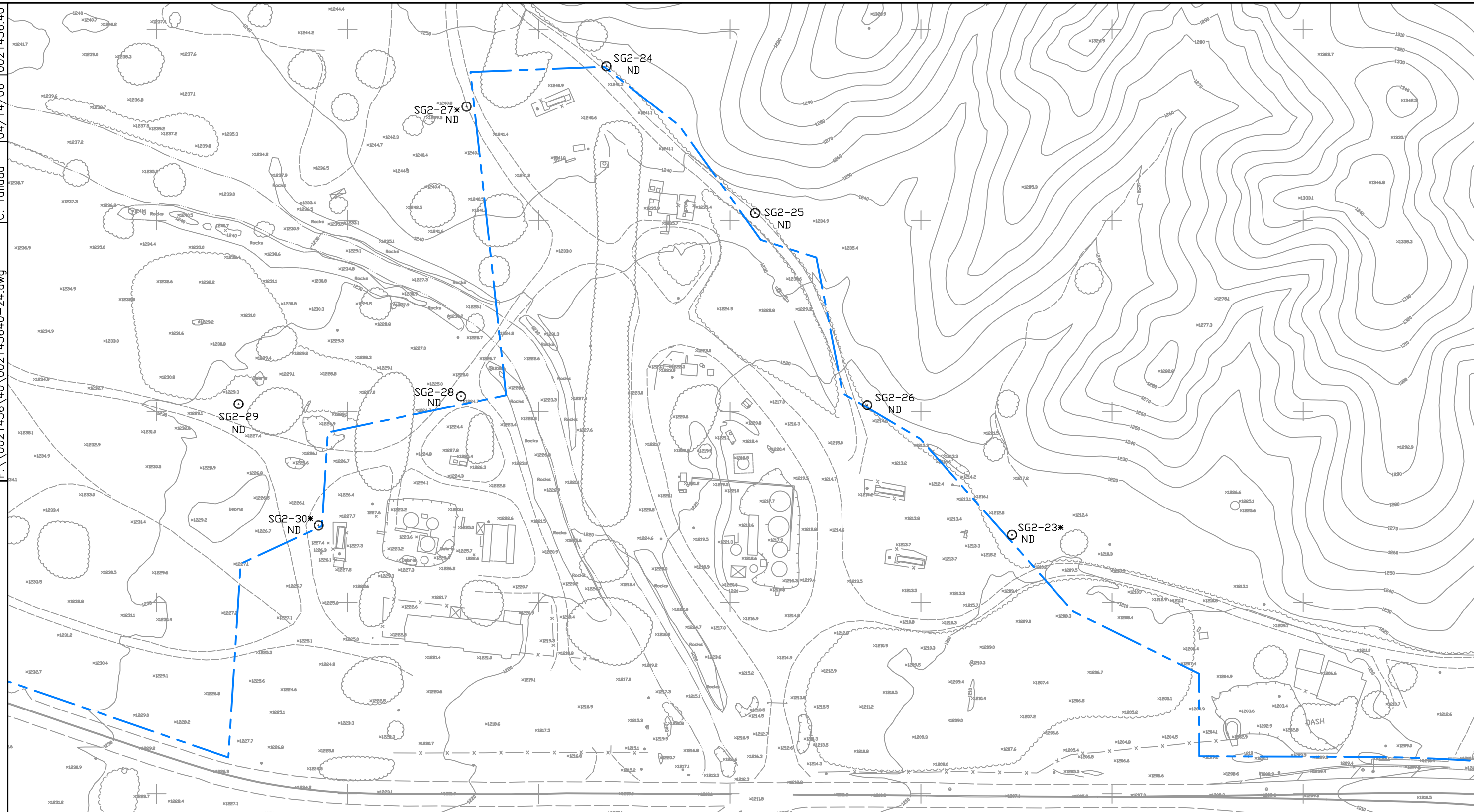
ERM 04/06

Project No. 0021456.40

Date: 04/14/06

Drawn By: C. Tallada

CAD File: F:\0021456\40\0021456 40-24.dwg



LEGEND

- Soil Vapor Point Installed by ERM
- Property Boundary

NOTE:

1. B, T, E, X are Expressed in µg/L.
2. VOC and Methane Expressed in PPMV.
3. CO2 and O2 Expressed in Percent.
4. * Denoted Laboratory Analyses and Mobil Laboratory Analyses.

N

0 50' 100' 200'

(APPROXIMATE) SCALE IN FEET

Figure 8

Location of Soil Vapor Points

Off-Site Property Boundary Near Active Oil Producing Area

Los Valles Land & Golf, LLC

Los Angeles County, California

ERM 04/06

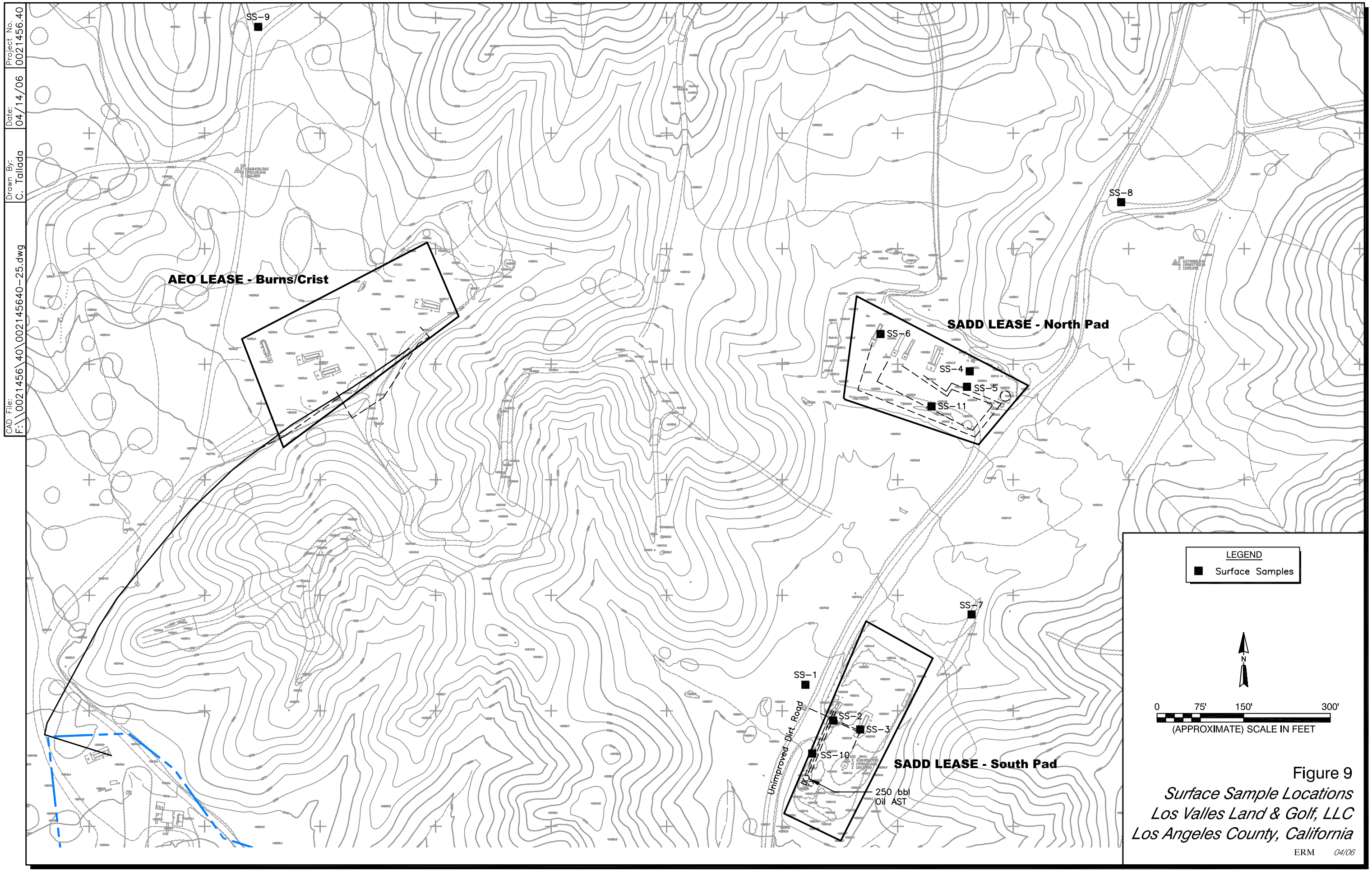


Figure 9
Surface Sample Locations
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

Project No. 0021456.40
Date: 04/14/06
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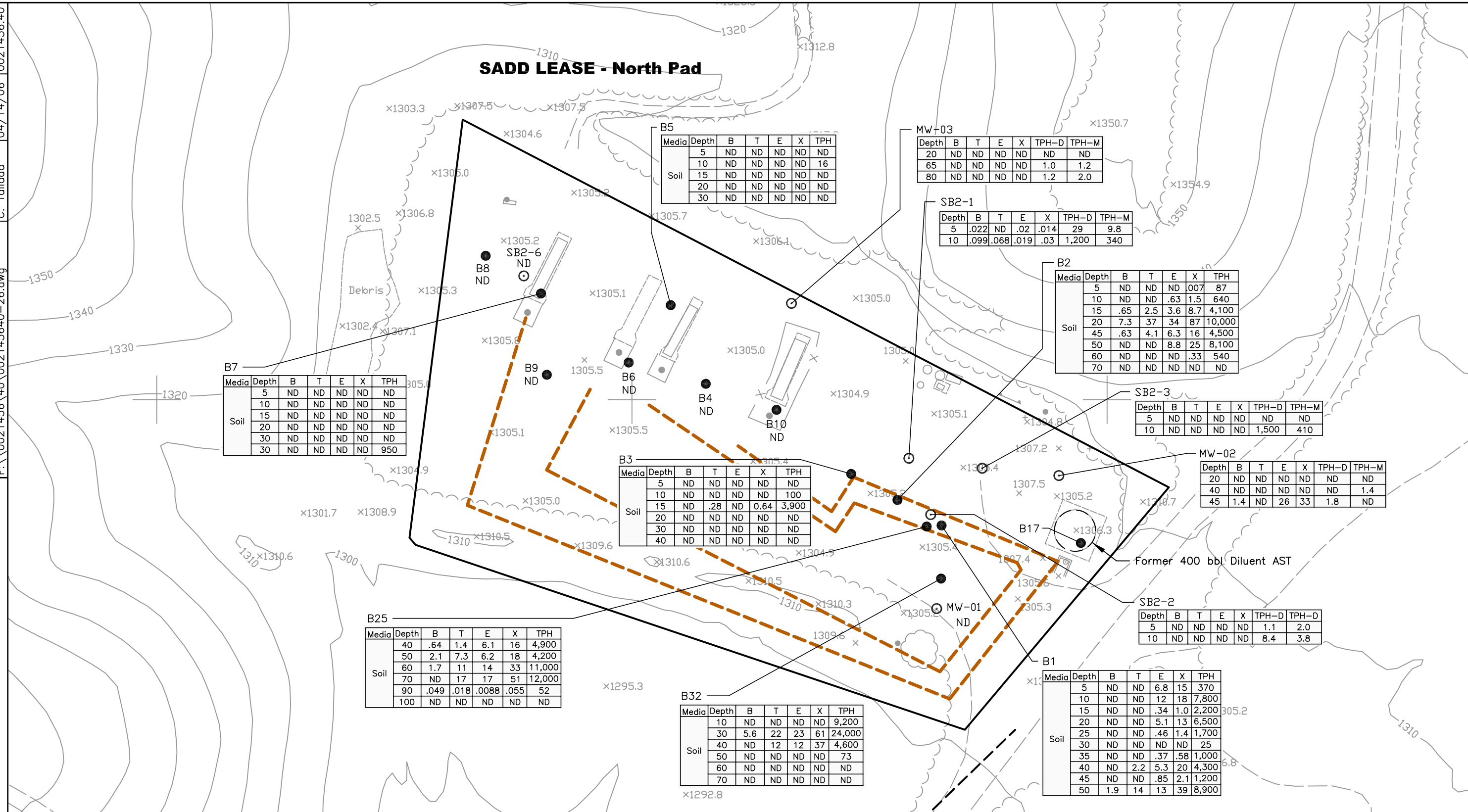

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	16
	15	ND	ND	ND	ND	ND
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND

Depth	B	T	E	X	TPH-D	TPH-M
20	ND	ND	ND	ND	ND	ND
65	ND	ND	ND	ND	1.0	1.2
80	ND	ND	ND	ND	1.2	2.0

Depth	B	T	E	X	TPH-D	TPH-M
5	.022	ND	.02	.014	29	9.8
10	.099	.068	.019	.03	1,200	340

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	.007	87
	10	ND	ND	.63	1.5	640
	15	.65	2.5	3.6	8.7	4,100
	20	7.3	37	34	87	10,000
	45	.63	4.1	6.3	16	4,500
	50	ND	ND	8.8	25	8,100
	60	ND	ND	ND	.33	540
	70	ND	ND	ND	ND	ND

Depth	B	T	E	X	TPH-D	TPH-M
5	ND	ND	ND	ND	ND	ND
10	ND	ND	ND	ND	1,500	410

Depth	B	T	E	X	TPH-D	TPH-M
20	ND	ND	ND	ND	ND	ND
40	ND	ND	ND	ND	ND	1.4
45	1.4	ND	26	33	1.8	ND

Depth	B	T	E	X	TPH-D	TPH-D
5	ND	ND	ND	ND	1.1	2.0
10	ND	ND	ND	ND	8.4	3.8

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	ND
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	950

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	100
	15	ND	.28	ND	0.64	3,900
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	40	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH
Soil	40	.64	1.4	6.1	16	4,900
	50	2.1	7.3	6.2	18	4,200
	60	1.7	11	14	33	11,000
	70	ND	17	17	51	12,000
	90	.049	.018	.0088	.055	52
	100	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH
Soil	10	ND	ND	ND	ND	9,200
	30	5.6	22	23	61	24,000
	40	ND	12	12	37	4,600
	50	ND	ND	ND	ND	73
	60	ND	ND	ND	ND	ND
	70	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	6.8	15	370
	10	ND	ND	12	18	7,800
	15	ND	ND	.34	1.0	2,200
	20	ND	ND	5.1	13	6,500
	25	ND	ND	.46	1.4	1,700
	30	ND	ND	ND	ND	25
	35	ND	ND	.37	.58	1,000
	40	ND	2.2	5.3	20	4,300
	45	ND	ND	.85	2.1	1,200
	50	1.9	14	13	39	8,900

LEGEND

- Location of Soil Boring Installed by CE
- Location of Soil Boring Installed by ERM
- Area of Removed Pipeline

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
ND = Not Detected
TPH = Total Petroleum Hydrocarbons
TPH-D = TPH in Diesel Range
TPH-M = TPH in Motor Oil Range

NOTE:
Soil Results in mg/kg, Water Results in µg/L

N

0 20' 40' 80'
(APPROXIMATE) SCALE IN FEET

Figure 10
Location of Soil Borings
SADD Lease - North Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

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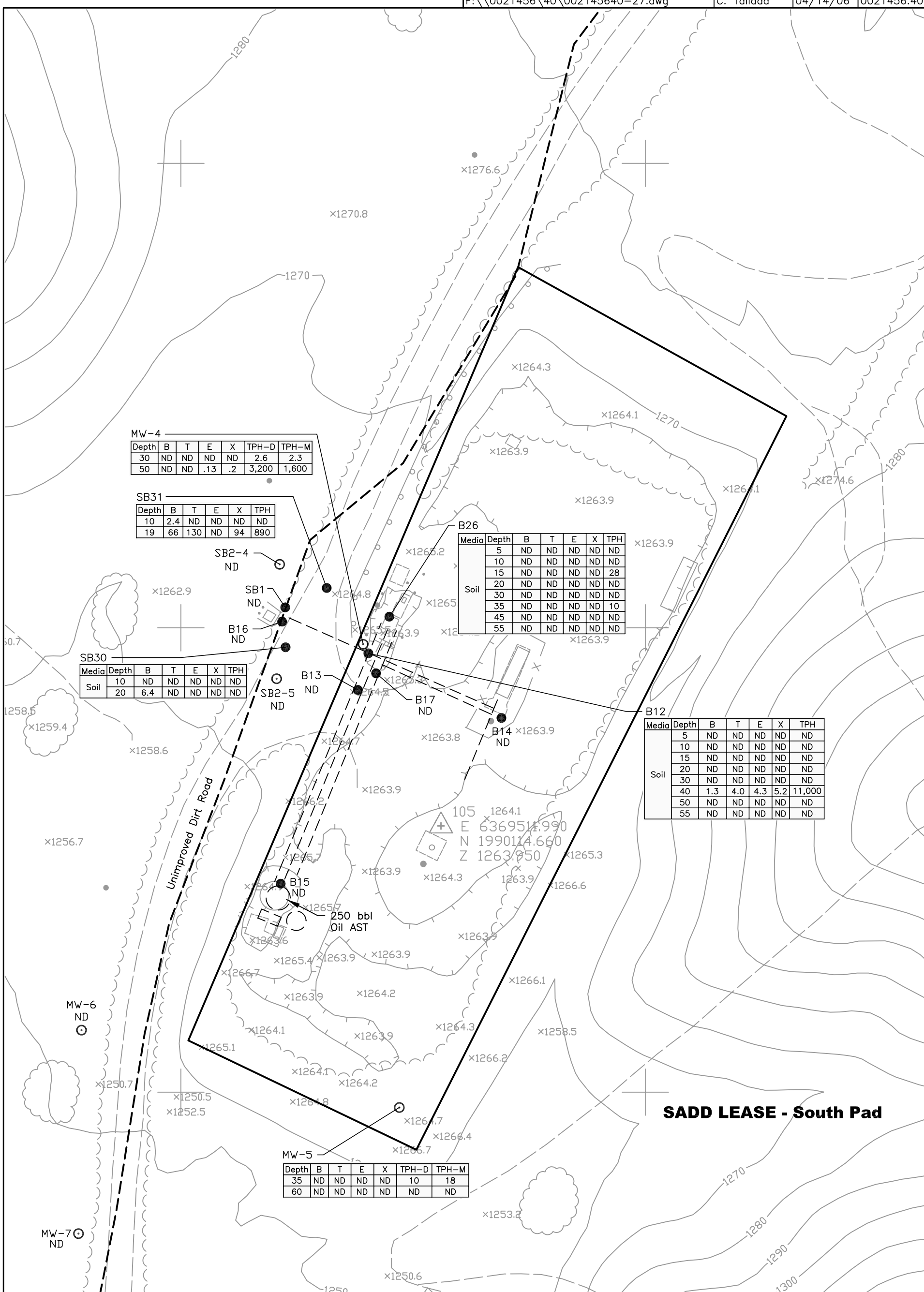

Depth	B	T	E	X	TPH-D	TPH-M
30	ND	ND	ND	ND	2.6	2.3
50	ND	ND	.13	.2	3,200	1,600

Depth	B	T	E	X	TPH
10	2.4	ND	ND	ND	ND
19	66	130	ND	94	890

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	28
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	35	ND	ND	ND	ND	10
	45	ND	ND	ND	ND	ND
	55	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH
Soil	10	ND	ND	ND	ND	ND
	20	6.4	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	ND
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	40	1.3	4.0	4.3	5.2	11,000
	50	ND	ND	ND	ND	ND
	55	ND	ND	ND	ND	ND

Depth	B	T	E	X	TPH-D	TPH-M
35	ND	ND	ND	ND	10	18
60	ND	ND	ND	ND	ND	ND

NOTE: Soil Results in mg/kg

LEGEND

- Location of Soil Boring Installed by CE
- Location of Soil Boring Installed by ERM
- Area of Removed Pipeline

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
ND = Not Detected
TPH = Total Petroleum Hydrocarbons
TPH-D = TPH in Diesel Range
TPH-M = TPH in Motor Oil Range

N

0 20' 40' 80'
(APPROXIMATE) SCALE IN FEET

Figure 11
Location of Soil Borings
SADD Lease - South Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

Project No. 0021456.40
Date: 04/14/06
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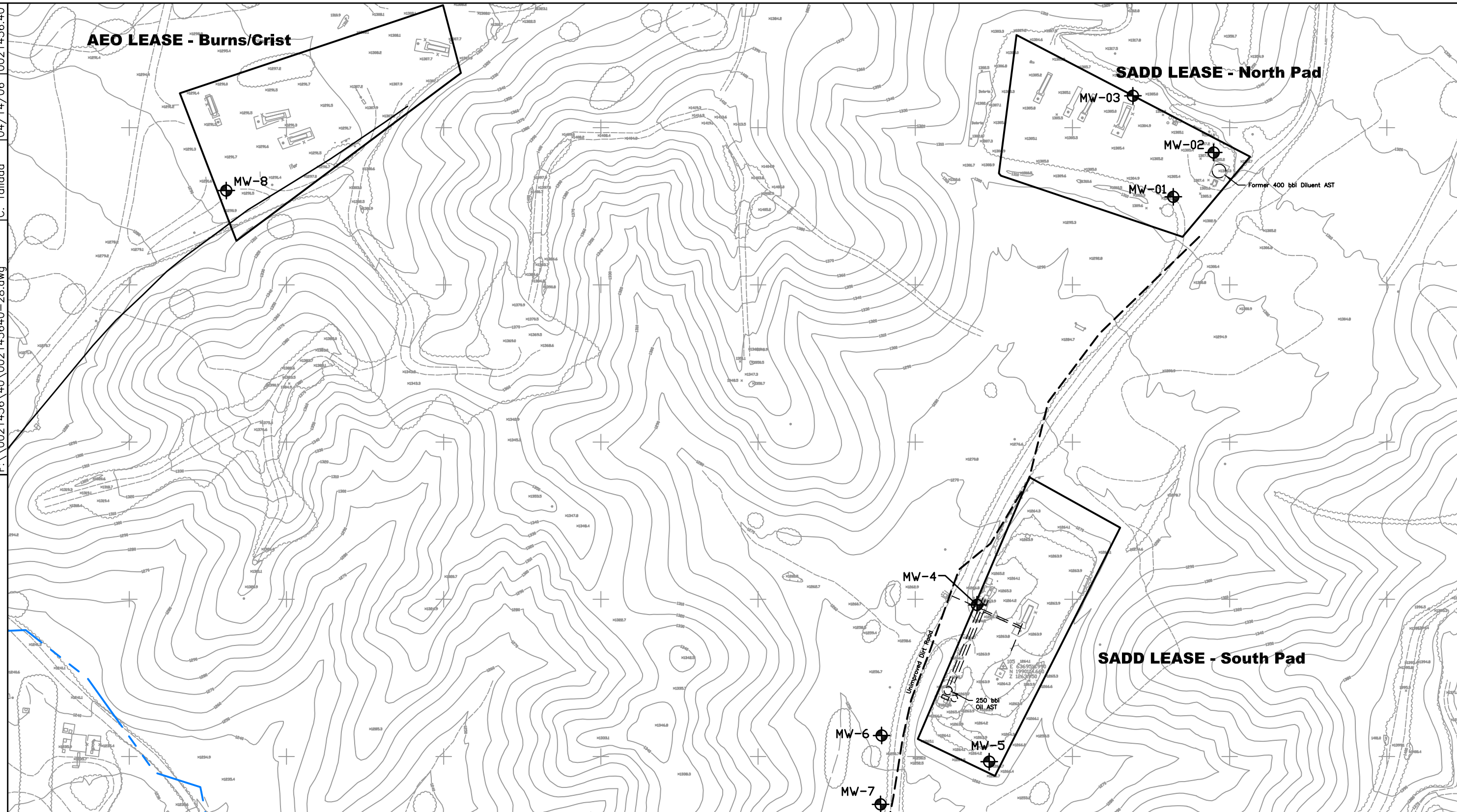

NOTE:
1. Water Results in µg/L, Except for TPH which is in mg/L.
2. Low Levels of Benzene and Toluene Isomers were also Present in MW-4.

LEGEND
Location of Monitoring Wells

N

0 60' 120' 240'
(APPROXIMATE) SCALE IN FEET

Figure 12
Location of Monitoring Wells
SADD Lease - North and South Pads
Los Valles Land & Golf, LLC
Los Angeles County, California
ERM 04/06

Project No. 0021456.40
Date: 04/14/06
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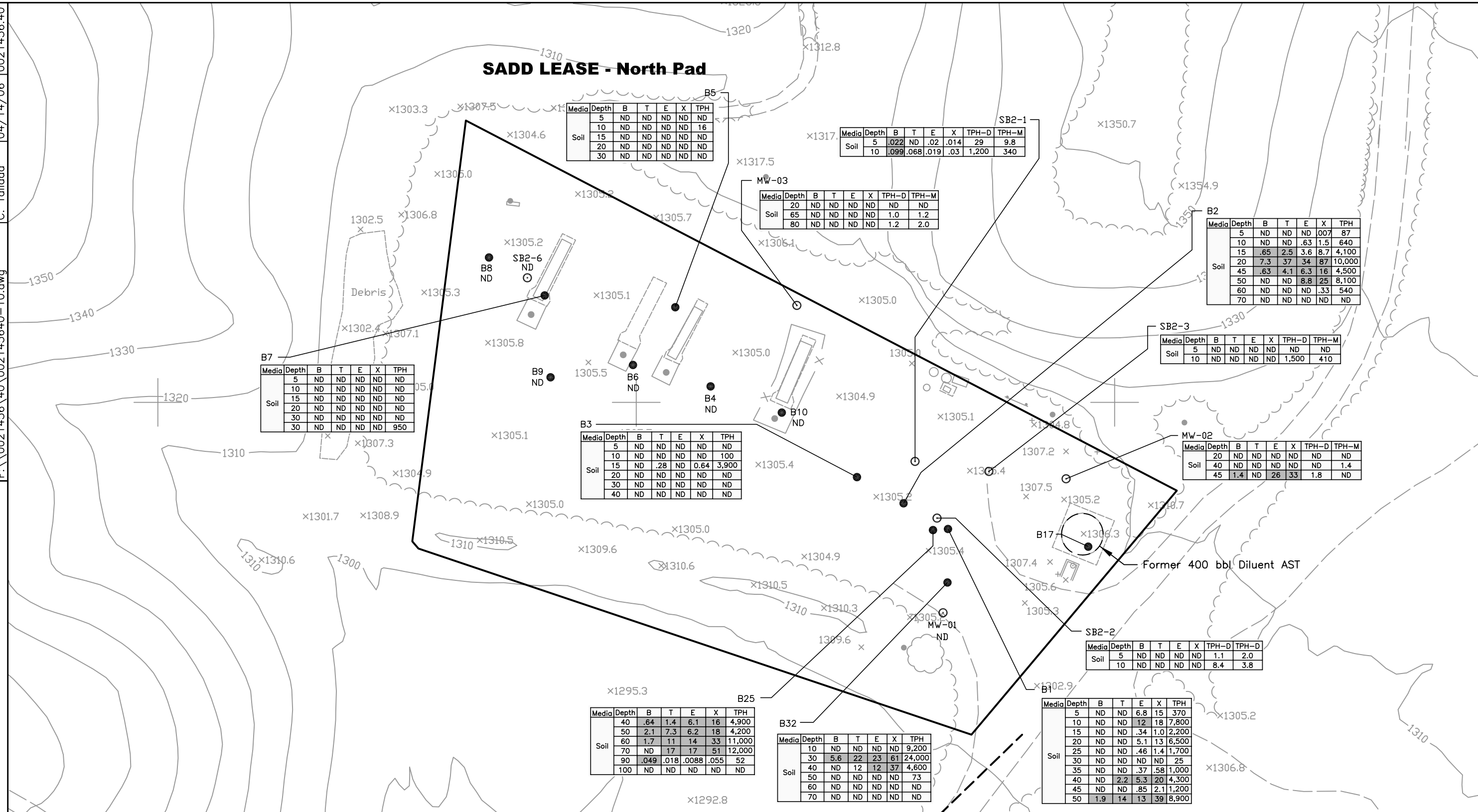
SADD LEASE - North Pad



Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	16
	15	ND	ND	ND	ND	ND
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH-D	TPH-M
Soil	5	.022	ND	.02	.014	29	9.8
	10	.099	.068	.019	.03	1,200	340

Media	Depth	B	T	E	X	TPH-D	TPH-M
Soil	20	ND	ND	ND	ND	ND	ND
	65	ND	ND	ND	ND	1.0	1.2
	80	ND	ND	ND	ND	1.2	2.0

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	.007	87
	10	ND	ND	.63	1.5	640
	15	.65	2.5	3.6	8.7	4,100
	20	7.3	37	34	87	10,000
	45	.63	4.1	6.3	16	4,500
	50	ND	ND	8.8	25	8,100
	60	ND	ND	ND	.33	540
	70	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH-D	TPH-M
Soil	5	ND	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	1,500	410

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	ND
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	950

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	100
	15	ND	.28	ND	0.64	3,900
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	40	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH-D	TPH-M
Soil	20	ND	ND	ND	ND	ND	ND
	40	ND	ND	ND	ND	ND	1.4
	45	1.4	ND	26	33	1.8	ND

Media	Depth	B	T	E	X	TPH-D	TPH-D
Soil	5	ND	ND	ND	ND	1.1	2.0
	10	ND	ND	ND	ND	8.4	3.8

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	6.8	15	370
	10	ND	ND	12	18	7,800
	15	ND	ND	.34	1.0	2,200
	20	ND	ND	5.1	13	6,500
	25	ND	ND	.46	1.4	1,700
	30	ND	ND	ND	ND	25
	35	ND	ND	.37	.58	1,000
	40	ND	2.2	5.3	20	4,300
	45	ND	ND	.85	2.1	1,200
	50	1.9	14	13	39	8,900

Media	Depth	B	T	E	X	TPH
Soil	10	ND	ND	ND	ND	9,200
	30	5.6	22	23	61	24,000
	40	ND	12	12	37	4,600
	50	ND	ND	ND	ND	73
	60	ND	ND	ND	ND	ND
	70	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH
Soil	40	.64	1.4	6.1	16	4,900
	50	2.1	7.3	6.2	18	4,200
	60	1.7	11	14	33	11,000
	70	ND	17	17	51	12,000
	90	.049	.018	.0088	.055	52
	100	ND	ND	ND	ND	ND

LEGEND

- ● Location of Soil Boring Installed by CE
- ⊙ Location of Soil Boring Installed by ERM

Concentrations Expressed in Methane PPMV

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene

ND = Not Detected
NA = Not Analyzed
TPH = Total Petroleum Hydrocarbons
TPH-D = TPH in Diesel Range
TPH-M = TPH in Motor Oil Range

NOTE:
1. B, T, E, X Soil Gas Results are Expressed in µg/L.
2. Methane Expressed in PPMV.
3. CO2 and O2 Expressed in Percent.
4. * Denoted Laboratory Analyses, all other Results are Based on Mobil Laboratory Analyses.
5. Soil Results in mg/kg.
6. Shaded Values Exceed Preliminary Clean-Up Goal.

N

0 20' 40' 80'
(APPROXIMATE) SCALE IN FEET

Figure 13
Previous Investigations
SADD Lease - North Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

CAD File:	Drawn By:	Date:	Project No.
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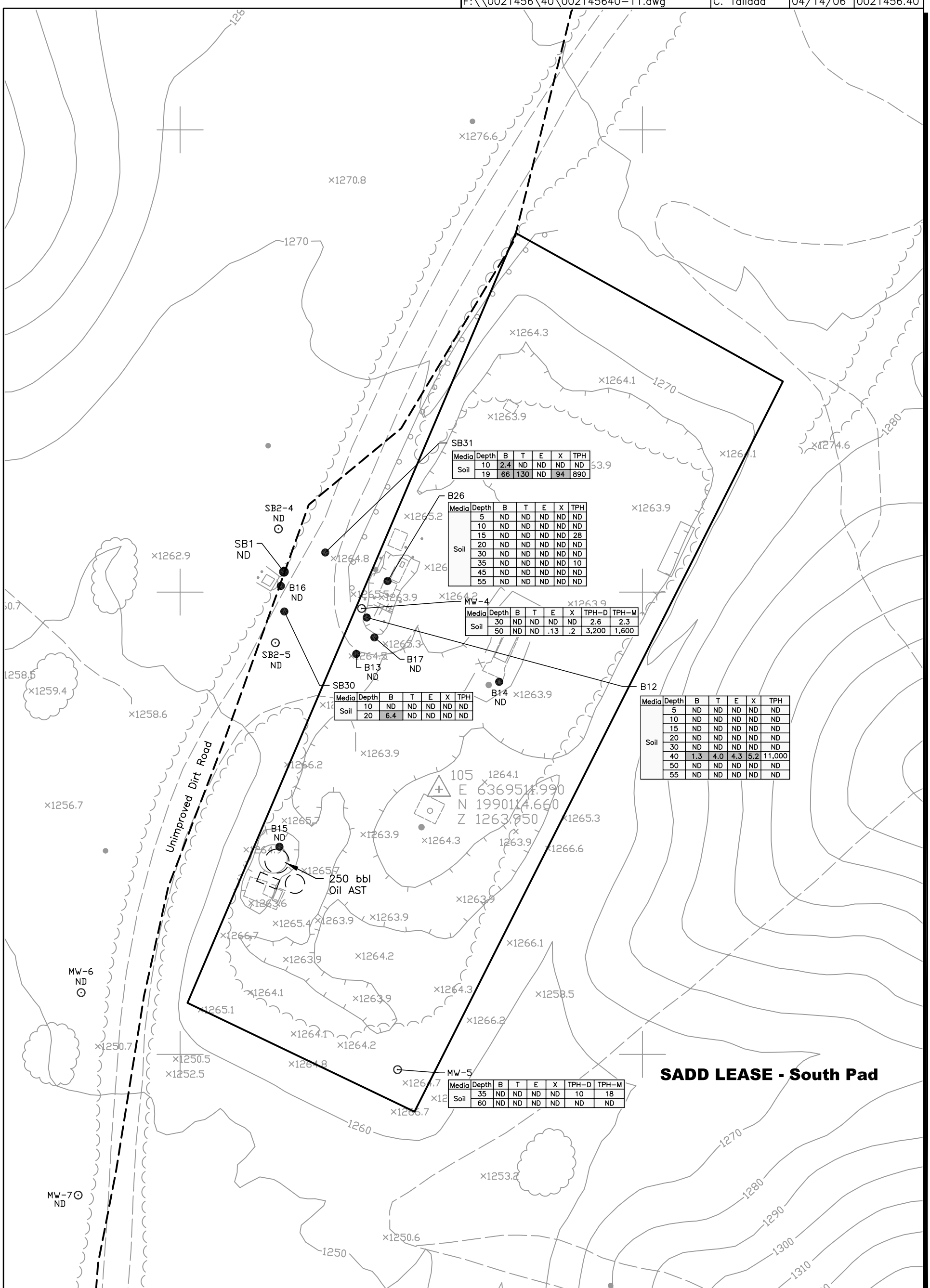


Media	Depth	B	T	E	X	TPH
Soil	10	2.4	ND	ND	ND	ND
	19	66	130	ND	94	890

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	28
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	35	ND	ND	ND	ND	10
	45	ND	ND	ND	ND	ND
	55	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH-D	TPH-M
Soil	30	ND	ND	ND	ND	2.6	2.3
	50	ND	ND	.13	.2	3,200	1,600

Media	Depth	B	T	E	X	TPH
Soil	10	ND	ND	ND	ND	ND
	20	6.4	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH
Soil	5	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND
	15	ND	ND	ND	ND	ND
	20	ND	ND	ND	ND	ND
	30	ND	ND	ND	ND	ND
	40	1.3	4.0	4.3	5.2	11,000
	50	ND	ND	ND	ND	ND
	55	ND	ND	ND	ND	ND

Media	Depth	B	T	E	X	TPH-D	TPH-M
Soil	35	ND	ND	ND	ND	10	18
	60	ND	ND	ND	ND	ND	ND

LEGEND

- ● Location of Soil Boring Installed by CE
- ⊙ Location of Soil Boring Installed by ERM

N

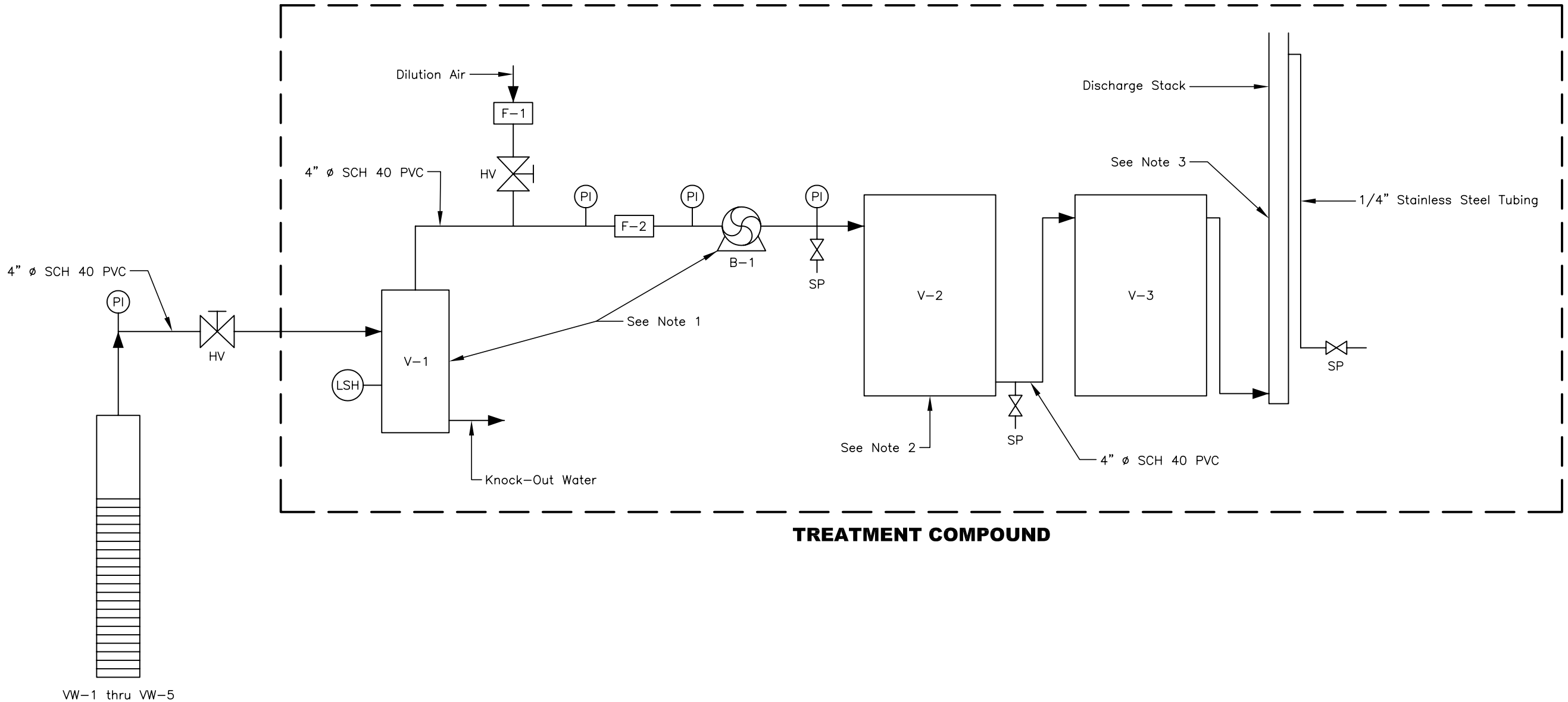
0 20' 40' 80'
(APPROXIMATE) SCALE IN FEET

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylene
ND = Not Detected
TPH = Total Petroleum Hydrocarbons
TPH-D = TPH in Diesel Range
TPH-M = TPH in Motor Oil Range
CH4 = Methane
VOC = Volatile Organic Compound
NA = Mot Analyzed
CO2 = Carbon Dioxide
O2 = Oxygen

NOTE:
1. B, T, E, X Soil Gas Results are Expressed in µg/L.
2. Methane Expressed in PPMV.
3. CO2 and O2 Expressed in Percent.
4. * Denoted Laboratory Analyses, all other Results are Based on Mobil Laboratory Analyses.
5. Soil Results in mg/kg.
6. Shaded Values Exceed Preliminary Clean-Up Goal.

Figure 14
Previous Investigations
SADD Lease - South Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06



TREATMENT COMPOUND

LEGEND

- HV — Hand Valve
- SP — Sample Port
- F-X — Filter
- V-X — Vessel
- B-X — Blower
- PI — Pressure Indicator
- LSH — High Level Switch

EQUIPMENT LIST

B-1	Regenerative Blower to Operate at 60 scfm at 12" of Mercury
F-1	Dilution Air Cartridge Filter (20 micron)
F-2	Inline Cartridge Air Filter (10 micron)
V-1	40 Gallon Air/Water Separator Rated for 50 cfm
V-2/3	500-lb Granular Activated Carbon Vessel with 4" Top and Side Connection Ports
VW-1/2/3/4/5	Soil Venting Wells

NOTES

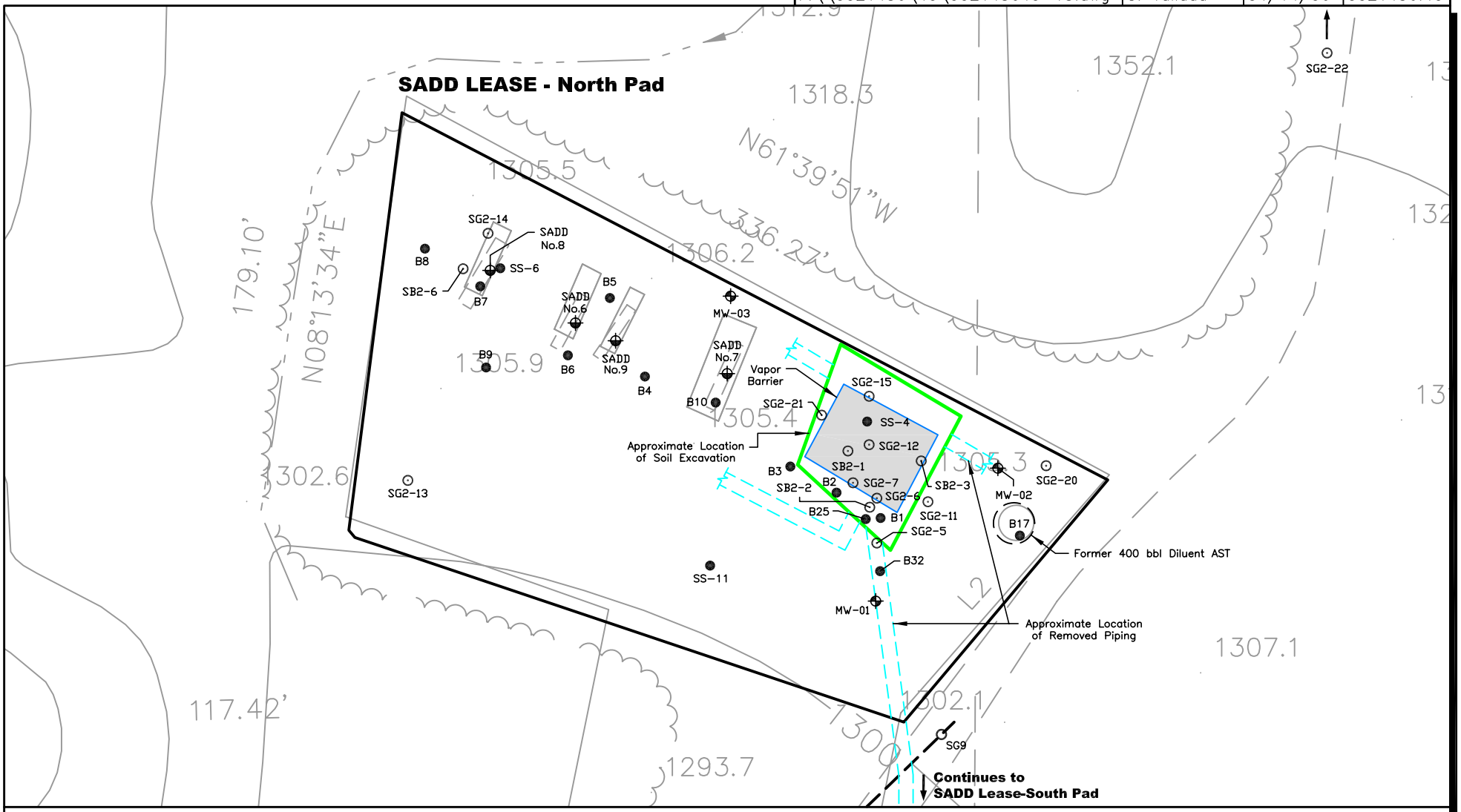
1. The air/water separator (V-1) and the blower (B-1) shall be trailer mounted.
2. The GAC vessels (V-2, V-3) shall be skid mounted.
3. The discharge stack shall be 4"ø SCH 40 PVC and the height will be determined by the air discharge permit.
4. Piping between wells and the Venting System will be underground.
5. Controls will be installed to shut the Venting System off when there is a High Level in V-1 or when there is a High or low pressure in the vapor line.

Figure 15
Active Venting System
Process Flow Diagram
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

Project No. 0021456.40
Date: 04/14/06
Drawn By: C. Tallada
CAD File: F:\0021456\40\0021456640-12.dwg

CAD File:	Drawn By:	Date:	Project No.
F:\\0021456\40\002145640-13.dwg	C. Tallada	04/14/06	0021456.40



LEGEND

- Groundwater Monitoring Well
- Location of Soil Boring Installed by CE
- Location of Soil Boring Installed by ERM
- Location of Removed Piping
- Vapor Barrier
- Excavation Area

N

0 30' 60' 120'

(APPROXIMATE) SCALE IN FEET

Figure 16

Excavation Area

SADD Lease - North Pad

Los Valles Land & Golf, LLC

Los Angeles County, California

ERM 04/06

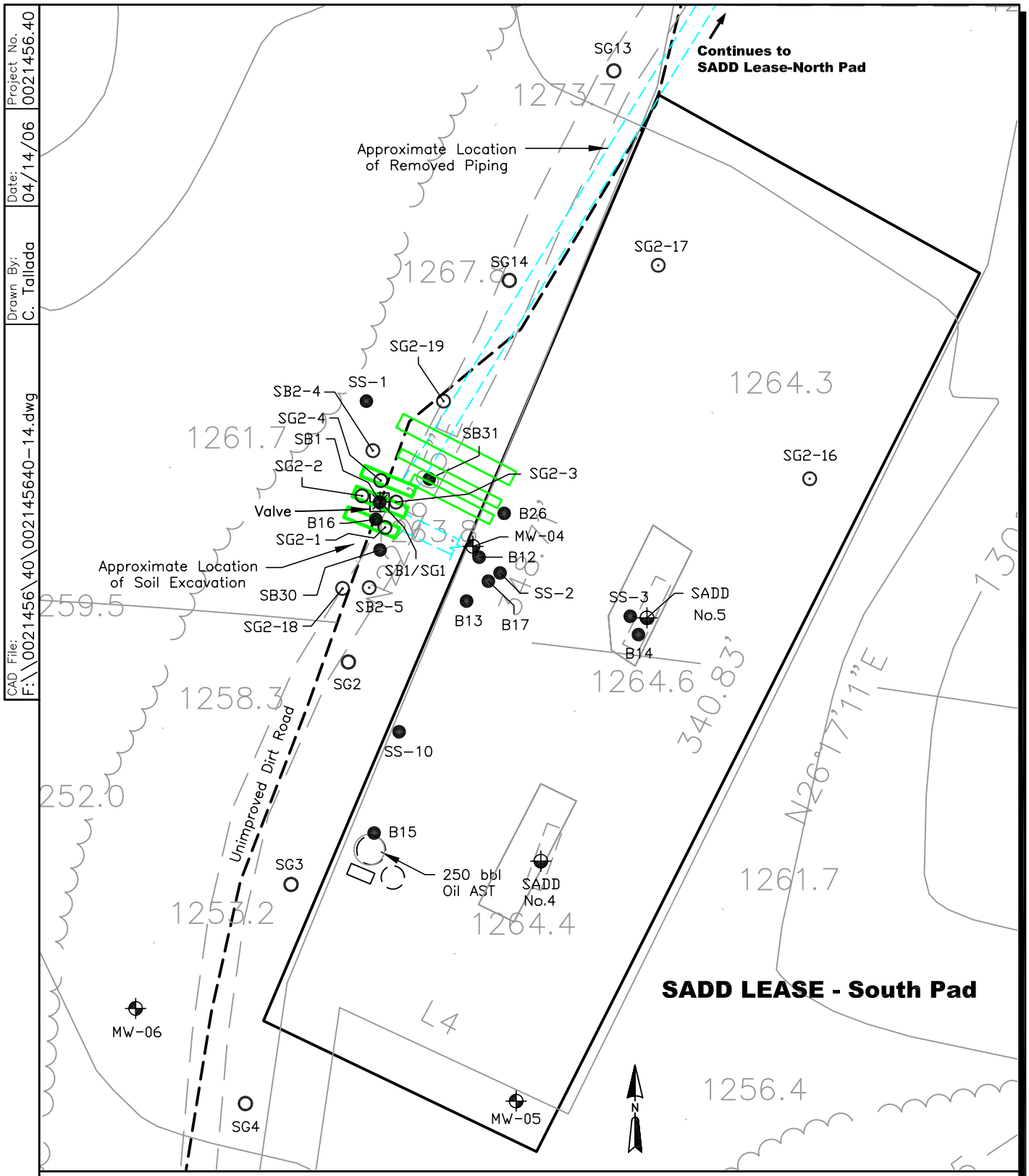
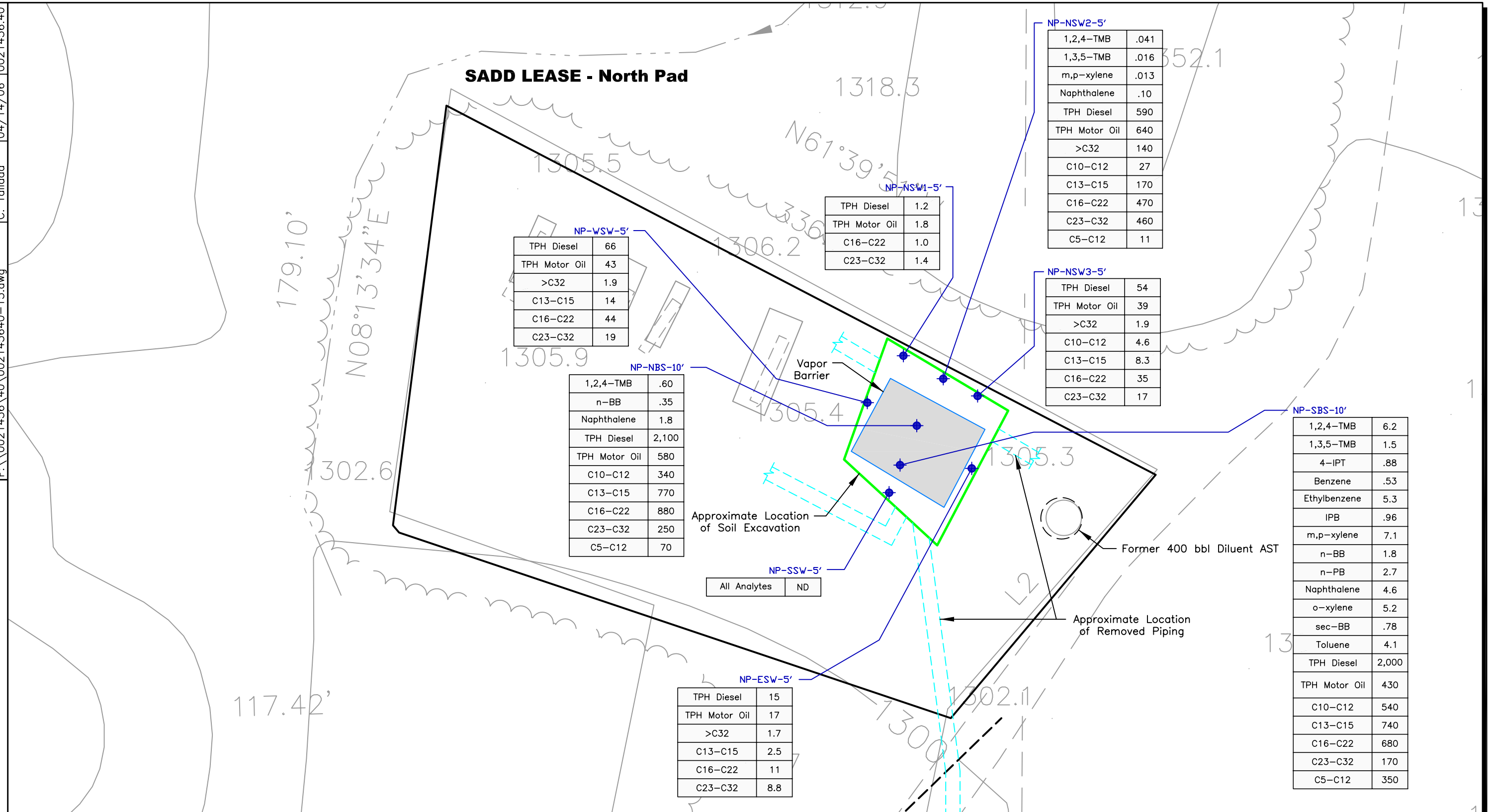


Figure 17
Excavation Area
SADD Lease - South Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06



NP-NSW2-5'	
1,2,4–TMB	.041
1,3,5–TMB	.016
m,p–xylene	.013
Naphthalene	.10
TPH Diesel	590
TPH Motor Oil	640
>C32	140
C10–C12	27
C13–C15	170
C16–C22	470
C23–C32	460
C5–C12	11

NP-NSW1-5'	
TPH Diesel	1.2
TPH Motor Oil	1.8
C16–C22	1.0
C23–C32	1.4

NP-WSW-5'	
TPH Diesel	66
TPH Motor Oil	43
>C32	1.9
C13–C15	14
C16–C22	44
C23–C32	19

NP-NSW3-5'	
TPH Diesel	54
TPH Motor Oil	39
>C32	1.9
C10–C12	4.6
C13–C15	8.3
C16–C22	35
C23–C32	17

NP-NBS-10'	
1,2,4–TMB	.60
n–BB	.35
Naphthalene	1.8
TPH Diesel	2,100
TPH Motor Oil	580
C10–C12	340
C13–C15	770
C16–C22	880
C23–C32	250
C5–C12	70

NP-SBS-10'	
1,2,4–TMB	6.2
1,3,5–TMB	1.5
4–IPT	.88
Benzene	.53
Ethylbenzene	5.3
IPB	.96
m,p–xylene	7.1
n–BB	1.8
n–PB	2.7
Naphthalene	4.6
o–xylene	5.2
sec–BB	.78
Toluene	4.1
TPH Diesel	2,000
TPH Motor Oil	430
C10–C12	540
C13–C15	740
C16–C22	680
C23–C32	170
C5–C12	350

NP-SSW-5'	
All Analytes	ND

NP-ESW-5'	
TPH Diesel	15
TPH Motor Oil	17
>C32	1.7
C13–C15	2.5
C16–C22	11
C23–C32	8.8

LEGEND

- Excavation Soil Sampling Locations (ERM, June 2004)
- Location of Removed Piping
- Vapor Barrier
- Excavation Area

NOTE:
Results in milligrams per kilogram (mg/kg).

N

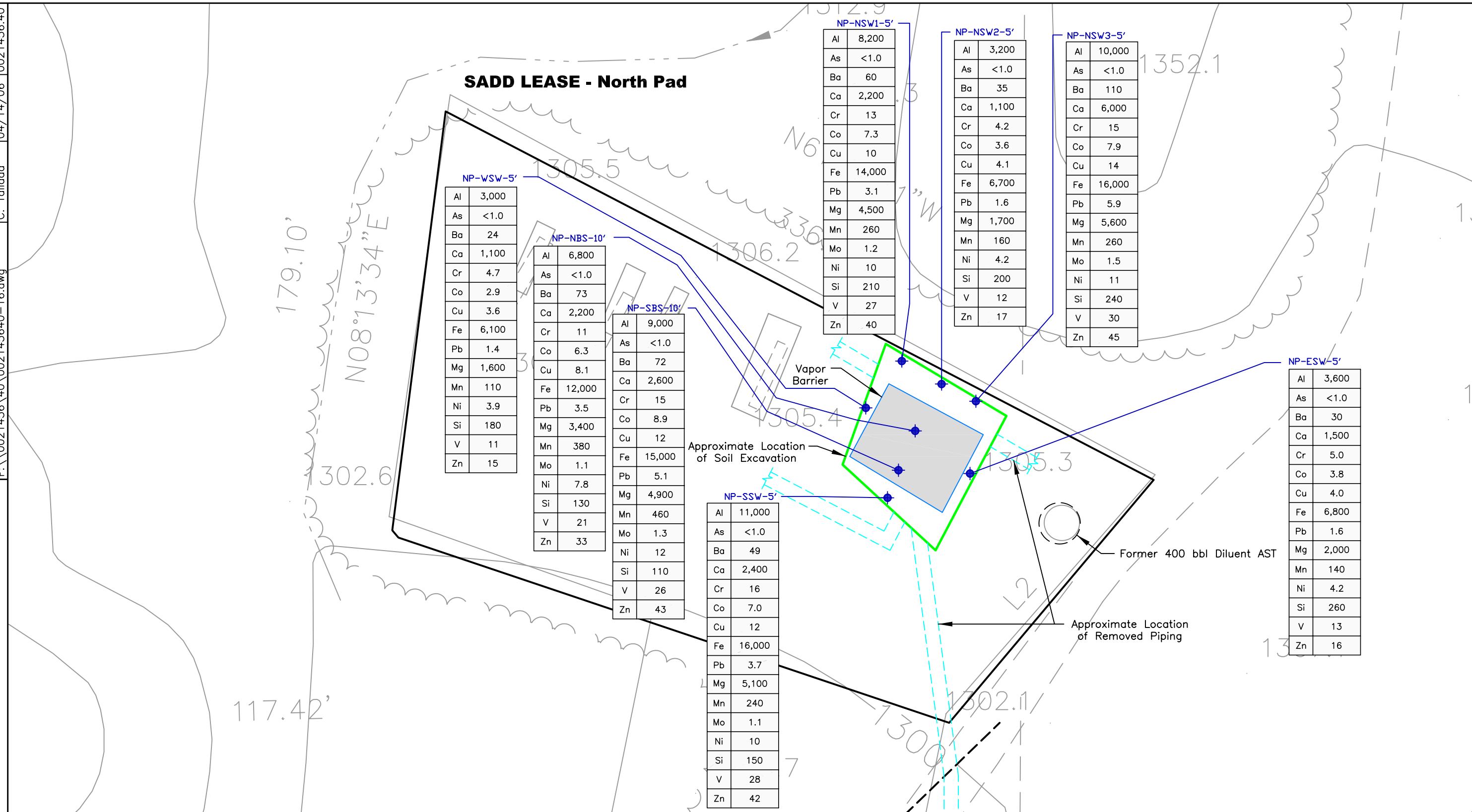
0 20' 40' 80'
(APPROXIMATE) SCALE IN FEET

Figure 18
Confirmation Soil Sampling Locations and Results - Organic
SADD Lease - North Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

CAD File: F:\0021456\40\00214564O-15.dwg
Drawn By: C. Tallada
Date: 04/14/06
Project No. 0021456.40

Project No. 0021456.40
Date: 04/14/06
Drawn By: C. Tallada
CAD File: F:\0021456\40\00214564 0-16.dwg



NP-NSW1-5'

Al	8,200
As	<1.0
Ba	60
Ca	2,200
Cr	13
Co	7.3
Cu	10
Fe	14,000
Pb	3.1
Mg	4,500
Mn	260
Mo	1.2
Ni	10
Si	210
V	27
Zn	40

NP-NSW2-5'

Al	3,200
As	<1.0
Ba	35
Ca	1,100
Cr	4.2
Co	3.6
Cu	4.1
Fe	6,700
Pb	1.6
Mg	1,700
Mn	160
Ni	4.2
Si	200
V	12
Zn	17

NP-NSW3-5'

Al	10,000
As	<1.0
Ba	110
Ca	6,000
Cr	15
Co	7.9
Cu	14
Fe	16,000
Pb	5.9
Mg	5,600
Mn	260
Mo	1.5
Ni	11
Si	240
V	30
Zn	45

NP-WSW-5'

Al	3,000
As	<1.0
Ba	24
Ca	1,100
Cr	4.7
Co	2.9
Cu	3.6
Fe	6,100
Pb	1.4
Mg	1,600
Mn	110
Ni	3.9
Si	180
V	11
Zn	15

NP-NBS-10'

Al	6,800
As	<1.0
Ba	73
Ca	2,200
Cr	11
Co	6.3
Cu	8.1
Fe	12,000
Pb	3.5
Mg	3,400
Mn	380
Mo	1.1
Ni	7.8
Si	130
V	21
Zn	33

NP-SBS-10'

Al	9,000
As	<1.0
Ba	72
Ca	2,600
Cr	15
Co	8.9
Cu	12
Fe	15,000
Pb	5.1
Mg	4,900
Mn	460
Mo	1.3
Ni	12
Si	110
V	26
Zn	43

NP-SSW-5'

Al	11,000
As	<1.0
Ba	49
Ca	2,400
Cr	16
Co	7.0
Cu	12
Fe	16,000
Pb	3.7
Mg	5,100
Mn	240
Mo	1.1
Ni	10
Si	150
V	28
Zn	42

NP-ESW-5'

Al	3,600
As	<1.0
Ba	30
Ca	1,500
Cr	5.0
Co	3.8
Cu	4.0
Fe	6,800
Pb	1.6
Mg	2,000
Mn	140
Ni	4.2
Si	260
V	13
Zn	16

LEGEND

- Excavation Soil Sampling Locations (ERM, June 2004)
- Location of Removed Piping
- Vapor Barrier
- Excavation Area

NOTE:
Results in milligrams per kilogram (mg/kg).

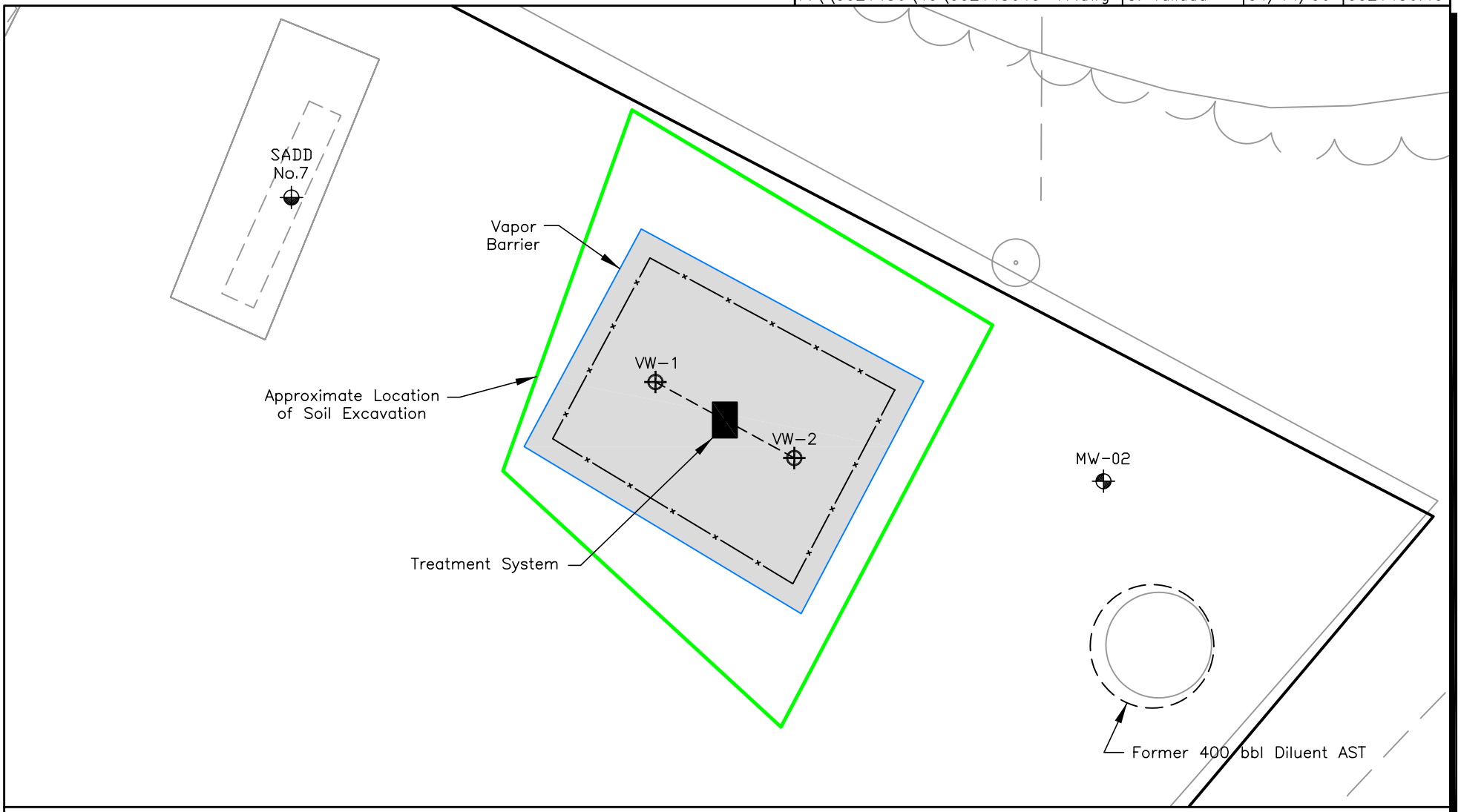
N

0 20' 40' 80'
(APPROXIMATE) SCALE IN FEET

Figure 19
Confirmation Soil Sampling Locations and Results - Inorganic
SADD Lease - North Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

CAD File:	Drawn By:	Date:	Project No.
F:\\0021456\40\002145640-17.dwg	C. Tallada	04/14/06	0021456.40



LEGEND

- Groundwater Monitoring Well
- Vapor Extraction Well
- Underground Conveyance Piping
- Treatment Area/System Location
- Vapor Barrier
- Excavation Area

N

0 10' 20' 40'

(APPROXIMATE) SCALE IN FEET

Figure 20

Soil Vapor Extraction Well Locations
SADD Lease - North Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM *04/06*

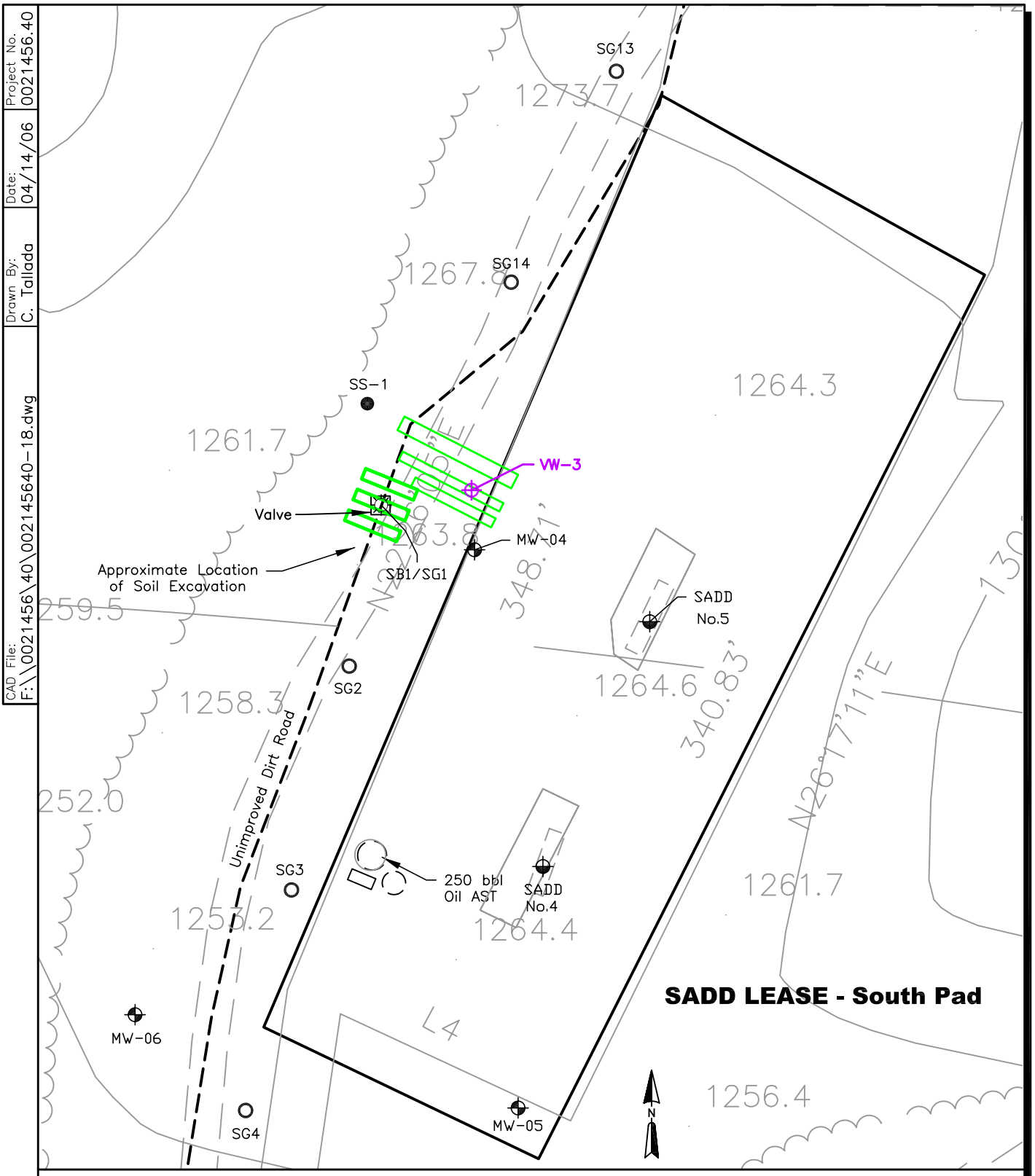
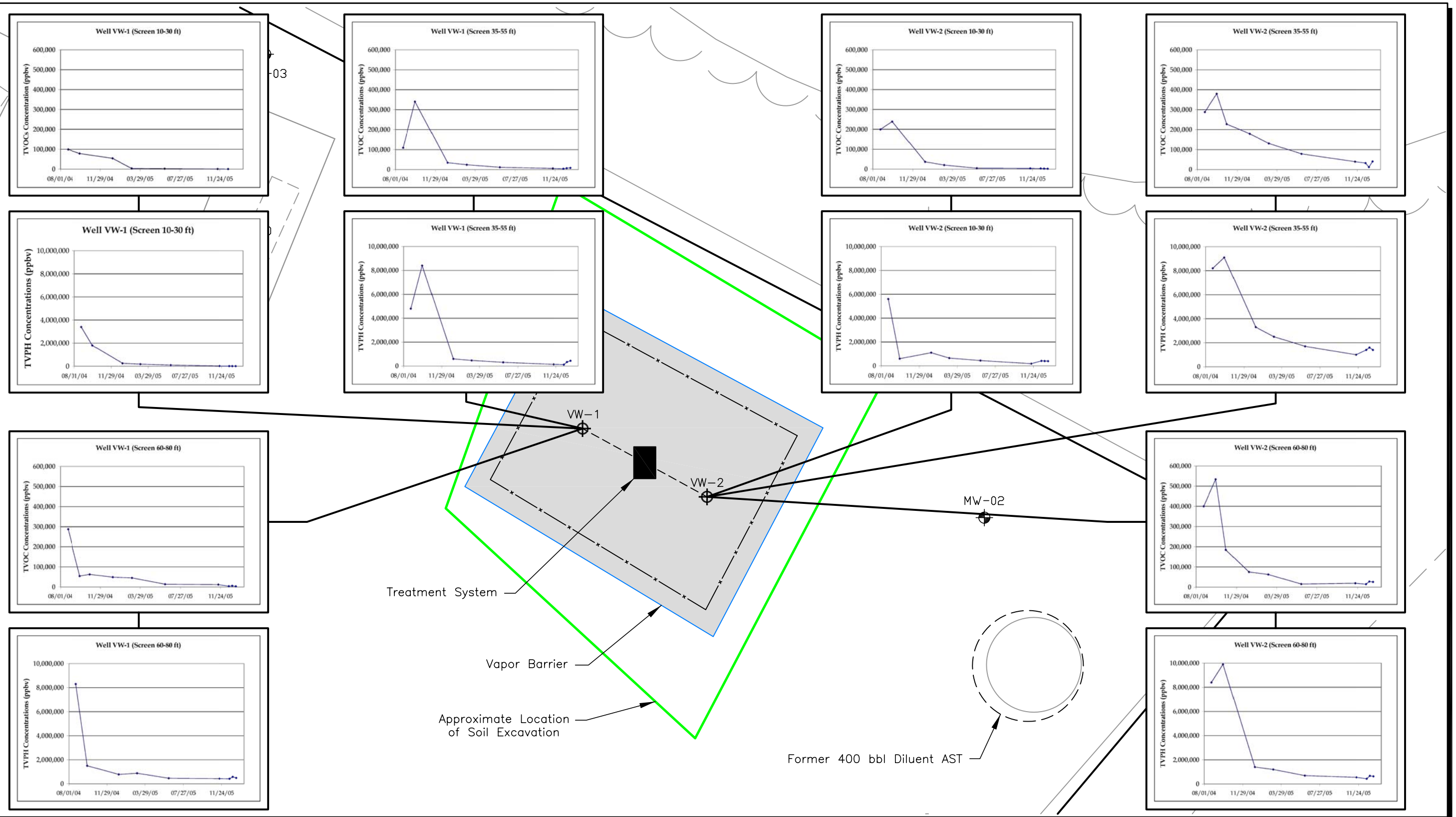


Figure 21

Soil Vapor Extraction Well Location
SADD Lease - South Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06



LEGEND

- Groundwater Monitoring Well
- Vapor Extraction Well
- Underground Conveyance Piping
- Treatment Area/System Location
- Vapor Barrier
- Excavation Area

N

0 7.5' 15' 30'

(APPROXIMATE) SCALE IN FEET

Figure 22

Historical Vapor Extraction System TVOC and TVPH Concentrations
SADD Lease - North Pad
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 04/06

Project No. 0021456.40
Date: 04/14/06
Drawn By: C. Tallada
CAD File: F:\0021456\40\002145640-19.dwg

Tables

Table 1 ***Volatile Organic Compounds, Methane, and Fixed Gases in Soil Gas***
Los Valles Company, Inc.
Castaic, California

Sample ID	Depth (feet)	Sample Date	Hydrogen Sulfide (ppmv)	Methane (ppmv)	Oxygen (%)	Carbon Dioxide (%)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-xylenes (µg/L)	o-xylenes (µg/L)
SG2-1	5	12/15/2003	0.001	<100	17.9	0.8	<1	<1	<1	<2	<1
SG2-1	10	12/15/2003	0.002	<100	17.2	1.6	<1	<1	<1	<2	<1
SG2-1 (Duplicate)	10	12/15/2003	NA	NA	NA	NA	<1	<1	<1	<2	<1
SG2-1 (Purge)	20	12/15/2003	0.006	<100	15.1	3.9	<1	<1	<1	<2	<1
SG2-1 (Purge)	20	12/15/2003	NA	NA	NA	NA	<1	<1	<1	<2	<1
SG2-1 (Purge)	20	12/15/2003	NA	NA	NA	NA	<1	<1	<1	<2	<1
SG2-1 *	20	1/6/2004	NA	<10	15.1	3.9	NA	NA	NA	NA	NA
SG2-2	5	12/15/2003	0.002	<100	18.3	0.6	<1	<1	<1	<2	<1
SG2-3	5	12/15/2003	0.002	<100	17.3	1.0	<1	<1	<1	<2	<1
SG2-4	5	12/15/2003	0.001	<100	18.2	0.7	<1	<1	<1	<2	<1
SG2-5	5	12/15/2003	0.001	<100	11.8	4.5	<1	<1	<1	<2	<1
SG2-5	12	12/15/2003	0.001	<100	6.9	14.3	<1	<1	<1	<2	<1
SG2-6	5	12/15/2003	0.000	<100	8.7	5.7	**2.8**	1.5	<1	<2	<1
SG2-6	14	12/15/2003	0.002	**42,000**	3.6	13.4	**50**	42	**14**	**30**	18
SG2-6*	14	1/6/2004	NA	320	5.1	12.6	NA	NA	NA	NA	NA
SG2-7	5	12/15/2003	0.002	<100	15.5	2.0	<1	<1	<1	<2	<1
SG2-7	10	12/15/2003	0.005	<100	18.5	0.3	<1	<1	<1	<2	<1
SG2-8	5	12/16/2003	0.000	<100	13.6	5.1	<1	<1	<1	<2	<1
SG2-8	10	12/16/2003	0.000	<100	11.4	7.3	<1	<1	<1	<2	<1
SG2-8	20	12/16/2003	0.000	<100	9.4	9.7	<1	<1	<1	<2	<1
SG2-9	5	12/16/2003	0.000	<100	18.0	0.7	<1	<1	<1	<2	<1
SG2-9	10	12/16/2003	0.000	<100	17.6	1.1	<1	<1	<1	<2	<1
SG2-9	20	12/16/2003	0.000	<100	17.0	0.9	<1	<1	<1	<2	<1
SG2-9 (Duplicate)	20	12/16/2003	NA	NA	NA	NA	<1	<1	<1	<2	<1

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Table 1 *Volatile Organic Compounds, Methane, and Fixed Gases in Soil Gas*
Los Valles Company, Inc.
Castaic, California

Sample ID	Depth (feet)	Sample Date	Hydrogen Sulfide (ppmv)	Methane (ppmv)	Oxygen (%)	Carbon Dioxide (%)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-xylenes (µg/L)	o-xylenes (µg/L)
SG2-10	5	12/16/2003	0.000	<100	19.3	0.2	<1	<1	<1	<2	<1
SG2-10	10	12/16/2003	0.000	<100	18.7	0.3	NA	NA	NA	NA	NA
SG2-10	20	12/16/2003	0.000	<100	18.0	0.3	NA	NA	NA	NA	NA
SG2-11	5	12/16/2003	0.005	**3,000**	4.4	8.8	**3.8**	<1	<1	<2	<1
SG2-11	9	12/16/2003	0.002	**110,000**	1.3	14.0	**61**	32	**29**	**46**	14
SG2-12	5	12/16/2003	0.002	**11,000**	18.5	0.4	**43**	<1	<1	<2	<1
SG2-12	10	12/16/2003	0.002	**310,000**	7.4	7.5	**280**	**170**	**37**	**35**	16
SG2-12*	10	1/6/2004	NA	**4,200**	9.7	6.7	NA	NA	NA	NA	NA
SG2-13	5	12/16/2003	0.002	<100	15.8	2.3	<1	<1	<1	<2	<1
SG2-13	10	12/16/2003	0.003	<100	16.1	3.1	NA	NA	NA	NA	NA
SG2-13	20	12/16/2003	0.005	<100	14.1	5.3	NA	NA	NA	NA	NA
SG2-13*	20	1/6/2004	NA	<10	15.4	5.2	NA	NA	NA	NA	NA
SG2-14	5	12/16/2003	0.001	<100	16.5	2.0	NA	NA	NA	NA	NA
SG2-14	10	12/16/2003	0.002	<100	16.0	2.6	<1	<1	<1	<2	<1
SG2-14	20	12/16/2003	0.002	<100	14.7	3.8	NA	NA	NA	NA	NA
SG2-15	5	12/16/2003	0.009	<100	4.1	11.0	<1	<1	<1	<2	<1
SG2-15	10	12/16/2003	0.024	**64,000**	0.2	13.7	<1	<1	<1	<2	<1
SG2-15	17	12/16/2003	0.002	**10,000**	18.7	0.3	**74**	28	**13**	<2	<1
SG2-16	5	12/17/2003	0.000	<100	17.8	0.9	<1	<1	<1	<2	<1
SG2-16	10	12/17/2003	0.000	<100	18.9	0.3	NA	NA	NA	NA	NA
SG2-16	20	12/17/2003	0.000	<100	19.2	0.3	NA	NA	NA	NA	NA
SG2-17	5	12/17/2003	0.000	<100	19.1	0.2	<1	<1	<1	<2	<1
SG2-17	10	12/17/2003	0.000	<100	19.1	0.3	NA	NA	NA	NA	NA
SG2-17	20	12/17/2003	0.000	<100	18.8	0.6	NA	NA	NA	NA	NA
SG2-18	5	12/17/2003	0.002	<100	17.0	1.1	<1	<1	<1	<2	<1
SG2-18	10	12/17/2003	0.002	<100	16.3	2.1	<1	<1	<1	<2	<1
SG2-18	17	12/17/2003	0.003	<100	11.5	7.2	<1	<1	<1	<2	<1
SG2-18*	17	1/6/2004	NA	<10	15.0	6.6	NA	NA	NA	NA	NA

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Table 1 ***Volatile Organic Compounds, Methane, and Fixed Gases in Soil Gas***
Los Valles Company, Inc.
Castaic, California

Sample ID	Depth (feet)	Sample Date	Hydrogen Sulfide (ppmv)	Methane (ppmv)	Oxygen (%)	Carbon Dioxide (%)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-xylenes (µg/L)	o-xylenes (µg/L)
SG2-19	5	12/17/2003	0.002	<100	18.3	0.5	<1	<1	<1	<2	<1
SG2-19	10	12/17/2003	0.006	<100	17.8	1.4	<1	<1	<1	<2	<1
SG2-20	5	12/17/2003	0.003	<100	12.9	5.7	<1	<1	<1	<2	<1
SG2-20	10	12/17/2003	0.004	<100	16.2	2.6	<1	<1	<1	<2	<1
SG2-20	20	12/17/2003	0.002	<100	17.7	1.1	<1	<1	<1	<2	<1
SG2-21	5	12/17/2003	0.001	<100	16.3	2.2	<1	<1	<1	<2	<1
SG2-21	13	12/17/2003	0.002	<100	14.4	2.2	<1	<1	<1	<2	<1
SG2-21 (Duplicate)	13	12/17/2003	NA	NA	NA	NA	<1	<1	<1	<2	<1
SG2-22	5	12/17/2003	0.002	<100	14.4	2.2	<1	<1	<1	<2	<1
SFRWQCB Shallow Soil Gas Screening Levels							0.084	83	2.2	21	21
DTSC Methane Gas Screening Level				1,000							

Notes:
< = Not detected at or above listed reporting limit.
* = Results were recorded in the lab for lower detection limits.
Bold = Exceeds listed screening criteria.

