# Draft Environmental Impact Report

# Big Rock Creek Surface Mining and Reclamation Plan
# Antelope Valley, Los Angeles County

Lebata, Inc.

**Project Number R2007-00670**
**State Clearinghouse No. 2007121054**

**DEIR**
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**Lebata, Inc.**
**Big Rock Creek Surface Mining Project**
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# 1.0 INTRODUCTION

## 1.1 PROJECT UNDER REVIEW

The applicant, Lebata, Inc. (Lebata), is proposing to establish and operate a new sand and gravel mining operation (Project) in the Antelope Valley area of unincorporated Los Angeles County, California (EIR Figure 1 – Regional Map). The Project involves mining a total of 46.48 million gross tons of sand and gravel over a period of approximately 47 years. The total Project area is comprised of approximately 310 acres, of which approximately 282.4 acres are proposed for excavation. The Project would extract aggregate from newly created pits in three distinct phases (Mining Phases). Although production would vary with market conditions, the extraction rate of unprocessed material over the life of the Project is expected to range between 500,000 to 2,500,000 tons per year. Sales would not exceed 2,000,000 net tons of processed material per year.

The Project involves the surface mining and the processing of excavated materials at an onsite Aggregate Processing Facilities. In addition to these facilities, the project includes the following onsite accessory industrial plants and facilities:

- Ready-Mixed Concrete Plant;
- Vac-Lite Plant (producing lightweight concrete);
- Asphalt Mixing Plant;
- Raw Cement and Aggregate Transfer and Distribution Facility;
- Water Reclamation and Fines Recovery Facilities;
- 24-foot by 60-foot office trailer (handicapped accessible); and
- 80-foot by 125-foot two-story building, which would include an equipment maintenance shop area, parts room, office, locker room, and restrooms (handicapped accessible).

Distinction is made throughout this EIR between the "production" and "sales" of aggregate materials and other products. "Production" refers to the onsite rate of mining, processing and manufacturing activities. "Sales" refers to the delivery of products offsite. This distinction is necessary because some impacts need to be evaluated in terms of their onsite levels (e.g., air emissions, noise, others), while other impacts need to be evaluated in terms of their offsite impacts (e.g., truck traffic and Levels of Service).

## 1.2 SITE HISTORY

The Project site is located in the Antelope Valley, off Avenue T, in unincorporated Los Angeles County. The Project area involves two separate undeveloped parcels, referred to herein as the North and South Parcels, which are bisected by the Union Pacific Railroad (EIR Figure 2 – Vicinity Map).

## 1.3 BACKGROUND

Lebata submitted an application to the County for the Surface Mining Permit, along with a proposed Reclamation Plan in 2007. The County reviewed the Surface Mining Permit application, including the supporting information, studies, analyses and reports, and prepared an Initial Study for the Project in accordance with the California Environmental Quality Act (Public Resources Code § 2710 et. seq.; CEQA Guidelines Section 15063). Based on the Initial Study, the County determined that an Environmental

Impact Report (EIR) was required to assess the potential environmental impacts of the Project. The Initial Study identified potentially significant impacts with regard to several environmental issue areas.

## 1.4 RESPONSIBILITIES UNDER CEQA

### 1.4.1 Lead Agency

Los Angeles County is the Lead Agency as defined in Section 15051(b) of the Guidelines for implementing CEQA (CEQA Guidelines), which states: "*If the project is to be carried out by a nongovernmental person or entity, the Lead Agency shall be the public agency with the greatest responsibility for supervising or approving the project as a whole.*"

### 1.4.2 Responsible and Trustee Agencies

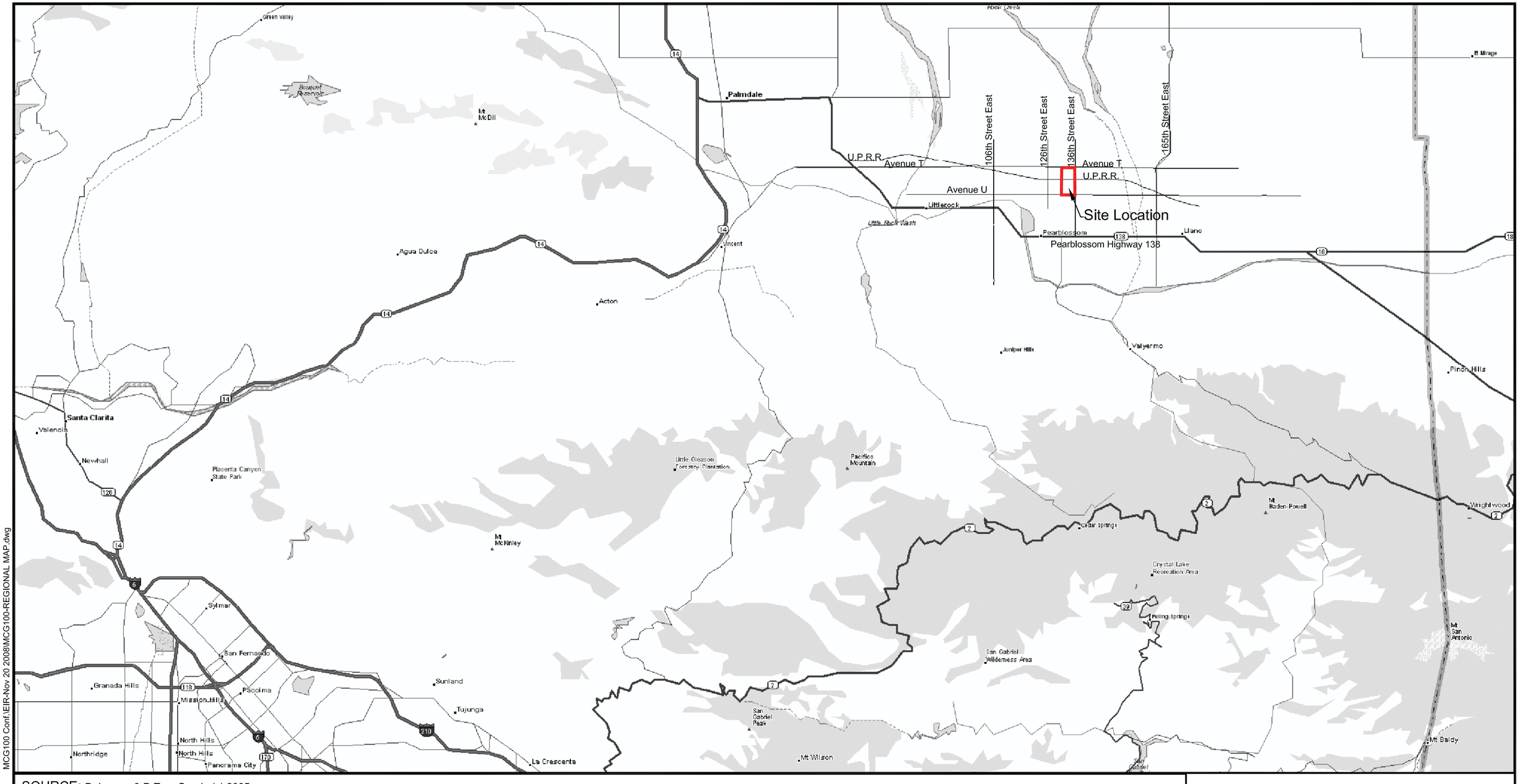
A Responsible Agency is a public agency, other than the Lead Agency, which has permitting authority or approval power over some aspect of the overall Project. Examples for the Project include the California Department of Fish and Wildlife (CDFW); Department of Conservation (DOC), Office of Mine Reclamation (OMR); California Department of Transportation (Caltrans); California Regional Water Quality Control Board – Lahontan Region (RWQCB); the U.S. Fish and Wildlife Service (USFWS); and the Antelope Valley Air Quality Management District (AVAQMD).

A Trustee Agency is "*a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the state of California*" (CEQA Guidelines Section 15386). For example, the CDFW is recognized as a Trustee Agency with jurisdiction over fish and wildlife with regard to the Project. The OMR is responsible for reviewing the Mining and Reclamation Plan/Financial Assurance Cost Estimate (FACE) for compliance with the Surface Mining and Reclamation Act of 1975, as amended (SMARA).

### 1.4.3 Purpose and Scope of the EIR

This EIR is intended to serve as a document to inform public agency decision-makers, Responsible and Trustee Agencies, and the public of the potentially significant environmental effects associated with the Project, identify ways to minimize or eliminate the significant effects, and evaluate a reasonable range of alternatives that meet the major objectives of the Project but further reduce or avoid significant environmental effects. An EIR provides objective planning and environmental information to guide and assist decision-makers, lead agency staff and the public in their evaluation of the potential environmental effects that may result from implementation of the Project as proposed. CEQA Guidelines Section 15151 contains the following standards of adequacy:

> "*An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and good faith effort at full disclosure.*"