Abbreviations:
µg/L = Micrograms per Liter
DTSC = Department of Toxic Substances Control
EPA = United States Environmental Protection Agency
NA = Not analyzed
ppmv = Parts per million in vapor
SFRWQCB = San Francisco Regional Water Quality Control Board

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Table 2 Volatile Organic Compounds and Total Petroleum Hydrocarbons in Soil
Los Valles Company, Inc.
Castaic, California

			EPA 8015B (mg/kg)		EPA 8260B (µg/kg)												
Sample ID	Depth (feet)	Sample Date	Diesel	Motor Oil	1,2,4-TMB	1,3,5-TMB	4-Isopropyl-toluene	Benzene	Ethyl-benzene	Isopropyl-benzene	m,p-xylenes	n-butyl-benzene	n-propyl-benzene	Naph-thalene	o-xylene	sec-Butyl-benzene	Toluene
SB2-1	5	12/17/2003	29	9.8	29	7.5	<5.0	22	20	<5.0	14	6.1	11	41	<5.0	<5.0	<5.0
SB2-1	10	12/17/2003	1,200	340	8.4	<5.0	<5.0	99	19	<5.0	30	<5.0	<5.0	10	27	<5.0	68
SB2-2	5	12/17/2003	1.1	2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-2	10	12/17/2003	8.4	3.8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-3	5	12/17/2003	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-3	10	12/17/2003	1,500	410	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-4	45	1/8/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-4	50	1/8/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-5	45	1/8/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-5	50	1/8/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-6	10	1/21/2004	5.0	12.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-6	20	1/21/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-6	30	1/21/2004	<1.0	1.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-6	40	1/21/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-6	50	1/21/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-7	25	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-7	35	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-7	45	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-8	15	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-8	25	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-9	20	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-9	30	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SB2-9	40	1/22/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SS-1	Surface	12/18/2003	2.1	4.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-2	Surface	12/18/2003	84	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-3	Surface	12/18/2003	35	71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-4	Surface	12/18/2003	120	280	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-5	Surface	12/18/2003	850	1,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table 2 Volatile Organic Compounds and Total Petroleum Hydrocarbons in Soil
Los Valles Company, Inc.
Castaic, California

			EPA 8015B (mg/kg)		EPA 8260B (µg/kg)												
Sample ID	Depth (feet)	Sample Date	Diesel	Motor Oil	1,2,4-TMB	1,3,5-TMB	4-Isopropyl-toluene	Benzene	Ethyl-benzene	Isopropyl-benzene	m,p-xylenes	n-butyl-benzene	n-propyl-benzene	Naph-thalene	o-xylene	sec-Butyl-benzene	Toluene
SS-6	Surface	12/18/2003	57	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	30	12/22/2003	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-1	55	12/22/2003	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-1	76	12/22/2003	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-2	20	1/6/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-2	40	1/6/2004	<1.0	1.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-2	45	1/6/2004	1.8	<1.0	32,000	9,000	3,000	**1,400**	**26,000**	5,600	33,000	9,100	16,000	14,000	4,400	4,100	<500
MW-3	20	1/7/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-3	65	1/7/2004	1	1.2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-3	80	1/7/2004	1.2	2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-4	30	1/8/2004	2.6	2.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-4	50	1/8/2004	3,200	1,600	2,000	230	190	<5.0	130	130	200	250	160	450	<5.0	180	<5.0
MW-5	35	1/21/2004	10	18	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-5	60	1/21/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-6	10	1/21/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-6	50	1/21/2004	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TR-01	14	1/21/2004	3,400	960	37,000	**26,000**	6,800	<500	<500	<500	26,000	<500	<500	25,000	5,800	<500	<500
TR-02	5	1/22/2004	<1.0	1.7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TR-03	10.5	1/22/2004	<1.0	1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PRG Residential			None	None	52,000	21,000	None	600	8,900	None	270,000	240,000	240,000	None	270,000	220,000	520,000

Notes:
< = Not detected at or above listed reporting limit.
Bold = Exceeds listed PRG.

Abbreviations:
µg/kg = Micrograms per kilogram
EPA = United States Environmental Protection Agency
mg/kg = Milligrams per kilogram
NA = Not analyzed
PRG = Preliminary Remediation Goal
TMB = Trimethylbenzene

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Table 3 Metals in Soil
Los Valles Company, Inc.
Castaic, California

			EPA 7471 (mg/kg)	EPA 6010B (mg/kg)								
Sample ID	Depth (feet)	Sample Date	Mercury	Arsenic	Barium	Chromium	Cobalt	Copper	Lead	Nickel	Vanadium	Zinc
SS-1	0.5	12/18/2003	<0.1	1.6	46	8.0	4.5	7.5	3.5	6.5	18	29
SS-2	0.5	12/18/2003	<0.1	1.3	40	7.0	4.0	7.5	3.5	5.5	16	27
SS-3	0.5	12/18/2003	<0.1	1.2	24	5.5	3.0	5.0	2.0	3.5	14	16
SS-4	0.5	12/18/2003	<0.1	1.6	44	7.5	4.0	7.5	3.0	5.5	18	22
SS-5	0.5	12/18/2003	<0.1	1.8	130	9.5	5.5	13	3.5	12	18	36
SS-6	0.5	12/18/2003	<0.1	1.5	34	6.0	4.0	5.5	2.0	5.0	16	20
SS-7	0.5	12/18/2003	<0.1	1.3	32	6.5	4.0	6.0	5.5	5.0	16	22
SS-8	0.5	12/18/2003	<0.1	1.5	43	8.0	4.5	7.0	5.5	5.5	18	27
SS-9	0.5	12/18/2003	<0.1	1.8	49	9.5	4.5	16	5.5	7.0	20	32
SS-10	0.5	12/18/2003	<0.1	1.8	72	9.0	5.0	12	6.5	20	68	34
SS-11	0.5	12/18/2003	<0.1	2.2	59	9.0	5.0	10	4.0	22	70	30
PRG Residential			23	22	5,400	210	900	3,100	150	1,600	550	23,000

Notes:
< = Not detected at or above listed reporting limit.

Abbreviations:
EPA = United States Environmental Protection Agency
mg/kg = Milligrams per kilogram
NA = Not analyzed

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Table 4 ***Volatile Organic Compounds and Total Petroleum Hydrocarbons in Groundwater***
Los Valles Company, Inc.
Castaic, California

		EPA 3510C (mg/L)		EPA 8260B (µg/L)											
Sample ID	Sample Date	Diesel	Motor Oil	1,2,4-TMB	1,3,5-TMB	4-Isopropyl-toluene	Ethyl-benzene	m,p-xylenes	n-propyl-benzene	Naph-thalene	sec-Butyl-benzene	Bromo-dichloro-methane	Bromoform	Chloroform	Dibromo-chloro-methane
MW-1	12/29/2003	0.061	0.077	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	5.9	1
MW-1	12/31/2003	0.11	0.21	NA	NA	<0.5	NA	NA	NA	NA	<0.5	NA	NA	NA	NA
MW-1	1/14/2004	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	1/14/2004	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2 (dup)	1/14/2004	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3	1/14/2004	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-4	1/14/2003	0.46	0.17	1.3	0.52	0.68	0.84	0.62	0.71	5.3	0.81	<0.5	<0.5	<0.5	<0.5
MW-5	1/26/2004	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-6	1/26/2004	0.11	0.099	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QA/QC															
Equipment Blank	12/29/2003	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.1	4.2	2.6	9.2
MW-1 FB	1/14/2004	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-5FD	1/26/2004	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trip Blank	12/29/2003	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trip Blank	1/14/2004	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trip Blank	1/26/2004	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MCL		None	None	None	None	None	None	None	None	None	None	80	80	80	80

Notes:
< = Not detected at or above listed reporting limit.

Abbreviations:
µg/L = Micrograms per Liter
EPA = United States Environmental Protection Agency
FB = Field blank
FD = Field Duplicate
MCL = Maximum Contaminant Level
mg/L = Milligrams per Liter
NA = Not analyzed
QA/QC = Quality Assurance/Quality Control
TMB = Trimethylbenzene

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Table 5 Metals in Groundwater
Los Valles Company, Inc.
Castaic, California

		EPA 7470 (µg/L)	EPA 3010A (mg/L)									
Sample ID	Sample Date	Mercury	Arsenic	Barium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Vanadium	Zinc
MW-1	12/29/2003	<0.2	<0.005	0.01	0.0032	<0.003	0.0062	<0.005	0.01	<0.003	0.005	0.01
MCL		None	0.01	1	0.05	None	1	0.015	None	0.1	None	5

Notes:
< = Not detected at or above listed reporting limit.

Abbreviations:
µg/L = Micrograms per Liter
EPA = United States Environmental Protection Agency
mg/L = Milligrams per Liter

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Table 6 Volatile Organics Detected in Soil
Los Valles Company, Inc.
Castaic, California

			EPA Method 8260B																													
Sample ID	Depth (feet)	Sample Date	1,1,1,2-PCA	1,1,1-TCA	1,1,2,2-PCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,1-DCP	1,2,3-TCB	1,2,3-TCP	1,2,4-TCB	1,2,4-TMB	1,2-D3C	1,2-DBM	1,2-DCB	1,2-DCA	1,2-DCPA	1,3,5-TMB	1,3-DCB	1,3-DCPA	1,4-DCB	2,2-DCPA	2-Chloro-toluene	4-Chloro-toluene	4-IPT	Benzene	Bromo-benzene	Bromo-dicloro-methane	Bromo-form	Bromo-methane	Carbon Tet.
NP-SSW	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-WSW	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-NSW1	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-NSW2	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	41	<0.1	<0.05	<0.05	<0.05	<0.05	16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-NSW3	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-ESW	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-SBS	10	6/8/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	6,200	<500	<2.5	<2.5	<2.5	<2.5	1,500	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	880	530	<2.5	<2.5	<2.5	<2.5	<2.5
NP-NBS	10	6/8/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	600	<500	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
NP-SP1-DS1		6/9/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<500	<2.5	<2.5	<2.5	<2.5	7.2	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
NP-SP1-DS2		6/9/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	2,100	<500	<2.5	<2.5	<2.5	<2.5	670	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	260	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
NP-SP2-DS3		6/9/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	4,300	<500	<2.5	<2.5	<2.5	<2.5	1,000	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	740	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
PRG for Residential Soil			3.2_{ca}	$1,200_{nc}$	$.410_{ca}$	$.730_{ca}$	510_{nc}	120_{nc}	NL	NL	$.005_{ca}$	650_{nc}	5.2_{nc}	$.019_{ca}$*	NL	370_{nc}	$.28_{ca}$	$.34_{ca}$	21_{nc}	16_{nc}	NL	3.4_{ca}	NL	NL	NL	NL	$.6_{ca}$	28_{nc}	$.82_{ca}$	62_{ca}	3.9_{nc}	$.25_{nc}$

Notes:

Results in milligrams per kilogram.
< = Not detected at or above the listed detection limit.
* = CAL-Modified PRG
ca = Cancer PRG
nc = Noncancer PRG
sat = Saturated Soil

Abbreviations:

BB = Butylbenzene
D3C = 1,2-Dibromo-3-chloropropane
DCA = Dichloroethane
DCB = Dichlorobenzene
DCE = Dichloroethene
DCP = Dichloropropene
DCPA = Dicloropropane
EPA = United States Environmental Protection Agency
IPB = Isopropylbenzene
IPT = Isopropyltoluene
MC = Methylene chloride
NL = Not Listed
PB = Propylbenzene
PCA = Tetrachloroethane
PCE = Tetrachloroethene
PRG = Peliminary Remedial Goals
TCA = Trichloroethane
TCB = Trichlorobenzene
TCE = Trichloroethene
TCFM - Trichlorofluoromethane
TCP = Trichloropropane
Tet. = Tetrachloride
TMB = Trimethylbenzene
VC = Vinyl chloride

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Table 6 Volatile Organics Detected in Soil
Los Valles Company, Inc.
Castaic, California

			EPA Method 8260B																										
Sample ID	Depth (feet)	Sample Date	Chloro-benzene	Chloro-ethane	Chloro-form	Chloro-methane	cis-1,2-DCE	cis-1,3-DCP	Dibromo-chloro-methane	Dibromo-methane	Dichloro-difluoro-methane	Ethyl-benzene	Hexa-chloro-butadiene	IPB	m,p-xylene	MC	n-BB	n-PB	Naph-thalene	o-xylene	sec-BB	Styrene	tert-BB	PCE	Toluene	trans-1,2-DCE	TCE	TCFM	VC
NP-SSW	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-WSW	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-NSW1	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-NSW2	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	13	<0.05	<0.05	<0.05	100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-NSW3	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-ESW	5	6/8/2004	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
NP-SBS	10	6/8/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	5,300	<2.5	960	7,100	<2.5	1,800	2,700	4,600	5,200	780	<2.5	<2.5	<2.5	4,100	<2.5	<2.5	<2.5	<2.5
NP-NBS	10	6/8/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	350	<2.5	1,800	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
NP-SP1-DS1		6/9/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
NP-SP1-DS2		6/9/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	450	<2.5	<2.5	740	<2.5	540	420	1,300	370	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
NP-SP2-DS3		6/9/2004	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	1,300	<2.5	420	1,900	<2.5	1,500	1,300	4,700	1,100	540	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
PRG for Residential Soil			15_{nc}	3_{ca}	$3.6_{ca/cn}$	1.2_{ca}	43_{nc}	NL	1.1_{ca}	NL	94_{nc}	8.9_{ca}	6.2_{ca}	NL	270_{nc}	9.1_{ca}	240_{sat}	240_{sat}	NL	270_{nc}	220_{sat}	$1{,}700_{sat}$	390_{sat}	1.5_{ca}	520_{sat}	69_{nc}	$.053_{ca}$	390_{nc}	$.079_{ca}$

Notes:

Results in milligrams per kilogram.
< = Not detected at or above the listed detection limit.
* = CAL-Modified PRG
ca = Cancer PRG
nc = Noncancer PRG
sat = Saturated Soil

Abbreviations:

BB = Butylbenzene
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IPB = Isopropylbenzene
IPT = Isopropyltoluene
MC = Methylene chloride
PB = Propylbenzene
PCA = Tetrachloroethane
PCE = Tetrachloroethene
PRG = Peliminary Remedial Goals
TCA = Trichloroethane
TCB = Trichlorobenzene
TCE = Trichloroethene
TCFM - Trichlorofluoromethane
TCP = Trichloropropane
Tet. = Tetrachloride
TMB = Trimethylbenzene
VC = Vinyl chloride

Table 7 ***Petroleum Hydrocarbons Detected in Soil***
Los Valles Company, Inc.
Castaic, California

			EPA 8015B							
			TPH							
Sample ID	Depth (feet)	Sample Date	Diesel	Motor Oil	C10-C12	C13-C15	C16-C22	C23-C32	C5-C12	>C32
NP-SSW	5	6/8/2004	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
NP-WSW	5	6/8/2004	66	43	<1.0	14	44	19	<1.0	1.9
NP-NSW1	5	6/8/2004	1.2	1.8	<1.0	<1.0	1.0	1.4	<1.0	<1.0
NP-NSW2	5	6/8/2004	590	640	27	170	470	460	11	140
NP-NSW3	5	6/8/2004	54	39	4.6	8.3	35	17	<1.0	1.9
NP-ESW	5	6/8/2004	15	17	<1.0	2.5	11	8.8	<1.0	1.7
NP-SBS	10	6/8/2004	2,000	430	540	740	680	170	350	<20
NP-NBS	10	6/8/2004	2,100	580	340	770	880	250	70	<20
CRWQCB Soil Screening Levels			1,000	10,000	500	1,000	1,000	10,000	500	10,000

Notes:

Results in milligrams per kilogram.

< = Not detected at or above the listed detection limit.

CRWQCB soil screening level for TPH in soil at a distance of 20-150 feet above groundwater.

Abbreviations:

CRWQCB = California Regional Water Quality Control Board

EPA = United States Environmental Protection Agency

TPH = Total petroleum hydrocarbon

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Table 8 Polyaromatic Hydrocarbons Detected in Soil
Los Valles Company, Inc.
Castaic, California

			EPA 8270C															
Sample ID	Depth (feet)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,I)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenz(a,h)-anthracene	Fluor-anthene	Fluorene	Indeon(1,2,3-cd)-pyrene	Naphthalene	Phen-anthrene	Pyrene
NP-SSW	5	6/8/2004	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
NP-WSW	5	6/8/2004	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
NP-NSW1	5	6/8/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NP-NSW2	5	6/8/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NP-NSW3	5	6/8/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NP-ESW	5	6/8/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NP-SBS	10	6/8/2004	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	4,700	<1,000	<1,000
NP-NBS	10	6/8/2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRG for Residential Soil			$3{,}700{,}000_{nc}$	NL	$22{,}000{,}000_{nc}$	620_{ca}	62_{ca}	620_{ca}	NL	$6{,}200_{ca}$	$62{,}000_{ca}$	62_{ca}	$2{,}300{,}000_{nc}$	$2{,}700{,}000_{nc}$	620_{ca}	$5{,}600_{nc}$	NL	$2{,}300{,}000_{nc}$

Notes:

Results in micrograms per kilogram.

< = Not detected at or above the listed detection limit.

ca = Cancer PRG

nc = Noncancer PRG

Abbreviations:

NA = Not analyzed

NL = Not Listed

EPA = United States Environmental Protection Agency

PRG = Preliminary Remedial Goals

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Table 9 Polychlorinated Biphenyls Detected in Soil
Los Valles Company, Inc.
Castaic, California

			Polychlorinated Biphenyls (EPA 8082)								
Sample ID	Depth (feet)	Sample Date	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
NP-SSW	5	6/8/2004	<16	<33	<16	<16	<16	<16	<16	<16	<16
NP-WSW	5	6/8/2004	<16	<33	<16	<16	<16	<16	<16	<16	<16
NP-SBS	10	6/8/2004	<16	<33	<16	<16	<16	<16	<16	<16	<16
PRG for Residential Soil			$3{,}900_{nc}$	220_{ca}	220_{ca}	220_{ca}	220_{ca}	220_{ca}	220_{ca}	NL	NL

Notes:

Results in micrograms per kilogram.

< = Not detected at or above the listed detection limit.

ca = Cancer PRG

nc = Noncancer PRG

Abbreviations:

EPA = United States Environmental Protection Agency

NA = Not analyzed

NL = Not Listed

PRG = Preliminary Remedial Goals

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Table 10 Metals Detected in Soil
Los Valles Company, Inc.
Castaic, California

			EPA Method 6010B																						
Sample ID	Depth (feet)	Sample Date	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	Se	Si	Ag	Tl	V	Zn
NP-SSW	5	6/8/2004	11,000	<2.0	<1.0	49	<1.0	<10	<1.0	2,400	16	7.0	12	16,000	3.7	5,100	240	1.1	10	<1.0	150	<1.0	<1.0	28	42
NP-WSW	5	6/8/2004	3,000	<2.0	<1.0	24	<1.0	<10	<1.0	1,100	4.7	2.9	3.6	6,100	1.4	1,600	110	<1.0	3.9	<1.0	180	<1.0	<1.0	11	15
NP-NSW1	5	6/8/2004	8,200	<2.0	<1.0	60	<1.0	<10	<1.0	2,200	13	7.3	10	14,000	3.1	4,500	260	1.2	10	<1.0	210	<1.0	<1.0	27	40
NP-NSW2	5	6/8/2004	3,200	<2.0	<1.0	35	<1.0	<10	<1.0	1,100	4.2	3.6	4.1	6,700	1.6	1,700	160	<1.0	4.2	<1.0	200	<1.0	<1.0	12	17
NP-NSW3	5	6/8/2004	10,000	<2.0	<1.0	110	<1.0	<10	<1.0	6,000	15	7.9	14	16,000	5.9	5,600	260	1.5	11	<1.0	240	<1.0	<1.0	30	45
NP-ESW	5	6/8/2004	3,600	<2.0	<1.0	30	<1.0	<10	<1.0	1,500	5.0	3.8	4.0	6,800	1.6	2,000	140	<1.0	4.2	<1.0	260	<1.0	<1.0	13	16
NP-SBS	10	6/8/2004	9,000	<2.0	<1.0	72	<1.0	<1.0	<1.0	2,600	15	8.9	12	15,000	5.1	4,900	460	1.3	12	<1.0	110	<1.0	<1.0	26	43
NP-NBS	10	6/8/2004	6,800	<2.0	<1.0	73	<1.0	<1.0	<1.0	2,200	11	6.3	8.1	12,000	3.5	3,400	380	1.1	7.8	<1.0	130	<1.0	<1.0	21	33
PRG for Residential Soil			$76{,}000_{nc}$	31_{nc}	22_{nc}, 0.39_{ca}	$5{,}400_{nc}$	150_{nc}	$16{,}000_{nc}$	37_{nc}	NL	210_{ca}	900_{ca}	$3{,}100_{nc}$	$23{,}000_{nc}$	150*	NL	$1{,}800_{nc}$	390_{nc}	$1{,}600_{nc}$	390_{nc}	NL	390_{nc}	5.2_{nc}	550_{nc}	$23{,}000_{nc}$

Notes:

Results in milligrams per kilogram.

< = Not detected at or above the listed detection limit.

* = CAL-Modified PRG

ca = Cancer PRG

nc = Noncancer PRG

Abbreviations:

Ag = Silver
Al = Aluminum
As = Arsenic
B = Boron
Ba = Barium
Be = Beryllium
Ca = Calcium
ca = Cancer PRG
Cd = Cadmium
Co = Cobalt
Cr = Chromium
Cu = Copper
EPA = United States Environmental Protection Agency
Fe = Iron
Mg = Magnesium
Mn = Manganese
Mo = Molybdenum
nc = Noncancer PRG
Ni = Nickel
NL = Not Listed
Pb = Lead
PRG = Preliminary Remedial Goals
Sb = Antimony
Se = Selenium
Si - Silicon
Tl = Thallium
V = Vanadium
Zn = Zinc

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Table 11 Volatile Organic Compounds Detected in Groundwater
Los Valles Company, Inc.
Castaic, California

USEPA 8260B µg/L

Sample ID	Sample Date	1,1,1,2-PCA	1,1,1-TCA	1,1,2,2-PCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,1-DCP	1,2,3-TCB	1,2,3-TCP	1,2,4-TCB	1,2,4-TMB	1,2-D3C	1,2-DBM	1,2-DCB	1,2-DCA	1,2-DCPA	1,3,5-TMB	1,3-DCB	1,3-DCPA	1,4-DCB	2,2-DCPA	2-Chloro-toluene	4-Chloro-toluene	4-IPT	Benzene	Bromo-benzene	Bromo-dichloro-methane	Bromo-form	Bromo-methane	Carbon Tet.	Chloro-benzene
MW-1	12/29/2003	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	1.2 U	<0.5	<0.50	<0.50	<0.50
	12/31/2003	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	NA	NA	<0.50	<0.50	<0.50
	1/14/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-2	1/14/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
(dup)	1/14/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3	1/14/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-4	1/14/2003	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/25/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/17/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-5	1/26/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-6	1/26/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/25/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/17/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-7	2/9/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/25/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-8	2/9/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
QA/QC																																
EB	12/29/2003	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	6.1	4.2	<0.50	<0.50	<0.50
MW-8EB	2/9/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
MW-1 FB	1/14/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
MW-5FD	1/26/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
MW-7FD	2/9/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
Trip Blank	12/29/2003	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
Trip Blank	1/14/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
Trip Blank	1/26/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
Trip Blank	2/9/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50

Notes:
< = Not detected at or above listed reporting limit.
NJ = Estimated Value - chromatogram did not resemble the standard hydrocarbon pattern
U - Nondetected

Abbreviations:
µg/L = Micrograms per liter
BB = Butylbenzene
D3C = 1,2-Dibromo-3-chloropropane
DBM = Dibromethane
DCA = Dichloroethane
DCB = Dichlorobenzene
DCE = Dichloroethene
DCP = Dichloropropene
DCPA = Dicloropropane
dup = Duplicate
EB = Equipment blank
FB = Field blank
FD = Field duplicate
IPB = Isopropylbenzene
IPT = Isopropyltoluene
MC = Methylene chloride
NA = Not analyzed
PB = Propylbenzene
PCA = Tetrachloroethane
PCE = Tetrachloroethene
QA/QC = Quality Assurance/Quality Control
TCA = Trichloroethane
TCB = Trichlorobenzene
TCE = Trichloroethene
TCFM - Trichlorofluoromethane
TCP = Trichloropropane
Tet. = Tetrachloride
TMB = Trimethylbenzene
USEPA = United States Environmental Protection Agency
VC = Vinyl chloride

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Table 11 Volatile Organic Compounds Detected in Groundwater
Los Valles Company, Inc.
Santa Clarita, California

		USEPA 8260B µg/L																											USEPA 8015M (µg/L)	
Sample ID	Sample Date	Chloro-ethane	Chloro-form	Chloro-methane	cis-1,2-DCE	cis-1,3-DCP	Dibromo-chloro-methane	Dibormo-methane	Dichloro-difluoro-methane	Ethyl-benzene	Hexa-chloro-butadiene	IPB	m,p-xylenes	MC	n-BB	n-PB	Naph-thalene	o-xylene	sec-BB	Styrene	tert-BB	PCE	Toluene	trans-1,2-DCE	TCE	TCFM	VC	Diesel	Motor Oil
MW-1	12/29/2003	<0.50	5.9 U	<0.50	<0.50	<0.50	1 U	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	61	77
	12/31/2003	<0.50	NA	<0.50	<0.50	<0.50	NA	<0.50	<0.50	NA	<0.50	<0.50	NA	<0.50	<0.50	NA	NA	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	110	210
	1/14/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
MW-2	1/14/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
(dup)	1/14/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
MW-3	1/14/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
MW-4	1/14/2003	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	0.84	<0.50	<0.50	0.62	<0.50	<0.50	0.71	5.3	<0.50	0.81	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	460 NJ	170 NJ
	6/25/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/17/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.71	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	66	NA
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	150	NA
MW-5	1/26/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
MW-6	1/26/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	110	99
	6/25/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/17/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
MW-7	2/9/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
	6/25/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	5/24/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
MW-8	2/9/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
	6/24/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
	9/16/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	12/8/2004	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
	5/23/2005	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	NA
QA/QC																													
EB	12/29/2003	<0.50	2.6	<0.50	<0.50	<0.50	9.2	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
MW-8EB	2/9/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
MW-1 FB	1/14/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
MW-5FD	1/26/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
MW-7FD	2/9/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<50	<50
Trip Blank	12/29/2003	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
Trip Blank	1/14/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
Trip Blank	1/26/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA
Trip Blank	2/9/2004	<0.50	<0.5	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA	NA

Notes:
< = Not detected at or above listed reporting limit.
NJ = Estimated Value - chromatogram did not resemble the standard hydrocarbon pattern
U - Nondetected

Abbreviations:
µg/L = Micrograms per liter
BB = Butylbenzene
D3C = 1,2-Dibromo-3-chloropropane
DBM = Dibromethane
DCA = Dichloroethane
DCB = Dichlorobenzene
DCE = Dichloroethene
DCP = Dichloropropene
DCPA = Dicloropropane
dup = Duplicate
EB = Equipment blank
FB = Field blank
FD = Field duplicate
IPB = Isopropylbenzene
IPT = Isopropyltoluene
MC = Methylene chloride
NA = Not analyzed
PB = Propylbenzene
PCA = Tetrachloroethane
PCE = Tetrachloroethene
QA/QC = Quality Assurance/Quality Control
TCA = Trichloroethane
TCB = Trichlorobenzene
TCE = Trichloroethene
TCFM - Trichlorofluoromethane
TCP = Trichloropropane
Tet. = Tetrachloride
TMB = Trimethylbenzene
USEPA = United States Environmental Protection Agency
VC = Vinyl chloride

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Table 12 Well Construction Details and Groundwater Elevation Data
Los Valles Company, Inc.
Castaic, California

Well Identification	Total Depth (ft bgs)	Screen Interval (ft bgs)	Top-of-casing Elevation (ft msl)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)
MW-1	122	89 - 119	1307.09	12/26/2003	88.04	1219.05
				1/14/2004	93.77	1213.32
				1/29/2004	93.33	1213.76
				2/9/2004	93.23	1213.86
				6/24/2004	92.56	1214.53
				9/16/2004	92.56	1214.53
				12/7/2004	92.58	1214.51
				5/24/2005	87.33	1219.76
MW-2	110	80 - 110	1307	1/12/2003	85.76	1221.24
				1/14/2004	86.36	1220.64
				1/29/2004	85.70	1221.30
				2/9/2004	85.63	1221.37
				6/17/2004	85.36	1221.64
				9/16/2004	85.74	1221.26
				12/7/2004	85.68	1221.32
				5/24/2005	79.18	1227.82
MW-3	110	80 - 110	1306.9	1/12/2004	76.26	1230.64
				1/14/2004	76.86	1230.04
				1/29/2004	76.26	1230.64
				2/9/2004	76.20	1230.70
				6/24/2004	76.39	1230.51
				9/16/2004	76.54	1230.36
				12/7/2004	76.77	1230.13
				5/24/2005	73.42	1233.48
MW-4	75	25 - 75	1265.44	1/12/2004	57.42	1208.02
				1/14/2004	57.72	1207.72
				1/29/2004	57.18	1208.26
				2/9/2004	57.11	1208.33
				6/25/2004	56.86	1208.58
				9/17/2004	56.75	1208.69
				12/7/2004	56.77	1208.67
				5/24/2005	52.58	1212.86
MW-5	75	45 - 75	1266.21	1/23/2004	64.26	1201.95
				1/26/2004	64.24	1201.97
				1/29/2004	64.01	1202.20
				2/9/2004	64.02	1202.19
				6/17/2004	63.77	1202.44
				9/16/2004	63.61	1202.60
				12/7/2004	63.64	1202.57
				5/24/2005	60.35	1205.86
MW-6	65	40 - 65	1252.57	1/23/2004	52.07	1200.50
				1/26/2004	51.87	1200.70
				1/29/2004	51.61	1200.96
				2/9/2004	51.61	1200.96
				6/25/2004	51.31	1201.26
				9/17/2004	51.12	1201.45
				12/7/2004	50.98	1201.59
				5/24/2005	48.02	1204.55
MW-7	70	40 - 70	1248.12	2/3/2004	53.50	1194.62
				2/6/2004	51.51	1196.61
				2/9/2004	51.70	1196.42
				6/25/2004	51.39	1196.73
				9/16/2004	51.24	1196.88
				12/7/2004	51.23	1196.89
				5/24/2005	49.21	1198.91
MW-8	85	55 - 85	1293.21	2/4/2004	69.00	1224.21
				2/6/2004	59.30	1233.91
				2/9/2004	69.28	1223.93
				6/24/2004	69.46	1223.75
				9/16/2004	69.54	1223.67
				12/7/2004	69.61	1223.60
				5/24/2005	62.56	1230.65

Abbreviations:
ft bgs = Feet below ground surface
ft btoc = Feet below top of casing
ft msl = Feet mean sea level

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Table 13 Discreet Soil Vapor Sample Results
SADD Lease–North and South Parcels
Los Valles Company, Inc.
Castaic, California

Well ID	Sample Depth	Date Sampled	TVPH-g		Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylene		Total Xylenes	1,3,5-TMB		1,2,4-TMB	
			ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	µg/L	ppbv	µg/L	ppbv	µg/L
		Molecular Weight	*100*		*78*		*92*		*106*		*106*		*106*		*106*	*120*		*120*	
North SADD Parcel																			
VW-1	10 - 30 ft	08/24/04	3,400,000	15,168.4	25,000	80.8	33,000	125.7	11,000	48.3	15,000	65.9	10,000	43.9	109.8	1,400	7.0	3,600	17.9
		09/29/04	1,800,000	8,030.4	19,000	61.4	22,000	83.8	6,100	26.8	15,000	65.9	8,000	35.1	101.0	2,500	12.4	5,800	28.8
		01/05/05	250,000	1,115.3	2.5	0.00808	3,900	14.86048	3,500	15.3658	34,000	149.3	12,000	52.7	202.0	220	1.1	590	2.9
		03/04/05	180,000	803.0	210	0.7	620	2.4	320	1.4	1,100	4.8	640	2.8	7.6	100	0.5	190	0.9
		06/10/05	100,000	446.1	180	0.6	360	1.4	160	0.7	590	2.6	390	1.7	4.3	140	0.7	170	0.8
		11/17/05	18,000	80.3	29	0.1	63	0.2	26	0.1	97	0.4	62	0.3	0.7	22	0.1	48	0.2
		12/19/05	12,000	53.5	< 1.8	< 0.01	3.7	0.01	< 1.8	0.01	5.1	0.02	4.0	0.02	0.04	< 3.6	< 0.02	< 3.6	< 0.02
		12/29/05	6,700	29.9	< 1.8	< 0.01	< 1.8	< 0.01	< 1.8	< 0.01	3.8	0.02	< 1.8	< 0.01	0.02	< 3.6	< 0.02	< 3.6	< 0.02
		01/09/06	5,800	25.9	< 1.8	< 0.01	< 1.8	< 0.01	2.0	0.01	6.9	0.03	2.5	0.01	0.0	< 3.6	< 0.02	< 3.6	< 0.02
	35 - 55 ft	08/24/04	4,800,000	21,414.3	26,000	84.0	41,000	156.2	11,000	48.3	16,000	70.2	11,000	48.3	118.0	1,400	7.0	3,100	15.4
		09/29/04	8,400,000	37,475.0	130,000	420.0	99,000	377.2	29,000	127.3	49,000	215.1	23,000	101.0	316.1	2,500	12.4	8,100	40.3
		01/05/05	600,000	2,676.8	3,000	9.7	9,200	35.1	5,500	24.1	8,800	38.6	5,600	24.6	63.2	680	3.4	1,600	8.0
		03/04/05	470,000	2,096.8	2,100	6.8	6,900	26.3	3,400	14.9	5,500	24.1	3,600	15.8	40.0	640	3.2	1,900	9.4
		06/10/05	310,000	1,383.0	720	2.3	3,100	11.8	1,700	7.5	2,700	11.9	1,600	7.0	18.9	44	0.2	1,500	7.5
		11/17/05	140,000	624.6	320	1.0	1,500	5.7	930	4.1	1,300	5.7	790	3.5	9.2	170	0.8	510	2.5
		12/19/05	120,000	535.4	240	0.8	1,100	4.2	610	2.7	930	4.1	600	2.6	6.7	120	0.6	300	1.5
		12/29/05	340,000	1,516.8	540	1.7	1,700	6.5	930	4.1	1,600	7.0	1,100	4.8	11.9	310	1.5	650	3.2
		01/09/06	440,000	1,963.0	860	2.8	2,200	8.4	950	4.2	1,900	8.3	1,400	6.1	14.5	370	1.8	710	3.5
	60 - 80 ft	08/24/04	8,300,000	37,028.8	110,000	355.4	83,000	316.3	27,000	118.5	39,000	171.2	21,000	92.2	263.4	1,700	8.4	6,000	29.8
		09/29/04	1,500,000	6,692.0	14,000	45.2	22,000	83.8	5,000	22.0	7,700	33.8	4,100	18.0	51.8	470	2.3	1,200	6.0
		10/29/04	NA	NA	12,000	38.8	25,000	95.3	7,800	34.2	10,000	43.9	5,300	23.3	67.2	660	3.3	1,900	9.4
		01/05/05	780,000	3,479.8	3,600	11.6	12,000	45.7	9,900	43.5	13,000	57.1	7,400	32.5	89.6	780	3.9	2,100	10.4
		03/04/05	880,000	3,925.9	2,600	8.4	9,700	37.0	7,200	31.6	13,000	57.1	7,800	34.2	91.3	1,200	6.0	3,700	18.4
		06/10/05	460,000	2,052.2	630	2.0	2,300	8.8	2,000	8.8	3,900	17.1	2,600	11.4	28.5	580	2.9	1,700	8.4
		11/17/05	430,000	1,918.4	530	1.7	2,100	8.0	2,000	8.8	3,200	14.0	2,200	9.7	23.7	490	2.4	1,200	6.0
		12/19/05	420,000	1,873.7	410	1.3	430	1.6	290	1.3	770	3.4	1,200	5.3	8.6	480	2.4	280	1.4
		12/29/05	580,000	2,587.6	400	1.3	570	2.2	560	2.5	1,200	5.3	2,000	8.8	14.0	630	3.1	400	2.0
		01/09/06	490,000	2,186.0	650	2.1	350	1.3	230	1.0	580	2.5	950	4.2	6.7	320	1.6	150	0.7
VW-2	10 - 30 ft	08/24/04	5,600,000	24,983.3	70,000	226.1	58,000	221.0	25,000	109.8	27,000	118.5	14,000	61.5	180.0	1,400	7.0	4,200	20.9
		09/29/04	600,000	2,676.8	80,000	258.4	71,000	270.5	28,000	122.9	36,000	158.0	16,000	70.2	228.3	2,400	11.9	5,400	26.8
		01/05/05	1,100,000	4,907.4	2,300	7.4	5,600	21.3	4,600	20.2	8,600	37.8	5,900	25.9	63.7	2,300	11.4	7,100	35.3
		03/04/05	650,000	2,899.8	1,600	5.2	4,000	15.2	2,500	11.0	4,200	18.4	2,800	12.3	30.7	1,300	6.5	4,000	19.9
		06/10/05	440,000	1,963.0	380	1.2	990	3.8	500	2.2	810	3.6	550	2.4	6.0	290	1.4	950	4.7
		11/17/05	180,000	803.0	350	1.1	930	3.5	490	2.2	710	3.1	450	2.0	5.1	160	0.8	460	2.3
		12/19/05	410,000	1,829.1	310	1.0	520	2.0	300	1.3	620	2.7	590	2.6	5.3	280	1.4	430	2.1
		12/29/05	400,000	1,784.5	400	1.3	510	1.9	190	0.8	400	1.8	470	2.1	3.8	200	1.0	220	1.1
		01/09/06	390,000	1,739.9	290	0.9	360	1.4	130	0.6	270	1.2	310	1.4	2.5	180	0.9	190	0.9

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Table 13 Discreet Soil Vapor Sample Results
SADD Lease–North and South Parcels
Los Valles Company, Inc.
Castaic, California

Well ID	Sample Depth	Date Sampled	TVPH-g		Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylene		Total Xylenes	1,3,5-TMB		1,2,4-TMB	
			ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	ppbv	µg/L	µg/L	ppbv	µg/L	ppbv	µg/L
		Molecular Weight	*100*		*78*		*92*		*106*		*106*		*106*		*106*	*120*		*120*	
VW-2	35 - 55 ft	08/24/04	8,200,000	36,582.7	110,000	355.4	86,000	327.7	31,000	136.1	34,000	149.3	20,000	87.8	237.1	1,700	8.4	5,300	26.3
		09/29/04	9,100,000	40,597.9	130,000	420.0	110,000	419.1	35,000	153.7	56,000	245.9	27,000	118.5	365.0	5,700	28.3	16,000	79.5
		10/29/04	NA	NA	57,000	184.1	80,000	304.8	30,000	131.7	36,000	158.0	18,000	79.0	237.1	1,700	8.4	4,900	24.4
		01/05/05	3,300,000	14,722.3	25,000	80.8	53,000	202.0	33,000	144.9	40,000	175.6	20,000	87.8	263.4	2,300	11.4	5,800	28.8
		03/04/05	2,500,000	11,153.3	12,000	38.8	36,000	137.2	25,000	109.8	33,000	144.9	17,000	74.6	219.5	2,000	9.9	5,900	29.3
		06/10/05	1,700,000	7,584.2	4,100	13.2	18,000	68.6	15,000	65.9	23,000	101.0	12,000	52.7	153.7	1,800	8.9	4,800	23.9
		11/17/05	1,000,000	4,461.3	1,500	4.8	9,200	35.1	7,900	34.7	11,000	48.3	6,700	29.4	77.7	950	4.7	2,300	11.4
		12/19/05	1,400,000	6,245.8	1,800	5.8	9,500	36.2	3,900	17.1	8,000	35.1	6,100	26.8	61.9	1,500	7.5	1,700	8.4
		12/29/05	1,600,000	7,138.1	730	2.4	2,300	8.8	850	3.7	3,600	15.8	3,100	13.6	29.4	920	4.6	500	2.5
		01/09/06	1,400,000	6,245.8	790	2.6	6,700	25.5	2,600	11.4	13,000	57.1	7,200	31.6	88.7	3,100	15.4	7,200	35.8
	60 - 80 ft	08/24/04	8,400,000	37,475.0	120,000	387.7	160,000	609.7	40,000	175.6	49,000	215.1	28,000	122.9	338.0	1,500	7.5	1,500	7.5
		09/29/04	9,900,000	44,166.9	150,000	484.6	190,000	724.0	44,000	193.2	76,000	333.7	37,000	162.4	496.1	9,000	44.7	28,000	139.2
		10/29/04	NA	NA	20,000	64.6	85,000	323.9	26,000	114.1	30,000	131.7	17,000	74.6	206.3	1,600	8.0	4,500	22.4
		01/05/05	1,400,000	6,245.8	3,100	10.0	15,000	57.2	17,000	74.6	21,000	92.2	13,000	57.1	149.3	1,700	8.4	4,200	20.9
		03/04/05	1,200,000	5,353.6	2,600	8.4	11,000	41.9	13,000	57.1	18,000	79.0	11,000	48.3	127.3	1,700	8.4	5,200	25.8
		06/10/05	690,000	3,078.3	530	1.7	2,000	7.6	2,800	12.3	4,400	19.3	2,900	12.7	32.0	620	3.1	1,900	9.4
		11/17/05	550,000	2,453.7	790	2.6	3,300	12.6	3,400	14.9	5,300	23.3	3,600	15.8	39.1	780	3.9	2,100	10.4
		12/19/05	430,000	1,918.4	690	2.2	2,500	9.5	2,500	11.0	4,000	17.6	2,900	12.7	30.3	550	2.7	1,400	7.0
		12/29/05	670,000	2,989.1	1,100	3.6	6,100	23.2	5,600	24.6	7,800	34.2	4,800	21.1	55.3	640	3.2	1,700	8.4
		01/09/06	630,000	2,810.6	1,900	6.1	9,000	34.3	4,000	17.6	5,600	24.6	3,500	15.4	40.0	500	2.5	1,200	6.0
South SADD Parcel																			
VW-3	10 - 30 ft	08/24/04	1,800	8.0	2	0.0	2	0.0	2	0.0	2	0.0	2	0.0	0.0	4	0.0	4	0.0
		12/19/05	< 1,800	<8.0	< 1.8	<0.01	< 1.8	<0.01	< 1.8	<0.01	< 1.8	<0.01	< 1.8	<0.01	0.0	< 3.5	<0.02	< 3.5	<0.02
	35 - 55 ft	08/24/04	4,400,000	19,629.7	130	0.4	37	0.1	70	0.3	250	1.1	110	0.5	1.6	75	0.4	75	0.4
		12/19/05	740,000	3,301.4	< 5.4	<0.02	< 5.4	<0.02	19	0.1	54	0.2	38	0.2	0.4	15	0.1	27	0.1
	RWQCB Region 2 ESL (µg/L)			*NS*		*0.0084*		*83*		*210*		*NS*		*NS*	*21*		*NS*		*NS*

Notes:
< = The constituent was not detected above the specified reporting limit.

Abbreviations:
µg/L = Micrograms per liter
ESL = Environmental screening level
ft = Feet
NA = not analyzed
NS = no standard
ppbv = parts per billion by volume
RWQCB = Regional Water Quality Control Board
TMB = Trimethylbenzene
TVPH-g = Total volatile petroleum hydrocarbons as gasoline

Table 14 *Influent Soil Vapor Sample Results*
Los Valles Company, Inc.
Castaic, California

Sample ID	Date Sampled	TVPH-g	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	1,3,5-TMB	1,2,4-TMB	Total VOCs
		ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv
Hasley-In-01	10/4/2004	**1,200**	**20.00**	**26.00**	5.80	7.20	3.90	<0.370	1.10	64.00
Hasley-In-02	11/1/2004	840	6.00	20.00	6.80	9.50	4.90	0.66	1.80	49.66
Hasley-In-03	12/2/2004	1,100	5.00	21.00	**14.00**	**17.00**	**11.00**	**1.40**	**3.60**	**73.00**
Hasley-In-04	1/5/2005	800	2.90	10.00	9.20	12.00	7.30	0.96	2.70	45.06
Hasley-In-05	2/1/2005	660	2.00	6.90	6.90	9.30	5.70	0.84	2.30	33.94
Hasley-In-06	3/4/2005	700	1.80	6.60	6.60	9.30	5.80	0.95	3.00	34.05
Hasley-In-07	4/7/2005	460	0.89	3.10	3.00	4.90	3.20	0.63	1.90	17.62
Hasley-In-08	5/11/2005	430	0.97	3.40	3.50	5.30	3.20	0.60	1.70	18.67
Hasley-In-09	6/10/2005	410	0.71	2.80	2.90	4.80	3.00	0.70	2.10	17.01
Hasley-In-10	7/29/2005	360	0.98	3.00	2.40	4.10	2.60	0.58	1.60	15.26
System shutdown for rebound testing starting on 8/5/05.										
Hasley-In-11	8/10/2005	420	1.20	3.60	2.80	4.90	3.10	0.69	2.00	18.29
System shutdown for rebound testing.										
Hasley-In-12	8/19/2005	530	1.50	3.90	3.10	5.20	3.30	0.73	1.90	19.63
System shutdown for rebound testing.										
Hasley-In-13	9/1/2005	430	1.30	4.10	3.40	5.00	3.30	0.61	1.70	19.41
Hasley-In-14 (*)	10/27/2005	360	0.67	2.70	2.50	3.60	2.50	0.56	1.50	14.03
Hasley-In-15	11/17/2005	380	0.57	2.50	2.30	3.40	2.30	0.49	1.30	12.86
Reduction since Startup/Max. Conc.		*68.3%*	*97.2%*	*90.4%*	*83.6%*	*80.0%*	*79.1%*	*65.0%*	*63.9%*	*82.4%*

Notes:

The active venting system was shutdown starting on 8/5/05 to initiate rebound testing.

The samples collected on 8/10, 8/19, and 9/1 are rebound testing samples.

(*) - TCE (0.051 ppmv) and PCE (0.250 ppmv) were also detected in the system influent sample on 10/27/05. These results appear anomolous.

< = The constituent was not detected above the specified reporting limit.

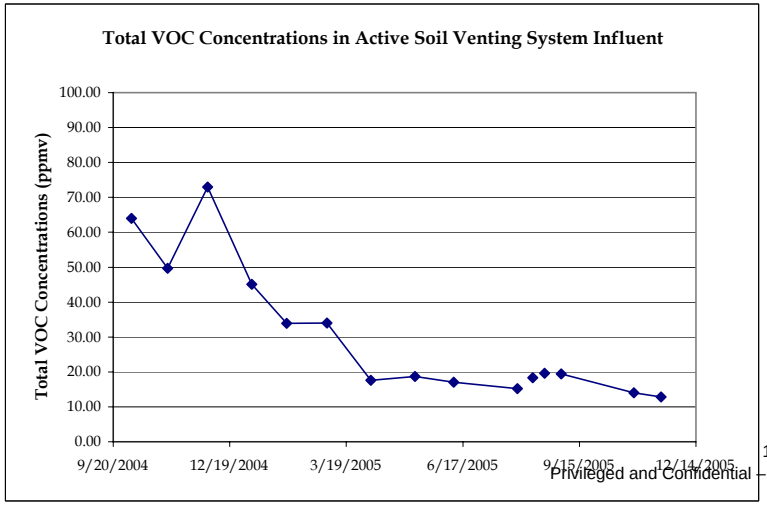
ppmv = parts per million by volume

Bolded values are maximum detected concentrations.

TMB = Trimethylbenzene

TVPH = Total Volatile Petroluem Hydrocarbons as gasoline

VOCs = Volatile Ogranic Compounds



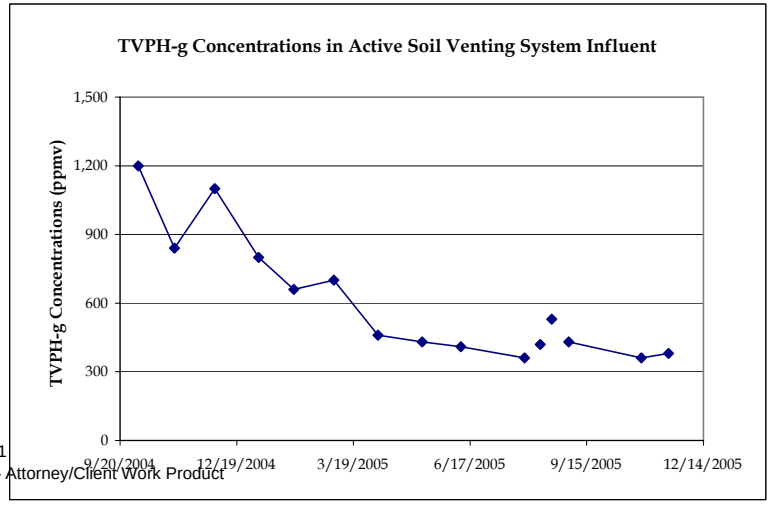


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Table 15 *Mass Removal Calculations*
Los Valles Company, Inc.
Castaic, California

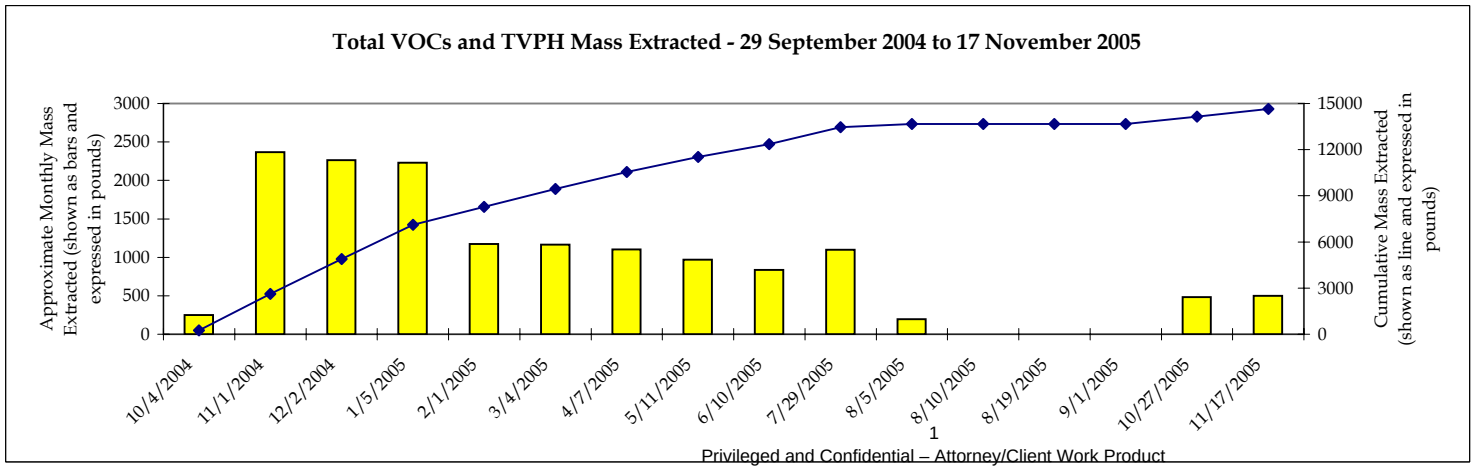
		Vapor Analytical Data								Mass Removal Calculations					
Molecular weight		78	92	106	106	106	120	120	100	Extraction	Operational	VOC Mass	TVPH Mass	Total Mass	Cumulative
Sample ID	Sample Date	Benzene	Toluene	Ethyl-benzene	mp-Xylene	o-Xylene	1,3,5-TMB	1,2,4-TMB	TVPH-g	flow rate (scfm)	Time (hours)	Extracted (lbs.)	Extracted (lbs.)	Extracted (lbs.)	Mass Ext. (lbs.)
Hasley-In-01	10/4/2004	20.00	26.00	5.80	7.20	3.90	< 0.37	1.10	1,200	225	51	11.8	238	250	250
Hasley-In-02	11/1/2004	6.00	20.00	6.80	9.50	4.90	0.66	1.80	840	219	703	129.4	2240	2369	2620
Hasley-In-03	12/2/2004	5.00	21.00	14.00	17.00	11.00	1.40	3.60	1,100	186	599	142.3	2122	2264	4884
Hasley-In-04	1/5/2005	2.90	10.00	9.20	12.00	7.30	0.96	2.70	800	180	846	121.5	2109	2231	7115
Hasley-In-05	2/1/2005	2.00	6.90	6.90	9.30	5.70	0.84	2.30	660	186	524	58.9	1114	1173	8287
Hasley-In-06	3/4/2005	1.80	6.60	6.60	9.30	5.80	0.95	3.00	700	179	512	55.9	1111	1167	9454
Hasley-In-07	4/7/2005	0.89	3.10	3.00	4.90	3.20	0.63	1.90	460	179	744	42.3	1061	1103	10557
Hasley-In-08	5/11/2005	0.97	3.40	3.50	5.30	3.20	0.60	1.70	430	186	671	41.8	929	971	11528
Hasley-In-09	6/10/2005	0.71	2.80	2.90	4.80	3.00	0.70	2.10	410	186	608	34.9	803	838	12366
Hasley-In-10	7/29/2005	0.98	3.00	2.40	4.10	2.60	0.58	1.60	360	186	909	46.2	1054	1100	13466
(*)	8/5/2005	0.98	3.00	2.40	4.10	2.60	0.58	1.60	360	186	163	8.3	189	197	13663
Hasley-In-11	8/10/2005	1.20	3.60	2.80	4.90	3.10	0.69	2.00	420	193	1	0.1	1	1	13665
Hasley-In-12	8/19/2005	1.50	3.90	3.10	5.20	3.30	0.73	1.90	530	186	1	0.1	2	2	13666
Hasley-In-13	9/1/2005	1.30	4.10	3.40	5.00	3.30	0.61	1.70	430	186	1	0.1	1	1	13668
Hasley-In-14	10/27/2005	0.67	2.70	2.50	3.60	2.50	0.56	1.50	390	179	384	17.4	464	482	14149
Hasley-In-15	11/17/2005	0.57	2.50	2.30	3.40	2.30	0.49	1.30	380	179	408	16.9	481	497	14647
										Total	**7125**	**728**	**13919**	**14647**	

Notes:

Concentrations are reported in parts per million by volume (ppmv)
< = Less than; constituent not detected at the Method Detection Limit
ID = Identification
TMB = Trimethylbenzene
scfm = Standard cubic feet per minute
TVPH-g = Total volatile petroleum hydrocarbons as gasoline
VOC = Volatile organic compound
(*) = System shutdown to initiate rebound testing.

Equations:

M = C * MW * Q * T * T(f) * CF
M = mass of hydrocarbons (lbs.)
C = concentrations of hydrocarbons in vapor sample (ppbv)
MW = molecular weight of compounds (g/mole)
Q = vapor flow rate (scfm)
T = operational time between sampling events (hours)
T(f) = temperature factor (dimensionless) = (temp in Kelvins/273 Kelvins)
CF = conversion factor = (1 mole/22.4 liter) * (60 minutes/hour) * (28.31 liter/cu. ft.) * (1 lb/454 grams) * (1/10^6 ppmv)



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Appendix A

Attenuation Factor Calculations

Table A1 *Attenuation Factor Calculations for Benzene*
SADD LEASE - North Pad
Remedial Action Plan
Former SADD Lease Site
Los Angels County, California

CHEMICAL	MCL (2) (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Benzene	1	0.5	89.5	4.475	58.175	26.85	0	73.2	37.0	4.7	4.71	NA	--
Benzene	1	5	85	4.25	55.25	25.5	0	73.2	34.3	4.4	4.37	22	80.1%
Benzene	1	10	80	4	52	24	0	73.2	31.3	4.0	3.99	99	96.0%
Benzene	1	15	75	3.75	48.75	22.5	0	73.2	28.3	3.6	3.61	650	99.4%
Benzene	1	20	70	3.5	45.5	21	0	73.2	25.3	3.2	3.23	7300	100.0%
Benzene	1	25	65	3.25	42.25	19.5	0	73.2	22.3	2.8	2.84	ND	--
Benzene	1	30	60	3	51	6	0	73.2	19.3	2.1	2.08	5600	100.0%
Benzene	1	35	55	2.75	46.75	5.5	0	73.2	16.3	1.8	1.75	ND	--
Benzene	1	40	50	2.5	42.5	5	0	73.2	13.3	1.4	1.43	640	99.8%
Benzene	1	45	45	2.25	38.25	4.5	0	73.2	10.3	1.1	1.11	1400	99.9%
Benzene	1	50	40	2	26	12	0	73.2	7.3	0.9	1.00	2100	100.0%
Benzene	1	60	30	1.5	25.5	3	0	73.2	5.7	0.6	1.00	1700	99.9%
Benzene	1	70	20	1	17	2	0	73.2	4.2	0.4	1.00	ND	--
Benzene	1	80	10	0.5	8.5	1	0	73.2	2.6	0.3	1.00	ND	--
Benzene	1	89.5	0.5	0.025	0.425	0.05	0	73.2	1.1	0.1	1.00	49	98.0%

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Benzene) =	65	(ml/g)
K_H(Benzene) =	0.229	
Average Depth to Groundwater =	90	feet

Soil Composition:

0 - 30 ft depth (Silty sand, SM)		**30 - 45 ft depth (Sand, SS)**		**45 - 50 ft depth (Silty sand, SM)**		**50 - 90 ft depth (sand, SS)**	
% Gravel =	5	% Gravel =	5	% Gravel =	5	% Gravel =	5
% Sand =	65	% Sand =	85	% Sand =	65	% Sand =	85
% Silt =	30	% Silt =	10	% Silt =	30	% Silt =	10
% Clay =	0	% Clay =	0	% Clay =	0	% Clay =	0

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Table A2 *Attenuation Factor Calculations for Toluene*
SADD LEASE - North Pad
Remedial Action Plan
Former SADD Lease Site
Los Angels County, California

CHEMICAL	MCL (2) (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Toluene	150	0.5	89.5	4.475	58.175	26.85	0	287.6	145.2	18.5	2777.39	NA	--
Toluene	150	5	85	4.25	55.25	25.5	0	287.6	134.6	17.2	2574.90	ND	--
Toluene	150	10	80	4	52	24	0	287.6	122.9	15.7	2349.91	68	--
Toluene	150	15	75	3.75	48.75	22.5	0	287.6	111.1	14.2	2124.92	2500	15.0%
Toluene	150	20	70	3.5	45.5	21	0	287.6	99.3	12.7	1899.93	37000	94.9%
Toluene	150	25	65	3.25	42.25	19.5	0	287.6	87.6	11.2	1674.94	ND	--
Toluene	150	30	60	3	51	6	0	287.6	75.8	8.2	1222.50	22000	94.4%
Toluene	150	35	55	2.75	46.75	5.5	0	287.6	64.0	6.9	1032.80	ND	--
Toluene	150	40	50	2.5	42.5	5	0	287.6	52.3	5.6	843.10	12000	93.0%
Toluene	150	45	45	2.25	38.25	4.5	0	287.6	40.5	4.4	653.41	4100	84.1%
Toluene	150	50	40	2	26	12	0	287.6	28.8	3.7	549.98	7300	92.5%
Toluene	150	60	30	1.5	25.5	3	0	287.6	21.8	2.3	351.81	11000	96.8%
Toluene	150	70	20	1	17	2	0	287.6	14.9	1.6	239.92	17000	98.6%
Toluene	150	80	10	0.5	8.5	1	0	287.6	7.9	0.9	150.00	ND	--
Toluene	150	89.5	0.5	0.025	0.425	0.05	0	287.6	1.3	0.1	150.00	18	--

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Toluene) =	260	(ml/g)
K_H(Toluene) =	0.274	
Average Depth to Groundwater =	90	feet

Soil Composition:

0 - 30 ft depth (Silty sand, SM)
% Gravel = 5
% Sand = 65
% Silt = 30

30 - 45 ft depth (Sand, SS)
% Gravel = 5
% Sand = 85
% Silt = 10

45 - 50 ft depth (Silty sand, SM)
% Gravel = 5
% Sand = 65
% Silt = 30

50 - 90 ft depth (sand, SS)
% Gravel = 5
% Sand = 85
% Silt = 10

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Table A3 *Attenuation Factor Calculations for Ethylbenzene*
SADD LEASE - North Pad
Remedial Action Plan
Former SADD Lease Site
Los Angeles County, California

CHEMICAL	MCL [2] (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Ethyl Benzene	700	0.5	89.5	4.475	58.175	26.85	0	243.8	123.1	15.7	10989.73	NA	--
Ethyl Benzene	700	5	85	4.25	55.25	25.5	0	243.8	114.2	14.6	10188.50	6800	--
Ethyl Benzene	700	10	80	4	52	24	0	243.8	104.2	13.3	9298.24	12000	22.5%
Ethyl Benzene	700	15	75	3.75	48.75	22.5	0	243.8	94.2	12.0	8407.99	3600	--
Ethyl Benzene	700	20	70	3.5	45.5	21	0	243.8	84.2	10.7	7517.73	34000	77.9%
Ethyl Benzene	700	25	65	3.25	42.25	19.5	0	243.8	74.3	9.5	6627.47	460	--
Ethyl Benzene	700	30	60	3	51	6	0	243.8	64.3	6.9	4837.26	23000	79.0%
Ethyl Benzene	700	35	55	2.75	46.75	5.5	0	243.8	54.3	5.8	4086.65	370	--
Ethyl Benzene	700	40	50	2.5	42.5	5	0	243.8	44.3	4.8	3336.04	12000	72.2%
Ethyl Benzene	700	45	45	2.25	38.25	4.5	0	243.8	34.4	3.7	2585.43	6300	59.0%
Ethyl Benzene	700	50	40	2	26	12	0	243.8	24.4	3.1	2176.18	13000	83.3%
Ethyl Benzene	700	60	30	1.5	25.5	3	0	243.8	18.5	2.0	1394.93	14000	90.0%
Ethyl Benzene	700	70	20	1	17	2	0	243.8	12.7	1.4	955.04	17000	94.4%
Ethyl Benzene	700	80	10	0.5	8.5	1	0	243.8	6.8	0.7	700.00	ND	--
Ethyl Benzene	700	89.5	0.5	0.025	0.425	0.05	0	243.8	1.3	0.1	700.00	8.8	--

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Ethyl Benzene) =	220	(ml/g)
K_H(Ethyl Benzene) =	0.328	
Average Depth to Groundwater =	90	feet

Soil Composition:

0 - 30 ft depth (Silty sand, SM)		**30 - 45 ft depth (Sand, SS)**		**45 - 50 ft depth (Silty sand, SM)**		**50 - 90 ft depth (sand, SS)**	
% Gravel =	5	% Gravel =	5	% Gravel =	5	% Gravel =	5
% Sand =	65	% Sand =	85	% Sand =	65	% Sand =	85
% Silt =	30	% Silt =	10	% Silt =	30	% Silt =	10

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Table A4 *Attenuation Factor Calculations for Xylenes*
SADD LEASE - North Pad
Remedial Action Plan
Former SADD Lease Site
Los Angels County, California

CHEMICAL	MCL (2) (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Total Xylenes	1750	0.5	89.5	4.475	58.175	26.85	0	265.4	134.0	17.1	29905.65	NA	--
Total Xylenes	1750	5	85	4.25	55.25	25.5	0	265.4	124.3	15.8	27725.31	15000	--
Total Xylenes	1750	10	80	4	52	24	0	265.4	113.4	14.5	25302.71	18000	--
Total Xylenes	1750	15	75	3.75	48.75	22.5	0	265.4	102.5	13.1	22880.11	8700	--
Total Xylenes	1750	20	70	3.5	45.5	21	0	265.4	91.7	11.7	20457.51	87000	76.5%
Total Xylenes	1750	25	65	3.25	42.25	19.5	0	265.4	80.8	10.3	18034.91	1400	--
Total Xylenes	1750	30	60	3	51	6	0	265.4	70.0	7.5	13163.32	61000	78.4%
Total Xylenes	1750	35	55	2.75	46.75	5.5	0	265.4	59.1	6.4	11120.74	580	--
Total Xylenes	1750	40	50	2.5	42.5	5	0	265.4	48.3	5.2	9078.15	37000	75.5%
Total Xylenes	1750	45	45	2.25	38.25	4.5	0	265.4	37.4	4.0	7035.57	16000	56.0%
Total Xylenes	1750	50	40	2	26	12	0	265.4	26.5	3.4	5921.91	39000	84.8%
Total Xylenes	1750	60	30	1.5	25.5	3	0	265.4	20.2	2.2	3791.77	33000	88.5%
Total Xylenes	1750	70	20	1	17	2	0	265.4	13.8	1.5	2590.55	51000	94.9%
Total Xylenes	1750	80	10	0.5	8.5	1	0	265.4	7.4	0.8	1750.00	ND	--
Total Xylenes	1750	89.5	0.5	0.025	0.425	0.05	0	265.4	1.3	0.1	1750.00	55	--

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Xylenes) =	240	(ml/g)
K_H(Xylenes) =	0.22	
Average Depth to Groundwater =	90	feet

Soil Composition:

0 - 30 ft depth (Silty sand, SM)
% Gravel = 5
% Sand = 65
% Silt = 30

30 - 45 ft depth (Sand, SS)
% Gravel = 5
% Sand = 85
% Silt = 10

45 - 50 ft depth (Silty sand, SM)
% Gravel = 5
% Sand = 65
% Silt = 30

50 - 90 ft depth (sand, SS)
% Gravel = 5
% Sand = 85
% Silt = 10

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Table A5 *Attenuation Factor Calculations for Benzene*
SADD LEASE - South Pad
Remedial Action Plan
Former SADD Lease Site
Los Angels County, California

CHEMICAL	MCL [2] (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Benzene	1	0.5	59.5	2.975	38.675	17.85	0	73.2	19.0	2.4	2.42	NA	--
Benzene	1	5	55	2.75	35.75	16.5	0	73.2	16.3	2.1	2.08	ND	--
Benzene	1	10	50	2.5	32.5	15	0	73.2	13.3	1.7	1.70	2400	99.9%
Benzene	1	15	45	2.25	29.25	13.5	0	73.2	10.3	1.3	1.32	ND	--
Benzene	1	20	40	2	34	4	0	73.2	7.3	0.8	1.00	66000	100.0%
Benzene	1	25	35	1.75	29.75	3.5	0	73.2	6.5	0.7	1.00	ND	--
Benzene	1	30	30	1.5	25.5	3	0	73.2	5.7	0.6	1.00	ND	--
Benzene	1	35	25	1.25	21.25	2.5	0	73.2	5.0	0.5	1.00	ND	--
Benzene	1	40	20	1	17	2	0	73.2	4.2	0.4	1.00	1300	99.9%
Benzene	1	45	15	0.75	12.75	1.5	0	73.2	3.4	0.4	1.00	ND	--
Benzene	1	50	10	0.5	8.5	1	0	73.2	2.6	0.3	1.00	ND	--
Benzene	1	59.5	0.5	0.025	0.425	0.05	0	73.2	1.1	0.1	1.00	ND	--

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Benzene) =	65	(ml/g)
K_H(Benzene) =	0.229	
Average Depth to Groudwater =	60	feet

0 - 15 ft depth (Silty sand, SM)		**15 - 60 ft depth (Sand, SS)**	
% Gravel =	5	% Gravel =	5
% Sand =	65	% Sand =	85
% Silt =	30	% Silt =	10
% Clay =	0	% Clay =	0

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Table A6 *Attenuation Factor Calculations for Toluene*
SADD LEASE - South Pad
Remedial Action Plan
Former SADD Lease Site
Los Angels County, California

CHEMICAL	MCL [2] (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Toluene	150	0.5	59.5	2.975	38.675	17.85	0	287.6	74.6	9.5	1427.44	NA	--
Toluene	150	5	55	2.75	35.75	16.5	0	287.6	64.0	8.2	1224.95	ND	--
Toluene	150	10	50	2.5	32.5	15	0	287.6	52.3	6.7	999.96	ND	--
Toluene	150	15	45	2.25	29.25	13.5	0	287.6	40.5	5.2	774.97	ND	--
Toluene	150	20	40	2	34	4	0	287.6	28.8	3.1	463.71	130000	99.6%
Toluene	150	25	35	1.75	29.75	3.5	0	287.6	25.3	2.7	407.76	ND	--
Toluene	150	30	30	1.5	25.5	3	0	287.6	21.8	2.3	351.81	ND	--
Toluene	150	35	25	1.25	21.25	2.5	0	287.6	18.3	2.0	295.86	ND	--
Toluene	150	40	20	1	17	2	0	287.6	14.9	1.6	239.92	4000	94.0%
Toluene	150	45	15	0.75	12.75	1.5	0	287.6	11.4	1.2	183.97	ND	--
Toluene	150	50	10	0.5	8.5	1	0	287.6	7.9	0.9	150.00	ND	--
Toluene	150	59.5	0.5	0.025	0.425	0.05	0	287.6	1.3	0.1	150.00	ND	--

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Toluene) =	260	(ml/g)
K_H(Toluene) =	0.274	
Average Depth to Groudwater =	60	feet

0 - 15 ft depth (Silty sand, SM)		**15 - 60 ft depth (Sand, SS)**	
% Gravel =	5	% Gravel =	5
% Sand =	65	% Sand =	85
% Silt =	30	% Silt =	10
% Clay =	0	% Clay =	0

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Table A7 *Attenuation Factor Calculations for Ethyl Benzene*
SADD LEASE - South Pad
Remedial Action Plan
Former SADD Lease Site
Los Angels County, California

CHEMICAL	MCL [2] (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Ethyl Benzene	700	0.5	59.5	2.975	38.675	17.85	0	243.8	63.3	8.1	5648.19	NA	--
Ethyl Benzene	700	5	55	2.75	35.75	16.5	0	243.8	54.3	6.9	4846.96	ND	--
Ethyl Benzene	700	10	50	2.5	32.5	15	0	243.8	44.3	5.7	3956.70	ND	--
Ethyl Benzene	700	15	45	2.25	29.25	13.5	0	243.8	34.4	4.4	3066.44	ND	--
Ethyl Benzene	700	20	40	2	34	4	0	243.8	24.4	2.6	1834.82	ND	--
Ethyl Benzene	700	25	35	1.75	29.75	3.5	0	243.8	21.5	2.3	1614.88	ND	--
Ethyl Benzene	700	30	30	1.5	25.5	3	0	243.8	18.5	2.0	1394.93	ND	--
Ethyl Benzene	700	35	25	1.25	21.25	2.5	0	243.8	15.6	1.7	1174.98	ND	--
Ethyl Benzene	700	40	20	1	17	2	0	243.8	12.7	1.4	955.04	4300	77.8%
Ethyl Benzene	700	45	15	0.75	12.75	1.5	0	243.8	9.8	1.1	735.09	ND	--
Ethyl Benzene	700	50	10	0.5	8.5	1	0	243.8	6.8	0.7	700.00	130	--
Ethyl Benzene	700	59.5	0.5	0.025	0.425	0.05	0	243.8	1.3	0.1	700.00	ND	--

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Ethyl Benzene) =	220	(ml/g)
K_H(Ethyl Benzene) =	0.328	
Average Depth to Groudwater =	60	feet

0 - 15 ft depth (Silty sand, SM)		**15 - 60 ft depth (Sand, SS)**	
% Gravel =	5	% Gravel =	5
% Sand =	65	% Sand =	85
% Silt =	30	% Silt =	10
% Clay =	0	% Clay =	0

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Table A8 *Attenuation Factor Calculations for Xylenes*
SADD LEASE - South Pad
Remedial Action Plan
Former SADD Lease Site
Los Angels County, California

CHEMICAL	MCL [2] (µg/L)	SAMPLE DEPTH (ft)	AVERAGE DEPTH TO GROUND WATER (ft)	GRAVEL TGR (ft)	SAND TSA (ft)	SILT TSI (ft)	CLAY TCL (ft)	AF	AF_D	AF_T	C (Soil Cleanup Levels) (µg/kg)	HIGHEST OBSERVED ANALTICAL SOIL RESULT (µg/kg)	Reduction To Reach Clean-Up Goal (%)
Total Xylenes	1750	0.5	59.5	2.975	38.675	17.85	0	265.4	68.9	8.8	15370.05	NA	--
Total Xylenes	1750	5	55	2.75	35.75	16.5	0	265.4	59.1	7.5	13189.71	ND	--
Total Xylenes	1750	10	50	2.5	32.5	15	0	265.4	48.3	6.2	10767.11	ND	--
Total Xylenes	1750	15	45	2.25	29.25	13.5	0	265.4	37.4	4.8	8344.51	ND	--
Total Xylenes	1750	20	40	2	34	4	0	265.4	26.5	2.9	4992.98	94000	94.7%
Total Xylenes	1750	25	35	1.75	29.75	3.5	0	265.4	23.3	2.5	4392.38	ND	--
Total Xylenes	1750	30	30	1.5	25.5	3	0	265.4	20.2	2.2	3791.77	ND	--
Total Xylenes	1750	35	25	1.25	21.25	2.5	0	265.4	17.0	1.8	3191.16	ND	--
Total Xylenes	1750	40	20	1	17	2	0	265.4	13.8	1.5	2590.55	5200	50.2%
Total Xylenes	1750	45	15	0.75	12.75	1.5	0	265.4	10.6	1.1	1989.95	ND	--
Total Xylenes	1750	50	10	0.5	8.5	1	0	265.4	7.4	0.8	1750.00	200	--
Total Xylenes	1750	59.5	0.5	0.025	0.425	0.05	0	265.4	1.3	0.1	1750.00	ND	--

Notes:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ft = feet
NA = Not Applicable
NL = Not Listed
(1) Guidebook
(2) California DOHS Emergency Rulemaking Document R-36-93, Interim Site Assessment and Cleanup Guidebook, May 1996, pg. A-8.
Highlighted areas indicate soil sample concentrations which have exceeded the calculated cleanup level.

Assumptions Used:

P_b =	2.27	(g/ml): Soil Bulk Density
θ_w =	0.031	: Soil Water Content
f_{oc} =	0.015	: Organic Carbon Content
n =	0.143	: Soil Porosity
K_{oc}(Xylenes) =	240	(ml/g)
K_H(Xylenes) =	0.22	
Average Depth to Groudwater =	60	feet

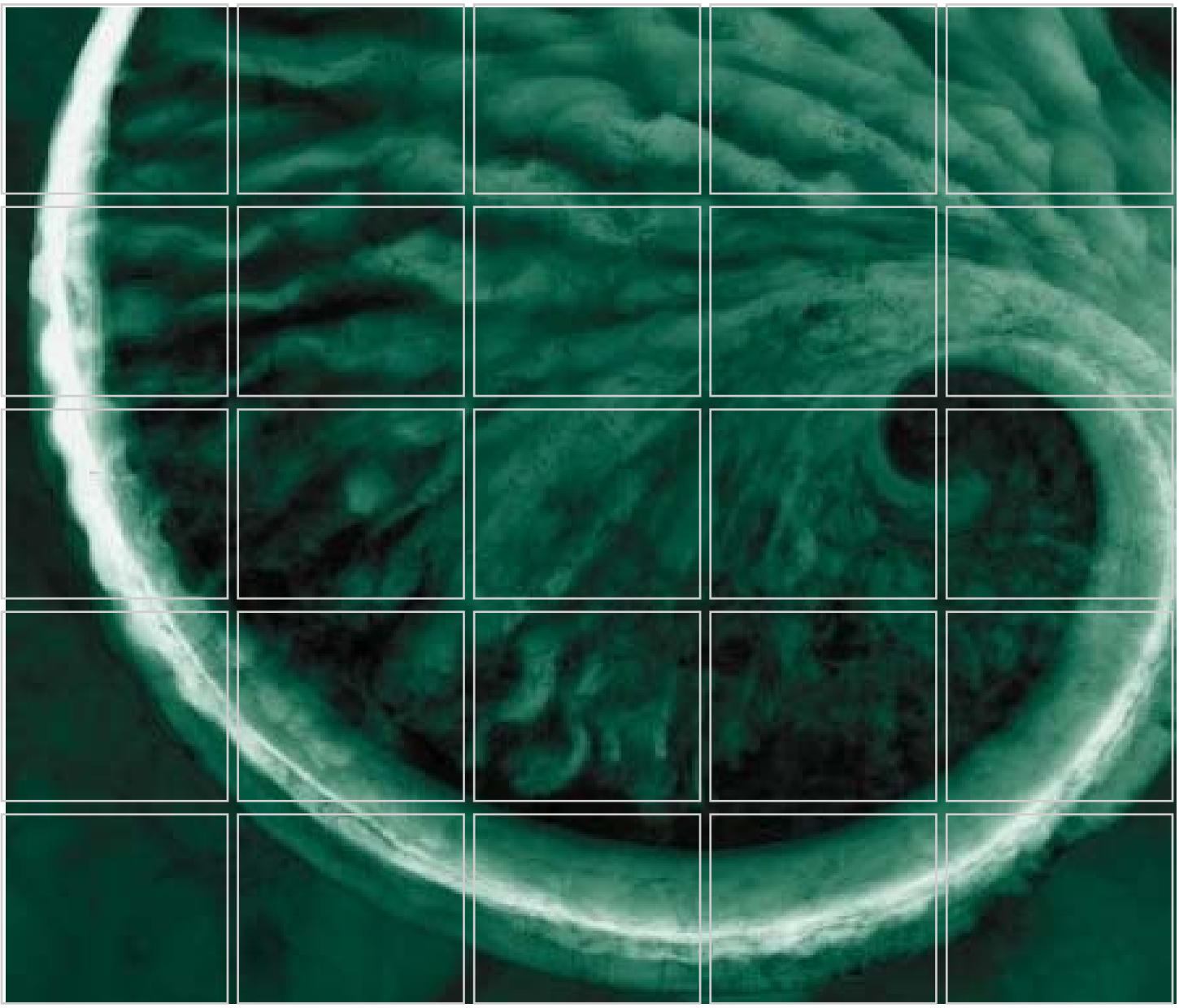
0 - 15 ft depth (Silty sand, SM)		**15 - 60 ft depth (Sand, SS)**	
% Gravel =	5	% Gravel =	5
% Sand =	65	% Sand =	85
% Silt =	30	% Silt =	10
% Clay =	0	% Clay =	0

Legend:
TGR = Total thickness of gravel layer within D (feet)
TSA = Total thickness of sand layer within D (feet)
TSI = Total thickness of silt layer within D (feet)
TCL = Total thickness of clay layer within D (feet)
$AF = 1 + (P_b / \theta_w) \cdot f_{oc} \cdot K_{oc} + (n - \theta_w) \cdot K_H / \theta w$
$AF_T = (AF_D / D) \cdot (TGR / 20 + TSA / 10 + TSI / 5 + TCL)$
C = Soil cleanup level concentrations (µg/kg)
MCL = California MCL (Maximum Contaminant Level)
PCE = Tetrachloroethene

Where:
AF_T = Attenuation factor with total modification for distance to ground water and lithology.
AF_D = Attenuation factor as a function of AF and depth to ground water.
D = Distance from ground water to point of interest (feet).