MCG100 Conf.\EIR-Nov 20 2008\MCG100-REGIONAL MAP.dwg

SOURCE: DeLorme, 3-D TopoQuads (c) 2005

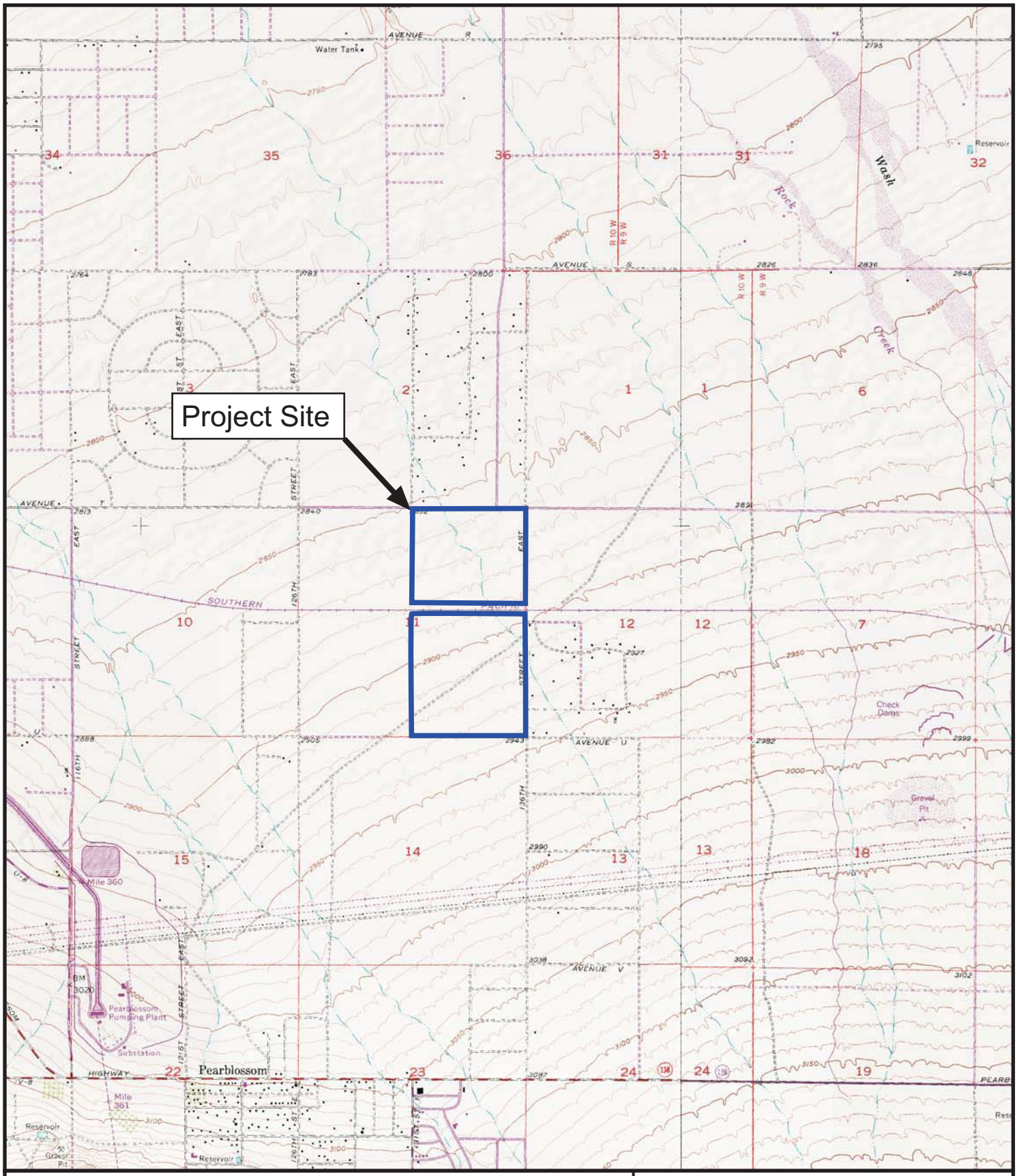
PROJECT BOUNDARY

N

NOT TO SCALE

Source: West Coast Environmental, 11-20-2008

| Regional Map<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>1 |
|---|---|
| Scale: NTS | Date: 3-13-2012 |




Source: USGS 7.5 Minute Topographic Quadrangle
Littlerock & Lovejoy Buttes, California 1957
Photorevised 1992
(C)2002 DeLorme, XMap(R) 3.5

Legend:

Project Boundary

N

0 2000' 4000'

10' Contour Interval
National Geodetic Vertical Datum 1929

Source: West Coast Environmental, 11-20-2008

| Vicinity Map<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>2 |
|---|---|
| Scale: As Shown | Date: 3-13-2012 |

In accordance with CEQA, the County, as Lead Agency, prepared an Initial Study to identify potential environmental impacts associated with the Project. The County then prepared a Notice of Preparation (NOP) of a Draft EIR for the Project, which was circulated to appropriate public agencies and interested groups and individuals for a 30-day comment period (CEQA Guidelines Section 15082). This comment period ran from December 12, 2007 through January 11, 2008. EIR Appendix 1 contains a copy of the Initial Study and the NOP, as well as a list of persons who were mailed a copy of the NOP. EIR Appendix 1 also contains the letters received by the County from agencies and the public during the NOP comment period, and the revised format Initial Study Checklist.

Based on the Initial Study and the responses to the NOP, the Lead Agency determined the Project could have significant environmental effects in the following areas. As such, it was determined that the EIR would analyze the following specific environmental factors:

- Geotechnical Hazards
- Flood Hazards
- Noise
- Water Quality
- Air Quality, Health Risks, and Climate Change
- Biological Resources – Sensitive Species Habitat/Loss of Habitat
- Visual Quality
- Traffic and Circulation
- Hazards and Hazardous Materials
- Water Supply/Quantity

Although not identified as having a potentially significant impact, a discussion of Land Use Consistency and Compatibility (EIR sub-chapter 4.2) precedes the others listed above and is intended to provide the proper context within which the Project is being evaluated.

### 1.4.4 Draft EIR

Circulation of the Draft EIR began when the Notice of Completion (NOC) was filed with the State Office of Planning and Research (State Clearinghouse). The State Clearinghouse (SCH) has assigned SCH No. 2007121054 to this Draft EIR for identification purposes. Filing the NOC started a minimum 45-day review period for the Draft EIR, as is required by CEQA Guidelines Section 15105(a), since it was submitted to the State Clearinghouse for distribution to Responsible and Trustee Agencies. Concurrent with the filing of the NOC, the Lead Agency issued the NOC to all organizations and individuals that previously requested such notice and those individuals who are located in close proximity to the Project site. The NOC briefly described the Project, identified the date by which written comments must be received, where comments are to be sent, and provided the locations where copies of the Draft EIR were made available for review (CEQA Guidelines Sections 15085 through 15087). **The NOC also provided the following link to the County's website for those wishing to obtain and review the Draft EIR electronically:**

http://planning.lacounty.gov/case/view/project_no_2007_00670_5_surface_mining_2007_00001/

Anyone reviewing the Draft EIR may submit written comments to the County during this period. Responses to the comments received will be included in the Final EIR to be prepared prior to the County taking action on the Project. Comments on the Draft EIR may be sent to:

Mr. Anthony Curzi, Regional Planning Assistant II
**County Department of Regional Planning**
**Zoning Permits North Section**
320 West Temple Avenue, 13th Floor
Los Angeles, CA 90012

Section 21081.6 of the California Public Resources Code (and CEQA Guidelines Section 15097) requires public agencies to adopt a monitoring program of the Mitigation Measures identified in the EIR to eliminate or reduce the Project's **Significant Impacts** to **Less than Significant Impacts**. Accordingly, a draft Mitigation Monitoring and Reporting Program (MMRP) has been prepared to ensure that the Mitigation Measures identified in the EIR are implemented and reviewed. The MMRP describes each Mitigation Measure identified in the EIR, implementation responsibilities, monitoring frequency, monitoring work program, monitoring agencies, and the standards of success. The MMRP is presented in EIR Chapter 8.0.

### 1.4.5 Organization of the EIR

The Draft EIR is organized into the following chapters:

Chapter 1.0 – Introduction: Provides an introduction and overview that describes the intended use of the document and the Lead Agency authority under CEQA.

Chapter 2.0 – Executive Summary: Summarizes the Project, areas of controversy, issues to be resolved, the potential environmental effects that may result from the implementation of the Project, the Mitigation Measures identified to reduce or eliminate significant effects, and a summary of alternatives to the Project.

Chapter 3.0 – Project Description: Describes the Project location, components, operations, purpose and objectives, and the surrounding community. Lists the permits required to implement the Project and responsible agencies or County departments that would issue those permits.

Chapter 4.0 – Environmental Impact Analysis: Describes the Project's characteristics related to each of the topical environmental issues and the threshold criteria used to evaluate potentially significant effects of the Project. Evaluates the potential environmental effects, identifies Mitigation Measures to reduce or eliminate effects found to be significant, and determines the level of significance of the effect after Mitigation Measures have been implemented.

For those areas of potentially significant impacts, the sub-chapters of this EIR employ the following format:

- Topic Title and Introduction
- Environmental Setting

- Threshold Criteria
- Impact Analysis
- Mitigation Measures
- Level of Significance After Mitigation
- Cumulative Impacts

Chapter 5.0 – Other CEQA Required Impact Analysis: Summarizes the environmental effects of the Project when considered with the effects of other approved and/or reasonably foreseeable projects that when combined, would be cumulatively significant. Also includes descriptions of: 1) ways in which the Project may foster economic or population growth and thereby be growth-inducing; and 2) any significant irreversible environmental changes which may result with the implementation of the Project (CEQA Guidelines Section 15126.2(c) (d)).

Chapter 6.0 – Alternatives to the Project: Describes a reasonable range of alternatives to the Project that would feasibly attain most of the basic objectives of the Project, but would avoid or substantially lessen any of the significant effects identified in the environmental analysis of the Project.

Chapter 7.0 – References: Includes a list of Lead Agency (County of Los Angeles) staff that participated in the processing of the application and oversaw the preparation of the EIR, Lebata contacts, and the consultants who prepared the technical reports and EIR. Also includes bibliography of information used to prepare the EIR.

Chapter 8.0 – Mitigation Monitoring and Reporting Program: The MMRP summarizes the significant impacts, Mitigation Measures, compliance and monitoring frequency, and responsible agency.

Appendices: Includes referenced analyses and studies.

## 1.5 NECESSARY APPROVALS

The Project requires County of Los Angeles (County) approval of a Surface Mining Permit, and Reclamation Plan, inclusive of the requisite Financial Assurance Cost Estimate (FACE). These approvals are required to ensure compliance with the:

- California Surface Mining and Reclamation Act of 1975 (SMARA), as amended (Public Resources Code Section 2719 et. seq.);
- California Code of Regulations (CCR), Title 14, Division 2, Chapter 8, Subchapter 1, Article 9 (Reclamation Standards); and
- County of Los Angeles Planning and Zoning Code, Chapter 22.56 Part 9.

Additionally, the Reclamation Plan and FACE were reviewed by the Department of Conservation (DOC). As a result, revisions were made to the Reclamation Plan (EIR Appendix 2). A list of the anticipated agency approvals, permits or reviews required to implement the Project is presented in EIR Table 1.

**Table 1 Anticipated Agency Approvals, Permits or Reviews**

| Agency | Approval, Permit or Review |
|---|---|
| County of Los Angeles | – Certification of the Final EIR<br>– Surface Mining Permit<br>– Reclamation Plan<br>– Financial Assurance Cost Estimate and Surety (FACE)<br>– Encroachment Permit<br>– Building Permits |
| Los Angeles County Department of Public Health, Environmental Health | – Well Permit (water)<br>– Onsite Wastewater Ttreatment System<br>– Noise Control Ordinance compliance |
| Los Angeles County Fire Department, Planning Division, Land Development Unit, Forestry Division and Health Hazardous Materials Division (including CUPA responsibilities) | – Spill Prevention, Control, and Countermeasure Plan<br>– Stormwater Pollution Prevention Program<br>– Hazardous Materials Handler Permit<br>– Above Ground Petroleum Storage Tanks Permit<br>– Hazardous Waste compliance<br>– California Accidental Release Prevention<br>– Fire Water Flow<br>– Fire and Safety Code Compliance |
| California Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation | – Review of Reclamation Plan<br>– Review of Financial Assurance Cost Estimate |
| California Regional Water Quality Control Board, Lahontan Region | – General Industrial Activities Stormwater Permit pursuant to National Pollution Discharge Elimination System |
| Antelope Valley Air Quality Management District | – Authority to Construct<br>– Permit to Operate |
| California Department of Fish and Wildlife | – Section 1605 (15-Year Long-Term) Streambed Alteration Agreement, if required |
| California Department of Transportation | – Encroachment Permit |

Because of the long lead times associated with complying with legal and statutory requirements of the agencies listed in the table above, Lebata is involved in a variety of regulatory activities concurrent with the preparation of this EIR.

## 1.6 INCORPORATION BY REFERENCE

As permitted by Section 15150 of the CEQA Guidelines, this Draft EIR has referenced several technical studies, analyses, and reports, which are included in the technical appendices incorporated in the EIR. Information from documents incorporated by reference has been summarized in the appropriate section(s) that follow. The following documents are hereby incorporated by reference and are available for review at the officves of Los Angeles County, Department of Regional Planning.

- County of Los Angeles General Plan, as adopted November 25, 1980, as subsequently amended

- County of Los Angeles Planning and Zoning Code, Chapter 22.56 Part 9
- California Surface Mining and Reclamation Act of 1975 (SMARA), as amended (Public Resources Code Section 2719 et. seq.)
- Antelope Valley Areawide General Plan, Country of Los Angeles Department of Regional Planning, December 4, 1986
- Los Angeles County, Department of Regional Planning, lnterpretation of Antelope Valley Area Plan Provisions Regarding Non-Residential Uses in Non-Urban Areas, signed by Bruce W. McClendon, Director of Planning, September 11, 2007

## 1.7 ACRONYMS

**AAQS** Ambient air quality standards
**afy** acre-feet per year
**APCD** Air Pollution Control District
**AQMD** Air Quality Management District
**AQMP** Air Quality Management Plan
**AVAQMD** Antelope Valley Air Quality Management District
**AVIRWMP** Antelope Valley Integrated Water Management Plan
**ATCM** Air Toxic Control Measure
**AVAA** Antelope Valley Adjudication Area
**AVEK** Antelope Valley East Kern Water Agency
**BACT** Best Available Control Technology
**Basin** Antelope Valley Groundwater Basin
**BCC** Bird of Conservation Concern
**bgs** below ground surface
**BMP** Best Management Practices
**BLM** Bureau of Land Management
**CAAQS** California Ambient Air Quality Standards
**CalEPA** California Environmental Protection Agency
**Caltrans** California Department of Transportation
**CARB** California Air Resources Board
**CCR** California Code of Regulations
**CDFG** California Department of Fish and Game (CDFG used herein for source citations and to reference CDFG Code)
**CDFW** California Department of Fish and Wildlife (On January 1, 2013, the Department of Fish and Game was renamed the Department of Fish and Wildlife)
**CEQA** California Environmental Quality Act
**CESA** California Endangered Species Act
**CFR** Code of Federal Regulations
**cfs** **c**ubic-feet per second
**CGS** California Geological Survey
**CMProg** Congestion Management Program
**CMP** Corrugated Metal Pipe
**CNEL** Community Noise Equivalent Level
**CNDDB** California Natural Diversity Data Base

| | |
|---|---|
| **CNPS** | California Native Plant Society |
| **CO** | Carbon monoxide |
| **$CO_2$** | Carbon dioxide |
| **Corps** | U.S. Army Corps of Engineers |
| **County** | County of Los Angeles |
| **cu-yd** | cubic yard |
| **CUPA** | Certified Unified Program Agency (Los Angeles County Fire Department) |
| **$D_{50}$** | An average of particle size, of which 50 percent are smaller |
| **dB** | Decibel |
| **dBA** | A-weighted decibel scale |
| **DAWN** | Domestic Agricultural Water Network |
| **DOC** | Department of Conservation |
| **DPM** | Diesel particulate matter |
| **DWR** | California Department of Water Resources |
| **EIR** | Environmental Impact Report |
| **FACE** | Financial Assurance Cost Estimate and Surety |
| **fc** | foot-candles |
| **FEMA** | Federal Emergency Management Agency |
| **FESA** | Federal Endangered Species Act |
| **FIRM** | Flood Insurance Rate Map |
| **Fs** | Factor of safety |
| **ft/sec** | Feet per second |
| **GHG** | Greenhouse gas |
| **gpm** | gallons per minute |
| **h:v** | Horizontal to Vertical (slope ratio) |
| **HAP** | Hazardous air pollutants |
| **HARP** | Hotspots Analysis and Reporting Program |
| **HCM** | Highway Capacity Manual |
| **HDC** | High Desert Corridor |
| **HHMD** | Health Hazardous Materials Division |
| **HI** | Hazard index |
| **HOV** | High-Occupancy Vehicle |
| **IEC** | Interdepartmental Engineering Committee |
| **ICU** | Intersection Capacity Utilization |
| **kh** | horizontal seismic coefficient |
| **km** | Kilometer |
| **Leq** | Equivalent noise levels |
| **Lmax** | Maximum sound level |
| **LACDPW** | Los Angeles County Department of Public Works |
| **LACWW40** | Los Angeles County Waterworks District No. 40 |
| **lb/day** | Pounds per day |
| **LOS** | Level of service |
| **MAF** | million acre-feet |
| **MBTA** | Migratory Bird Treaty Act |
| **MDAB** | Mojave Desert Air Basin |
| **MG** | million gallons |

**mgd** million gallons per day
**MGS** Mohave ground squirrel
**MMBtu** million British thermal units
**MMtpy** million tons per year
**MMRP** Mitigation Monitoring and Reporting Program
**mph** **m**iles per hour
**MRZ** Mineral Resource Zone
**msl** mean sea level
**NAAQS** National ambient air quality standards
**$NO_2$** Nitrogen Dioxide
**NOC** Notice of Completion
**NOI** Notice of Intent
**NOP** Notice of Preparation
**NOx** Nitrogen Oxides
**NPDES** National Pollutant Discharge Elimination System
**NSR** New Source Review
**$O_3$** Ozone
**OEHHA** California Office of Environmental Health Hazard Assessment
**OMR** Office of Mine Reclamation
**OWTS** Onsite Wastewater Ttreatment System
**PA** Participating Agencies
**Pb** Lead
**PC** Production-Consumption (Regions)
**PCC** Portland Cement Concrete-grade
**$PM_{2.5}$** Fine particulate matter (2.5 microns or less)
**$PM_{10}$** Respirable particulate matter (10-micron or less)
**ppm** Parts per million
**PSD** Prevention Significant Deterioration
**RAC** Rubberized Asphaltic Concrete
**RAP** Recycled Asphalt Product
**RCBC** Rectangular Concrete Box Culvert
**ROW** Right-of-Way
**RWQCB** Regional Water Quality Control Board – Lahontan Region
**SAA** Streambed Alteration Agreement
**SCAQMD** South Coast Air Quality Management District
**SCH** State Clearinghouse
**SEA** Significant Ecological Areas
**SIP** State Implementation Plan
**SMARA** Surface Mining and Reclamation Act of 1975, as amended
**$SO_2$** Sulfur Dioxide
**SOx** Sulfur Oxides
**SPCC** Spill Prevention, Control, and Countermeasure Plan
**SPL** Sound pressure level
**sq.ft.** Square feet
**SSC** California Species of Special Concern
**SWP** State Water Project

| | |
|---|---|
| **SWPPP** | Stormwater Pollution Prevention Program |
| **SWRCD** | State Water Resources Control Board |
| **TAC** | Toxic air contaminants |
| **Tc** | time of concentration |
| **TeNS** | Technical Noise Supplement |
| **TI** | Traffic Index |
| **TNAP** | Traffic Noise Analysis Protocol |
| **TNM** | Traffic Noise Model |
| **tpy** | **T**ons per year |
| **UBC** | Uniform Building Code |
| **US EPA** | United States Environmental Protection Agency |
| **USFWS** | United States Fish and Wildlife Service |
| **USGS** | United States Geological Survey |
| **UTM** | Universe Transverse Mercator coordinates |
| **UWMP** | Urban Water Management Plan |
| **V/C** | Volume to capacity ratios |
| **VCAPCD** | Ventura County Air Pollution Control District |
| **VMC** | Vulcan Materials Company |
| **VMT** | Vehicle Miles Traveled |
| **VOC** | Volatile Organic Compound |
| **Vs** | Wave velocity |
| **yd3/yr** | Cubic yards per year |

## 1.8 GLOSSARY OF TERMS

**A-Weighted Sound Level (dBA):** The sound level obtained using an A-weighted filter. This filter de-emphasizes the very low and very high frequency response of the human ear and correlates well with subjective reactions to noise.

**Acre-foot:** Volume of liquid or solid required to cover an area of one acre to a depth of one foot. One acre-foot equals 325,851 gallons.

**Aggregate:** Materials composed of natural or crushed, hard, sound, and durable particles of unreactive minerals. Aggregates are carefully graded into certain size categories so they may be recombined according to required specifications into various size mixes for different purposes. Materials should be clean and free from clay-like material, organic matter, and chemical salts and fill.

**Alluvium:** A geologic term for general deposits made by streams, riverbeds, or floodplains typically composed of a mixture of sands, gravels, and clays.

**Ambient Noise Level:** The all-encompassing noise associated with an environment, usually a composite of sound from many different sources in different directions.

**Aquifer:** A geological formation that is sufficiently permeable to conduct groundwater and to yield significant quantities of water to wells and springs.

**BACT:** Best Available Control Technology – air quality term used to describe air pollutant control equipment for equipment and facilities that produce air emissions.

**California Endangered Species Act:** California state legislation, enacted in 1984, with the intent to protect floral (plant) and faunal (animal) species by listing them as "rare," "threatened" "endangered," or "candidate" and by providing a consultation process for the determination and resolution of potential adverse impact to the species.

**California Environmental Quality Act (CEQA):** Policies enacted in 1970, and subsequently amended, the intent of which is the maintenance of a quality environment for the people of California now and in the future. (Public Resources Code § 2710 et. seq.)

**Candidate Species:** A native California species or subspecies of a bird, mammal fish, amphibian, reptile or plant is a candidate when the Fish and Wildlife Commission has formally noticed it as being under review by the Department to determine whether listing as threatened or endangered is warranted, or when it is the subject of a proposed rulemaking by the Commission to list as threatened or endangered (Section 2068, Fish and Game Code).

**Community Noise Equivalent Level (CNEL):** The 24-hour A-weighted average sound level obtained after the addition of 5 dBA to sound levels occurring in the evening (7:00 p.m. to 10 p.m.) and 10 dBA to sound levels occurring in the night (10:00 p.m. to 7:00 a.m.).

**Decibel (dB):** A logarithmic unit of measurement that expresses the magnitude of power relative to an implied reference level. The reference level (0 dB) for acoustics is generally set at the threshold of human perception.