Appendix B

Health Risk Assessment Report



Health Risk Assessment

Former SADD Lease Site

February 2006

www.erm.com

Prepared for:
Los Valles Land &
Golf, LLC

Delivering sustainable solutions in a more competitive world

ERM

Los Valles Land & Golf, LLC

Health Risk Assessment

Former SADD Lease Site

February 2006

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1.0 INTRODUCTION

On behalf of Los Valles Land & Golf, LLC (Los Valles) ERM-West, Inc., (ERM) has prepared this Health Risk Assessment (HRA) Report to address potential for carcinogenic risk and non-carcinogenic health effects related to residual impacted soil at the Los Valles site in Castaic, California (Figure 1).

The 432-acre site is largely undeveloped land with the exception of three former production areas (each covering an area of approximately 1 acre) previously used for crude oil extraction. Previous oil production activities resulted in potential environmental impacts at these three areas. The three former production areas, as shown on Figure 2, are referred to as:

1. AEO Lease – Burns/Crist (AEO Pad);
2. SADD Lease – North Pad (NP); and
3. SADD Lease - South Pad (SP).

The site is being redeveloped as a combination of luxury homes and a championship golf course (Figures 3 and 4). The three areas mentioned above will be incorporated as features of the golf course (i.e. the six-hole tee box will be situated at the SADD Lease – NP). No future homes will be constructed on these threes sites.

Investigation results did not identify impacted material warranting further consideration or remediation at the AEO Pad. Residual impacted soil was identified at the SP, however no active remediation is required per the Los Angeles County Fire Department (LACFD). Remediation at the NP shows that the soil gas concentrations have been significantly reduced and stabilized.

Specifically this HRA Report focuses on the passive venting of vapors from partially treated soil at the Former SADD Lease Parcels after the development of the property. Specifically, this document describes air dispersion modeling, exposure analysis, and resultant risk assessment from the passive venting of the soil gas. Detailed site background, proposed redevelopment, and investigation/remediation information are provided in the *Remedial Action Plan* (ERM, 2004) and quarterly progress reports submitted to the Los Angeles County Fire Department (LACFD).

The HRA Report is organized as follows:

- Section 2.0 summarizes the overall risk assessment methodology used in the analysis;
- Section 3.0 discusses the results of the risk assessment;
- Section 4.0 describes the conclusion of the study; and
- Section 5.0 provides references.

2.0 PRELIMINARY SCREENING RISK ASSESSMENT METHODOLOGY

This section provides the methodology utilized in conducting the preliminary screening HRA. The screening HRA is used to conservatively assess the potential for carcinogenic risk and non-carcinogenic health effects from the passive venting of the in-line extraction systems at the SADD Lease - NP and SP areas on near-by future residents, golf-course workers, and golf course guests. The HRA includes the development of air toxic emission rates, model analysis of exposure, and the predicted health impacts from the continuous low-level releases into the atmosphere.

The California Office of Environmental Health Hazard Assessment (OEHHA) has provided general guidelines for assessing health effects from toxic pollutants (OEHHA, 2003). The guidelines are designed to predict the upper-bound of limit estimates of risk in order to ensure public safety. The overall approach of this screening HRA follows the general guidelines.

2.1 AIR DISPERSION MODELING METHODOLOGY

2.1.1 Emissions Development

In the past, extraction wells were installed and operated to actively extract contaminates from the soil through below ground extraction systems. During the construction and operation of the golf course, the extraction wells will be allowed to passively vent into the atmosphere. As such, the flow of contaminant mass will be very small and will primarily be driven by the difference in pressure above and below ground.

In order to assess the impacts from these passive emittants, mass emissions are required to conduct exposure modeling. Mass emissions can be calculated from soil gas concentrations based upon the following formula:

$$ER = C \times F \times 0.001$$

Where,

ER = Emission rate (g/s)

C = Soil gas concentration (μg/l)

F = Exhaust volume flow rate (m3/s)

0.001 = Conversion factor for units (l-g/m3-µg)

g/s = grams per second

µg/l = micrograms per liter

l-g/m3-µg = liter-gram per cubic meter-microgram

There are two extraction wells (VW-1 and VW-2) in the SADD Lease – NP; each well has three measurement depths. The SADD Lease – SP has one well with two depths. The depths for each location (NP and SP) are provided in Table 1, along with the most recent soil gas concentration measurements. This evaluation assumes that each depth will vent independently through a 2-inch diameter pipe with an assumed exit velocity of 0.01 meters per second (m/s), a highly conservative velocity for passive systems. However, for modeling purposes, all vent piping will be bundled at one location for both the NP and SP, and a single point source will be used to model each location. Therefore, the soil gas concentrations at each depth for VW 1 and VW-2 will be averaged to define the soil gas concentration in the emissions development for the NP source. Similarly, all depths from VW-3 will be used to calculate the average soil gas for the SP source.

The most recent measurements were used to represent current and future soil gas estimates. For VW-1 and VW-2, the most recent measurements were conducted on 19 and 29 December 2005 and 9 January 2006. The most recent samples at VW-3 were taken on 8 August and 19 December 2005. Table 1 summarizes the data used to calculate the average soil gas concentrations for each model source.

For each sampling depth, the passive exhaust flow rate was based upon the piping parameters above, resulting in a flow of 0.00002 cubic meters per second (m^3/s). The overall flow rate of the bundled piping at the NP source would be six times the single contribution flow (two wells, three depths) or 0.000122 m^3/s. The overall exhaust flow rate for the SP source is 0.000041 m^3/s (one well, two depths). Based on the equation above, Table 2 summarizes the mass emissions for each modeling source and air toxic pollutant.

2.1.2 *Modeling Source Characteristics*

The HRA evaluated the potential for emissions from two sources, one located near the NP, the other at the SP. As stated earlier, the vents from

the passive vent wells will be combined at a central point, each vent having a diameter of 2 inches and an assumed exit velocity of 0.01 m/s. For the NP source, it is assumed a total of six vents will be located at the same location, including three levels from both VW-1 and VW-2. For the SP source, it is assumed there are two vents at the single location (two depths from VW-3). An effective diameter for each source was computed on the basis of the sum of the cross-sectional areas for the individual vents. Based upon the variation in the number of vents at each source, the NP source will have a larger diameter for modeling purposes. The vents are assumed to be elevated to approximately 12 feet above the ground surface. It is also assumed that the exit temperature is at ambient (293°K). A unit emission rate of 1 g/s was used to estimate normalized exposure concentrations. Table 3 summarizes the model source release characteristics associated with the two sources.

2.1.3 *Screening Exposure Model Selection and Use*

For the purposes of the preliminary screening HRA, the SCREEN3 model was utilized to assess maximum ground-level concentrations. This model has been approved by the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) for use in assessing air quality impacts for regulatory purposes. The model calculates maximum 1-hour concentrations from single sources at specified receptor locations for selected hypothetical, worst-case meteorological conditions. Long-term exposure in this assessment was estimated by applying a 1-hour to annual peak-to-mean ratio of 0.1, as specified by CARB, to the 1-hour maximum concentration. This has been shown to be a conservatively high estimate of long-term impacts. Short-term exposure (1-hour) will be determined by the maximum 1-hour predicted concentration from all meteorological conditions.

The unit concentrations from the model were based upon a unit emission rate of 1 g/s. Actual concentrations for benzene, toluene, ethylbenzene, and xylenes (BTEX) were calculated by multiplying the normal concentrations by the actual compound emission rate, since the modeled concentrations have a linear relationship to input emission rates.

2.1.4 *Meteorological Data*

The full screening meteorology data set in the SCREEN3 model was used to predict maximum 1-hour concentrations. The full set includes hourly meteorological data that varies the wind speeds between 1 m/s to 20 m/s, for six different atmospheric stability classifications (A-being most

unstable through F-being most stable). The model assumes that the wind direction will blow directly from the source to each specific receptor location identified in the model run. The assumed ambient temperature is 293°K. The assumed mixing heights in the model are 320 meters for unstable through neutral conditions (Stability Classes A-D) and unlimited for stable atmosphere (Stability Classes E-F).

2.1.5 *Receptor Locations*

Four specific receptors were selected for analysis. These include: 1) the closest future residential location to the NP source; 2) the closest tee box to the NP source; 3) the closest future resident to the SP source; and the closest tee box to the SP source. It is assumed that the tee boxes will be the location where the highest likely exposure will be to both workers and guests. Since distances vary between the NP and SP sources with respect to the four sensitive receptor locations, eight distances were modeled, four relative to the NP source. Table 4 summarizes the receptor locations.

2.2 *EXPOSURE ANALYSIS METHODOLOGY*

In this assessment, exposure relates to the amount of contaminants inhaled that have the potential for health effects. Exposures can vary based upon downwind distance from a source, concentration, inhalation rates, and duration/frequency of the exposure conditions. For long-term residential risk exposure, OEHHA suggests a conservative estimate of 24 hours per day, 350 days per year, for a 70-year period. OEHHA also suggests that a residential inhalation rate of 302 liters per kilogram-day (l/kg-day) should be used.

The long-term exposure parameters for worker risk exposure were based upon modifications to the OEHHA's recommendation, due to the unique aspects of the workplace at the golf course. As recommended by OEHHA, the inhalation rate of 149 l/kg-day was used. In addition, the recommended values of 8 hours per day, 5 days per week and 49 weeks per year (a total of 245 days per year) were used with the modification that, over any given year, the worker is expected to be at each hole only 1/18 of the time (on an annual basis). Thus, the annual exposure is reduced by this fraction. Finally, the over worker exposure is assumed to be 40 years, as recommended by OEHHA.

There is no guidance on risk exposures for golfing guests. Therefore, as a conservative estimate, it was assumed that a golfer would play the course

once per week, 52 weeks per year for a period of 20 years. At any hole, the time spent for tee-off was assumed to be 15 minutes. This again is conservative over a long period, since the typical between holes are designed to be six minutes. Again, the worker-breathing rate of 149 l/kg-day was assumed (with the above adjustment of the 15 minute period over any 8-hour basis).

The maximum predicted annual average concentration for each compound was multiplied by the exposure factors to derive a daily intake of contaminant mass in milligrams of contaminant per kilogram of body mass per day (mg/kg-day).

For non-carcinogenic annual health effects, the maximum concentrations are multiplied by only the duration parameters to estimate the dosage concentration.

For non-carcinogenic acute health effects, the maximum predicted concentrations from each source only will be used. No adjustment factors will apply based upon the assumption that anyone could be at any location for a one-time, 1-hour period.

2.3 *RISK ANALYSIS METHODOLOGY*

For the estimation of carcinogenic risk and non-carcinogenic chronic and acute health effects, only BTEX is identified on the OEHHA air toxic list. Benzene has the potential for carcinogenic risk and chronic/acute health effects. Toluene and xylene have the potential for both chronic and acute non-carcinogenic health effects. Ethylbenzene is only identified for the potential of non-carcinogenic chronic health effects.

For carcinogenic risk, the cancer potency factor $(m/kg\text{-}day)^{-1}$ is multiplied by average daily dosage rate to estimate the maximum individual excess cancer risk. An increase in risk greater than one in one million (1.0E-06) is considered significant. As identified in the OEHHA guidelines, the cancer potency factor for benzene is 0.1 $(mg/kg\text{-}day)^{-1}$.

For non-carcinogenic health effects, a hazard quotient (HQ) was computed by dividing the maximum contaminant concentration by its reference exposure level (REL). The REL is the level for a given contaminant where adverse impacts have been observed or estimated, based upon an ample measure of safety. For chronic and acute effects, the REL will differ within each contaminant. As a conservative estimate, the

hazard index (HI) was then computed by summing all of the HQs for all pollutants, regardless whether the contaminants affect the same target organs. Chronic or acute HI greater than 1.0 is considered significant.

For chronic health effects, all four pollutants will be included in the analysis. For acute effects, only benzene, toluene, and xylenes contribute to the overall acute HI.

3.0 SCREENING RISK ASSESSMENT RESULTS

Overall the results of the preliminary screening HRA indicates that the carcinogenic risks and non-carcinogenic chronic and acute health effects are below recognized safe health levels. The remainder of this section discusses the results of the carcinogenic risk, the chronic non-carcinogenic health effects, and the acute non-carcinogenic health effects.

3.1 CARCINOGENIC RISK RESULTS

Table 6 summarizes the results of the carcinogenic risk analysis relative to potential risks to the future residences nearby, the on-site construction and maintenance workers, and the golfers on the course.

As seen in the Table 6, the maximum predicted carcinogenic risk from the venting of benzene is 9.4 in one billion (9.4E-09) excess cancer risk, occurring at the NP residential receptor. The venting from wells VW-1 and VW-2 would account for over 98 percent of the contribution to the risk. The risk at the NP residential location is higher than at the SP residential receptor (1.2 versus 1.1 in a billion) because of the larger amount of benzene emissions associated with the NP vents and the relative distances from the wells. The risk estimates are approximately more than two orders of magnitude below the OEHHA significance level of 1.0E-06 excess cancer risk. Therefore, the risk estimates are considered to have no significant impacts on the future residents living nearby.

Similar results are predicted for the workers and guests. The maximum predicted excess cancer risks for both the workers and guests occur at the NP tee location, and are driven by the NP source. The maximum predicted risks are 1.8E-09 and 5.9E-12 for the workers and guests, respectively. These range from 3 to 6 orders of magnitude below the OEHHA significance level, again showing that the venting would not affect the workers or guests of the course.

3.2 NON-CARCINOGENIC CHRONIC HEALTH EFFECTS

The maximum predicted non-carcinogenic chronic hazard indices showed results well below the 1.0 significance levels for all receptors and were similar to the cancer risks. Table 7 shows the chronic HIs for the residents, workers, and guests. The predicted values were highest with the

residents, followed by the worker, with the guests being least affected. However, all maximum concentrations were five orders of magnitude below the significance level, with the maximum residential being 1.5E-05 at the tee box nearest the NP source. The vents from VW-1 and VW-2 accounted for over 99 percent of the contribution. The maximum predicted chronic HI at the tee box nearest the SP source was also extremely low with a value of 1.1E-05. The maximum predicted chronic HIs for the worker and guest exposure were correspondingly low with values of 3.4E-06 and 2.2E-08.

3.3 NON-CARCINOGENIC ACUTE HEALTH EFFECTS

The location of the maximum non-carcinogenic acute hazard indices was identical to the locations for the chronic health effects, all at the NP receptor location for residents, workers, and guests. As with the chronic effects, the maximum predicted acute HIs were all more than five orders of magnitude below the significance level of 1.0, with the maximum impact predicted for the residential location near the NP source (4.3E-06). The impacts were very comparable for the worker and guest exposure, both having a 4.3E-06 HI. This is expected because of the identical exposure duration for this analysis (all were assumed to be exposed for the full hour). Table 8 presents the summary results for the non-carcinogenic acute health impacts.

4.0 CONCLUSIONS

The preliminary HRA has been conducted to present the likely upper limit of carcinogenic risk and non-carcinogenic chronic and acute health effects from the passive venting of the soil-gas wells at the SADD Lease - NP and SADD Lease - SP areas on the future residents, workers, and guests of the proposed Los Valles Golf Course. Based upon the results of the analysis, the maximum predicted individual excess carcinogenic risks at all modeled locations will be well below the OEHHA recommended significance level.

Correspondingly, the non-carcinogenic chronic and acute hazard indices predicted in this analysis have also been shown to be orders of magnitude below the OEHHA recommended significance level. As such, the passive venting of the soil gas wells in the SADD Lease - NP and SP are not predicted to cause any significant health risk to future residents, workers, or guests during the construction or operation of the proposed golf course.

5.0 REFERENCES

ERM.. May 2004. *Remedial Action Plan.*

OEHHA. 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidelines Manual for the Preparation of Health Risk Assessments.*

Figures

CAD File:	Drawn By:	Date:	Project No.
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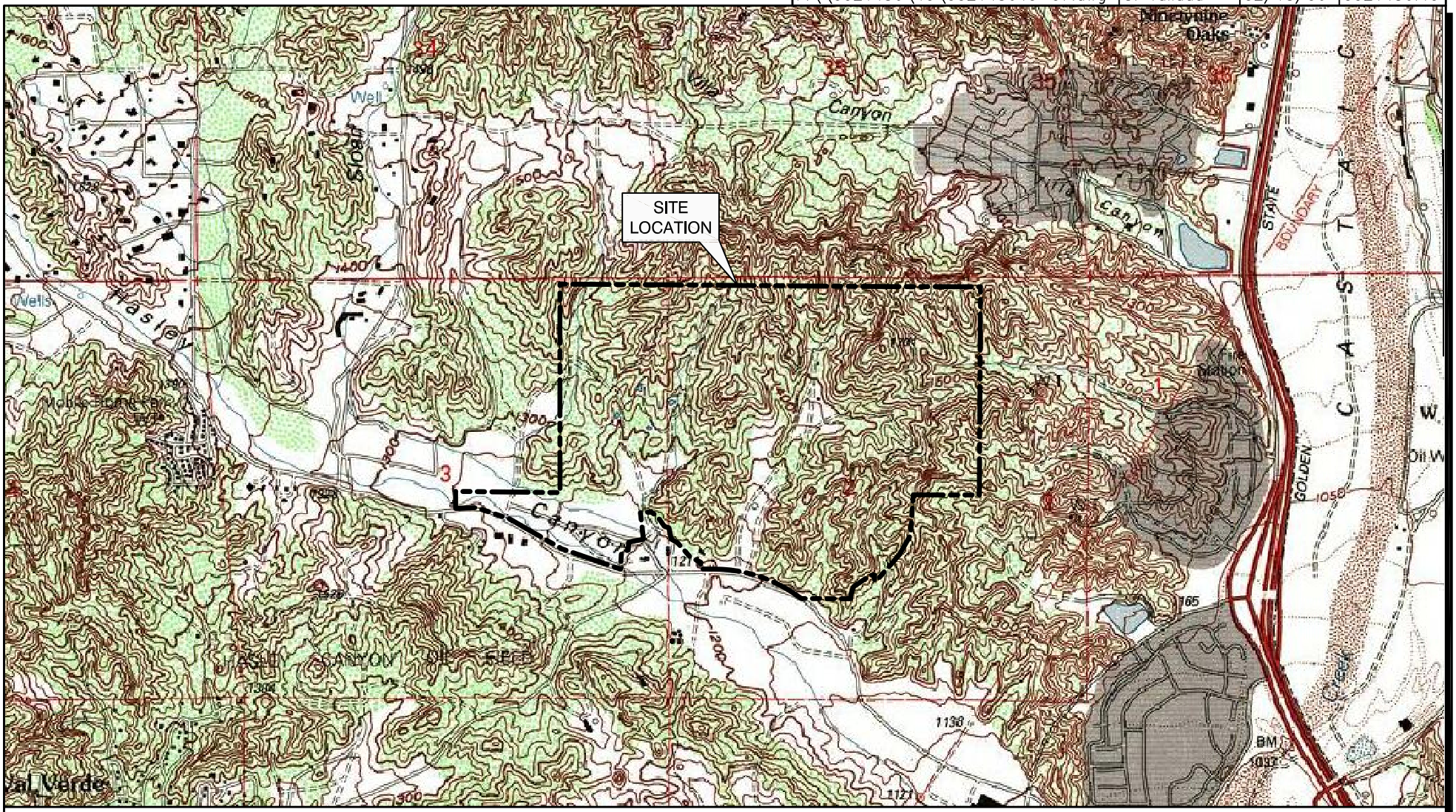

References:
Seamless U.S.G.S. 7.5 Minute Topographic Series
Map created with TOPO!® © 2001
National Geographic Holdings

N

0 900' 1800' 3600'
SCALE IN FEET

Figure 1
Site Location Map
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM *02/06*

CAD File: F:\0021456\40\0021456 40-08.dwg

Drawn By: C. Tallada

Date: 02/13/06

Project No. 0021456.40

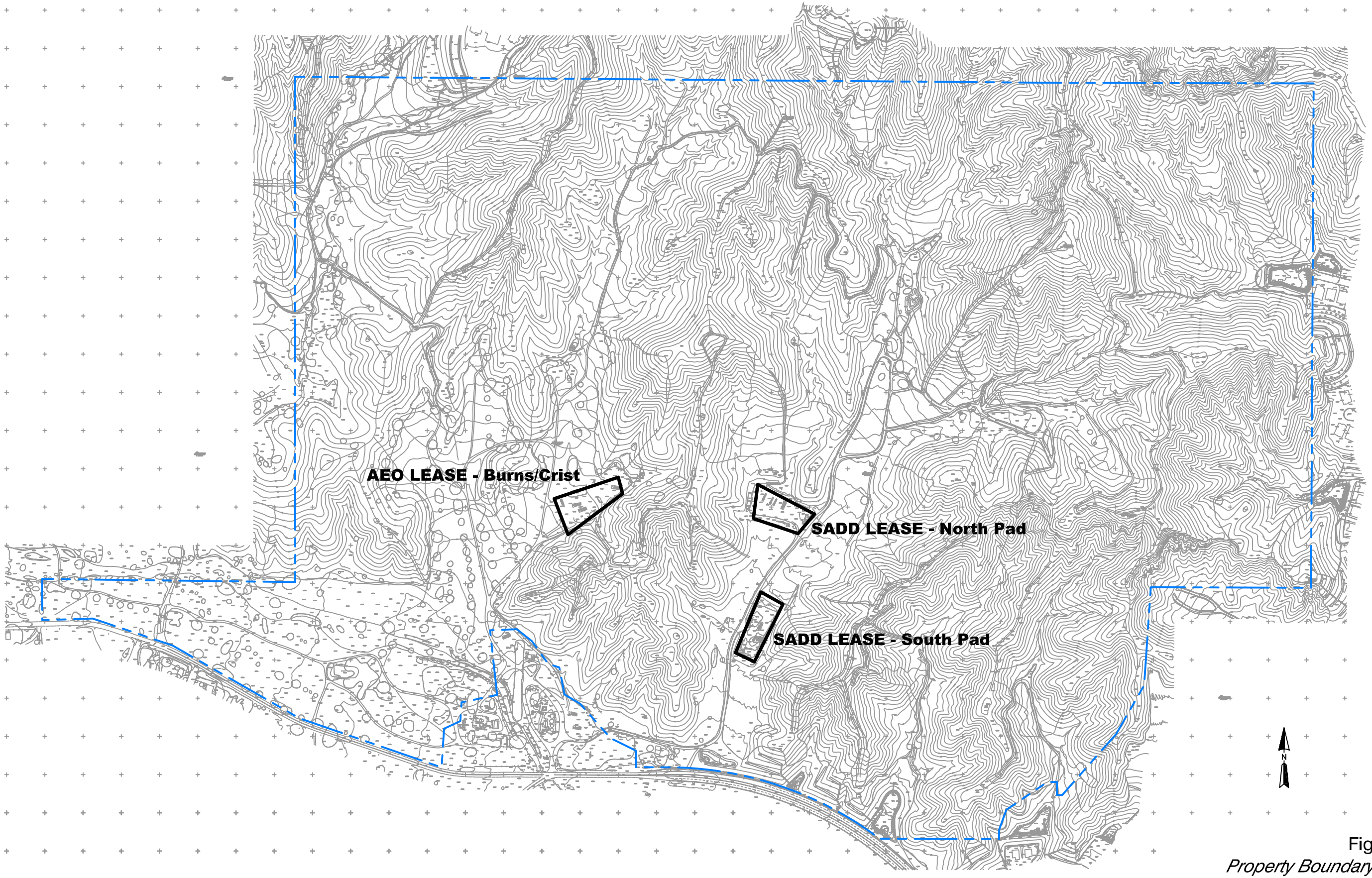

Figure 2

Property Boundary Map

Los Valles Land & Golf, LLC

Los Angeles County, California

ERM 02/06

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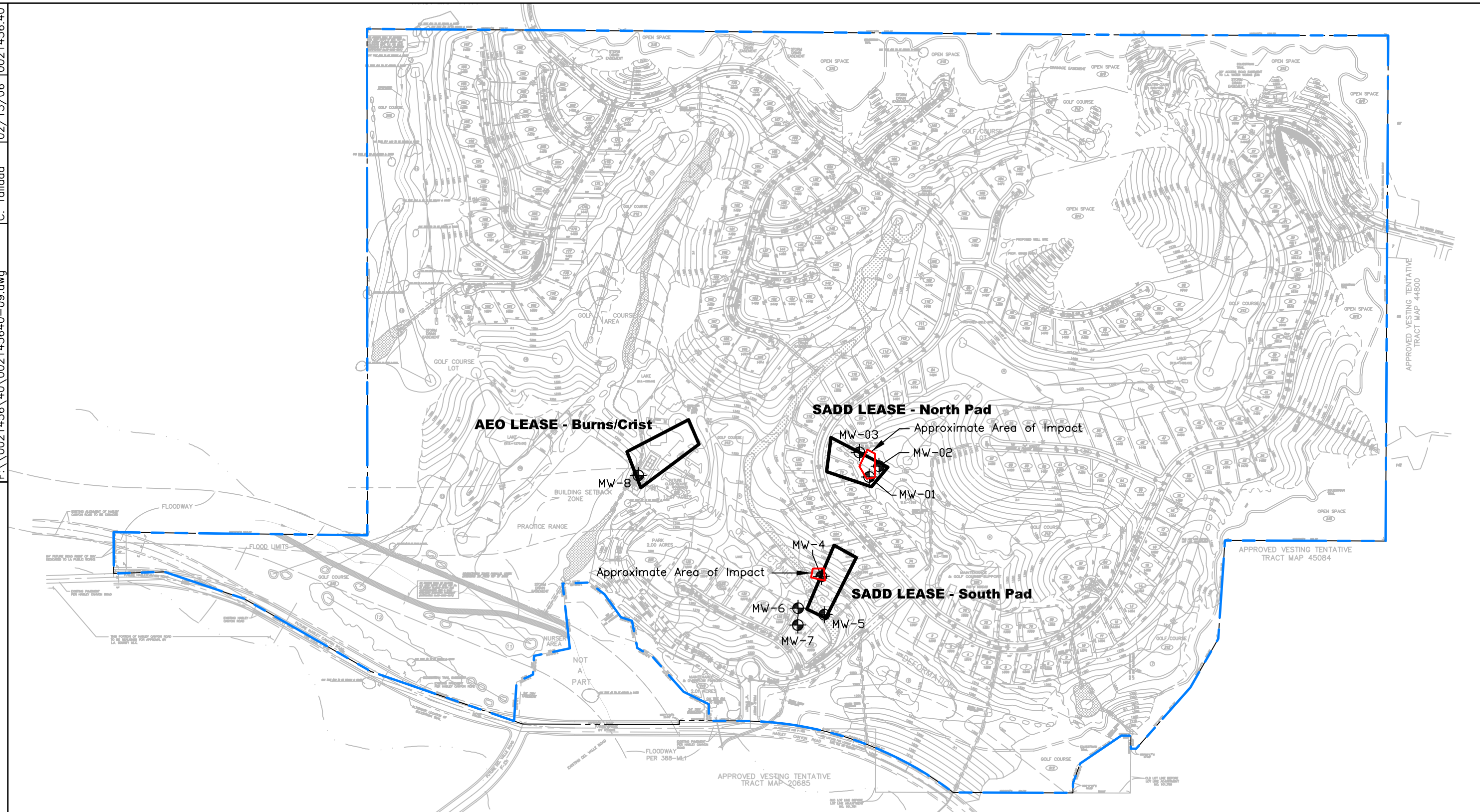
Date: 02/13/06
Project No. 0021456.40



N

0 250' 500' 1000'
SCALE IN FEET

Figure 3
Proposed Land Use
Los Valles Land & Golf, LLC
Los Angeles County, California

ERM 02/06

CAD File:	Drawn By:	Date:	Project No.
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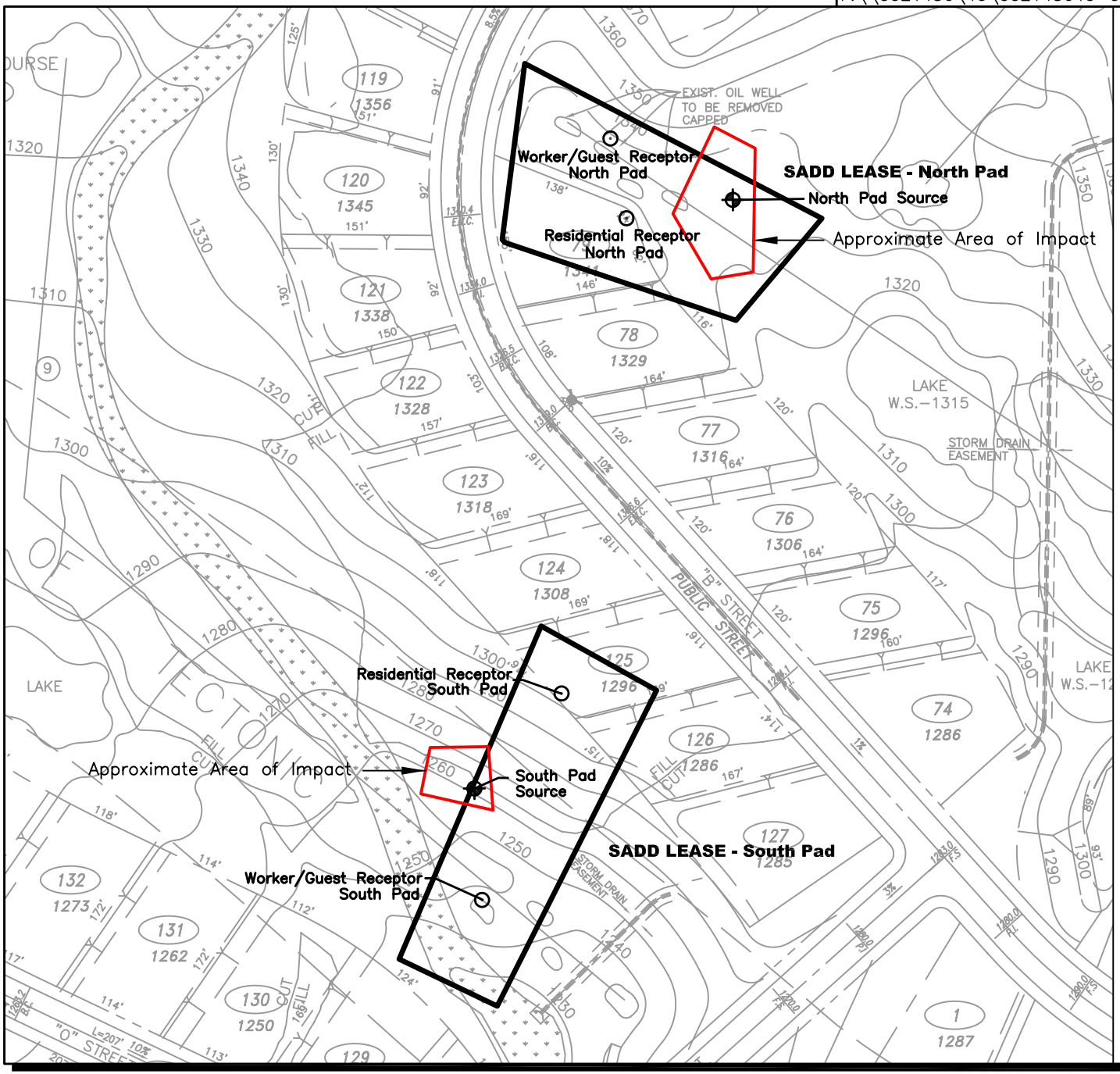

LEGEND

Location of Source

Potential Receptor Location

N

0 75' 150' 300'

SCALE IN FEET

Figure 4

Source Receptor Map

Los Valles Land & Golf, LLC

Los Angeles County, California

ERM 02/06

Tables

Table 1 *Discreet Soil Vapor Sample Results*
North and South SADD Parcels
Los Valles Land & Golf, LLC
Santa Clarita, California

Well ID	Sample Depth	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
North SADD Parcel						
VW-1	*10 - 30 ft*	12/19/05	< 0.01	0.01	0.01	0.04
		12/29/05	< 0.01	< 0.01	< 0.01	0.02
		01/09/06	< 0.01	< 0.01	0.01	0.0
	Average		**< 0.006**	**< 0.009**	**0.008**	**0.035**
	35 - 55 ft	12/19/05	0.8	4.2	2.7	6.7
		12/29/05	1.7	6.5	4.1	11.9
		01/09/06	2.8	8.4	4.2	14.5
	Average		**1.766**	**6.351**	**3.644**	**11.019**
	60 - 80 ft	12/19/05	1.3	1.6	1.3	8.6
		12/29/05	1.3	2.2	2.5	14.0
		01/09/06	2.1	1.3	1.0	6.7
	Average		**1.572**	**1.715**	**1.580**	**9.805**
VW-2	*10 - 30 ft*	12/19/05	1.0	2.0	1.3	5.3
		12/29/05	1.3	1.9	0.8	3.8
		01/09/06	0.9	1.4	0.6	2.5
	Average		**1.077**	**1.765**	**0.907**	**3.893**
	35 - 55 ft	12/19/05	5.8	36.2	17.1	61.9
		12/29/05	2.4	8.8	3.7	29.4
		01/09/06	2.6	25.5	11.4	88.7
	Average		**3.575**	**23.497**	**10.756**	**60.000**
	60 - 80 ft	12/19/05	2.2	9.5	11.0	30.3
		12/29/05	3.6	23.2	24.6	55.3
		01/09/06	6.1	34.3	17.6	40.0
	Average		**3.974**	**22.354**	**17.707**	**41.853**
VW1 and VW-2 Overall Average			***2.0***	***9.3***	***5.8***	***21.1***
South SADD Parcel						
VW-3	*10 - 30 ft*	08/24/04	0.0	0.0	0.0	0.0
		12/19/05	<0.01	<0.01	<0.01	0.0
	Average		**0.006**	**0.007**	**0.008**	**0.016**
	35 - 55 ft	08/24/04	0.4	0.1	0.3	1.6
		12/19/05	<0.02	<0.02	0.1	0.4
	Average		**0.219**	**0.081**	**0.195**	**0.992**
VW-3 Overall Average			*0.112*	*0.044*	*0.102*	*0.504*

Notes:

< = The constituent was not detected above the specified reporting limit.

Shaded values are from samples collected under static conditions (i.e., while SVE system is not operating)

Table 2 ***Estimated Air Toxic Emission Rates for the North and South SADD Parcels Los Valles Land & Golf, LLC Santa Clarita, California***

Well ID	Total Exhaust Flow Rate (m^3/s)	Benzene (g/s)	Toluene (g/s)	Ethylbenzene (g/s)	Total Xylenes (g/s)
North SADD Parcel					
VW-1 and VW-2	0.000122	2.426E-07	1.129E-06	7.013E-07	2.566E-06
South SADD Parcel					
VW-3	0.000041	4.551E-09	1.776E-09	4.120E-09	2.043E-08

Notes:

Total exhaust flow for VW-1 and VW-2 assumes the sum of 6 equal exhaust vents from three depths from each of the two wells. The total exhaust flow for VW-3 assumes the sum of 2 equal exhaust vents from the well. Each exhaust vent assumes an exit velocity of 0.1 m/s and a diameter of 2 inches.

Table 3 *Model Stack Parameters for Exhaust Vents at the North and South SADD Parcels Los Valles Land & Golf, LLC Santa Clarita, California*

Source ID	X-Coordinate Location (meters)	Y-Coordinate Location (meters)	Stack Height (meters)	Exit Temperature (^{o}K)	Exit Velocity (meters/second)	Stack Diameter (meters)	Unit Emission Rate (grams/second)
North SADD Parcel							
VW-1 and VW-2	0.0	0.0	3.66	293.0	0.01	0.124	1.0
South SADD Parcel							
VW-3	0.0	0.0	3.66	293.0	0.01	0.072	1.0

Notes:

The stack diameter for the combined VW-1 and VW-2 well exhaust, assumed to be discharged from a single point source, is based on an effective diameter calculated from a cross-sectional area equivilent to the area of 6 individual 2-inch diameter cross-sectional areas. The stack diameter for the VW-3 well exhaust is based upon the area of 2 individual 2-inch diameter cross-sectional areas. These represent the individual exhaust vents from the various depths at each well location.

Table 4 ***Model Receptor Locations***
For the North and South SADD Parcels
Los Valles Land & Golf, LLC
Santa Clarita, California

Receptor ID	*Model Coordinates relative to North Sources*			*Model Coordinates relative to South Sources*		
	X-Coordinate Location (meters)	**Y-Coordinate Location (meters)**	**Distance From North Source (meters)**	**X-Coordinate Location (meters)**	**Y-Coordinate Location (meters)**	**Distance From South Source (meters)**
North SADD Parcel						
Residential	32.0	0.0	32.0	179.9	0.0	179.9
Worker/Guest	41.8	0.0	41.8	202.4	0.0	202.4
South SADD Parcel						
Residential	159.3	0.0	159.3	39.2	0.0	39.2
Worker/Guest	226.7	0.0	226.7	34.0	0.0	34.0

Notes:

The stack diameter for the combined VW-1 and VW-2 well exhaust, assumed to be discharged from a single point source, is based on an effective diameter calculated from calculated from a cross-sectional area equivilent to the area of 6 individual 2-inch diameter cross-sectional areas. The stack diameter for the VW-3 well exhaus for the VW-3 well exhaust is based upon the area of 2 individual 2-inch diameter cross-sectional areas. These represent the individual exhaust vents from the va exhaust vents from the various depths at each well location.

Table 5 *Cancer Potency Factors and Reference Exposure Levels For the North and South SADD Parcels Los Valles Land & Golf, LLC Santa Clarita, California*

Contaminant	Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$	Chronic REL ($\mu g/m^3$)	Acute REL (ug/m^3)
Benzene	0.1	60	1300
Toluene	N/A	300	37000
Ethylbenzene	N/A	2000	N/A
Xylenes	N/A	700	22000

Notes:

Cancer Potency Factors and Chronic RELs, and Acute RELs provided by the Office of Environmental Health Hazard Assessment (OEHHA, 2003)

Table 6 *Predicted Residential and Worker/Guest Carcinogenic Risks*
For the North and South SADD Parcels
Los Valles Land & Golf, LLC
Santa Clarita, California

Source ID	Modeled Concentration ($\mu g/m^3/g/s$)[1]	Benzene Emission Rate (g/s)	Modeled Benzene Concentration ($\mu g/m^3$)	Exposure Factor (m^3-mg/µg-kg-day)	Average Daily Intake Benzene (mg/kg-day)	Benzene Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$	Carcinogenic Risk
Residential Risk							
North SADD Parcel							
Residential Receptor							
VW-1 and VW-2	1.273E+03	2.426E-07	3.088E-04	3.020E-04	9.327E-08	1.00E-01	9.3E-09
VW-3	7.936E+02	4.551E-09	3.611E-06	3.020E-04	1.091E-09	1.00E-01	1.1E-10
Combined							***9.4E-09***
South SADD Parcel							
Residential Receptor							
VW-1 and VW-2	9.349E+02	2.426E-07	2.268E-04	3.020E-04	6.850E-08	1.00E-01	6.8E-09
VW-3	1.108E+03	4.551E-09	5.042E-06	3.020E-04	1.523E-09	1.00E-01	1.5E-10
Combined							***7.0E-09***
Worker Risk							
North SADD Parcel							
Worker Receptor							
VW-1 and VW-2	1.276E+03	2.426E-07	3.096E-04	5.715E-05	1.769E-08	1.00E-01	1.8E-09
VW-3	6.961E+02	4.551E-09	3.168E-06	5.715E-05	1.810E-10	1.00E-01	1.8E-11
Combined							***1.8E-09***
South SADD Parcel							
Worker Receptor							
VW-1 and VW-2	6.227E+02	2.426E-07	1.511E-04	5.715E-05	8.634E-09	1.00E-01	8.6E-10
VW-3	1.156E+03	4.551E-09	5.261E-06	5.715E-05	3.006E-10	1.00E-01	3.0E-11
Combined							***8.9E-10***
Guest Risk							
North SADD Parcel							
Guest Receptor							
VW-1 and VW-2	1.276E+03	2.426E-07	3.096E-04	1.895E-07	5.867E-11	1.00E-01	5.9E-12
VW-3	6.961E+02	4.551E-09	3.168E-06	1.895E-07	6.004E-13	1.00E-01	6.0E-14
Combined							***5.9E-12***
South SADD Parcel							
Guest Receptor							
VW-1 and VW-2	6.227E+02	2.426E-07	1.511E-04	1.895E-07	2.863E-11	1.00E-01	2.9E-12
VW-3	1.156E+03	4.551E-09	5.261E-06	1.895E-07	9.970E-13	1.00E-01	1.0E-13
Combined							***3.0E-12***

[1] For estimating annual average concentrations, a peak to mean ratio of 0.1 was applied to the 1-hour conentrations within annual period to account for persistence.

Table 7 *Predicted Residential and Worker/Guest Chronic Hazard Index*
For the North and South SADD Parcels
Los Valles Land & Golf, LLC
Santa Clarita, California

Source ID	Modeled Concentration ($ug/m^3/g/s$)[1]	Benzene Emission Rate (g/s)	Toluene Emission Rate (g/s)	Ethylbenzene Emission Rate (g/s)	Total Xylenes Emission Rate (g/s)	Hazard Index
Residential Risk						
North SADD Parcel						
Residential Receptor						
VW-1 and VW-2	1.27300E+03	2.426E-07	1.129E-06	7.013E-07	2.566E-06	1.443E-05
VW-3	7.93600E+02	4.551E-09	1.776E-09	4.120E-09	2.043E-08	8.600E-08
Combined						***1.5E-05***
South SADD Parcel						
Residential Receptor						
VW-1 and VW-2	9.34900E+02	2.426E-07	1.129E-06	7.013E-07	2.566E-06	1.060E-05
VW-3	1.10800E+03	4.551E-09	1.776E-09	4.120E-09	2.043E-08	1.201E-07
Combined						***1.1E-05***
Worker Risk						
North SADD Parcel						
Worker Receptor						
VW-1 and VW-2	1.276E+03	2.426E-07	1.129E-06	7.013E-07	2.566E-06	3.375E-06
VW-3	6.961E+02	4.551E-09	1.776E-09	4.120E-09	2.043E-08	1.760E-08
Combined						***3.4E-06***
South SADD Parcel						
Worker Receptor						
VW-1 and VW-2	6.227E+02	2.426E-07	1.129E-06	7.013E-07	2.566E-06	1.647E-06
VW-3	1.156E+03	4.551E-09	1.776E-09	4.120E-09	2.043E-08	2.923E-08
Combined						***1.7E-06***
Guest Risk						
North SADD Parcel						
Guest Receptor						
VW-1 and VW-2	1.276E+03	2.426E-07	1.129E-06	7.013E-07	2.566E-06	2.149E-08
VW-3	6.961E+02	4.551E-09	1.776E-09	4.120E-09	2.043E-08	1.121E-10
Combined						***2.2E-08***
South SADD Parcel						
Guest Receptor						
VW-1 and VW-2	6.227E+02	2.426E-07	1.129E-06	7.013E-07	2.566E-06	1.049E-08
VW-3	1.156E+03	4.551E-09	1.776E-09	4.120E-09	2.043E-08	1.861E-10
Combined						***1.1E-08***

[1] For estimating annual average concentrations, a peak to mean ratio of 0.1 was applied to the 1-hour to account for persistence within annual period.

Exposure Refernece Levels (µg/m3):

Benzene	60
Toluene	300
Ethylbenzene	2000
Total Xylenes	700

Table 8 ***Predicted Residential and Worker/Guest Acute Hazard Index For the North and South SADD Parcels Los Valles Land & Golf, LLC Santa Clarita, California***

Source ID	Modeled Concentration (µg/m^3/g/s)	Benzene Emission Rate (g/s)	Toluene Emission Rate (g/s)	Total Xylenes Emission Rate (g/s)	Acute Hazard Index
Residential Risk					
North SADD Parcel					
Residential Receptor					
VW-1 and VW-2	1.273E+04	2.426E-07	1.129E-06	2.566E-06	4.249E-06
VW-3	7.936E+03	4.551E-09	1.776E-09	2.043E-08	3.553E-08
Combined					***4.3E-06***
South SADD Parcel					
Residential Receptor					
VW-1 and VW-2	9.349E+03	2.426E-07	1.129E-06	2.566E-06	3.120E-06
VW-3	1.108E+04	4.551E-09	1.776E-09	2.043E-08	4.961E-08
Combined					***3.2E-06***
Worker Risk					
North SADD Parcel					
Worker Receptor					
VW-1 and VW-2	1.276E+04	2.426E-07	1.129E-06	2.566E-06	4.259E-06
VW-3	6.961E+03	4.551E-09	1.776E-09	2.043E-08	3.117E-08
Combined					***4.3E-06***
South SADD Parcel					
Worker Receptor					
VW-1 and VW-2	6.227E+03	2.426E-07	1.129E-06	2.566E-06	2.078E-06
VW-3	1.156E+04	4.551E-09	1.776E-09	2.043E-08	5.176E-08
Combined					***2.1E-06***
Guest Risk					
North SADD Parcel					
Guest Receptor					
VW-1 and VW-2	1.276E+04	2.426E-07	1.129E-06	2.566E-06	4.259E-06
VW-3	6.961E+03	4.551E-09	1.776E-09	2.043E-08	3.117E-08
Combined					***4.3E-06***
South SADD Parcel					
Guest Receptor					
VW-1 and VW-2	6.227E+03	2.426E-07	1.129E-06	2.566E-06	2.078E-06
VW-3	1.156E+04	4.551E-09	1.776E-09	2.043E-08	5.176E-08
Combined					***2.1E-06***

Exposure Reference Levels (µg/m^3):

Benzene	1.30E+03
Toluene	3.70E+04
Total Xylenes	2.20E+04

Appendix A

SCREEN3 Modeling Output Files

02/16/06
13:21:10

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

Los Valles North Source Impacts

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      1.00000
   STACK HEIGHT (M)       =       3.6600
   STK INSIDE DIAM (M)    =        .1240
   STK EXIT VELOCITY (M/S)=        .0100
   STK GAS EXIT TEMP (K)  =     293.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =        .0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    32.   .1273E+05    3     1.0    1.0   320.0    3.29    4.33    2.62    NO
    42.   .1276E+05    4     1.0    1.0   320.0    3.29    3.65    2.18    NO
   159.   9349.        6     1.0    1.0 10000.0    3.29    6.26    3.40    NO
   227.   6227.        6     1.0    1.0 10000.0    3.29    8.68    4.52    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
--------------    -----------   -------   -------
SIMPLE TERRAIN      .1276E+05       42.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

02/16/06
13:26:06

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

Los Valles South Source Impacts

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =      1.00000
   STACK HEIGHT (M)       =       3.6600
   STK INSIDE DIAM (M)    =        .0720
   STK EXIT VELOCITY (M/S)=        .0100
   STK GAS EXIT TEMP (K)  =     293.0000
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =        .0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =        .0000
   MIN HORIZ BLDG DIM (M) =        .0000
   MAX HORIZ BLDG DIM (M) =        .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN DISCRETE DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   180.   7936.        6     1.0    1.0 10000.0    3.45    7.01    3.75    NO
   202.   6961.        6     1.0    1.0 10000.0    3.45    7.81    4.13    NO
    39.   .1108E+05    4     1.0    1.0   320.0    3.45    3.44    2.06    NO
    34.   .1156E+05    3     1.0    1.0   320.0    3.45    4.59    2.77    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
--------------    -----------   -------   -------
SIMPLE TERRAIN      .1156E+05       34.        0.