**Discretionary project or actions:** Project that "requires the exercise of judgment or deliberation when the public agency decides to approve or disapprove a particular activity" (CEQA Guidelines Sec. 15357).

**Endangered Species:** A native California bird, mammal, fish, amphibian, reptile, or plant (species, subspecies or variety) is endangered when it is in serious danger of becoming extinct throughout all, or a significant portion of its range due to one or more causes, including loss of habitat, change of habitat, over-exploitation, predation, competition or disease (Section 2062, Fish and Game Code).

**Environmental Impact Report (EIR):** Document in which the impacts of any state or local, public or private project action that may have a significant environmental effect are evaluated prior to its construction or implementation, as required by the California Environmental Quality Act.

**Equivalent Continuous Noise Level (Leq):** The level of steady sound that has the same A-weighted sound energy as the time varying sound in the stated time (i.e., the average).

**Federal Endangered Species Act:** Congress passed the Endangered Species Act in 1973 to protect those species that are endangered or threatened with extinction. The Act is intended to operate in conjunction with the National Environmental Policy Act to help protect the ecosystems upon which endangered and threatened species depend.

**Financial Assurances:** An assurance that reclamation will be completed on mined lands pursuant to the approved reclamation plan so that the public will not bear the cost of reclaiming abandoned surface mining operations. Financial assurances can take the form of surety bonds, trust funds, or irrevocable letters of credit.

**Hazardous Material:** Substance that because of its potential for corrosivity, toxicity, ignitability, chemical reactivity, or explosiveness, may cause injury to persons or damage to property.

**Insertion Loss:** The difference in the sound level at a receiver location with and without the presence of a noise barrier Used to predict the effectiveness of noise barriers.

**$L_{01}$, $L_{10}$, $L_{50}$, $L_{90}$:** The A-weighted noise level that is equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 50 percent, or 90 percent of the stated time period.

**Lead Agency:** Section 15051(b) of the CEQA Guidelines states: "*If the project is to be carried out by a nongovernmental person or entity, the Lead Agency shall be the public agency with the greatest responsibility for supervising or approving the project as a whole.*" In this instance, the Lead Agency is the County of Los Angeles.

**Mineral Resource Zone – 2:** Defined by the California Department of Conservation, Division of Mines and Geology, as an area where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.

**Mining Activities:** Those activities associated with the excavation and transport of excavated materials to the onsite Aggregate Processing Facilities.

**Mining Phases:** Planned stages of project development.

**Notice of Preparation (NOP):** A brief notice sent by the public agency with principal responsibility for carrying out or approving a project to notify other agencies that an EIR is being prepared.

**NOx:** A generic term for various oxides of nitrogen.

**Overburden:** Soil or rock layers that cover mineral deposits and must be removed prior to mining.

**Overdraft:** Groundwater extractions in excess of the "safe yield" of water from an aquifer, which over time will lead to a depletion of the water supply within a groundwater basin as well as other detrimental effects, if the imbalance between pumping and extraction continues.

**Ozone ($O_3$):** An end product of complex reactions between reactive organic gases (or nonmethane hydrocarbons) and nitrogen oxides (NOx) in the presence of intense ultraviolet radiation.

**Performance Standards:** Standards established by a lead agency or other responsible agency to ensure public health and safety. A 2:1 (horizontal:vertical) slope angle would be an example of a performance standard for slope stability.

**Permeability:** The capacity of porous rock, sediment, or soil for transmitting a fluid.

**Processing Activities:** Those activities associated with the operation of the onsite Aggregate Processing Facilities used to screen, wash and sort the excavated materials into finished aggregate products, such as rock, sand and gravel.

**Processing Facilities Site:** The onsite location where the Aggregate Processing Facilities and most of the accessory industrial plants and facilities will be placed (e.g., Ready-Mixed Concrete Facility, etc.).

**Rare Species:** A native California plant (species, subspecies or variety) is rare when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens (Section 1901, Fish and Game Code). Since 1985, this designation applies to plants only.

**Reclamation:** The combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations, so that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses.

**Regional Significance:** Area designated by the State Mine and Geology Board pursuant to SMARA which is known to contain deposits of minerals, the extraction of which is judged to be of prime importance in meeting future needs for minerals in a particular region of the state within which the minerals are located and which if particularly developed for alternative incompatible land uses, could result in the permanent loss of minerals that are of more than local significance (SMARA 2006).

**Regional Water Quality Control Board (RWQCB):** Agency which administers the requirements of the California Administrative Code, Title 23, Division 3, Chapter 15 (Section 2595,g,7) to ensure the highest possible water quality consistent with all demands.

**Responsible Agency:** A Responsible Agency is a public agency, other than the Lead Agency, which has permitting authority or approval power over some aspect of the overall Project. Examples for the Project include the California Department of Fish and Wildlife (CDFW); Department of Conservation (DOC), Office of Mine Reclamation (OMR); California Department of Transportation (Caltrans); California Regional Water Quality Control Board – Lahontan Region (RWQCB); and the Antelope Valley Air Quality Management District (AVAQMD).

**Right-of-way (ROW):** The right to pass over property owned by another. The strip of land over which facilities such as roadways, railroads, or power lines are built.

**Safe Yield:** The amount of annual water extraction from the aquifer over time equal to the amount of water needed to recharge the groundwater aquifer and maintain it in equilibrium, plus any temporary surplus. Temporary surplus is defined as that amount of water that may be pumped from an aquifer to make room to store future water that would otherwise be wasted and unavailable for use.

**Sensitive Species:** Generic term for any plant or animal species that is recognized by the government or by any conservation group as being in need of special management in order to prevent them to become threatened or endangered.

**Significant Impact:** As defined by CEQA, Chapter 3, Article 1, Section 15002(g), "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project."

**Sound Pressure Level (SPL):** The logarithmic measure of the energy of a sound relative to a reference value, measured in dB.

**Sound Power Level (SWL):** The acoustical energy emitted by the sound source. An absolute value that is not affected by the environment, unlike SPL.

**Species of Special Concern:** "Species of Special Concern" (SSC) are animals that are not listed under State law. The designation is intended to focus attention on the species that require special management consideration and to help avert the need for listing under federal and State endangered species laws. This designation is also intended to stimulate collection of additional information on the biology, distribution, and status of poorly known species, and focus research and management attention on them.

**Threatened Species:** A native California bird, mammal, fish, amphibian, reptile or plant (species, subspecies or variety) is threatened when, although not presently threatened with extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

**Volatile Organic Compound (VOC):** Volatile organic compounds contribute to the formation of ground-level ozone, which is harmful to human health and vegetation when present at high enough concentrations.

# 2.0 EXECUTIVE SUMMARY

## 2.1 PROJECT UNDER REVIEW

The applicant, Lebata, Inc. (Lebata), is proposing to establish a new sand and gravel mining operation (Project) in the Antelope Valley area of unincorporated Los Angeles County, California (EIR Figure 1 – Regional Map). The Project involves mining a total of 46.48 million gross tons of sand and gravel over a period of approximately 47 years. The total Project area is comprised of approximately 310 acres, of which approximately 282.4 acres are proposed for excavation. The Project would extract aggregate from newly created pits in three distinct phases (Mining Phases) (EIR Figure 3 – Site Plan). Although production would vary with market conditions, the extraction rate of unprocessed material over the life of the Project is expected to range between 500,000 and 2,500,000 tons per year. Sales would not exceed 2,000,000 net tons of processed material per year.

## 2.2 SCOPE OF THE EIR

This EIR contains an analysis of the environmental impacts associated with the Project. The topics analyzed in this EIR are presented in EIR Chapter 4.0 in the following sub-chapters:

4.2 Land Use Consistency and Compatibility
4.3 Geotechnical Hazards
4.4 Flood Hazards
4.5 Noise
4.6 Water Quality
4.7 Air Quality, Health Risks, and Climate Change
4.8 Biological Resources
4.9 Visual Quality
4.10 Traffic and Circulation
4.11 Hazards and Hazardous Materials
4.12 Water Supply/Quantity

Each sub-chapter describes the threshold criteria used to evaluate potentially significant effects of the Project, the Mitigation Measures needed to reduce or eliminate impacts found to be significant, and a description of the level of impact significance after Mitigation Measures have been implemented.

## 2.3 ORGANIZATION OF THE EIR

The Draft EIR is organized into the following chapters:

Chapter 1.0 – Introduction: Provides an introduction and overview that describes the intended use of the document and the Lead Agency authority under CEQA.

Chapter 2.0 – Executive Summary: Summarizes the Project, areas of controversy, issues to be resolved, the potential environmental effects that may result from the implementation of the Project, the Mitigation Measures identified to reduce or eliminate significant effects, and a summary of alternatives to the Project.

Chapter 3.0 – Project Description: Describes the Project location, components, operations, purpose and objectives, and the surrounding community. Lists the permits required to implement the Project and responsible agencies or County departments that would issue those permits.

Chapter 4.0 – Environmental Impact Analysis: Describes the Project's characteristics related to each of the topical environmental issues and the threshold criteria used to evaluate potentially significant effects of the Project. Evaluates the potential environmental effects, identifies Mitigation Measures to reduce or eliminate effects found to be significant, and determines the level of significance of the effect after Mitigation Measures have been implemented.

Chapter 5.0 – Other CEQA Required Impact Analysis: Summarizes the environmental effects of the Project when considered with the effects of other approved and/or reasonably foreseeable projects that when combined, would be cumulatively significant. Also includes descriptions of: 1) ways in which the Project may foster economic or population growth and thereby be growth-inducing; and 2) any significant irreversible environmental changes which may result with the implementation of the Project (CEQA Guidelines Section 15126.2(c)(d)).

Chapter 6.0 – Alternatives to the Project: Describes a reasonable range of alternatives to the Project that would feasibly attain most of the basic objectives of the Project, but would avoid or substantially lessen any of the significant effects identified in the environmental analysis of the Project.

Chapter 7.0 – References: Includes a list of Lead Agency (County of Los Angeles) staff that participated in the processing of the application and oversaw the preparation of the EIR, Lebata contacts, and the consultants who prepared the technical reports and EIR. Also includes bibliography of information used to prepare the EIR.

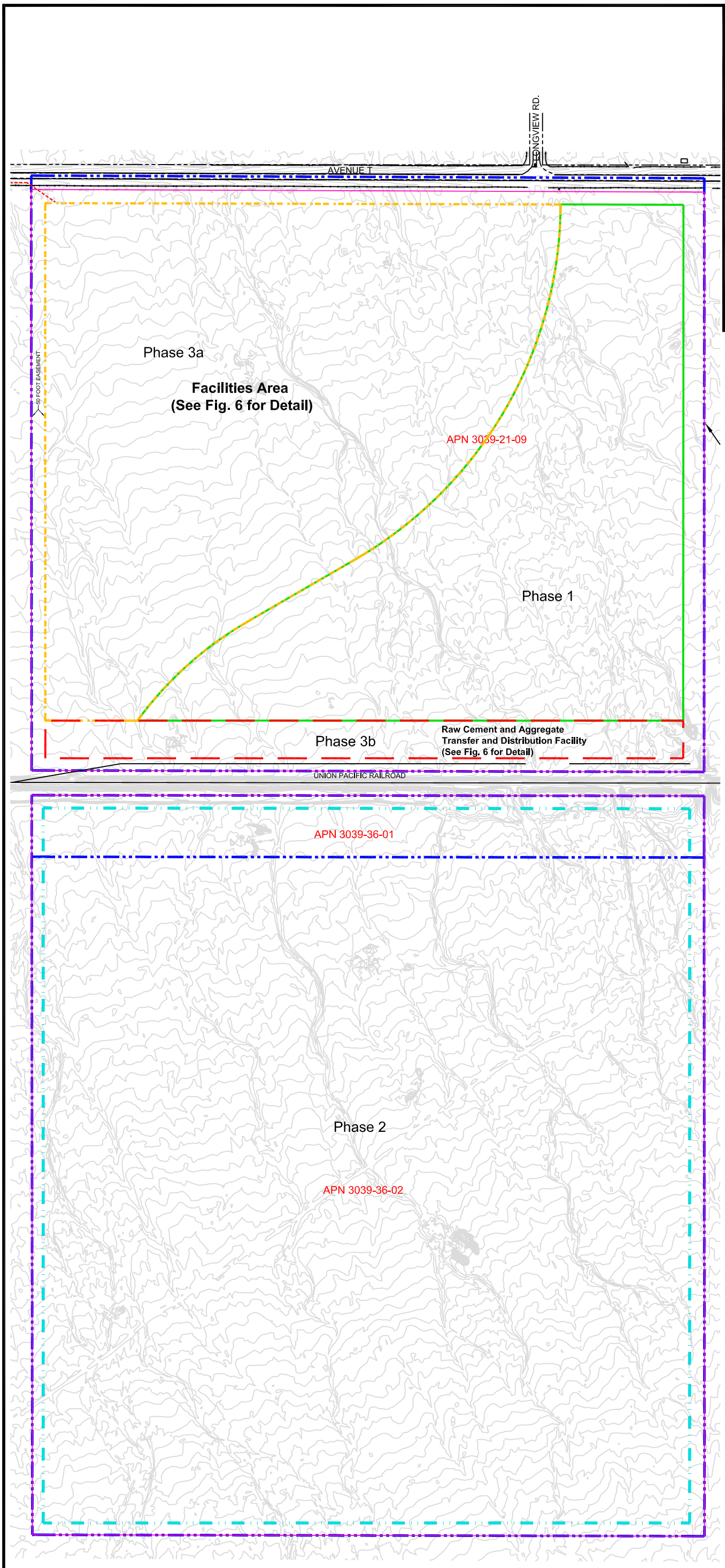
Chapter 8.0 – Mitigation Monitoring and Reporting Program: The MMRP summarizes the significant impacts, Mitigation Measures, compliance and monitoring frequency, and responsible agency.

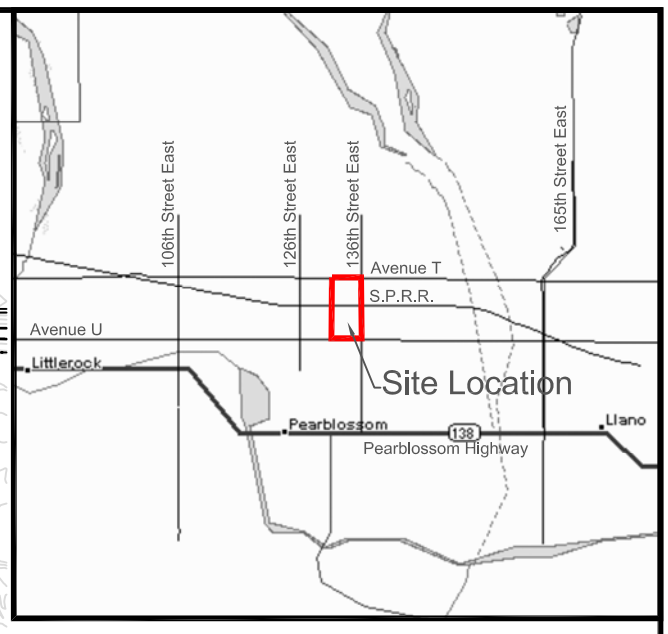
Appendices: Includes referenced analyses and studies.

## 2.4 CLASSIFICATION OF IMPACTS

The following nomenclature is used to describe various levels of impacts within this EIR:

- **Significant Impacts** – Significant environmental impacts that cannot be mitigated to a less than significant level. Pursuant to Section 15092(b) of the CEQA Guidelines, the County must issue a Statement of Overriding Considerations (CEQA Section 15093) for these impacts prior to approving the Project. Mitigation Measures designed to minimize these impacts are described.
- **Significant, but Mitigable to Less than Significant Impacts** – Significant environmental impacts that can be mitigated to a less than significant level with the implementation of the Mitigation Measures identified in this EIR. Prior to approving the Project, the County must make specific "findings" pursuant to Section 15091(a) of CEQA Guidelines.
- **Less than Significant Impacts** – Environmental impacts that are potentially adverse, but are less than significant.




## Vicinity Map

N.T.S.

## LEGEND:

- Assessors Parcel Boundaries
- CUP Boundary
- Phase 1 Mining Boundary
- Phase 2 Mining Boundary
- Phase 3a Mining Boundary
- Phase 3b Mining Boundary
- Existing Contours

N

0 200 400

APPROXIMATE SCALE IN FEET

SOURCE: West Coast Environmental 02/02/09

# Site Plan
## Big Rock Creek Site
Antelope Valley California

FIGURE 3

SCALE: AS SHOWN

DATE: 3-16-2012

## 2.5 PROJECT DESCRIPTION

### 2.5.1 Project Location

The Project site is located in the Antelope Valley, off Avenue T, in unincorporated Los Angeles County (EIR Figure 4 and EIR Figure 5 – Assessor's Parcel Maps 1 and 2).

### 2.5.2 Project Background

Lebata submitted an application to the County for the Surface Mining Permit, along with the proposed Reclamation Plan in 2007. The County reviewed the Surface Mining Permit application, including the supporting information, studies, analyses and reports, and prepared an Initial Study for the Project in accordance with the California Environmental Quality Act (Public Resources Code § 2710 et. seq.; CEQA Section 15063). Based on the Initial Study, the County determined that an Environmental Impact Report (EIR) was required to assess the potential environmental impacts of the Project. The Initial Study identified potentially significant impacts with regard to several environmental issue areas.

### 2.5.3 Project Description and Objectives

The Project's primary objective is to produce marketable Portland Cement Concrete-grade (PCC-grade) aggregate and related construction material products and supply these products where they are in demand. Lebata Inc.'s overall Project objectives are to:

- Conduct aggregate surface mining and processing operations to produce marketable PCC-grade aggregate and related products;
- Installation and operation of Aggregate Processing Facilities and various accessory industrial plants and facilities (described immediately below);
- Distribute products primarily to the greater Los Angeles, the Saugus/Palmdale and the San Bernardino/Riverside market areas with PCC-grade aggregate (e.g., rock, sand and gravel), specialty sand, ready-mixed concrete, mortar, road base, asphalt and raw cement; and
- Provide for the environmentally sound and economically viable operation and closure of the site.

### 2.5.4 Description of Surface Mining/Processing and Accessory Facilities

The Project involves the surface mining and the processing of excavated materials at an onsite Aggregate Processing Facilities. In addition to these facilities, the project includes the following onsite accessory facilities, described in more detail in the sub-chapters that follow, as illustrated in EIR Figure 6 – Facilities Site Plan. These accessory industrial plants and facilities include:

- Ready-Mixed Concrete Plant;
- Vac-Lite Plant (producing lightweight concrete);
- Asphalt Mixing Plant;
- Raw Cement and Aggregate Transfer and Distribution Facility;
- Water Reclamation and Fines Recovery Facilities;
- 24-foot by 60-foot office trailer (handicapped accessible); and

- 80-foot by 125-foot two-story building, which would include an equipment maintenance shop area, parts room, office, locker room, and restrooms (handicapped accessible).

#### 2.5.4.1 Amount and Type of Material to be Excavated and Processed

Proposed production levels would vary based on market demand. Although production would vary with market economies, the extraction rate of unprocessed material over the life of the Project is expected to range between 500,000 to 2,500,000 tons per year. Peak daily sales would be limited to the physical capabilities of the processing equipment, stockpiles of processed materials onsite, and demand. Peak annual sales would be further limited by the daily truck trips. If all such trips were allocated to the delivery of aggregate materials processed onsite, sales would not exceed 2,000,000 net tons of process material per year. Actual sales levels would vary over time and are a direct function of the rate of development within the Project's market area, the number and type of contracts obtained (e.g., Caltrans), the overall economy, equipment downtime, as well as hours and days of operation. Because this resource could last about 47 years, Lebata is requesting a 50-year permit.