***************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
***************************************************
```

APPENDIX 5.8-4

Request for Regulatory Oversight Soil Cleanup of Former Oil Production Areas

LOS VALLES LAND & GOLF, LLC
233 WILSHIRE BOULEVARD, SUITE 800
SANTA MONICA, CALIFORNIA 90401
TEL: (310) 576-6700
FAX: (310) 576-0888

March 29, 2004

Ms. Shahin Nourishad
Site Mitigation Unit Supervisor
County of Los Angeles Fire Department
Health Hazardous Materials Division
5825 Rickenbacker Rd.
Commerce CA 90040-3027

VIA FEDERAL EXPRESS

Subject: Request for Regulatory Oversight Soil Cleanup of Former Oil Production Areas.
Castaic, California

Dear Ms. Nourishad:

Los Valles Land & Golf, LLC, a Delaware limited liability company (Los Valles) is seeking to enter into the cost recovery program so that regulatory oversight can be performed by the Site Mitigation Unit (SMU) at a site located at 28801 Hasley Canyon Road in an unincorporated area of LA County. As such, we have attached a check for the initial fee of $1,490.00, and agree to the SMU hourly rate charge of $99.31.

The site is a 432-acre parcel of mostly undeveloped land, which was recently acquired by Los Valles. The tax assessor's parcel numbers for the site are: 2866-052-001; 2866-001-015; to 17, 27-29, 69, 71, 74; 3247-032-001, 007, 035, 036.

Three small areas (approximately 1-acre each) within the overall site had been utilized in the 1970s and 1980s for oil production. As part of these operations ten oil wells were present within the three oil production areas. These wells were closed and properly abandoned, per California Department of Oil and Gas (D.O.G.) protocol and approval in April 2003. However, investigations performed within the vicinity of two of the three former oil production areas have identified the presence of middle-range petroleum distillates (chemically similar to diesel fuel) and low levels of aromatic hydrocarbons in soil to depths of up to 90 feet below ground surface (bgs).

Due to the variable ground surface elevations present at the site, depth to groundwater ranges from between 50 and 90 feet bgs. Groundwater monitoring wells installed down gradient of the areas impacted with petroleum hydrocarbons contain very low to nondetectable concentrations of petroleum and/or aromatic hydrocarbons. Copies of all of the investigations conducted at the site are attached.

The California Regional Water Quality Control Board (RWQCB) has recommended that Los Valles enter into an agreement with the SMU for the oversight of soil remediation. In addition, the RWQCB has recommended that Los Valles perform a self-monitoring program with respect to groundwater. Upon the acquisition of sufficient data, Los Valles will submit the data to the RWQCB and request closure of groundwater.

The completion of certain aspects of the soil remediation effort need to be completed prior to grading operations which are currently scheduled for June 2004. As such, Los Valles and our environmental consultant will seek to meet with you at the earliest possible opportunity, so that we can reach some early concurrence regarding scope and schedule issues.

In conclusion, please feel free to contact Andres Cervantes at the above referenced telephone number if you have any questions. Our representatives will be contacting you in the near future in order to set up a meeting.

Thank you.

Sincerely,

LOS VALLES LAND & GOLF, LLC
a Delaware Limited Liability Company

By: PALMER-LOS VALLES, LLC
a Delaware Limited Liability Company,
a Manager and a Member

By: PALMER INVESTMENTS, INC.
a California corporation,
the Manager and a Member

By: _____
Dan S. Palmer, Jr., its President

cc: Hush Sohaili, Esq.
John Charles Maddux, Esq.

APPENDIX 5.8-5

Notice of Completion of Asbestos Removal, March, 2004

A. Q. Management & Control, Inc.

March 4, 2004

Palmer Investments, Inc.
Attention: Andres Cervantes
233 Wilshire Blvd. Suite 800
Santa Monica, CA 90401
310-576-6700
310-576-0888 Fax

NOTICE OF COMPLETION

Job Site: 28831 Hasley Canyon Rd, Castaic, CA 91384

A.Q. Management & Control, Inc. has completed the removal of asbestos materials in the vacant house and the adjacent shed.

The work included removal of asbestos floor tiles in the house and asbestos roofing shingels on the shed.

The work was completed on 03-04-2004.

The removal and cleanup was completed in accordance with Federal, State and local regulations and generally accepted engineering principles and practices.

Thank you for your patronage. We appreciate your business and hope we can provide environmental services on your future projects. Please give us a call if you have any questions.

Sincerely,
A.Q. Management & Control Inc.

State License no. 633132, DOSH Registration no. 176

3921 Wilshire Boulevard, Suite 600, Los Angeles, CA 90010
Telephone 213-386-4540, Fax 213-386-3015, E-mail info@hazwaste.com

APPENDIX 5.8-6

Phase I Environmental Site Assessment, California Environmental, July 2003

California

geologists & engineers

Environmental

ENVIRONMENTAL SITE ASSESSMENT - PHASE I
AND SUBSURFACE ASSESSMENT
Undeveloped Land
Approximately 420 Acres in the Vicinity of Hasley Canyon Road
Los Angeles County, California

FOR

HASLEY CANYON LAND COMPANY LLC
HIGHRIDGE HASLEY LLC
HR – HASLEY INVESTORS LLC
LAMCO REAL PROPERTY, INC
ARROYO LAND COMPANY
WOODRIDGE CAPITAL LLC

c/o

ERVIN, COHEN AND JESSUP
9401 Wilshire Boulevard, Ninth Floor
Beverly Hills, California 90212-2974

Attention: Mr. Roger Holt and Mr. Shiraz Tangri

CE Job No. EV797-1474 July 2003

PRIVILEGED AND CONFIDENTIAL
ATTORNEY-CLIENT AND ATTORNEY WORK PRODUCT PRIVILEGES
SELF-EVALUATE PRIVILEGE

1474.RPT2

1161 Calle Suerte, Suite G · Camarillo, CA 93012 · (805) 445-7117 · FAX (805) 445-8599 · Lic. #A732377

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I. Inquiry and Response Letters
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EXECUTIVE SUMMARY

A Phase I Environmental Site Assessment was performed for the subject property consisting of approximately 420 acres in the vicinity of Hasley Canyon, Los Angeles County, California. The scope of work for the Phase I Environmental Site Assessment meets ASTM E 1527-00 *Standard Practice for Environmental Site Assessments*. The purpose of the Phase I report was to provide information regarding the potential for hazardous material impacts to the soil or groundwater at the subject property. The scope of work included a site reconnaissance, research of available land use records, review of previous environmental site assessment reports, and other sources for preliminary indications of hazardous material use, disposal, or storage at the property.

California Environmental also implemented subsurface assessment at the property. The assessment included observations during removal of oil field pipelines, soil vapor testing, soil sampling, and groundwater sampling.

SITE DESCRIPTION

The subject property includes four contiguous parcels along the north side of Hasley Canyon Road near the junction with Del Valle Road, in an unincorporated area of Los Angeles County about three miles northwest of the City of Santa Clarita. The property is largely undeveloped. Existing improvements include a house, an office/maintenance shop for oil field operations, several oil wells with associated storage tanks and other equipment, water wells, and a number of graded dirt roads. The oil field facilities on the south part of the site area are excluded from this assessment.

The property is hilly and rugged, with the topography generally sloping towards Hasley Canyon Wash at the southern edge of the property. The hills are covered with sparse chamise chaparral and grass. Alluviated areas in the canyon bottoms are grassy with scattered trees.

Small quantities of household waste have been dumped in various locations, mostly in gullies adjacent to dirt roads in the central and northern portions of the property. No areas of hazardous materials dumping were observed in the trash. Tree and brush trimmings have also been dumped in various locations. No areas of suspect buried trash fill were observed. Small areas of artificial fill are present beneath the oil field facilities. Fill material in these areas was probably generated onsite. No trash was observed in the fill in these areas.

SITE UTILIZATION HISTORY

The property is within the Hasley Canyon Oil Field. Petrominerals Corporation developed 14 oil wells on the southeastern portion of the property in the early 1980s. Ten onsite wells were abandoned in 2003. Mud pits associated with the well developments were removed.

Oil production on the property is from a depth of about 5,000 feet. The property does not overlie an alluvial groundwater basin. Groundwater was found at a depth of 100 feet (elevation 1,205 feet) in a rotary air boring drilled beneath the northerly SADD production pad (elevation 1,305 feet). Groundwater was found at a depth of 55 feet (elevation 1,212 feet) in a well on the west side of the site. The water well on the property is reportedly producing from a depth of about 2,000 feet above the oil production zone. The well discharges to a concrete lined pond.

The AEO parcel was used as a golf course from 1963 until approximately the early 1980s. The former golf course pro shop building is currently used as an office and maintenance shop by AEO. There is a record of a septic tank for this building. Two or three mobile homes were used by the golf course in the early 1980s. The mobile homes are no longer present. No evidence of underground storage tanks were observed on this parcel and the caretaker has no knowledge of any USTs on the property. A UST may be present offsite on the AEO production parcel.

A small residence is located on the southern portion of the SADD parcel. This facility may also have a septic tank.

The area surrounding the property is primarily vacant land with scattered residences and small ranches. There is no known commercial or industrial use, other than the oil fields, within ¼ mile of the property.

A search of standard environmental records sources revealed no known sites of environmental concern within 1½ miles of the subject property.

No conditions of recognized environmental concern other than those related to the oil field operations were identified. Underground storage tanks, often unpermitted, are commonly associated with rural residences and with golf courses, but no field indications or records of such USTs were identified for the subject property.

Minor quantities of household waste and other debris (car bodies, demolition debris, and empty drums) are present in various locations. These materials may be removed during site clearing.

Septic tanks should be properly abandoned prior to redevelopment of the property. Structures should be sampled for asbestos-containing materials prior to demolition.

Water wells should be properly abandoned unless they are to be used for the proposed development. If the wells are to be used it is recommended that the water be tested for fitness for the proposed use.

Subsurface assessment work was implemented at the property. The work included testing of soil vapor, soil and groundwater sampling. The testing was focussed principally in the areas previously excluded from an earlier Phase I Assessment, prepared by California Environmental in 1997. Two primary impacts were identified in soil at the site. These include unrefined crude oil and a diluent product. Diluent is a refined petroleum product similar in characteristics to kerosene or diesel which was used as a solvent to help extract oil from the onsite wells. TPH impacts were found in soil beneath all three drilling pad areas, two on the

SADD parcel, and one on the AEO parcel. In the northeast area on the SADD parcel, the TPH impacts persisted to a depth of approximately 90 feet near abandoned SADD oil wells 6, 7, 8 and 9. Groundwater was encountered at a depth of approximately 100 feet beneath this pad area. The release detected on the northern SADD drill pad is a reportable release to a lead enforcement agency, either the Regional Water Quality Control Board or the Los Angeles County Fire Department as a potential threat to groundwater quality. Additional assessment including sampling of groundwater will be required by the lead enforcement agency in order to develop appropriate mitigation measures, such as natural attention.

No additional recognized environmental conditions were ascertained in connection with the property.

INTRODUCTION

The following report presents the findings of the Environmental Site Assessment - Phase I performed for the subject property. The scope of the Phase I study meets ASTM E 1527-00 *Standard Practice for Environmental Site Assessments* and the scope of work outlined in the California Environmental/Ervin, Cohen, and Jessup Standard Consulting Agreement. The scope of the Phase I also includes research of available land use records, and other sources for preliminary indications of hazardous material use, storage or disposal at the property. California Environmental also implemented subsurface testing including sampling of soil vapor, soil and groundwater. The sampling was performed in order to determine the distribution of petroleum impacts associated with abandoned underground oil field pipelines and around former oil production areas. The findings of this study are intended to provide information to the client regarding hazardous material impacts to the soil and groundwater at the site. This report is intended to be relied upon by Hasley Canyon Land Company LLC, Highridge Hasley LLC, HR – Hasley Investors LLC, LAMCO Real Property, LLC, Arroyo Land Company, Woodridge Capital LLC its affiliates, co-investors, joint venture partners, lenders, and their respective successors and assignees. This report includes **GENERAL FINDINGS** and **CONCLUSIONS AND RECOMMENDATIONS** which together with the remainder of this report are subject to the **NOTICE** at the end of the report.

The scope of work included:

- A walkover of the site.
- Review of building permits on file with the County of Los Angeles Department of Building and Safety.
- Research of underground tank permit files and industrial fire prevention files maintained by the County of Los Angeles Department of Public Works.

- Review of historical aerial photographs of the Fairchild Collection maintained at the Whittier College Geography Department and the EDR photograph research.
- Contact with the County of Los Angeles, Health Department to review their files.
- Contact with the South Coast Air Quality Management District to review their files.
- California Department of Conservation, Division of Oil and Gas - Oil Field Maps.
- Review of the following lists and maps of suspect or known contaminated sites:
  - U.S. Environmental Protection Agency Superfund Program - *National Priorities List* (NPL).
  - California Regional Water Quality Control Board, Region 4 (RWQCB) - *Computer Case Listing of Reported Underground Tank Leaks*, covering Los Angeles and Ventura County.
  - U.S. Environmental Protection Agency - *Comprehensive Environmental Response, Compensation, and Liability Information System* (CERCLIS).
  - California Governor's Office of Planning and Research - *Hazardous Waste and Substance Sites* - Cortese List and Contaminated Wells List which includes the Bond Expenditure Plan (BEP) sites.
  - California Environmental Protection Agency, Department of Toxic Substances Control - *Cal Sites* List.
  - California Department of Health Services, *Hazardous Waste Information System* (HWIS) and Tanner Report.
  - California Integrated Waste Management Board, *Solid Waste Information System* - (SWIS) List.
  - State Water Resources Board, *Solid Waste Assessment Test Program*, (SWAT).
  - U.S. Environmental Protection Agency, *Toxic Release Inventory System* (TRI).
  - U.S. Environmental Protection Agency, *Resource Conservation and Recovery Information, System Treatment, Storage and Disposal Facilities*, (RCRIS-TS).
  - U.S. Environmental Protection Agency, *Resource Conservation and Recovery Information System, Large Quantity Generators*, (RCRIS-LQG).
  - U.S. Environmental Protection Agency, *Resource Conservation and Recovery Information System, Small Quantity Generators*, (RCRIS-SQG).
  - U.S. Environmental Protection Agency - *Superfund Amendment and Reauthorization Act , Title III*, (SARA Title III)

- State Registered Underground Storage Tanks (UST).
- U.S. Environmental Protection Agency, *Emergency Response Notification System* (ERNS).
- U.S. Environmental Protection Agency, *Facility Index System* (FINDS).
- U.S. Environmental Protection Agency, *Civil Enforcement Docket* (DOCKET).

- An agency database survey was performed by EDR. The results of the search are summarized in this report. The report is enclosed in **APPENDIX III**.
- Sampling of 29 soil vapor probes on the property for the presence of methane, TPH and VOCs.
- Excavation and sampling of 32 borings to depths of 20-100 feet beneath the site.
- Collection of soil and groundwater samples for analysis in an onsite state certified mobile laboratory and at a fixed base state certified laboratory.
- Preparation of this report.

SITE DESCRIPTION

LOCATION AND LEGAL DESCRIPTION

The subject property consists of four contiguous parcels located along the north side of Hasley Canyon Road at the junction with Del Valle Road. The subject site is located in an unincorporated area of Los Angeles County, about three miles northwest of the City of Santa Clarita, California (see **VICINITY MAP**). The improvements located onsite are addressed as:

- 28801 ½ Hasley Canyon Road-Newman
- 28803 Hasley Canyon Road
- 28831 Hasley Canyon Road-John Sadd

- 28943 Hasley Canyon Road-SADD Oil Well Drilling Site
- 29001 Hasley Canyon Road-Petromineral Oil Well Drilling Site
- 29007/29030 Hasley Canyon Road-Former Golf Course
- 29007 ½ Hasley Canyon Road-Petromineral's facility

SITE RECONNAISSANCE

The site conditions were observed during a reconnaissance conducted by Christopher Rude of California Environmental during June and July 2003. An Environmental Field Reconnaissance Checklist was completed by the environmental professionals during the site visit. Environmental Field Interview checklists were previously sent to identify owners of the property. The features described below are shown on the **PLOT PLAN**. Photographs of the subject property are included as **PLATES 1-3**.

A list of selected environmental risk sites identified within a one-quarter mile radius of the subject property is included in the **STANDARD ENVIRONMENTAL RECORDS SOURCES** section of this report.

Description of Property

The site consists of four parcels of land consisting of approximately 420 acres. The property is largely undeveloped. There are a number of graded dirt roads located throughout the property. Four active and ten abandoned oil wells are located within the subject property boundaries. The active oil wells located within the AEO parcel are excluded from the purchase of the property. Access to the property is via several entrances off Hasley Canyon Road to the south, Sloan Canyon Road to the west, and Madloy Street to the north.

SADD Parcel

The parcel consists of approximately 100 acres. The parcel is located along the southeastern portion of the subject property. There is single-story residential structure located along the southwestern portion of the Sadd parcel. The address of the structure is 28831 Hasley Canyon Road. A metal shed was observed to the northwest of the residential structure. The dwelling was unoccupied at the time of the site visit. The interior of the buildings were not observed. A domestic water well was observed in the vicinity of the Sadd dwelling. There are seven abandoned oil wells located on the central portion of the parcel. The oil wells were abandoned during February/April 2003.

The remaining portion of the parcel is undeveloped land of rugged and hilly terrain. The parcel is covered with native vegetation consisting of sparse chamise chaparral, grasses and scattered trees.

Petromineral/AEO Parcel

The parcel consists of approximately 115 acres. The parcel is located along the south portion of the subject property. The southern portion of this parcel completely surrounds the existing AEO processing plant (excluded from this assessment) area. The processing plant area occupies approximately 10 acres and consists of a wood frame building, aboveground storage tanks, and four oil wells. Underground oil field piping, underground tanks, and other facilities are located on this offsite but contiguous parcel.

An earthen berm encompassing an area of approximately 3,000 square feet, utilized as secondary containment, is located within the area of the processing facility. The building is located southwest of the bermed area. The building is utilized as office space and a maintenance shop. North of the bermed area are

cooling towers, and aboveground oil storage tanks and a diesel generator. Two 20 foot diameter oil tanks are located west of the office/maintenance building.

The remaining portion of the parcel is undeveloped land of rugged and hilly terrain. The parcel is covered with native vegetation consisting of sparse chamise chaparral, grasses and scattered trees.

Evans Parcel

The parcel consists of approximately 40 acres north of the SADD parcel. The parcel is located along the northeast portion of the subject property. No structures were observed on the parcel at the time of the site visit. The parcel is covered with native vegetation consisting of sparse chamise chaparral, grasses and scattered trees.

Northeast Parcels-Newman

The northeast parcels consist of contiguous parcels encompassing approximately 145 acres. This parcel is largely undeveloped. There is an unimproved road which extends northerly towards a dwelling. There are no oil wells or oil facilities located within the boundary of this property. There is a demolished single story residential structure located near the southwestern portion of the site. The address of the property is 28801 ½ Hasley Canyon Road. Several small corrals were observed to the north and west of the dwelling. The remaining portion of the property is undeveloped land consisting of rugged and hilly terrain. An abandoned private water well exists on this property. The previous owner indicates that following the Northridge earthquake, the well went dry. The well was abandoned by filling the casing with rocks. This well will require proper reabandonment under permits issued by the Los Angeles County Health Department in conformance with the California Department of Water Resources Standards for Well Destruction.

Adjacent Properties

The subject property is bound to the south by Hasley Canyon Road with existing oil field facilities beyond; to the west by undeveloped property; to the north by undeveloped property; and to the east by new residential and commercial developments.

Topography and Drainage

The subject property is hilly and rugged, with the topography generally sloping towards Hasley Canyon to the south. Drainage from the property is toward the south via several unnamed creeks and natural drainage channels. Hasley Canyon Wash is located on the southern portion of the site. Hasley Canyon Wash drains toward the southeast.

An approximately 2,400 square foot man made concrete lined pond was observed about 750 feet west of the AEO office/maintenance building. The pond was reportedly utilized by the previous onsite golf course. It appeared that the pond was less than ten feet in depth. Heavy algae growth was observed in the pond water at the time of the site visit. A second smaller pond of approximately 175 square feet was observed 300 feet north of the maintenance shop. The pond was approximately 5 feet in depth. The pond was occupied by reeds, trees, bushes and standing surface water. No additional evidence of surface drains or catch basins was observed on the property at the time of the site visit.

Past Uses of the Property

Other than oil field operations, no evidence of the past use, treatment, storage, disposal or generation of hazardous substances were observed during the site reconnaissance.

Use of Hazardous Substances

No evidence of use of hazardous substances was observed on the subject property during the site visit.

The AEO production area located adjacent the southern portion of the AEO parcel utilizes hazardous substances in connection with oil production. The chemicals observed during the site visit include a 55 gallon drum of methanol, two 55 gallon drums of unknown substances, one gallon container of muriatic acid, a 5 gallon container of gasoline, a 55 gallon drum of gear oil, a 55 gallon drum of ethylene glycol, a 55 gallon drum of petroleum distillates, and a 60 gallon container of Aqua Nox.

Material Safety Data Sheets (MSDS) supplied by AEO indicate that the facility utilizes a product named Magnaclear. According to Steve Burks, foreman for AEO, Magnaclear is the only chemical currently used at the facility. The AEO production area is excluded from the purchase of the subject property.

Storage Tanks

No evidence of existing underground or aboveground storage tanks, clarifiers, sumps, or grease traps was observed on the subject property during the site visit.

Two aboveground diesel tanks, oil storage tanks and process water tanks were observed on the excluded portion of the AEO parcel. One of the diesel tanks was utilized for servicing vehicles and the other diesel tank was utilized for a generator. An earthen berm approximately three feet high surrounds the

Petromineral processing plant. Staining was observed within the bermed area. A 15 foot stain of unknown substance was observed extending south from the bermed area onto the subject property. There was a sump containing oil located adjacent to one of the AEO aboveground storage tanks. Oil residue was observed in the immediate vicinity of the oil sump. Minor oil stains are present on the roadway adjacent to the bermed area near the oil loading pipes.

A 250 barrel oil AST was previously located on the southern drill pad on the SADD parcel. A 400 barrel diluent oil AST was previously located on the northern portion of the north SADD drill parcel. No aboveground or underground tanks are known to exist on the subject property at this time. Ten abandoned oil wells are located beneath the subject property. The approximate locations of these wells are shown on the attached **VICINITY MAP**. Four groundwater wells were found on the property. One of the wells located south of the Lombardi property line is operational and was reportedly drilled to depths of over 2,500 feet. Existing onsite water wells will either need to be abandoned to current standards or tested and upgraded to meet current well sanitary standards adopted by the Los Angeles County Department of Health.

Containers of Hazardous or Unidentified Substances

No evidence of containers of hazardous or unidentified substances was observed on the subject property at the time of the site reconnaissance.

Solid Waste Disposal

Evidence of disposal of solid waste was observed on the subject property during the site visit. Small quantities of non-hazardous household waste was observed in various locations, mostly in gullies adjacent to the dirt roads in the central and northern portions of the property. A few water heaters, air conditioners,

car bodies, metal drums, and other appliances were discarded on the property. No evidence of hazardous materials was observed in the areas of the solid waste. Tree and brush trimmings were also observed in various onsite locations. No areas of suspected trash fill or landfilling were observed on the subject property during the site visit.

Poly-Chlorinated Biphenyl's (PCBs)

Several pole mounted transformers were observed throughout the subject property and the excluded oil well areas. Pole mounted transformers were observed to the west of the man made pond located offsite approximately 750 feet west of the AEO office. During the site reconnaissance, surficial staining was observed on the concrete pad located at the base of the transformer pole. The onsite transformers are owned and serviced by Southern California Edison (SCE). Five pole mounted transformers were observed on two poles located adjacent to the west of the dirt road extending towards the two oil well leases. Three pole mounted and three slab mounted transformers were observed within the excluded area of the Petromineral Maintenance building and oil well enclosure. Mr. Joe Montoya of SCE was contacted regarding the PCB content of the onsite transformers. A letter stating that "it is highly unlikely the transformers serving your facility contains PCBs at concentration levels requiring special management under the Environmental Protection Agency's rules" was issued by SCE for the property. No additional evidence of PCB containing transformers or equipment was observed on the subject property during the site visit.

Asbestos Containing Building Materials (ACM)

Sampling of suspect asbestos containing material (ACM) was not included in the scope of work for this study. There are two dwellings and an office/maintenance building located on the subject property. The office/maintenance building is located on the AEO processing facility which is excluded from the purchase

of the property. Based on the age of the structures (prior to 1960s), asbestos containing material may have been utilized in the construction materials. SCAQMD Rule 1403 requires that a comprehensive asbestos survey be performed by a California Certified Asbestos Consultant prior to the demolition or renovation of the structures.

Wastewater Disposal Systems

There are two non-operational wood outhouses located in the central portion of the AEO parcel. The sheds for the outhouses have been knocked over. It is considered likely that there is also a septic tank associated with the dwelling located on the Sadd parcel. There is a septic tank permit for the AEO office building located offsite on the southern portion of the excluded AEO parcel.

Radon

Radon hazard assessment was not included in the scope of this study. However, the EDR research report indicates the levels of radon at 63 sites located within Los Angeles County were below one picoCurie per Liter (pCi/L). This concentration is well below the Federal Action level of four pCi/L.

Lead

Assessment of lead-based paint or other lead hazards was not included in the scope of this study. There are four structures currently located on the subject property. Lead content in paint was significantly reduced in 1977. Based upon the age of the structures, prior to 1970, the structures may have used lead based paint.

Odor

Strong petroleum hydrocarbon odors were occasionally noted during the underground pipe removal work on the SADD parcel. Hydrocarbon odors and staining were also noted during the assessment work on the AEO drill pad and the northern and southern drill pads located on the SADD property. No other evidence of strong pungent or noxious odors were noted on the subject property during the time of the site walkover.

Stressed Vegetation

No evidence of stressed vegetation was observed on the subject property at the time of the site reconnaissance.

Stained Soil or Pavement

Stained soil was noted in several areas during the pipeline removal work. Stained soil was also noted on the drill pad areas on the SADD and AEO parcels.

Pits, Ponds, or Lagoons

No evidence of pits, or lagoons was observed on the subject property at the time of the site reconnaissance.

Potable Water Supply

Water is supplied to the subject property by onsite private wells.

Other Conditions of Environmental Concern

No additional areas of environmental concern were ascertained during the site walkover and research. Areas of hydrocarbon impacted soil were identified onsite during pipeline removal work and subsurface testing implemented by California Environmental during June and July of 2003. These data are presented under the Subsurface Testing portion of this report.

PREVIOUS WORK

California Environmental previously prepared Preliminary Environmental Site Assessments – Phase I for the subject property. The reports are dated August 26, 1997 and November 24, 1997. The reports identified no recognized environmental conditions associated with the property. At the time of the environmental assessment work, the oil production pads on the SADD and AEO parcels were excluded from the Phase I Assessment reports. California Environmental recommended that existing oil field pipelines located on the property be removed and the soil around the pipelines be inspected for evidence of contamination.

A report by Petroleum Industry Consultants, dated July 23, 1987 was found in the files at the Los Angeles County Department of Public Works. PIC conducted subsurface assessment for MacFarland Energy Company. The assessment work was located offsite to the south in the vicinity of the Mabel Strawn Tank Farm and the tank farms located on the excluded AEO parcel adjacent to the southern portion of the site. Evidence of petroleum hydrocarbon impacts in soil were found during the subsurface assessment work.

HYDROGEOLOGY

The subject property is located on the north side of Hasley Canyon, east of Sloan Canyon, in the Castaic Hills area of the western San Gabriel Mountains. Most of the subject property is underlain by sandstone and conglomerate bedrock of the Pliocene/Pleistocene Saugus Formation. The southern portion of the property is underlain by alluvium in the bottom of Hasley Canyon. Small areas of alluvium are present in the tributary canyons as well.

The topography of the site is hilly and quite rugged. Four small canyons drain southwards across the property into Hasley Canyon Wash, thence into Castaic Creek to the east, and then into the Santa Clara River. The tributary streams are incised into the alluvium indicating fairly recent rejuvenation. All of the streams on the property, including Hasley Canyon Wash, are seasonally intermittent.

The subject property is not located in a recognized groundwater basin. Groundwater is present in bedrock formations in the area. The water wells on or near the property for which the Department of Water Resources has information were drilled to depths of 200 to 360 feet below the ground surface (bgs). The depth to water in these wells is unknown at this time. One of the water wells currently serving the AEO operation produces from a depth of over 2,000 feet bgs, according to a representative of AEO. Oil production in the area is from the Monterey Formation at a depth of about 5,000 feet bgs.

A 12 inch diameter water well was observed along the southeastern portion of the site. The well was capped and non-operational at the time of the site visit. The measured depth to groundwater was 55 feet (elevation 1,210 feet) on July 20, 2003. Groundwater was encountered at a depth of 100 feet (elevation

1,205 feet) in CE boring B25 on July 23, 2003. Two domestic water wells are located in the vicinity of the onsite dwellings.

The Department of Public Works, Hydrologic Records Division maintains groundwater monitoring wells in Los Angeles County. The nearest water well to the property is well no. 6984B maintained by the Los Angeles County Department of Public Works. The well is located approximately one mile southeast and was last measured on May 13, 1996. The depth to water at that time was 27.4 below ground surface and ground surface elevation was measured at 1028.5 feet mean sea level. The groundwater gradient is expected to follow the surface topography towards the south and southeast.

SITE UTILIZATION HISTORY

BUILDING AND GRADING PERMIT RESEARCH

The County of Los Angeles, Department of Building and Safety was visited by our personnel for the purpose of researching building permits and Certificates of Occupancy for the subject property. Addresses 28577, 28801, 28803 and 29323 Hasley Canyon Road do not have building permits maintained at the County of Los Angeles, Department of Building and Safety. The permit information is summarized below in **TABLE I**.

TABLE I
Building Permits

Date	Permit No.	Owner	Purpose of Building	Description
28801 ½ Hasley Canyon Road				
10/29/68	--	--	Dwelling	Electrical report.
3/28/69	--	--	Dwelling	Clothing trap for washer.
5/1/96	--	Edith Newman	Dwelling	Electrical.
28831 Hasley Canyon Road				
2/27/68	--	John Sadd	Dwelling	Plumbing permit for a shower
28943 Hasley Canyon Road				
--	--	Sadd Nelson Engineering Inc.	--	Oil well permit for 2 oil wells. SADD #1 and McGilliven #2 (#2 is located south of Hasley Canyon Road)
29001 Hasley Canyon Road				
8/15/83	--	Petromineral	--	Grading permit for oil well drilling site, Burns-Crist #7
29007 Hasley Canyon Road				
7/28/67	--	John Blankenship	Del Valle Golf	Permit closed out due to time limit
2/23/83	--	Hasley Canyon Corp.		Notice of Order - Board confirmed the findings that the property is substandard and is ordered to clear all debris by February 23, 1983 and the structure should be closed to prevent unlawful entry.
4/28/86	--	Petromineral Corp.	--	Electrical Permit
4/13/87	--	Petromineral Corp.	--	Rehabilitation of building and offices
29007½ Hasley Canyon Road				
--	--	Petromineral Corp.	--	Not legible.

UNDERGROUND STORAGE TANK PERMIT RESEARCH

The County of Los Angeles, Department of Public Works (DPW), Environmental Affairs Division was contacted regarding underground storage tank records and industrial waste file for the subject property. Ms. Mirna Marin of the County of Los Angeles (DPW) stated that there are no UST files records for the property addresses 28577, 28801, 28801½, 28803, 28831, 28943, 29001, 29030 and 29007½ Hasley Canyon Road. Industrial waste records were found for the AEO production facility. The Los Angeles County Department of Public Works does maintain files for the subject site relative to abandonment of mudpits and inspection and inventory forms. Los Angeles County also maintains files for the AEO carve out parcel located adjacent to the southern portion of the site.

LACHD AND SCAQMD FILE REVIEW

Inquiry letters were sent to South Coast Air Quality Management District (SCAQMD) and the Los Angeles County Department of Health (LACHD) for any information in their files regarding soil, water or air contamination at the site. The SCAQMD had files for the subject property. The file included a permit to operate a crude oil/gas/water production system located at the SADD and Burns-Crist tank farm areas. The file also contained notices of violations for unpermitted aboveground tanks and oil field production equipment. Also included in the file were inspection reports listing equipment and facilities onsite.

The LACHD had files for the property. The files included facilities inventories and hazardous materials stored onsite. The materials listed as stored onsite included oil well treatment chemicals consisting of petroleum distillates. The inquiry letters and responses from these agencies are included in **APPENDIX II**.

HISTORICAL AERIAL PHOTOGRAPH RESEARCH

Aerial photographs were reviewed as part of this study. The photographs are a part of the historic aerial photograph collections maintained by EDR and Whittier College Geography Department. Fifteen aerial photographs were reviewed for the subject property. The photographs are summarized below in **TABLE II**. Copies of the EDR aerial photographs are included in the **ILLUSTRATIONS** section of this report.

TABLE II
Historic Aerial Photograph Research

Date	Collection	Description
1928	Fairchild	No visible structures are located on the subject property. The property is undeveloped land. The area surrounding the site is undeveloped land.
1930	Fairchild	Subject property consists of primarily vacant land. A dwelling may be located on the Sadd property adjacent to Hasley Canyon.
6/25/40	Fairchild	Subject property is primarily vacant undeveloped land. Area adjacent to the eastern dirt road around the area of the Sadd house has been graded. May have been utilized for agricultural purposes. Area around the Lombardi ranch house appears to be utilized for agricultural purposes.
2/46	Fairchild	Medium vertical view. Subject property is primarily vacant undeveloped land. Ranch house on Lombardi parcel exists. House and second structure on Sadd property exists to the southeast. Some agricultural land (row crops) are located along Hasley Canyon near house. No agricultural use. Two houses not visible. Dirt roads leading to vicinity of two dwellings exist.
2/1/46	Fairchild	Medium vertical view. Subject property is primarily vacant undeveloped land. Ranch house on Lombardi parcel exists. House and second structure on Sadd property exists to the southeast. Some agricultural land (row crops) are located along Hasley Canyon near house. No agricultural use. Two houses not visible. Dirt roads leading to vicinity of two dwellings exist.
1952	Pacific Air	The property is primarily undeveloped land. There are no visible structures located on the subject property. Hasley Canyon Road is located to the south of the site.
5/52	Fairchild 4-136 4-135	Medium vertical view. Subject property is primarily vacant and undeveloped land. Ranch house on Lombardi parcel exists. House and second structure on Sadd property exists to the southeast. Some agricultural land (row crops) are located along Hasley Canyon near house.
5/13/52	Fairchild 4-134	Medium vertical view. Subject property is primarily vacant and undeveloped land. Ranch house on Lombardi parcel exists. House and second structure on Sadd property exists to the southeast. Some agricultural land (row crops) are located along Hasley Canyon near house.
1/19/52	Fairchild 1-1-10	Medium vertical view. Subject property is primarily vacant and undeveloped land. Ranch house on Lombardi parcel exists. House and second structure on Sadd property exists to the southeast. Some agricultural land (row crops) are located along Hasley Canyon near house.
5/22/53	Fairchild LA-3-74	High vertical view. Property consists of vacant and undeveloped land.

TABLE II
Historic Aerial Photograph Research
(continued)

Date	Collection	Description
2/7/56	Fairchild 1-21 and 1-22	High vertical view. Subject property is vacant and undeveloped land. Several trees and transecting dirt roads are located in the vicinity of the Hasley Canyon Wash.
1957	Fairchild 22926 3-101	Medium vertical view. Subject property is primarily vacant and undeveloped land. Hasley Canyon Road exists to the south. Several dirt roads transect the property. Possible house on Sadd property. Adjacent properties consist of vacant and undeveloped land. Area near ranch house appears to have been used for agricultural purposes.
1959	Robinson	There are no visible structures located on the subject property. The property is undeveloped land. Hasley Canyon Road is located to the south of the site.
1968	Teledyne	The photograph shows the northern portion of the subject property. Due to the elevation the photograph was taken, no visible structures or developments were observed onsite. The property is primarily undeveloped land.
1994	USDA	There are oil wells located along central portion of the AEO parcel. Mud pits are not visible in the photo. There are graded dirt roads located along throughout the subject property. The remaining portion of the property is undeveloped land.

HISTORICAL FIRE INSURANCE MAPS/HISTORICAL TOPOGRAPHIC MAPS

The EDR Sanborn Research Company was contacted to review historic fire insurance maps for the subject property. There is no Sanborn Fire Insurance Maps coverage available for the property.

Historic USGS 7.5 minute topographic maps were reviewed as part of this study. The Val Verde quadrangle topographic map dated 1952 (photorevised 1969) indicates that there was a single structure located along the eastern portion of the subject property in 1952. In 1969, the property was occupied by four structures. Three of the buildings coincide with the current AEO office (golf shop) building and the two onsite residences. The fourth building is located to the northwest of the residential structure located along the southern portion of the Sadd parcel. This structure no longer exists on the property.

NEARBY CONTAMINATED SITES

LANDFILLS

As part of our study, the Major Waste Systems Map for Los Angeles County and the Solid Waste Information System "SWIS" list were reviewed. Map Number 264-077 shows that there are no transfer stations or landfills located within a 2,000-foot radius of the subject property. There are no permitted hazardous waste landfills located in Los Angeles County.

OIL FIELD MAPS/DOGGR RECORDS

The California Division of Oil and Gas Maps were researched to evaluate oil production on and near the subject property. DOGGR Map No. 253 shows the subject property is located within the Hasley Canyon Oil Field. Ten oil wells are shown on the subject property. Four wells are shown on the excluded AEO parcel which abuts the southern portion of the site.

During January 2003, Long Beach Oil Development Company obtained permits to abandon ten wells on the subject property. Wells SADD 4, 5, 6, 7, 8 and 9 and Burns-Crist wells 8, 9, 10 and 12 were proposed for abandonment. On May 20, 2003, a *Report on Operations of Abandonment* for those wells was filed with DOGGR. On May 20, 2003, the DOGGR issued a *Report of Well Plugging and Abandonment,* approving the abandonment work completed on the wells. The DOGGR well abandonment and permit records are attached in **APPENDIX II**.

Mudpits were used during drilling of the wells in the 1980s. Information on file with the Department of Public Works and verbal information presented by Mr. Paul Howard, former president of Petrominerals indicates that the pits were properly abandoned.

Underground oil field pipelines were removed from the SADD parcel by California Environmental during July 2003. Observations of impacted soil and testing of soil conducted during and subsequent to the pipeline removal work are discussed under the **SUBSURFACE TESTING** section of this report.

According to Paul Howard, President for Petromineral, the mud pits associated with the well development were removed following the completion of the oil wells. Mr. Howard was not familiar with the chemicals used when drilling the onsite oil wells. According to Mr. Howard, leaks from the aboveground and underground pipelines "probably" have occurred. Once a leak is detected, the lines are repaired and the impacted soils are removed. The contents of the mud pits were removed offsite and backfilled with clean soil. Abandonment of the mud pits were generally overseen by a representative of the DOGGR, however, certificates of abandonment were not issued. Oil production on the property is from a depth of about 5,000 feet. Minor surface oil stains were observed near the oil production facilities.

STANDARD ENVIRONMENTAL RECORD SOURCES

A database search of government records sources was performed by Environmental Data Resources (EDR) to locate known or contaminated sites and sites which store, generate, or use hazardous materials near the subject property. There were no identified environmental risk sites located within a ½ mile radius of the site. Environmental risk sites found to exist within two miles of the subject property are summarized below

in **TABLE III**. The EDR database report including a description of the databases searched, are included as **APPENDIX III.**

TABLE III
Standard Environmental Record Sources

Name	Address	Distance from Subject Property	Source(s)
Cosmic Plastics	28410 Industry Drive	2,100 ft. SE	FINDS RCRIS LQR
Ebensteiner Castaic Shop	30305 The Old Rd.	> 1 mile E	RCRIS-SQG FINDS
Castaic Boat Marine	30517 The Old Rd.	> 1 mile E	RCRIS-SQG FINDS
County of Los Angeles - Newhall Moose	30617 The Old Rd.	> 1 mile E	CA SLIC
Ebensteiner Co.	30629 The Old Rd.	> 1 mile E	RCRIS-SQG FINDS
--	31264 N. Lake Hills Rd.	> 1 mile SE	LUST
Dixie Diesel Station	29471 The Old Rd.	> 1 mile SE	LUST UST
Robert N. Chesebrough Jr.	27812 Parker Rd.	> 1 mile NE	UST
Sun Exploration & Production Co.	Ferguson Los Angeles County	> 1 mile NE	FINDS RCRIS-LQG
Advanced Walk-in Chiropractic	27305 Hasley Canyon Rd.	> 1 mile SE	HAZNET
City of L.A. Dept. of Parks and Rec.	31320 Castaic Rd.	> 1 mile E/NE	HAZNET
--	31602 Castaic Rd.	> 1 mile NE	CHMIRS
Stix Oil Truck Stop	31611 Castaic Rd.	> 1 mile NE	UST
Southland Corp. dba 7 Eleven	27680 Castaic Rd.	> 1 mile NE	FINDS RCRIS-LQG RCRIS-SQG
L. A. Co. Dept. of Public Works Road Dept.	27624 Parker Rd.	> 1 mile NE	SWIS HMS
DWR Mobile Equipment Shop	31849 Lake Hughes Rd.	> 1 mile N/NE	HAZNET LUST
Giant Truck Stops-Castaic	31711 Castaic Rd.	> 1 mile NE	CA. FID CORTESE LUST
North County Correctional Facility	29380 The Old Rd.	> 1 mile SE	HAZNET
Golden State Towing	27666 Fantastic Ln.	> 1 mile NE	RCRIS-SQG FINDS
Pitchess Cogeneration Station	29300 The Old Rd.	> 1 mile SE	HAZNET CA. SLIC CHMIRS SWIS WMUDS
--	I-5 @ Castaic Scales	> 1 mile SE	CHMIRS

Note: A search of public information databases may omit some nearby contaminated sites due to missing or inaccurate information in the public record.

SUBSURFACE EVALUATION

During June and July 2003, California Environmental implemented subsurface testing on the property. The testing was implemented in several phases. The initial phase included soil vapor testing adjacent to the buried oil field pipelines located on the SADD and AEO parcels. Following that testing, California Environmental was authorized to remove the oil field pipelines from beneath the SADD parcel. During the pipeline removal process, areas of petroleum hydrocarbon impacted soil were identified. These areas were further assessed by placement of exploratory borings. The drilling included the use of a hydraulic push rig, a hollow stem auger rig, and an air rotary drill rig. Soil samples obtained during this assessment work were analyzed in an onsite state certified mobile lab. Overflow samples were transferred to a state certified laboratory. Both laboratories are operated by American Analytics. One groundwater sample was obtained and analyzed during the assessment work.

SOIL VAPOR SURVEY

On June 23 and 24, American Analytics mobilized to the site and conducted soil and soil vapor sampling under the direction of California Environmental. Thirty-one soil vapor samples were obtained and transferred to an onsite state certified laboratory for analysis. Four vapor samples contained in tedlar bags were transported to a fixed base laboratory for testing. Soil vapor probes were spaced at approximately 100-foot intervals along the pipeline alignment. Probe locations were also placed near valve boxes and at locations where the pipe alignment varies. During the soil vapor sampling, a Multi-Rae 5-gas PID was used to measure fixed gases and methane in the field. Both soil and soil vapor samples were obtained at probe locations. Initially, a soil vapor sample was obtained at depths of 4-5 feet. Following obtaining that sample, the probe was driven to a depth of approximately 7 feet where an

undisturbed soil sample was obtained. The results of the soil vapor sampling are presented on **TABLE IV**. The approximate locations of the sampling points are shown on the attached **SOIL VAPOR PLOT PLAN**. The laboratory test report on soil vapor is attached in **APPENDIX I**.

TABLE IV

Laboratory Analysis of Soil Vapor

Sample I.D.	Date	Field Vapor Readings			Mobile Laboratory Vapor Data (µg/L) & ppmv*					
		Multi Rae Plus			EPA Method 8015/8021/8260					
		O_2 %	CH_4 % LEL	VOC ppmv	B	T	E	X	CH_4*	8015 GRO
SG1 @ 7 ft.	6/23/03	17.4	4	279	46	4.2	<0.5	<1	7500	2700
SG1 @ 10 ft.	6/23/03	6.2	100	538	130	3.7	<1	<2.1	70,000	4900
SG1 @ 20 ft.	6/23/03	3.2	100	370	500	<5	<5	<10	100,000	7300
SG2 @ 7 ft.	6/23/03	21.6	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG3 @ 7 ft.	6/23/03	21.4	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG4 @ 7 ft.	6/23/03	21.2	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG5 @ 7 ft.	6/23/03	20.8	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG6 @ 7 ft.	6/23/03	20.2	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG7 @ 7 ft.	6/23/03	21.4	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG8 @ 7 ft.	6/23/03	20.3	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG9 @ 7 ft.	6/23/03	21.2	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG10 @ 7 ft.	6/23/03	21.3	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG11 @ 7 ft.	6/23/03	20.4	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG12 @ 7 ft.	6/23/03	21.1	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG13 @ 7 ft.	6/23/03	21.1	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG14 @ 7 ft.	6/23/03	21.3	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG15 @ 7 ft.	6/24/03	20.4	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG16 @ 7 ft.	6/24/03	20.6	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG17 @ 7 ft.	6/24/03	20.5	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG18 @ 7 ft.	6/24/03	20.5	0	0	<0.5 (<0.1)	<0.5 (<0.1)	<0.5 (<0.1)	<1	--	<20
SG19 @ 7 ft.	6/24/03	20.8	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG20 @ 7 ft.	6/24/03	21.3	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG21 @ 7 ft.	6/24/03	20.4	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG22 @ 7 ft.	6/24/03	20.1	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG23 @ 7 ft.	6/24/03	16.5	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG24 @ 7 ft.	6/24/03	17.1	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG25 @ 7 ft.	6/24/03	20.8	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG26 @ 10 ft.	6/24/03	20.0	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG27 @ 20 ft.	6/24/03	21.4	0	0	<0.5	<0.5	<0.5	<1	--	<20
SG28 @ 5 ft.	6/24/03	--	--	--	<0.5	<0.5	<0.5	<1	--	<20
SG29 @ 5 ft.	6/24/03	--	--	--	<0.5	<0.5	<0.5	<1	--	<20

( ) Tedlar bag sample analyzed in fixed laboratory

SOIL AND GROUNDWATER SAMPLING

Excavation of hollow stem auger borings and air rotary borings were implemented onsite during July 2003 to further define the extent of TPH impacts initially identified during the soil vapor survey and removal of the underground pipelines. Thirty-two borings were excavated onsite to depths of 5-100 feet below the ground surface. Soil samples were obtained at intervals of 5-10 feet to the total depth of the borings. The soil sampling protocols are attached in **APPENDIX V**. Soil samples were transferred to an onsite state certified mobile laboratory for analysis. Overflow samples were archived in the onsite mobile laboratory refrigeration unit for transportation to the fixed base lab.

Initial testing of samples indicated that the predominant constituents of concern in soil beneath the site are TPH associated with crude oil and TPH associated with diluent. Diluent is a solvent used onsite to help thin the heavy crude within the well to improve pumpability. The diluent consists of a refined petroleum product, primarily in the diesel/kerosene hydrocarbon range. The diluent was carried via underground pipeline to an AST and to the individual well heads where it was injected to thin the oil for pumping. Evidence of leaks in the diluent lines were noted during the pipeline removal work. A patch was noted on the piping removed from the northern production pad on the SADD lease. Heavy hydrocarbon odors were noted in the area around and beneath the patched pipeline. Borings placed beneath and adjacent to this removed pipeline area found high levels of petroleum hydrocarbons (up to 24,000 mg/Kg – B32 at 30 ft.) of TPH in soil. Low to moderate levels of benzene, toluene, ethylbenzene, and xylene were also detected. The locations of the assessment borings are shown on the attached **PLOT PLANS**.

A grab groundwater sample was obtained from B25 at 100 feet. That sample contained a low level of benzene (43 μg/L). The laboratory tests on soil and groundwater samples are summarized below in **TABLE V**. The laboratory test reports are attached in **APPENDIX IV**.

TABLE V

Laboratory Analysis of Soil and Groundwater Samples

Sample ID	EPA Method 8015FC mg/Kg				EPA Methods 8021/ 8260 mg/Kg							
	C6-C12	C13-C23	C24+	Total TPH	B	T	E	X	TCE	1,2,4 TMB	1,3,5 TMB	All other analytes
Soil (mg/Kg)												
SB1 @ 5 ft.	<1	<10	<1	ND	<2	<2	<2	<2	<5	<5	<5	<MRL
SB1 @ 25 ft.	<1	<1	<1	ND	<2	<2	<2	<2	<5	<5	<5	<MRL
SB30 @ 10 ft.	<1	<1	<1	ND	<2	<2	<2	<2	<5	<5	<5	<MRL
SB30 @ 20 ft.	<1	<1	<1	ND	6.4	<2	<2	<2	<5	<5	<5	<MRL
SB31 @ 10 ft.	<1	<1	<1	ND	2.4	<2	<2	<2	5.9	<5	6.2	<MRL
SB31 @ 19 ft.	29.7	835	25.1	890	66	130	<2	94	<5	<5	13	<MRL
B1 @ 5 ft.	169	140	14	370	<1	<1	6.8	15	--	--	--	--
B1 @ 10 ft.	4240	3340	98	7800	ND	ND	12	18	--	--	--	--
B1 @ 15 ft.	1315	923	<1	2200	<0.08	<0.08	0.34	1.0	--	--	--	--
B1 @ 20 ft.	3220	3180	550	6500	<0.5	<0.5	5.1	13	--	--	--	--
B1 @ 25 ft.	968	766	15	1700	<0.08	<0.08	0.46	1.4	--	--	--	--
B1 @ 30 ft.	6	17	<1	25	ND	ND	ND	ND	--	--	--	--
B1 @ 35 ft.	544	475	6	1000	<0.08	<0.08	0.37	0.58	--	--	--	--
B1 @ 40 ft.	1970	2150	133	4300	ND	2.2	5.3	20	--	--	--	--
B1 @ 45 ft.	658	519	21	1200	<0.08	<0.08	0.85	2.1	--	--	--	--
B1 @ 50 ft.	4150	4470	358	8900	1.9	14	13	39	--	--	--	--
B2 @ 5 ft.	14	70	3	87	<0.002	<0.007	<0.002	0.007	--	--	--	--
B2 @ 10 ft.	282	326	53	640	ND	ND	0.63	1.5	--	--	--	--
B2 @ 15 ft.	2510	1595	<1	4100	0.65	2.5	3.6	8.7	--	--	--	--
B2 @ 20 ft.	4700	4800	500	10000	7.3	37	34	87	--	--	--	--
B2 @ 45 ft.	2761	1693	20	4500	0.63	4.1	6.3	16	--	--	--	--
B2 @ 50 ft.	3880	3990	230	8100	<1	<1	8.8	25	--	--	--	--
B2 @ 60 ft.	140	352	48	540	<0.5	<0.5	<0.5	0.33	--	--	--	--
B2 @ 70 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B3 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B3 @ 10 ft.	5	7	91	100	ND	ND	ND	ND	--	--	--	--
B3 @ 15 ft.	1774	2076	6	3900	<0.08	0.28	<0.08	0.64	--	--	--	--
B3 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B3 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B3 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--

TABLE V
Laboratory Analysis of Soil and Groundwater Samples
(continued)

Sample ID	EPA Method 8015FC mg/Kg				EPA Methods 8021/ 8260 mg/Kg							
	C6-C12	C13-C23	C24+	Total TPH	B	T	E	X	TCE	1,2,4 TMB	1,3,5 TMB	All other analytes
B4 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B4 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B4 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B4 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B4 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B4 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B5 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B5 @ 10 ft.	2	10	6	16	ND	ND	ND	ND	--	--	--	--
B5 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B5 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B5 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B5 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B6 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B6 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B6 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B6 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B6 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B6 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B7 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B7 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B7 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B7 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B7 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B7 @ 40 ft.	<1	80	870	950	ND	ND	ND	ND	--	--	--	--
B8 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B8 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B8 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B8 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B8 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B8 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B9 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B9 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B9 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--

TABLE V
Laboratory Analysis of Soil and Groundwater Samples
(continued)

Sample ID	EPA Method 8015FC mg/Kg				EPA Methods 8021/ 8260 mg/Kg							
	C6-C12	C13-C23	C24+	Total TPH	B	T	E	X	TCE	1,2,4 TMB	1,3,5 TMB	All other analytes
B9 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B9 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B9 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B10 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B10 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B10 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B10 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B10 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B11 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B11 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B11 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B11 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B11 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B11 @ 40 ft.	1623	7170	1813	ND	ND	ND	ND	ND	--	--	--	--
B12 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B12 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B12 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B12 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B12 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B12 @ 40 ft.	1623	7170	1813	11000	1.3	4.0	4.3	5.2	--	--	--	--
B12 @ 50 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B12 @ 55 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B13 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B13 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B13 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B13 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B13 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B13 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B14 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B14 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B14 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B14 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B14 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--

TABLE V
Laboratory Analysis of Soil and Groundwater Samples
(continued)

Sample ID	EPA Method 8015FC mg/Kg				EPA Methods 8021/ 8260 mg/Kg							
	C6-C12	C13-C23	C24+	Total TPH	B	T	E	X	TCE	1,2,4 TMB	1,3,5 TMB	All other analytes
B14 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B15 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B15 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B15 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B15 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B15 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B16 @ 25 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B16 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B16 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B17 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B17 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B17 @ 15 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B17 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B17 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B18 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B18 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B18 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B18 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B19 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B19 @ 10 ft.	<1	<1	<1	570	ND	ND	ND	ND	--	--	--	--
B19 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B19 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B20 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B20 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B20 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B20 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B21 @ 5 ft.	10390	2646	155	13000	.007	0.11	0.09	1.8	--	--	--	--
B21 @ 10 ft.	2910	1750	540	5200	<0.1	0.88	2.7	22	--	--	--	--
B21 @ 20 ft.	1373	879	191	2400	ND	5.2	1.6	8.8	--	--	--	--
B21 @ 30 ft.	20	50	50	120	0.0032	0.014	0.097	--	--	--	--	--
B21 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B22 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	.002	--	--	--	--
B22 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--

TABLE V
Laboratory Analysis of Soil and Groundwater Samples
(continued)

Sample ID	EPA Method 8015FC mg/Kg				EPA Methods 8021/ 8260 mg/Kg							
	C6-C12	C13-C23	C24+	Total TPH	B	T	E	X	TCE	1,2,4 TMB	1,3,5 TMB	All other analytes
B22 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B23 @ 5 ft.	<1	<1	<1	--	--	--	--	--	--	--	--	--
B23 @ 10 ft.	<1	<1	<1	ND	--	--	--	--	--	--	--	--
B23 @ 20 ft.	<1	<1	<1	--	ND	ND	ND	ND	--	--	--	--
B23 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B24 @ 5 ft.	156	517	427	1100	.004	.006	.007	0.02	--	--	--	--
B24 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B24 @ 20 ft.	329	700	71	1100	<0.05	<0.05	0.16	0.23	--	--	--	--
B24 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B24 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B25 @ 40 ft.	2040	2881	20	4900	0.64	1.4	6.1	16	--	--	--	--
B25 @ 50 ft.	2450	1640	110	4200	2.1	7.3	6.2	18	--	--	--	--
B25 @ 60 ft.	4240	6800	<10	11000	1.7	11	14	33	--	--	--	--
B25 @ 70 ft.	6800	4720	480	12000	ND	17	17	51	--	--	--	--
B25 @ 90 ft.	25	27	<10	52	0.049	0.018	0.0088	0.055	--	--	--	--
B25 @ 100 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B25 W (mg/L)	<10	<10	<10	4.2	0.0043	0.012	0.0066	0.018	--	--	--	--
B26 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B26 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B26 @ 15 ft.	<1	28	<1	28	ND	ND	ND	ND	--	--	--	--
B26 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B26 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B26 @ 35 ft.	3.8	501	<1	10	ND	ND	ND	ND	--	--	--	--
B26 @ 45 ft.	<10	<10	<10	ND	ND	ND	ND	ND	--	--	--	--
B26 @ 55 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B27 @ 2 ft.	126	438	536	1100	ND	ND	ND	ND	--	--	--	--
B27 @ 5 ft.	10	160	<10	150	ND	ND	0.0035	0.0081	--	--	--	--
B27 @ 10 ft.	<1	<1	<1	170	ND	ND	ND	0.0065	--	--	--	--
B28 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B28 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B29 @ 2 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B29 @ 5 ft.	<1	<10	<1	ND	ND	ND	ND	ND	--	--	--	--
B30 @ 2 ft.	5	225	<10	230	ND	ND	ND	ND	--	--	--	--

TABLE V

Laboratory Analysis of Soil and Groundwater Samples (continued)

Sample ID	EPA Method 8015FC mg/Kg				EPA Methods 8021/ 8260 mg/Kg							
	C6-C12	C13-C23	C24+	Total TPH	B	T	E	X	TCE	1,2,4 TMB	1,3,5 TMB	All other analytes
B30 @ 5 ft.	5	41	<10	46	ND	ND	ND	ND	--	--	--	--
B30 @ 10 ft.	76	1314	10	1400	ND	ND	ND	ND	--	--	--	--
B31 @ 2 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B31 @ 5 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B32 @ 10 ft.	4820	4370	12	9200	ND	ND	ND	ND	--	--	--	--
B32 @ 30 ft.	9600	13000	<10	24000	5.6	22	23	61	--	--	--	--
B32 @ 40 ft.	2640	1890	20	4600	ND	12	12	37	--	--	--	--
B32 @ 50 ft.	21	52	<10	73	ND	ND	ND	ND	--	--	--	--
B32 @ 60 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B32 @ 70 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B33 @ 10 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B33 @ 20 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B33 @ 30 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--
B33 @ 40 ft.	<1	<1	<1	ND	ND	ND	ND	ND	--	--	--	--

TCE = Trichloroethene
1,2,4-TMB = Trimethylbenzene
1,3,5-TMB = Trimethylbenzene
-- = Not Analyzed
ND = Non Detect
BTEX = Benzene, Toluene, Ethylbenzene, Xylene

FINDINGS

During the research phase of this study, the following information was obtained:

- Aerial photograph research indicates that the subject property was undeveloped land from 1928 to 1968. Oil wells were observed on the property in the 1994 photo.

- Building permit research indicates that a public golf course was located onsite in 1967. A structure occupied the property in 1968. In 1983, a Notice of Order was issued for the 29007 Hasley Canyon Road. The order stated that the property was substandard and was ordered to clear all debris and close the structure to prevent unlawful entry.

- Building permit research indicates that the property was occupied by Petromineral Corporation in 1986 and 1987.

- There are no underground storage tank files for the subject property maintained by the Los Angeles County, Department of Public Works.

- The South Coast Air Quality Management District maintains files for the subject property. The files include notices of violation and permits to operate oil field related production equipment.

- The Los Angeles County Department of Health Services maintains files for the property. The files contained inventory information for chemicals used and stored at the AEO production site which is adjacent to the property.

- The 1952 historic USGS topographic maps shows a structure in the same location as the current dwelling located on the southern portion of the site. In 1969, the property was occupied by four structures and four areas of oil wells.

- There are no historical fire insurance maps available for the subject property.

- There are ten abandoned oil wells located within the subject property. Underground oil field piping is present onsite beneath the AEO parcel. The underground oil field piping beneath the SADD parcel was removed by California Environmental during June and July 2003.

- Oil production on the property is from a depth of about 5,000 feet.

- There are no landfills or transfer stations located within a 2,000 ft. radius of the subject property.

- There are no environmental risk sites located within a one mile radius of the subject property.

- The subject property is not located within an alluvial groundwater basin.

- There are no database listed contaminated sites located within a one-half miles radius of the subject property.

During the site visit, the following observations were made:

- The subject property includes four parcels which consists of approximately 420 acres.
- Access to the property is via several entrances off Hasley Canyon Road to the south, Sloan Canyon to the west and Madloy Street to the north.
- A high production water well is located along the southeastern portion of the parcel. The well was capped and non-operational.
- A single-story residential structure was observed along the southwestern portion of the SADD parcel. A domestic water well is located in the vicinity of the dwelling.
- The portion of the property not occupied by structures is undeveloped land covered with vegetation.
- Minor surface oil stains were observed near the AEO oil production facility.
- Two aboveground diesel tanks, several oil tanks and water tanks were present within the offsite adjacent AEO processing facility.
- An approximate 2,400 square foot concrete lined, man made pond was observed approximately 750 feet west of the Petromineral office building. The pond was utilized for irrigation by the previous golf course operator.
- A smaller pond approximately 175 square feet was observed 300 feet north of the maintenance building.
- No evidence of hazardous substance use was observed on the subject property. Hazardous substances associated with oil production were observed on the AEO processing facility.
- No evidence of containers of hazardous or unidentified substances was observed on the subject property.
- Small quantities of non-hazardous household waste was observed in various locations, mostly in gullies adjacent to dirt roads in the central and northern portion of the property. No areas of suspected trash fill or landfilling were observed onsite.
- Two non-operation outhouses were observed along the central portion of the AEO parcel. The sheds for the outhouses were destroyed.

- No evidence of existing underground storage tanks, aboveground storage tanks, clarifiers, sumps, or grease traps were observed on the subject property. Sewage/septic systems are present onsite.

- The surrounding area consists primarily of undeveloped land with sparse residential properties and small ranches.

During the vapor testing at the subject property, the following findings were made.

- TPH in vapor was found in probe location SG1. Up to 7,300 µg/L of TPH was found in SG1 at 20 feet.

- Methane was detected in SG1. Up to 100,000 ppm (10%) of methane was detected in SG1 at 20 feet.

- Benzene was detected in SG1. 500 µg/L of benzene were found in SG1 at a depth of 20 feet. The remaining 28 soil vapor probe locations had non-detect levels of methane, BTEX, and TPH.

During the soil sampling conducted at the subject property, the following findings were made.

- A maximum level of 24,000 mg/Kg of TPH was found in soil sample B32 at 30 feet. Benzene was not detected in that sample. 51 mg/Kg of xylenes and 17 mg/Kg of both toluene and ethylbenzene were found in that sample.

- The maximum level of benzene detected in soil onsite was 2.1 mg/Kg as found in soil sample B25-B50.

- Low levels of TPH and VOCs were found in the grab groundwater sample obtained from a depth of 100 feet from boring B25. The groundwater sample contained 4.2 mg/Kg of TPH, 43 µg/L of benzene, 12 µg/L of toluene, 6.6 µg/L of ethylbenzene, and 18 µg/L of xylenes.

CONCLUSIONS AND RECOMMENDATIONS

A Phase I Environmental Site Assessment and Subsurface Testing was performed for the subject property. The Phase I research identified that the property is within the Hasley Canyon Oil Field. Ten oil wells were recently abandoned under permits issued by the DOGGR. The DOGGR has issued final approval for the abandonment of the onsite oil wells.

Oil field pipelines were removed from beneath the SADD parcel of the site. The pipelines were removed by California Environmental. The pipelines were previously flushed and cleaned by representatives of AEO. California Environmental excavated the piping and wasted the piping offsite to a metal recycling facility. Abandoned underground piping remains beneath the central portion of the site, and beneath the former AEO/Burns-Crist production area.

Historical site utilization history indicates the subject property has been either undeveloped, used for recreational purposes (a golf course), for corrals, and as small ranches. Residential structures and associated out buildings are present onsite. Water is supplied to the site by onsite private groundwater production wells. Several of these wells have been abandoned, but the abandonment does not meet the requirements of the Los Angeles County Health Department. All wells which are not programmed for use should be abandoned by removing the well casing and grouting the annular space with an approved sealing material. All former residences and structures onsite should be assumed to be associated with onsite sewage disposal systems such as a septic tank and leachfield. These systems will require proper removal and abandonment during future development activities. Household debris, non hazardous trash, metal debris, and vegetation clippings are present in various locations throughout the property. No

evidence of hazardous materials or burial of debris were noted on the property. Underground storage tanks, often unpermitted are commonly associated with rural residences and golf courses. No indications of existing underground tanks through permit records or an onsite walkover were found for the site.

Groundwater was found at a depth of approximately 100 feet beneath the upper SADD drill parcel. This corresponds to an elevation of approximately 1,205 feet above mean sea level. An inactive groundwater well located on the southwest portion of the site was sounded on July 17, 2003. The depth to groundwater was 55 feet which corresponds to a groundwater elevation of approximately 1,210 feet above mean sea level.

Soil matrix and soil vapor sampling were accomplished along the alignment of the onsite abandoned oil field pipelines and on the three production pads (two on SADD, one on AEO). Elevated levels of VOCs and methane were detected in soil vapor in the vicinity of sampling location SG1. An increasing concentration with depth trend of total TPH and methane was recognized in sampling location SG1. The chemical analysis suggests "a light end" hydrocarbon, such as diluent was released into the subsurface probably from a leaky pipeline or valve.

The elevated levels of methane detected in the area of SG1 are probably related to anaerobic biodegradation of the released hydrocarbons. This narrow plume of methane coincides with the area of hydrocarbon impacts detected in both soil and soil vapor. Methane was not detected in any of the remaining soil vapor test points placed along the pipeline alignment. It is probable that the methane anomaly will abate rapidly once the TPH source zone is removed.