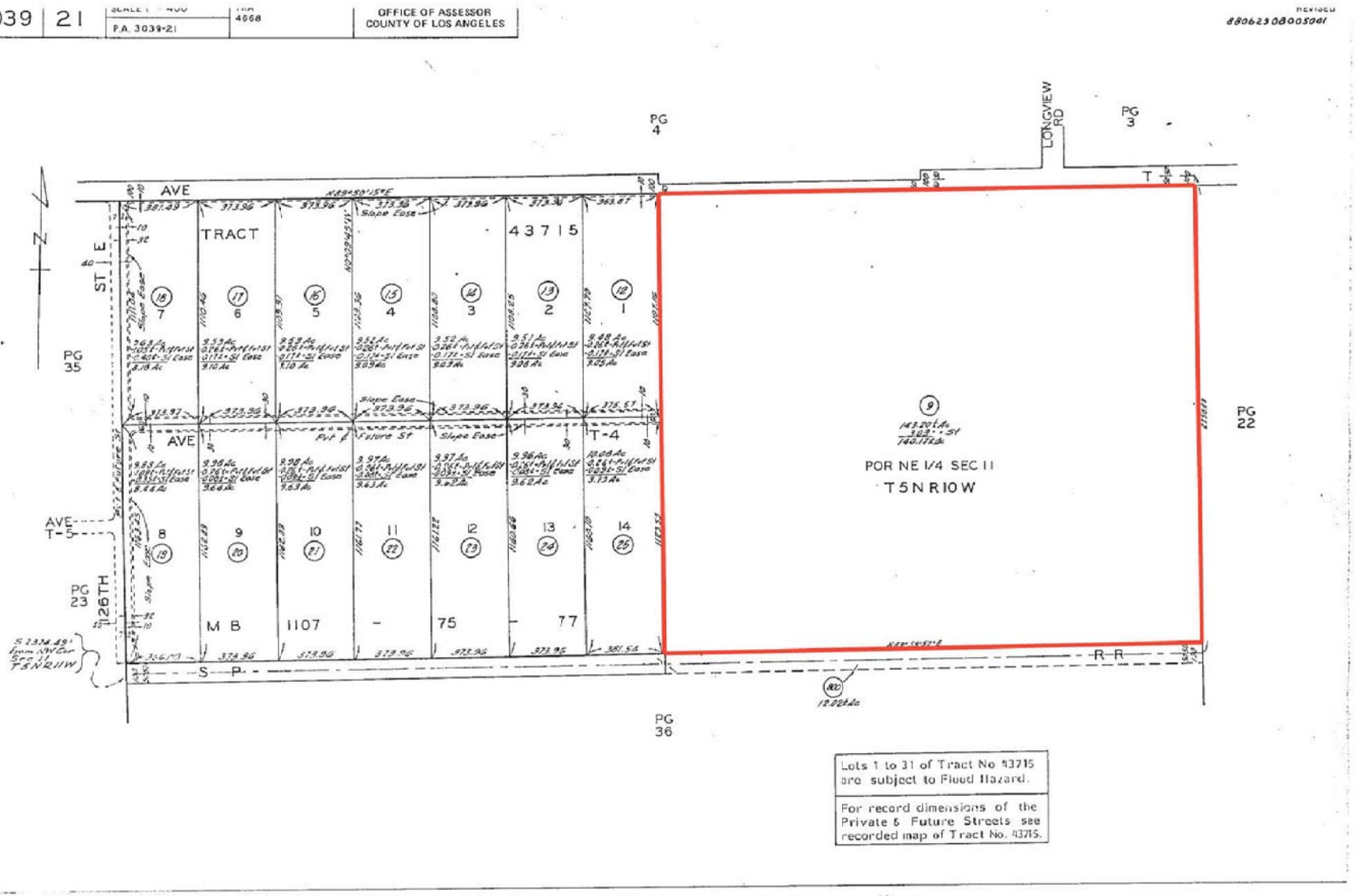
Gross volume of the material proposed to be excavated from the mining area is estimated to be approximately 30.98 million cubic yards. At an assumed density of 1.5 tons per cubic yard, this equates to a total of 46.48 million gross tons. Assuming that approximately 20.75 percent of the material would be unsuitable for sale as PCC-grade aggregate, the net reserves are estimated at 36.84 million tons.

Finished products would be PCC-grade aggregate and aggregate-using products, such as concrete and asphalt. Processing also creates scalped fines as a byproduct, some of which may be used as a soil amendment onsite in association with revegetation activities. The remainder of the fines would be sold as slurry used in nonstructural concrete or as miscellaneous fill material.

### 2.5.5 Mining Method and Aggregate Processing

The Project would extract aggregate from newly created pits in three distinct phases (Mining Phases). Mined materials would be excavated by dozers and shovels, either placed directly into the jaw crusher, or, during the initial part of each mining phase, placed into articulating trucks for transport to the jaw crusher. As the mining pit deepens, material would be excavated by shovel and transported by articulating trucks for transport to the jaw crusher. From the jaw crusher, material would be conveyed out of the mining pit to the Aggregate Processing Facilities.

At the Aggregate Processing Facilities, materials would be mechanically crushed, sorted by size and type using triple-deck and double-deck dry scalping screens. Sand would be washed to remove fine material. Finished products would be stockpiled, and products would be transported offsite via haul trucks. A grader would be used to maintain the Project's interior roads.




Source: USGS 7.5 Minute Topographic Quadrangle
Littlerock & Lovejoy Buttes, California 1957
Photorevised 1992
(C)2002 DeLorme, XMap(R) 3.5

Legend:

Project Boundary

N

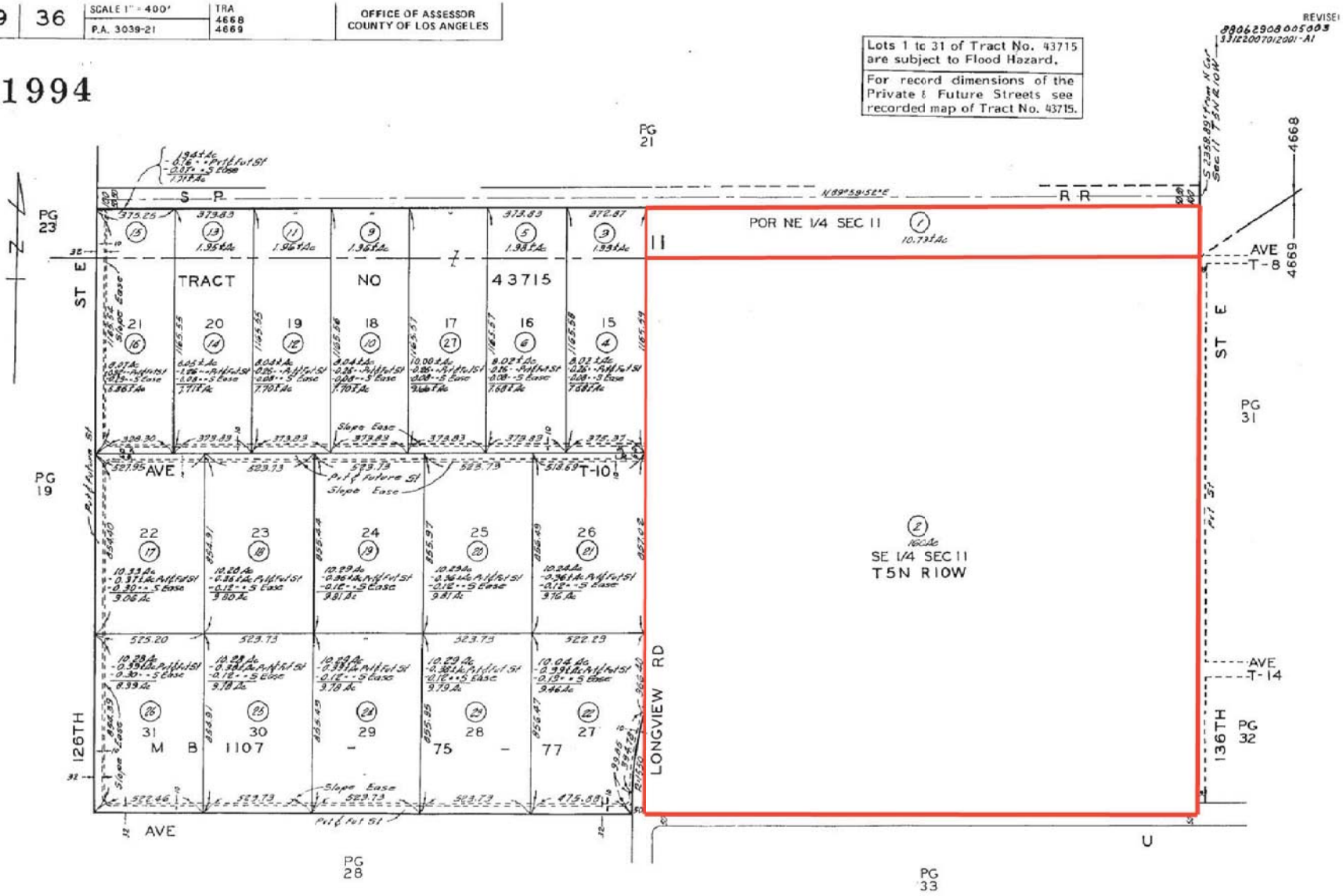
Source: West Coast Environmental, 12-31-2008

Assessor's Parcel Map 1
Big Rock Creek Site
Antelope Valley, California

FIGURE 4

Scale: NTS

Date: 3-13-2012



Source: West Coast Environmental, 12-31-2008

| Assessor's Parcel Map 2<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 5 |
|---|---|
| Scale: NTS | Date: 3-13-2012 |

To preclude erosion of the slope faces, floodwater interceptors and down drains would be installed as mining progresses. This is described in detail and illustrated in EIR sub-chapter 4.4.

All final mining slopes would be at a 2:1 horizontal:vertical overall inclination with County required benching at 30-foot vertical intervals (1.85:1 horizontal:vertical incremental slope). As proposed, the Project does not include backfilling[1]. The *Pit Slope Stability Evaluation* (EIR Appendix 4) determined a factor of safety for static conditions of not less than about 1.76. For pseudostatic conditions, in conjunction with a minimum horizontal acceleration coefficient of 0.15g, the factor of safety was determined to be not less than about 1.28. For surficial conditions, the factor of safety was determined to be not less than about 1.96. For each of these conditions, the Project exceeds County factor of safety criteria.

### 2.5.7 Mining Phases

Mining would occur in three phases. Mining Phase 1 would begin in the North Parcel, which is located between Avenue T and the Union Pacific Railroad, and would involve approximately 49.3 acres. In Mining Phase 1, mining would start at the northeast quarter of the Project site and progress toward the south and southwest up to, but not including, the road prism of the Longview Road Extension right-of-way.

A minimum two-ft-high Mine Safety and Health Administration (MSHA)-required safety berm would be installed along the top of the mine pit slope around the entire northern, eastern, southern, and western rims of the mine pits and pit entrance/exit ramps would prevent the temporarily impounded water from creating a public safety hazard.

Mining Phase 2 would involve the South Parcel where excavated materials would be conveyed out of the Mining Pit under the railroad tracks to the Aggregate Processing Facilities via a tunnel. The mined area would involve approximately 150.5 acres and would include all of the South Parcel, except for that portion comprising the road prism of the Longview Road Extension right-of-way, and the Raw Cement and Aggregate Transfer and Distribution Facility.

Mining Phase 3a would involve the excavation of materials occupied by the Processing Plant Area, which would be relocated to the floor of the Mining Phase 1 area, as well as the road prism of the Longview Road Extension right-of-way, both in the North and South Parcel. This would involve approximately 73.4 acres.

Mining Phase 3b would involve the area underlying the Raw Cement and Aggregate Transfer and Distribution Facility Area, which would involve approximately 9.2 acres. Regarding Mining Phase 3b, the Applicant proposes the following options:

1. If it is decided to mine the area underlying the Raw Cement and Aggregate Transfer and Distribution Facility, the Facility would be relocated into the Mining Phase 1 pit and operated there. The removal of the material from this area would occur during Mining Phase 3 excavation.

[1] Backfilling is associated with the Lowered Facilities Altrernative discussed in EIR sub-chapter 6.6.6.

2. If it is decided not to mine the area underlying the Raw Cement and Aggregate Transfer and Distribution Facility, the Facility would operate at that location during the life of the Project.

### 2.5.8 Ready-Mixed Concrete Plant

Lebata proposes to install and operate a Ready-Mixed Concrete Plant to manufacture and deliver 150,000 cubic yards per year of ready mixed concrete on an average annual basis. This Plant would be located on the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The actual quantity would depend upon market demand and may be as much as 225,000 cubic yards per year during peak demand.

### 2.5.9 Vac-Lite Plant

"Vac-Lite" is a strong, durable, porous glass pumice aggregate of volcanic origin, making it an ideal natural material for use in structural lightweight concrete. Lebata proposes to install and operate a Vac-Lite Plant on the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). Annual throughput would be no more that 30,000 tons imported for processing and exported for sale. The material must remain in a wet condition after processing, so it is typically made to order. If excess is produced, it would be stored in the three-sided bunker and kept wet until sold and transported offsite. The transportation of these materials would be done in a manner that does not increase the average and peak daily truck trips.

### 2.5.10 Asphalt Mixing Plant

Lebata proposes to install and operate an Asphalt Mixing Plant to manufacture and deliver 200,000 tons of asphalt per year on an average annual basis. This Plant would be located on the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The actual quantity would depend upon market conditions and may be as much as 300,000 tons per year during peak demand.

### 2.5.11 Raw Cement and Aggregate Transfer and Distribution Facility

Lebata currently has no rail transport option to receive raw cement from Northern California, primarily the Sacramento area, by rail and stored in onsite silos. To provide the capability, a Raw Cement and Aggregate Transfer and Distribution Facility is proposed on approximately 9.2 acres of the North Parcel, adjacent to and immdeiately north of the existing Union Pacific railroad tracks (EIR Figure 6 – Facilities Site Plan). If so constructed, the Project would receive approximately 300,000 tons of raw cement annually, which would be transferred pneumatically from the rail cars into two adjacent silos. Raw cement would be used onsite as a component of ready-mixed concrete at the Ready-Mixed Concrete Plant and the remainder would be pneumatically loaded from the silos into raw cement haul trucks for transport by truck to third parties or operator-owned concrete plants in the Greater Los Angeles, and the San Bernardino and Riverside areas. In addition, if such a facility is constructed, aggregate materials would be delivered by rail from the Project to the Los Angeles Basin.

However, the rail carriers have little available rail capacity and currently do not consider either type of commodity a “preferred cargo” for rail shipment. In addition, receiver stations or commitments needed from the Rail authorities to make this economically viable are not available at the present time. As such, it is possible the proposed rail spur may not be constructed to receive raw cement deliveries or receive and transport aggregate materials. If not, the Project would take truck delivery of raw cement for its use onsite at the Ready-Mixed Concrete Plant.

LONGVIEW ROAD

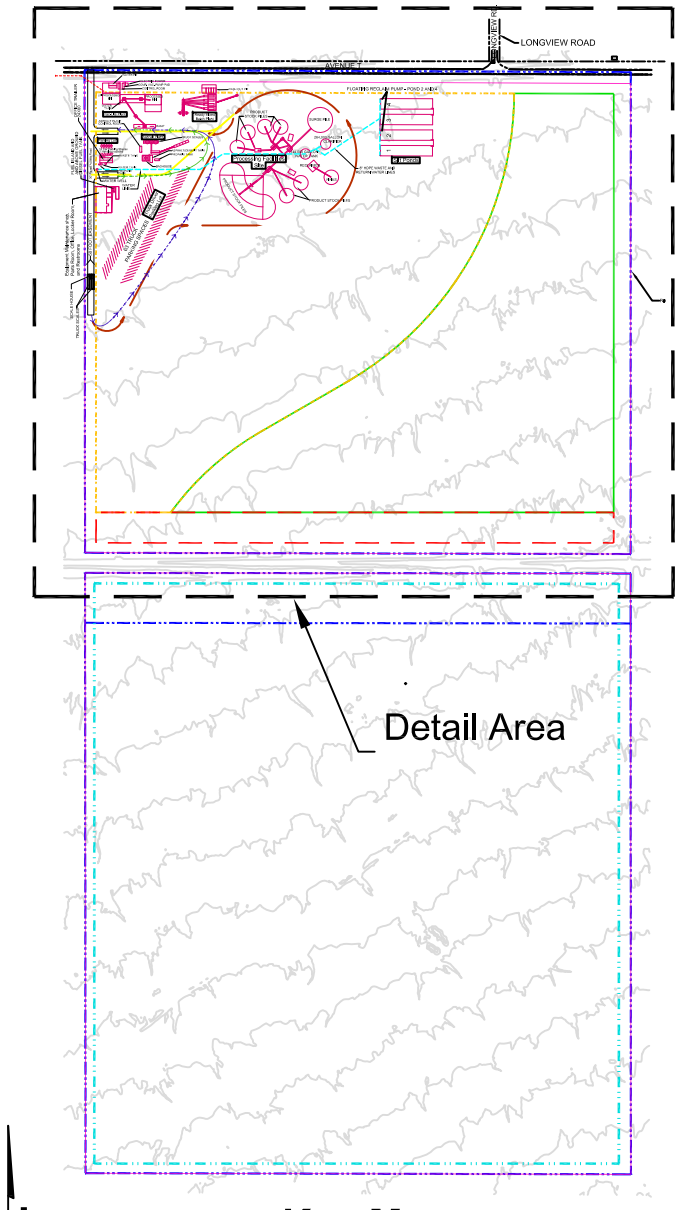
AVENUE T

WATER PIT
ELECTRIC POWER
COMP. VAC. PUMP PAD
CONTROL ROOM
WASH OUT PIT
FLOATING RECLAIM PUMP - POND 2 AND 4
OFFICE TRAILER 24X60
UNPROCESSED BIN
PROCESSED BIN
WATER TANK
Vac-Lite Plant
Ready Mixed Batch Plant
PRODUCT STOCK PILES
SURGE PILE
ASPHALT PLANT CONTROL ROOM
RAMP
Asphalt Plant
TRUCK SCALES
264,000 GALLON CLARIFIER
Parking Lot
16 Car Parking Spaces 2 Handicap spaces
ASPHALT/CEMENT TANK
PROPANE TANK
144,000 GALLON WATER TANK
Processing Facilities Site
Silt Ponds
WASTE TANK
BAGHOUSE
RECLAIMER
8" HDPE WASTE AND RETURN WATER LINES
WATER TANK
PROPANE TANK
FINES
FUEL ISLAND AND AND ABOVE GROUND DIESEL FUEL TANK
30' Paved Access Road
WATER WELL
WATER LINE
PRODUCT STOCK PILES
PRODUCT STOCK PILES
Truck Driver Parking Lot
63 TRUCK PARKING SPACES
Equipment Maintenance shop, Parts Room, Office, Locker Room, and Restrooms
SCALE HOUSE
TRUCK SCALES

Raw Cement Silos
RAW CEMENT AND AGGREGATE TRANSFER AND DISTRIBUTION FACILITY
SPACE TO UNLOAD 17 RAIL CARS
RAIL SPUR
UNION PACIFIC RAILROAD

## Legend

- Assessors Parcel Boundaries
- CUP Boundary
- Phase 1 Boundary
- Phase 3a Boundary
- Phase 3b Boundary
- Existing Contours
- AVEK (Alternative Water Supply)
- Aggregate Haul Route
- Asphalt, Ready Mix, and Vac-Lite Haul Route




## Key Map

SOURCE: West Coast Environmental 02/02/09

N

0 125 250

APPROXIMATE SCALE IN FEET

| Facilities Site Plan<br>Big Rock Creek Site<br>Antelope Valley California | FIGURE<br>6 |
|---|---|
| SCALE: AS SHOWN | DATE: 3-16-2012 |

### 2.5.12 Water Reclamation and Fines Recovery Facilities

At the Water Reclamation and Fines Recovery Facilities, aggregate processing wash water is drawn from the 45-foot diameter Fresh Water Tank and the used water from the Sand Washer and Dewatering Screen flows is pumped to a fines recovery system then it is pumped to the 45-foot diameter Thickener Tank. The Thickener tank separates whatever solids that are left and the clean water gravity flows back to the Fresh Water Tank. Fines are recovered and conveyed onto the Fines stockpile for subsequent sale. If this initial process does not recover the intended level of fines, Lebata would also use a traditional open pond system to settle out/recover fines. The use of an open pond system would be subject to approval by the Regional Water Quality Control Board.

This system would be comprised of three to four basins approximately 80 feet x 130 feet and 10 feet deep (depicted as Silt Ponds in EIR Figure 6 – Facilities Site Plan). Wash water from Aggregate Processing Facility would be collected, and would flow by gravity in a drainage system back to the Silt Ponds. To that water, a flocculant, comprised of organic polymers, would be added to cause the fine material to "settle out" from the water column. Settled fines would be removed and deposited on the Fines stockpile by a front-end loader. These and other fine materials produced during processing would be marketed for use as soil amendments, slurry used in nonstructural concrete, landfill top cover, miscellaneous fill material, among other uses; used as a soil amendment onsite in association with revegetation activities; or placed within the mine pit after being blended with surplus sand to ensure permeability is maintained. Only EPA-approved, non-toxic flocculant would be used to ensure there are no adverse impacts to water quality. To facilitate fines removal, the ends of each basin would be sloped, approximately 3:1 (h:v), to permit the entry and exit of equipment.

## 2.6 SUMMARY OF ALTERNATIVES

CEQA Guidelines Section 15126.6 provides a framework for the formulation and analysis of alternatives in an EIR. This Section states, "*An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*"

## 2.7 ALTERNATIVES NOT CONSIDERED FOR EVALUATION

### 2.7.1 Alternative Location

The start-up of a new surface mining operation and its related Aggregate Processing Facilities and accessory industrial plants and facilities is a complex undertaking with a variety of technical and environmental issues. An alternative site would not only require a high quality aggregate resource but would also need to support the various activities being proposed.

Site-specific studies would be required to evaluate a new site and its adequacy to support mining and processing operations. Issues to be addressed for a new site are dominated by its land availability and suitability. The site must be available for purchase or long-term lease with abundant aggregate resources to justify the investment. Overall feasibility studies would have to be prepared similar to the Project to evaluate the following environmental and logistical concerns:

- Quality and quantity of aggregate resource and its suitability to meet construction specifications for concrete and asphalt for up to 50 years;
- Geotechnical hazards, flood hazards, and hazards and hazardous materials;
- Water and electric service availability;
- Distance to markets possibly increasing haul truck mileage and air emissions;
- Available truck routes and impacts to roads and traffic;
- Existing and future surrounding land uses;
- Effects of the mining and processing plants on these surrounding land uses including visual aesthetics, dust, nighttime lighting, and noise;
- Potential impacts to groundwater, surface water, biological resources, and cultural resources; and
- Reclamation and use of site after mining has been completed.