The apparent pipeline releases probably represent a reportable event to a lead enforcement agency such as the Los Angeles County Fire Department, Health Hazmat Division or RWQCB. The Fire Department will likely require additional assessment to further define the extent of the impacts and to develop a proposal for remedial action. The largest zone of impacted soil is located beneath the northern SADD drill site parcel. The impacts in this area are probably associated with a leak in a diluent line. TPH impacts beneath the area of this removed line extend to depths of 90 feet. Step-out borings suggest a plume radius on the order of 50 feet. Approximately 30,000 cubic yards of soil have been impacted by the release in this area. It is possible this release has impacted groundwater. Future groundwater testing will be required to determine the extent of dissolved phase impacts, if any, to compute the groundwater gradient, and for future attenuation monitoring, if required.

Widespread shallow TPH impacted soil is also present on the AEO drill site parcel. Approximately 500 cubic yards of impacted soil are present in this area.

Future Assessment

Two components of future environmental assessment and clean-up are anticipated. The first component is removal of shallow TPH impacted soil to depths of 10-25 feet prior to commencement of onsite grading activities. The removal of the shallow TPH impacted soil is recommended so that future grading work in the pad areas will not be affected by the TPH impacted soil.

The second component of future costs will include assessment and remediation of the hydrocarbon plume on the northern SADD drill pad which extends to depths of 90 feet. Impacts to groundwater from this release are probable. However, diluent hydrocarbon is a highly biodegradable material and will

probably not persist in the saturated zone for a long period of time. Future assessment and remediation should be conducted under the guidance of a lead enforcement agency, such as the Regional Water Quality Control Board or the Los Angeles County Fire Department. Remedial clean-up should be consistent with levels acceptable for future use. Since the source of the leak has been abated (the pipeline removed), the residual hydrocarbons in the saturated zone, if present, should attenuate fairly rapidly. Residual hydrocarbons in the unsaturated zone will degrade but are subject to rate limitations. This rate can be accelerated through the use of bioaugmentation processes. Additional treatment may also be accomplished with other methods, if necessary.

No additional recognized environmental conditions were ascertained during the preparation of this report. Additional site assessment work as required by the lead enforcement agency will be required. Additional site assessment research is not recommended at this time.

This report is subject to the following **NOTICE**:

NOTICE

All properties are subject to some element of environmental risk and the risk cannot be eliminated. Industrial and commercial properties developed prior to modern environmental laws are especially risk prone to environmental hazards which include, but are not limited to, wastes which may be toxic, ignitable, corrosive or reactive. The potential for these environmental hazards to impact the use of the property can be reduced by the identification and mitigation of the hazards prior to development or redevelopment of the property. Due to the difficulty in locating underground wastes, in some cases it is not always possible to ascertain that hazardous wastes are present on the property prior to development.

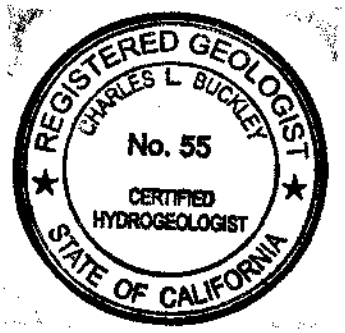
A Phase I environmental site assessment does not utilize subsurface exploration to check for the presence of hazardous wastes on the property. The experience of the assessor, along with the research of available reports, aerial photographs and land use records are used to evaluate the potential for hazardous wastes to occur on the site. Based on the information gained from the audit, subsurface exploration may be recommended to check for the presence of hazardous wastes. Preexisting environmental problems such as the presence of hazardous wastes in the soil or groundwater, can be concealed by grading activities and site improvements. If such wastes are present these wastes cannot be observed by the auditor.

The subsurface conditions described herein have been ascertained from excavations on the site as indicated, and should in no way be construed to reflect variations which may occur between or beyond these excavations. The chemical laboratory testing described herein was performed by a state certified testing laboratory. The state certified testing laboratory assumes responsibility for the testing procedures used in their analysis.

This report was prepared with the skill and competence as commonly used by environmental professionals in this area. No warranty, expressed or implied, of any kind is made or intended in connection with this report, or by the fact you are being furnished this report, or by any other oral or written statement.

Should you have any questions or desire any additional information, please contact the undersigned.

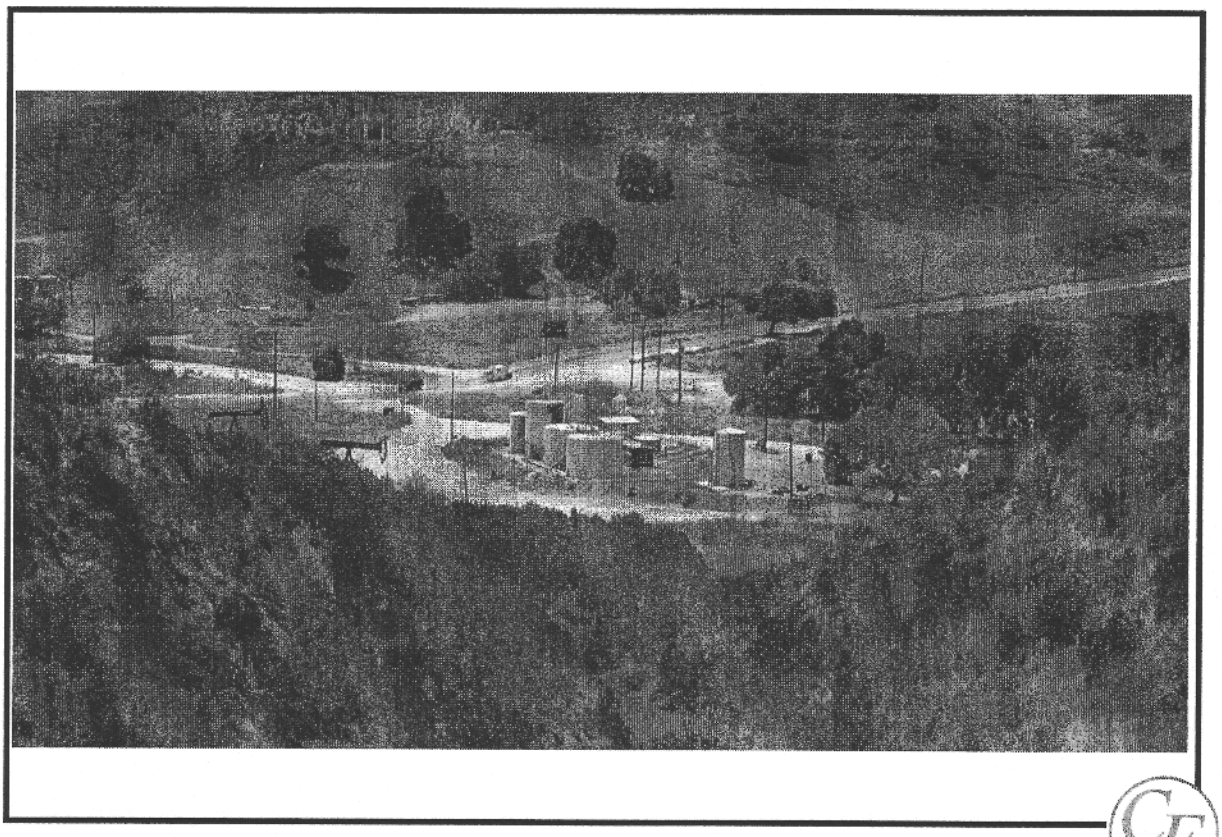
Respectfully submitted,



Charles I. Buckley
Certified Hydrogeologist No. 55
Registered Environmental Assessor II No. 20116

ILLUSTRATIONS

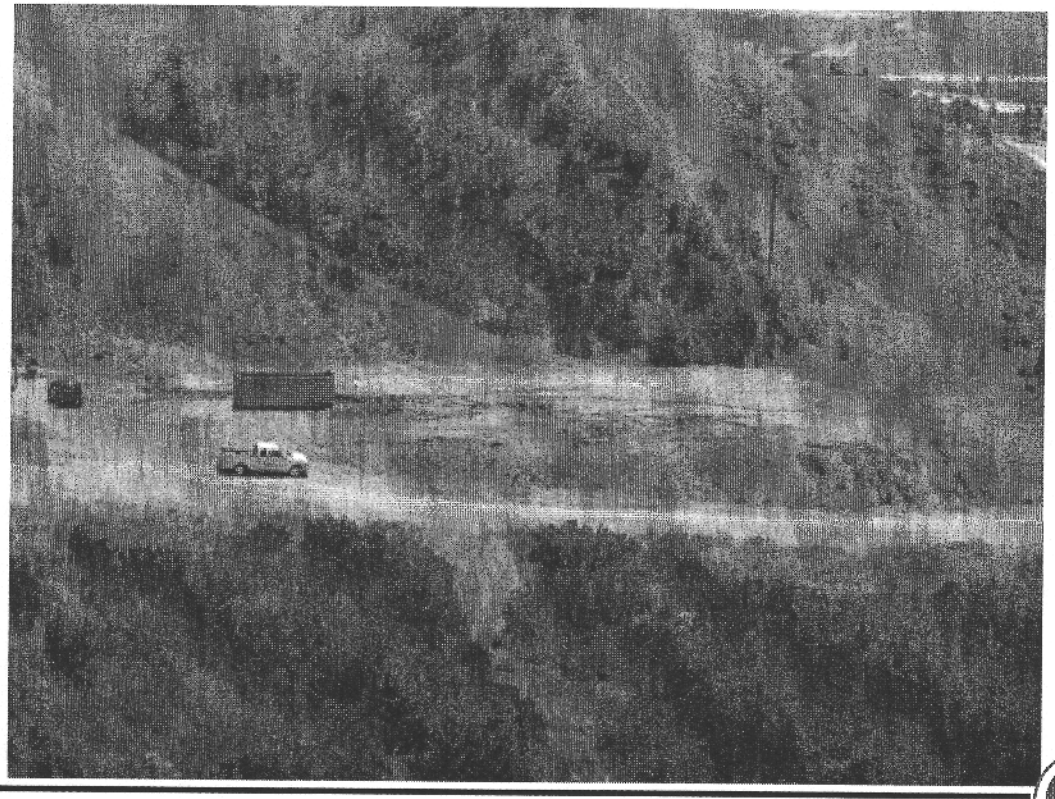
.Site Photographs
Vicinity Map
SADD Lease- South Pad
SADD Lease- North Pad
AEO Lease- Burns-Crist
Soil Vapor Plot Plan
Development Overlay Plan
Logs of Borings - Plates 1 to 33



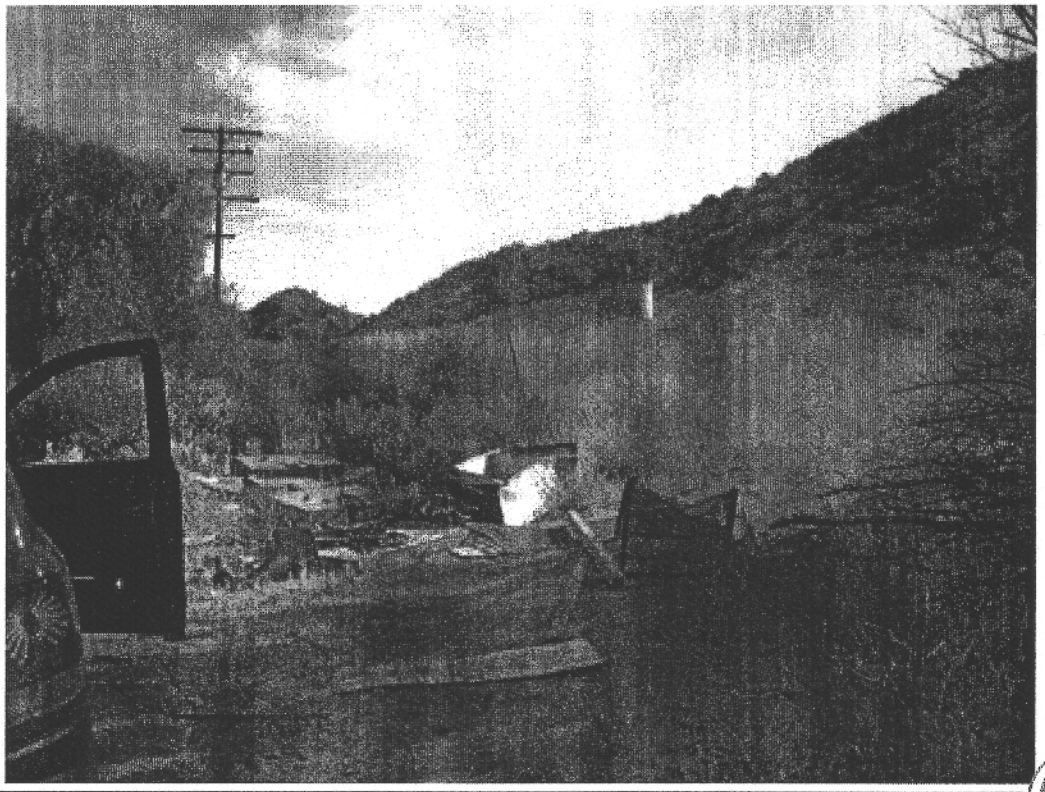
Veiw of AEO production site from AEO parcel
Hasley Canyon Land Company LLC

Area of trash debris
Hasley Canyon Land Company LLC

Trash and debris on northern parcel
Hasley Canyon Land Company LLC

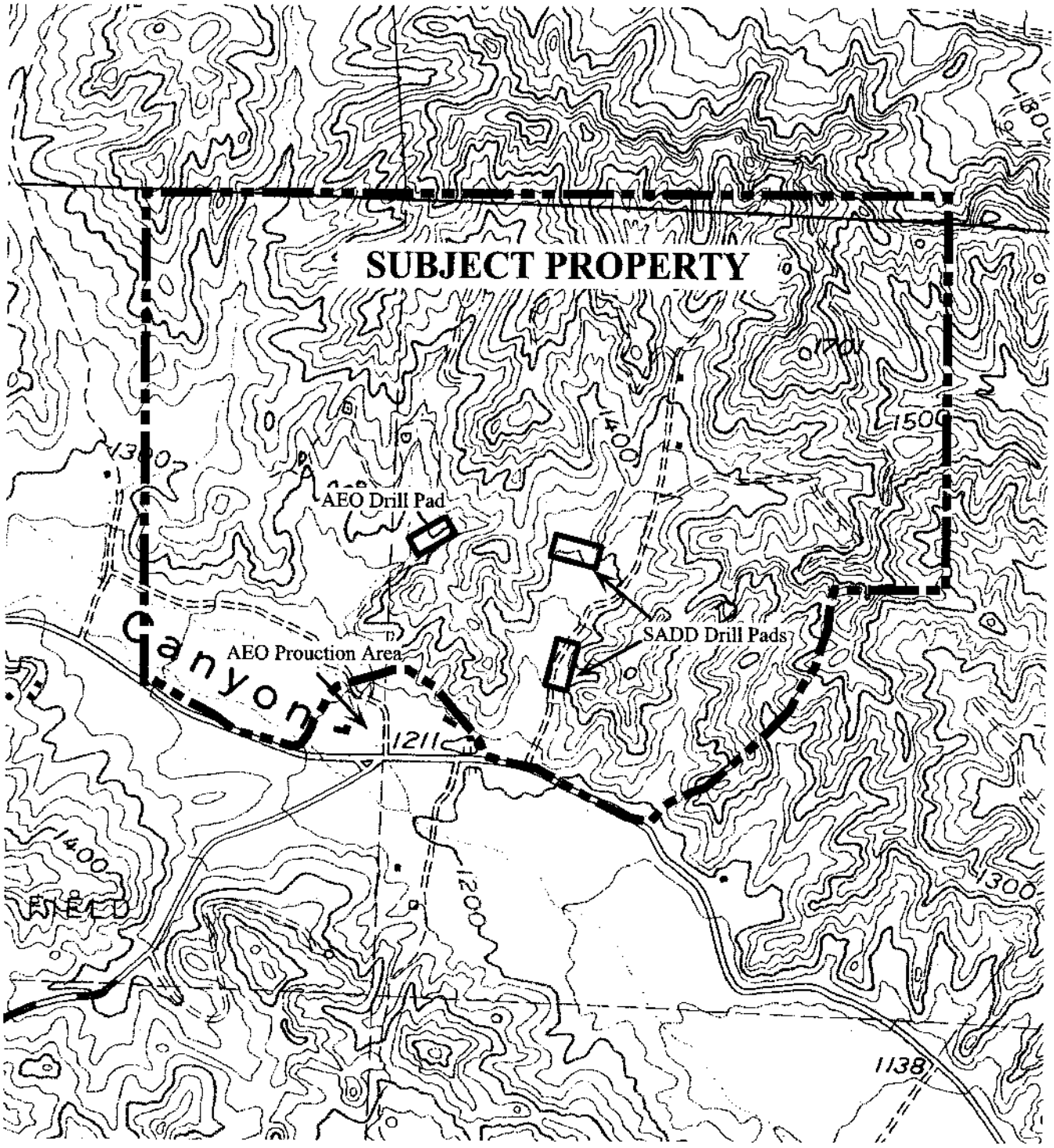


Pipe removal Sadd Drill Pad South
Hasley Canyon Land Company LLC



Area of debris
Hasley Canyon Land Company LLC

SW portion of site near Hasley Canyon Rd.
Hasley Canyon Land Company LLC



SCALE
0 1000 1000 feet
1inch = 1,000 feet

N
W E
S

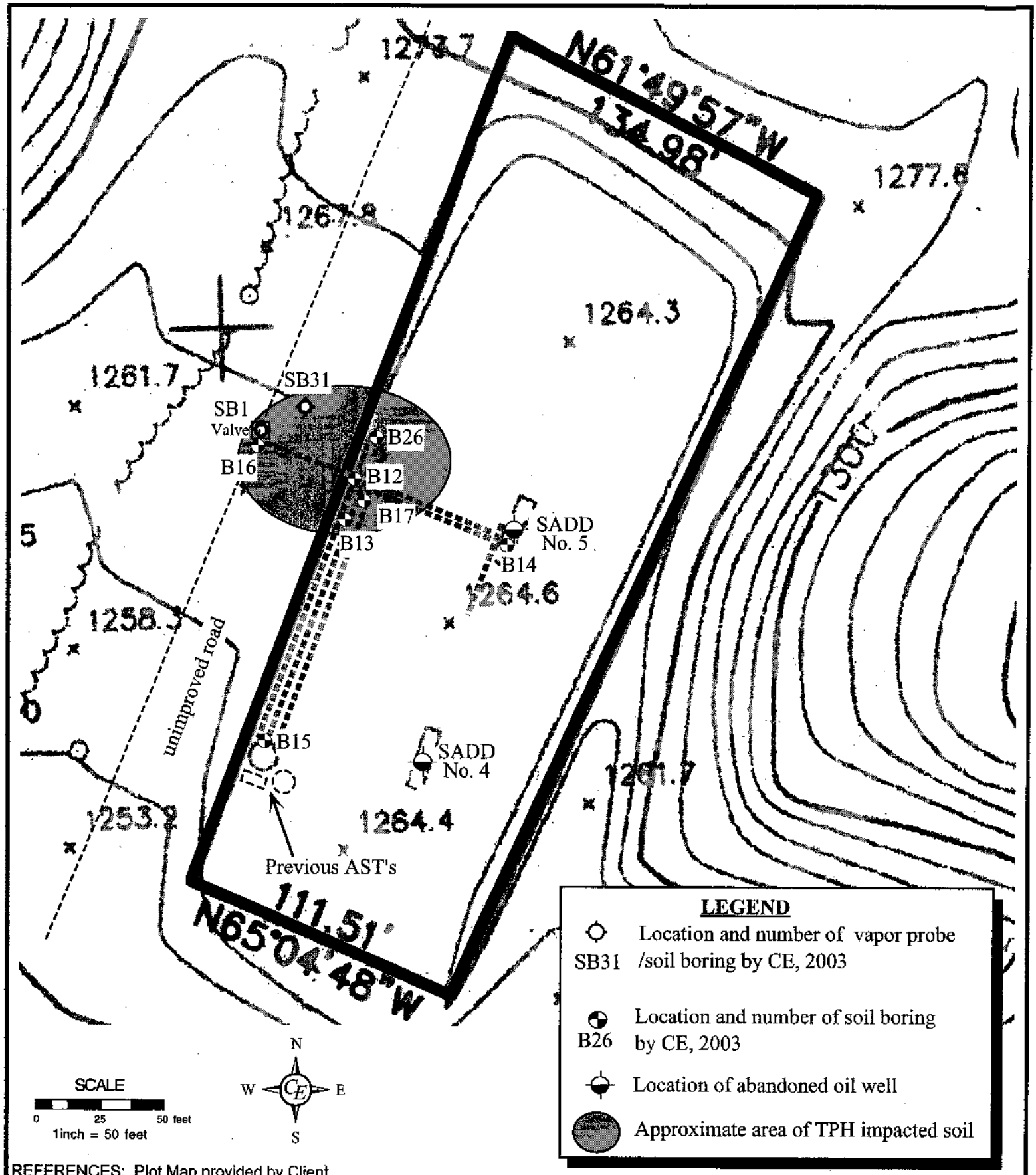
REFERENCES USGS 7.5" Val Verde Topographic Quadrangle, 1952 (Photo Revised 1969)

VICINITY MAP
HASLEY CANYON
Los Angeles County, California

Drawn By:	LRN	Job #	EV797-1474
Checked By:	CIB	Date:	July 2003

California Environmental

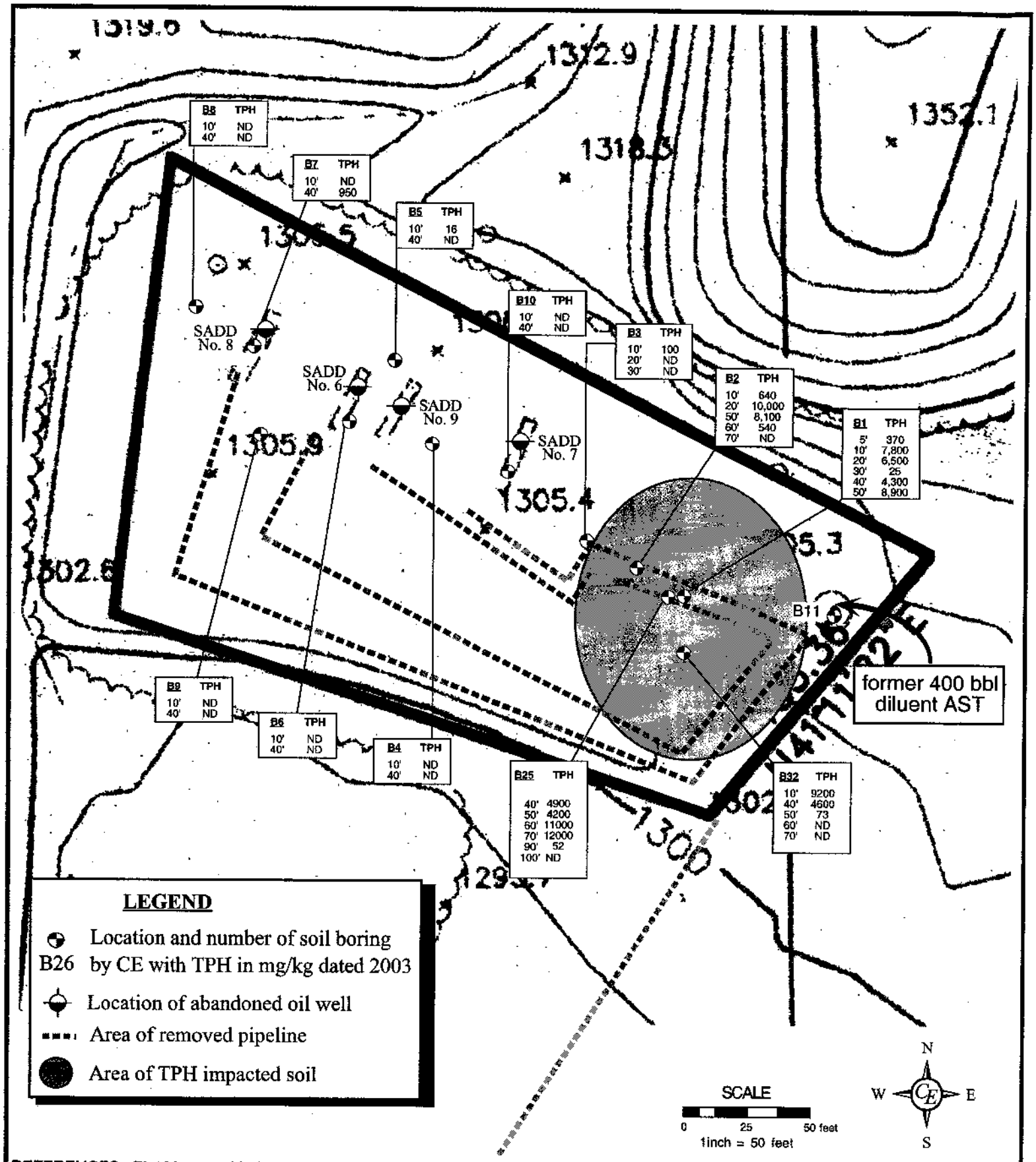
1474 vicinity map



REFERENCES: Plot Map provided by Client

CE	**SADD LEASE-SOUTH DRILL PAD** **Hasley Canyon, California**		California Environmental
	Drawn By: LRN	Job # EV797-1474	
	Checked By: CIB	Date: July 2003	

1474 SADD Lease South Drill Pad



REFERENCES: Plot Map provided by Client

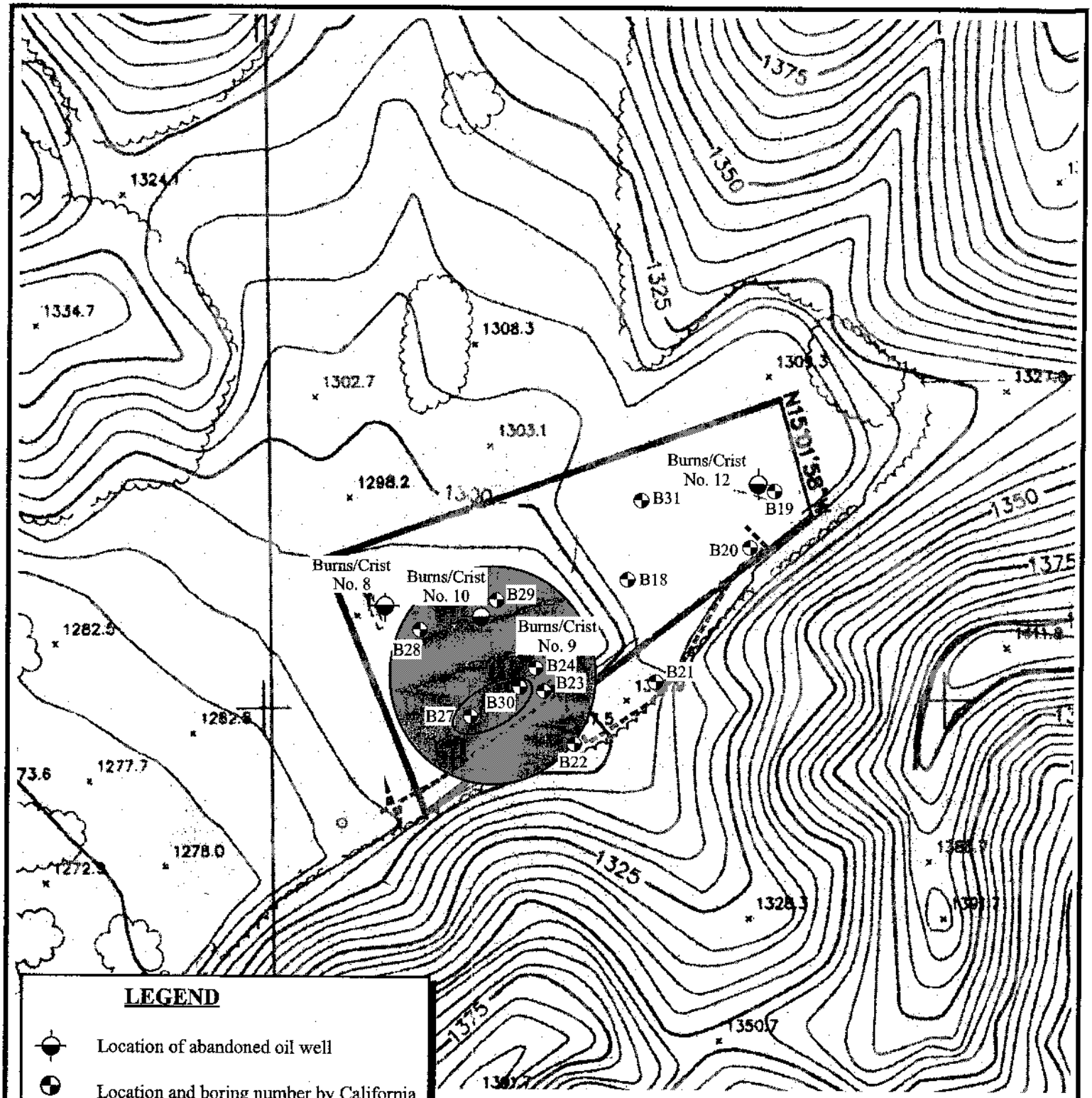
SADD LEASE NORTH DRILL PAD

Hasley Canyon, California

Drawn By:	LRN	Job #	EV797-1474
Checked By:	CIB	Date:	July 2003

California Environmental

1474 SADD Lease North Drill Pad



LEGEND

- Location of abandoned oil well
- B31 Location and boring number by California Environmental 2003
- Location of removed sump
- Approximate area of TPH impacted soil

SCALE
0 25 100feet
1inch = 100 feet

N W E S

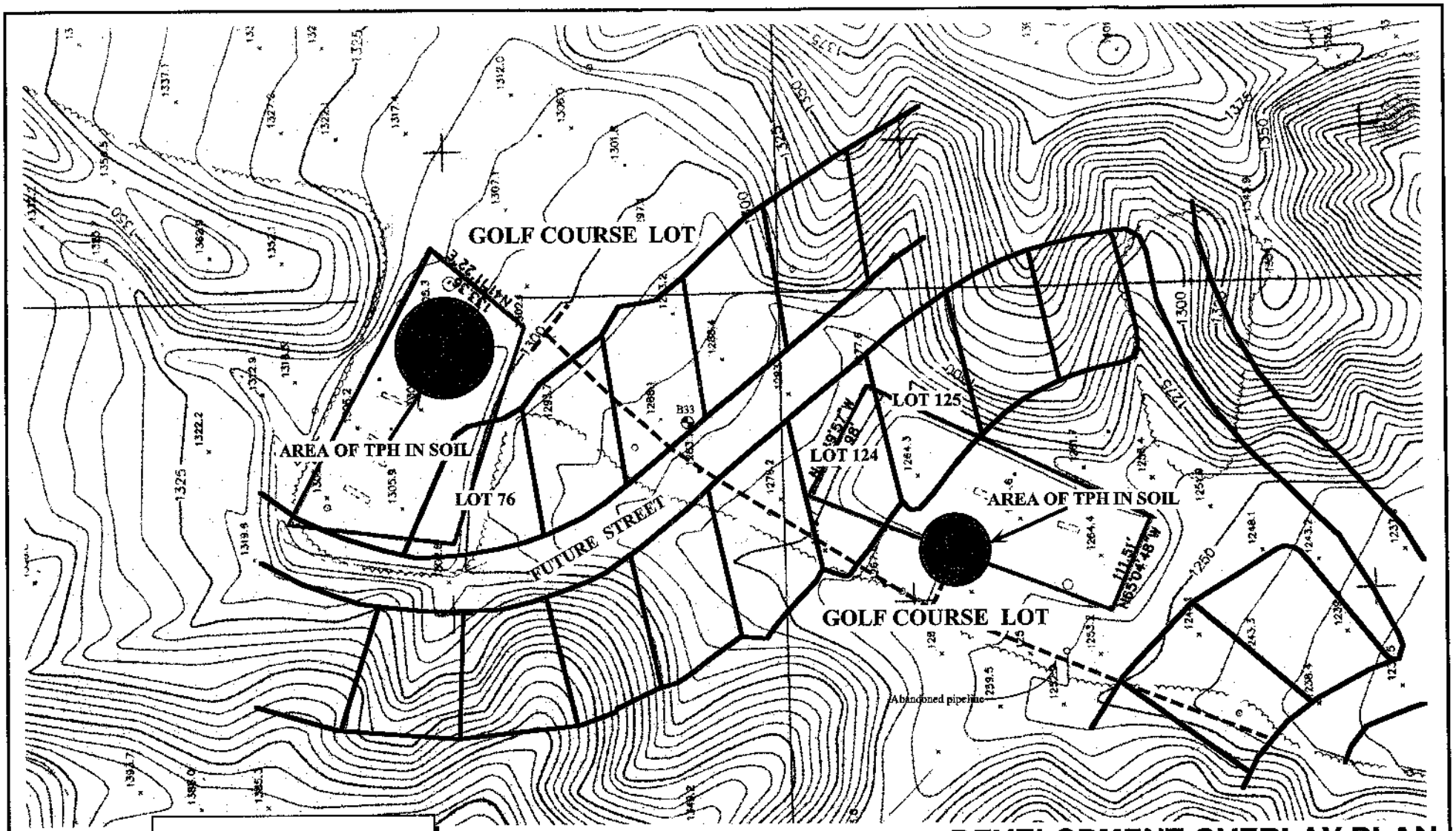
REFERENCES: Maps provided by Client

AEO-Burns/Crist Drill Pad
Hasley Canyon, California

Drawn By:	LRN	Job #	EV797-1474
Checked By:	CIB	Date:	July 2003

California Environmental

1474 AEO Burns Crist Drill Pad



DEVELOPMENT OVERLAY PLAN

LEGEND

Drill pad areas

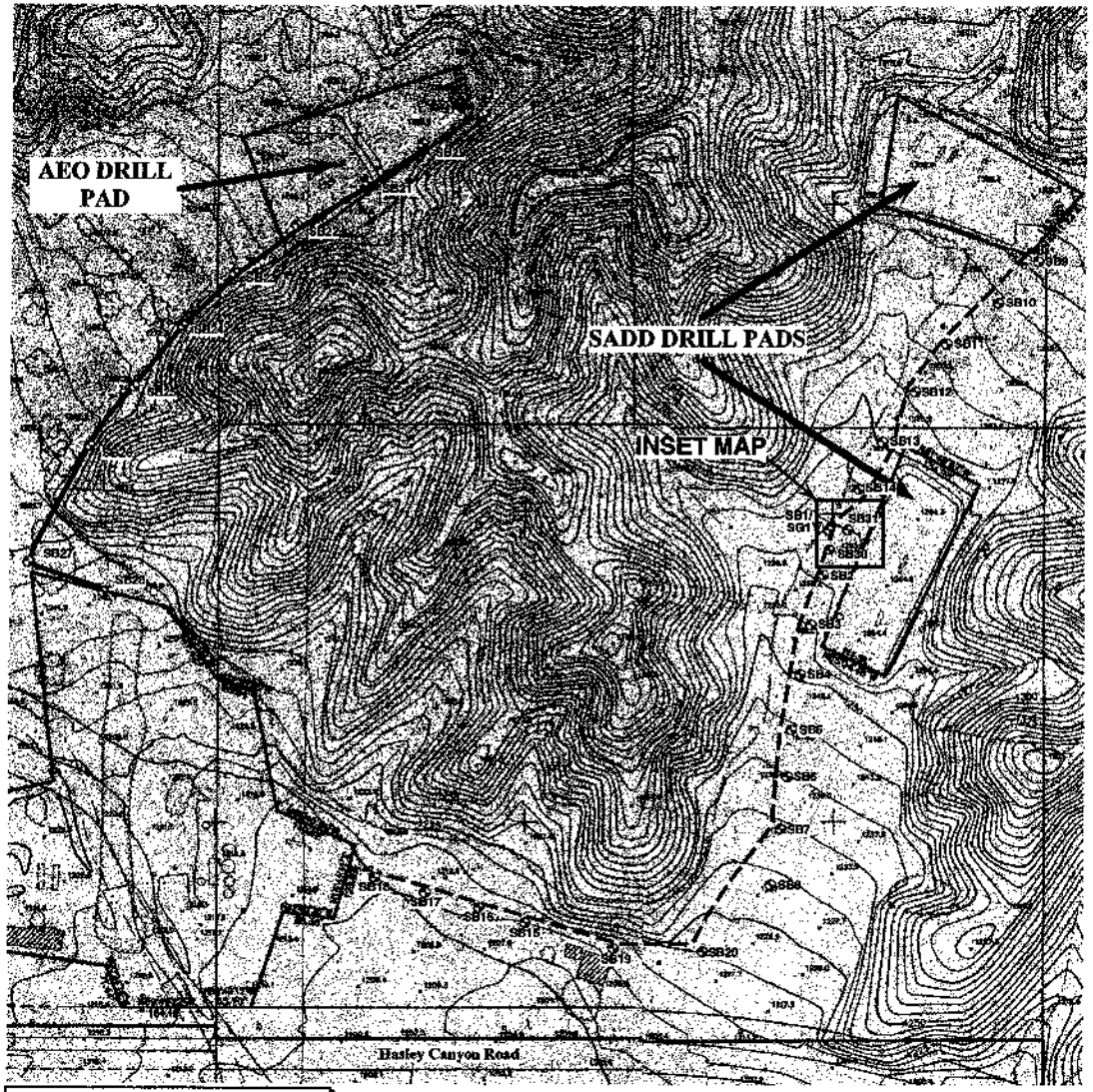
B33 — Location and number of soil boring by CE, dated July 23, 2003

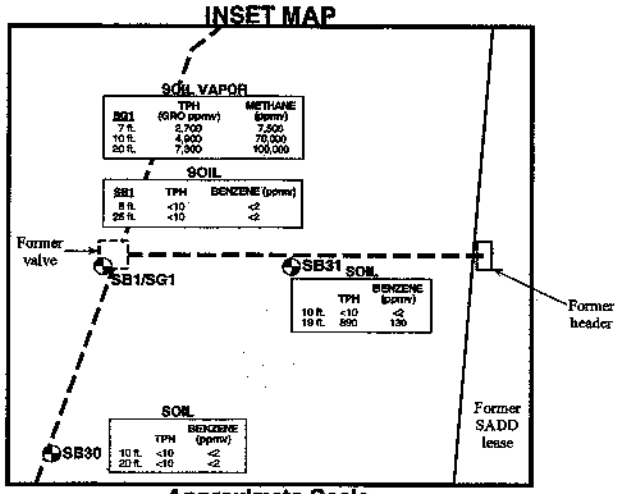
SCALE
0 50 100 feet
1inch = 100 feet

N E S W

REFERENCE: Plot Map provided by Client

California Environmental			
Client	Hasley Canyon Land Company, LLC	Job #	EV797-1474
Site Name	Portion of SADD and Burns Crist Parcels	Date	July 2003
Location	Hasley Canyon, California	By LRN	Checked By CIB





Approximate Scale
1 inch = 10 feet

SOIL VAPOR PLOT PLAN

LEGEND

- SB29 — Location and number of soil and soil vapor sampling point
- Approximate location of removed pipelines
- Approximate location of existing pipelines

SCALE
0 100 200 feet
1inch = 200 feet

N W E S

REFERENCE: Plot Map provided by Client

California Environmental			
Client	Hasley Canyon Land Company, LLC	Job #	EV797-1474
Site Name	Portion of SADD and Burns Crist Parcels	Date	July 2003
Location	Hasley Canyon, California	By LRN	Checked By CIB

LOG OF BORING B1

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61-HSA
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Siltstone, firm, slightly moist, strong petroleum odor.			54-4"		
10	SD	Siltstone, firm, slightly moist, petroleum odor.			50/54-4"		
15	SD	Coarse sand, firm, slightly moist, petroleum odor.			35/50-4"		
20	SD	Coarse sand, firm, slightly moist, petroleum odor.			100-6"		
25	SD	Coarse sand, firm, slightly moist (no sample recovered), petroleum odor.			100-6"		
30	SD	Rock (no recovery), petroleum odor.			100-6"		
35	SD	Sand, medium brown, slightly moist, petroleum odor.			48-50-5"		
40	SD	Sand, medium brown, slightly moist, petroleum odor.			58-6"		
45	SD	Coarse sand, medium brown, slightly moist, petroleum.			50-6"		
50	SD	Coarse sand, medium brown, slightly moist, petroleum odor.			100-7"		
		End @ 50 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 1

LOG OF BORING B2

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, slight petroleum odor.			11/22/40		
10	SD	Sand, medium brown, slightly moist, petroleum odor.			19/25-5"		
15	SD	Sandstone/siltstone, slightly moistened, brown, petroleum odor.			33/50-4"		
20	SD	Sandstone, slightly moist, medium brown, petroleum odor.			50-6"		
25							
30	SD	No recovery - cobbly/gravelly.			50-5"		
35							
40	SD	No recovery - cobbly/gravelly.			50-3"		
45	SD	No recovery - gravelly. **46.5 ft.** - coarse sand and gravel, medium brown, slightly moist, petroleum odor.					
50	SD	Coarse sand and gravel, medium brown, slightly moist, strong petroleum odor, partial recovery.			50-3"		
55	SD						
60	SD	Coarse sand, medium brown, slightly moist, strong, petroleum odor, partial recovery.			50-6"		
		End @ 60 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 2

LOG OF BORING B3

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, slight petroleum odor.			28/50-5"		
10	SD	Sand, medium brown, slightly moist, slight petroleum odor.			52/50-5"		
15					25/50-5"		
20	SD	Sand, medium brown, slightly moist, petroleum odor.			47/50-5"		
25							
30	SD	Sand, medium brown, slightly moist, slight petroleum odor.			40/50-4"		
35							
40	SD	Sand, medium brown, slightly moist, no petroleum odor.			100-8"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 3

LOG OF BORING B4

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, slight petroleum odor.			6/7/15		
10	SD	Sand, medium brown, slightly moist, no petroleum odor.			10/10/14		
15	SD	Sand, medium brown, slightly moist.			30/40		
20	SD	Sand, medium brown, slightly moist, no petroleum odor.			10/33/44		
25							
30	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			17/35/45		
35							
40	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			20/50-4"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 4

LOG OF BORING B5

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, no petroleum odor.			4/4/5		
10	SD	Sand, medium brown, slightly moist, no petroleum odor.			9/15/24		
15	SD	Sand, medium brown, slightly moist, no petroleum odor.			12/50		
20	SD	Sand, medium brown, slightly moist, no petroleum odor.			20/50-4"		
25	SD						
30	SD	Sand, medium brown, slightly moist, no petroleum odor.			20/50-4"		
35	SD						
40	SD	Sand, medium brown, slightly moist, no petroleum odor.			20/50-4"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 5

LOG OF BORING B6

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Silty sand, medium brown, slightly moist, no petroleum odor.			6/6/10		
10	SD	Sand, medium brown, slightly moist, no petroleum odor.			22/50		
15	SD	Sand, medium brown, slightly moist, no petroleum odor.			22/50-5"		
20	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			30/50-5"		
25	SD						
30	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.					
35	SD						
40	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.					
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 6

LOG OF BORING B7

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			6/7/11		
10	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			10/10/15		
15	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			14/20/30		
20	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			13/17/21		
25							
30	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			18/19/18		
35							
40	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			25/50-5"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 7

LOG OF BORING B8

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, no petroleum odor.			10/15/17		
10	SD	Sandy gravel, medium brown, slightly moist, no petroleum odor.			10/17/24		
15	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			12/16/21		
20	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			30/30/50		
25							
30	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			13/16/19		
35							
40	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			34/50-6"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 8

LOG OF BORING B9

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, no petroleum odor.			5/7/8		
10	SD	Sand, medium brown, slightly moist, no petroleum odor.			12/18/23		
15	SD	Sand, medium brown, slightly moist, no petroleum odor.			12/18/23		
20	SD	Sand, medium brown, slightly moist, no petroleum odor.			26/50-4"		
25							
30	SD	Sand, medium brown, slightly moist, no petroleum odor.			17/33/54		
35							
40	SD	Sand, medium brown, slightly moist, no petroleum odor.			27/50-4"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B10

JOB NUMBER:	EV797-1474	**DATE:**	7/14/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium to dark brown, slightly moist, no petroleum odor.			8/12/17		
10	SD	Sand, medium brown, slightly moist, no petroleum odor.			20/33/55		
15							
20	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			50-4"		
25							
30	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			100-6"		
35							
40	SD	Siltstone, light to medium brown, slightly moist, no petroleum odor.			50-6"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor
D=Drive G=Grab N=No Recovery

LOG OF BORING B11

JOB NUMBER:	EV797-1474	**DATE:**	7/16/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, no petroleum odor.			10/12/16		
10	SD	Sand with gravel, slightly moist, no petroleum odor.			12/24/26		
15	SD	Sand with gravel, slightly moist, no petroleum odor.			17/50-5"		
20	SD	Sand with gravel, slightly moist, no petroleum odor.			34/50-5"		
25							
30	SD	Sand with gravel, slightly moist, no petroleum odor.			55-6"		
35							
40	SD	Coarse sand, light brown, slightly moist, no petroleum odor.			50-5"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 11

LOG OF BORING B12

JOB NUMBER:	EV797-1474	**DATE:**	7/16/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Coarse sand, medium to light brown, slightly moist, no petroleum odor.			8/15/25		
10	SD	Coarse sand, medium to light brown, slightly moist, no petroleum odor.			7/18/22		
15	SD	Coarse sand, medium to light brown, slightly moist, no petroleum odor.			30/50-5"		
20	SD	Coarse sand, medium grayish brown, slightly moist, slight petroleum odor.			7/9/15		
25							
30	SD	Coarse sand, medium to grayish brown, slightly moist, slight petroleum odor.			100-7"		
35							
40	SD	Coarse sand, grayish brown, slightly moist, strong petroleum odor.			100-7"		
45							
50	SD	Coarse sand, grayish brown to medium brown, slightly moist, slight petroleum odor.			100-4"		
55	SD	Sand, medium to light brown, moist, slight petroleum odor.			40/50-4"		
		End @ 55 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 12

LOG OF BORING B13

JOB NUMBER:	EV797-1474	**DATE:**	7/16/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, coarse, light brown, slightly moist, no petroleum odor.			6/8/10		
10	SD	Sand, medium brown, slightly moist, no petroleum odor.			7/11/16		
15		Sand, medium brown, slightly moist, no petroleum odor.			16/28/40		
20	SD	Sand, medium brown, slightly moist, no petroleum odor.			50/4		
25							
30	SD	Sand, medium to light brown, moist, no petroleum odor.			100-7"		
35							
40	SD	Sand, medium to light brown, moist, no petroleum odor.			100-7"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B14

JOB NUMBER:	EV797-1474	**DATE:**	7/16/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, slightly moist, no petroleum odor.					
10	SD	Sand, medium brown, slightly moist, no petroleum odor.			10/16/20		
15	SD	Sand, medium brown, slightly moist, no petroleum odor.			6/12/15		
20	SD	Sand, medium brown, slightly moist, no petroleum odor.			36/50-4"		
25							
30	SD	Sand, coarse, medium to light brown, slightly moist, no petroleum odor.			20/20/29		
35							
40	SD	Sand, medium to light brown, slightly moist, no petroleum odor,.			50-5"		
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B15

JOB NUMBER:	EV797-1474	**DATE:**	7/16/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, medium brown, moist, no petroleum odor.			4/7/11		
10	SD	Sand, medium brown, moist, no petroleum odor.			5/19/20		
15	SD	Sand with gravel.			12/14/20		
20	SD	Sand , medium brown, slightly moist, no petroleum odor.			50-5"		
25							
30	SD	Sand, medium brown, moist, no petroleum odor.			15/20/38		
		End @ 30 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B16

JOB NUMBER:	EV797-1474	**DATE:**	7/16/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5							
10							
15							
20							
25	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			75-7"		
30	SD	Sand coarse, medium brown, slightly moist, no petroleum odor.			50-3"		
35							
40	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.					
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 16

LOG OF BORING B17

JOB NUMBER:	EV797-1474	**DATE:**	7/16/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			8/18/19		
10	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			7/9/13		
15	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			7/10/19		
20	SD	Sand with gravel, medium brown, moist, no petroleum odor.			10/13/17		
		End @ 20 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 17

LOG OF BORING B18

JOB NUMBER:	EV797-1474	**DATE:**	7/17/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			32/20/34		
10	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			5/6/7		
15							
20	SD	Sand, medium brown, slightly moist, no petroleum odor.			7/10/10		
25							
30	SD	Sand, medium brown, slightly moist, no petroleum odor.			9/11/12		
		End @ 30 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 18

LOG OF BORING B19

JOB NUMBER:	EV797-1474	**DATE:**	7/17/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.			6/8/8		
10	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			75-6"		
15							
20	SD	Silty sand, fine, medium to light brown, slightly moist, no petroleum odor.			27/50-4"		
25							
30	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			11/50-4"		
		End @ 30 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B20

JOB NUMBER:	EV797-1474	**DATE:**	7/17/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Silty sand, light brown, slightly moist, no petroleum odor.			9/18/27		
10	SD	Silty sand, light brown, slightly moist, no petroleum odor.			16/25/40		
15							
20	SD	Siltstone, light brown, slightly moist, no petroleum odor.			20/50-6"		
25							
30	SD	Siltstone, light brown, slightly moist, no petroleum odor.					
		End @ 30 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B21

JOB NUMBER:	EV797-1474	**DATE:**	7/17/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, light brown, slightly moist, no petroleum odor.			4/5/5		
10	SD	Sand, light brown, slightly moist, strong petroleum odor.			18/27/33		
15							
20	SD	Sand, light brown, slightly moist, petroleum odor.			80-5"		
25							
30	SD	Sand, light brown, slightly moist, slight petroleum odor.			100-6"		
35							
40	SD	Siltstone, medium to light brown, slightly moist, no petroleum odor.					
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B22

JOB NUMBER:	EV797-1474	**DATE:**	7/17/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand, light brown, slightly moist, no petroleum odor.			10/12/17		
10	SD	Sand, light brown, slightly moist, strong petroleum odor.			42/50-4"		
15							
20	SD	Sand, light brown, slightly moist, petroleum odor.			50-5"		
		End @ 20 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 22

LOG OF BORING B23

JOB NUMBER:	EV797-1474	**DATE:**	7/17/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Sand with gravel, medium brown to light brown, slightly moist, no petroleum odor.			6/7/6		
10	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.			6/8/8		
15							
20	SD	Sand with gravel, medium brown, massive, slightly moist, no petroleum odor.			5/10/15		
25							
30	SD	Siltstone, medium brown, massive, slightly moist, no petroleum odor.			7/11/24		
		End @ 30 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B24

JOB NUMBER:	EV797-1474	**DATE:**	7/17/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD	Coarse sand, medium to dark brown, slightly moist, petroleum odor.			50-5"		
10	SD	Coarse sand, medium brown, slightly moist, slight petroleum odor.			8/11/14		
15							
20	SD	Coarse sand, greenish gray to black, slightly moist, petroleum odor.			10/15/20		
25		21 ft. Discoloration cleaned up in tip of sampler.					
30	SD	Coarse sand, light brown, slightly moist, no petroleum odor.			16/26/30		
35							
40	SD	Siltstone medium to light brown, massive, slightly moist, no petroleum odor.					
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 24

LOG OF BORING B25

JOB NUMBER:	EV797-1474	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	Air Rotary
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Drive tube
LOGGED BY:	Michael Tiffany Registered Geologist No. 6750	**BORING DIAMETER:**	10-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0							
5							
10		No samples.					
15							
20							
25							
30							
35		**Saugus Formation**					
40	SD	Medium to coarse sand with gravel, gray, hydrocarbon odor.			22/50-5"		
45							
50	SD	Silty fine to coarse sand, brown, hydrocarbon odor.			50-6"		
55							
60	NS	Silty fine to coarse sand with gravel, brown, hydrocarbon odor.			3" recovery		
65							
70	SD	Fine to coarse sand, light brown, strong hydrocarbon odor.			38/50-1"		
75							
80	SD	Silty fine sand, brown, moist, micaceous, strong odor, no recovery.			50-1"		
85							
90	SD	Sandy clayey silt, brown, slightly moist, very stiff, no odor, occasional gravel, show of moisture.			18/50-2"		
95							
100	SD	Fine to coarse sand, minor silt, grayish brown, wet, no odor			3/20/30		
		End @ 100 ft., water at 100 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B26

JOB NUMBER:	EV797-1474	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	Air Rotary
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Drive tube
LOGGED BY:	Michael Tiffany, RG No. 6750	**BORING DIAMETER:**	10-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5	SD				5/6/7		
10	SD	Sand with gravel, medium brown, slightly moist, no petroleum odor.	SW		7/8/10		
15	SD	Coarse sand, light brown, slightly moist, no petroleum odor.	SW		—		
20	SD	Coarse sand with gravel, medium brown, slightly moist to moist, faint petroleum odor.	SW				
25							
30	SD	No sample - sampler hit rock.	GW?				
35	SD	Medium to coarse sand with gravel, grayish brown, medium hydrocarbon odor.	SW				
40							
45	SD	Medium to coarse sand with gravel, grayish brown, medium hydrocarbon odor.	SW				
50							
55	SD	Medium to coarse sand, gray, slight hydrocarbon odor,.	SW				
		End @ 55 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B27

JOB NUMBER:	EV797-1474	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Environmental Scientist	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
1							
2	SD	Silty sand, dark grayish brown, slightly moist, petroleum odor.			5/7/22		
3							
4							
5	SD	Silty sand, dark grayish brown, slightly moist, petroleum odor.			7/11/15		
6							
7							
8							
9	SD	Silty sand, medium brown, slightly moist, no petroleum odor.					
10	SD	Silty sand with gravel, medium brown, slightly moist, no petroleum odor.					
		End @ 10 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 27

LOG OF BORING B28

JOB NUMBER:	EV801-2304	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Senior Environmental Technician	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
1							
2	SD	Silty sand, dark brown, slightly moist, no petroleum odor.			17/21/31		
3							
4							
5	SD	Coarse sand, light brown, slightly moist, no petroleum odor.			17/24/32		
6							
7							
8							
9							
10	SD	Coarse sand, light brown, slightly moist, no petroleum odor.					
		End @ 10 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 28

LOG OF BORING B29

JOB NUMBER:	EV801-2304	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Senior Environmental Technician	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
		Saugus Formation					
0	SD	Coarse sand, dark brown, slightly moist, slight petroleum odor.			9/10/10		
1							
2	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.					
3							
4							
5	SD	Coarse sand, medium brown, slightly moist, no petroleum odor.					
		End @ 5 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 29

LOG OF BORING B30

JOB NUMBER:	EV801-2304	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Senior Environmental Technician	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
1							
2	SD	Silty sand, dark grayish brown, slightly moist, slight petroleum odor.			17-12"		
3							
4							
5	SD	Silty sand, dark grayish brown, slightly moist, slight petroleum odor.					
6							
7							
8							
9		Silty sand, medium brown, slightly moist, no petroleum odor.					
10		Sand, medium brown, slightly moist, no petroleum odor.					
		End @ 10 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 30

LOG OF BORING B31

JOB NUMBER:	EV801-2304	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Senior Environmental Technician	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
1							
2	SD	Silty sand, medium brown, slightly moist, no petroleum odor.			18-12		
3							
4							
5	SD	Silty sand, medium brown, slightly moist, no petroleum odor.			5/7/9		
		End @ 5 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

LOG OF BORING B32

JOB NUMBER:	EV801-2304	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	Air Rotary
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Drive tube
LOGGED BY:	Michael Tiffany, RG No. 6750	**BORING DIAMETER:**	10-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5							
10	SD	Clayey silt with sand, olive gray, slightly moist, stiff, strong gasoline odor.	ML		13/18		
15		Color change ~ 15 ft. gray-brown.					
20	SD	No sample recovered - one rock chip.			50-6"		
25							
30	SD	Silty fine to medium sand, occasional gravel, light yellow brown, moist, moderate odor.	SM		50-6"		
35							
40	SD	Fine to coarse sands, pale brown, slight odor.	SW		50-4"		
45							
50	SD	Fine sand, pale brown, slight odor.	SP		50-6"		
55							
60	SD	Silty with sand, brown, slightly moist, stiff, no odor.	ML		50-6"		
65							
70	SD	Silty fine to medium sand, light brown, moist, very slight odor.	SM		50-4"		
		End @ 70 ft.					

†Sample Type: S=Soil W=Water V=Vapor
D=Drive G=Grab N=No Recovery

LOG OF BORING B33

JOB NUMBER:	EV801-2304	**DATE:**	7/23/03
CLIENT NAME:	Hasley Canyon Land Company, LLC	**DRILL RIG:**	B61
SITE ADDRESS:	Portions of SADD and AEO Parcels Los Angeles County, California	**SAMPLING METHOD:**	Split Spoon
LOGGED BY:	Christopher E. Rude Senior Environmental Technician	**BORING DIAMETER:**	7-inch
		SURFACE CONDITIONS:	Unpaved
REVIEWED BY:	Charles I. Buckley, CHG No. 55 REA II No. 20116		

Depth in Feet	Sample Type†	LITHOLOGIC DESCRIPTION	USCS Code	PID Reading (ppmv)	Blows per Foot	Graphic Log	Well Diagram
0		**Saugus Formation**					
5							
10	SD	Sand with gravel, coarse, light brown, slightly moist, no petroleum odor.			3/11/13		
15							
20	SD	Sandstone, light brown, slightly moist, no petroleum odor.			19/20/38		
25							
30	SD	Sandstone, light brown, slightly moist, no petroleum odor.					
35							
40	SD	Sandstone, light brown, slightly moist, no petroleum odor.					
		End @ 40 ft.					

†Sample Type: S=Soil W=Water V=Vapor D=Drive G=Grab N=No Recovery

PLATE 33

APPENDIX I

Inquiry and Response Letters

California

geologists & engineers

Environmental

July 15, 2003

Job No. EV797-1474

Custodian of Records
DHS/PHI
5555 Ferguson Drive, Suite 120-04
Commerce, California 90022

Attention: Custodian of Records

Dear Sir/Madam:

I am writing to request information on Site Inspection Files, Emergency Response file, the Doing Business As (DBA) file, Site Mitigation File Log (active or inactive), and site mitigation files, Hazardous Materials Business Plans/Inventory, Hazardous Waste Generator License, California Accidental Release Prevention (CalARP) Program Information, as well as, spills and site remediation information, and any other file that would help locate information regarding soil or water contamination at or nearby the following address.

28831 Hasley Canyon Road
Los Angeles County, California 91384

Please call our office regarding the availability of such files at your earliest convenience. Your timeliness in this matter is appreciated.

Thank you for your assistance,

Christopher E. Rude
Environmental Scientist

1474.LTR

1161 Calle Suerte, Suite G, Camarillo, California 93012 (805) 445-7117 (805) 445-8599 (fax)

California

geologists & engineers

Environmental

July 15, 2003

Job No. EV797-1474

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DHS/PHI
5555 Ferguson Drive, Suite 120-04
Commerce, California 90022

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28943 Hasley Canyon Road
Los Angeles County, California 91384

Please call our office regarding the availability of such files at your earliest convenience. Your timeliness in this matter is appreciated.

Thank you for your assistance,

Christopher E. Rude
Environmental Scientist

1474.LTR

1161 Calle Suerte, Suite G, Camarillo, California 93012 (805) 445-7117 (805) 445-8599 (fax)

California

geologists & engineers

Environmental

July 15, 2003

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5555 Ferguson Drive, Suite 120-04
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29001 Hasley Canyon Road
Los Angeles County, California 91384

Please call our office regarding the availability of such files at your earliest convenience. Your timeliness in this matter is appreciated.

Thank you for your assistance,

Christopher E. Rude
Environmental Scientist

1474.LTR

1161 Calle Suerte, Suite G, Camarillo, California 93012 (805) 445-7117 (805) 445-8599 (fax)

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geologists & engineers

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July 15, 2003

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29007 Hasley Canyon Road
Los Angeles County, California 91384

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Thank you for your assistance,

Christopher E. Rude
Environmental Scientist

1474.LTR

1161 Calle Suerte, Suite G, Camarillo, California 93012 (805) 445-7117 (805) 445-8599 (fax)

California

geologists & engineers

Environmental

July 15, 2003

Job No. EV797-1474

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Attention: Custodian of Records

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29007 1/2 Hasley Canyon Road
Los Angeles County, California 91384

Please call our office regarding the availability of such files at your earliest convenience. Your timeliness in this matter is appreciated.

Thank you for your assistance,

Christopher E. Rude
Environmental Scientist

1474.LTR

1161 Calle Suerte, Suite G, Camarillo, California 93012 (805) 445-7117 (805) 445-8599 (fax)

South Coast Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765

(909) 396-3700
FAX (909) 396-3330

Office Use Only
CONTROL NUMBER

PUBLIC RECORDS REQUEST FORM

CE Job No. EV797-1474 *(Please Type or Print)*

Requestor Name	Christopher E. Rude	Date	7/15/03
Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

In order to expedite your request for records we are asking that you fill out this form completely. Check the record(s) that you are interested in receiving and the time frame of the request (eg.1989-1991). If applicable a description of what your are requesting is also advisable.

Request Company Name

Address 28831 Hasley Canyon Road

City Los Angeles County State CA Zip Code 91384

Specify Equipment (e.g Permit or ID numbers)

Time Period of Documents Requested: From: 1900 To: Present

RECORDS REQUESTED

(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)		AB 2588 (Toxics) HRA
X	Permit(s)		Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
X	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
X	Site Inspection Reports		Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE:

REPORTS/SUBSCRIPTIONS

Please check the appropriate box(s) and submit your check or money order to the attention of Public Records.

Payable to: S.C.A.Q.M.D.

NAME OF REPORT	MONTHLY		QUARTERLY		YEARLY	
Asbestos/Demolition Notification Quarterly Report		--		$15.00		$60.00
Application Summary Report		$30.00		$90.00		$360.00
Civil/Criminal Monthly Report		$5.00		$15.00		$60.00
Emission Reduction Credit Report (ERC)		$5.00		$15.00		$60.00

I hereby agree to reimburse the SCAQMD for all expenses related to producing the information requested in accordance with Govt. Code Section 6257.

(Signature)

South Coast Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765

(909) 396-3700
FAX (909) 396-3330

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Requestor Name	Christopher E. Rude	Date	7/15/03
Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

In order to expedite your request for records we are asking that you fill out this form completely. Check the record(s) that you are interested in receiving and the time frame of the request (eg.1989-1991). If applicable a description of what your are requesting is also advisable.

Request Company Name			
Address 28831 Hasley Canyon Road			
City Los Angeles County	State CA	Zip Code	91384
Specify Equipment (e.g Permit or ID numbers)			
Time Period of Documents Requested:	From: 1900	To: Present	

RECORDS REQUESTED
(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)	X	AB 2588 (Toxics) HRA
	Permit(s)	X	Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
	Site Inspection Reports	X	Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE: H and S.C. 41805.5 - Air Solid Waste Assessment Testing

REPORTS/SUBSCRIPTIONS

Please check the appropriate box(s) and submit your check or money order to the attention of Public Records.
Payable to: S.C.A.Q.M.D.

NAME OF REPORT	MONTHLY		QUARTERLY		YEARLY	
Asbestos/Demolition Notification Quarterly Report		--		$15.00		$60.00
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CE Job No. EV797-1474

(Please Type or Print)

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Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

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Request Company Name

Address 28943 Hasley Canyon Road

City Los Angeles County State CA Zip Code 91384

Specify Equipment (e.g Permit or ID numbers)

Time Period of Documents Requested: From: 1900 To: Present

RECORDS REQUESTED

(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)		AB 2588 (Toxics) HRA
X	Permit(s)		Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
X	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
X	Site Inspection Reports		Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE:

REPORTS/SUBSCRIPTIONS

Please check the appropriate box(s) and submit your check or money order to the attention of Public Records.
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NAME OF REPORT	MONTHLY		QUARTERLY		YEARLY	
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Request Company Name			
Address 28943 Hasley Canyon Road			
City Los Angeles County	State CA	Zip Code	91384
Specify Equipment (e.g Permit or ID numbers)			
Time Period of Documents Requested:	From: 1900	To: Present	

RECORDS REQUESTED

(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)	X	AB 2588 (Toxics) HRA
	Permit(s)	X	Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
	Site Inspection Reports	X	Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE: H and S.C. 41805.5 - Air Solid Waste Assessment Testing

REPORTS/SUBSCRIPTIONS

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Payable to: S.C.A.Q.M.D.

NAME OF REPORT	MONTHLY		QUARTERLY		YEARLY	
Asbestos/Demolition Notification Quarterly Report		--		$15.00		$60.00
Application Summary Report		$30.00		$90.00		$360.00
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C. Rude

(Signature)

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PUBLIC RECORDS REQUEST FORM

CE Job No. EV797-1474 *(Please Type or Print)*

Requestor Name	Christopher E. Rude	Date	7/15/03
Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

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Request Company Name

Address 29001 Hasley Canyon Road

City Los Angeles County State CA Zip Code 91384

Specify Equipment (e.g Permit or ID numbers)

Time Period of Documents Requested: From: 1900 To: Present

RECORDS REQUESTED

(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)		AB 2588 (Toxics) HRA
X	Permit(s)		Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
X	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
X	Site Inspection Reports		Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE:

REPORTS/SUBSCRIPTIONS

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Payable to: S.C.A.Q.M.D.

NAME OF REPORT		MONTHLY		QUARTERLY		YEARLY
Asbestos/Demolition Notification Quarterly Report		--		$15.00		$60.00
Application Summary Report		$30.00		$90.00		$360.00
Civil/Criminal Monthly Report		$5.00		$15.00		$60.00
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C Rude
(Signature)

South Coast
Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765

(909) 396-3700
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PUBLIC RECORDS REQUEST FORM

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CONTROL NUMBER

CE Job No. EV797-1474

(Please Type or Print)

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Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

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Request Company Name			
Address 29001 Hasley Canyon Road			
City Los Angeles County	State CA	Zip Code	91384
Specify Equipment (e.g Permit or ID numbers)			
Time Period of Documents Requested:	From: 1900	To: Present	

RECORDS REQUESTED

(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)	X	AB 2588 (Toxics) HRA
	Permit(s)	X	Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
	Site Inspection Reports	X	Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE: H and S.C. 41805.5 - Air Solid Waste Assessment Testing

REPORTS/SUBSCRIPTIONS

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Payable to: S.C.A.Q.M.D.

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Asbestos/Demolition Notification Quarterly Report		--		$15.00		$60.00
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(Signature)

South Coast Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765

(909) 396-3700
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Office Use Only
CONTROL NUMBER

PUBLIC RECORDS REQUEST FORM

CE Job No. EV797-1474 *(Please Type or Print)*

Requestor Name	Christopher E. Rude	Date	7/15/03
Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

In order to expedite your request for records we are asking that you fill out this form completely. Check the record(s) that you are interested in receiving and the time frame of the request (eg.1989-1991). If applicable a description of what your are requesting is also advisable.

Request Company Name			
Address 29007 Hasley Canyon Road			
City Los Angeles County	State CA	Zip Code	91384
Specify Equipment (e.g Permit or ID numbers)			
Time Period of Documents Requested:	From: 1900	To: Present	

RECORDS REQUESTED
(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)		AB 2588 (Toxics) HRA
X	Permit(s)		Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
X	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
X	Site Inspection Reports		Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE:

REPORTS/SUBSCRIPTIONS

Please check the appropriate box(s) and submit your check or money order to the attention of Public Records.
Payable to: S.C.A.Q.M.D.

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Emission Reduction Credit Report (ERC)		$5.00		$15.00		$60.00

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(Signature)

South Coast Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765

(909) 396-3700
FAX (909) 396-3330

Office Use Only
CONTROL NUMBER

PUBLIC RECORDS REQUEST FORM

CE Job No. EV797-1474 *(Please Type or Print)*

Requestor Name	Christopher E. Rude	Date	7/15/03
Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

In order to expedite your request for records we are asking that you fill out this form completely. Check the record(s) that you are interested in receiving and the time frame of the request (eg.1989-1991). If applicable a description of what your are requesting is also advisable.

Request Company Name

Address 29007 Hasley Canyon Road

City Los Angeles County State **CA** Zip Code 91384

Specify Equipment **(e.g Permit or ID numbers)**

Time Period of Documents Requested: From: 1900 To: Present

RECORDS REQUESTED
(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)	X	AB 2588 (Toxics) HRA
	Permit(s)	X	Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
	Site Inspection Reports	X	Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE: H and S.C. 41805.5 - Air Solid Waste Assessment Testing

REPORTS/SUBSCRIPTIONS

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NAME OF REPORT	MONTHLY		QUARTERLY		YEARLY	
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C Rude
(Signature)

South Coast Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765

(909) 396-3700
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Office Use Only
CONTROL NUMBER

PUBLIC RECORDS REQUEST FORM

CE Job No. EV797-1474 *(Please Type or Print)*

Requestor Name	Christopher E. Rude	Date	7/15/03
Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

In order to expedite your request for records we are asking that you fill out this form completely. Check the record(s) that you are interested in receiving and the time frame of the request (eg.1989-1991). If applicable a description of what your are requesting is also advisable.

Request Company Name			
Address 29007 1/2 Hasley Canyon Road			
City Los Angeles County	State CA	Zip Code	91384
Specify Equipment (e.g Permit or ID numbers)			
Time Period of Documents Requested:	From: 1900	To: Present	

RECORDS REQUESTED

(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)		AB 2588 (Toxics) HRA
X	Permit(s)		Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
X	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
X	Site Inspection Reports		Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE:

REPORTS/SUBSCRIPTIONS

Please check the appropriate box(s) and submit your check or money order to the attention of Public Records.
Payable to: S.C.A.Q.M.D.

NAME OF REPORT		MONTHLY		QUARTERLY		YEARLY
Asbestos/Demolition Notification Quarterly Report		--		$15.00		$60.00
Application Summary Report		$30.00		$90.00		$360.00
Civil/Criminal Monthly Report		$5.00		$15.00		$60.00
Emission Reduction Credit Report (ERC)		$5.00		$15.00		$60.00

I hereby agree to reimburse the SCAQMD for all expenses related to producing the information requested in accordance with Govt. Code Section 6257.

(Signature)

South Coast
Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765

(909) 396-3700
FAX (909) 396-3330

PUBLIC RECORDS REQUEST FORM

Office Use Only
CONTROL NUMBER

CE Job No. EV797-1474

(Please Type or Print)

Requestor Name	Christopher E. Rude	Date	7/15/03
Company Name	California Environmental		
Mailing Address	1161 Calle Suerte, Suite G		
City Camarillo	State CA	Zip Code	93012
Phone (805) 445-7117			

In order to expedite your request for records we are asking that you fill out this form completely. Check the record(s) that you are interested in receiving and the time frame of the request (eg.1989-1991). If applicable a description of what your are requesting is also advisable.

Request Company Name			
Address 29007 1/2 Hasley Canyon Road			
City Los Angeles County	State CA	Zip Code	91384
Specify Equipment (e.g Permit or ID numbers)			
Time Period of Documents Requested:	From: 1900	To: Present	

RECORDS REQUESTED
(Check Only Three Items Maximum *Per Request*)

	Application(s)		New Source Review Balance (NSR)	X	AB 2588 (Toxics) HRA
	Permit(s)	X	Air Monitoring Data (please describe below)		VOC RECLAIM Facilities (Disk $10.00)
	Notices of Violation		Source Test Reports		RECLAIM NOx & Sox (Disk $10.00)
	Site Inspection Reports	X	Asbestos Reports		Title V Facilities List (Disk $10.00)
					Other (please describe below)

DESCRIPTION OF ABOVE: H and S.C. 41805.5 - Air Solid Waste Assessment Testing

REPORTS/SUBSCRIPTIONS

Please check the appropriate box(s) and submit your check or money order to the attention of Public Records.
Payable to: S.C.A.Q.M.D.

NAME OF REPORT		MONTHLY		QUARTERLY		YEARLY
Asbestos/Demolition Notification Quarterly Report		--		$15.00		$60.00
Application Summary Report		$30.00		$90.00		$360.00
Civil/Criminal Monthly Report		$5.00		$15.00		$60.00
Emission Reduction Credit Report (ERC)		$5.00		$15.00		$60.00

I hereby agree to reimburse the SCAQMD for all expenses related to producing the information requested in accordance with Govt. Code Section 6257.

(Signature)

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 23, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25342
Received 7/16/2003

Re: ASBESTOS RECORDS, AIR MON. & HRA FOR 28831 HASLEY CANYON RD., LOS ANGELES COUNTY, CA.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

COLLEEN PAINEx2594
For Linda L. Mills
Public Records Coordinator

LLM: CP

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 23, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25344
Received 7/16/2003

Re: ASBESTOS RECORDS, AIR MON. & HRA FOR 28943 HASLEY CANYON RD., LOS ANGELES COUNTY, CA.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

COLLEEN PAINEx2594
For Linda L. Mills
Public Records Coordinator

LLM: CP

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 23, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25331
Received 7/16/2003

Re: AIR MON. DATA, ASBESTOS REC. & HRA FOR 29001 HASLEY CANYON RD. SANTA CLARITA, CA 91384.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

MARCUS PETERSONx3025
For Linda L. Mills
Public Records Coordinator

LLM: MP

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 23, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25337
Received 7/16/2003

Re: AIR MON. DATA, ASBESTOS REC. & HRA'S FOR 29007 HASLEY CANYON RD., LOS ANGELES COUNTY, CA 91384.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

SAMANTHA WHITLEYx3062
For Linda L. Mills
Public Records Coordinator

LLM: SW

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 23, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25335
Received 7/16/2003

Re: AIR MON. DATA, ASBESTOS REC. & HRA'S FOR 29007 1/2
HASLEY CANYON RD., LOS ANGELES COUNTY, CA 91384.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

SAMANTHA WHITLEYx3062
For Linda L. Mills
Public Records Coordinator

LLM: SW

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 17, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25343
Received 7/16/2003

Re: P/O'S, NOV'S & I/R'S FOR 28943 HASLEY CANYON RD., LOS ANGELES COUNTY, CA.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

COLLEEN PAINEx2594
For Linda L. Mills
Public Records Coordinator

LLM: CP

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 17, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25341
Received 7/16/2003

Re: P/O'S, NOV'S & I/R'S FOR 28831 HASLEY CANYON RD., LOS ANGELES COUNTY, CA.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

COLLEEN PAINEx2594
For Linda L. Mills
Public Records Coordinator

LLM: CP

Breathing the air should not be a risk.

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 16, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25330
Received 7/16/2003

Re: P/O'S, NOV'S & I/R'S FOR 29001 HASLEY CANYON RD. SANTA CLARITA, CA 91384.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

MARCUS PETERSONx3025
For Linda L. Mills
Public Records Coordinator

LLM: MP

Clearing the air day and night.

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

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

July 16, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Ref.: CONTROL NO. 25336
Received 7/16/2003

Re: P/O'S, NOV'S & I/R'S FOR 29007 1/2 HASLEY CANYON RD., LOS ANGELES COUNTY, CA 91384.

After a thorough search of this agency's records:

NO REQUESTED RECORDS WERE FOUND FOR THE ABOVE-REFERENCED FACILITY OR FACILITY SITE.

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.**

Sincerely,

SAMANTHA WHITLEYx3062
For Linda L. Mills
Public Records Coordinator

LLM: SW

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

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
Fax:(909) 396-3330

ACKNOWLEDGEMENT LETTER

July 16, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Re: Request for Records
Control # 25335
Request: AIR MON. DATA, ASBESTOS REC. & HRA'S FOR 29007 1/2 HASLEY CANYON RD., LOS ANGELES COUNTY, CA 91384.

Your request for records has been received by the Public Records Unit has been assigned for proccessing.

When your request is completed, an appointment will be made with you for your review of the records, or copies of the requested records will be mailed to you along with an invoice for the direct cost of duplication at $ .15/page over 10 pages, $8.00/microfiche or $10.00/diskette.

Should you have any questions or need additional information regarding your request, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.** Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

SAMANTHA WHITLEY x3062
For Linda L. Mills
Public Records Coordinator

LLM: SW

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

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
Fax:(909) 396-3330

ACKNOWLEDGEMENT LETTER

July 16, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Re: Request for Records
Control # 25336
Request: P/O'S, NOV'S & I/R'S FOR 29007 1/2 HASLEY CANYON RD., LOS ANGELES COUNTY, CA 91384.

Your request for records has been received by the Public Records Unit has been assigned for proccessing.

When your request is completed, an appointment will be made with you for your review of the records, or copies of the requested records will be mailed to you along with an invoice for the direct cost of duplication at $ .15/page over 10 pages, $8.00/microfiche or $10.00/diskette.

Should you have any questions or need additional information regarding your request, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.** Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

SAMANTHA WHITLEY x3062
For Linda L. Mills
Public Records Coordinator

LLM: SW

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

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
Fax:(909) 396-3330

ACKNOWLEDGEMENT LETTER

July 16, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Re: Request for Records
Control # 25337
Request: AIR MON. DATA, ASBESTOS REC. & HRA'S FOR 29007 HASLEY CANYON RD., LOS ANGELES COUNTY, CA 91384.

Your request for records has been received by the Public Records Unit has been assigned for proccessing.

When your request is completed, an appointment will be made with you for your review of the records, or copies of the requested records will be mailed to you along with an invoice for the direct cost of duplication at $ .15/page over 10 pages, $8.00/microfiche or $10.00/diskette.

Should you have any questions or need additional information regarding your request, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.** Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

SAMANTHA WHITLEY x3062
For Linda L. Mills
Public Records Coordinator

LLM: SW

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

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
Fax:(909) 396-3330

ACKNOWLEDGEMENT LETTER

July 16, 2003

CHRISTOPHER RUDE
CALIFORNIA ENVIRONMENTAL
1161 CALLE SUERTE # G
CAMARILLO, CA 93012

Re: Request for Records
Control # 25338
Request: P/O'S, NOV'S & I/R'S FOR 29007 HASLEY CANYON RD., LOS ANGELES COUNTY, CA 91384.

Your request for records has been received by the Public Records Unit has been assigned for proccessing.

When your request is completed, an appointment will be made with you for your review of the records, or copies of the requested records will be mailed to you along with an invoice for the direct cost of duplication at $ .15/page over 10 pages, $8.00/microfiche or $10.00/diskette.

Should you have any questions or need additional information regarding your request, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m.** to **4:30 p.m.** Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

SAMANTHA WHITLEY x3062
For Linda L. Mills
Public Records Coordinator

LLM: SW

Clearing the air clear for records.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO OPERATE

Permit No.
F46614
A/N 346371

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner or Operator: LONG BEACH OIL DEVELOPMENT CO, MC GILLIV
550 W BRAND 1960
GLENDALE, CA 91203

ID 117640

Equipment Location: 29007 W HASLEY CANYON RD SANTA CLARITA CA 91384 3200

Equipment Description:

CRUDE OIL/ GAS / WATER PRODUCTION SYSTEM LOCATED AT HASLEY CANYON UNIT/MCGILLIVRAE LEASE CONSISTING OF:

1. TWO CRUDE OIL STOCK TANKS, EACH 500 BARRELS CAPACITY, 16'-0" DIA X 15'-5" H., FIXED ROOF.
2. HEATER TREATER, 2,000,000 BTU/HR, NATURAL GAS FIRED.
3. TANK HEATER, ACME, MODEL NO. 6-0, SERIAL NO. 12092, 600,000 BTU/HR, NATURAL GAS FIRED WITH A 1 HP PUMP.
4. ONE CRUDE OIL STOCK TANK, 200 BARRELS CAPACITY, 9'-6" DIA. X 15'-0" H., FIXED ROOF.
5. TWO WATER TANKS, EACH 400 BARRELS CAPACITY, 12'-0" DIA. X 20'-0" H., FIXED ROOF.
6. ONE GAS SCRUBBER OVERFLOW DRAIN DOWN TANK, 100 BARRELS CAPACITY, 8'-0" DIA. X 10'-0" H., FIXED ROOF.
7. VERTICAL GAS SCRUBBER, 2'-0"DIA. X 10'-0" H.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL COMPLY WITH DISTRICT RULES 431.1, 463, 464, 466, 467, 1173 AND 1176.
4. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 3. THE RECORDS SHALL BE KEPT FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.

FILE COPY

CONTINUATION OF PERMIT TO OPERATE

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

By Dorris M. Bailey/PIRP
11/17/01

FILE COPY

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO OPERATE

Permit No.
F46611
A/N 346361

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner
or Operator: LONG BEACH OIL DEVELOPMENT CO, SADD
550 W BRAND 1960
GLENDALE, CA 91203

ID 117639

Equipment Location: 29007 W HASLEY CANYON RD SANTA CLARITA CA 91384 3200

Equipment Description:

CRUDE OIL/ GAS / WATER PRODUCTION SYSTEM LOCATED AT HASLEY CANYON UNIT/SADD LEASE CONSISTING OF:

SAAD (TANK FARM)

1. TWO CRUDE OIL STOCK TANKS, EACH 1000 BARRELS CAPACITY, 21'-6" DIA. X 16'-2" H., FIXED ROOF, VENTED TO AIR POLLUTION SYSTEM, EACH.

2. WASH TANK, 750 BARRELS CAPACITY, 15'-6" DIA. X 24'-6" H., FIXED ROOF. VENTED TO AIR POLLUTION SYSTEM.

3. WASTEWATER TANK, 500 BARRELS CAPACITY, 15'-6" DIA. X 16'-0" H. FIXED ROOF, VENTED TO AIR POLLUTION SYSTEM.

4. WASTEWATER TANK, BAKER TYPE, 500 BARRELS CAPACITY, 10'-0"W. X 40'-0"L. X 8'-0"H.

5. FLOAT CELL, 100 BARRELS CAPACITY, 6'-0"DIA. X 10'-0" H., FIXED ROOF.

6. SLOP TANK, BAKER TYPE, 7'-6"W. X 5'-10" L. X 5'-0" H.

7. WATER TRANSFER PUMP FEED TANK, 50 BARRELS CAPACITY, 10'-0" DIA. X 6'-0" H., FIXED ROOF.

8. TANK HEATER, RAYPAK, MODEL NO. H3-0403-0, 399,000 BTU/HR, NATURAL GAS FIRED.

9. VAPOR RECOVERY SYSTEM CONSISTING OF:

   A. GAS COMPRESSOR, SPEEDAIRE, MODEL NO. 4UP73, RECIPROCATING TYPE, 3.5 H.P. ELECTRIC MOTOR WITH A SCRUBBER.

SAAD (GAS COMPRESSOR)

10. COGEN GAS BOOSTING SYSTEM CONSISTING OF:
    A. GAS COMPRESSOR, INGERSOL-RAND, CLASS ESI, SERIAL NO. 4218, 15 H.P ELECTRIC MOTOR.

FILE COPY

CONTINUATION OF PERMIT TO OPERATE

B. ONE GAS SCRUBBER, 3'-0"DIA. X 12'-0" H.

SAAD (#4 AND#5 WELL LOCATION)

11. TEST TANK, 200 BARREL CAPACITY, WELDED.

12. SUMP PIT, 6'-0"W. X 6'-0" L. X 6'-0" D.

SAAD (#6, #7, #8, AND #9 WELL LOCATION)

13. KD TANK, 500 BARRELS CAPACITY, BOLTED.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.

2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.

3. THIS EQUIPMENT SHALL COMPLY WITH DISTRICT RULES 431.1, 463, 464, 466, 467, 1173 AND 1176.

4. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 3. THE RECORDS SHALL BE KEPT FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.

5. THE STOCK TANKS, WASH TANK AND WASTEWATER TANK SHALL NOT BE OPERATED UNLESS THEY ARE VENTED TO A VAPOR RECOVERY SYSTEM WHICH IS IN FULL USE AND HAS BEEN ISSUED A PERMIT TO CONSTRUCT OR PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

FILE COPY

CONTINUATION OF PERMIT TO OPERATE

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M. Bailey

By Dorris M. Bailey/PIRP
11/17/01

FILE COPY

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO OPERATE

Permit No.
F46612
A/N 346365

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner or Operator: LONG BEACH OIL DEVELOPMENT CO, BURNS
550 N BRAND 1960
GLENDALE, CA 91203

ID 117638

Equipment Location: 29007 W HASLEY CANYON RD SANTA CLARITA CA 91384 3200

Equipment Description:

CRUDE OIL/ GAS / WATER PRODUCTION SYSTEM LOCATED AT HASLEY CANYON UNIT/BURNS CRIST LEASE CONSISTING OF:

1. TWO CRUDE OIL STOCK TANKS, EACH 500 BARRELS CAPACITY, 15'-6" DIA. X 16'-2" H., FIXED ROOF, VENTED TO VAPOR RECOVERY SYSTEM.
2. ONE WASTEWATER TANK, SPARE, 200 BARRELS CAPACITY, 8'-0" DIA. X 24'-0" H.; FIXED ROOF, VENTED TO VAPOR RECOVERY SYSTEM.
3. WASH TANK, 400 BARRELS CAPACITY, 12'-0" DIA. X 22'-0" H., FIXED ROOF, VENTED TO VAPOR RECOVERY SYSTEM.
4. TANK HEATER, ACME, SERIAL NO. 1296, 1,170,000 BTU/HR, NATURAL GAS FIRED.
5. ONE GAS SCRUBBER, 2'-0" DIA. X 10'-0" H.
6. ONE ELECTRIC TRANSFER PUMP, 1.5 H.P.
7. ONE ELECTRIC CHARGE PUMP, 1.75 H.P.
8. VAPOR RECOVERY SYSTEM CONSISTING OF:
   A. TANK VENT COLLECTION HEADER VENTING STOCK TANKS, WASH TANK AND WASTEWATER TANK TO THE TANK HEATER.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL COMPLY WITH DISTRICT RULES 431.1, 463, 464, 466, 467, 1173 AND 1176.

FILE COPY

CONTINUATION OF PERMIT TO OPERATE

4. RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITION NO. 3. THE RECORDS SHALL BE KEPT FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.

5. THE STOCK TANKS, WASH TANK AND WASTEWATER TANK SHALL NOT BE OPERATED UNLESS THEY ARE VENTED TO A VAPOR RECOVERY SYSTEM WHICH IS IN FULL USE AND HAS BEEN ISSUED A PERMIT TO CONSTRUCT OR PERMIT TO OPERATE BY THE EXECUTIVE OFFICER.

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M. Bailey

By Dorris M. Bailey/PIRP
11/17/01

FILE COPY

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO OPERATE

Permit No.
F47523
A/N 346367

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner or Operator: LONG BEACH OIL DEVELOPMENT CO, BURNS
550 N BRAND 1960
GLENDALE, CA 91203

ID 117638

Equipment Location: 29007 W HASLEY CANYON RD SANTA CLARITA CA 91384 3200

Equipment Description:

COGENERATION SYSTEM LOCATED AT HASLEY CANYON CONSISTING OF:

1. INTERNAL COMBUSTION ENGINE, CATERPILLAR, MODEL NO. 6398TAHC, SPARK IGNITED, FOUR STROKE, TURBO-CHARGED, AFTERCOOLED, V-12, 713 HP, NATURAL GAS FIRED, DRIVING A 500 KW ELECTRIC GENERATOR.
2. ONE GAS SCRUBBER, 3'-0" DIA. X 12'-0" H.
3. THREE HEAT RECOVERY UNITS, OIL/WATER HEAT EXCHANGER TYPE, 1,230,000 BTU/HR EACH.
4. ONE AFTER-COOLER TOWER WITH 3/4 HP ELECTRIC PUMP.
5. TWO MOTOR OIL TANKS, 280 GALLON CAPACITY EACH.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL ONLY USE NATURAL GAS AS FUEL. DAILY RECORDS OF FUEL USE SHALL BE MAINTAINED FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO AQMD UPON REQUEST.
4. THE OXIDE OF NITROGEN EMISSION AS NO2 SHALL NOT EXCEED 2 GRAMS PER HP–HR AND 3.50 POUNDS PER HOUR OR 150 PPM BY VOLUME.
5. THE DAILY EMISSIONS FROM THIS EQUIPMENT SHALL NOT EXCEED THE FOLLOWING:

AIR CONTAMINANT	LBS/DAY
TOTAL HYDROCARBONS	65

FILE COPY

CONTINUATION OF PERMIT TO OPERATE

NITROGEN OXIDE	82
CARBON MONOXIDE	55

6. NITROGEN OXIDE EMISSION OF THIS EQUIPMENT SHALL BE REDUCED TO 36 PPM BY VOLUME NO LATER THAN DECEMBER 31, 2004 OR THIS EQUIPMENT SHALL BE REMOVED FROM OPERATION BY NO LATER THAN DECEMBER 31, 2004. IF AN APPLICATION FOR PERMIT TO CONSTRUCT CONTROL EQUIPMENT WILL BE REQUIRED, THE APPLICATION SHALL BE FILED NO LATER THAN APRIL 30, 2003 (RULE 1110.2 (E)(1) COMPLIANCE SCHEDULE).

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M. Bailey

By Dorris M. Bailey/PIRP
12/22/01

FILE COPY

South Coast Air Quality Management District

NOV L01500

Company

Facility: PETROMINERALS CORP BURNS CRIST LEASE (ID: 46946)
Location Address: 2472 CHAMBERS, RD SAUGUS
Mailing Address: 2472 CHAMBERS, RD TUSTIN, CA 92680
Representative: DAVID LIVINGSTONE

Violation

Notice Issued Date: 8/25/1992
Violation Date: 8/18/1992
Serve To:
Issue By: GENE HINES (Team:)
Assignment No.: 512001
Equipment: CRUDE OIL TANK
Description

Violation:

Disposition

Final Action Code: CLO 10/7/1992 00:00:00
Achieved Date:
Due Date:
Violation Days: 0

Rule/Comment

203 FAILURE TO OBTAIN PERMIT TO OPERATE

Emittent

Follow-Up

Status: Inspector ID: Inspection Date: Number:

Lab Sample Numbers

Device IDs.

Inspector Comment

INSPECTOR: _____ DATE: _____
signature

SUPERVISOR: _____ DATE: _____
signature

South Coast Air Quality Management District

NOV L05934

Company

Facility: PETROMINERALS CORP (MABEL STRAWN LEASE) (ID: 22068)
Location Address: 29007 W HASLEY CANYON, RD SAUGUS
Mailing Address: 29007 W HASLEY CANYON, RD SAUGUS, CA 91384-000
Representative: DAVID LIVINGSTONE

Violation

Notice Issued Date: 10/29/1990
Violation Date: 10/29/1990
Serve To:
Issue By: THOMAS C FRAZIER (Team: P)
Assignment No.: 515351
Equipment: TANK #3
Description

Violation:

Disposition

Final Action Code: CLO 12/11/1990 00:00:00
Achieved Date:
Due Date:
Violation Days: 0

Rule/Comment

203 FAILURE TO OBTAIN PERMIT TO OPERATE

Emittent

Follow-Up

Status: Inspector ID: Inspection Date: Number:

Lab Sample Numbers

Device IDs.

Inspector Comment

INSPECTOR: _____ DATE: _____
signature

SUPERVISOR: _____ DATE: _____
signature

South Coast Air Quality Management District

NOV P26066

Company

Facility: LONG BEACH OIL DEVELOPMENT CO, BURNS (ID: 117638)
Location Address: 29007 W HASLEY CANYON, RD SANTA CLARITA, CA 91384-3200
Mailing Address:
Representative: FIELD SUPV.

Violation

Notice Issued Date: 7/13/2000
Violation Date: 7/13/2000
Serve To: STEVEN BURKS
Issue By: MARK C VON DER AU (Team: W)
Assignment No.: 620595
Equipment:
Description

Violation: OPERATING BURNS CRIST LENSE TANK RAAAOTARY WITHOUT VENTING TANKS TO THE BOILER AS REQUIRED (VAPOR RECOERY LINE DISCONNECTED). FAILURE TO CONDUCT REQUIRED 2ND QUARTER 2000 VAPOR LEAK CHECKS

Disposition

Final Action Code: CLO 6/22/2001 00:00:00
Achieved Date: 9/14/2000
Due Date:
Violation Days: 0

Rule/Comment

1173 e2
202 c
203 b

Emittent

Follow-Up

Status: INCOMP Inspector ID: Inspection Date: 09/14/00 00:00 Number:

Lab Sample Numbers

Device IDs.

Inspector Comment

INSPECTOR: _____ DATE: _____
signature

SUPERVISOR: _____ DATE: _____
signature

South Coast Air Quality Management District

Assignment Report

Assignment 565623

Catagory: COMPLIANCE
Activity: EQUIPMENT LIST INSPECTION
Inspector: GENE HINES (GH01)
Facility: PETROMINERALS CORP (MABEL STRAWN L046946 ID: 22068
Instruction:

Status

Assignment Status: OPEN
Priority: HIGH
Assign By: GENEH on 12/18/97 11:03:44
Receive Date:
Due Date: 1/1/98

Inspector Comment

On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil production site. There are 6 wells producing 120 BBLS. of crude oil daily. No leaks or odors were detected during this insp.. Equipment list shows no PTOS active or inactive, here we go again!

INSPECTOR: G. Hines (signature) DATE: 1-21-98

SUPERVISOR: (signature) DATE:

1-15-98

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 22068 PETROMINERALS CORP (MABEL STRAWN L046946
Last Inspection: 01/09/1996
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SAUGUS 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITI
Assignment No. 565623

Contact:
Quarter: 1000 - inspect in 1st quarter, every year
On Hold:
Suspended:
Team:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
		00/00/0000				00/00/0000	

Inactive

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP (MABEL STRAWN LEASE) QTRLY

STREET CODE: 02/03/93

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD CITY SAUGUS 91384-3200

CHECKED BY: H/S- 1

INSPECTED BY: GENE HILDES

MAILING ADDRESS: 2472 CHAMBERS RD #230 CITY TUSTIN STATE ZIP CA 92680

STATUS 54: CONTINUE / NEW / NEW N. S. / OUT OF BUS. / BECAME N. S.

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	55-56
PD	022068	1	0103	0	23	93		1	124	7	0		EN	CA	1000	1762		6722

6	5	N	8	7	J	M

REMARKS:

EQUIPMENT LIST CORRECT AS PRINTED.

WEEDS NEW B-CAT & ONLY ONE PERMIT.

DATA ENTRY 9-24-93 ENGINEERING

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA	
1	✓		I C E (>500 HP) OTHER FUEL	B	M56678	10	05/01/87	138030	0		COGEN AT
		03670700	I C E (>500 HP) OTHER FUEL								BURNS CRUST
2	✓		CRUDE OIL, STORAGE-OTHER	B		21	02/14/89	184116			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
3	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M09466	10	04/03/80	C11463	0		
		23180500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS								
4	✓		CRUDE OIL, STORAGE-OTHER	B	M09467	10	04/03/80	C11465	0		
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
5	✓		CRUDE OIL, STORAGE-OTHER	B	M09468	10	04/03/80	C11466	0		
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								

SOUTH COAST A.Q.M.D.

70E602 - 1/81

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME:	STREET CODE	ALPHA NO.	T S
PETROMINERALS CORP (MABEL STRAWN LEASE) QTRLY	02/03/93	71 78	79-80 83

ADDRESS OF PREMISES:	CITY		CHECKED BY:	INSPECTED BY:
29007 W HASLEY CANYON RD	SAUGUS	91384-3200	H/S- /	

MAILING ADDRESS:	CITY	STATE ZIP
2472 CHAMBERS RD #230	TUSTIN	CA 92680

STATUS 54: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S. / NO. OF INSPECTOR

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			6	5	N	8	7	J	M	INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53								55-56
PD	022068	1	0103	8	23	93		1	124	7	0		EN	CA	1000	1762									6722

REMARKS:

DATA ENTRY 9-24-93 ENGINEERING

SOUTH COAST A.Q.M.D.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
6	✓		CRUDE OIL, STORAGE-OTHER	B	M09469	10	04/03/80	C11467	0	
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL							
7	✓		CRUDE OIL, STORAGE-OTHER	B	M09470	10	04/03/80	C11468	0	
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL							

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP (MABEL STRAUN LEASE) QTRLY

STREET CODE: 01/28/94

ALPHA NO.: 71 78

T S: 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD

CITY: SAUGUS 91384-3200

CHECKED BY: H/S- /

INSPECTED BY: Rovelma Hudson

MAILING ADDRESS: 2472 CHAMBERS RD #230

CITY: TUSTIN

STATE ZIP: CA 92680

STATUS 54: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S.

SECTOR 6-7	I. D. NUMBER 8-14	I.F. 15	MR. NO. 18-21	DATE THIS INSP. MO. 22	DAY	YEAR 23-24	RAD. REQ. 25	QUART ASGN. 26	LIST NO.	WORK ACCOMPLISHED PER ITEM NO. 27-29	W.U. 30-33	34-36	37-40	O. T. 41	E.D.P. ASGN. NO. 42		53	NO. OF INSPECTOR 55-56
PD	022068	1	0103	3	16	94		1	107	7	0		EN	CA	1000	1762		G717

STATUS 54: 6 X; 5; N; 8; 7; J; M

REMARKS: EQUIPMENT CORRECT AS PRINTED

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA	
1			I C E (>500 HP) OTHER FUEL	B	M56678	10	05/01/87	138030	0		
		03670700	I C E (>500 HP) OTHER FUEL								
2			CRUDE OIL, STORAGE-OTHER	B		21	02/14/89	184116			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
3			CRUDE OIL/GAS/H20 SEP SYS,>=30 &<400 B	B	M09466	10	04/03/80	C11463	0		
		23180800	CRUDE OIL/GAS/H20 SEP SYS,>=30 &<400 B								
4			CRUDE OIL, STORAGE-OTHER	B	M09467	10	04/03/80	C11465	0		
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
5			CRUDE OIL, STORAGE-OTHER	B	M09468	10	04/03/80	C11466	0		
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								

SOUTH COAST A.Q.M.D.

75E001 - 1/91

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP (MABEL STRAWN LEASE) QTRLY

STREET CODE: 2 5 01/11/92

ALPHA NO. 71 76

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD. CITY SAUGUS 91384-3200

CHECKED BY: Chearn H/S- 1

INSPECTED BY: GENE HINES

MAILING ADDRESS: 2472 CHAMBERS RD #230 CITY TUSTIN STATE ZIP CA 92680

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			STATUS 54 CONTINUE	NEW	NEW N.S.		OUT OF BUS.	BECAME N.S.	NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	6	5	N	8	7	J	M	55-56
PD	022068	1	0103	8	18	92		1	122	7	0		EN	CA	1000	1762		✓							6722

REMARKS:

EQUIPMENT LIST CORRECT AS PRINTED.

SOUTH COAST A.Q.M.D.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA	
1	✓		I C E (>500 HP) OTHER FUEL	B	M56678	10	05/01/87	138030	0		CoGEN
		03670700	I C E (>500 HP) OTHER FUEL								AT BUENES
			###								CHRIST
2	✓		CRUDE OIL, STORAGE-OTHER	B		21	02/14/89	184116			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
3	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M09466	10	04/03/80	01[illegible]63	0		
		23180500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS								
			###								
4	✓		CRUDE OIL, STORAGE-OTHER	B	M09467	10	04/03/80	C11465	0		
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
			###								

DEC 1992 ENTERED

7EE602 - 1/91

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP (MABEL STRAWN LEASE) QTRLY

STREET CODE: 2 8 01/11/92

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD. CITY: SAUGUS 91384-3200

CHECKED BY: H/S- /

INSPECTED BY:

MAILING ADDRESS: 2472 CHAMBERS RD #230 CITY: TUSTIN STATE ZIP: CA 92680

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			STATUS 54 CONTINUE	NEW	NEW N.S.			OUT OF BUS.	BECAME N.S.	NO. OF INSPECTOR
6-7	8 14	16	19 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	6	5	N	8	7	J	M	55-56
PD	022068	1	0103	8	18	92		1	122	7	0		EN	CA	1000	1762		✓							6722

REMARKS:

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
5	✓		CRUDE OIL, STORAGE-OTHER	B	M09468	10	04/03/80	C11466	0	
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL							
			###							
6	✓		CRUDE OIL, STORAGE-OTHER	B	M09469	10	04/03/80	C11467	0	
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL							
			###							
7	✓		CRUDE OIL, STORAGE-OTHER	B	M09470	10	04/03/80	C11468	0	
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL							
			###							

DEC 1992 ENF ENTERED

7856692 - 1/91

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP (MABEL STROWN LEASE) QTRLY

STREET CODE: 2 5 01/16/91

ALPHA NO.: 71 78

T S: 79-80 93

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD. CITY: SAUGUS 91384-3200

CHECKED BY: PC- / 8

INSPECTED BY: GENE HILDES

MAILING ADDRESS: 2472 CHAMBERS RD #230 CITY: TUSTIN STATE ZIP: CA 92680

STATUS 54: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S.

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	55-56
PO	022068	1	0103	3	26	91		1	115	6	24		EN.	CA	1000	1762		G723

6	5	N	8	7	J	M
✓						

REMARKS: EQUIPMENT LIST CORRECT AS PRINTED

1991

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
1	✓		COGENERATION UNIT	8	M56678	10	10/01/87	138030	0	
		03600000	COGENERATION SYSTEM							
			###							
2	✓		CRUDE OIL, SEPARATION-LIQUID	8	M09466	10	04/03/80	C11463	0	
		23180000	CRUDE OIL/WATER SEPARATION							
			###							
3	✓		CRUDE OIL, STORAGE-OTHER	8	M09467	10	04/03/80	C11465	6	
		23190000	STORAGE TANK CRUDE OIL							
			###							
4	✓		CRUDE OIL, STORAGE-OTHER	8	M09468	10	04/03/80	C11466	6	
		23190000	STORAGE TANK CRUDE OIL							
			###							

7EE902-1/81

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP (MABEL STRAWN LEASE) QTRLY

STREET CODE: 2 5 01/15/81

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29907 W HASLEY CANYON RD. CITY: SANGUS 91354-5200

CHECKED BY: H/S- /

INSPECTED BY: GENE HUNES

MAILING ADDRESS: 2472 CHAMBERS RD #230 CITY: TUSTIN STATE ZIP: CA 92680

STATUS 54: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S.

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	55-56
PC	022068	1	0103	3	26	91		1	115	6	24		50	CA	1000	1762		6777

6 5 N 8 7 J M ✓

REMARKS:

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
5	✓		CRUDE OIL, STORAGE-OTHER	B	M09465	10	04/03/80	C11467	6	
		23190000	STORAGE TANK CRUDE OIL							
			###							
6	✓		CRUDE OIL, STORAGE-OTHER	B	M09470	10	04/03/80	C11468	6	
		23190000	STORAGE TANK CRUDE OIL							
			###							

78E602 - 1/81

South Coast Air Quality Management District

Assignment Report

Assignment 565620

Catagory: COMPLIANCE
Activity: EQUIPMENT LIST INSPECTION
Inspector: GENE HINES (GH01)
Facility: PETROMINERALS CORP(MCGILLIVARRE LEASE) ID: 24865
Instruction:

Status

Assignment Status: OPEN
Priority: HIGH
Assign By: GENEH on 12/18/97 10:54:26
Receive Date:
Due Date: 1/1/98

Inspector Comment

On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil production facility. There are 2 wells producing 28 BBLS. daily. No odors or leaks were detected during this insp. facility is in apparent compliance.

On 1/21/97 I met with S. Burks again to try to iron out errors! PTO D12475 is 1 BTU short of needing a PTO per Rule & Ken Coats. PTO D92108 is the new PTO for the Sadd lease, will fill out Merge form.

INSPECTOR: G Hines (signature) DATE: 1-22-98

SUPERVISOR: (signature) DATE:

REPORT ID: ENF749R1 A. E. I. S. - EQUIPMENT LIST INQUIRY 08/25/93

ID Company Name & Location Page: 1

024865 PETROMINERALS CORP McGillivare Lease
29007 W HASLEY CANYON RD SAUGUS CA 91384-3200

2472 CHAMBERS RD #230 TUSTIN CA 92680

Owner: CA On Hold: Expired: Number Of: Employees:
Suspended: Vehicles:

Sic#: 1311 Phone: 8052572828 Contact: ~~DAVID LIVINGSTONE~~ STEVE BURKE

Section	Sector	TS	Freq	Mr#	Insp Date	Radio	Quarter	Pty	Source
EN	PD	83	1	0103	~~081892~~ 3/16/94	677	0100		

Equip Category	Description		Permit T	Number	Date	Appl Number	Commts
✓ 23190000	CRUDE OIL,	STORAG	B		890214	184113	Active
✓ 23190000	CRUDE OIL,	STORAG	B		890214	184115	Active
✓ 01100100	BOILER (<5 MMBTU/HR) NAT		B	D12475	891201	184111	Active

Rules:

Comments: Continue –

Inspector: [signature] Review By: [signature] Date: 3/24/94

REPORT ID: ENF749R1 A. E. I. S. - EQUIPMENT LIST INQUIRY 08/25/93

ID Company Name & Location Page: 1

024865 PETROMINERALS CORP
29007 W HASLEY CANYON RD SAUGUS CA 91384-3200

2472 CHAMBERS RD #230 TUSTIN CA 92680

Owner: CA On Hold: Expired: Suspended: Number Of: Employees: Vehicles:

Sic#: 1311 Phone: 8052572828 Contact: DAVID LIVINGSTONE

Section	Sector	TS	Freq	Mr#	Insp Date	Radio	Quarter	Pty	Source
EN	PD	83	1	0103	081892 8-23-93	G722	0100		

Equip Category	Description	Permit T	Number	Date	Number	Appl Commts
✓ 23190000	CRUDE OIL, STORAG	B		890214	184113	Active
✓ 23190000	CRUDE OIL, STORAG	B		890214	184115	Active
✓ 01100100	BOILER (<5 MMBTU/HR) NAT	B	D12475	891201	184111	Active

Rules:

DATA ENTRY 9-24-93 ENGINEERING

Comments: McGILLIVARE LS.

Inspector: [illegible] Review By: [illegible] Date: 8-26-93

ENFORCEMENT DIV. – EQUIPMENT LIST

NAME: PETROMINERALS CORP McGILLIVARE Ls, QTRLY

STREET CODE: 03/21/92

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD CITY SAUGUS 91384-3200

CHECKED BY: H/S- 1

INSPECTED BY: GENE HILLES

MAILING ADDRESS: 2472 CHAMBERS RD #230 CITY TUSTIN STATE ZIP CA 92680

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.O.P. ASGN. NO.			STATUS 84 CONTINUE	NEW	NEW N. S.		OUT OF BUS.	BECAME N. S.	NO. OF INSPECTOR
5-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	6	5	N	8	7	J	M	55-56
PD	024865	1	0103	8	18	91		2	49	3	0		EN	CA	0100	1662		✓							6722

REMARKS:

EQUIPMENT LIST CORRECT AS PRINTED.
PLEASE ADD McGILLIVARE Ls. TO ADD.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA	
1	✓		BOILER (<5 MMBTU/HR) NAT GAS ONLY	B	D12475	10	12/01/89	184111	0		
		01100100	BOILER (<5 MMBTU/HR) NAT GAS ONLY								
			###								
2	✓		CRUDE OIL, STORAGE-OTHER	B		21	02/14/89	184113			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
3	✓		CRUDE OIL, STORAGE-OTHER	B		21	02/14/89	184115			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								

DEC 1992 ENF ENTERED

SOUTH COAST A.Q.M.D.

706002 - 1/91

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP QTRLY

STREET CODE: 03/24/94 | ALPHA NO. | T S 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD | CITY: SAUGUS | 91384-3200

CHECKED BY: H/S- /

INSPECTED BY: Rovelma Hudson

MAILING ADDRESS: 2472 CHAMBERS RD #230 | CITY: TUSTIN | STATE ZIP: CA 92680

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.		STATUS 54 CONTINUE	NEW	NEW N.S.		OUT OF BUS.	BECAME N.S.	NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42 53		6	5	N	B	7	J	M	55-56
PD	024865	1	0103	3	16	94		2	45	3	0		EN	CA	0100	2 662	X							6717

REMARKS: INSPECTED 3/16/94 1

DATA ENTRY ENGINEERING

SOUTH COAST A.Q.M.D.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA	
1			BOILER (<5 MMBTU/HR) NAT GAS ONLY	B	D12475	10	12/01/89	184111	0		
		01100100	BOILER (<5 MMBTU/HR) NAT GAS ONLY								
2			CRUDE OIL/GAS/H2O SEP SYS,>=30 &<400 B	B		21	02/14/89	184113			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								
3			CRUDE OIL, STORAGE-OTHER	B		21	02/14/89	184115			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								

Records

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 24865 PETROMINERALS CORP(MCGILLIVARRE LEASE)
Last Inspection: 01/09/1996
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SAUGUS 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITI
Assignment No. 565620

Contact: PHILIP FARAHMAND (714) 7305400
Quarter: 0100 - inspect in 2nd quarter, every year
On Hold: Suspended:
Team:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
✓	184116	D92108	07/18/1995	ACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	PERMIT TO OPERATE GRANTED
✓	184113	D91836	07/06/1995	ACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	PERMIT TO OPERATE GRANTED
✓	184111	D12475	12/01/1989	INACTIVE	011001	BCAT	BOILER (<5 MMBTU/HR) NAT GAS ONLY	02/14/1989	PERMIT TO OPERATE GRANTED
	293308		00/00/0000		040001	BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	05/26/1994	APPLICATION CANCELLED, REFUND ALL FEES
	293308		00/00/0000		040001	BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	05/26/1994	APPLICATION CANCELLED, REFUND ALL FEES
	293309		00/00/0000		040001	BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	05/19/1994	APPLICATION CANCELLED, REFUND ALL FEES
	184115		00/00/0000		231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	APPLICATION CANCELLED, REFUND ALL FEES
	184112		00/00/0000		011000	BCAT	BOILER, NATURAL GAS	02/14/1989	APPLICATION CANCELLED, KEEP ALL FEES

1. D92108 IS THE SAAD PTO

3. 2mm EXEMPT

Inspector: G Hines Date: 1-16-98 Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 24865 PETROMINERALS CORP(MCGILLIVARRE LEASE)
Last Inspection: ~~[illegible]~~ 7/13/2000
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITIE
Assignment No. 565620

Contact: STEVE BURKS (805) 2572828
~~Quarter: 0100 - inspect in 2nd quarter~~, every year
On Hold: N 00/0 Suspended: N
Team:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
184113	D91836	7/6/95	ACTIVE	231900 BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	2/14/89	PERMIT TO OPERATE GRANTED
184111	D12475	12/1/89	INACTIVE	011001 BCAT	BOILER (<5 MMBTU/HR) NAT GAS ONLY	2/14/89	PERMIT TO OPERATE GRANTED
293306				040001 BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	5/26/94	APPLICATION CANCELLED, REFUND ALL FEES
293308				040001 BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	5/26/94	APPLICATION CANCELLED, REFUND ALL FEES
293309				040001 BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	5/19/94	APPLICATION CANCELLED, REFUND ALL FEES
184116				231900 BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	2/14/89	APPLICATION CANCELLED, REFUND ALL FEES
184112				011000 BCAT	BOILER, NATURAL GAS	2/14/89	APPLICATION CANCELLED, KEEP ALL FEES

O/B. new owner ID # 117640.

Inspector: Mark von der au Date: 7/13/2000 Reviewed By: [illegible] Date: 7/20/00

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
ENFORCEMENT DIVISION REPORT FORM

SOURCE

NAME: PETROMINERALS CORP. I.D.#:046946 SECTOR:PD

ADDRESS: 29434 DEL VALLE CITY: SAUGUS ZIP:91350

COMPL#40071__ VAR# _ DENIAL __ DUST [ ] ODOR [X] SMOKE [ ] OTHER_____

DATE INSPECTED: 8/1/90 TIME ARRIVED:13:10 TIME DEPARTED:15:15

INSPECTOR'S FINDINGS: I CALLED JOHN LEWIS AT 10:15 AM ON 8/1/90. WE DISCUSSED THE COMPLAINT [#40071] CALLED IN ON 7/29/90 AT 23:17. THE COMPLAINANT TOLD ME ABOUT A NATURAL GAS ODOR WHICH FREQUENTLY OCCURS BETWEEN THE HOURS 22:00 AND 8:00. THE ALLEGED SOURCE IS PETROMINERALS CORP., A CRUDE OIL PRODUCTION FACILITY, LOCATED IN A CANYON WEST OF THE TRACT WHERE THE COMPLAINANT LIVES. THE FACILITY WAS VISITED BY MR. LEWIS ON SEVERAL OCCASIONS WHEN HE SMELLED THE ODOR. MR. LEWIS STATED THAT, "A STRONGER CONCENTRATION OF THE NATURAL GAS SMELL WAS PRESENT IN FRONT OF THE FACILITY."

I ARRIVED AT THE COMPLAINANT'S HOUSE AT 13:10 AND WAS UNABLE TO DETECT A NATURAL GAS ODOR OR ANY OFFENDING ODOR. I DISCUSSED THE COMPLAINT WITH MRS. LEWIS. SHE WAS ALSO UNABLE TO DETECT ANY ODOR AT THE TIME. MRS. LEWIS STATED THAT, "THE SMELL USUALLY OCCURS AT NIGHT AND IS MOST INTOLERABLE WHEN WE ROLE DOWN THE WINDOWS OF THE HOUSE." I LEFT THE 800 COMPLAINT NUMBER WITH MRS. LEWIS AND INFORMED HER THAT I WOULD CHECK THE ALLEGED SOURCE.

I ARRIVED AT PETROMINERALS CORPORATION AT 13:45. I WAS UNABLE TO DETECT ANY ODORS IN FRONT OF THE COMPANY'S OFFICE OR IN THE AREA OF THE LEASES.

I MET WITH DAVID D. LIVINGSTONE, FIELD SUPERINTENDENT, AT 14:30. WE DISCUSSED THE COMPLAINT AND HE SUGGESTED THAT THE ODOR WAS COMING FROM A WATER TREATMENT FACILITY LOCATED APPROXIMATELY 2.5 MILES AWAY. MR. LIVINGSTONE INFORMED ME THAT NO WORK WAS DONE OR WAS BEING DONE ON THE LEASES THAT WOULD CREATE AN ODOR PROBLEM.

I DROVE BY THE WATER TREATMENT PLANT AT 15:15 AND SMELLED A FAINT SEWAGE-LIKE ODOR.

PETROMINERALS CORPORATION WAS OPERATING NOT VIOLATING RULE 402 AT THE TIME OF INVESTIGATION. THE AREA EAST OF THE PETROMINERALS CORPORATION'S LEASES IS UNDERGOING RAPID DEVELOPMENT. IF AN ODOR PROBLEM IS ORIGINATING FROM THE LEASES, AN INCREASE IN COMPLAINTS CAN BE EXPECTED.

(con't on page 2)

COMPLAINANT
CONTACT: JOHN LEWIS ADDRESS: 29111 RANGEWOOD RD. PHONE: [818]257-3003
WK [818]775-8137

STATEMENT: STRONG NATURAL GAS ODORS OCCURRING MOSTLY AT NIGHT.

SOURCE
CONTACT: DAVID D. LIVINGSTONE TITLE: FIELD SUPERINTENDENT
PHONE: [805]257-2828

STATEMENT: ANY ODORS THAT THE COMPLAINANT SMELLS IS PROBABLY COMING FROM THE WATER TREATMENT PLANT DOWN THE ROAD. WE HAVE NOT DONE ANY CONSTRUCTION THAT WOULD HAVE RELEASED ODORS.

RECOMMENDATION: MORE COMPLAINTS ARE PROBABLE DUE TO THE EXPANSION OF HOUSING DEVELOPMENTS NEAR THE LEASES. I WOULD RECOMMEND A MORE IN-DEPTH INSPECTION OF THE LEASES AND CONTINUED FOLLOW-UP OF FUTURE COMPLAINTS.

8/3/90
(DATE REPORT SUBMITTED)

(SIGNATURE OF INSPECTOR)

8/6/90
(DATE APPROVED)

(SUPERVISOR'S SIGNATURE)

South Coast Air Quality Management District

Assignment Report

Assignment 565621

Catagory: COMPLIANCE
Activity: EQUIPMENT LIST INSPECTION
Inspector: GENE HINES (GH01)
Facility: PETROMINERALS CORP BURNS CRIST LEASE ID: 46946
Instruction:

Status

Assignment Status: OPEN
Priority: HIGH
Assign By: GENEH on 12/18/97 10:55:49
Receive Date:
Due Date: 1/1/98

Inspector Comment

On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil facility. There are 6 wells producing 85 BBLS. of oil daily. No leaks or odors were detected during this insp. and facility is in apparent compliance. Seems to have alot of active PTOS on equip. list but are not in folder, will try to check out.

INSPECTOR: G Hines C signature DATE: 1-16-98

SUPERVISOR: signature DATE:

REPORT ID: ENF749R1 A. E. I. S. - EQUIPMENT LIST INQUIRY 03/18/94

ID Company Name & Location Page: 1

046946 PETROMINERALS CORP-BURNS CRIST LEASE
29007 W HASLEY CANYON RD SAUGUS CA 91384-3200

2472 CHAMBERS RD, STE 230 TUSTIN CA 92680

Owner: CA On Hold: Expired: Suspended:

Number Of: Employees: Vehicles:

Sic#: 1311 Phone: 8052572828

Contact: ~~DAVID LIVINGSTONE~~ STEVE BURKE

Section	Sector	TS	Freq	Mr#	Insp Date	Radio	Quarter	Pty	Source
EN	PD	83	1	0103	~~082393~~ 3/16/94	6717	0010		

Equip Category	Description	Permit T	Number	Date	Number	Appl Commts
✓ 23190000	STORAGE TANK, CRUDE OIL W B			890214	184114	Active
✓ 23180800	CRUDE OIL/GAS/H2O SEP SYS B	M	44214	850530	130412	Active

Rules:

Comments: CONTINUE — EQUIPTMENT LIST CORRECT AS PRINTED

Inspector: Rose Ma Holden Review By: R C Date: 3/24/94

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP BURNS CRIST LEASE QTRLY

STREET CODE: 06/29/93

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 25007 W HASLEY CANYON RD

CITY: SAUGUS 91384-3200

CHECKED BY: RIS-7

INSPECTED BY: GENE HUPES

MAILING ADDRESS: 2472 CHAMBERS RD. STE. 230

CITY: TUSTIN

STATE ZIP: CA 92680

STATUS 54: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S.

SECTOR 6-7	I. D. NUMBER 8-14	I.F. 16	MR. NO. 18-21	DATE THIS INSP. MO. 22	DAY	YEAR 23-24	RAD. REQ. 25	QUART ASGN. 26	LIST NO.	WORK ACCOMPLISHED PER ITEM NO. 27-29	W.U. 30-33	34-36	37-40	O. T. 41	E.D.P. ASGN. NO. 42		53	CONTINUE 6	NEW 5	NEW N.S. N	8	7	OUT OF BUS. J	BECAME N.S. M	NO. OF INSPECTOR 55-56
PD	046946	1	0103	8	23	93		3	132	2	0		EN	CA	0010	1661		✓							6722

REMARKS:

EQUIPMENT LIST CORRECT AS PRINTED.

DATA ENTRY 9-24-93 ENGINEERING

SOUTH COAST A.Q.M.D.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA	
1	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M44214	10	05/30/85	130412	0		
		23180500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS								
2	✓		STORAGE TANK, CRUDE OIL W/O CONTROL	B		21	02/14/89	184114			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								

ENFORCEMENT DIV. — EQUIPMENT LIST

NAME: PETROMINERALS CORP BURNS CRIST LEASE QTRLY

STREET CODE: 06/20/92

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD

CITY: SAUGUS 91384-3200

CHECKED BY: H/S- 1

INSPECTED BY: GENE HINES

MAILING ADDRESS: 2472 CHAMBERS RD. STE. 230

CITY: TUSTIN

STATE ZIP: CA 92680

STATUS 54: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S.

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			NO. OF INSPECTOR	6	5	N	8	7	J	M
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	55-56							
PD RE	046946	1	0103	8	18	92		3	136	2	0		EN	CA	0010	1661		6722	✓						

REMARKS:

EQUIPMENT LIST CORRECT AS PRINTED EXCEPT SECTOR.

	ROG	METH.	NOX	CO
C	7.0	1.77	5.00	.01
CU	7.0	2.00		

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA	
1	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M44214	10	05/30/85	130412	0		
		23160500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS								
2	✓		STORAGE TANK, CRUDE OIL W/O CONTROL	B		21	02/14/89	184114			10 P/C
		23190000	STORAGE TANK, CRUDE OIL W/O CONTROL								

DEC 1992 ENF ENTERED

SOUTH COAST A.Q.M.D.

TR6002 - 1/91

NAME: PETROMINERALS CORP BURNS CRIST LEASE QTRLY

STREET CODE: 07/04/91

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD. CITY: SAUGUS 91384-3200

CHECKED BY: H/S- 1

INSPECTED BY: GEDE KIVES

MAILING ADDRESS: 2472 CHAMBERS RD. STE. 230 CITY: TUSTIN STATE ZIP: CA 92680

SECTOR	I. O. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			STATUS 54 CONTINUE	NEW	NEW N.S.	OUT OF BUS.	BECAME N.S.		NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	6	5	N	8	7	J	M	55-56
DD SE	046946	1	0103	9	10	91		3	136	1	0		EM	CA	0018	1661		✓							0722

SOUTH COAST A.Q.M.D.

REMARKS:

EQUIPMENT LIST CORRECT AS PERMITED

	ROG	METH.	NOX
	7.00	1.77	5.00
ABOVE LINE STONE	7.00	2.00	.00

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
1	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M44214	10	05/30/85	130412	0	
		23180500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS							
			###							

OCT 4 1991 ENF ENTERED

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 46946 PETROMINERALS CORP BURNS CRIST LEASE
Last Inspection: 01/09/1996
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SAUGUS 91384-3200 Sector:PD
Mailing Address: 915 WESTMINISTER AVE, ALHAMBRA 91803 Sector:PE
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITI
Assignment No. 565621

Contact: STEVE BURKE (805) 2572828
Quarter: 0010 - inspect in 3rd quarter, every year
On Hold: Suspended:
Team:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
184114	D89596	04/04/1995	ACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	PERMIT TO OPERATE GRANTED
138030	M56678	05/01/1987	ACTIVE	036707	BCAT	I C E (>500 HP) OTHER FUEL	10/21/1985	PERMIT TO OPERATE GRANTED
130412	M44214	05/30/1985	ACTIVE	231808	BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	03/05/1985	PERMIT TO OPERATE GRANTED
C11463	M09466	04/03/1980	ACTIVE	231808	BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	01/01/1990	PERMIT TO OPERATE GRANTED
C11465	M09467	04/03/1980	ACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED
C11466	M09468	04/03/1980	ACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED
C11467	M09469	04/03/1980	ACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED
C11468	M09470	04/03/1980	ACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED
130414		00/00/0000		231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	03/05/1985	APPLICATION CANCELLED, REFUND ALL FEES

Inspector: G Hines Date: 1-16-98 Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 46946 PETROMINERALS CORP (BURNS CRIST LEASE)
Last Inspection: ~~1/14/98~~ 7/13/2000
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITIE
Assignment No. 565621

Contact: STEVE BURKS (805) 2572828
Quarter: ~~0010~~ inspect in 3rd quarter, every year
On Hold: N 0000
Suspended: N
Team:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
184114	D89596 ✓	4/4/95	ACTIVE	231900 BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	2/14/89	PERMIT TO OPERATE GRANTED
138030	M56678 ✓	5/1/87	ACTIVE	036707 BCAT	I C E (>500 HP) OTHER FUEL	10/21/85	PERMIT TO OPERATE GRANTED
130412	M44214	5/30/85	INACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation> =30-<400BPD	3/5/85	PERMIT TO OPERATE GRANTED
130414				231900 BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	3/5/85	APPLICATION CANCELLED, REFUND ALL FEES

O/B. new owner ID # 117638.

Inspector: Mark vondrau Date: 7/13/2000 Reviewed By: [illegible] Date: 7/20/00

South Coast Air Quality Management District

Assignment Report

Assignment 565628

Catagory: COMPLIANCE
Activity: EQUIPMENT LIST INSPECTION
Inspector: GENE HINES (GH01)
Facility: PETROMINERALS CORP SADD LEASE ID: 54211
Instruction:

Status

Assignment Status: OPEN
Priority: HIGH
Assign By: GENEH on 12/18/97 11:12:54
Receive Date:
Due Date: 1/1/98

Inspector Comment

On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil production facility. There are 8 wells producing 90 BBLS. of crude oil daily. No leaks or odors were detected and facility is in apparent compliance.

On 1/21/98 I met with S. Burks again. The new pto D92108 for this ls. is in 24685 where it does not belong (with the wrong B-CAT) but what the hell we are collecting twice. Somebody tell the Engrs. new one cancells old one no big deal.

INSPECTOR: G. Hines DATE: 1-21-98
signature

SUPERVISOR: DATE:
signature

REPORT ID: ENF749R1 A. E. I. S. - EQUIPMENT LIST INQUIRY 03/18/94

ID Company Name & Location Page: 1

054211 PETROMINERALS CORP SADD LEASE
29007 W HASLEY CANYON RD SAUGUS CA 91384-3200

2472 CHAMBERS RD. TUSTIN CA 92680
STE. 230

Owner: CA On Hold: Expired: Number Of: Employees:
Suspended: Vehicles:

Sic#: 1311 Phone: 7147305400 Contact:

Section	Sector	TS	Freq	Mr#	Insp Date	Radio	Quarter	Pty	Source
EN	PD	83	1	0103	~~082393~~ 3/16/94		0010		

Equip Category	Description	Permit T	Number	Date	Number	Appl Commts
23180800	CRUDE OIL/GAS/H2O SEP SYS B	M	44215	850530	130413	Active

Rules:

Comments: OFP

Inspector: HUDSON Review By: [illegible] Date: 3/24/94

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP SADD LEASE QTRLY

STREET CODE: 06/29/93

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD

CITY: SAUGUS 91384-3200

CHECKED BY: H/S-1

INSPECTED BY: GENE HUNES

MAILING ADDRESS: 2472 CHAMBERS RD. STE. 230

CITY: TUSTIN

STATE ZIP: CA 92680

STATUS 54: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S.

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		52	55-56
PO	054211	1	0103	08	18	92		3	133	1	0		EN	CA	0010	1661		6722

6	5	N	8	7	J	M
✓						

REMARKS:

EQUIPMENT LIST CORRECT AS PRINTED.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
1	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M44215	10	05/30/85	130413	0	
		23180500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS							

DATA ENTRY 9-24-93 ENGINEERING

SOUTH COAST AQMD

705602 - 1/81

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP SADD LEASE QTRLY

STREET CODE: 06/20/92

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29007 W HASLEY CANYON RD CITY SAUGUS 91384-3200

CHECKED BY: Beach H/S- 1

INSPECTED BY: Gene Kines

MAILING ADDRESS: 2472 CHAMBERS RD. STE. 230 CITY TUSTIN STATE ZIP CA 92680

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			STATUS 54 CONTINUE	NEW	NEW N.S.			OUT OF BUS.	BECAME N.S.	NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	6	5	N	8	7	J	M	55-56
PD	054211	1	0103	09	10	91		3	137	1	0		EN	CA	0010	1661		✓							6222

REMARKS:

SOUTH COAST A.Q.M.D.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
1	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M44215	10	05/30/85	130413	0	
		23180500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS							

DEC 1992 ENF ENTERED

ENFORCEMENT DIV. - EQUIPMENT LIST

NAME: PETROMINERALS CORP SADD LEASE QTRLY

STREET CODE: 07/06/90

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29434 DEL VALLE

CITY ~~41384~~ SAUGUS 913500000

CHECKED BY: H/S- R

INSPECTED BY: THOMAS C FRAZIER

MAILING ADDRESS: 2472 CHAMBERS RD. STE. 230

CITY TUSTIN

STATE ZIP CA 926800000

STATUS 84: CONTINUE / NEW / NEW N.S. / OUT OF BUS. / BECAME N.S.

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	55-56
PD	054211	1	0103	10	29	90		3	153	0	0		EN	EA	0010	1661		G725

6	5	N	8	7	J	M
✓						

REMARKS: I INSPECTED THIS LEASE WITH DAVID LIVINGSTONE, FIELD SUPERINTENDENT, AND DAVE TASKEY, PUMPER. MR. LIVINGSTONE CAN BE REACHED AT (805) 257-2828. THE LEASE HAS BEEN TAGGED FOR 1173 REQUIREMENT, HOWEVER, SOME OF THE STEAM LINES AND TEST VALVES WERE NOT TAGGED. I WILL CHECK 1173 REQUIREMENTS. ALSO, I PULLED A DRAGER (HC) READING OF > 2,000PPM FROM PR./HATCH ON TANK #2.

PERMITTED EQUIPMENT

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
1	✓ 3	23150000	CRUDE OIL/WATER SEPARATION	B	M44215	10	05/30/85	130413	0	

NAME: PETROMINERALS CORP SADD LEASE QTRLY

STREET CODE: 07/04/91

ALPHA NO. 71 78

T S 79-80 83

ADDRESS OF PREMISES: 29097 W HASLEY CANYON RD. CITY: SAUGUS 91384-3200

CHECKED BY: H/S- 1 f

INSPECTED BY: GENE HUGES

MAILING ADDRESS: 2472 CHAMBERS RD. STE. 230 CITY: TUSTIN STATE ZIP: CA 92680

SECTOR	I. D. NUMBER	I.F.	MR. NO.	DATE THIS INSP. MO.	DAY	YEAR	RAD. REQ.	QUART ASGN.	LIST NO.	WORK ACCOMPLISHED PER ITEM NO.	W.U.			O. T.	E.D.P. ASGN. NO.			STATUS 54 CONTINUE	NEW	NEW N.S.		OUT OF BUS.	BECAME N.S.	NO. OF INSPECTOR
6-7	8 14	16	18 21	22		23-24	25	26		27-29	30-33	34-36	37-40	41	42		53	6	5	N	8	7	J	M	55-56
PD	054211	1	0103	9	10	91		3	137	1	0		EN	CA	0010	1661		✓							6722

REMARKS:

EQUIPMENT LIST CORRECT AS PRINTED.

	ROG	METH.	NOX	CO
	9.00	3.10	.10	.03
ASAE LIVINGSTONE	9.00	2.00	.00	.00

ITEM	ACTION	EQ. CAT. NO.	PERMIT DESCRIPTION	T	PERMIT NO.	PC	PERMIT DATE	APPL. NO.	WU	NA
1	✓		CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS	B	M44215	10	05/30/85	130413	0	
		23180500	CRUDE OIL/GAS/WATER SEP SYS (<=5 TANKS							
			###							

SOUTH COAST A.Q.M.D.

South Coast Air Quality Management District

FILE COPY

Facility Equipment List Report

Facility: 54211 PETROMINERALS CORP SADD LEASE
Last Inspection: 01/09/1996
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SAUGUS 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITI
Assignment No. 565628

Contact: UNKNOWN UNKNOWN (714) 7305400
Quarter: 0010 - inspect in 3rd quarter, every year
On Hold:
Suspended:
Team:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
130413	M44215	05/30/1985	ACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	03/05/1985	PERMIT TO OPERATE GRANTED

✓ D 92/08 231808 90 RAL'S

Inspector: G Hines Date: 1-16-98 Reviewed By: _____ Date: _____

Records

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 54211 PETROMINERALS CORP SADD LEASE
Last Inspection: 01/09/1996
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SAUGUS 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITI
Assignment No. 565628

Contact: UNKNOWN UNKNOWN (714) 7305400
Quarter: 0010 - inspect in 3rd quarter, every year
On Hold: Suspended:
Team:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
130413	M44215	05/30/1985	ACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	03/05/1985	PERMIT TO OPERATE GRANTED

D92108 231808 90 BBLS

At ID # 24865

Inspector: G Hines Date: 1-16-98 Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 54211 PETROMINERALS CORP. (SADD LEASE)
Last Inspection: ~~[illegible]~~ 7/13/2000
SIC: 1311
Inspector: GENE HINES
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITIE
Assignment No. 565628

Contact: STEVE BURKS (805) 2572828
~~Quarter~~: ~~0010 - inspect~~ In 3rd quarter, every year
On Hold: N ~~0000~~ Suspended: N
Team:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
184116	D92108	7/18/95	ACTIVE	231900 BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	2/14/89	PERMIT TO OPERATE GRANTED
130413	M44215	5/30/85	INACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation> =30-<400BPD	3/5/85	PERMIT TO OPERATE GRANTED

O/B. new owner ID # 117639.

Inspector: Mark vandeman Date: 7/13/2000 Reviewed By: [illegible] Date: 7/20/00

South Coast Air Quality Management District
Facility Equipment List Report

Facility: Petrominerals (Sterling) ID # ~~114978~~ 114798 MR: Contact:
Last Inspection: 7/13/2000 TS: Quarter: 000
SIC Code: SECTOR ID: PD Assignment No: AIRS ID:
Inspector: On Hold: Susp:
Location Address: 29007 Mount View Rd.
Mailing Address:
Comments: O/B, new owner ID # 117641.

	APPL NO:	PERMIT NO:	PERMIT ISSUE DATE:	PERMIT STATUS:	BCAT /CCAT	DESCRIPTON	APPL DATE	APPL STATUS DESCRIPTION
(1) –	24384	D49854				crude oil separation		

Facility:

Inspector: Mark von der Au Date: 7 / 13 / 2000 Reviewed By: Date: 7 / 20 / 00

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 117638 LONG BEACH OIL DEVELOPMENT CO, BURNS
Last Inspection: ~~1/16/98~~ 7/13/2000
SIC: 1311
Inspector:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 N BRAND, GLENDALE 91203 Sector:PM
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITIE
Assignment No.

Contact: GREGG MARTIN (970) 3855543
Quarter: 0010 - inspect in 3rd quarter, every year
On Hold: N
Suspended: N
Team:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
① ✓	346365				231808 BCAT	Crude Oil/Gas/H2OSeparation> =30-<400BPD	10/9/98	ASSIGNED TO ENGINEER - CLASS III
② ✓	346367				036707 BCAT	I C E (>500 HP) OTHER FUEL	10/9/98	ASSIGNED TO ENGINEER - CLASS III

MET WITH STEVEN BURNS, FIELD SUPV. THIS FACILITY KNOWN AS BURNS CRIST LEASE. ITEM 1 TANK BATTERY CONSISTS OF THREE 500 BARREL OIL STORAGE TANKS (1 IS WASH TANK), WASTEWATER TANK, 1.2 MIL BTU BOILER, DILUENT TANK, & GAS SCRUBBER. N/V # P26066 ISSUED AS VAPOR RECOVERY SYSTEM TO BOILER WAS DISCONNECTED. N/V ALSO ISSUED AS CO. FAILED TO CONDUCT 2ND QUARTER RULE 1173 LEAK CHECKS. ITEM 2 IS 713 H.P. FIELD GAS FIRED COGEN ENGINE. (OK R 1110.1) COMPLIES RULE 431.1 AS AVG NGAS HAVE VERY LITTLE H_2S CONTENT. ADVISED CO MUST COMPLY WITH RULE 1110.2 BY 12/31/2004 FOR ENGINE, RULE 1146.2 FOR BOILER BY 7/1/2002, AND RULE 222 BOILER REGISTRATION BY 1/1/2002. MADE NEW STATUS REPORTS & PLOT PLAN FOR FILE.

Inspector: Mark vonderau Date: 7/13/2000 Reviewed By: [illegible] Date: 7/20/00

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 117639 LONG BEACH OIL DEVELOPMENT CO, SADD
Last Inspection: [redacted] 7/13/2000
SIC: 1311
Inspector:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 W BRAND, GLENDALE 91203 Sector:PM
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITIE
Assignment No.

Contact: GREGG MARTIN (970) 3855543
Quarter: 0010 - inspect in 3rd quarter, every year
On Hold: N
Suspended: N
Team:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
(1) ✓	346361				231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	10/9/98	ASSIGNED TO ENGINEER - CLASS III

MET WITH STEVEN BURKS, FIELD SUPV. THIS LOCATION KNOWN AS SADD LEASE. ITEM 1 TANK FARM HAS TWO 1,000 BARRELL STORAGE TANKS + 750 BARRELL WASH TANK. TANKS IN GOOD SHAPE, AWAITING FINAL PERMITS.

Inspector: Mark Vandersan Date: 7/13/2000 Reviewed By: [illegible] Date: 7/20/00

South Coast Air Quality Management District

Run Date 10/18/2002 01 47 PM

Facility Equipment List Report

Facility 117639LONG BEACH OIL DEVELOPMENT CO, SADD
MR 0103
Contact GREGG MARTIN (970) 3855543
Last Inspection 10/08/2002
TS TS 1I Industrial Sector ba
Quarter 0010 inspect in 3rd quarter every year
SIC 1311
Facility Status Active
On Hold N
Suspended N
Inspector BM01 BRAD MCCLUNG
Assignment No 730930
Facility Team C
Inspection Date 10/08/2002
Disposition Operating in Compliance at time of inspection
Location Address 29007 W HASLEY CANYON RD, SANTA CLARITA 91384 3200 Sector PD
Mailing Address 550 W BRAND GLENDALE 91203 Sector PM
Instruction

RECLAIM N TITLE V N SIP AIR

	Application No	Permit No	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
✓	346361	F46611	11/17/2001	ACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30 <400BPD	10/09/199	PERMIT TO OPERATE GRANTED

Report Met with Steve Burks, Field Supervisor
Permit #F46611 Crude Oil/Gas/Water Production system with Gas Compressor system Systems are in good condition Vapor recovery system is up and running
Rule 1173 leak inspection is in compliance Records of these quarterly inspections were available for review
Reviewed all equipment, facility status report indicates equipment that is in service and physically inspected all sites No odors were detected at these tank farms
Facility is in compliance with Rules 431 1, 463 464, 466, 467, 1173 & 1176

Inspector [signature] Date 10-18-02 Reviewed By [signature] Date 10/22/02

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 117640 LONG BEACH OIL DEVELOPMENT CO, MC GILLIV
Last Inspection: ~~[illegible]~~ 7/13/2000
SIC: 1311
Inspector:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 W BRAND, GLENDALE 91203 Sector:PM
Comment:

MR: 0103
TS: CRUDE OIL PRODUCTION FACILITIE
Assignment No.

Contact: GREGG MARTIN (970) 3855543
~~Quarter: 0100 - inspect in 2nd quarter~~, every year
On Hold: N 0010
Suspended: N
Team:

① ✓

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
346371				231808 BCAT	Crude Oil/Gas/H2OSeparation> =30-<400BPD	10/9/98	ASSIGNED TO ENGINEER - CLASS III

MET WITH STEVEN BURKS, FIELD SUPV. THIS LOCATION KNOWN AS MCGILLIVARRE LEASE. ITEM 1 HAS TWO 500 BARREL OIL STORAGE TANKS IN GOOD SHAPE. STILL AWAITING FINAL PERMIT.

Inspector: Mark von der au Date: 7/13/2000 Reviewed By: [illegible] Date: 7/20/00

South Coast Air Quality Management District

Run Date 10/18/2002 01 45 PM

Facility Equipment List Report

Facility 117640LONG BEACH OIL DEVELOPMENT CO MC GILLIV MR 0103 Contact GREGG MARTIN (970) 3855543
Last Inspection 10/08/2002 TS TS 11 Industrial Sector ba Quarter 0010 inspect in 3rd quarter every year
SIC 1311 Facility Status Active On Hold N Suspended N
Inspector BM01 BRAD MCCLUNG Assignment No 730929 Facility Team C
Inspection Date 10/08/2002 Disposition Operating in Compliance at time of inspection
Location Address 29007 W HASLEY CANYON RD SANTA CLARITA 91384 3200 Sector PD
Mailing Address 550 W BRAND GLENDALE 91203 Sector PM
Instruction

RECLAIM N TITLE V N SIP AIR

	Application No	Permit No	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
✓	346371	F46614	11/17/2001	ACTIVE	23180E BCAT	Crude Oil/Gas/H2OSeparation>=30 <400BPD	10/09/199	PERMIT TO OPERATE GRANTED

Report Met with Steve Burks, Field Supervisor
Permit #F46614 Crude Oil/Gas/Water Production system
This system is completely out of service at this time

Inspector [signature] Date 10-18-02 Reviewed By [signature] Date 10/28/02

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 117641 LONG BEACH OIL DEVELOPMENT CO, STERLING
Last Inspection: 7/13/2000
SIC: 1311
Inspector:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 W GRAND, GLENDALE 91203 Sector:PM
Comment:

MR:
TS: NONE
Assignment No.

Contact: GREGG MARTIN (970) 3855543
Quarter: 0010
On Hold: N
Suspended: N
Team:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
(1) ✓	346370				231808 BCAT	Crude Oil/Gas/H2OSeparation> =30-<400BPD	10/9/98	ASSIGNED TO ENGINEER - CLASS III

MET WITH STEVEN BURKS, FIELD SUPV. THIS LOCATION KNOWN AS STERLING LEASE, CURRENTLY NOT IN USE. STILL AWAITING FINAL PERMIT.

Inspector: Mark van der as Date: 7/13/2000 Reviewed By: DW Date: 7/20/00

South Coast Air Quality Management District

Run Date 10/18/2002 01 40 PM

Facility Equipment List Report

Facility 117641 LONG BEACH OIL DEVELOPMENT CO STERLING MR Contact GREGG MARTIN (970) 3855543
Last Inspection 10/08/2002 TS TS 11 Industrial Sector ba Quarter 0010 inspect in 3rd quarter every year
SIC 1311 Facility Status Inactive On Hold Y Suspended N
Inspector BM01 BRAD MCCLUNG Assignment No 730921 Facility Team C
Inspection Date 10/08/2002 Disposition Not Operating Equipment Still On Site
Location Address 29007 W HASLEY CANYON RD SANTA CLARITA 91384 3200 Sector PD
Mailing Address 550 N BRAND, GLENDALE 91203 Sector PM
Instruction

RECLAIM N TITLE V N SIP AIR

Application No	Permit No	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
346370	F46613	11/17/2001	EXPIRED	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30 <400BPD	10/09/199	PERMIT TO OPERATE GRANTED

Report Met with Steve Burks, Field Supervisor
Permit #F46613 Crude Oil/Gas/Water Production system
This system has been torn down and removed from service
Equipment still on site (disassembled)

Inspector Brad a McC Date 10-18-02 Reviewed By [illegible] Date 10/[illegible]

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 117642 LONG BEACH OIL DEVELOPMENT CO, MABEL
Last Inspection: 7/13/2000
SIC:
Inspector:
Location Address: 29007 W HASLEY CANYON RD, SAUGUS 91384 Sector:PD
Mailing Address: 550 N BRAND, GLENDALE 91203 Sector:PM
Comment:

MR:
TS: NONE
Assignment No.

Contact: GREGG MARTIN (970) 3855543
Quarter: 0010
On Hold: N
Suspended: N
Team:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
(1) ✓	346373				231808 BCAT	Crude Oil/Gas/H2OSeparation > =30-<400BPD	10/9/98	ASSIGNED TO ENGINEER - CLASS III

MET WITH STEVE BURKS, FIELD SUPV. TANK FARM CURRENTLY OUT OF COMMISSION, SWDING OIL TO 2 RENTAL BAKER TANKS, STILL AWAITING FINAL PERMIT. THIS LOCATION KNOWN AS MABEL STRAWN LEASE.

Inspector: Mark von der Ahe Date: 7/13/2000 Reviewed By: [illegible] Date: 7/20/00

South Coast Air Quality Management District

Run Date : 07/16/2003 02:48 PM

Facility Equipment List Report

Facility: 117638 LONG BEACH OIL DEVELOPMENT CO, BURNS
MR: 0103
Contact: GREGG MARTIN (970) 3855543
Last Inspection: 10/08/2002
TS: TS-15 Industrial: Crude Oil Produ
Quarter: 0010 - inspect in 3rd quarter, every year
SIC: 1311
Facility Status: Active
On Hold: N
Suspended: N
Inspector: BM01 BRAD MCCLUNG
Assignment No. 730923
Facility Team: C
Inspection Date: 10/08/2002
Disposition: Operating in Compliance at time of inspection
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 N BRAND, GLENDALE 91203 Sector:PM
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
346365	F46612	11/17/2001	ACTIVE	231808	BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	10/09/1998	PERMIT TO OPERATE GRANTED
346367	F47523	12/22/2001	ACTIVE	036707	BCAT	I C E (>500 HP) OTHER FUEL	10/09/1998	PERMIT TO OPERATE GRANTED

Report: Met with Steve Burks, Field Supervisor.
Permit #F46612: Crude Oil/Gas/Water Production system is in good condition. Vapor recovery system is up and running.
Rule 1173 leak inspection is in compliance. Records of these quarterly inspections were available for review.
Boiler/Tank Heater has been disconnected and is no longer in use. They are using two small Raypak 399,000 BTU Boilers for there process. Unit is in compliance with Rule 1146.2.
Permit #F47523: Cogeneration (IC Engine/Generator/Heat Production) system is in good condition. Logs of gas used are well maintained. System only has two heat exchagers, permit states three.
Reviewed all equipment, facility status report indicates equipment that is in service, and physically inspected all sites. No odors were detected at these tank farms.
Odors were detected at a Storage tank containing a "KD" distillate. Product has some Hydrogen Sulfide and smells like rotten eggs within 100 yards of the tank. See MSDS in field files.
Facility is in compliance with Rules 431.1, 463, 464, 466, 467, 1173, & 1176.

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Run Date : 07/16/2003 02:48 PM

Facility Equipment List Report

Facility: 117639 LONG BEACH OIL DEVELOPMENT CO, SADD
MR: 0103
Contact: GREGG MARTIN (970) 3855543
Last Inspection: 10/08/2002
TS: TS-15 Industrial: Crude Oil Produ
Quarter: 0010 - inspect in 3rd quarter, every year
SIC: 1311
Facility Status: Active
On Hold: N
Suspended: N
Inspector: BM01 BRAD MCCLUNG
Assignment No. 730930
Facility Team: C
Inspection Date: 10/08/2002
Disposition: Operating in Compliance at time of inspection
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 W BRAND, GLENDALE 91203 Sector:PM
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
346361	F46611	11/17/2001	ACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	10/09/1998	PERMIT TO OPERATE GRANTED

Report: Met with Steve Burks, Field Supervisor.
Permit #F46611: Crude Oil/Gas/Water Production system with Gas Compressor system. Systems are in good condition. Vapor recovery system is up and running.
Rule 1173 leak inspection is in compliance. Records of these quarterly inspections were available for review.
Reviewed all equipment, facility status report indicates equipment that is in service, and physically inspected all sites. No odors were detected at these tank farms.
Facility is in compliance with Rules 431.1, 463, 464, 466, 467, 1173, & 1176.

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Run Date : 07/16/2003 02:49 PM

Facility Equipment List Report

Facility: 117640 LONG BEACH OIL DEVELOPMENT CO, MC GILLIV
MR: 0103
Contact: GREGG MARTIN (970) 3855543
Last Inspection: 10/08/2002
TS: TS-15 Industrial: Crude Oil Produ
Quarter: 0010 - inspect in 3rd quarter, every year
SIC: 1311
Facility Status: Active
On Hold: N
Suspended: N
Inspector: BM01 BRAD MCCLUNG
Assignment No. 730929
Facility Team: C
Inspection Date: 10/08/2002
Disposition: Operating in Compliance at time of inspection
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 W BRAND, GLENDALE 91203 Sector:PM
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
346371	F46614	11/17/2001	ACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	10/09/1998	PERMIT TO OPERATE GRANTED

Report: Met with Steve Burks, Field Supervisor.
Permit #F46614: Crude Oil/Gas/Water Production system.
This system is completely out of service at this time.

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Run Date : 07/16/2003 02:49 PM

Facility Equipment List Report

Facility: 117642 LONG BEACH OIL DEVELOPMENT CO, MABEL
MR:
Contact: GREGG MARTIN (970) 3855543
Last Inspection: 10/08/2002
TS: TS-15 Industrial: Crude Oil Produ
Quarter: 0010 - inspect in 3rd quarter, every year
SIC:
Facility Status: Active
On Hold: N
Suspended: N
Inspector: BM01 BRAD MCCLUNG
Assignment No. 730925
Facility Team: C
Inspection Date: 10/08/2002
Disposition: Operating in Compliance at time of inspection
Location Address: 29007 W HASLEY CANYON RD, SAUGUS 91384 Sector:PD
Mailing Address: 550 N BRAND, GLENDALE 91203 Sector:PM
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
346373	F46789	11/29/2001	ACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	10/09/1998	PERMIT TO OPERATE GRANTED

Report: Met with Steve Burks, Field Supervisor.
Permit #F46789: Crude Oil/Gas/Water Production system is in good condition. Vapor recovery system is up and running.
Rule 1173 leak inspection is in compliance. Records of these quarterly inspections were available for review.
Boiler/Tank Heater has been disconnected and is no longer in use. They are using one small Raypak 399,000 BTU Boilers for there process. Unit is in compliance with Rule 1146.2.
Reviewed all equipment, facility status report indicates equipment that is in service, and physically inspected all sites. No odors were detected at these tank farms.
Facility is in compliance with Rules 431.1, 463, 464, 466, 467, 1173, & 1176.

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 22068 PETROMINERALS CORP (MABEL STRAWN)
MR: 0103
Contact: STEVE BURKS (805) 2572828
Last Inspection: 07/13/2000
TS: TS-83 Ref/Energy: RECLAIM Cn
Quarter: 0000 - no scheduled inspections
SIC: 1311
Facility Status: DUPLICATE
On Hold: N
Suspended: N
Inspector: GH01 GENE HINES
Assignment No. 565623
Facility Team: C2
Inspection Date:
Disposition:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
_____	C11463	M09466	04/03/1980	INACTIVE	231808	BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	01/01/1990	PERMIT TO OPERATE GRANTED
_____	C11465	M09467	04/03/1980	INACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED
_____	C11466	M09468	04/03/1980	INACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED
_____	C11467	M09469	04/03/1980	INACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED
_____	C11468	M09470	04/03/1980	INACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	01/01/1990	PERMIT TO OPERATE GRANTED

Report: On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil production site. There are 6 wells producing 120 BBLS. of crude oil daily. No leaks or odors were detected during this insp.. Equipment list shows no PTOS active or inactive, here we go again!

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Run Date : 07/16/2003 02:47 PM

Facility Equipment List Report

Facility: 24865 PETROMINERALS CORP(MCGILLIVARRE LEASE) MR: 0103 Contact: STEVE BURKS (805) 2572828
Last Inspection: 07/13/2000 TS: TS-83 Ref/Energy: RECLAIM Cr Quarter: 0000 - no scheduled inspections
SIC: 1311 Facility Status: Sold On Hold: N Suspended: N
Inspector: GH01 GENE HINES Assignment No. 565620 Facility Team: C2
Inspection Date: Disposition:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
184111	D12475	12/01/1989	INACTIVE	011001	BCAT	BOILER (<5 MMBTU/HR) NAT GAS ONLY	02/14/1989	PERMIT TO OPERATE GRANTED
184112				011000	BCAT	BOILER, NATURAL GAS	02/14/1989	APPLICATION CANCELLED, KEEP ALL FEI
184113	D91836	07/06/1995	INACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	PERMIT TO OPERATE GRANTED
184115				231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	APPLICATION CANCELLED, REFUND ALL I
293306				040001	BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	05/26/1994	APPLICATION CANCELLED, REFUND ALL I
293308				040001	BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	05/26/1994	APPLICATION CANCELLED, REFUND ALL I
293309				040001	BCAT	I C E (50-500 HP) N-EM STAT NAT GAS ONLY	05/19/1994	APPLICATION CANCELLED, REFUND ALL I

Report: On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil production facility. There are 2 wells producing 28 BBLS. daily. No odors or leaks were detected during this insp. facility is in apparent compliance.

On 1/21/97 I met with S. Burks again to try to iron out errors! PTO D12475 is 1 BTU short of needing a PTO per Rule & Ken Coats. PTO D92108 is the new PTO for the Sadd lease, will fill out Merge form.

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 46946 PETROMINERALS CORP (BURNS CRIST LEASE)
MR: 0103
Contact: STEVE BURKS (805) 2572828
Last Inspection: 07/13/2000
TS: TS-83 Ref/Energy: RECLAIM Cri
Quarter: 0000 - no scheduled inspections
SIC: 1311
Facility Status: Sold
On Hold: N
Suspended: N
Inspector: GH01 GENE HINES
Assignment No. 565621
Facility Team: C2
Inspection Date:
Disposition:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

	Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category		BCAT/CCAT Description	Application Date	Application Status
_____	130412	M44214	05/30/1985	INACTIVE	231808	BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	03/05/1985	PERMIT TO OPERATE GRANTED
_____	130414				231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	03/05/1985	APPLICATION CANCELLED, REFUND ALL I
_____	138030	M56678	05/01/1987	INACTIVE	036707	BCAT	I C E (>500 HP) OTHER FUEL	10/21/1985	PERMIT TO OPERATE GRANTED
_____	184114	D89596	04/04/1995	INACTIVE	231900	BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	PERMIT TO OPERATE GRANTED

Report: On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil facility. There are 6 wells producing 85 BBLS. of oil daily. No leaks or odors were detected during this insp. and facility is in apparent compliance. Seems to have alot of active PTOS on equip. list but are not in folder, will try to check out.

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Facility Equipment List Report

Facility: 54211 PETROMINERALS CORP. (SADD LEASE)
MR: 0103
Contact: STEVE BURKS (805) 2572828
Last Inspection: 07/13/2000
TS: TS-83 Ref/Energy: RECLAIM Cr
Quarter: 0000 - no scheduled inspections
SIC: 1311
Facility Status: Sold
On Hold: N
Suspended: N
Inspector: GH01 GENE HINES
Assignment No. 565628
Facility Team:
Inspection Date:
Disposition:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
130413	M44215	05/30/1985	INACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	03/05/1985	PERMIT TO OPERATE GRANTED
184116	D92108	07/18/1995	INACTIVE	231900 BCAT	STORAGE TANK, CRUDE OIL W/O CONTROL	02/14/1989	PERMIT TO OPERATE GRANTED

Report: On 12/19/97 I met with Steve Burke, Foreman to do a field insp. of this crude oil production facility. There are 8 wells producing 90 BBLS. of crude oil daily. No leaks or odors were detected and facility is in apparent compliance.

On 1/21/98 I met with S. Burks again. The new pto D92108 for this ls. is in 24685 where it does not belong (with the wrong B-CAT) but what the hell we are collecting twice. Somebody tell the Engrs. new one cancells old one no big deal.

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Run Date : 07/16/2003 02:48 PM

Facility Equipment List Report

Facility: 114798 PETROMINERALS CORP (STERLING LEASE)
MR:
Contact: STEVE BURKS (805) 2572828
Last Inspection: 07/13/2000
TS:
Quarter: 0000 - no scheduled inspections
SIC: 1311
Facility Status: Sold
On Hold: N
Suspended: N
Inspector:
Assignment No.
Facility Team: C
Inspection Date:
Disposition:
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 230 WHITE DOVE CT, NIPOMO 93444
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
243914	D49854	03/17/1992	INACTIVE	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	01/03/1991	PERMIT TO OPERATE GRANTED

Report:

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

South Coast Air Quality Management District

Run Date : 07/16/2003 02:49 PM

Facility Equipment List Report

Facility: 117641 LONG BEACH OIL DEVELOPMENT CO, STERLING
MR:
Contact: GREGG MARTIN (970) 3855543
Last Inspection: 10/08/2002
TS: TS-11 Industrial: Sector-based In
Quarter: 0010 - inspect in 3rd quarter, every year
SIC: 1311
Facility Status: Inactive
On Hold: Y
Suspended: N
Inspector: BM01 BRAD MCCLUNG
Assignment No. 730921
Facility Team: C
Inspection Date: 10/08/2002
Disposition: Not Operating - Equipment Still On Site
Location Address: 29007 W HASLEY CANYON RD, SANTA CLARITA 91384-3200 Sector:PD
Mailing Address: 550 N BRAND, GLENDALE 91203 Sector:PM
Instruction:

RECLAIM: N TITLE V: N SIP: AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
346370	F46613	11/17/2001	EXPIRED	231808 BCAT	Crude Oil/Gas/H2OSeparation>=30-<400BPD	10/09/1998	PERMIT TO OPERATE GRANTED

Report: Met with Steve Burks, Field Supervisor.
Permit #F46613: Crude Oil/Gas/Water Production system.
This system has been torn down and removed from service.
Equipment still on-site (disassembled).

Inspector: _____ Date: _____ Reviewed By: _____ Date: _____

INSPECTOR'S REPORT

TO: C. STOBERG

FROM: J. BAROCCO

FILE: I-7556 PETROMINERAL CORP.
HASLEY CYN OILFIELD

DATE: 12/13/83

REPORT: MR. DAVE LIVINGSTONE PUMPER OF ABOVE LEASE WAS CONTACTED TODAY. HE WAS GIVEN PERMISSION TO CLEAN AND BACKFILL SUMPS AT SADD #1 AND MC. GILLIVRAE #3 (SEE ATTACHED SHEETS)

RECEIVED
DEPT. OF COUNTY ENGINEER

OCT 24 1983

REGION 2
NEWHALL-VALENCIA

PETROMINERALS CORPORATION

1538 N. Century Boulevard • Santa Ana, California 92703 • Telephone (714) 554-7800

October 21, 1983

County of Los Angeles
Dept. of County Engineer, Region VII
Project Planning and Pollution Control Division
23757 W. Valencia Boulevard
Valencia, California 91355

ATTENTION: JOE BAIOCCO

Dear Joe:

As a follow-up to our telephone conversation, enclosed find the analysis of the water from the Sadd #1 sump and the McGillivrae #3 sump that was collected and analyzed by Case Engineering & Laboratory, Inc. to determine if they met the requirements of the Industrial Waste Water Division of Los Angeles County and the State Water Resources Board.

In both cases the Sadd #1 and the McGillivrae #3 tested out at a value substantially less than what is required to be met by the Water Resources Board. I understand that you took samples at the same time and have submitted these samples to your independent lab. Hopefully, the results will match the analysis that we received from our independent lab, Case Engineering & Laboratory, Inc.

Very truly yours,

Richard C. Russell

Richard C. Russell
Enclosure

RCR:dm

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
PROJECT PLANNING AND POLLUTION CONTROL DIVISION
CHEMICAL ANALYSIS REQUEST

COUNTY ENG.
020782

By BAROCO, J.

Sample Source PETROMINERAL CORP.
Name and address or location

Sample Of *Industrial Waste* ☒ *Water* ☐ *Sewage* ☐ *Other* _____

If Industrial Waste
Type of Industry or Process WASTE WATER FROM DRILLING MUD SADD#1 WELL File No. F-7556-70 *specify*

Discharge *Surface* ☒ *Subsurface* ☐ *Sewer* ☐ *Stored-Hauled* ☐

Sampling Point UNLINE SUMP 100'YDS ~~SE~~ EAST OF HASLEY CYN & DELVALE RD.
Specific location in treatment or process

Sample *Marked* PETROMIN *Quant.* 1QT *Temp.* (F°) _____ *Time* 10:15 AM *Date* 10/11/83

Collector BAROCO, J. Special Instructions _____

Parameter	✓	Mg/1 or ppm	Parameter	✓	Mg/1 or ppm
Calcium (Ca)			Nickel (Ni)		
Magnesium (Mg)			Selenium (Se)		
Sodium (Na)			Chloride (Cl)	X	580
Potassium (K)			Sulfate (SO_4)		
Iron (Fe)			Bicarbonate (HCO_3)		
Manganese (Mn)			Carbonate (CO_3)		
Aluminum (Al)			Hydroxide (OH)		
Boron (B)			Fluoride (F)		
Chromium (Cr)			Phosphate (PO_4)		
Silica (Si)			Cyanide (CN)		
Arsenic (As)			Sulfide (H_2S)		
Barium (Ba)			Residual Chlorine (Cl_2)		
Cadmium (Cd)			Nitrate Nitrogen (NO_3-N)		
Copper (Cu)			Nitrite Nitrogen (NO_2-N)		
Lead (Pb)			Ammonia Nitrogen (NH_3-N)		
Mercury (Hg)			Organic Nitrogen (Org-N)		
Zinc (Zn)			Thiosulphate (S_2O_3)		
pH			Dissolved Oxygen (DO)		
Hardness (as $CaCO_3$)			Biochemical Oxygen Demand (BOD)		
Alkalinity (as $CaCO_3$)			Chemical Oxygen Demand (COD)		
Non-Carbonate Hardness			Dissolved Solids (TOTAL)	X	1460
Oil & Grease			Suspended Solids		
Phenols			Total Solids		
MBAS (surfactants Anionic)			Settleable Solids		
Turbidity			Color		
Conductance (micromhos)			Odor		
Sodium Ratio			Coliform		

Remarks _____

Date Received Oct. 11, 1983 Laboratory No. 50706 Analysis by Water Quality Lab. LACFCD. Date Completed. Oct. 21, 1983

JUL 25 PAID

76C211F-CE 644 (Rev. 8/74)

FILE COPY

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
PROJECT PLANNING AND POLLUTION CONTROL DIVISION
CHEMICAL ANALYSIS REQUEST

COUNTY ENG.
0207.82

By BAROCCO, J.

Sample Source PETROMINERAL CORP.
Name and address or location

Sample Of *Industrial Waste* ☒ *Water* ☐ *Sewage* ☐ *Other* _____ *specify*

If Industrial Waste
Type of Industry or Process WASTE WATER FROM DRILLING MUD File No. I-7556-70
MCGILLIVRAE #3 WELL

Discharge *Surface* ☒ *Subsurface* ☐ *Sewer* ☐ *Stored-Hauled* ☐

Sampling Point UNLINE SUMP 100' YDS SOUTH OF HARLEY CYN & DEL VALLE RD.
Specific location in treatment or process

Sample *Marked* PETROMIN *Quant.* 1 QT *Temp. (F°)* _____ *Time* 10:30 AM *Date* 10/11/83

Collector _____ Special Instructions _____

Parameter	✓	Mg/1 or ppm	Parameter	✓	Mg/1 or ppm
Calcium (Ca)			Nickel (Ni)		
Magnesium (Mg)			Selenium (Se)		
Sodium (Na)			Chloride (Cl)	X	280
Potassium (K)			Sulfate (SO_4)		
Iron (Fe)			Bicarbonate (HCO_3)		
Manganese (Mn)			Carbonate (CO_3)		
Aluminum (Al)			Hydroxide (OH)		
Boron (B)			Fluoride (F)		
Chromium (Cr)			Phosphate (PO_4)		
Silica (Si)			Cyanide (CN)		
Arsenic (As)			Sulfide (H_2S)		
Barium (Ba)			Residual Chlorine (Cl_2)		
Cadmium (Cd)			Nitrate Nitrogen (NO_3-N)		
Copper (Cu)			Nitrite Nitrogen (NO_2-N)		
Lead (Pb)			Ammonia Nitrogen (NH_3-N)		
Mercury (Hg)			Organic Nitrogen (Org-N)		
Zinc (Zn)			Thiosulphate (S_2O_3)		
pH			Dissolved Oxygen (DO)		
Hardness (as $CaCO_3$)			Biochemical Oxygen Demand (BOD)		
Alkalinity (as $CaCO_3$)			Chemical Oxygen Demand (COD)		
Non-Carbonate Hardness			Dissolved Solids (TDMC)	X	736
Oil & Grease			Suspended Solids		
Phenols			Total Solids		
MBAS (surfactants Anionic)			Settleable Solids		
Turbidity			Color		
Conductance (micromhos)			Odor		
Sodium Ratio			Coliform		

Remarks _____

Date Received Oct. 11, 1983 Laboratory No. 50705 Analysis by Water Quality Lab., LACFCD. Date Completed. Oct. 21, 1983

76C211F-CE 644 (Rev. 8/74) **FILE COPY** JUL 2 5 PAID

INSPECTOR'S REPORT

TO: C. STOBERG

FROM: J. BAIOCCO

FILE: T-7556-70 PETROMINERAL CORP.
HASLEY CYN OIL FIELD SADD # 2 WELL

DATE: 3/7/84

REPORT: A FOLLOW-UP INSPECTION WAS MADE AT THIS WELL TODAY IT WAS FOUND THAT THE SUMP AND ALL DRILLING MUD HAS BEEN DISPOSED OF ON SITE AS INSTRUCTED.

OK

I-7556

PETROMINERALS CORPORATION

1538 N. Century Boulevard • Santa Ana, California 92703 • Telephone (714) 554-7800

RECEIVED
DEPT. OF COUNTY ENGINEER
FEB 15 1984
REGION 2
NEWHALL-VALENCIA

February 10, 1984

Joe - A normal leachate test (5:1 ratio w/w) would put this under the regional limit. However, it is still not permissable to dilute to meet a limit. CWS

Mr. Joseph C. Baiocco
Industrial Waste Engineering Inspector
Department of County Engineer
Region VII
23757 W. Valencia Boulevard
Valencia, CA 91355

Re: Sadd #2 Well

Dear Mr. Baiocco:

Pursuant to your request (J-7556-70), a sample of the mud from the Sadd #2 Well sump was collected and chemically analyzed by dry weight basis by laboratory personnel from Case Engineering & Laboratory, Inc. The results of the test are as follows:

Chloride, CL
386.62 MG/KG

(A copy of the analysis is attached.) Case Engineering & Laboratory, Inc. is a state approved laboratory located at 5574-B Everglade Street, Ventura, California 93003, Telephone: 805/654-8555. If you have any questions regarding the collecting or anlayzing methods used, please call the above listed number.

This dry test is a follow up on the wet test that was analyzed and described in the letter from Petrominerals Corporation dated January 12, 1984. (A copy of this letter is attached for your reference.) We are awaiting your approval to back fill, by approved methods, and thereby eliminate this drilling sump which is no longer needed.

Yours very truly,

Richard C Russell

Richard C. Russell, Jr.
Vice President

RCR/vml
Attachments

cc: P. L. Howard
D. Livingston

CWS

(805) 654-8555

CASE Engineering & Laboratory, Inc.

5574-B EVERGLADES STREET, VENTURA, CA 93003

February 9, 1984

Petrominerals Corp.
P.O. Box 10378
Santa Ana, CA 92711

Attn; Mr. Dick Russell

A sample of mud from SADD #2 was collected by laboratory personell and submitted to this laboratory on February 6, 1984, for chemical analysis.

The results are as follows;

Chloride, Cl^-

386.62 mg/kg

Respectfully submitted,

Judy A. Linhart

JUDY A. LINHART
Chemist

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

INSPECTOR'S REPORT

TO: C. SJOBERG DATE: 5/21/86

FROM: J. McCURBIN FILE: I-7556-70

INDUSTRY: PETROMINERALS CORP. — HASLEY CANYON OIL FIELD

REPORT: AN INSPECTION WAS CONDUCTED AT THE ABOVE OILFIELD 3/7/86. AN UNLINED SUMP WAS DISCOVERED ON the BURNS/CRISTE LEASE, WELL 8. MR RICHARD RUSSEL WAS CONTACTED AND NOTIFIED TO HAVE A SAMPLE TAKEN AND ANALYZED.

ACCORDING TO PAST RECORDS, THIS IS NOT THE FIRST TIME AN INCIDENT SUCH AS THIS HAS OCCURRED. ENCLOSED IS A COPY OF THE ANALYSIS AND A LETTER from R. RUSSEL. I AM AWAITING YOUR RECOMMENDATIONS REGARDING: a) HOW TO FURTHER PREVENT SUCH OCCURANCES; AND, b) IF IT IS / IS NOT OK TO BACKFILL.

[redacted]

7615DOL-15-CE 858-2-70

Cus

PETROMINERALS CORPORATION

12362 Beach Boulevard • Suite 9 • P.O. Box 65 • Stanton, CA 90680 • (714) 895-6370

May 13, 1986

Mr. Jack McCubbin
County of Los Angeles
Industrial Waste Engineer
Region VII
34757 W. Valencia Boulevard
Valencia, CA 91355

Re: Burns Crist #8 Well - Drilling Sump
Petrominerals' Hasley Canyon Field,
Los Angeles, County, California
Section 3, Township 4 North, Range 17W S.B.B.&M.

Dear Mr. McCubbin:

Enclosed find the Laboratory Analysis of the water sample analyzed for chlorides and TDS from the Burns Crist #8 Sump, Hasley Canyon Field, Los Angeles County, California. This sample was collected by laboratory personnel on May 7, 1986. The collection and testing was conducted by Case Engineering and Laboratory, Inc., an impartial and independent State certified laboratory, located at 5574B Everglade Street, Ventura, California 93003.

We are awaiting your approval to back fill and thereby eliminate this drilling sump which is no longer needed.

Yours very truly,

Richard C. Russell

Richard C. Russell
Vice President

RCR/vml
Enclosures

cc: Paul L. Howard
David D. Livingstone

(805) 654-8555

CASE Engineering & Laboratory, Inc.

5574-B EVERGLADES STREET, VENTURA, CA 93003

May 12, 1986

Petrominerals Corp.
12362 Beach Blvd.
Stanton, CA 90680

Attn; Mr. Dick Russell

A samples of water from a sump at Burns-Crist # 8 was collected on May 7, 1986, for chemical analysis.

The results are as follows;

	mg/L
Chloride	229.9
Total Dissolved Solids	820

Respectfully submitted;

JUDY A. LINHART
Chemist

INSPECTOR'S REPORT

TO: C. SJOBERG.

FROM: J. BATOCCO

FILE: I-7556-70 PETROMINERALS CORP
HANSLEY CYN OILFIELD

DATE: 1-4-85

REPORT: THE ATTACHED ANALYSIS WAS PICKED UP ON FEBRUARY 4, 1985 AT PETROMINERALS FIELD OFFICE. MR DAVE LIVINGSTON FIELD SUPV. OF PETROMINERALS WAS INSTRUCTED TO HAVE ALL CUTTINGS AND MUD FROM SADD #7 and BURNS CRUST #10 WELLS REMOVED TO A LEGAL POINT OF DISPOSAL SINCE TDS FOR BOTH SITES WERE IN EXCESS OF 2000 ppm LIMIT.

(805) 654-8555

CASE Engineering & Laboratory, Inc.

5574-B EVERGLADES STREET, VENTURA, CA 93003

January 30, 1985

RECEIVED
DEPT. OF COUNTY ENG.
FEB 01 REC'D
REGION 2
NEWHALL-VALENCIA

Petrominerals Corp.
29434 del Valle Road
Saugus, CA 91350

Attn; Mr. Dave Livingston

Samples of water from sumps at Hasley Canyon were collected by laboratory personnel and submitted to this laboratory on January 22, 1985, for chemical analysis.

The results are as follows;

	Sadd # 7	Burns Crist # 10
Conductivity mhos/cm	3,248	38,860
Total Dissolved Solids mg/L	2,274	27,200
Chlorides, mg/L	90.0	7,097.8

Respectfully submitted;

Judy A. Linhart

JUDY A. LINHART
Chemist

COUNTY OF LOS ANGELES

DEPARTMENT OF COUNTY ENGINEER/FACILITIES

SANITATION DIVISION

NOTICE

TO: DAVE LIVINGSTONE DATE: 10-24-84

FIRM NAME: PETRO MINERAL CORP. FILE NO: I-7556-70

LOCATION HASLEY CYN OIL FIELD I.W. PERMIT NO: 8393

REMARKS: YOU ARE HEREBY DIRECTED TO REMOVE ALL OILY-MATERIAL BEING STORED WITHIN THE METAL RECTANGULAR CONTAINERS WEST OF BURNS/CRIST Nº 6 WELL TO A LEGAL POINT OF DISPOSAL.

IF YOU WISH TO USE THIS MATERIAL FOR CONSTRUCTIVE PURPOSES. IT IS REQUIRE THAT YOU OBTAIN CLEARANCE FROM THE CALIF. DEPT OF HEALTH SERVICES AND STATE REGIONAL WATER CONTROL BOARD PRIOR TO OBTAINING CLEARANCE FROM THIS OFFICE.

THIS CORRECTIVE WORK SHALL BE COMPLETED BY NOVEMBER 14, 1984.

YOU ARE FURTHER DIRECTED TO FURNISH THIS OFFICE BY NOVEMBER 14, 1984 A TECHNICAL REPORT INDICATING THAT ALL MATERIALS WERE REMOVED AND DISPOSED OF IN A LEGAL MANNER (IE WASTE HAULER SLIPS)

Please telephone the office indicated below for return inspection.

Santa Clarita Valley Regional Office
29757 West Valencia Boulevard
Valencia, Ca. 91355

(805) 253-7207
8-9 A.M.

Kenneth R. Kvammen
Assistant Deputy County Engineer
Sanitation Division

By J. Baiocco
Industrial Waste Engineering Inspector
Joseph C. Baiocco

COPY SENT TO CRWQCB L.A. REGION

INSPECTOR'S REPORT

TO: C. STOBERG

FROM: J. BRUCCO

FILE: I - 7554 - 70 PETROMINERAL CORP.
HASLEY CYN. OIL FIELD

DATE: 10-18-84

REPORT: AN INSPECTION WAS MADE AT THIS LOCATION ON 10-15-84. IT WAS FOUND THAT OILY MATERIAL IS BEING STORED WITHIN TWO(2) METAL RECTANGULAR CONTAINERS. MR. DAVE LIVINGSTONE FIELD PUMPER WAS QUESTIONED ABOUT THE MATERIAL. HE SAID THAT IT IS TANK BOTTOMS AND HE IS GOING TO USE IT FOR CONSTRUCTIVE PURPOSES.

MR. LIVINGSTONE WAS INSTRUCTED THAT THIS METHOD OF DISPOSAL WOULD REQUIRE CLEARANCE FROM THE STATE DEPT. OF HEALTH SERVICES AND REGIONAL WATER QUALITY CONTROL BOARD.

A "NOTICE" TO REMOVE THE MATERIAL WILL BE ISSUED (ATTACHED)

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
PROJECT PLANNING AND POLLUTION CONTROL DIVISION
CHEMICAL ANALYSIS REQUEST

County ENG.
0207.82

By PYLES, M.

Sample Source PETROMINERAL CORP.
Name and address or location

Sample Of *Industrial Waste* ☒ *Water* ☐ *Sewage* ☐ *Other* _____

If Industrial Waste
Type of Industry or Process WASTE WATER from Drilling Mud Burns Crist #9 WELL File No. I-7556-70 (specify)

Discharge *Surface* ☒ *Subsurface* ☐ *Sewer* ☐ *Stored-Hauled* ☐

Sampling Point UNLINE SUMP Burns Crist #9
Specific location in treatment or process

Sample *Marked* Petromineral *Quant.* 1 qt. *Temp. (F°)* 84° *Time* 12:30 pm. *Date* 5-14-84

Collector PYLES, MICHAEL Special Instructions None

Parameter	✓	Mg/1 or ppm	Parameter	✓	Mg/1 or ppm
Calcium (Ca)			Nickel (Ni)		
Magnesium (Mg)			Selenium (Se)		
Sodium (Na)			Chloride (Cl)	X	3700 mg/1
Potassium (K)			Sulfate (SO_4)		
Iron (Fe)			Bicarbonate (HCO_3)		
Manganese (Mn)			Carbonate (CO_3)		
Aluminum (Al)			Hydroxide (OH)		
Boron (B)			Fluoride (F)		
Chromium (Cr)			Phosphate (PO_4)		
Silica (Si)			Cyanide (CN)		
Arsenic (As)			Sulfide (H_2S)		
Barium (Ba)			Residual Chlorine (Cl_2)		
Cadmium (Cd)			Nitrate Nitrogen (NO_3-N)		
Copper (Cu)			Nitrite Nitrogen (NO_2-N)		
Lead (Pb)			Ammonia Nitrogen (NH_3-N)		
Mercury (Hg)			Organic Nitrogen (Org-N)		
Zinc (Zn)			Thiosulphate (S_2O_3)		
pH			Dissolved Oxygen (DO)		
Hardness (as $CaCO_3$)			Biochemical Oxygen Demand (BOD)		
Alkalinity (as $CaCO_3$)			Chemical Oxygen Demand (COD)		
Non-Carbonate Hardness			Dissolved Solids (Total)	X	7064 mg/1
Oil & Grease			Suspended Solids		
Phenols			Total Solids		
MBAS (surfactants Anionic)			Settleable Solids		
Turbidity			Color		
Conductance (micromhos)			Odor		
Sodium Ratio			Coliform		

Remarks _____

Date Received 5/14/84 Laboratory No. 51136 Analysis by Water Quality Lab. LACWCD Date Completed. 5/18/84

76C211F-CE 644 (Rev. 8/74) **FILE COPY** JUL 25 PAID

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
PROJECT PLANNING AND POLLUTION CONTROL DIVISION
CHEMICAL ANALYSIS REQUEST

County Eng.
0207.82

By BARCLO

Sample Source PETROMINERAL CORP.
Name and address or location

Sample Of *Industrial Waste* ☒ *Water* ☐ *Sewage* ☐ *Other* _____

If Industrial Waste
Type of Industry or Process WASTE WATER FROM DRILLING MUD SADD #4 WELL File No. I-7556-70 (specify)

Discharge *Surface* ☒ *Subsurface* ☐ *Sewer* ☐ *Stored-Hauled* ☐

Sampling Point Upline SUMP 100 YDS. NORTHEAST OF HASLEY CYN. & DEL VALLE RD.
Specific location in treatment or process

Sample *Marked* PETROMINERAL *Quant.* 1 QT. *Temp.* (F°) _____ *Time* 11:00AM *Date* 5/29/84

Collector M. PYLES Special Instructions _____

Parameter	✓	Mg/1 or ppm	Parameter	✓	Mg/1 or ppm
Calcium (Ca)			Nickel (Ni)		
Magnesium (Mg)			Selenium (Se)		
Sodium (Na)			Chloride (Cl)	X	11,250 mg/1
Potassium (K)			Sulfate (SO_4)		
Iron (Fe)			Bicarbonate (HCO_3)		
Manganese (Mn)			Carbonate (CO_3)		
Aluminum (Al)			Hydroxide (OH)		
Boron (B)			Fluoride (F)		
Chromium (Cr)			Phosphate (PO_4)		
Silica (Si)			Cyanide (CN)		
Arsenic (As)			Sulfide (H_2S)		
Barium (Ba)			Residual Chlorine (Cl_2)		
Cadmium (Cd)			Nitrate Nitrogen (NO_3-N)		
Copper (Cu)			Nitrite Nitrogen (NO_2-N)		
Lead (Pb)			Ammonia Nitrogen (NH_3-N)		
Mercury (Hg)			Organic Nitrogen (Org-N)		
Zinc (Zn)			Thiosulphate (S_2O_3)		
pH			Dissolved Oxygen (DO)		
Hardness (as $CaCO_3$)			Biochemical Oxygen Demand (BOD)		
Alkalinity (as $CaCO_3$)			Chemical Oxygen Demand (COD)		
Non-Carbonate Hardness			Dissolved Solids (TOTAL)	X	17,030 mg/1
Oil & Grease			Suspended Solids		
Phenols			Total Solids		
MBAS (surfactants Anionic)			Settleable Solids		
Turbidity			Color		
Conductance (micromhos)			Odor		
Sodium Ratio			Coliform		

Remarks _____

Date Received May 29, 1984 Laboratory No. 51157 Analysis by ~~Water Quality~~ Lab. LACFCD. Date Completed June 1, 1984

JUL 25 PAID

76C211F-CE 644 (Rev. 8/74)

FILE COPY

002325
PAT

SOIL BORING
GEOLOGIC REPORT

for

MCFARLAND ENERGY CO.
Hasley Canyon Oil Field
Castaic, California

July 23, 1987

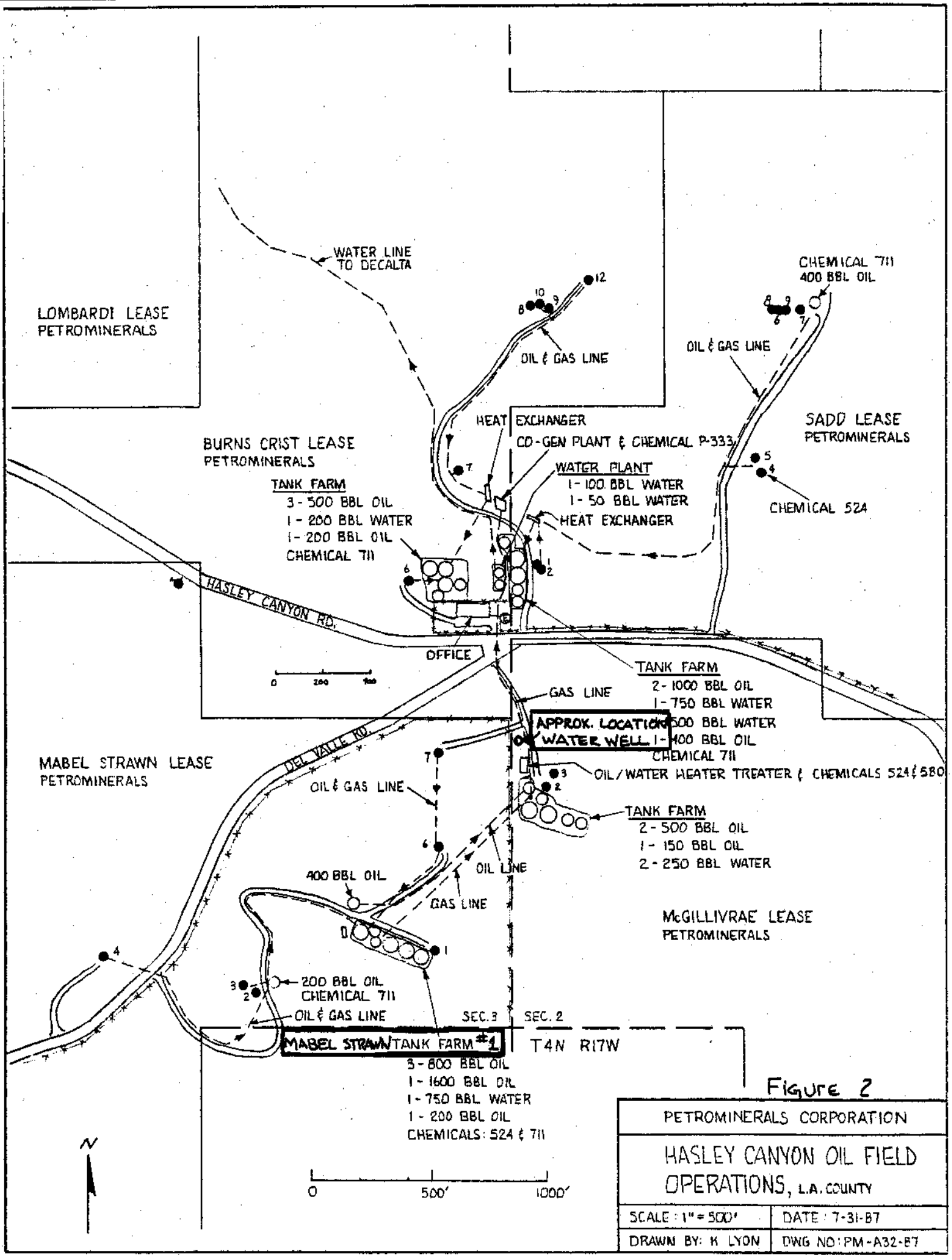

Figure 2

PETROMINERALS CORPORATION	
HASLEY CANYON OIL FIELD OPERATIONS, L.A. COUNTY	
SCALE: 1" = 500'	DATE: 7-31-87
DRAWN BY: K LYON	DWG NO: PM-A32-87

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DISPLAYS

Figure 1: Site Location Map
Figure 2A: Site Sketch - Burns Crist Tank Battery
Figure 2B: Site Sketch - Sadd Tank Battery
Figure 2C: Site Sketch - K.D. #2 Tank Battery
Figure 2D: Site Sketch - K.D. #1 Tank Battery
Figure 2E: Site Sketch McGillivrae #2 Tank Battery
Figure 3: Topographic Map
Appendix A: Boring Logs
Appendix B: Chain of Custody
Appendix C: Laboratory Results

PETROLEUM INDUSTRY CONSULTANTS, INC.
PIC

5455
GARDEN GROVE
BOULEVARD,
WESTMINSTER,
CALIFORNIA
92683

INTRODUCTION

Representatives of McFarland Oil Company contracted with Petroleum Industry Consultants (PIC) to perform a site investigation at the tank batteries for the Burns Crist, Sadd, Strawn, and McGillivrae leases in Sections 2 and 3, T4N-R17W, Los Angeles County, California (see Figure 1; Site Location Map). These leases are located in the Hasley Canyon Oil Field. The purpose of the investigation was to establish levels of petroleum hydrocarbons in the soil surrounding certain tanks in the above mentioned tank batteries. Thus, on July 13-14, 1987, seven vertical borings and two angle borings were drilled and soil samples were recovered to document the subsurface soil conditions under the tank batteries.

Petroleum Industry Consultants (PIC) was contracted (in-house job #552) to provide a geologist on site to: 1) log and sample the soil borings; 2) oversee subsequent laboratory testing of soil samples and 3) prepare this geologic report of drilling and laboratory results.

PROCEDURE

A Mobile B53 drilling rig was utilized to complete nine borings on July 13-14, 1987 (for boring locations see Figures 2A, 2B, 2C, 2D, and 2E; Site Sketch Maps and Figure 3; Topographic Map). Each boring, drilled with an outside diameter of eight inches, was logged off the auger from surface to total depth in accordance with the uniform soil code. The following table lists the borings, depths, and attitudes of the borings:

Boring	Lease/ Fig.	Attitude	Total Depth	Comments
B-1	BC/2A	Vertical	40'	No odor
B-2	BC/2A	Vertical	30'	No odor
B-3	SD/2B	Vertical	30'	Odor @ 10' only
B-4	SD/2B	Vertical	30'	No odor
B-5	BC/2A	Vertical	40'	No odor
B-6	MS/2C	15 East	20'	Exhibited odor throughout, drill refusal @ 20'
B-7	MS/2D	13 Southwest	30'	Drill refusal @ 30' - exhibited odor throughout
B-8	BC/2A	Vertical	30'	No odor
B-9	MG/2E	Vertical	30'	No odor

B-1 was drilled to 40' in an attempt to reach the water table. The water table was not encountered in any of the borings. B-5 was drilled to 40' because of a suspected odor of hydrocarbons in the cuttings. The two deviated borings (B-6 and B-7) were abandoned at 20' and 30' because of tight hole conditions and drill refusal in a very hard clay.

In all borings, samples were recovered at ten feet depth intervals below surface. Each sample was cored undisturbed in brass rings using a 3 inch split-spoon sampler. Lithology of the cuttings and field evidence of petroleum contamination were

recorded by depth for later analysis (see Appendix A; Boring Logs). These soil samples were sealed with teflon caps, placed in ice and transported to Chemical Research Laboratories for specified testing and analysis (see Appendix B; Chain of Custody).

DRILLING RESULTS AND GEOHYDROLOGY

Lithologic units observed in borings B-1, B-2, B-3, B-4, B-5, and B-8 were similar but not correlatable. The soils consist of Recent gravels and sands related to a fluvial environment deposited by Hasley Canyon Creek. The gravels and sands are mixed, poorly sorted, and generally unconsolidated. Lithologic units observed in borings B-6, B-7, and B-9 were silts, clays, and sands which outcrop nearby in the hills above Hasley Canyon.

Olfactory evidence of hydrocarbon contamination within 2'-3' of the surface was detected in borings B-5, B-6, B-7, B-8, and B-9. Borings B-6 and B-7 exhibited evidence of contamination to total depth. Cuttings from boring B-5 exhibited a suspicious odor but the core samples contained no such odor. Boring B-3 exhibited hydrocarbon odor at 10 feet but not above or below this depth. No groundwater was encountered in any of the borings. It is assumed that groundwater flow (gradient) is down Hasley Canyon toward the junction of Castaic Creek and the Santa Clara River.

TESTING AND RESULTS

Selected samples were transported to Chemical Research Laboratories, 11631 Seaboard Circle, Stanton, California for

specified quantitative testing for total petroleum hydrocarbons (crude oil) using EPA method 418.1 (see Appendix C; Laboratory Results). Of the nine borings only three exhibited evidence of significant petroleum hydrocarbon contamination (B-3, B-6, B-7).

Boring B-3: Apparent crude oil contamination was encountered only at the 10-15 feet depth interval adjacent to a buried crude oil storage tank in the Sadd Tank Battery. As a result, a surface spill is not a plausible explanation. More likely, the storage tank has a relatively small, subsurface leak.

Boring B-6: This angle boring was drilled adjacent to the K.D #2 tank on the Mable Strawn Tank Battery. The relatively low petroleum hydrocarbon values (30-190 ppm), the fact that values unexpectedly increased with depth, and the nature of the lithology (hard, native, clay) are anomalous (not easily explained). Perhaps this boring is located within the fringe or edge of a contamination plume under the K.D. tank. At any rate, the lateral and vertical extent of a potential contamination plume cannot be determined from this single boring.

Boring B-7: This angle boring was drilled adjacent to the K.D. #1 tank of the Mable Strawn Tank Battery. Surface contamination of the drill site was noted on the boring log from a truck fueling facility. This contamination decreased to nondectible levels by 10 feet (first core sample). Because the boring was deviated, by 20 feet a sample was recovered from below the K.D tank battery. Samples at both 20 and 30 feet exhibited significant levels of crude oil contamination (580 ppm) probably resulting from spillage/leakage near the surface. Unfortunately,

drill refusal at 30 feet prevented sampling deeper. As a result, the lateral and vertical extent of this contamination plume is not known.

This report is proprietary and confidential, to be delivered to, and intended for the exclusive use of, the above named client only. Petroleum Industry Consultants, Inc. assumes no responsibility nor liability for the reliance herein or use hereof by anyone other than the above named client. In addition, all of the lab work cited in this report was prepared under the supervision of Mike Hiatt of Chemical Research Laboratories, Stanton, and is solely responsible for the contents and conclusions of the laboratory data.

Should you have any additional questions or comments regarding the procedures or results outlined in this report, please do not hesitate to call us at 714/898-6399.

Respectfully submitted,

Matt E. Naftely

Matt E. Naftely
Staff Geologist

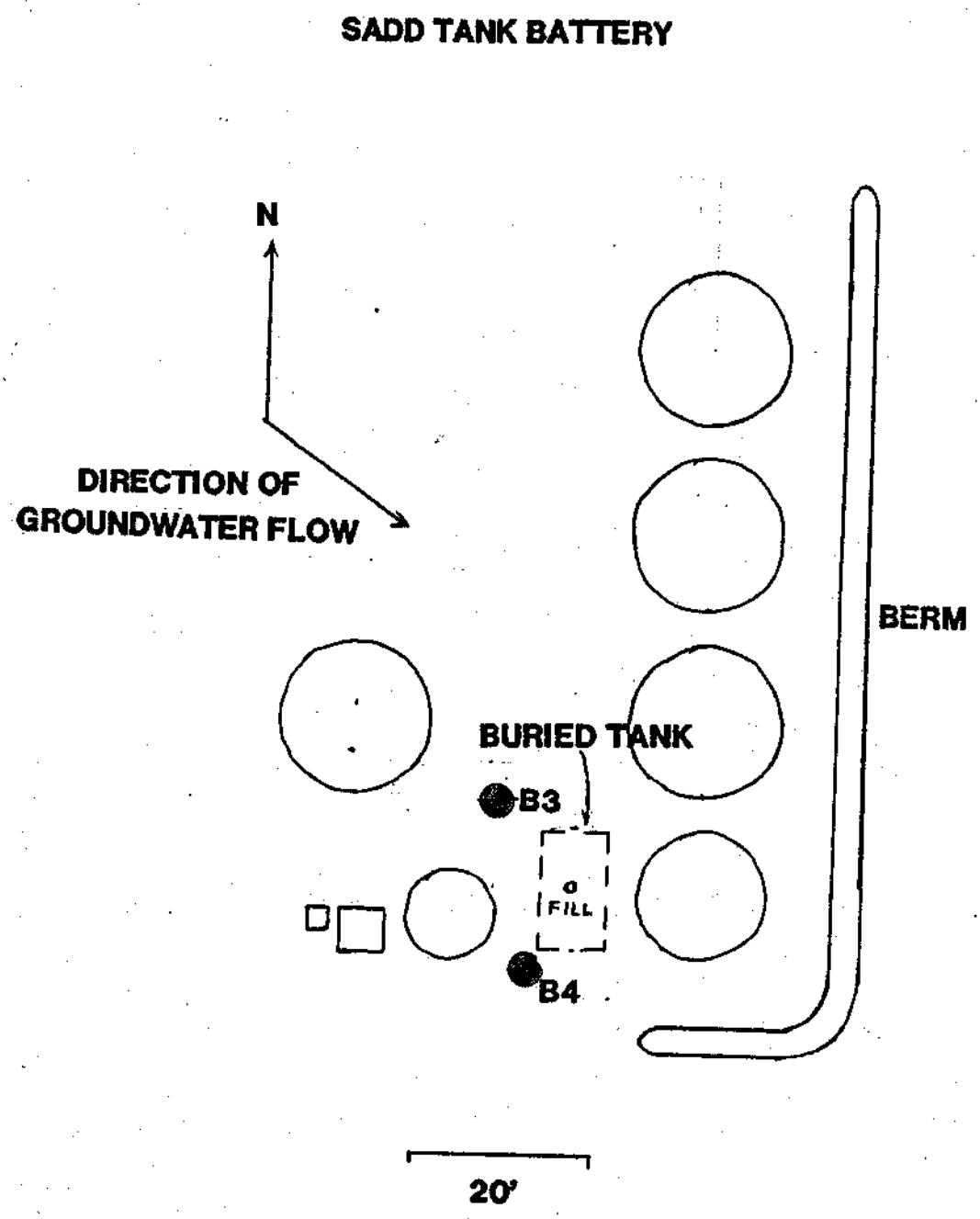
J. Tim Hersch

J. Tim Hersch
California Registered Geologist #4082
Operations Manager

T. W. Ehring
California Registered Geologist #487

JTH/ls

Figure 2B
Site Sketch Map



PETROLEUM INDUSTRY CONSULTANTS, INC.
WESTMINSTER, CA

MCFARLAND

Hasley Canyon Oil Field
Los Angeles Co., California

REVISED	BY	PREPARED BY	CHECKED BY R.W.	GEOLOGICAL DRAWING NUMBER
		SCALE	DATE 7/87	E 552

APPENDIX II

Building Permits/DOGGR Records

APPLICATION FOR BUILDING PERMIT

COUNTY OF LOS ANGELES — BUILDING AND SAFETY

WORKERS' COMPENSATION DECLARATION

I hereby affirm that I have a certificate of consent to self insure, or a certificate of Workers' Compensation Insurance, or a certified copy thereof (Sec. 3600, Lab. C.).

Policy No. _____ Company _____

☐ Certified copy is hereby furnished.

☐ Certified copy is filed with the county Building Inspection department.

Date _____ Applicant _____

CERTIFICATE OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

(This section need not be completed if the permit is for one hundred dollars ($100) or less.)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Laws.

X 2-25-86 Applicant [signature]

NOTICE TO APPLICANT: If after making this Certificate of Exemption you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

LICENSED CONTRACTORS DECLARATION

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

License Number _____ Lic. Class _____

Contractor _____ Date _____

☐ I am exempt under Sec. _____

B.&P.C. for the reason _____

Date _____

Signature _____

OWNER-BUILDER DECLARATION

I hereby affirm that I am exempt from the Contractor's License law for the following reason: (Section 7031.5, Business and Professions Code):

☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work and the structure is not intended or offered for sale (Section 7044, Business and Professions Code).

☒ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Section 7044, Business and Professions Code).

CONSTRUCTION LENDING AGENCY

I hereby affirm that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C.).

Lender's Name _____

Lender's Address _____

I certify that I have read the application and state that the above information is correct. I agree to comply with all County ordinances and State laws relating to building construction, and hereby authorize representatives of this County to enter upon the above mentioned property for inspection purposes.

X [signature] 2-25-86

Signature of Applicant or Agent — Date

FOR APPLICANT TO FILL IN

BUILDING ADDRESS: 29007 W Hasley Cyn Rd
CITY: Saugus CA ZIP 91351
SIZE OF LOT: _____ NO. OF BLDGS. NOW ON LOT: _____
TRACT: _____ BLOCK: _____ LOT NO.: _____
OWNER: Petromineracs TEL. NO.: 777-6570
ADDRESS: 12362 Beach Boulevard
CITY: Stanton CA ZIP 90680
ARCHITECT OR ENGINEER: _____ TEL. NO.: _____
ADDRESS: _____
CONTRACTOR: _____ TEL. NO.: _____
ADDRESS: _____ LIC. NO.: _____
CITY: _____ LIC. CLASS: _____

SQ. FT. SIZE	NO. OF STORIES	NO. OF FAMILIES	CHECK ONE
			NEW ☐
			ADD ☐
			ALTER ☐
			REPAIR ☒
			DEMOLISH ☐

DESCRIPTION OF WORK: Rehabilitation of Commercial Building

USE OF EXISTING BLDG.: OFFICES

APPLICANT OR PERMIT: David Knowlstone TEL. NO.: 323-222-8228

ADDRESS: 3312 N Theodore Cosmic

PRESENT BUILDING ADDRESS: Same

LOCALITY: _____

MOVING CONTRACTOR: _____ LIC. NO.: _____

ADDRESS: _____

REQUIRED SET BACK	YARD	WAY	DISTANCE FROM PROP. LINE	BLDG. WIDTH
FRONT				
SIDE				

P.C. Fee $ _____ Permit Fee 150.00
Inspection Fee 10.50
Investigation Fee _____ Total Fee 160.50

BUILDING ADDRESS: 29007 W Hasley Cyn Rd
LOCALITY: Saugus
NEAREST CROSS ST.: Dry Valley
ASSESSOR MAP BOOK NO. _____ BK. _____ PAGE _____ PARCEL _____
USE ZONE: A-2 MAP NO.: 27611093
SPECIAL CONDITIONS: _____

DISTRICT	GROUP	TYPE CONST.	FIRE ZONE	PROCESSED BY
8.2	1	V	4	Linden

STATISTICAL CLASSIFICATION: CLASS NO. 21 DWEL. UNITS 0 APT. _____ CONDO. _____

SEWER MAP: BK. _____ PG. _____

VALIDATION

VALUATION $ _____

$ _____

FINAL DATE 4-15-91

FINALED BY [signature]

LDMA Ref. # _____

LDMA Rec. # _____

LDMA Permit # _____

INSPECTOR COPY

SEE REVERSE FOR EXPLANATORY LANGUAGE

APPLICATION FOR BUILDING PERMIT

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
BUILDING AND SAFETY DIVISION

1

FOR APPLICANT TO FILL IN

BUILDING ADDRESS: 28831 HASLEY CYN RD
CITY: SAUGUS ZIP: 91350
SIZE OF LOT: 5 ACRES NO. OF BLDGS. NOW ON LOT: 1
TRACT: BLOCK: LOT NO.:
OWNER: John J. Sadd TEL. NO.:
ADDRESS:
CITY: Hollywood ZIP:
ARCHITECT OR ENGINEER: TEL. NO.:
ADDRESS:
CONTRACTOR: TEL. NO.:
ADDRESS: LIC. NO.:
CITY: LIC. CLASS:
CONSTRUCTION LENDER NAME AND BRANCH:
ADDRESS: CITY:

SQ. FT. SIZE	NO. OF STORIES	NO. OF FAMILIES	CHECK ONE
			NEW ☐
			ADD ☐
			ALTER ☐
			REPAIR ☐
			DEMOL. ☐

DESCRIPTION OF WORK: ADD 2 BEDROOMS APPROX. 300 SQ FT.
USE OF EXISTING BLDG.: S/F Home
APPLICANT (PRINT): Ken Smith TEL. NO.: 257 2942
BY (SIGNATURE): Ken Smith

I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE ABOVE IS CORRECT AND AGREE TO COMPLY WITH ALL ORDINANCES AND LAWS REGULATING BUILDING CONSTRUCTION. I CERTIFY THAT IN DOING THE WORK AUTHORIZED HEREBY I WILL NOT EMPLOY ANY PERSON IN VIOLATION OF THE LABOR CODE OF THE STATE OF CALIFORNIA IN RELATING TO WORKMEN'S COMPENSATION INSURANCE.

SIGNATURE OF PERMITTEE: Ken Smith
ADDRESS: 28831 Hasley Cyn Rd
CITY: SAUGUS TEL. NO.: 257 2942

VALUATION $ 1500.00

BUILDING ADDRESS: 28831 HASLEY CYN
LOCALITY: SAUGUS
NEAREST CROSS ST.:
ASSESSOR MAP BOOK: PAGE: PARCEL:

DISTRICT	GROUP	TYPE CONST.	FIRE ZONE	PROCESSED BY
8	2	I	V	FIP

STATISTICAL CLASSIFICATION: CLASS NO. 21 DWELL. UNITS: SEWER MAP BK. PG.
USE ZONE: A-2 MAP NO.: 270 H 093
SPECIAL CONDITIONS:
ROAD DEPARTMENT APPROVAL REQUIRED: YES ☐ NO ☐
BLDG. SETBACK FROM FRONT PROP. LINE OF: (STREET)

HIGHWAY	TOTAL SETBACK FROM FRONT PROP. LINE	TYPE OF HIGHWAY	EXISTING WIDTH

BLDG. SETBACK FROM SIDE PROP. LINE OF: (STREET)

HIGHWAY	TOTAL SETBACK FROM SIDE PROP. LINE	TYPE OF HIGHWAY	EXISTING WIDTH

CORNER CUTOFF: YES ☐ NO ☐
IN OPEN SPACE: YES ☐ NO ☐
IN COASTAL PERMIT ZONE: YES ☐ NO ☐

Abandoned 1/78
Marcia Hamilton
Gary Hamilton

FINAL DATE: BY:

P.C. Fee $ 14.40 Permit Fee 18.00
Issuance Fee 6.00
Total Fee 24.00

PLAN CHECK VALIDATION: M.O. CASH
PERMIT VALIDATION: M.O. CASH

C0 649277 MAY 24 23 A 14.401

INSPECTOR COPY

96X836A CE 7605A 8/76

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Burns Crest" 12,

A.P.I. No. 037-23269, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 28, 2003.

2. Site inspection made and approved May 14, 2003.

tkc

Hal Bopp
Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Hesson
(Typed Name of Deputy Supervisor)

OG169 (4/98)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Burns Crist" 10,

A.P.I. No. 037-29964, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 5, 2003, received May 13, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of the Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 16, 2003,

2. Site inspection made and approved May 14, 2003.

fkc

Hal Bopp
State Oil and Gas Supervisor

By (Signature of Deputy Supervisor)

Bruce H. Hierson
(Typed Name of Deputy Supervisor)

OG160 (4/00)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Burns Crist" 9,

A.P.I. No. 037-22944, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon Field Los Angeles County,

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 28, 2003.

2. Site inspection made and approved May 14, 2003.

Tkc

Hal Bopp
State Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Heaton
(Typed Name of Deputy Supervisor)

OG159 (4/98)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Burns Crist" 8,

A.P.I. No. 037-22867, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 18, 2003.

2. Site inspection made and approved May 14, 2003.

Tkc

Hal Bopp
(State Oil and Gas Supervisor)

By
(Signature of Deputy Supervisor)

Bruce H. Hesson
(Typed Name of Deputy Supervisor)

OG163 (4/94)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Sadd" 9,

A.P.I. No. 037-22870, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 21, 2003.

2. Site inspection made and approved May 14, 2003.

Tkc

Hal Bopp
State Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Hesson
(Typed Name of Deputy Supervisor)

OG159 (4/95)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Sadd" 8,

A.P.I. No. 037-22971, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 21, 2003.

2. Site inspection made and approved May 14, 2003.

Tkc

Hal Bopp
State Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Hesson
(Typed Name of Deputy Supervisor)

59 (4/88)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
650 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Sadd" 7

A.P.I. No. 037-22962, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 16, 2003.

2. Site inspection made and approved May 14, 2003.

Tkc

Hal Bopp
State Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Hesson
(Typed Name of Deputy Supervisor)

OG156 (4/98)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Sadd" 6,

A.P.I. No. 037-22954, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 21, 2003.

2. Site inspection made and approved May 14, 2003.

Tkc

Hal Bopp
State Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Heeson
(Typed Name of Deputy Supervisor)

OG153 (4/00)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1960
Glendale, CA 91203

Your report of the plugging and abandonment of well "Sadd" 5,

A.P.I. No. 037-22963, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County.

dated May 5, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 21, 2003.

2. Site inspection made and approved May 14, 2003.

Tkc

Hal Bopp
State Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Hasson
(Typed Name of Deputy Supervisor)

OG159 (4/98)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Ventura, California

May 20, 2003

Mr. Joseph J.Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT
550 N. Brand Blvd., #1980
Glendale, CA 91203

Your report of the plugging and abandonment of well "Sadd" 4

A.P.I. No. 037-22948, Section 2, T. 4N, R. 17W, SBB. & M.,

Hasley Canyon field Los Angeles County,

dated May 6, 2003, received May 12, 2003, has been

examined in conjunction with records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and filing of well records.

NOTES: 1. Surface plugging completed on April 9, 2003.

2. Site inspection made and approved May 14, 2003.

tkc

Hal Bopp
State Oil and Gas Supervisor

By
(Signature of Deputy Supervisor)

Bruce H. Hasson
(Typed Name of Deputy Supervisor)

OG189 (4/98)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-8

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)
00
(area code)
—
(new pool code)
05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Sadd" 4,
A.P.I. No. 037-22948 Sec. 2, T. 4N, R. 17W, SB B.&M.,
Hasley Canyon field, ——— area, Val Verde pool
Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5850'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs.,cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5361'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor

By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (6/96/GSR/5M) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-9

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)

00
(area code)

(new pool code)

05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Sadd" 5,
A.P.I. No. 037-22953 Sec. 2, T. 4N, R. 17W, SB B.&M.,
Hasley Canyon field, ——— area, Val Verde pool
Los Angeles County; dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5768'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs./cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5500'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor

By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (6/96/GSR/5M) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-10

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)
00
(area code)

(new pool code)
05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Sadd" 6, A.P.I. No. 037-22954 Sec. 2, T. 4N, R. 17W, SB B.&M., Hasley Canyon field, ——— area, Val Verde pool Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5768'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs./cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5500'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor

By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (6/96/GSR/SM) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-11

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)

00
(area code)

—
(new pool code)

05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Sadd" 7,
A.P.I. No. 037-29962 Sec. 2, T. 4N, R. 17W, SB B.&M.,
Hasley Canyon field, ——— area, Val Verde pool
Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5736'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs./cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5471'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor

By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (5/96/GSR/5M) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-12

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)
00
(area code)

(new pool code)
05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Sadd" 8,
A.P.I. No. 037-29971 Sec. 2, T. 4N, R. 17W, SB B.&M.,
Hasley Canyon field, ---------- area, Val Verde pool
Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5798'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs.,cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5463'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor
By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

DG111 (6/96/GSR/5M) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-13

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)
00
(area code)

(new pool code)
05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Sadd" 9,
A.P.I. No. 037-29970 Sec. 2, T. 4N, R. 17W, SB B.&M.,
Hasley Canyon field, ——— area, Val Verde pool
Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5838'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs.,cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5543'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor
By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

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RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-7

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)
00
(area code)
—
(new pool code)
05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Burns Crist" 12,
A.P.I. No. 037-23269 Sec. 2, T. 4N, R. 17W, SB B.&M.,
Hasley Canyon field, ——— area, Val Verde pool
Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5638'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs.,cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5372'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH R. HENDERSON,
Acting State Oil & Gas Supervisor

By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (6/96/GSR/5M) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-6

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)
00
(area code)
—
(new pool code)
05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Burns Crist" 10, A.P.I. No. 037-29964 Sec. 2, T. 4N, R. 17W, SB B.&M., Hasley Canyon field, ——— area, Val Verde pool Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5634'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs.,cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5323'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor
By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (6/96/GSR/5M) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-5

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)
00
(area code)
—
(new pool code)
05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Burns Crist" 9, A.P.I. No. 037-22944-01 Sec. 2, T. 4N, R. 17W, SB B.&M., Hasley Canyon field, ——— area, Val Verde pool Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5805'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs.,cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5405'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor

By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (6/96/GSR/5M) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

No. P203-4

PERMIT TO CONDUCT WELL OPERATIONS

298
(field code)

00
(area code)

—
(new pool code)

05
(old pool code)

Mr. Joseph J. Grigg, Jr., Agent
Long Beach Oil Development Company
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
January 21, 2003

Your _____ proposal to plug and abandon well "Burns Crist" 8,
A.P.I. No. 037-22967 Sec. 2, T. 4N, R. 17W, SB B.&M.,
Hasley Canyon field, ——— area, Val Verde pool
Los Angeles County, dated 01-16-2003 received 01-17-2003 has been examined in conjunction with records filed in this office.

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Blowout prevention equipment conforming to DOGGR Class II 2M requirements shall be installed and maintained in operating conditions at all times.
2. Hole fluid of a quality and in sufficient quantity is used to control all subsurface conditions in order to prevent blowouts.
3. A diligent effort shall be made to clean out the well to at least 5730'.
4. All portions of the well not plugged with cement are filled with inert mud fluid having a minimum density of 72lbs.,cu. ft and a minimum gel shear strength of 25lbs./100 sq. ft.
5. Any sump used during these operations shall be thoroughly cleaned and filled with earth as soon as operations are completed.
6. Well site restoration is completed with 60 days following the plugging and abandonment of the well.
7. This office shall be consulted before deviating from the proposed abandonment program.
8. This office shall be consulted before initiating any changes or additions to this proposed operation, or f operations are to be suspended.
9. **THIS DIVISION SHALL BE NOTIFIED:**
   a. To inspect the installed blowout prevention equipment prior to commencing downhole operations.
   b. To witness the location and hardness of the cement plug at 5292'.
   c. To witness the mudding of the well.
   d. To witness the location and hardness of the cement plug at 2900'.
   e. To witness the placing of the surface plug or to verify its location.
   f. To inspect and approve the cleanup of the wellsite before approval of abandonment will be issued.

SAF:sf

Engineer Steven A. Fields

Phone (805) 654-4761

KENNETH P. HENDERSON,
Acting State Oil & Gas Supervisor

By _____
Acting Deputy Supervisor

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

OG111 (6/96/GSR/SM) Printed on recycled paper.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-076**

Report on Operations

Mr. Joseph J. Grigg, Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Burns Crist" 12**, API No. **037-23269**, Sec. **2**, T. **4N**, R.**17W**, S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **05-01-2003**. **Steve Mulqueen**, representative of the supervisor, was present from **1200** to **1300**. There were also present **Orchel Krier**.

Present condition of well: **16" cem 40'; 10 ¾" cem 602'; 7" cem 5495' WSO, cp @ 100', perf 5472'-5473'; 5 ½" ld 5413'-5638', perf 5427'-5492' & 5502'-5637'. TD 5748'. Plugged w/ cem 5607'-5267', 3192'-2807' & 100'-surface.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. T203-104

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 19, 2003

Your operations at well **"Burns Crist" 10**, API No. **037-29964**, Sec. 2, T. 4N, R.17W, S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **05-05-2003**. **Steve Mulqueen**, representative of the supervisor, was present from **1000** to **1100**. There were also present **Phil Mathews**.

Present condition of well: **16" cem 50'; 10 ¾" cem 590'; 7" cem 5530' WSO, cp 100'; 5 ½" ld 5423'-5654', perfs @ int 5435'-5654'. TD 5831'. Plugged w/ cem 5830'-5660', 5637'-5313', 3000'-2882' & 100'-surface.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-079**

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Burns Crist" 9,** API No. **037-22944**, Sec. 2, T. 4N, R.17W, S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **05-05-2003**. **Steve Mulqueen,** representative of the supervisor, was present from **1000** to **1100**. There were also present **Orchel Krier.**

Present condition of well: **16" cem 40'; 10 ¾" cem 607'; 7" cem 5610', cp @ 100'; 5 ½" ld 5500'-5805', perf 5514'-5605' & 5615'-5805'. TD 5832'. Plugged w/ cem 5832'-5404', 3000'-2641' & 100'-surface.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-082**

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Burns Crist" 8,** API No. **037-22967,** Sec. **2,** T. **4N,** R.**17W,** S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **05-01-2003. Steve Mulqueen,** representative of the supervisor, was present from **1200** to **1300.** There were also present **Phil Mathews.**

Present condition of well: **16" cem 50'; 10 ¾" cem 595'; 7" cem 5502', cp @ 100'; 5 ½" ld 5392'-5730', perf 5407'-5497' & 5507'-5730'. TD 5800'. Plugged w/ cem 5721'-5120', 3000'-2890' & 100'-surface.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-072**

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Sadd" 9**, API No. **037-29970**, Sec. **2**, T. **4N**, R.**17W**, S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **04-28-2003**. **Anne Anderle,** representative of the supervisor, was present from **1600** to **1615**. There were also present **Lyle Bowen.**

Present condition of well: **16" cem 54'; 10" cem 610'; 7" cem 5750', cp @ 100'; 5 ½" ld 5643'-5838', perf 5655'-5745' & 5755'-5838'. TD 5950'. Plugged w/ cem 5950'-5287', 3000'-2817' & 100'-5'.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-078**

Report on Operations

Mr. Joseph J. Grigg, Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Sadd" 8,** API No. **037-29971,** Sec. **2,** T. **4N,** R.**17W,** S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **05-01-2003**. **Steve Mulqueen,** representative of the supervisor, was present from **1200** to **1300**. There were also present **Lyle Bowen.**

Present condition of well: **16" cem 50'; 10 ¾" cem 625'; 7" cem 5680' WSO, cp 100'; 5 ½" ld 5563'-5798', perfs @ int 5579'-5798'. TD 5880'. Plugged w/ cem 5803'-5244', 3000'-2858' & 100'-surface.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-071**

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Sadd" 7**, API No. **037-29962**, Sec. **2**, T. **4N**, R.**17W**, S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **04-28-2003**. **Anne Anderle**, representative of the supervisor, was present from **1645** to **1700**. There were also present **Lyle Bowen**.

Present condition of well: **16" cem 40'; 10 ¾" cem 590'; 7" cem 5676', WSO perf @ 5581', cp @ 100'; 5 ½" ld 5571'-5736', perf 5581'-5736'. TD 5850'. Plugged w/ cem 5844'-5750', 5731'-5328', 3000'-2852' & 100'-5'.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-073**

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Sadd" 6,** API No. **037-29954,** Sec. **2,** T. **4N,** R.**17W,** S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **04-30-2003. Anne Anderle,** representative of the supervisor, was present from **1600** to **1615.** There were also present **Lyle Bowen.**

Present condition of well: **16" cem 40'; 10 ¾" cem 604'; 7" cem 5710', cp @ 100'; 5 ½" ld 5600'-5768', perf 5616'-5705' & 5717'-5768'. TD 5900'. Plugged w/ cem 5900'-5286', 3000'-2688' & 100'-5'.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-070**

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Sadd" 5**, API No. **037-29953**, Sec. **2**, T. **4N**, R.**17W**, S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **04-28-2003**. **Anne Anderle**, representative of the supervisor, was present from **1630** to **1645**. There were also present **Lyle Bowen.**

Present condition of well: **16" cem 40'; 10 ¾" cem 580'; 7" cem 5674', WSO @ 5579', cp @ 100'; 5 ½" ld 5566'-5774', perf 5579'-5668' & 5679'-5774'. TD 6000'. Plugged w/ cem 5994'-5250', 3000'-2836' & 100'-5'.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND
GEOTHERMAL RESOURCES

No. **T203-074**

Report on Operations

Mr. Joseph J. Grigg, Jr., Agent
LONG BEACH OIL DEVELOPMENT COMPANY
550 N. Brand Blvd., #1960
Glendale, CA 91203

Ventura, California
May 6, 2003

Your operations at well **"Sadd" 4**, API No. **037-29948**, Sec. **2**, T. **4N**, R.**17W**, S.B.B.&M. **Hasley Canyon** Field, in **Los Angeles** County, were witnessed on **04-28-2003**. **Anne Anderle,** representative of the supervisor, was present from **1615** to **1630**. There were also present **Lyle Bowen.**

Present condition of well: **16" cem 40'; 10 ¾" cem 641'; 7" cem 5570'; cp @ 100'; 5 ½" ld 5461'-5850', perf 5475'-5565' & 5575'-5850'. TD 5950'. Plugged w/ cem 5800'-4862', 3000'-2863' & 100'-5'.**

The operations were performed for the purpose of **abandonment.**

DECISION:

The plugging operations as witnessed and reported are approved.

tkc

Hal Bopp
State Oil and Gas Supervisor

By _____
Bruce H. Hesson
Deputy Supervisor

OG109 (Modified 2000)

APPENDIX III

Environmental Records Database

The EDR Radius Map
with GeoCheck®

Hasley Canyon Land Company, LLC
Vicinity of Hasley Canyon
Los Angeles County, CA 91384

Inquiry Number: 01010666.1r

July 11, 2003

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06890

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-MSR

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

VICINITY OF HASLEY CANYON
LOS ANGELES COUNTY, CA 91384

COORDINATES

Latitude (North):	34.457700 - 34' 27' 27.7"
Longitude (West):	118.633900 - 118' 38' 2.0"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	349916.2
UTM Y (Meters):	3813921.8
Elevation:	1346 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	2434118-D6 VAL VERDE, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

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 ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-SQG..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

AWP..... Annual Workplan Sites

Cal-Sites ..... Calsites Database
CHMIRS ..... California Hazardous Material Incident Report System
Cortese ..... "Cortese" Hazardous Waste & Substances Sites List
Notify 65 ..... Proposition 65 Records
Toxic Pits ..... Toxic Pits Cleanup Act Sites
SWF/LF ..... Solid Waste Information System
WMUDS/SWAT ..... Waste Management Unit Database
LUST ..... Leaking Underground Storage Tank Information System
CA BOND EXP. PLAN ..... Bond Expenditure Plan
UST ..... List of Underground Storage Tank Facilities
VCP ..... Voluntary Cleanup Program Properties
INDIAN UST ..... Underground Storage Tanks on Indian Land
CA FID UST ..... Facility Inventory Database
HIST UST ..... Hazardous Substance Storage Container Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT ..... Superfund (CERCLA) Consent Decrees
ROD ..... Records Of Decision
Delisted NPL ..... National Priority List Deletions
HMIRS ..... Hazardous Materials Information Reporting System
MLTS ..... Material Licensing Tracking System
MINES ..... Mines Master Index File
NPL Liens ..... Federal Superfund Liens
PADS ..... PCB Activity Database System
DOD ..... Department of Defense Sites
RAATS ..... RCRA Administrative Action Tracking System
TRIS ..... Toxic Chemical Release Inventory System
TSCA ..... Toxic Substances Control Act
SSTS ..... Section 7 Tracking Systems
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST ..... Aboveground Petroleum Storage Tank Facilities
CLEANERS ..... Cleaner Facilities
CA WDS ..... Waste Discharge System
DEED ..... List of Deed Restrictions
SCH ..... School Property Evaluation Program
NFA ..... No Further Action Determination
REF ..... Unconfirmed Properties Referred to Another Agency
NFE ..... Properties Needing Further Evaluation
CA SLIC ..... Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
HAZNET ..... Hazardous Waste Information System
LOS ANGELES CO. HMS ..... HMS: Street Number List
LA Co. Site Mitigation ..... Site Mitigation List
AOCONCERN ..... San Gabriel Valley Areas of Concern

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas ..... Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

VCP ..... Voluntary Cleanup Program Properties

EXECUTIVE SUMMARY

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS 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. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-LQG list, as provided by EDR, and dated 05/09/2003 has revealed that there is 1 RCRIS-LQG site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
COSMIC PLASTICS	***28410 INDUSTRY DR***	***1/4 - 1/2 SSE***	***1***	***6***

FEDERAL ASTM SUPPLEMENTAL

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 03/19/2003 has revealed that there is 1 FINDS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
COSMIC PLASTICS	***28410 INDUSTRY DR***	***1/4 - 1/2 SSE***	***1***	***6***

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
PPG INDUSTRIES INC WORKS 24	RCRIS-SQG, FINDS, RCRIS-TSD, CORRACTS, CERC-NFRAP, LOS ANGELES CO. HMS
PIER 3, NAVAL STATION LONG BEACH	HAZNET, CHMIRS
LA CO FD FIRE STATION #077	LUST, LOS ANGELES CO. HMS
ALISO CANYON	HIST UST
ADVANCED WALK-IN CHIROPRACTIC	HAZNET
CANYON ENGINEERING PRODUCTS	RCRIS-SQG, FINDS, HAZNET
SHELL SERVICE STATION	RCRIS-SQG
DEPARTMENT OF TRANSPORTATION	RCRIS-SQG, FINDS
SECOND SIGHT LLC	RCRIS-SQG, FINDS
UNOCAL - DEL VALLE	CA SLIC

OVERVIEW MAP - 01010666.1r - California Environmental

★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Coal Gasification Sites

National Priority List Sites

Landfill Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Oil & Gas pipelines

100-year flood zone

500-year flood zone

Areas of Concern

N

TARGET PROPERTY:	Hasley Canyon Land Company, LLC	CUSTOMER:	California Environmental
ADDRESS:	Vicinity of Hasley Canyon	CONTACT:	Christopher Rude
CITY/STATE/ZIP:	Los Angeles County CA 91384	INQUIRY #:	01010666.1r
LAT/LONG:	34.4577 / 118.6339	DATE:	July 11, 2003 12:41 pm

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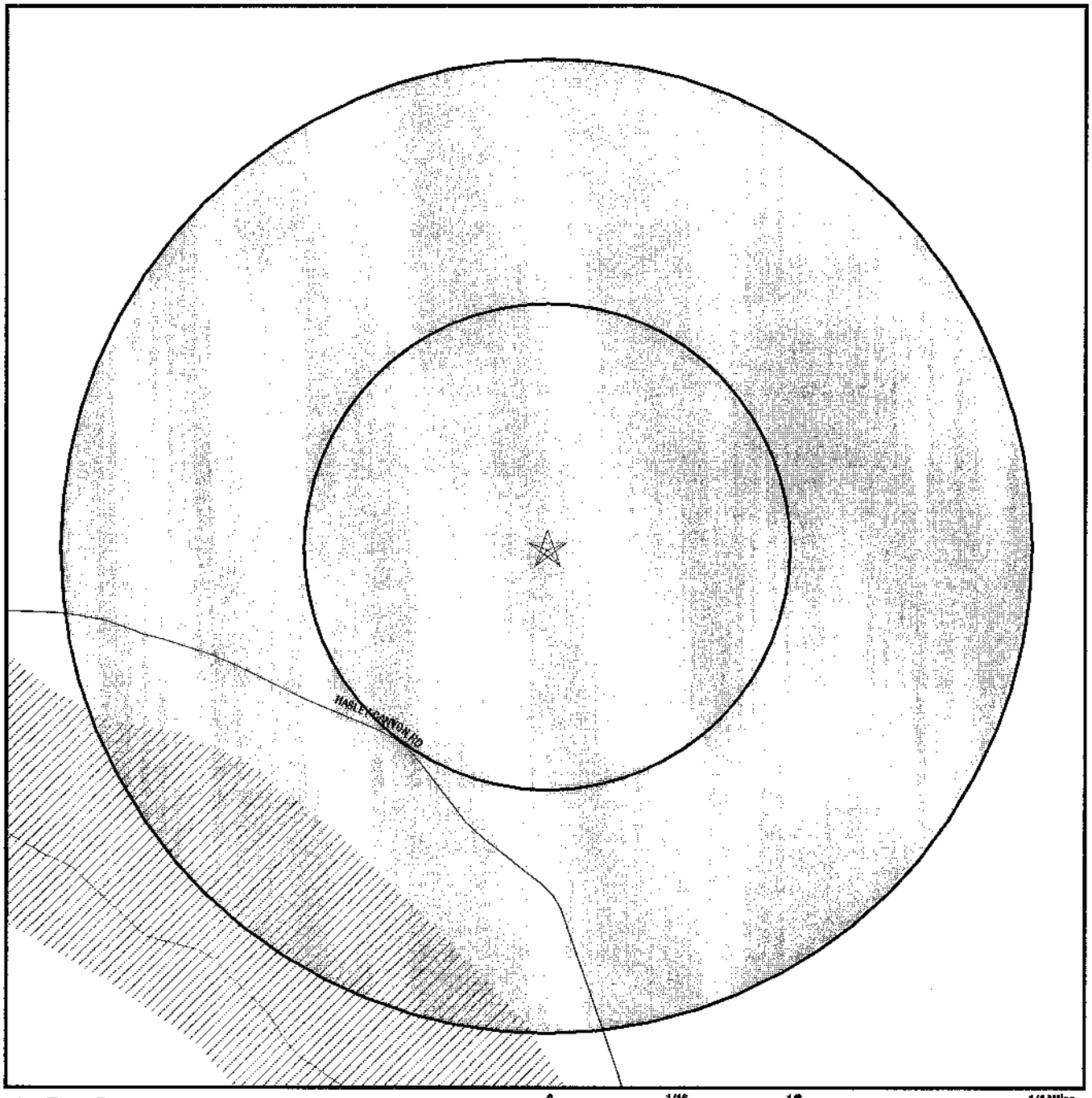
DETAIL MAP - 01010666.1r - California Environmental



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
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	Hasley Canyon Land Company, LLC	CUSTOMER:	California Environmental
ADDRESS:	Vicinity of Hasley Canyon	CONTACT:	Christopher Rude
CITY/STATE/ZIP:	Los Angeles County CA 91384	INQUIRY #:	01010666.1r
LAT/LONG:	34.4577 / 118.6339	DATE:	July 11, 2003 12:42 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		1.000	0	0	0	0	NR	0
RCRIS Lg. Quan. Gen.		0.500	0	0	1	NR	NR	1
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		0.250	0	0	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
CHMIRS		0.125	0	NR	NR	NR	NR	0
Cortese		0.500	0	0	0	NR	NR	0
Notify 65		0.250	0	0	NR	NR	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
UST		0.250	0	0	NR	NR	NR	0
VCP		1.000	0	0	0	0	NR	0
INDIAN UST		TP	NR	NR	NR	NR	NR	0
CA FID UST		0.250	0	0	NR	NR	NR	0
HIST UST		TP	NR	NR	NR	NR	NR	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		0.500	0	0	1	NR	NR	1
HMIRS		0.125	0	NR	NR	NR	NR	0
MLTS		0.250	0	0	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		1.000	0	0	0	0	NR	0
PADS		0.500	0	0	0	NR	NR	0
DOD		TP	NR	NR	NR	NR	NR	0
RAATS		0.500	0	0	0	NR	NR	0
TRIS		0.500	0	0	0	NR	NR	0
TSCA		0.500	0	0	0	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		0.125	0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CLEANERS		0.250	0	0	NR	NR	NR	0
CA WDS		0.250	0	0	NR	NR	NR	0
DEED		TP	NR	NR	NR	NR	NR	0
SCH		TP	NR	NR	NR	NR	NR	0
NFA		TP	NR	NR	NR	NR	NR	0
REF		TP	NR	NR	NR	NR	NR	0
NFE		TP	NR	NR	NR	NR	NR	0
CA SLIC		0.500	0	0	0	NR	NR	0
HAZNET		0.250	0	0	NR	NR	NR	0
Los Angeles Co. HMS		0.250	0	0	NR	NR	NR	0
LA Co. Site Mitigation		0.500	0	0	0	NR	NR	0
AOCONCERN		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.000	0	0	0	0	NR	0
BROWNFIELDS DATABASES								
VCP		1.000	0	0	0	0	NR	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

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1 **SSE** **1/4-1/2** **2162 ft.**	**COSMIC PLASTICS** **28410 INDUSTRY DR** **VALENCIA, CA 91355**	**FINDS** **RCRIS-LQG**	**1004677528** **CAR000098475**

Relative:
Lower

Actual:
1142 ft.

RCRIS:

Owner: LILLIAN LUH
(661) 257-3274

EPA ID: CAR000098475

Contact: DAVE HARRELL
(661) 257-3274

Classification: Large Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site:
Facility Registry System (FRS)
Resource Conservation and Recovery Act Information system (RCRAINFO)

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CASTAIC	S103648602	ADVANCED WALK-IN CHIROPRACTIC	27305 HASLEY CANYON ROAD	91384	HAZNET
CASTAIC	1006805318	SHELL SERVICE STATION	31428 RIDGE ROUTE	91384	RCRIS-SQG
CASTAIC	S102064869	LA CO FD FIRE STATION #077	47376 RIDGE ROUTE RD	91384	LUST, LOS ANGELES CO. HMS
LOS ANGELES CO.	S103878697	UNOCAL - DEL VALLE	DEL VALLE	91384	CA SLIC
LOS ANGELES COUNTY	S105632221		PIER 3, NAVAL STATION LONG BEACH		HAZNET, CHMIRS
NORTHRIDGE	U001568063	ALISO CANYON	MAIN PLANT @ 12801 TAMPA AVE	91384	HIST UST
SANTA CLARITA	1005441285	DEPARTMENT OF TRANSPORTATION	RTE 5 MAGIC MOUNTAIN PKWY EXIT	91355	RCRIS-SQG, FINDS
VALENCIA	1004677117	SECOND SIGHT LLC	28460 AVE STANFORD STE 200	91355	RCRIS-SQG, FINDS
VALENCIA	1001967506	CANYON ENGINEERING PRODUCTS	24773 AVE ROCKEFELLER	91355	RCRIS-SQG, FINDS, HAZNET
VALENCIA	1000119892	PPG INDUSTRIES INC WORKS 24	25663 W AVE STANFORD	91355	RCRIS-SQG, FINDS, RCRIS-TSD, CORRACTS, CERC-NFRAP, LOS ANGELES CO. HMS

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.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
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: 04/30/03
Date Made Active at EDR: 06/02/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 05/05/03
Elapsed ASTM days: 28
Date of Last EDR Contact: 05/09/03

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 04/30/03
Date Made Active at EDR: 06/02/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 05/05/03
Elapsed ASTM days: 28
Date of Last EDR Contact: 05/05/03

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
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: 03/19/03
Date Made Active at EDR: 04/08/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 03/24/03
Elapsed ASTM days: 15
Date of Last EDR Contact: 06/23/03

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 03/19/03
Date Made Active at EDR: 04/08/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/24/03
Elapsed ASTM days: 15
Date of Last EDR Contact: 06/23/03

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/31/03
Date Made Active at EDR: 05/08/03
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/07/03
Elapsed ASTM days: 31
Date of Last EDR Contact: 06/09/03

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS 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).

Date of Government Version: 05/09/03
Date Made Active at EDR: 07/01/03
Database Release Frequency: Varies

Date of Data Arrival at EDR: 05/09/03
Elapsed ASTM days: 53
Date of Last EDR Contact: 06/26/03

ERNS: Emergency Response Notification System
Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/02
Date Made Active at EDR: 02/03/03
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/03
Elapsed ASTM days: 7
Date of Last EDR Contact: 04/28/03

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
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: 12/31/99
Database Release Frequency: Biennially

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
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: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision
Source: EPA
Telephone: 703-416-0223
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: 01/09/03
Database Release Frequency: Annually

Date of Last EDR Contact: 04/07/03
Date of Next Scheduled EDR Contact: 07/07/03

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
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: 04/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/05/03
Date of Next Scheduled EDR Contact: 08/04/03

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
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: 03/19/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/07/03
Date of Next Scheduled EDR Contact: 07/07/03

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 01/31/03
Database Release Frequency: Annually

Date of Last EDR Contact: 04/30/03
Date of Next Scheduled EDR Contact: 07/21/03

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
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: 04/23/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/07/03
Date of Next Scheduled EDR Contact: 07/07/03

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 03/11/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/31/03
Date of Next Scheduled EDR Contact: 06/30/03

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (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 receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-564-3887
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: 03/26/03
Database Release Frequency: Annually
Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 08/11/03

DOD: Department of Defense Sites
Source: USGS
Telephone: 703-648-5920
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: 04/01/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 08/11/03

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
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: 04/17/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-260-1531
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: 12/31/00
Database Release Frequency: Annually
Date of Last EDR Contact: 06/27/03
Date of Next Scheduled EDR Contact: 09/22/03

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
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: 12/31/98
Database Release Frequency: Every 4 Years
Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 04/15/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

SSTS: Section 7 Tracking Systems
Source: EPA
Telephone: 202-564-5008
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: 12/31/00
Database Release Frequency: Annually
Date of Last EDR Contact: 05/09/03
Date of Next Scheduled EDR Contact: 07/21/03

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
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: 04/15/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 03/31/03
Date Made Active at EDR: 04/25/03
Database Release Frequency: Annually
Date of Data Arrival at EDR: 04/07/03
Elapsed ASTM days: 18
Date of Last EDR Contact: 04/07/03

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
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.

Date of Government Version: 04/28/03
Date Made Active at EDR: 06/23/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/02/03
Elapsed ASTM days: 21
Date of Last EDR Contact: 06/02/03

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/01
Date Made Active at EDR: 01/15/03
Database Release Frequency: Varies
Date of Data Arrival at EDR: 12/02/02
Elapsed ASTM days: 44
Date of Last EDR Contact: 05/27/03

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-9100
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: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 04/29/03

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 04/21/03

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
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: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 05/05/03

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
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: 06/13/03
Date Made Active at EDR: 07/07/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/16/03
Elapsed ASTM days: 21
Date of Last EDR Contact: 06/16/03

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
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: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 06/17/03

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
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.

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/25/03
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 9
Date of Last EDR Contact: 04/16/03

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
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: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 04/02/03
Date Made Active at EDR: 04/30/03
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 04/16/03
Elapsed ASTM days: 14
Date of Last EDR Contact: 04/16/03

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
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: 04/28/03
Date Made Active at EDR: 06/12/03
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 06/02/03
Elapsed ASTM days: 10
Date of Last EDR Contact: 06/02/03

INDIAN UST: Underground Storage Tanks on Indian Land
Source: EPA Region 9
Telephone: 415-972-3368

Date of Government Version: N/A
Date Made Active at EDR: N/A
Database Release Frequency: Varies
Date of Data Arrival at EDR: N/A
Elapsed ASTM days: 0
Date of Last EDR Contact: N/A

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
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: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
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: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-341-5712
Registered Aboveground Storage Tanks.

Date of Government Version: 05/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 05/05/03
Date of Next Scheduled EDR Contact: 08/04/03

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
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: 03/11/03
Database Release Frequency: Annually
Date of Last EDR Contact: 04/07/03
Date of Next Scheduled EDR Contact: 07/07/03

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/23/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 04/04/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/07/03
Date of Next Scheduled EDR Contact: 07/07/03

NFA: No Further Action Determination
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

REF: Unconfirmed Properties Referred to Another Agency
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

SCH: School Property Evaluation Program
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
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: 04/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

NFE: Properties Needing Further Evaluation
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process. PEA In Progress indicates properties where DTSC is currently conducting a PEA. PEA Required indicates properties where DTSC has determined a PEA is required, but not currently underway.

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
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: 12/31/01
Database Release Frequency: Annually

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/11/03

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/02/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 07/28/03

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 11/26/02
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 07/28/03

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 06/16/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/05/03
Date of Next Scheduled EDR Contact: 09/01/03

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/28/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/28/03
Date of Next Scheduled EDR Contact: 08/11/03

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 03/25/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 12/01/02
Database Release Frequency: Varies

Date of Last EDR Contact: 05/19/03
Date of Next Scheduled EDR Contact: 08/18/03

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-607-2239

Date of Government Version: 03/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/19/03
Date of Next Scheduled EDR Contact: 08/18/03

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 05/30/02
Database Release Frequency: Annually

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 02/25/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/19/03
Date of Next Scheduled EDR Contact: 08/18/03

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 03/01/02
Database Release Frequency: Varies

Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 02/27/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 05/19/03
Date of Next Scheduled EDR Contact: 08/18/03

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/07/03
Database Release Frequency: Annually
Date of Last EDR Contact: 05/19/03
Date of Next Scheduled EDR Contact: 08/18/03

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-972-3178
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 07/06/99
Date of Next Scheduled EDR Contact: N/A

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 03/04/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 05/05/03
Date of Next Scheduled EDR Contact: 08/04/03

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/31/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 03/31/03
Date of Next Scheduled EDR Contact: 06/30/03

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 03/31/03
Database Release Frequency: Annually
Date of Last EDR Contact: 03/31/03
Date of Next Scheduled EDR Contact: 06/30/03

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/11/03
Date of Next Scheduled EDR Contact: 09/08/03

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/27/01
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/11/03
Date of Next Scheduled EDR Contact: 09/08/03

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 10/24/00
Database Release Frequency: Annually

Date of Last EDR Contact: 06/11/03
Date of Next Scheduled EDR Contact: 09/08/03

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 02/03/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/23/03
Date of Next Scheduled EDR Contact: 09/22/03

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/03/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/21/03
Date of Next Scheduled EDR Contact: 07/21/03

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 05/30/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/21/03
Date of Next Scheduled EDR Contact: 07/21/03

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 04/02/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/05/03
Date of Next Scheduled EDR Contact: 08/04/03

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 04/03/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/05/03
Date of Next Scheduled EDR Contact: 08/04/03

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
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: 04/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies
Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
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: 03/31/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/16/03
Date of Next Scheduled EDR Contact: 07/07/03

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 06/20/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 03/17/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 03/13/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/28/03
Date of Next Scheduled EDR Contact: 07/28/03

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 06/16/03
Database Release Frequency: Annually
Date of Last EDR Contact: 05/07/03
Date of Next Scheduled EDR Contact: 07/14/03

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 01/08/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 03/31/03
Date of Next Scheduled EDR Contact: 06/30/03

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 12/11/02
Database Release Frequency: Annually
Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 12/20/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 12/18/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 04/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/28/03
Date of Next Scheduled EDR Contact: 07/28/03

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/07/03
Date of Next Scheduled EDR Contact: 07/07/03

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 09/01/02
Database Release Frequency: Annually
Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 03/10/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/15/03
Date of Next Scheduled EDR Contact: 09/15/03

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/30/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/15/03
Date of Next Scheduled EDR Contact: 07/14/03

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
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: 02/11/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/16/03
Date of Next Scheduled EDR Contact: 09/15/03

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 10/28/02
Database Release Frequency: Annually
Date of Last EDR Contact: 04/21/03
Date of Next Scheduled EDR Contact: 07/21/03

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
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: 02/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 03/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/15/03
Date of Next Scheduled EDR Contact: 07/14/03

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 05/19/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 05/19/03
Date of Next Scheduled EDR Contact: 08/18/03

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-266-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 08/09/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/31/03
Date of Next Scheduled EDR Contact: 06/30/03

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 04/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/08/03
Date of Next Scheduled EDR Contact: 07/07/03

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 06/09/03
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/07/03
Date of Next Scheduled EDR Contact: 07/07/03

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 05/29/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 05/14/03
Date of Next Scheduled EDR Contact: 07/07/03

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 07/02/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 03/31/03
Date of Next Scheduled EDR Contact: 06/30/03

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
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: 06/11/03
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 05/12/03
Date of Next Scheduled EDR Contact: 08/11/03

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
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: 03/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 04/21/03
Date of Next Scheduled EDR Contact: 07/21/03

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 04/03/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 03/28/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/15/03
Date of Next Scheduled EDR Contact: 07/14/03

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 05/19/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 05/19/03
Date of Next Scheduled EDR Contact: 08/18/03

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 04/01/03
Database Release Frequency: Quarterly
Date of Last EDR Contact: 04/28/03
Date of Next Scheduled EDR Contact: 07/28/03

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 03/01/03
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 04/08/03
Date of Next Scheduled EDR Contact: 07/07/03

SLIC REG 6L: SLIC Sites
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574

Date of Government Version: 06/09/03
Database Release Frequency: Varies
Date of Last EDR Contact: 06/09/03
Date of Next Scheduled EDR Contact: 09/08/03

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 07/19/01
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/08/03
Date of Next Scheduled EDR Contact: 07/07/03

SLIC REG 7: SLIC List
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491

Date of Government Version: 05/29/03
Database Release Frequency: Varies

Date of Last EDR Contact: 05/27/03
Date of Next Scheduled EDR Contact: 08/25/03

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 04/01/03
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/21/03
Date of Next Scheduled EDR Contact: 07/07/03

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 03/03/03
Database Release Frequency: Annually

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

STATE OF CALIFORNIA BROWNFIELDS DATABASES RECORDS

VCP: Voluntary Cleanup Program Properties
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
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: 04/28/03
Database Release Frequency: Quarterly

Date of Last EDR Contact: 06/02/03
Date of Next Scheduled EDR Contact: 09/01/03

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.

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: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

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 1999 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 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK® PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

HASLEY CANYON LAND COMPANY, LLC
VICINITY OF HASLEY CANYON
LOS ANGELES COUNTY, CA 91384

TARGET PROPERTY COORDINATES

Latitude (North):	34.457699 - 34˚ 27' 27.7"
Longitude (West):	118.633904 - 118˚ 38' 2.1"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	349916.2
UTM Y (Meters):	3813921.8
Elevation:	1346 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle 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. 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.

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).

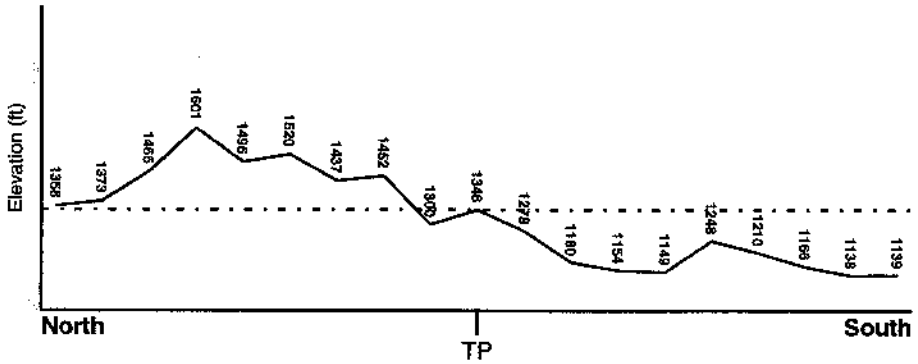
TOPOGRAPHIC INFORMATION

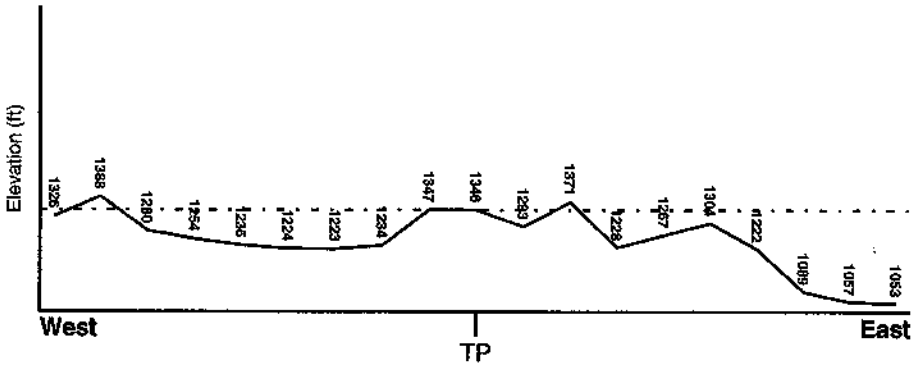
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	2434118-D6 VAL VERDE, CA
General Topographic Gradient:	General SSW
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1346 ft.

0 1/2 1 Miles

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:	0650430340B
Additional Panels in search area:	0650430345B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
VAL VERDE	Not Available

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:	Pliocene
Code:	Tpc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

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).

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. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	CIENEBA
Soil Surface Texture:	loam
Hydrologic Group:	Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.
Soil Drainage Class:	Somewhat excessive. Soils have high hydraulic conductivity and low water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	MODERATE
Depth to Bedrock Min:	> 4 inches
Depth to Bedrock Max:	> 20 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	10 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 2.00	Max: 7.30 Min: 5.10
2	10 inches	14 inches	weathered bedrock	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: gravelly - sandy loam
silty clay loam
unweathered bedrock
very gravelly - sandy loam
gravelly - loam
very gravelly - silt loam
very fine sandy loam
sandy loam

Surficial Soil Types: gravelly - sandy loam
silty clay loam
unweathered bedrock
very gravelly - sandy loam
gravelly - loam
very gravelly - silt loam
very fine sandy loam
sandy loam

Shallow Soil Types: very gravelly - silt loam

Deeper Soil Types: unweathered bedrock

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

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.

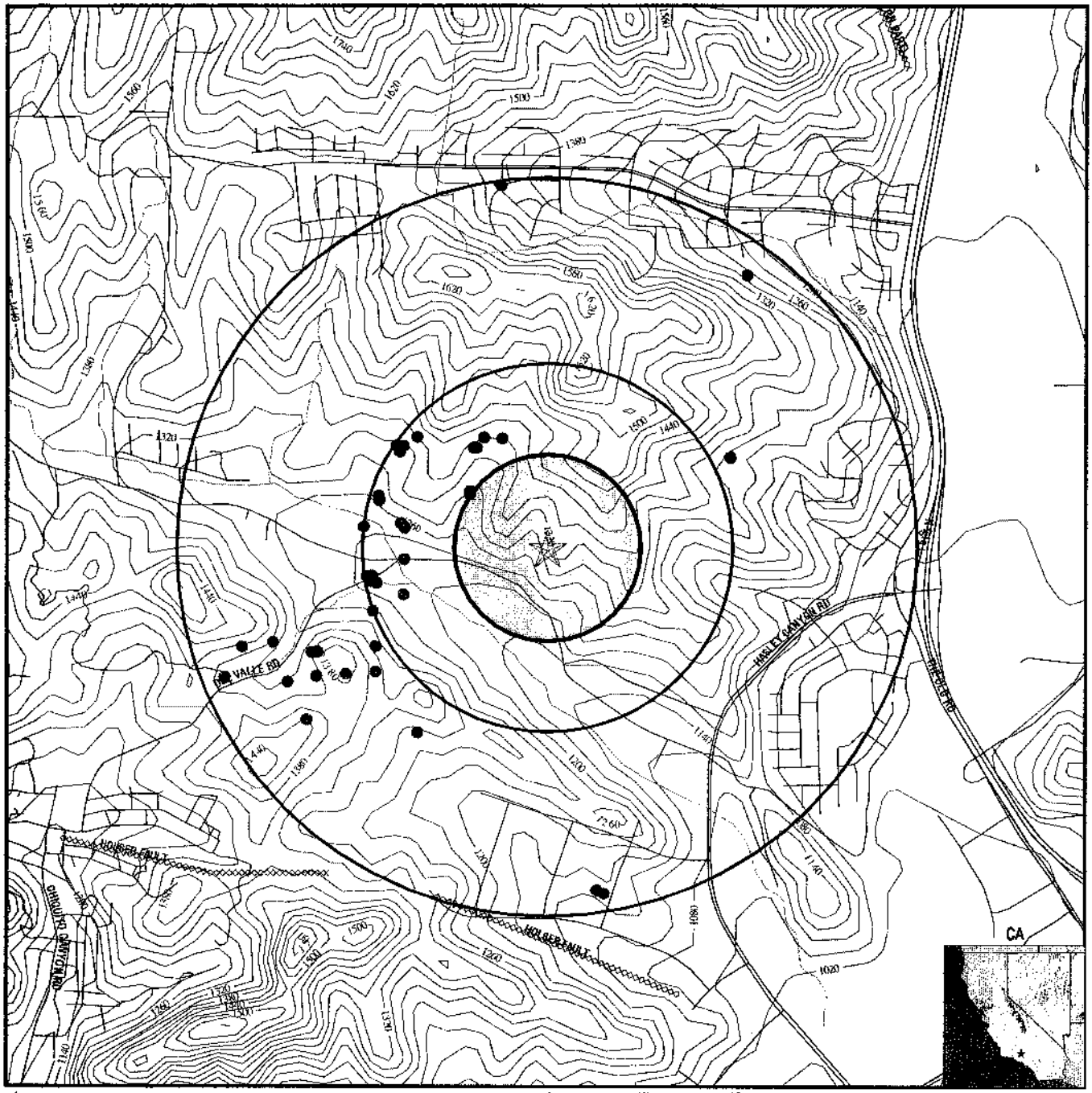
STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/2 - 1 Mile NNW	1/2 - 1 Mile NNE
1/2 - 1 Mile WNW	1/4 - 1/2 Mile NW
1/4 - 1/2 Mile NW	1/2 - 1 Mile WNW
1/2 - 1 Mile WNW	1/4 - 1/2 Mile WNW
1/4 - 1/2 Mile WNW	1/2 - 1 Mile WNW
1/4 - 1/2 Mile ENE	1/4 - 1/2 Mile WNW
1/4 - 1/2 Mile West	1/2 - 1 Mile West
1/2 - 1 Mile West	1/2 - 1 Mile West
1/2 - 1 Mile West	1/4 - 1/2 Mile West
1/2 - 1 Mile WSW	1/2 - 1 Mile WSW
1/2 - 1 Mile WSW	1/2 - 1 Mile WSW
1/2 - 1 Mile WSW	1/2 - 1 Mile WSW
1/2 - 1 Mile WSW	1/2 - 1 Mile WSW
1/2 - 1 Mile WSW	1 - 2 Miles WSW
1/2 - 1 Mile WSW	1/2 - 1 Mile WSW
1/2 - 1 Mile SW	1/2 - 1 Mile WSW
1/2 - 1 Mile WSW	1 - 2 Miles WSW
1/2 - 1 Mile WSW	1/2 - 1 Mile SW
1/2 - 1 Mile SW	1 - 2 Miles South
1 - 2 Miles South	

PHYSICAL SETTING SOURCE MAP - 01010666.1r



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

TARGET PROPERTY:	Hasley Canyon Land Company, LLC	CUSTOMER:	California Environmental
ADDRESS:	Vicinity of Hasley Canyon	CONTACT:	Christopher Rude
CITY/STATE/ZIP:	Los Angeles County CA 91384	INQUIRY #:	01010666.1r
LAT/LONG:	34.4577 / 118.6339	DATE:	July 11, 2003 12:42 pm

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Direction Distance	Database	EDR ID Number
NNW 1/2 - 1 Mile	**OIL_GAS**	**CA00014382**
NNW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00014382**

Well Number:	36	Status:	Plugged and abandoned oil
API Number:	03701245	Operator:	Chevron USA, Inc.
Latitude:	34.471912	Longitude:	-118.635213
Region:	2	Lease:	Villa
Section:	35	Township:	05N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NNE 1/2 - 1 Mile	**OIL_GAS**	**CA00009006**
NNE 1/2 - 1 Mile	**CA OIL/GAS**	**CA00009006**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03701247	Operator:	Texaco E & P Inc
Latitude:	34.468375	Longitude:	-118.623550
Region:	2	Lease:	Forst
Section:	35	Township:	05N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW 1/2 - 1 Mile	**OIL_GAS**	**CA00011003**
WNW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00011003**

Well Number:	12	Status:	Completed oil- directional
API Number:	03723269	Operator:	Petrominerals Corporation
Latitude:	34.462059	Longitude:	-118.639151
Region:	2	Lease:	Burns Crist
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
NW 1/4 - 1/2 Mile	**OIL_GAS**	**CA00010928**
NW 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00010928**

Well Number:	6	Status:	Completed oil- directional
API Number:	03722954	Operator:	Petrominerals Corporation
Latitude:	34.462044	Longitude:	-118.635997
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

NW 1/4 - 1/2 Mile	**OIL_GAS**	**CA00010929**
NW 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00010929**

Well Number:	7	Status:	Completed oil- directional
API Number:	03729962	Operator:	Petrominerals Corporation
Latitude:	34.461996	Longitude:	-118.635131
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW 1/2 - 1 Mile	**OIL_GAS**	**CA00011007**
WNW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00011007**

Well Number:	8	Status:	001
API Number:	03722967	Operator:	Petrominerals Corporation
Latitude:	34.461723	Longitude:	-118.640139
Region:	2	Lease:	Burns Crist
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
WNW 1/2 - 1 Mile	**OIL_GAS**	**CA00011008**
WNW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00011008**

Well Number:	9	Status:	Completed oil- directional
API Number:	03722944	Operator:	Petrominerals Corporation
Latitude:	34.461699	Longitude:	-118.639799
Region:	2	Lease:	Burns Crist
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW 1/4 - 1/2 Mile	**OIL_GAS**	**CA00010930**
WNW 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00010930**

Well Number:	8	Status:	Completed oil- directional
API Number:	03729971	Operator:	Petrominerals Corporation
Latitude:	34.461634	Longitude:	-118.636336
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW 1/4 - 1/2 Mile	**OIL_GAS**	**CA00010931**
WNW 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00010931**

Well Number:	9	Status:	Completed oil- directional
API Number:	03729970	Operator:	Petrominerals Corporation
Latitude:	34.461634	Longitude:	-118.636491
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Direction Distance	Database	EDR ID Number
WNW 1/2 - 1 Mile	**OIL_GAS**	**CA00011002**
WNW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00011002**

Well Number:	10	Status:	Completed oil- directional
API Number:	03729964	Operator:	Petrominerals Corporation
Latitude:	34.461468	Longitude:	-118.639984
Region:	2	Lease:	Burns Crist
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

ENE 1/4 - 1/2 Mile	**OIL_GAS**	**CA00015671**
ENE 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00015671**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705146	Operator:	Atlantic Oil Company
Latitude:	34.461242	Longitude:	-118.624339
Region:	2	Lease:	Good
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WNW 1/4 - 1/2 Mile	**OIL_GAS**	**CA00010927**
WNW 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00010927**

Well Number:	5	Status:	Completed oil- directional
API Number:	03722953	Operator:	Petrominerals Corporation
Latitude:	34.459921	Longitude:	-118.636642
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
West 1/4 - 1/2 Mile	**OIL_GAS**	**CA00010926**
West 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00010926**

Well Number:	4	Status:	Completed oil- directional
API Number:	03722948	Operator:	Petrominerals Corporation
Latitude:	34.459793	Longitude:	-118.636673
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West 1/2 - 1 Mile	**OIL_GAS**	**CA00011006**
West 1/2 - 1 Mile	**CA OIL/GAS**	**CA00011006**

Well Number:	7	Status:	Completed oil
API Number:	03722750	Operator:	Petrominerals Corporation
Latitude:	34.459727	Longitude:	-118.640970
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West 1/2 - 1 Mile	**OIL_GAS**	**CA00011004**
West 1/2 - 1 Mile	**CA OIL/GAS**	**CA00011004**

Well Number:	5	Status:	001
API Number:	03724193	Operator:	Petrominerals Corporation
Latitude:	34.459573	Longitude:	-118.640939
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
West 1/2 - 1 Mile	**OIL_GAS**	**CA00010953**
West 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010953**

Well Number:	1	Status:	Completed oil- directional
API Number:	03722739	Operator:	Petrominerals Corporation
Latitude:	34.458657	Longitude:	-118.639917
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West 1/2 - 1 Mile	**OIL_GAS**	**CA00011005**
West 1/2 - 1 Mile	**CA OIL/GAS**	**CA00011005**

Well Number:	6	Status:	Completed oil
API Number:	03722740	Operator:	Petrominerals Corporation
Latitude:	34.458523	Longitude:	-118.641679
Region:	2	Lease:	Burns Crist
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

West 1/4 - 1/2 Mile	**OIL_GAS**	**CA00010925**
West 1/4 - 1/2 Mile	**CA OIL/GAS**	**CA00010925**

Well Number:	2	Status:	Completed oil
API Number:	03722940	Operator:	Petrominerals Corporation
Latitude:	34.458479	Longitude:	-118.639731
Region:	2	Lease:	Sadd
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010950**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010950**

Well Number:	3	Status:	Completed oil- directional
API Number:	03722747	Operator:	Petrominerals Corporation
Latitude:	34.457277	Longitude:	-118.639759
Region:	2	Lease:	McGillivrae
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010948**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010948**

Well Number:	9	Status:	001
API Number:	03724195	Operator:	Petrominerals Corporation
Latitude:	34.456633	Longitude:	-118.641273
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010941**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010941**

Well Number:	10	Status:	001
API Number:	03724196	Operator:	Petrominerals Corporation
Latitude:	34.456607	Longitude:	-118.641520
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010946**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010946**

Well Number:	7	Status:	Completed oil
API Number:	03722727	Operator:	Petrominerals Corporation
Latitude:	34.456428	Longitude:	-118.641365
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010947**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010947**

Well Number:	8	Status:	001
API Number:	03724194	Operator:	Petrominerals Corporation
Latitude:	34.456353	Longitude:	-118.641056
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010949**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010949**

Well Number:	2	Status:	Completed oil
API Number:	03722349	Operator:	Petrominerals Corporation
Latitude:	34.455897	Longitude:	-118.639768
Region:	2	Lease:	McGillivrae
Section:	02	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010945**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010945**

Well Number:	6	Status:	Completed oil
API Number:	03722340	Operator:	Petrominerals Corporation
Latitude:	34.455253	Longitude:	-118.641239
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010943**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010943**

Well Number:	4	Status:	Completed oil
API Number:	03722060	Operator:	Petrominerals Corporation
Latitude:	34.454010	Longitude:	-118.645937
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010967**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010967**

Well Number:	1	Status:	Completed oil
API Number:	03707258	Operator:	Petrominerals Corporation
Latitude:	34.453848	Longitude:	-118.641113
Region:	2	Lease:	Mabel E. Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
WSW 1 - 2 Miles	**OIL_GAS**	**CA00010944**
WSW 1 - 2 Miles	**CA OIL/GAS**	**CA00010944**

Well Number:	5	Status:	Plugged and abandoned-dry hole
API Number:	03722072	Operator:	Petrominerals Corporation
Latitude:	34.453826	Longitude:	-118.647420
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010940**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010940**

Well Number:	2	Status:	Completed oil
API Number:	03721715	Operator:	Petrominerals Corporation
Latitude:	34.453634	Longitude:	-118.643833
Region:	2	Lease:	Mabel E. Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010942**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010942**

Well Number:	3	Status:	Completed oil- directional
API Number:	03721805	Operator:	Petrominerals Corporation
Latitude:	34.453607	Longitude:	-118.644112
Region:	2	Lease:	Mabel Strawn
Section:	03	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
SW 1/2 - 1 Mile	**OIL_GAS**	**CA00012074**
SW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00012074**

Well Number:	81X	Status:	Plugged and abandoned-dry hole
API Number:	03721466	Operator:	Montara Petroleum Company
Latitude:	34.452826	Longitude:	-118.641111
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010933**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010933**

Well Number:	2-10	Status:	Completed oil
API Number:	03721816	Operator:	Petrominerals Corporation
Latitude:	34.452744	Longitude:	-118.642502
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00010932**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00010932**

Well Number:	1-10	Status:	Completed oil
API Number:	03721801	Operator:	Petrominerals Corporation
Latitude:	34.452663	Longitude:	-118.643893
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
WSW 1 - 2 Miles	**OIL_GAS**	**CA00008486**
WSW 1 - 2 Miles	**CA OIL/GAS**	**CA00008486**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706205	Operator:	U. S. Natural Gas C & Manning
Latitude:	34.452622	Longitude:	-118.648222
Region:	2	Lease:	Strawn
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

WSW 1/2 - 1 Mile	**OIL_GAS**	**CA00015649**
WSW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00015649**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03705148	Operator:	Atlantic Oil Company
Latitude:	34.452428	Longitude:	-118.645253
Region:	2	Lease:	Strawn
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

SW 1/2 - 1 Mile	**OIL_GAS**	**CA00013952**
SW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00013952**

Well Number:	3-10	Status:	Plugged and abandoned oil
API Number:	03721871	Operator:	Decalta International Corp
Latitude:	34.450949	Longitude:	-118.644354
Region:	2	Lease:	Sterling
Section:	10	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

Direction Distance	Database	EDR ID Number
SW 1/2 - 1 Mile	**OIL_GAS**	**CA00009001**
SW 1/2 - 1 Mile	**CA OIL/GAS**	**CA00009001**

Well Number:	1	Status:	Plugged and abandoned-dry hole
API Number:	03706082	Operator:	Texaco E & P Inc
Latitude:	34.450430	Longitude:	-118.639127
Region:	2	Lease:	Fernando
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 1 - 2 Miles	**OIL_GAS**	**CA00008939**
South 1 - 2 Miles	**CA OIL/GAS**	**CA00008939**

Well Number:	B-1	Status:	Plugged and abandoned-dry hole
API Number:	03706107	Operator:	Texaco E & P Inc
Latitude:	34.444225	Longitude:	-118.630643
Region:	2	Lease:	Newhall
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

South 1 - 2 Miles	**OIL_GAS**	**CA00008940**
South 1 - 2 Miles	**CA OIL/GAS**	**CA00008940**

Well Number:	D-1	Status:	Plugged and abandoned-dry hole
API Number:	03706108	Operator:	Texaco E & P Inc
Latitude:	34.444098	Longitude:	-118.630303
Region:	2	Lease:	Newhall
Section:	11	Township:	04N
Range:	17W	Map Number:	253
Base and Meridian:	San Bernardino	Total Depth:	Not Reported
Spud Date:	Not Reported	Abandonment Date:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

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. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 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 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
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. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

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.

California Oil and Gas Well Locations for District 2, 3, 5 and 6
Source: Department of Conservation
Telephone: 916-323-1779

RADON

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.

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.

APPENDIX IV

Chemical Laboratory Test Reports

LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: EV1474
Project Name: Hasley Canyon Land Co.
Sample Matrix: Vapor
Method: Methane

AA Project No.: MB243176
Date Received: 06/23/03
Date Reported: 06/27/03
Units: ppmV

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	DF	Results	MRL
155667	SG-1-7	06/23/03	06/26/03	125.0	**7500**	20
155783	SG18-7	06/24/03	06/26/03	1.0	<20	20
155789	SG1-10	06/24/03	06/26/03	1,000.0	**70000**	20
155790	SG1-20	06/24/03	06/26/03	2,000.0	**100000**	20

MRL: Method Reporting Limit J: Estimated Value DF: Dilution Factor

Allen Aminian
Project Manager

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Tel: (818) 998 - 5547 • • Fax: (818) 998 - 7258

LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: EV1474
Project Name: Hasley Canyon Land Co.
Sample Matrix: Vapor
Method: EPA 8260B

AA Project No.: MB243176
Date Received: 06/23/03
Date Reported: 06/27/03
Units: ppmV

Date Sampled:	**06/23/03**	**06/24/03**	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/25/03**	**06/26/03**	**06/26/03**	**06/26/03**	
AA ID No.:	**155667**	**155783**	**155789**	**155790**	
Client ID No.:	**SG-1-7**	**SG18-7**	**SG1-10**	**SG1-20**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Acetone	<5	<5	<5	<5	5
Benzene	**0.64**	<0.1	**53**	**110**	0.1
Bromobenzene	<0.1	<0.1	<0.1	<0.1	0.1
Bromochloromethane	<0.1	<0.1	<0.1	<0.1	0.1
Bromodichloromethane	<0.1	<0.1	<0.1	<0.1	0.1
Bromoform	<0.1	<0.1	<0.1	<0.1	0.1
Bromomethane	<0.1	<0.1	<0.1	<0.1	0.1
2-Butanone	<2	<2	<2	<2	2
Butylbenzene	<0.1	<0.1	<0.1	<0.1	0.1
Carbon tetrachloride	<0.1	<0.1	<0.1	<0.1	0.1
Chlorobenzene	<0.1	<0.1	<0.1	<0.1	0.1
Chloroethane	<0.1	<0.1	<0.1	<0.1	0.1
Chloroform	<0.1	<0.1	<0.1	<0.1	0.1
Chloromethane	<0.1	<0.1	<0.1	<0.1	0.1
2-Chlorotoluene	<0.1	<0.1	<0.1	<0.1	0.1
4-Chlorotoluene	<0.1	<0.1	<0.1	<0.1	0.1
1,2-Dibromo-3-chloropropan	<0.2	<0.2	<0.2	<0.2	0.2
Dibromochloromethane	<0.1	<0.1	<0.1	<0.1	0.1
1,2-Dibromoethane	<0.1	<0.1	<0.1	<0.1	0.1
Dibromomethane	<0.1	<0.1	<0.1	<0.1	0.1
1,2-Dichlorobenzene	<0.1	<0.1	<0.1	<0.1	0.1
1,3-Dichlorobenzene	<0.1	<0.1	<0.1	<0.1	0.1
1,4-Dichlorobenzene	<0.1	<0.1	<0.1	<0.1	0.1
Dichlorodifluoromethane	<0.1	<0.1	<0.1	<0.1	0.1
1,1-Dichloroethane	<0.1	<0.1	<0.1	<0.1	0.1
1,2-Dichloroethane	<0.1	<0.1	<0.1	<0.1	0.1
1,2-Dichloroethene-(cis)	<0.1	<0.1	<0.1	<0.1	0.1
1,2-Dichloroethene-(trans)	<0.1	<0.1	<0.1	<0.1	0.1
1,1-Dichloroethene	<0.1	<0.1	<0.1	<0.1	0.1
1,2-Dichloropropane	<0.1	<0.1	<0.1	<0.1	0.1
1,3-Dichloropropane	<0.1	<0.1	<0.1	<0.1	0.1
2,2-Dichloropropane	<0.1	<0.1	<0.1	<0.1	0.1
1,3-Dichloropropene-(cis)	<0.1	<0.1	<0.1	<0.1	0.1
1,3-Dichloropropene-(trans)	<0.1	<0.1	<0.1	<0.1	0.1
1,1-Dichloropropene	<0.1	<0.1	<0.1	<0.1	0.1
Ethylbenzene	<0.1	<0.1	<0.1	<0.1	0.1

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LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: EV1474
Project Name: Hasley Canyon Land Co.
Sample Matrix: Vapor
Method: EPA 8260B

AA Project No.: MB243176
Date Received: 06/23/03
Date Reported: 06/27/03
Units: ppmV

Date Sampled:	06/23/03	06/24/03	06/24/03	06/24/03	
Date Analyzed:	06/25/03	06/26/03	06/26/03	06/26/03	
AA ID No.:	155667	155783	155789	155790	
Client ID No.:	SG-1-7	SG18-7	SG1-10	SG1-20	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Heptanone	<1	<1	<1	<1	1
Hexachlorobutadiene	<0.2	<0.2	<0.2	<0.2	0.2
2-Hexanone	<1	<1	<1	<1	1
Isopropylbenzene	<0.1	<0.1	<0.1	<0.1	0.1
Isopropyltoluene	<0.2	<0.2	<0.2	<0.2	0.2
Methyl tert-Butyl Ether	<1	<1	<1	<1	1
4-Methyl-2-pentanone	<1	<1	<1	<1	1
Methylene chloride	<1	<1	<1	<1	1
Naphthalene	<0.2	<0.2	<0.2	<0.2	0.2
Propylbenzene	<0.1	<0.1	<0.1	<0.1	0.1
Styrene	<0.1	<0.1	<0.1	<0.1	0.1
1,1,1,2-Tetrachloroethane	<0.1	<0.1	<0.1	<0.1	0.1
1,1,2,2-Tetrachloroethane	<0.1	<0.1	<0.1	<0.1	0.1
Tetrachloroethene	<0.1	<0.1	<0.1	<0.1	0.1
Toluene	<0.1	<0.1	<0.1	<0.1	0.1
1,2,3-Trichlorobenzene	<0.1	<0.1	<0.1	<0.1	0.1
1,2,4-Trichlorobenzene	<0.1	<0.1	<0.1	<0.1	0.1
1,1,1-Trichloroethane	<0.1	<0.1	<0.1	<0.1	0.1
1,1,2-Trichloroethane	<0.1	<0.1	<0.1	<0.1	0.1
Trichloroethene	<0.1	<0.1	<0.1	<0.1	0.1
Trichlorofluoromethane	<0.1	<0.1	<0.1	<0.1	0.1
1,2,3-Trichloropropane	<0.1	<0.1	<0.1	<0.1	0.1
1,2,4-Trimethylbenzene	<0.1	<0.1	<0.1	<0.1	0.1
1,3,5-Trimethylbenzene	<0.1	<0.1	<0.1	<0.1	0.1
Vinyl chloride	<0.1	<0.1	<0.1	<0.1	0.1
m,p-Xylenes	<0.2	<0.2	<0.2	<0.2	0.2
o-Xylene	<0.1	<0.1	<0.1	<0.1	0.1
sec-Butylbenzene	<0.1	<0.1	<0.1	<0.1	0.1
tert-Butylbenzene	<0.1	<0.1	<0.1	<0.1	0.1

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	06/23/03	06/23/03	06/23/03	06/23/03	
Date Analyzed:	06/23/03	06/23/03	06/23/03	06/23/03	
AA ID No.:	155667	155668	155669	155670	
Client ID No.:	SG-1-7	SG2-7	SG3-7	SG4-7	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	**46**	<0.5	<0.5	<0.5	0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	0.5
Toluene	**4.2**	<0.5	<0.5	<0.5	0.5
Xylenes	<1	<1	<1	<1	1

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	06/23/03	06/23/03	06/23/03	06/23/03	
Date Analyzed:	06/23/03	06/23/03	06/23/03	06/23/03	
AA ID No.:	155671	155672	155673	155674	
Client ID No.:	SG5-7	SG6-7	SG7-7	SG8-7	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.5	<0.5	<0.5	<0.5	0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	0.5
Toluene	<0.5	<0.5	<0.5	<0.5	0.5
Xylenes	<1	<1	<1	<1	1

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	06/23/03	06/23/03	06/23/03	06/23/03	
Date Analyzed:	06/23/03	06/23/03	06/23/03	06/23/03	
AA ID No.:	155675	155676	155677	155678	
Client ID No.:	SG9-7	SG10-7	SG11-7	SG12-7	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.5	<0.5	<0.5	<0.5	0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	0.5
Toluene	<0.5	<0.5	<0.5	<0.5	0.5
Xylenes	<1	<1	<1	<1	1

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	06/23/03	06/23/03	06/24/03	06/24/03	
Date Analyzed:	06/23/03	06/23/03	06/24/03	06/24/03	
AA ID No.:	155679	155680	155783	155784	
Client ID No.:	SG13-7	SG14-7	SG18-7	SG17-7	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.5	<0.5	<0.5	<0.5	0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	0.5
Toluene	<0.5	<0.5	<0.5	<0.5	0.5
Xylenes	<1	<1	<1	<1	1

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	06/24/03	06/24/03	06/24/03	06/24/03	
Date Analyzed:	06/24/03	06/24/03	06/24/03	06/24/03	
AA ID No.:	155785	155786	155787	155788	
Client ID No.:	SG16-7	SG15-7	SG19-7	SG20-7	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.5	<0.5	<0.5	<0.5	0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	0.5
Toluene	<0.5	<0.5	<0.5	<0.5	0.5
Xylenes	<1	<1	<1	<1	1

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	06/24/03	06/24/03	06/24/03	06/24/03	
Date Analyzed:	06/24/03	06/24/03	06/24/03	06/24/03	
AA ID No.:	155789	155790	155791	155792	
Client ID No.:	SG1-10	SG1-20	SG21-7	SG22-7	
Dilution Factor:	2.0	10.0	1.0	1.0	**MRL**
Compounds:					
Benzene	130	500	<0.5	<0.5	0.5
Ethylbenzene	<1	<5	<0.5	<0.5	0.5
Toluene	3.7	<5	<0.5	<0.5	0.5
Xylenes	<2	<10	<1	<1	1

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	**06/24/03**	**06/24/03**	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/24/03**	**06/24/03**	**06/24/03**	**06/24/03**	
AA ID No.:	**155793**	**155794**	**155795**	**155796**	
Client ID No.:	**SG23-7**	**SG24-7**	**SG25-7**	**SG26-5**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.5	<0.5	<0.5	<0.5	0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	0.5
Toluene	<0.5	<0.5	<0.5	<0.5	0.5
Xylenes	<1	<1	<1	<1	1

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/30/03
Sample Matrix:	Vapor	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	**06/24/03**	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/24/03**	**06/24/03**	**06/24/03**	
AA ID No.:	**155797**	**155798**	**155800**	
Client ID No.:	**SG27-5**	**SG28-5**	**SG29-5**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:				
Benzene	<0.5	<0.5	<0.5	0.5
Ethylbenzene	<0.5	<0.5	<0.5	0.5
Toluene	<0.5	<0.5	<0.5	0.5
Xylenes	<1	<1	<1	1

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: EV1474
Project Name: Hasley Canyon Land Co.
Sample Matrix: Vapor
Method: EPA 8015M (GRO)

AA Project No.: MB243176
Date Received: 06/23/03
Date Reported: 06/30/03
Units: ug/L

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	DF	Results	MRL
155667	SG-1-7	06/23/03	06/23/03	1.0	**2700**	20
155668	SG2-7	06/23/03	06/23/03	1.0	<20	20
155669	SG3-7	06/23/03	06/23/03	1.0	<20	20
155670	SG4-7	06/23/03	06/23/03	1.0	<20	20
155671	SG5-7	06/23/03	06/23/03	1.0	<20	20
155672	SG6-7	06/23/03	06/23/03	1.0	<20	20
155673	SG7-7	06/23/03	06/23/03	1.0	<20	20
155674	SG8-7	06/23/03	06/23/03	1.0	<20	20
155675	SG9-7	06/23/03	06/23/03	1.0	<20	20
155676	SG10-7	06/23/03	06/23/03	1.0	<20	20
155677	SG11-7	06/23/03	06/23/03	1.0	<20	20
155678	SG12-7	06/23/03	06/23/03	1.0	<20	20
155679	SG13-7	06/23/03	06/23/03	1.0	<20	20
155680	SG14-7	06/23/03	06/23/03	1.0	<20	20
155783	SG18-7	06/24/03	06/24/03	1.0	<20	20
155784	SG17-7	06/24/03	06/24/03	1.0	<20	20
155785	SG16-7	06/24/03	06/24/03	1.0	<20	20
155786	SG15-7	06/24/03	06/24/03	1.0	<20	20
155787	SG19-7	06/24/03	06/24/03	1.0	<20	20
155788	SG20-7	06/24/03	06/24/03	1.0	<20	20
155789	SG1-10	06/24/03	06/24/03	1.0	**4900**	20
155790	SG1-20	06/24/03	06/24/03	1.0	**7300**	20
155791	SG21-7	06/24/03	06/24/03	1.0	<20	20
155792	SG22-7	06/24/03	06/24/03	1.0	<20	20
155793	SG23-7	06/24/03	06/24/03	1.0	<20	20
155794	SG24-7	06/24/03	06/24/03	1.0	<20	20
155795	SG25-7	06/24/03	06/24/03	1.0	<20	20
155796	SG26-5	06/24/03	06/24/03	1.0	<20	20
155797	SG27-5	06/24/03	06/24/03	1.0	<20	20
155798	SG28-5	06/24/03	06/24/03	1.0	<20	20
155800	SG29-5	06/24/03	06/24/03	1.0	<20	20

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LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: EV1474
Project Name: Hasley Canyon Land Co.
Sample Matrix: Vapor
Method: EPA 8015M (GRO)

AA Project No.: MB243176
Date Received: 06/23/03
Date Reported: 06/30/03
Units: ug/L

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	DF	Results	MRL

MRL: Method Reporting Limit J: Estimated Value DF: Dilution Factor

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/27/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**06/23/03**	**06/24/03**	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/27/03**	**06/27/03**	**06/27/03**	**06/27/03**	
Date Extracted:	**06/26/03**	**06/26/03**	**06/26/03**	**06/26/03**	
AA ID No.:	**155681**	**155801**	**155802**	**155803**	
Client ID No.:	**SB1-5**	**SB1@25**	**SB30@10**	**SB30@20**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	**3.9**	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/27/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/27/03**	**06/27/03**	
Date Extracted:	**06/26/03**	**06/26/03**	
AA ID No.:	**155804**	**155805**	
Client ID No.:	**SB31@10**	**SB31@19**	
Dilution Factor:	**1.0**	**1.0**	**MRL**
Compounds:			
C06-C08	<1	**3.5**	1
C08-C10	<1	**5.2**	1
C10-C12	<1	**21**	1
C12-C14	<1	**200**	1
C14-C16	<1	**260**	1
C16-C18	<1	**200**	1
C18-C20	<1	**100**	1
C20-C22	<1	**40**	1
C22-C24	<1	**35**	1
C24-C26	<1	**7.0**	1
C26-C28	<1	**13**	1
C28-C32	<1	**1.1**	1
C32-C34	<1	<1	1
C34-C36	<1	<1	1
C36-C40	<1	<1	1
C40-C44	<1	<1	1
TPH (C6-C44)	<10	**890**	10

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: EV1474
Project Name: Hasley Canyon Land Co.
Sample Matrix: Soil
Method: EPA 8260B

AA Project No.: MB243176
Date Received: 06/23/03
Date Reported: 06/27/03
Units: ug/Kg

Date Sampled:	**06/23/03**	**06/24/03**	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/24/03**	**06/26/03**	**06/26/03**	**06/26/03**	
AA ID No.:	**155681**	**155801**	**155802**	**155803**	
Client ID No.:	**SB1-5**	**SB1@25**	**SB30@10**	**SB30@20**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Acetone	<50	<50	<50	<50	50
Benzene	<2	<2	<2	**6.4**	2
Bromobenzene	<5	<5	<5	<5	5
Bromochloromethane	<5	<5	<5	<5	5
Bromodichloromethane	<5	<5	<5	<5	5
Bromoform	<5	<5	<5	<5	5
Bromomethane	<5	<5	<5	<5	5
2-Butanone	<50	<50	<50	<50	50
Butylbenzene	<5	<5	<5	<5	5
Carbon disulfide	<5	<5	<5	<5	5
Carbon tetrachloride	<5	<5	<5	<5	5
Chlorobenzene	<5	<5	<5	<5	5
Chloroethane	<5	<5	<5	<5	5
Chloroform	<5	<5	<5	<5	5
Chloromethane	<5	<5	<5	<5	5
2-Chlorotoluene	<5	<5	<5	<5	5
4-Chlorotoluene	<5	<5	<5	<5	5
1,2-Dibromo-3-chloropropan	<10	<10	<10	<10	10
Dibromochloromethane	<5	<5	<5	<5	5
1,2-Dibromoethane	<5	<5	<5	<5	5
Dibromomethane	<5	<5	<5	<5	5
1,2-Dichlorobenzene	<5	<5	<5	<5	5
1,3-Dichlorobenzene	<5	<5	<5	<5	5
1,4-Dichlorobenzene	<5	<5	<5	<5	5
Dichlorodifluoromethane	<5	<5	<5	<5	5
1,1-Dichloroethane	<5	<5	<5	<5	5
1,2-Dichloroethane	<5	<5	<5	<5	5
1,2-Dichloroethene-(cis)	<5	<5	<5	<5	5
1,2-Dichloroethene-(trans)	<5	<5	<5	<5	5
1,1-Dichloroethene	<5	<5	<5	<5	5
1,2-Dichloropropane	<5	<5	<5	<5	5
1,3-Dichloropropane	<5	<5	<5	<5	5
2,2-Dichloropropane	<5	<5	<5	<5	5
1,3-Dichloropropene-(cis)	<5	<5	<5	<5	5
1,3-Dichloropropene-(trans)	<5	<5	<5	<5	5
1,1-Dichloropropene	<5	<5	<5	<5	5

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/27/03
Sample Matrix:	Soil	**Units:**	ug/Kg
Method:	EPA 8260B		

Date Sampled:	06/23/03	06/24/03	06/24/03	06/24/03	
Date Analyzed:	06/24/03	06/26/03	06/26/03	06/26/03	
AA ID No.:	155681	155801	155802	155803	
Client ID No.:	SB1-5	SB1@25	SB30@10	SB30@20	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Ethylbenzene	<2	<2	<2	<2	2
Hexachlorobutadiene	<10	<10	<10	<10	10
2-Hexanone	<50	<50	<50	<50	50
Isopropylbenzene	<5	<5	<5	<5	5
Isopropyltoluene	<10	<10	<10	<10	10
Methyl tert-Butyl Ether	<5	<5	<5	<5	5
4-Methyl-2-pentanone	<50	<50	<50	<50	50
Methylene chloride	<50	<50	<50	<50	50
Naphthalene	<10	<10	<10	<10	10
Propylbenzene	<5	<5	<5	<5	5
Styrene	<5	<5	<5	<5	5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	5
Tetrachloroethene	<5	<5	<5	<5	5
Toluene	<2	<2	<2	<2	2
1,2,3-Trichlorobenzene	<5	<5	<5	<5	5
1,2,4-Trichlorobenzene	<5	<5	<5	<5	5
1,1,1-Trichloroethane	<5	<5	<5	<5	5
1,1,2-Trichloroethane	<5	<5	<5	<5	5
Trichloroethene	<5	<5	<5	<5	5
Trichlorofluoromethane	<5	<5	<5	<5	5
1,2,3-Trichloropropane	<5	<5	<5	<5	5
1,2,4-Trimethylbenzene	<5	<5	<5	<5	5
1,3,5-Trimethylbenzene	<5	<5	<5	<5	5
Vinyl chloride	<5	<5	<5	<5	5
m,p-Xylenes	<2	<2	<2	<2	2
o-Xylene	<2	<2	<2	<2	2
sec-Butylbenzene	<5	<5	<5	<5	5
tert-Butylbenzene	<5	<5	<5	<5	5

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LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: EV1474
Project Name: Hasley Canyon Land Co.
Sample Matrix: Soil
Method: EPA 8260B

AA Project No.: MB243176
Date Received: 06/23/03
Date Reported: 06/27/03
Units: ug/Kg

Date Sampled:	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/26/03**	**06/26/03**	
AA ID No.:	**155804**	**155805**	
Client ID No.:	**SB31@10**	**SB31@19**	
Dilution Factor:	**1.0**	**1.0**	**MRL**
Compounds:			
Acetone	<50	<50	50
Benzene	**2.4**	**66**	2
Bromobenzene	<5	<5	5
Bromochloromethane	<5	<5	5
Bromodichloromethane	<5	<5	5
Bromoform	<5	<5	5
Bromomethane	<5	<5	5
2-Butanone	<50	<50	50
Butylbenzene	<5	<5	5
Carbon disulfide	<5	<5	5
Carbon tetrachloride	<5	<5	5
Chlorobenzene	<5	<5	5
Chloroethane	<5	<5	5
Chloroform	<5	<5	5
Chloromethane	<5	<5	5
2-Chlorotoluene	<5	<5	5
4-Chlorotoluene	<5	<5	5
1,2-Dibromo-3-chloropropan	<10	<10	10
Dibromochloromethane	<5	<5	5
1,2-Dibromoethane	<5	<5	5
Dibromomethane	<5	<5	5
1,2-Dichlorobenzene	<5	<5	5
1,3-Dichlorobenzene	<5	<5	5
1,4-Dichlorobenzene	<5	<5	5
Dichlorodifluoromethane	<5	<5	5
1,1-Dichloroethane	<5	<5	5
1,2-Dichloroethane	<5	<5	5
1,2-Dichloroethene-(cis)	<5	<5	5
1,2-Dichloroethene-(trans)	<5	<5	5
1,1-Dichloroethene	<5	<5	5
1,2-Dichloropropane	<5	<5	5
1,3-Dichloropropane	<5	<5	5
2,2-Dichloropropane	<5	<5	5
1,3-Dichloropropene-(cis)	<5	<5	5
1,3-Dichloropropene-(trans)	<5	<5	5
1,1-Dichloropropene	<5	<5	5

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243176
Project No.:	EV1474	**Date Received:**	06/23/03
Project Name:	Hasley Canyon Land Co.	**Date Reported:**	06/27/03
Sample Matrix:	Soil	**Units:**	ug/Kg
Method:	EPA 8260B		

Date Sampled:	**06/24/03**	**06/24/03**	
Date Analyzed:	**06/26/03**	**06/26/03**	
AA ID No.:	**155804**	**155805**	
Client ID No.:	**SB31@10**	**SB31@19**	
Dilution Factor:	**1.0**	**1.0**	**MRL**
Compounds:			
Ethylbenzene	<2	**16**	2
Hexachlorobutadiene	<10	<10	10
2-Hexanone	<50	<50	50
Isopropylbenzene	<5	<5	5
Isopropyltoluene	<10	<10	10
Methyl tert-Butyl Ether	<5	<5	5
4-Methyl-2-pentanone	<50	<50	50
Methylene chloride	<50	<50	50
Naphthalene	<10	<10	10
Propylbenzene	<5	<5	5
Styrene	<5	<5	5
1,1,1,2-Tetrachloroethane	<5	<5	5
1,1,2,2-Tetrachloroethane	<5	<5	5
Tetrachloroethene	<5	<5	5
Toluene	<2	**130**	2
1,2,3-Trichlorobenzene	<5	<5	5
1,2,4-Trichlorobenzene	<5	<5	5
1,1,1-Trichloroethane	<5	<5	5
1,1,2-Trichloroethane	<5	<5	5
Trichloroethene	**5.9**	<5	5
Trichlorofluoromethane	<5	<5	5
1,2,3-Trichloropropane	<5	<5	5
1,2,4-Trimethylbenzene	<5	**6.2**	5
1,3,5-Trimethylbenzene	<5	**13**	5
Vinyl chloride	<5	<5	5
m,p-Xylenes	<2	**66**	2
o-Xylene	<2	**31**	2
sec-Butylbenzene	<5	<5	5
tert-Butylbenzene	<5	<5	5

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/28/03	07/28/03	07/28/03	07/28/03	
Date Extracted:	07/25/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156850	156852	156854	156856	
Client ID No.:	B-1@15	B-1@25	B-1@35	B-1@45	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	15	18	5.7	20	1
C08-C10	180	140	58	88	1
C10-C12	440	300	160	200	1
C12-C14	680	510	320	350	1
C14-C16	460	340	220	240	1
C16-C18	280	230	150	160	1
C18-C20	110	100	67	72	1
C20-C22	71	82	32	40	1
C22-C24	2.1	14	6.1	6.6	1
C24-C26	<1	9.6	5.1	<1	1
C26-C28	<1	5.4	1.1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	2200	1700	1000	1200	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/28/03	07/28/03	07/28/03	07/28/03	
Date Extracted:	07/25/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156858	156860	156862	156865	
Client ID No.:	B-3@5	B-3@15	B-2@5	B-2@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	130	1
C08-C10	<1	44	<1	420	1
C10-C12	<1	530	3.7	760	1
C12-C14	<1	1200	9.7	1200	1
C14-C16	<1	910	15	770	1
C16-C18	<1	670	17	480	1
C18-C20	<1	390	20	200	1
C20-C22	<1	43	11	140	1
C22-C24	<1	63	6.5	5.1	1
C24-C26	<1	5.6	2.6	<1	1
C26-C28	<1	<1	1.1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	3900	87	4100	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/21/03	07/21/03	07/28/03	07/28/03	
Date Extracted:	07/20/03	07/20/03	07/25/03	07/25/03	
AA ID No.:	156867	156868	156869	156872	
Client ID No.:	B-3@40	B-2@45	B-4@5	B-4@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	61	<1	<1	1
C08-C10	<1	560	<1	<1	1
C10-C12	<1	940	<1	<1	1
C12-C14	<1	1200	<1	<1	1
C14-C16	<1	970	<1	<1	1
C16-C18	<1	430	<1	<1	1
C18-C20	<1	170	<1	<1	1
C20-C22	<1	92	<1	<1	1
C22-C24	<1	31	<1	<1	1
C24-C26	1.9	16	<1	<1	1
C26-C28	<1	3.3	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	4500	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/21/03	07/28/03	07/28/03	07/28/03	
Date Extracted:	07/20/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156879	156882	156884	156886	
Client ID No.:	B-5@20	B-5@30	B-6@5	B-6@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/21/03	07/28/03	07/28/03	07/28/03	
Date Extracted:	07/20/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156874	156875	156876	156878	
Client ID No.:	B-4@20	B-4@30	B-5@5	B-5@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/21/03	07/28/03	07/28/03	07/28/03	
Date Extracted:	07/20/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156887	156888	156890	156892	
Client ID No.:	B-6@20	B-6@30	B-7@5	B-7@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/21/03	07/28/03	07/30/03	07/30/03	
Date Extracted:	07/20/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156893	156894	156896	156897	
Client ID No.:	B-7@20	B-7@30	B-8@5	B-8@10	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/21/03	07/30/03	07/30/03	07/30/03	
Date Extracted:	07/20/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156899	156900	156902	156904	
Client ID No.:	B-8@20	B-8@30	B-9@5	B-9@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/15/03**	**07/15/03**	**07/15/03**	**07/15/03**	
Date Analyzed:	**07/21/03**	**07/30/03**	**07/30/03**	**07/21/03**	
Date Extracted:	**07/20/03**	**07/25/03**	**07/25/03**	**07/20/03**	
AA ID No.:	**156905**	**156906**	**156908**	**156910**	
Client ID No.:	**B-9@20**	**B-9@30**	**B-10@5**	**B-10@20**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/15/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/30/03	07/30/03	07/21/03	07/30/03	
Date Extracted:	07/25/03	07/25/03	07/20/03	07/25/03	
AA ID No.:	156911	156982	156983	156984	
Client ID No.:	B-10@30	B-11@15	B-11@20	B-11@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: 1474
Project Name: Hasley Canyon Land
Sample Matrix: Soil
Method: EPA 8015M(Carbon Chain)

AA Project No.: MB243179
Date Received: 07/14/03
Date Reported: 08/01/03
Units: mg/Kg

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/30/03	07/30/03	07/22/03	07/21/03	
Date Extracted:	07/25/03	07/25/03	07/21/03	07/20/03	
AA ID No.:	156987	156988	156991	156992	
Client ID No.:	B-12@10	B-12@15	B-12@40	B-12@50	
Dilution Factor:	1.0	1.0	5.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	83	<1	1
C08-C10	<1	<1	440	<1	1
C10-C12	<1	<1	1100	<1	1
C12-C14	<1	<1	1500	<1	1
C14-C16	<1	<1	1800	<1	1
C16-C18	<1	<1	1400	<1	1
C18-C20	<1	<1	1300	<1	1
C20-C22	<1	<1	680	<1	1
C22-C24	<1	<1	490	<1	1
C24-C26	<1	<1	470	<1	1
C26-C28	<1	<1	400	<1	1
C28-C32	<1	<1	520	<1	1
C32-C34	<1	<1	150	<1	1
C34-C36	<1	<1	43	<1	1
C36-C40	<1	<1	230	<1	1
C40-C44	<1	<1	<5	<1	1
TPH (C6-C44)	<10	<10	11000	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/21/03	07/30/03	07/30/03	07/30/03	
Date Extracted:	07/20/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	156994	156995	156996	156998	
Client ID No.:	B-13@5	B-13@10	B-13@15	B-13@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Analyzed:	**07/30/03**	**07/21/03**	**07/30/03**	**07/30/03**	
Date Extracted:	**07/25/03**	**07/20/03**	**07/25/03**	**07/25/03**	
AA ID No.:	**157001**	**157002**	**157003**	**157006**	
Client ID No.:	**B-14@15**	**B-14@20**	**B-14@30**	**B-15@5**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Analyzed:	**07/30/03**	**07/21/03**	**07/21/03**	**07/30/03**	
Date Extracted:	**07/25/03**	**07/20/03**	**07/20/03**	**07/25/03**	
AA ID No.:	**157007**	**157008**	**157011**	**157012**	
Client ID No.:	**B-15@15**	**B-15@20**	**B-16@40**	**B-17@5**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client: Cal Environmental
Project No.: 1474
Project Name: Hasley Canyon Land
Sample Matrix: Soil
Method: EPA 8015M(Carbon Chain)

AA Project No.: MB243179
Date Received: 07/14/03
Date Reported: 08/01/03
Units: mg/Kg

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/30/03	07/30/03	07/30/03	07/30/03	
Date Extracted:	07/25/03	07/25/03	07/25/03	07/25/03	
AA ID No.:	157013	157014	157015	157016	
Client ID No.:	B-17@10	B-17@15	B17@20	B-@3016 B16@30'	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/17/03**	**07/17/03**	**07/17/03**	**07/17/03**	
Date Analyzed:	**07/30/03**	**07/30/03**	**07/21/03**	**07/30/03**	
Date Extracted:	**07/25/03**	**07/25/03**	**07/20/03**	**07/25/03**	
AA ID No.:	**157017**	**157018**	**157020**	**157022**	
Client ID No.:	**B-14@5**	**B-18@10**	**B-18@20**	**B-19@5**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/21/03	07/30/03	07/21/03	07/21/03	
Date Extracted:	07/20/03	07/25/03	07/20/03	07/20/03	
AA ID No.:	157024	157026	157028	157029	
Client ID No.:	B-19@20	B-21@5	B-21@20	B-21@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	590	33	<1	1
C08-C10	<1	3200	420	<1	1
C10-C12	<1	3300	500	5.6	1
C12-C14	<1	3300	420	12	1
C14-C16	<1	1300	410	9.0	1
C16-C18	<1	780	200	6.6	1
C18-C20	<1	390	130	<1	1
C20-C22	<1	160	82	9.0	1
C22-C24	<1	66	57	13	1
C24-C26	<1	52	35	22	1
C26-C28	<1	58	54	17	1
C28-C32	<1	44	76	21	1
C32-C34	<1	1.3	21	<1	1
C34-C36	<1	<1	3.5	<1	1
C36-C40	<1	<1	2.0	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	13000	2400	120	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/30/03	07/30/03	07/21/03	07/21/03	
Date Extracted:	07/25/03	07/25/03	07/20/03	07/20/03	
AA ID No.:	157031	157034	157036	157037	
Client ID No.:	B-22@5	B-23@5	B-23@20	B-23@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/29/03	07/21/03	07/29/03	07/30/03	
Date Extracted:	07/28/03	07/20/03	07/28/03	07/25/03	
AA ID No.:	157038	157039	157040	157041	
Client ID No.:	B-20@10	B-20@20	B-20@30	B-20@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/17/03**	
Date Analyzed:	**07/21/03**	
Date Extracted:	**07/20/03**	
AA ID No.:	**157043**	
Client ID No.:	**B-24@10**	
Dilution Factor:	**1.0**	**MRL**
Compounds:		
C06-C08	<1	1
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C22	<1	1
C22-C24	<1	1
C24-C26	<1	1
C26-C28	<1	1
C28-C32	<1	1
C32-C34	<1	1
C34-C36	<1	1
C36-C40	<1	1
C40-C44	<1	1
TPH (C6-C44)	<10	10

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Extracted:	07/14/03	07/14/03	07/14/03	07/14/03	
AA ID No.:	156848	156849	156851	156853	
Client ID No.:	B-1@5	B-1@10	B-1@20	B-1@30	
Dilution Factor:	1.0	5.0	2.0	1.0	**MRL**
Compounds:					
C08-C10	25	840	520	<1	1
C10-C12	57	1300	1200	<1	1
C12-C14	87	2100	1500	5.5	1
C14-C16	95	1300	1200	9.3	1
C16-C18	50	1100	1000	6.9	1
C18-C20	26	620	580	<1	1
C20-C24	19	370	400	<1	1
C24-C28	4.1	88	110	<1	1
C28-C32	7.4	9.2	38	<1	1
C32-C40	2.3	<5	<2	<1	1
Total	370	7800	6500	25	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Extracted:	07/14/03	07/14/03	07/14/03	07/14/03	
AA ID No.:	156855	156857	156859	156861	
Client ID No.:	B-1@40	B-1@50	B-3@10	B-3@20	
Dilution Factor:	5.0	5.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	330	750	<1	<1	1
C10-C12	650	1400	<1	<1	1
C12-C14	990	2000	4.3	<1	1
C14-C16	970	1600	5.6	<1	1
C16-C18	480	1300	1.9	<1	1
C18-C20	420	840	<1	<1	1
C20-C24	280	730	2.1	<1	1
C24-C28	88	180	32	<1	1
C28-C32	45	130	42	<1	1
C32-C40	<5	48	3.3	<1	1
Total	4300	8900	100	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Extracted:	07/14/03	07/14/03	07/14/03	07/14/03	
AA ID No.:	156863	156864	156866	156870	
Client ID No.:	B-2@10	B-3@30	B-2@20	B-2@50	
Dilution Factor:	5.0	1.0	5.0	1.0	**MRL**
Compounds:					
C08-C10	22	<1	1000	580	1
C10-C12	80	<1	1600	1400	1
C12-C14	180	<1	2100	1900	1
C14-C16	190	<1	2100	1800	1
C16-C18	100	<1	1200	1000	1
C18-C20	36	<1	870	690	1
C20-C24	17	<1	630	500	1
C24-C28	<5	<1	220	130	1
C28-C32	<5	<1	180	110	1
C32-C40	<5	<1	69	49	1
Total	640	<10	10000	8100	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/14/03**	**07/14/03**	**07/14/03**	**07/14/03**	
Date Analyzed:	**07/15/03**	**07/14/03**	**07/15/03**	**07/15/03**	
Date Extracted:	**07/15/03**	**07/14/03**	**07/15/03**	**07/15/03**	
AA ID No.:	**156871**	**156873**	**156877**	**156880**	
Client ID No.:	**B-4@10**	**B-2@60**	**B-5@10**	**B-2@70**	
Dilution Factor:	**1.0**	**10.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C08-C10	<1	<10	<1	<1	1
C10-C12	<1	<10	<1	<1	1
C12-C14	<1	**140**	**1.4**	<1	1
C14-C16	<1	**200**	**6.4**	<1	1
C16-C18	<1	**110**	**4.9**	<1	1
C18-C20	<1	**42**	**2.2**	<1	1
C20-C24	<1	**23**	<1	<1	1
C24-C28	<1	<10	<1	<1	1
C28-C32	<1	<10	<1	<1	1
C32-C40	<1	<10	<1	<1	1
Total	<10	**540**	**16**	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/14/03**	**07/15/03**	**07/15/03**	**07/15/03**	
Date Analyzed:	**07/15/03**	**07/15/03**	**07/15/03**	**07/15/03**	
Date Extracted:	**07/15/03**	**07/15/03**	**07/15/03**	**07/15/03**	
AA ID No.:	**156881**	**156883**	**156885**	**156889**	
Client ID No.:	**B-4@40**	**B-5@40**	**B-6@10**	**B-6@40**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C24	<1	<1	<1	<1	1
C24-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Extracted:	07/15/03	07/15/03	07/15/03	07/15/03	
AA ID No.:	156891	156895	156898	156901	
Client ID No.:	B-7@10	B-7@40	B-8@15	B-8@40	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	2.7	<1	<1	1
C20-C24	<1	77	<1	<1	1
C24-C28	<1	310	<1	<1	1
C28-C32	<1	360	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	950	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Extracted:	07/15/03	07/15/03	07/15/03	07/15/03	
AA ID No.:	156903	156907	156909	156912	
Client ID No.:	B-9@10	B-9@40	B-10@10	B-10@40	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C24	<1	<1	<1	<1	1
C24-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Extracted:	07/16/03	07/16/03	07/16/03	07/16/03	
AA ID No.:	156980	156981	156985	156986	
Client ID No.:	B-11@5	B-11@10	B-11@40	B-12@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C24	<1	<1	<1	<1	1
C24-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Extracted:	07/16/03	07/16/03	07/16/03	07/16/03	
AA ID No.:	156989	156990	156993	156997	
Client ID No.:	B-12@20	B-12@30	B-12@55	B-13@20	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C24	<1	<1	<1	<1	1
C24-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Analyzed:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Extracted:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
AA ID No.:	**156999**	**157000**	**157004**	**157005**	
Client ID No.:	**B-13@40**	**B-14@10**	**B-14@40**	**B-15@10**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C24	<1	<1	<1	<1	1
C24-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/17/03**	**07/17/03**	
Date Analyzed:	**07/16/03**	**07/16/03**	**07/17/03**	**07/17/03**	
Date Extracted:	**07/16/03**	**07/16/03**	**07/17/03**	**07/17/03**	
AA ID No.:	**157009**	**157010**	**157019**	**157021**	
Client ID No.:	**B-15@30**	**B-16@25**	**B-18@5**	**B-18@30**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C24	<1	<1	<1	<1	1
C24-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Extracted:	07/17/03	07/17/03	07/17/03	07/17/03	
AA ID No.:	157023	157025	157027	157030	
Client ID No.:	B-19@10	B-19@30	B-21@10	B-21@40	
Dilution Factor:	1.0	1.0	10.0	1.0	**MRL**
Compounds:					
C08-C10	<1	<1	900	<1	1
C10-C12	<1	<1	910	<1	1
C12-C14	<1	<1	1100	<1	1
C14-C16	<1	<1	710	<1	1
C16-C18	<1	<1	480	<1	1
C18-C20	1.8	<1	290	<1	1
C20-C24	32	<1	270	<1	1
C24-C28	150	<1	120	<1	1
C28-C32	220	<1	150	<1	1
C32-C40	170	<1	250	<1	1
Total	570	<10	5200	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Extracted:	07/17/03	07/17/03	07/17/03	07/17/03	
AA ID No.:	157032	157033	157035	157042	
Client ID No.:	B-22@10	B-22@20	B-23@10	B-24@5	
Dilution Factor:	1.0	1.0	1.0	5.0	**MRL**
Compounds:					
C08-C10	<1	<1	<1	18	1
C10-C12	<1	<1	<1	40	1
C12-C14	<1	<1	<1	98	1
C14-C16	<1	<1	<1	120	1
C16-C18	<1	<1	<1	140	1
C18-C20	<1	<1	<1	97	1
C20-C24	<1	<1	<1	160	1
C24-C28	<1	<1	<1	130	1
C28-C32	<1	<1	<1	200	1
C32-C40	<1	<1	<1	130	1
Total	<10	<10	<10	1100	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/17/03**	**07/17/03**	**07/17/03**	
Date Analyzed:	**07/17/03**	**07/17/03**	**07/17/03**	
Date Extracted:	**07/17/03**	**07/17/03**	**07/17/03**	
AA ID No.:	**157044**	**157045**	**157046**	
Client ID No.:	**B-24@20**	**B-24@30**	**B-24@40**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:				
C08-C10	<1	<1	<1	1
C10-C12	**99**	<1	<1	1
C12-C14	**230**	<1	<1	1
C14-C16	**230**	<1	<1	1
C16-C18	**250**	<1	<1	1
C18-C20	**100**	<1	<1	1
C20-C24	**120**	<1	<1	1
C24-C28	**75**	<1	<1	1
C28-C32	**25**	<1	<1	1
C32-C40	<1	<1	<1	1
Total	**1100**	<10	<10	10

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/24/03	07/14/03	07/29/03	07/14/03	
AA ID No.:	156848	156849	156850	156851	
Client ID No.:	B-1@5	B-1@10	B-1@15	B-1@20	
Dilution Factor:	1.0	2.5	40.0	1.0	**MRL**
Compounds:					
Benzene	<1	<1	<0.08	<0.5	0.002
Ethylbenzene	**6.8**	**12**	**0.34**	**5.1**	0.002
Toluene	<1	<1	<0.08	<0.5	0.002
Xylenes	**15**	**18**	**1.0**	**13**	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/29/03	07/14/03	07/29/03	07/14/03	
AA ID No.:	156852	156853	156854	156855	
Client ID No.:	B-1@25	B-1@30	B-1@35	B-1@40	
Dilution Factor:	40.0	1.0	40.0	100.0	**MRL**
Compounds:					
Benzene	<0.08	<0.002	<0.08	<1	0.002
Ethylbenzene	**0.46**	<0.002	**0.37**	**5.3**	0.002
Toluene	<0.08	<0.002	<0.08	**2.2**	0.002
Xylenes	**1.4**	<0.002	**0.58**	**20**	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/29/03	07/14/03	07/29/83	07/14/03	
AA ID No.:	156856	156857	156858	156859	
Client ID No.:	B-1@45	B-1@50	B-3@5	B-3@10	
Dilution Factor:	40.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.08	1.9	<0.002	<0.002	0.002
Ethylbenzene	0.85	13	<0.002	<0.002	0.002
Toluene	0.40	14	<0.002	<0.002	0.002
Xylenes	2.1	39	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/14/03**	**07/14/03**	**07/14/03**	**07/14/03**	
Date Analyzed:	**04/29/03**	**07/14/03**	**07/28/03**	**07/14/03**	
AA ID No.:	**156860**	**156861**	**156862**	**156863**	
Client ID No.:	**B-3@15**	**B-3@20**	**B-2@5**	**B-2@10**	
Dilution Factor:	**40.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.08	<0.002	<0.002	<0.25	0.002
Ethylbenzene	<0.08	<0.002	<0.002	**0.63**	0.002
Toluene	**0.28**	<0.002	<0.002	<0.25	0.002
Xylenes	**0.64**	<0.002	**0.0076**	**1.5**	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/14/03	07/29/03	07/14/03	07/21/03	
AA ID No.:	156864	156865	156866	156867	
Client ID No.:	B-3@30	B-2@15	B-2@20	B-3@40	
Dilution Factor:	1.0	40.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	0.65	7.3	<0.002	0.002
Ethylbenzene	<0.002	3.6	34	<0.002	0.002
Toluene	<0.002	2.5	37	<0.002	0.002
Xylenes	<0.002	8.7	87	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/21/03	07/29/03	07/14/03	07/15/03	
AA ID No.:	156868	156869	156870	156871	
Client ID No.:	B-2@45	B-4@5	B-2@50	B-4@10	
Dilution Factor:	100.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	**0.63**	<0.002	<1	<0.002	0.002
Ethylbenzene	**6.3**	<0.002	**8.8**	<0.002	0.002
Toluene	**4.1**	<0.002	<1	<0.002	0.002
Xylenes	**16**	<0.002	**25**	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/14/03	07/14/03	07/14/03	07/14/03	
Date Analyzed:	07/29/03	07/14/03	07/21/03	07/29/03	
AA ID No.:	156872	156873	156874	156875	
Client ID No.:	B-4@15	B-2@60	B-4@20	B-4@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.05	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.05	<0.002	<0.002	0.002
Toluene	<0.002	<0.05	<0.002	<0.002	0.002
Xylenes	<0.002	**0.33**	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/14/03**	**07/14/03**	**07/14/03**	**07/14/03**	
Date Analyzed:	**07/29/03**	**07/15/03**	**07/29/03**	**07/21/03**	
AA ID No.:	**156876**	**156877**	**156878**	**156879**	
Client ID No.:	**B-5@5**	**B-5@10**	**B-5@15**	**B-5@20**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/14/03	07/14/03	07/15/03	07/15/03	
Date Analyzed:	07/15/03	07/15/03	07/28/03	07/15/03	
AA ID No.:	156880	156881	156882	156883	
Client ID No.:	B-2@70	B-4@40	B-5@30	B-5@40	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/28/03	07/15/03	07/29/03	07/21/03	
AA ID No.:	156884	156885	156886	156887	
Client ID No.:	B-6@5	B-6@10	B-6@15	B-6@20	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/15/03**	**07/15/03**	**07/15/03**	**07/15/03**	
Date Analyzed:	**07/28/03**	**07/15/03**	**07/29/03**	**07/15/03**	
AA ID No.:	**156888**	**156889**	**156890**	**156891**	
Client ID No.:	**B-6@30**	**B-6@40**	**B-7@5**	**B-7@10**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/28/03	07/21/03	07/29/03	07/15/03	
AA ID No.:	156892	156893	156894	156895	
Client ID No.:	B-7@15	B-7@20	B-7@30	B-7@40	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/15/03**	**07/15/03**	**07/15/03**	**07/15/03**	
Date Analyzed:	**07/29/03**	**07/29/03**	**07/15/03**	**07/21/03**	
AA ID No.:	**156896**	**156897**	**156898**	**156899**	
Client ID No.:	**B-8@5**	**B-8@10**	**B-8@15**	**B-8@20**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/29/03	07/15/03	07/29/03	07/15/03	
AA ID No.:	156900	156901	156902	156903	
Client ID No.:	B-8@30	B-8@40	B-9@5	B-9@10	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/15/03**	**07/15/03**	**07/15/03**	**07/15/03**	
Date Analyzed:	**07/29/03**	**07/21/03**	**07/29/03**	**07/15/03**	
AA ID No.:	**156904**	**156905**	**156906**	**156907**	
Client ID No.:	**B-9@15**	**B-9@20**	**B-9@30**	**B-9@40**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/15/03	07/15/03	07/15/03	07/15/03	
Date Analyzed:	07/29/03	07/15/03	07/21/03	07/29/03	
AA ID No.:	156908	156909	156910	156911	
Client ID No.:	B-10@5	B-10@10	B-10@20	B-10@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/15/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/15/03	07/16/03	07/16/03	07/29/03	
AA ID No.:	156912	156980	156981	156982	
Client ID No.:	B-10@40	B-11@5	B-11@10	B-11@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Analyzed:	**07/21/03**	**07/29/03**	**07/16/03**	**07/16/03**	
AA ID No.:	**156983**	**156984**	**156985**	**156986**	
Client ID No.:	**B-11@20**	**B-11@30**	**B-11@40**	**B-12@5**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Analyzed:	**07/29/03**	**07/29/03**	**07/16/03**	**07/16/03**	
AA ID No.:	**156987**	**156988**	**156989**	**156990**	
Client ID No.:	**B-12@10**	**B-12@15**	**B-12@20**	**B-12@30**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Analyzed:	**07/21/03**	**07/21/03**	**07/16/03**	**07/21/03**	
AA ID No.:	**156991**	**156992**	**156993**	**156994**	
Client ID No.:	**B-12@40**	**B-12@50**	**B-12@55**	**B-13@5**	
Dilution Factor:	**50.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	**1.3**	<0.002	<0.002	<0.002	0.002
Ethylbenzene	**4.3**	<0.002	<0.002	<0.002	0.002
Toluene	**4.0**	<0.002	<0.002	<0.002	0.002
Xylenes	**5.2**	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/29/03	07/31/03	07/16/03	07/29/03	
AA ID No.:	156995	156996	156997	156998	
Client ID No.:	B-13@10	B-13@15	B-13@20	B-13@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/16/03**	**07/16/03**	
Date Analyzed:	**07/16/03**	**07/16/03**	**07/29/03**	**07/21/03**	
AA ID No.:	**156999**	**157000**	**157001**	**157002**	
Client ID No.:	**B-13@40**	**B-14@10**	**B-14@15**	**B-14@20**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/28/03	07/16/03	07/16/03	07/31/03	
AA ID No.:	157003	157004	157005	157006	
Client ID No.:	B-14@30	B-14@40	B-15@10	B-15@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/29/03	07/21/03	07/16/03	07/16/03	
AA ID No.:	157007	157008	157009	157010	
Client ID No.:	B-15@15	B-15@20	B-15@30	B-16@25	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/16/03	07/16/03	07/16/03	07/16/03	
Date Analyzed:	07/21/03	07/29/03	07/16/03	07/29/03	
AA ID No.:	157011	157012	157013	157014	
Client ID No.:	B-16@40	B-17@5	B-17@10	B-17@15	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/16/03**	**07/16/03**	**07/17/03**	**07/17/03**	
Date Analyzed:	**07/17/03**	**07/28/03**	**07/29/03**	**07/28/03**	
AA ID No.:	**157015**	**157016**	**157017**	**157018**	
Client ID No.:	**B17@20**	**B-@3016**	**B-14@5**	**B-18@10**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/17/03	07/21/03	07/17/03	07/28/03	
AA ID No.:	157019	157020	157021	157022	
Client ID No.:	B-18@5	B-18@20	B-18@30	B-19@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/17/03**	**07/17/03**	**07/17/03**	**07/17/03**	
Date Analyzed:	**07/17/03**	**07/21/03**	**07/17/03**	**07/28/03**	
AA ID No.:	**157023**	**157024**	**157025**	**157026**	
Client ID No.:	**B-19@10**	**B-19@20**	**B-19@30**	**B-21@5**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	**0.0068**	0.002
Ethylbenzene	<0.002	<0.002	<0.002	**0.091**	0.002
Toluene	<0.002	<0.002	<0.002	**0.11**	0.002
Xylenes	<0.002	<0.002	<0.002	**1.8**	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/17/03**	**07/17/03**	**07/17/03**	**07/17/03**	
Date Analyzed:	**07/17/03**	**07/21/03**	**07/21/03**	**07/17/03**	
AA ID No.:	**157027**	**157028**	**157029**	**157030**	
Client ID No.:	**B-21@10**	**B-21@20**	**B-21@30**	**B-21@40**	
Dilution Factor:	**1.0**	**50.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.1	<0.1	<0.002	<0.002	0.002
Ethylbenzene	**2.7**	**1.6**	**0.014**	<0.002	0.002
Toluene	**0.88**	**5.2**	**0.0032**	<0.002	0.002
Xylenes	**22**	**8.8**	**0.097**	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/28/03	07/17/03	07/17/03	07/29/03	
AA ID No.:	157031	157032	157033	157034	
Client ID No.:	B-22@5	B-22@10	B-22@20	B-23@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	**0.0020**	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/17/03	07/21/03	07/21/03	07/29/03	
AA ID No.:	157035	157036	157037	157038	
Client ID No.:	B-23@10	B-23@20	B-23@30	B-20@10	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/17/03	07/17/03	07/17/03	07/17/03	
Date Analyzed:	07/21/03	07/29/03	07/28/03	07/17/03	
AA ID No.:	157039	157040	157041	157042	
Client ID No.:	B-20@20	B-20@30	B-20@5	B-24@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	**0.0044**	0.002
Ethylbenzene	<0.002	<0.002	<0.002	**0.0076**	0.002
Toluene	<0.002	<0.002	<0.002	**0.0059**	0.002
Xylenes	<0.002	<0.002	<0.002	**0.020**	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243179
Project No.:	1474	**Date Received:**	07/14/03
Project Name:	Hasley Canyon Land	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/17/03**	**07/17/03**	**07/17/03**	**07/17/03**	
Date Analyzed:	**07/21/03**	**07/17/03**	**07/17/03**	**07/17/03**	
AA ID No.:	**157043**	**157044**	**157045**	**157046**	
Client ID No.:	**B-24@10**	**B-24@20**	**B-24@30**	**B-24@40**	
Dilution Factor:	**1.0**	**100.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.05	<0.002	<0.002	0.002
Ethylbenzene	<0.002	**0.16**	<0.002	<0.002	0.002
Toluene	<0.002	<0.05	<0.002	<0.002	0.002
Xylenes	<0.002	**0.23**	<0.002	<0.002	0.002

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/24/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/15/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/21/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C06-C08	<1	1
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C22	<1	1
C22-C24	<1	1
C24-C26	<1	1
C26-C28	<1	1
C28-C32	<1	1
C32-C34	<1	1
C34-C36	<1	1
C36-C40	<1	1
C40-C44	<1	1
TPH (C6-C44)	<10	10

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/22/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C06-C08	<1	1
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C22	<1	1
C22-C24	<1	1
C24-C26	<1	1
C26-C28	<1	1
C28-C32	<1	1
C32-C34	<1	1
C34-C36	<1	1
C36-C40	<1	1
C40-C44	<1	1
TPH (C6-C44)	<10	10

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/21/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

MRL: Method Reporting Limit

Allen Aminian
Project Manager

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/21/03
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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/16/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

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Sample ID: Reagent Blank

Project No.: 1474
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Date Analyzed: 07/17/03
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Toluene	<0.002	0.002
Xylenes	<0.002	0.002

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/14/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C24	<1	1
C24-C28	<1	1
C28-C32	<1	1
C32-C40	<1	1
Total	<10	10

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/15/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C24	<1	1
C24-C28	<1	1
C28-C32	<1	1
C32-C40	<1	1
Total	<10	10

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Sample ID: Reagent Blank

Project No.: 1474
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Compounds	Results mg/Kg	MRL
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C24	<1	1
C24-C28	<1	1
C28-C32	<1	1
C32-C40	<1	1
Total	<10	10

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Sample ID: Reagent Blank

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Compounds	Results mg/Kg	MRL
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C24	<1	1
C24-C28	<1	1
C28-C32	<1	1
C32-C40	<1	1
Total	<10	10

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/28/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

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Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/29/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

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Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

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Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

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LABORATORY QA/QC REPORT

Client: Cal Environmental
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Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/28/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C06-C08	<1	1
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C22	<1	1
C22-C24	<1	1
C24-C26	<1	1
C26-C28	<1	1
C28-C32	<1	1
C32-C34	<1	1
C34-C36	<1	1
C36-C40	<1	1
C40-C44	<1	1
TPH (C6-C44)	<10	10

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243179
Date Analyzed: 07/30/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C06-C08	<1	1
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C22	<1	1
C22-C24	<1	1
C24-C26	<1	1
C26-C28	<1	1
C28-C32	<1	1
C32-C34	<1	1
C34-C36	<1	1
C36-C40	<1	1
C40-C44	<1	1
TPH (C6-C44)	<10	10

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Sample ID: Reagent Blank

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AA Project No.: MB243179
Date Analyzed: 07/30/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C06-C08	<1	1
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C22	<1	1
C22-C24	<1	1
C24-C26	<1	1
C26-C28	<1	1
C28-C32	<1	1
C32-C34	<1	1
C34-C36	<1	1
C36-C40	<1	1
C40-C44	<1	1
TPH (C6-C44)	<10	10

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/24/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0372	93.00	69.00 -131
Ethylbenzene	0.0382	96.00	63.00 -137
Toluene	0.0378	95.00	67.00 -133
Xylenes	0.0416	104.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/15/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0480	120.00	69.00 -131
Ethylbenzene	0.0341	85.00	63.00 -137
Toluene	0.0334	84.00	67.00 -133
Xylenes	0.0326	82.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/21/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	244	122	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/22/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	198	99	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/21/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0434	109.00	69.00 -131
Ethylbenzene	0.0328	82.00	63.00 -137
Toluene	0.0341	85.00	67.00 -133
Xylenes	0.0424	106.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/21/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0411	103.00	69.00 -131
Ethylbenzene	0.0423	106.00	63.00 -137
Toluene	0.0428	107.00	67.00 -133
Xylenes	0.0444	111.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/16/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0482	121.00	69.00 -131
Ethylbenzene	0.0368	92.00	63.00 -137
Toluene	0.0340	85.00	67.00 -133
Xylenes	0.0329	82.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/17/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0463	116.00	69.00 -131
Ethylbenzene	0.0251	63.00	63.00 -137
Toluene	0.0236	59.00	67.00 -133
Xylenes	0.0229	57.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/14/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	192	96	50 - 150

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Client: Cal Environmental
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Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/15/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	208	104	50 - 150

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Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/16/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	195	98	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/17/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	197	99	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/28/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0425	106.00	69.00 -131
Ethylbenzene	0.0353	88.00	63.00 -137
Toluene	0.0327	82.00	67.00 -133
Xylenes	0.0344	86.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/29/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0431	108.00	69.00 -131
Ethylbenzene	0.0346	87.00	63.00 -137
Toluene	0.0308	77.00	67.00 -133
Xylenes	0.0338	85.00	55.00 -145

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Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/29/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0383	96.00	69.00 -131
Ethylbenzene	0.0398	100.00	63.00 -137
Toluene	0.0400	100.00	67.00 -133
Xylenes	0.0415	104.00	55.00 -145

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Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/29/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0370	93.00	69.00 -131
Ethylbenzene	0.0395	99.00	63.00 -137
Toluene	0.0383	96.00	67.00 -133
Xylenes	0.0401	100.00	55.00 -145

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Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/28/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	217	109	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/30/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	186	93	50 - 150

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Client: Cal Environmental
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Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/30/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	199	100	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No: 156853
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/24/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Benzene	0.0235	59.00	0.0228	57.00	3.4	65.00 -135
Ethylbenzene	0.0322	81.00	0.0308	77.00	5.0	77.00 -123
Toluene	0.0263	66.00	0.0239	60.00	9.5	66.00 -134
Xylenes	0.0326	82.00	0.0330	83.00	1.2	73.00 -127

Allen Aminian
Project Manager

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No: 156871
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/15/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Benzene	0.0423	106.00	0.0397	99.00	6.8	65.00 -135
Ethylbenzene	0.0312	78.00	0.0287	72.00	8.0	77.00 -123
Toluene	0.0285	71.00	0.0278	70.00	1.4	66.00 -134
Xylenes	0.0352	88.00	0.0357	89.00	1.1	73.00 -127

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Project Manager

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 200 mg/Kg

AA ID No: 157043
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/21/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	173	87	184	92	6	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 200 mg/Kg

AA ID No: 156994
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/22/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	178	89	165	83	7	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No: 156980
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/16/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Benzene	0.0364	91.00	0.0442	111.0	19.	65.00 -135
Ethylbenzene	0.0286	72.00	0.0376	94.00	26.	77.00 -123
Toluene	0.0354	89.00	0.0340	85.00	4.6	66.00 -134
Xylenes	0.0260	65.00	0.0361	90.00	32.	73.00 -127

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No: 157015
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/17/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Benzene	0.0471	118.00	0.0431	108.0	8.8	65.00 -135
Ethylbenzene	0.0332	83.00	0.0365	91.00	9.2	77.00 -123
Toluene	0.0331	83.00	0.0339	85.00	2.3	66.00 -134
Xylenes	0.0331	83.00	0.0359	90.00	8.0	73.00 -127

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 400 mg/Kg

AA ID No: 156864
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/14/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	403	101	426	107	6	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 400 mg/Kg

AA ID No: 156877
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/15/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	334	84	513	128	42	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 400 mg/Kg

AA ID No: 156980
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/16/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	431	108	342	86	23	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 400 mg/Kg

AA ID No: 157019
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/17/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	393	98	510	128	27	50 - 150

Allen Aminian
Project Manager

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 200 mg/Kg

AA ID No: 156882
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/28/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	176	88	214	107	19	50 - 150

Allen Aminian
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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 200 mg/Kg

AA ID No: 157006
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/30/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	175	88	179	90	2	50 - 150

Allen Aminian
Project Manager

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasley Canyon Land
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 200 mg/Kg

AA ID No: 157034
Project No.: 1474
AA Project No. MB243179
Date Analyzed: 07/30/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	179	90	171	86	5	50 - 150

Allen Aminian
Project Manager

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AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

№ 302280

DATE: 7/14/03

PAGE 1 OF 3

AA Client: CALE ENV	Phone: 805 445 7117	Sampler's Name (Print): CHRIS RUDE	
Project Manager: CLB	P.O. No.: 1474	Sampler's Signature:	
Project Name: HASLEY CYN LAND CO.	Client's Project No.:	Project Manager's Signature:	
Job Name and Address: SADD LEASE, CASTAIC			

ANALYSIS REQUIRED (Test Name)

Client's I.D.	A.A. I.D.#	Date 7/14/03	Time	Sample Type	Number of Containers	BTEX 8020	8015M C.C.	Client's Comment Special Test Requirements / Comments (i.e., - Turnaround Time, Detection Limits, Data Package.....)
B-1@5	156848	~~0905~~	SOIL	0905	1	X	X	(X) Added for inhouse analysis per C. Rude request. 7/24/03 A-A Normal T.A.T Due 8/1/03
B-1@10	156849	7/14/03	0920	SOIL	1	X	X	
B-1@15	156850		0920		1	X	X	
B-1@20	156851		0935		1	X	X	
B-1@25	156852		0940		1	X	X	
B-1@30	156853		0955		1	X	X	
B-1@35	156854		1010		1	X	X	
B-1@40	156855		1220		1	X	X	
B-1@45	156856		1230		1	X	X	
B-1@50	156857		1245		1	X	X	
B-3@5	156858		1235		1	X	X	
B-3@10	156859		1237		1	X	X	
B-3@15	156860		1245		1	X	X	
B-3@20	156861		1250		1	X	X	
B-2@5	156862		1300		1	X	X	
B-2@10	156863	7/14	1305		1	X	X	

LAB COMMENTS

Approved on work order by Allen Avian 7/16/03 A-A

Relinquished by:	Date	Time	Received by:
Chris Rude	7/14	1600	Brian Built
Brian Built	7/16/03	8:00 am	[illegible] '03 JUL 16 AM 5:2

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

№ 302281

DATE: 7/14/03

PAGE 2 OF 3

AA Client: Calif. Env.		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): BTEX, EPA 8015 Carb C

Client's Comment Special Test Requirements / Comments (i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	BTEX	EPA 8015 Carb C	Client's Comment
B-3@30	156864	7/14/03	1305	SOIL	1	X	X	
B-2@15	156865		1310		1	X	X	
B-2@20	156866		1315		1	X	X	
B-3@40	156867		1320		1	X	X	~~HOLD~~ run
B-2@45	156868		1410		1	X	X	
B-4@5	156869		1415		1	X	X	(X) Added per C. Rude
B-2@50	156870		1415		1	X	X	request. 7/18/03 A.A
B-4@10	156871		1420		1	X	X	Push 72 hr.
B-4@15	156872		1425		1	X	X	
B-2@60	156873		1440		1	X	X	
B-4@20	156874		1430		1	X	X	(X) Added per C. Rude 7/24/03
B-4@30	156875		1445		1	X	X	A.A
B-5@5	156876		1520		1	X	X	
B-5@10	156877		1530		1	X	X	
B-5@15	156878		1540	1575	1	X	X	
B-5@20	156879		1555	1540	1	X	X	

LAB COMMENTS

Approved as work order by Allen Amen 7/16/03 A.A

Relinquished by:	Date	Time	Received by:
[illegible]	7/14	1600	Brian Built
Brian Built	7/16/03	8:49	[illegible]

'03 JUL 16 AM 5:2

A.A. Project No.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

№ 302282

DATE: 7/14/03

PAGE 3 OF 3

AA Client: Calif. Env.		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name)

Client's Comment Special Test Requirements / Comments

i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	BTEX	8010/CH cc.								
B-2@70	156880	7/14/03	1540	SOIL	1	X	X								
B-4@40	156881		1500		1	X	X								

LAB COMMENTS

Approved as work order by Allen Aminian 7/16/03 A.A.

Relinquished by:	Date	Time	Received by:
[illegible]	7/14	1600	Brian Built
Brian Built	7/16/03	829	[illegible]

03 JUL 16 AM 5:2

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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№ 302283

DATE: 7/15/03

PAGE 1 OF 2

AA Client: Cally Env.		Phone	Sampler's Name (Print)
Project Manager		P.O. No. 1474	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): 8015M C.P.; 8260 PBTX

Client's Comment Special Test Requirements / Comments i.e., - Turnaround Time Detection Limits Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8015M C.P.	8260 PBTX	Comments
B-5@30	156882	7/15/03	0740	SOIL	1	X	X	~~Hold~~ Run
B-5@40	156883		0800		1	X	X	
B-6@5	156884		0815		1	X	X	Run
B-6@10	156885		0820		1	X	X	X Added per client
B-6@15	156886		0830		1	X	X	request.
B-6@20	156887		0845		1	X	X	7/18/03 AA
B-6@30	156888		0900		1	X	X	Rush 72hr
B-6@40	156889		0930		1	X	X	
B-7@5	156890		1045		1	X	X	X Added per C. Ende 7/24/03 A.A
B-7@10	156891		1050		1	X	X	
B-7@15	156892		1100		1	X	X	
B-7@20	156893		1110		1	X	X	
B-7@30	156894		1120		1	X	X	
B-7@40	156895		1130		1	X	X	
B-8@5	156896		1150		1	X	X	
B-8@10	156897		1200		1	X	X	

LAB COMMENTS

Approved on workorder by Allen Amidon 7/16/03 A.A

Relinquished by:	Date	Time	Received by:
[signature]	7/15	4:00	Brian Burlt
Brian Burlt	7/16/03	8:29	[signature]

'03 JUL 16 AM 5:2

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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Tel: 818-998-5547 FAX: 818-998-7256

№ 302284

DATE: 7/15/03

PAGE 2 OF 2

AA Client: Calif. Env.		Phone	Sampler's Name (Print)
Project Manager: CIB		P.O. No. 1474	Sampler's Signature
Project Name: Hasley canyon land		Client's Project No.	Project Manager's Signature
Job Name and Address: Castaic			

ANALYSIS REQUIRED (Test Name)

Client's I.D.	AA. I.D.#	Date	Time	Sample Type	Number of Containers	8015M C.C.	8020 BTEX	Client's Comment Special Test Requirements / Comments i.e., - Turnaround Time Detection Limits Data Package.....)
B-8@15	156898	7/15/03	1205	SOIL	1	X	X	
B-8@20	156899		1210		1	X	X	
B-8@30	156900		1220		1	X	X	
B-8@40	156901		1235		1	X	X	⊗ Added per C. Rude
B-9@5	156902		1340		1	X	X	request. 7/16/03 A.A
B-9@10	156903		1345		1	X	X	72 hr rush
B-9@15	156904		1350		1	X	X	
B-9@20	156905		1400		1	X	X	⊗ Added per C. Rude 7/24/03 AA
B-9@30	156906		1405		1	X	X	
B-9@40	156907		1415		1	X	X	
B-10@5	156908		1440		1	X	X	
B-10@10	156909		1445		1	X	X	
B-10@20	156910		1500		1	X	X	
B-10@30	156911		1510		1	X	X	
B-10@40	156912		1570		1	X	X	

LAB COMMENTS

Approved as work order by Allen Ruck 7/16/03 A.A

Relinquished by:	Date	Time	Received by:
	7/15	400	Brian Built
Brian Built	7/16/03	2:29	

'03 JUL 15 AM 5:2

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311 № 300951

Tel: 818-998-5547 FAX: 818-998-7258

DATE: 7/16/03

PAGE 1 OF 3

AA Client: Cal Env.		Phone	Sampler's Name (Print)
Project Manager		P.O. No. 1474	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): 8015M C.C. / Pb Tot 8020

Client's Comment Special Test Requirements / Comments (i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8015M C.C.	Pb Tot 8020	Client's Comment
B-11@5	156980	7/16/03	0800	SOIL	1	X	X	
B-11@10	156981		0800		1	X	X	
B-11@15	156982		0800		1	X	X	X Added per C. Rude request. 7/18/03 A.A
B-11@20	156983		0815		1	X	X	
B-11@30	156984		0840		1	X	X	Rush 72 hr
B-11@40	156985		0840		1	X	X	
B-12@5	156986		0915		1	X	X	
B-12@10	156987		0940		1	X	X	X Added per C. Rude 7/24/03 A.A
B-12@15	156988		0930		1	X	X	
B-12@20	156989		0935		1	X	X	
B-12@30	156990		0940		1	X	X	
B-12@40	156991		0952		1	X	X	
B-12@50	156992		1010		1	X	X	
B-12@55	156993		1020		1	X	X	
B-13@5	156994		1045		1	X	X	
B-13@10	156995		1050		1	X	X	

LAB COMMENTS

Approved as work order by Allen Aninu 7/17/03 A.A

AA Project No. [illegible]

Relinquished by:	Date	Time	Received by:
[signature]	7/16	4:15	Brian Built
Brian Built	7/16/03	8:20	[signature]

'03 JUL 17 AM 4:3[illegible]

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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Tel: 818-998-5547 FAX: 818-998-7258

DATE: 7/16/03

PAGE 2 OF 3

AA Client: Cal Env.		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): 8015M G.C., 8020 BTEX

Client's Comment Special Test Requirements / Comments (i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8015M G.C.	8020 BTEX	Client's Comment
B-13@15	156996	7/16/03	1100	SOIL	1	X	X	
B-13@20	156997		1105		1	X	X	
B-13@30	156998		1130		1	X	X	
B-13@40	156999		1135		1	X	X	⊗ Added per C. Rude
B-14@10	157000		1400		1	X	X	request. 7/18/03 A.A
B-14@15	157001		1400		1	X	X	72 hr rush
B-14@20	157002		1400		1	X	X	
B-14@30	157003		1400		1	X	X	⊗ Added per C. Rude
B-14@40	157004		1400		1	X	X	7/24/03 A.A
B-15@10	157005		1410		1	X	X	
B-15@[illegible]	157006		1400		1	X	X	
B-15@15	157007		1415		1	X	X	
B-15@20	157008		1420		1	X	X	
B-15@30	157009		1430		1	X	X	
B-16@25	157010		1510		1	X	X	
B-16@40	157011		1535		1	X	X	

LAB COMMENTS

Approved as work order by Allen Amian.
7/17/03 A.A

Relinquished by:	Date	Time	Received by:
[illegible]	7/16	1715	Brian Built
Brian Built	7/17/03	8:00	[illegible] 03 JUL 17 AM 4:3

AA Project No. [illegible]

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311 № 300953

Tel: 818-998-5547 FAX: 818-998-7258

DATE: 7/16/03

PAGE 3 OF 3

AA Client: Cal Ban V.		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name)

Client's Comment Special Test Requirements / Comments

i.e., - Turnaround Time, Detection Limits, Data Packages.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8015M C.C.	8178X	Client's Comment
B17@5	157012	7/16/03	1555	SOIL	1	X	X	(X) Added per C. Rude 7/24/03 A.A
B17@10	157013		1600		1	X	X	
B17@15	157014		1605		1	X	X	
B17@20	157015		1610		1	X	X	Run
B16@30	157016		1520		1	~~X~~	~~X~~	~~Hold~~ Run

LAB COMMENTS

Approved as work order by Allen Ami 7/17/03 A.A

Relinquished by:	Date	Time	Received by:
	7/15	4/15	Brian Built
Brian Built	7/17/03	8:0	

AA Project No.

'03 JUL 17 AM 4:3

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311 Nº 300954

Tel: 818-998-5547 FAX: 818-998-7258

DATE: 7/17/03

PAGE 1 OF 2

AA Client: Cal Env.

Phone:

Sampler's Name (Print):

Project Manager:

P.O. No.:

Sampler's Signature:

Project Name:

Client's Project No.:

Project Manager's Signature:

Job Name and Address:

ANALYSIS REQUIRED (Test Name): 8015M G.C. / 8020 BTEX

Client's Comment Special Test Requirements / Comments (i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8015M G.C.	8020 BTEX	Comments
B-14@5	157017	7/16/03	1205	SOIL	1	X	X	~~Hold~~ Run
B-18@10	157018		1005		1	X	X	
B-18@5	157019		1000		1	X	X	X Added per C. Rude
B-18@20	157020		1005		1	X	X	~~responsibi~~ request.
B-18@30	157021		1005		1	X	X	7/18/03 A.A
B-19@5	157022		1000		1	X	X	
B-19@10	157023		1020		1	X	X	X Rush 72 hrs.
B-19@20	157024		1020		1	X	X	
B-19@30	157025		1040		1	X	X	
B-21@5	157026		1215		1	X	X	X Added per C. Rude
B-21@10	157027		1215		1	X	X	7/24/03
B-21@20	157028		1220		1	X	X	A.A
B-21@30	157029		1235		1	X	X	
B-21@40	157030		1250		1	X	X	
B-22@5	157031		1350		1	X	X	
B-22@10	157032		1350		1	X	X	

LAB COMMENTS

Approved as work order by Allen Amirian. 7/18/03 A.A

AA Project No.

Relinquished by:	Date	Time	Received by:
			Brian Built
Brian Built	7/18/03	8:00	[illegible]
			'03 JUL 18 AM 6:2

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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Tel: 818-998-5547 FAX: 818-998-7258

DATE: 7/17/03

PAGE 2 OF 2

AA Client: Cal. Envi		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): 8021B C.C. / 8020 BTX

Client's Comment Special Test Requirements / Comments i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8021B C.C.	8020 BTX	Client's Comment
B-22@20	157033	7/17/03	1350	SOIL	1	X	X	
B-23@5	157034		1430		1	X	X	
B23@10	157035		1435		1	X	X	X Added per C. Rude
B23@20	157036		1450		1	X	X	request. 7/18/03 A.A
B23@30	157037		1500		1	X	X	
B20@10	157038		1110		1	X	X	X RUSH 72 hr.
B20@20	157039		1120		1	X	X	
B20@30	157040		1130		1	X	X	
B20@5	157041		1100		1	X	X	X Added per C. Rude
B24@5	157042		1515		1	X	X	7/24/03
B24@10	157043		1520		1	X	X	A.A
B24@20	157044		1545		1	X	X	
B24@30	157045		1545		1	X	X	
B24@40	157046		1600		1	X	X	

LAB COMMENTS

approved as work order by Allen Aminian. 7/18/03

Relinquished by:	Date	Time	Received by:
			Brian Built
Brian Built	7/18/03	8:20	[illegible]
			03 JUL 18 AM 6:2

AA Project No.

LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Water	**Units:**	ug/L
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/23/03**	
Date Analyzed:	**07/23/03**	
AA ID No.:	**157280**	
Client ID No.:	**B25-W**	
Dilution Factor:	**1.0**	**MRL**
Compounds:		
Benzene	**4.3**	0.5
Ethylbenzene	**6.6**	0.5
Toluene	**12**	0.5
Xylenes	**18**	1

MRL: Method Reporting Limit J: Estimated Value

Allen Aminian
Project Manager

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/25/03	07/25/03	07/25/03	07/25/03	
Date Extracted:	07/24/03	07/24/03	07/25/03	07/24/03	
AA ID No.:	157274	157276	157281	157283	
Client ID No.:	B25@40	B25@60	B26@5	B26@15	
Dilution Factor:	1.0	10.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	140	320	<1	1.3	1
C08-C10	700	1400	<1	<1	1
C10-C12	1200	2500	<1	<1	1
C12-C14	1500	3400	<1	<1	1
C14-C16	750	1800	<1	1.1	1
C16-C18	400	1100	<1	4.4	1
C18-C20	140	550	<1	2.3	1
C20-C22	80	<10	<1	4.2	1
C22-C24	11	<10	<1	3.2	1
C24-C26	8.1	<10	<1	2.9	1
C26-C28	4.2	<10	<1	5.7	1
C28-C32	6.2	<10	<1	2.6	1
C32-C34	<1	<10	<1	<1	1
C34-C36	<1	<10	<1	<1	1
C36-C40	<1	<10	<1	<1	1
C40-C44	<1	<10	<1	<1	1
TPH (C6-C44)	4900	11000	<10	28	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/25/03	07/25/03	07/25/03	07/25/03	
Date Extracted:	07/24/03	07/24/03	07/24/03	07/24/03	
AA ID No.:	157284	157291	157293	157295	
Client ID No.:	B26@20	B27@10	B-28@10	B-29@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	1.4	<1	1.7	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	6.4	<1	<1	1
C12-C14	<1	40	<1	<1	1
C14-C16	<1	45	<1	<1	1
C16-C18	<1	43	<1	1.4	1
C18-C20	<1	21	<1	<1	1
C20-C22	<1	9.4	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	170	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/25/03	07/25/03	07/25/03	07/25/03	
Date Extracted:	07/24/03	07/25/03	07/24/03	07/24/03	
AA ID No.:	157297	157298	157299	157300	
Client ID No.:	B-30@2	B-30@5	B-30@10	B-31@2	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	1.6	2.3	1.4	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	75	<1	1
C12-C14	35	5.4	270	<1	1
C14-C16	53	8.8	350	<1	1
C16-C18	69	11	360	<1	1
C18-C20	38	6.9	220	<1	1
C20-C22	25	4.8	110	<1	1
C22-C24	4.6	2.1	14	<1	1
C24-C26	1.5	1.5	8.6	<1	1
C26-C28	1.1	2.8	5.4	<1	1
C28-C32	<1	<1	1.4	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	230	46	1400	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/25/03	07/25/03	07/25/03	07/25/03	
Date Extracted:	07/24/03	07/25/03	07/24/03	07/24/03	
AA ID No.:	157301	157302	157303	157305	
Client ID No.:	B-31@5	B-33@10	B-33@20	B-33@30	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C06-C08	<1	<1	<1	<1	1
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	<1	<1	1
C14-C16	<1	<1	<1	<1	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C22	<1	<1	<1	<1	1
C22-C24	<1	<1	<1	<1	1
C24-C26	<1	<1	<1	<1	1
C26-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C34	<1	<1	<1	<1	1
C34-C36	<1	<1	<1	<1	1
C36-C40	<1	<1	<1	<1	1
C40-C44	<1	<1	<1	<1	1
TPH (C6-C44)	<10	<10	<10	<10	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/23/03**	**07/23/03**	
Date Analyzed:	**07/25/03**	**07/25/03**	
Date Extracted:	**07/24/03**	**07/24/03**	
AA ID No.:	**157306**	**157307**	
Client ID No.:	**B-33@40**	**B-32@30**	
Dilution Factor:	**1.0**	**10.0**	**MRL**
Compounds:			
C06-C08	<1	**1000**	1
C08-C10	<1	**3300**	1
C10-C12	<1	**5300**	1
C12-C14	<1	**5800**	1
C14-C16	<1	**4800**	1
C16-C18	<1	**2400**	1
C18-C20	<1	**1100**	1
C20-C22	<1	**290**	1
C22-C24	<1	**23**	1
C24-C26	<1	<10	1
C26-C28	<1	<10	1
C28-C32	<1	<10	1
C32-C34	<1	<10	1
C34-C36	<1	<10	1
C36-C40	<1	<10	1
C40-C44	<1	<10	1
TPH (C6-C44)	<10	**24000**	10

MRL: Method Reporting Limit J: Estimated Value

Allen Aminian
Project Manager

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Extracted:	07/23/03	07/23/03	07/23/03	07/23/03	
AA ID No.:	157275	157277	157278	157279	
Client ID No.:	B25@50	B25@70	B25@90	B25@100	
Dilution Factor:	2.0	10.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	550	1500	<1	<1	1
C10-C12	900	2500	3.2	<1	1
C12-C14	1000	2800	14	<1	1
C14-C16	760	2200	16	<1	1
C16-C18	460	1400	10	<1	1
C18-C20	250	730	2.2	<1	1
C20-C24	170	390	1.4	<1	1
C24-C28	39	79	<1	<1	1
C28-C32	31	77	<1	<1	1
C32-C40	4.5	<10	<1	<1	1
Total	4200	12000	52	<10	10

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Project Manager

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Extracted:	07/23/03	07/23/03	07/23/03	07/23/03	
AA ID No.:	157282	157285	157286	157287	
Client ID No.:	B26@10	B26@30	B26@35	B26@45	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	<1	<1	<1	<1	1
C10-C12	<1	<1	<1	<1	1
C12-C14	<1	<1	3.8	1.7	1
C14-C16	<1	<1	5.1	2.2	1
C16-C18	<1	<1	<1	<1	1
C18-C20	<1	<1	<1	<1	1
C20-C24	<1	<1	<1	<1	1
C24-C28	<1	<1	<1	<1	1
C28-C32	<1	<1	<1	<1	1
C32-C40	<1	<1	<1	<1	1
Total	<10	<10	10	<10	10

Allen Aminian
Project Manager

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Extracted:	07/23/03	07/23/03	07/23/03	07/23/03	
AA ID No.:	157288	157289	157290	157292	
Client ID No.:	B26@55	B27@2	B27@5	B-28@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
C08-C10	<1	3.5	<1	<1	1
C10-C12	<1	30	2.4	<1	1
C12-C14	<1	92	21	<1	1
C14-C16	<1	150	43	<1	1
C16-C18	<1	140	46	<1	1
C18-C20	<1	130	15	<1	1
C20-C24	<1	96	20	<1	1
C24-C28	<1	110	1.1	<1	1
C28-C32	<1	160	<1	<1	1
C32-C40	<1	170	<1	<1	1
Total	<10	1100	150	<10	10

Allen Aminian
Project Manager

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Extracted:	07/23/03	07/23/03	07/23/03	07/23/03	
AA ID No.:	157294	157304	157308	157309	
Client ID No.:	B-29@2	B-32@10	B-32@40	B-32@50	
Dilution Factor:	1.0	10.0	5.0	2.0	**MRL**
Compounds:					
C08-C10	<1	620	600	<2	1
C10-C12	<1	1500	990	<2	1
C12-C14	<1	2700	1100	21	1
C14-C16	<1	2300	880	26	1
C16-C18	<1	1400	550	16	1
C18-C20	<1	420	290	3.7	1
C20-C24	<1	250	170	2.2	1
C24-C28	<1	12	25	<2	1
C28-C32	<1	<10	22	<2	1
C32-C40	<1	<10	<5	<2	1
Total	<10	9200	4600	73	10

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8015M(Carbon Chain)		

Date Sampled:	**07/23/03**	**07/23/03**	
Date Analyzed:	**07/23/03**	**07/23/03**	
Date Extracted:	**07/23/03**	**07/23/03**	
AA ID No.:	**157310**	**157311**	
Client ID No.:	**B-32@60**	**B-32@70**	
Dilution Factor:	**1.0**	**1.0**	**MRL**
Compounds:			
C08-C10	<1	<1	1
C10-C12	<1	<1	1
C12-C14	<1	<1	1
C14-C16	<1	<1	1
C16-C18	<1	<1	1
C18-C20	<1	<1	1
C20-C24	<1	<1	1
C24-C28	<1	<1	1
C28-C32	<1	<1	1
C32-C40	<1	<1	1
Total	<10	<10	10

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Water	**Units:**	mg/L
Method:	EPA 8015M (Carbon Chain)		

Date Sampled:	**07/23/03**	
Date Analyzed:	**07/23/03**	
Date Extracted:	**07/23/03**	
AA ID No.:	**157280**	
Client ID No.:	**B25-W**	
Dilution Factor:	**1.0**	**MRL**
Compounds:		
C08-C10	**0.30**	0.1
C10-C12	**0.88**	0.1
C12-C14	**0.87**	0.1
C14-C16	**1.1**	0.1
C16-C18	**0.41**	0.1
C18-C20	**0.14**	0.1
C20-C24	<0.1	0.1
C24-C28	<0.1	0.1
C28-C32	<0.1	0.1
C32-C44	<0.1	0.1
Total	**4.2**	1

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/31/03	07/23/03	07/31/03	07/23/03	
AA ID No.:	157274	157275	157276	157277	
Client ID No.:	B25@40	B25@50	B25@60	B25@70	
Dilution Factor:	50.0	500.0	25.0	200.0	**MRL**
Compounds:					
Benzene	0.64	2.1	1.7	<0.1	0.002
Ethylbenzene	6.1	6.2	14	17	0.002
Toluene	1.4	7.3	11	17	0.002
Xylenes	16	18	33	51	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/23/03	07/23/03	07/24/03	07/23/03	
AA ID No.:	157278	157279	157281	157282	
Client ID No.:	B25@90	B25@100	B26@5	B26@10	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	**0.049**	<0.002	<0.002	<0.002	0.002
Ethylbenzene	**0.0088**	<0.002	<0.002	<0.002	0.002
Toluene	**0.018**	<0.002	<0.002	<0.002	0.002
Xylenes	**0.055**	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/24/03	07/24/03	07/23/03	07/24/03	
AA ID No.:	157283	157284	157285	157286	
Client ID No.:	B26@15	B26@20	B26@30	B26@35	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/23/03	07/23/03	07/23/03	07/23/03	
AA ID No.:	157287	157288	157289	157290	
Client ID No.:	B26@45	B26@55	B27@2	B27@5	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	**0.0035**	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	**0.0087**	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/23/03**	**07/23/03**	**07/23/03**	**07/23/03**	
Date Analyzed:	**07/24/03**	**07/23/03**	**07/31/03**	**07/23/03**	
AA ID No.:	**157291**	**157292**	**157293**	**157294**	
Client ID No.:	**B27@10**	**B-28@5**	**B-28@10**	**B-29@2**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	**0.0065**	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/24/03	07/24/03	07/31/03	07/31/03	
AA ID No.:	157295	157297	157298	157299	
Client ID No.:	B-29@5	B-30@2	B-30@5	B-30@10	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	07/23/03	07/23/03	07/23/03	07/23/03	
Date Analyzed:	07/31/03	07/31/03	07/31/03	07/31/03	
AA ID No.:	157300	157301	157302	157303	
Client ID No.:	B-31@2	B-31@5	B-33@10	B-33@20	
Dilution Factor:	1.0	1.0	1.0	1.0	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	<0.002	0.002
Ethylbenzene	<0.002	<0.002	<0.002	<0.002	0.002
Toluene	<0.002	<0.002	<0.002	<0.002	0.002
Xylenes	<0.002	<0.002	<0.002	<0.002	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/23/03**	**07/23/03**	**07/23/03**	**07/23/03**	
Date Analyzed:	**07/23/03**	**07/31/03**	**07/31/03**	**07/31/03**	
AA ID No.:	**157304**	**157305**	**157306**	**157307**	
Client ID No.:	**B-32@10**	**B-33@30**	**B-33@40**	**B-32@30**	
Dilution Factor:	**1.0**	**1.0**	**1.0**	**25.0**	**MRL**
Compounds:					
Benzene	<0.002	<0.002	<0.002	**5.6**	0.002
Ethylbenzene	<0.002	<0.002	<0.002	**23**	0.002
Toluene	<0.002	<0.002	<0.002	**22**	0.002
Xylenes	<0.002	<0.002	<0.002	**61**	0.002

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LABORATORY ANALYSIS RESULTS

Client:	Cal Environmental	**AA Project No.:**	MB243180
Project No.:	1474	**Date Received:**	07/23/03
Project Name:	Hasely Canyon	**Date Reported:**	08/01/03
Sample Matrix:	Soil	**Units:**	mg/Kg
Method:	EPA 8020 (BTEX)		

Date Sampled:	**07/23/03**	**07/23/03**	**07/23/03**	**07/23/03**	
Date Analyzed:	**07/23/03**	**07/23/03**	**07/23/03**	**07/23/03**	
AA ID No.:	**157308**	**157309**	**157310**	**157311**	
Client ID No.:	**B-32@40**	**B-32@50**	**B-32@60**	**B-32@70**	
Dilution Factor:	**1000.0**	**1.0**	**1.0**	**1.0**	**MRL**
Compounds:					
Benzene	<0.5	<0.002	<0.002	<0.002	0.002
Ethylbenzene	**12**	<0.002	<0.002	<0.002	0.002
Toluene	**12**	<0.002	<0.002	<0.002	0.002
Xylenes	**37**	<0.002	<0.002	<0.002	0.002

MRL: Method Reporting Limit J: Estimated Value

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C24	<1	1
C24-C28	<1	1
C28-C32	<1	1
C32-C40	<1	1
Total	<10	10

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8015M (Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Results mg/L	MRL
C08-C10	<0.1	0.1
C10-C12	<0.1	0.1
C12-C14	<0.1	0.1
C14-C16	<0.1	0.1
C16-C18	<0.1	0.1
C18-C20	<0.1	0.1
C20-C24	<0.1	0.1
C24-C28	<0.1	0.1
C28-C32	<0.1	0.1
C32-C44	<0.1	0.1
Total	<1	1

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Results ug/L	MRL
Benzene	<0.5	0.5
Ethylbenzene	<0.5	0.5
Toluene	<0.5	0.5
Xylenes	<1	1

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8015M(Carbon Chain)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243180
Date Analyzed: 07/25/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
C06-C08	<1	1
C08-C10	<1	1
C10-C12	<1	1
C12-C14	<1	1
C14-C16	<1	1
C16-C18	<1	1
C18-C20	<1	1
C20-C22	<1	1
C22-C24	<1	1
C24-C26	<1	1
C26-C28	<1	1
C28-C32	<1	1
C32-C34	<1	1
C34-C36	<1	1
C36-C40	<1	1
C40-C44	<1	1
TPH (C6-C44)	<10	10

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243180
Date Analyzed: 07/24/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Reagent Blank

Project No.: 1474
AA Project No.: MB243180
Date Analyzed: 07/31/03
Date Reported: 08/01/03

Compounds	Results mg/Kg	MRL
Benzene	<0.002	0.002
Ethylbenzene	<0.002	0.002
Toluene	<0.002	0.002
Xylenes	<0.002	0.002

MRL: Method Reporting Limit

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	203	102	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0448	112.00	69.00 -131
Ethylbenzene	0.0332	83.00	63.00 -137
Toluene	0.0366	92.00	67.00 -133
Xylenes	0.0336	84.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 20 ug/L

Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Recovered Amount (ug/L)	Recovery (%)	Acceptable Range (%)
Benzene	22.4	112	69 - 131
Ethylbenzene	18.3	92	63 - 137
Toluene	16.6	83	67 - 133
Xylenes	16.8	84	55 - 145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8015M(Carbon Chain)
Sample ID: Laboratory Control Standard
Concentration: 200 mg/Kg

Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/25/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Diesel Range Organics	168	84	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/24/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0447	112.00	69.00 -131
Ethylbenzene	0.0464	116.00	63.00 -137
Toluene	0.0471	118.00	67.00 -133
Xylenes	0.0485	121.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Laboratory Control Standard
Concentration: 0.04 mg/Kg

Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/31/03
Date Reported: 08/01/03

Compounds	Recovered Amount (mg/Kg)	Recovery (%)	Acceptable Range (%)
Benzene	0.0332	83.00	69.00 -131
Ethylbenzene	0.0338	85.00	63.00 -137
Toluene	0.0319	80.00	67.00 -133
Xylenes	0.0330	83.00	55.00 -145

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 400 mg/Kg

AA ID No: 157279
Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	404	101	485	121	18	50 - 150

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No: 157279
Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/23/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Benzene	0.0427	107.00	0.0451	113.0	5.4	65.00 -135
Ethylbenzene	0.0343	86.00	0.0347	87.00	1.1	77.00 -123
Toluene	0.0328	82.00	0.0343	86.00	4.7	66.00 -134
Xylenes	0.0335	84.00	0.0345	86.00	2.3	73.00 -127

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LABORATORY QA/QC REPORT

Client: Cal Environmental
Project Name: Hasely Canyon
Method: EPA 8015M(Carbon Chain)
Sample ID: Matrix Spike
Concentration: 200 mg/Kg

AA ID No: 157306
Project No.: 1474
AA Project No. MB243180
Date Analyzed: 07/25/03
Date Reported: 08/01/03

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept. Rec. Range (%)
Diesel Range Organics	170	85	173	87	2	50 - 150

Allen Aminian
Project Manager

American Analytics • 9765 Eton Avenue, Chatsworth, California 91311
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AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

№ 302336

DATE: 7/23/03

PAGE 1 OF 3

AA Client: California Environmental		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): 8015M C.C.; PETEX 8020

Client's Comment Special Test Requirements / Comments i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8015M C.C.	PETEX 8020	Comments
B25@40	157274	7/23/03	1117	soil	1	X	X	X Analyze in house per C. Rude request 7/24/03 A.A Normal T.A.T
B25@50	157275		1140		1	X	X	
B25@60	157276		1200		1	X	X	
B25@70	157277		1210		1	X	X	
B25@90	157278		1240		1	X	X	
B25@100	157279		1305		1	X	X	
B25-W	157280		1340	water	3	X	X	
B26@5	157281		0930	soil	1	X	X	
B26@10	157282		0932		1	X	X	
B26@15	157283		0940		1	X	X	
B26@20	157284		1000		1	X	X	
B26@30	157285		1005		1	X	X	
B26@35	157286		1020		1	X	X	
B26@45	157287		1030		1	X	X	
B26@55	157288		1040		1	X	X	
B27@2	157289		1130		1	X	X	

LAB COMMENTS

Approved as work order by Allen Aminian. 7/24/03 A.A

Relinquished by:	Date	Time	Received by:
	7/23/03	1900	Brian Built
Brian Built	7/24/03	813	[illegible]

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AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

№ 302337

DATE: 7/23/03

PAGE 2 OF 3

AA Client: Cal Env.		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): 8260 BOTH CL. / 8260 BOTH BTEX

Client's Comment Special Test Requirements / Comments (i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8260 BOTH CL.	8260 BOTH BTEX	Comments
B-27@5	157290	7/23/03	1130	SOIL	1	X	X	(X) Analyze in house per C. Rule request. Normal T.A.T 7/24/03 A.A
B-27@10	157291		1140		1	X	X	
B-28@5	157292		1205		1	X	X	
B-28@10	157293		1210		1	X	X	
B-29@2	157294		1240		1	X	X	
B-29@5	157295		1250		1	X	X	
B-29@10	157296		1250		1	X	X	No sample for this depth.
B-30@2	157297		1350		1	X	X	
B-30@5	157298		1350		1	X	X	
B-30@10	157299		1355		1	X	X	
B-31@2	157300		1440		1	X	X	
B-31@5	157301		1445		1	X	X	
B33@10	157302		1630		1	X	X	
B33@20	157303		1700		1	X	X	
B-32@10	157304		1720		1	X	X	
B33@30	157305		1740		1	X	X	

LAB COMMENTS

Approved as work order by Allen Amision. 7/24/03 A.A

Relinquished by:	Date	Time	Received by:
	7/23/03	1900	Brian Built
Brian Built	7/24/03	813	[illegible]

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AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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Tel: 818-998-6547 FAX: 818-998-7258

№ 302338

DATE: 7/23/03

PAGE 3 OF 3

AA Client: Cal Env.		Phone	Sampler's Name (Print)
Project Manager		P.O. No.	Sampler's Signature
Project Name		Client's Project No.	Project Manager's Signature

Job Name and Address

ANALYSIS REQUIRED (Test Name): 8015M C.C. / 8020 BTEX

Client's Comment Special Test Requirements / Comments (i.e., - Turnaround Time, Detection Limits, Data Package.....)

Client's I.D.	A.A. I.D.#	Date	Time	Sample Type	Number of Containers	8015M C.C.	8020 BTEX	Comments
B-32@40	157306	7/23/03	1750	SOIL	1	X	X	
B-32@30	157307		1740		1	~~X~~	~~X~~	~~HOLD~~ Run
B-32@40	157308		1750		1	X	X	
B-32@50	157309		1810		1	X	X	(X) Analyze in house per
B-32@60	157310		1820		1	X	X	C. Rude request. 7/24/03
B-32@70	157311		1845		1	X	X	Normal T.A.T AA

LAB COMMENTS

Approved as work order by Allen Aminian. 7/24/03 AA

Relinquished by:	Date	Time	Received by:
	7/23/03	1900	Brian Built
Brian Built	7/24/03	813	[illegible] 03 JUL 23 PM 9:4

APPENDIX V

Soil Sample Protocols

SOIL SAMPLING PROTOCOLS

Samples will be labeled, preserved, and transported properly to retain sample integrity. This exhibit describes procedures to be followed by CE, Inc., during collection of samples of subsurface soil. Sampling guidance documents from the American Society of Testing and Materials (ASTM), U.S. Environmental Protection Agency (EPA), and California EPA will be followed for all sampling procedures. Actual sampling procedures employed will be based on field conditions and may differ slightly from those described here.

1.0 HYDROPUNCH BORING/SOIL SAMPLING PROCEDURES

Borings and soil sampling will be performed under the direction of a CE geologist. The borings will be advanced using a truck-mounted, hollow-stem auger drill rig, hydraulic push rig and/or other similar methods. Hand auger sampling is also employed.

Soil samples will be continuously collected or at 2-5 foot vertical depth intervals. Soil sampling will be done in accordance with ASTM 1586-84. Using this procedure, three 2½-inch-diameter, 6-inch-length, brass tubes will be placed in a California-type split-barrel sampler. The sampler will be driven into the soil by a 140-pound weight falling 30 inches. After an initial set of 6 inches, the number of blows required to drive the sampler an additional 12 inches is known as penetration resistance, or the "N" value. The "N" value will be used as an empirical measure of the relative density of cohesionless soils and the consistency of cohesive soils.

Upon recovery of the split-barrel sampler, the brass tubes containing the soil will be removed. The ends of one of the three brass tubes will be sealed with Teflon sheets and plastic end caps. The sample will be labeled with an identification number, time, date, location, and requested laboratory analysis. The sample will be placed in a plastic bag and stored at approximately 4 Celsius (C) in an ice chest for transport to the laboratory. As an alternative, the samples will be immediately transferred to an onsite mobile laboratory. Sample custody procedures outlined in Section 4.0 of this exhibit will be followed.

One of the brass tubes containing soil will be partially extracted to create headspace and capped for later screening for organic vapors using a photoionization detector (PID) or a flame ionization detector (FID). The remaining portion of the soil sample will be examined and a complete log of soil conditions will be recorded on a soil-boring log using the Unified Soil Classification System. The soil will be examined for grain size, color, and moisture content.

The split-barrel sampler will be cleaned to prevent cross-contamination for each sampling interval using procedures described in Section 3.0.

Borings advanced with hollow-stem augers generate cuttings. The soil generated will be stored on visqueen or in 55-gallon drums.

2.0 DECONTAMINATION AND DISPOSAL PROCEDURES

2.1 Equipment Decontamination

All equipment that comes in contact with potentially contaminated soil, drilling fluid, air, or water will be decontaminated before each use. Decontamination consists of steam cleaning, a high-pressure, hot water rinse, or alconox (phosphate free soap) and freshwater rinse, as appropriate.

Drilling and sampling equipment will be decontaminated as follows:

1. Drill rig augers, drill rods, and drill bits will be steam-cleaned prior to use and between borings. Visible soil, grease, and other impurities will be removed.

2. Soil sampling equipment will be cleaned prior to use and between each boring. Prior to individual sample collection, the sampling device will be cleaned in an alconox solution and rinsed twice in clean water. Any visible soil residue will be removed.

3. Stainless steel or brass soil sampling tubes will be steam-cleaned or will be washed in an alconox solution and rinsed with clean water.

3.0 FIELD MEASUREMENTS

Field data will be collected during various sampling and monitoring activities; this section describes routine procedures followed by personnel performing field measurements. The methods presented below are intended to ensure that field measurements are consistent and reproducible when performed by various individuals.

3.1 Buried Utility Locations

Prior to commencement of work on site, CE will contact appropriate utility companies to have underground utility lines located. CE also researches the location of all underground utilities using past site construction and surveying plans and by conducting a ground reconnaissance of the area if available, or if provided by client/property owner. All work associated with the auger borings will be preceded by hand augering to a minimum depth of 5 feet below grade to avoid contact with underground utilities.

3.2 Lithologic Logging

A log of soil conditions encountered during the drilling and sample collection will be maintained using the Unified Soil Classification System by a CE geologist. A California registered geologist will review all borings.

The collected soil samples will be examined and the following information recorded: boring location, sample interval and depth, blow counts, color, soil type, moisture content (qualitative), and depth at which ground water (if present) is first encountered. Also recorded on the soil boring logs will be the field screening results derived from the use of a portable PID or FID.

3.3 Disposal Procedures

Soils and fluids that will be produced and/or used during the installation and sampling of borings, and that are known or suspected to contain potentially hazardous materials, will be contained during the above operations. These substances will be retained on site until chemical testing has been completed to determine the proper means of disposal. Handling and disposal of substances known or suspected to contain potentially hazardous materials will comply with the applicable regulations of FED EPA, CAL EPA and CAL OSHA, and any other applicable regulations. Soils and fluids produced and/or used during the above-described operations that appeared to contain potentially hazardous materials will be disposed of appropriately.

Residual substances generated during cleaning procedures that are known or suspected to pose a threat to human health or the environment will be placed in appropriate containers until chemical testing had been completed to determine the proper means for their disposal.

4.0 SAMPLE CUSTODY

This section describes standard operating procedures for sample custody and custody documentation. Sample custody procedures will be followed through sample collection, transfer, analysis, and ultimate disposal. The purpose of these procedures is to assure that (1) the integrity of samples will be maintained during their collection, transportation, and storage prior to analysis and (2) post-analysis sample material will be properly disposed of. Sample custody is divided into field procedures and laboratory procedures, as described below.

4.1 FIELD CUSTODY PROCEDURES

Sample quantities, types, and locations will be determined before the actual fieldwork commences. As few people as possible handle samples. The field sampler will be responsible for the care and custody of the collected samples until they are properly transferred.

4.1.1 Field Documentation

Each sample will be labeled and sealed properly immediately after collection. Sample identification documents will be carefully prepared so that identification and chain-of-custody records can be maintained and sample disposition can be controlled. Forms will be filled out with waterproof ink. The following sample identification documents will be utilized.

- Sample labels
- Field notes
- Chain-of-custody forms

4.1.2 Sample Labels

Sample labels provide identification of samples. Preprinted sample labels will be provided. Where necessary, the label will be protected from water and solvents with clean label-protection tape. Each level will contain the following information:

- Name of collector
- Date and time of collection
- Place of collection
- CE project number
- Sample number
- Preservative (if any)

4.1.3 Field Notes

Information pertinent to a field survey, measurements, and/or sampling will be recorded in field notes. Entries may include the following:

- Name and title of author, date and time of entry, and physical/environmental conditions during field activity.
- Location of sampling or measurement activity.
- Name(s) and title(s) of field crew.
- Type of sampled or measured media (e.g., soil, groundwater, air, etc.)
- Sample collection or measurement method(s).
- Number and volume of sample(s) taken.
- Description of sampling point(s).
- Description of measuring reference points.
- Date and time of collection or measurement.
- Sample identification number(s).
- Sample preservative (if any).
- Sample distribution (e.g. laboratory).
- Field observations/comments.

- Field measurement data (pH, etc.)

4.1.4 Chain-of-Custody Record

A chain-of-custody record will be filled out for and accompany every sample and every shipment of samples to the analytical laboratories in order to establish the documentation necessary to trace sample possession from the time of collection. The record will contain the following information:

- Sample or station number of sample I.D.
- Signature of collector, sampler, or recorder.
- Date and time of collection.
- Place of collection.
- Sample type.
- Signatures of persons involved in the chain of possession.
- Inclusive dates of possession.

The laboratory portion of the form will be completed by laboratory personnel and contains the following information:

- Name of person receiving the sample.
- Laboratory sample number.
- Date and time of sample receipt.
- Analyses requested.
- Sample condition and temperature.

4.1.5 Sample Transfer and Shipment

Samples will always be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving the samples will sign, date, and note the time on the chain-of-custody record. Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis. The chain-of-custody record will accompany each shipment. The method of shipment, courier name(s), and other pertinent information will be entered in the chain-of-custody record.

4.2 Laboratory Custody Procedures

A designated sample custodian will accept custody of the shipped samples and verified that the information on the sample label matched that on the chain-of-custody record. Information regarding method of delivery and sample conditions will be also checked on the chain-of-custody record. The custodian will then enter the appropriate data into the laboratory sample tracking system. The laboratory custodian may use the sample number on the sample label or may assign a unique laboratory number to each sample. The custodian will then transfer the sample(s) to the proper analyst(s) or stored the sample(s) in the appropriate secure area.

Laboratory personnel are responsible for the care and custody of samples from the time they are received until the sample is exhausted. Once at the laboratory, the samples are handled in accordance with U.S. Environmental Protection Agency SW-846. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Third Edition, for the intended analyses. All date sheets, chromatographs, and laboratory results will be field as part of the permanent documentation.

4.3 Corrections to Documentation

Original data recorded in field notes, chain-of-custody records, and other forms will be written in ink. These documents will not be altered, destroyed, or discarded, even if they will be illegible or contained inaccuracies that required a replacement document.

If an error is made or found on a document, the individual making the corrections will do so by crossing a single line through the error, entering the correct information, and initialing and dating the change. The erroneous information will not be obliterated. Any subsequent error(s) discovered on a document will be corrected. All corrections will be initialed and dated.

4.4 Sample Storage and Disposal

The analytical laboratory will retain samples and extracts for 60 days after a written report will be issued by the laboratory. Unless notified by the program manager, the laboratory will dispose of excess or unused samples in an appropriate manner consistent with applicable government regulations.