Having undertaken this process to identify the Big Rock Creek site, Lebata made the determination that the site best met the environmental and logistical concerns noted above. In making this determination, seven (7) other sites were considered for a mining operation, each of which was found to be infeasible for the stated reasons:

1. Indio — Site was near threatened and endangered species.
2. Hemet — Site had high royalty rates and the reserves were too small for the investment.
3. San Diego — High royalty rates and opposition by the neighbors.
4. Lucerne Valley — Site was too far from the market.
5. Victorville — Cost to facilitate was too high along with property ownership issues.
6. Barstow — Too far from the market.
7. Gorman — Reserves were too small, consisted of sand and no rock, and the royalty was too high along.

Therefore, an alternative location was not further considered.

## 2.8 ALTERNATIVES CONSIDERED FOR EVALUATION

The following alternatives were selected for analysis in this EIR and are described in more detail below:

- No Project Alternative
- 750-Foot Turn Radius Project Alternative
- Project without Longview Road Extension Alternative
- Reduced Project Alternative, 1,500-Foot Turn Radius
- Reduced Project Alternative, 750-Foot Turn Radius

- Lowered Facilities Alternative

The two "Reduced" alternatives are both reduced footprint and reduced duration in nature.

### 2.8.1 Longview Road Extension and its Relationship to the Development of Alternatives

The County General Plan, specifically Figure 4.5: LA County Highway Plan, illustrates the adopted alignment of the future Longview Road Extension, which would bisect the Project area from its northeast corner to the southwest corner. The Project and its alternatives reflect various realignments of the Longview Road Extension, or its deletion. These include:

1. The 1,500-foot turn radius alignment, which was reconfigured to lessen the operational impacts upon the Project, by moving it further to the west and northwest and away from the center of the North Parcel, and to minimize its use of the South Pit. For the purposes of this EIR, the revised 1,500-foot turn radius has been incorporated within the Project Description.
2. A tighter 750-foot turn radius alignment was designed within the Project boundaries to move the right-of-way even further to the west and northwest. This 750-foot turn radius is associated with a lesser road standard than is planned for the Longview Road Extension.
3. Deletion of the Longview Road Extension.
4. Realign Longview Road Extension to coincide with the entire western boundary of the Project. This would entail a further reduction in its design standard, since travel would be subject stop signs at its two intersections with Avenue T. It would also involve the shared use of Avenue T for approximately 0.4 miles between the north and south portions of Longview Road. For these reasons, this option was discarded.

On December 15, 2008, Lebata has made application to the County's Interdepartmental Engineering Committee (IEC) requesting consideration of the the 1,500-foot turn radius alignment and 750-foot turn radius alignment. Since that time, it was learned the only option that can be decided without a General Plan Amendment is the 1,500-foot turn radius, upon which the Project has been designed. Because this alignment utilizes the same design standards as the existing alignment and falls entirely within the same properties, it can be approved by the County a General Plan Amendment. For this reason, Lebata has made application to the County's DPW Traffic and Lighting Division for the 1,500-foot turn radius realigment.

All other options would require a General Plan Amenedment to revise Figure 4.5: LA County Highway Plan. Lebata is not proposing a General Plan Amendment because the County's General Plan is currently undergoing a formal Update. In anticipation of the possible results of the General Plan Update, this EIR has been drafted to disclose the effects of the 1,500-foot turn radius alignment, 750-turmn radius alignment, and deletion of the Longview Road Extension. The General Plan Update process has been underway for many years and will likely be completed before the Longview Road Extension constrains the Project operationally.

During the EIR and Project decision-making processes, Lebata will work with Regional Planning staff to ensure that Project Conditions of Approval are written in a manner permitting the Project to conform to any realignment or the deletion of the Longview Road Extension resulting from the General Plan

Update. In the event the tighter 750-foot turn radius alignment is adopted by the County, the Project and all alternatives have been designed to place facilities within this alignment.

Discussions with LACDPW staff indicate a 750-turn radius alignment or the deletion of the Longview Road Extension must be supported by traffic modeling results. As the County has no traffic model for the Antelope Valley area, it was suggested the traffic model being developed by the City of Palmdale be used and the model results subjected to LACDPW review and acceptance. Lebata had intended using the City's traffic model to assess the 750-foot turn radius alignment and the deletion of Longview Road Extension. However, after waiting several years for the City of Palmdale to develop its new traffic model, and because there is as of yet no schedule for its development, a study was prepared to determine whether the Longview Road Extension was needed at all.

To this end, the *Deletion of Longview Road from Los Angeles County Master Plan of Highways Traffic Study* was prepared (EIR Appendix 9, Second Addendum), which concluded the following:

> *The projected 2035 future traffic volumes in the study area can easily be accommodated by the existing roadway system without the extension of Longview Road, and Longview Road should be deleted from the Master Plan of Highways. The cost of constructing the extension, which would include a substantial curvature in alignment, would not be offset by any significant improvement in the resulting level of service. The levels of service on existing roadways will not be significantly impacted by the deletion of Longview Road from the Master Plan of Highways.*

### 2.8.2 Mitigation Measures Common to all Alternatives

All of the Mitigation Measures identified in this EIR and presented in EIR Chapter 8.0 apply to the alternatives presented below. One Mitigation Measure was identified that are unique to the Lowered Facilities Alternative regarding slope stability (refer to EIR sub-chapter 6.6.6.2).

## 2.9 ANALYSIS OF THE ALTERNATIVES

### 2.9.1 No Project Alternative

Under the No Project Alternative, the site would remain in its relatively undisturbed condition. The No Project Alternative would be considered environmentally superior because it would have no site impacts to Geotechnical Hazards; Flood Hazards; Noise; Water Quality; Air Quality, Health Risks and Climate Change; Biological Resources; Visual Quality; Traffic and Circulation; Hazards and Hazardous Materials; and Water Supply/Quantity.

However, the No Project Alternative would result in the need for aggregate materials to be supplied from other surface mining operations in order to meet the 50-year demand within the Palmdale P-C Region. EIR sub-chapter 4.2.8 (Aggregate Sustainability in California) notes that:

> *One of the largest changes in the State of California involves the Palmdale P-C Region, where permitted reserves dropped from 216 to 152 million tons while demand increased from 172 to 557 million tons. Given the projected demand, the Palmdale P-C Region can currently provide only 27 percent of the 50-year demand and would be exhausted in approximately 13.6 years.*

Because there is currently an inadequate supply of permitted reserves within the Palmdale P-C Region and the surrounding P-C Regions, aggregate materials will need to be transported from surface mining operations located in other areas of the County, or from outside the County. The resulting supply pressure would likely result in increased material costs as well as the need to transport materials over greater distances. Traffic impacts would depend on where aggregate material would be supplied from to make up the loss of aggregate materials that would otherwise be produced at the Project site. If aggregate materials were to be transported from another aggregate source further away from markets, additional impacts to traffic and air quality could occur. Any increase in travel distances would result in increased air quality impacts and additional traffic upon other roadways. Such increases in impacts, depending upon the area affected, could result in significant impacts, including those considered cumulatively considerable.

The No Project Alternative eliminates the future mineral development of the site in conflict with the existing state Mineral Resource Zone (MRZ) classification of MRZ-2, the State's designation of the site as having aggregate deposits of regional significance, and County General Plan and Zoning Designation (i.e., Non-Urban and Agricultural, Mineral Resource Area). The loss of this aggregate resource could cause future shortages of construction material in the Palmdale P-C Region.

The No Project Alternative would not meet Lebata's project objectives to provide a long-term aggregate resource to meet the infrastructure needs of the County. In addition, without the Project, Lebata and/or other aggregate suppliers will need to search for another aggregate source to produce the aggregate supply the County needs. Expanding an existing surface mining operation, or permitting a new surface mining operation elsewhere in the County could potentially have similar or additional environmental impacts as discussed in EIR Chapter 4.0.

### 2.9.2 750-Foot Turn Radius Project Alternative

Under the 750-Foot Turn Radius Project Alternative, the site would be developed in the same manner as the Project with one notable change: the right-of-way for the Longview Road Extension would conform to a tighter 750-foot turn radius. In all other regards, the 750-Foot Turn Radius Project Alternative would result in essentially the same impacts as those described for the Project in EIR Chapter 4.0, with some additional clarification of impacts described below.

Comparison of the depths of flooding to the proposed 80-foot depth of the mine pits indicates that the Capital Flood volume inside the pits would not overflow. Thus, the mine pits would not overflow during the Capital Flood. As a result, flooding impacts are considered **Less than Significant.**

All mining phases would be emptied within 5 days after the Capital Flood event and the Project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Therefore, impacts are considered **Less than Significant.**

Even after the Capital Flood, a sediment layer measuring 0.07 feet or less would be deposited, which is less than that of the Project. As a result, impacts due to sedimentation are considered **Less than Significant.**

### 2.9.3 Project (and Lowered Facilities) without Longview Road Extension Alternative

Under the Project without Longview Road Extension Alternative, the site would be developed in the same manner as the Project with one notable change: the right-of-way for the Longview Road Extension would either be abandoned or realigned to coincide with Project's western-most boundary.

In all other regards, this alternative would result in the same impacts as those described for the Project in EIR Chapter 4.0, except there would be a minor reduction in air emissions due to the fact the road prism underlying the right-of-way would not have to be reconstructed, as would otherwise be the case for the Project. Final reclamation under this alternative would be quite similar to EIR Figure 11 and EIR Figure 12 in EIR sub-chapter 3.6.1.3, minus the need for the Longview Road Extension right-of-way. As a result, Flood Hazards associated with the Project without Longview Road Extension Alternative would be less than those of the Project given the increase in surface area available to capture a Capital Flood.

This alternative is also applicable to the Lowered Facilities Alternative (refer to EIR sub-chapter 6.6.6). In that instance, this alternative would result in the same impacts as those described for the Project in EIR sub-chapter 6.6.6, except there would be a minor reduction in air emissions due to the fact the road prism underlying the right-of-way would not have to be reconstructed, as would otherwise be the case for the Lowered Facilities Alternative. Gross and net tonnage would be similar to that of the Project, as depicted in EIR Table 4. Final reclamation under this alternative would be quite similar to EIR Figure 73 and EIR Figure 74 in EIR sub-chapter 6.6.6.1, minus the need for the Longview Road Extension right-of-way. As a result, Flood Hazards associated with the Project without Longview Road Extension Alternative would be less than those of the Project given the increase in surface area available to capture a Capital Flood.

### 2.9.4 Reduced Project Alternative, 1,500-Foot Turn Radius (Reduced Footprint/Duration)

Under the Reduced Project Alternative, 1,500-Foot Turn Radius, surface mining activities would cease within the North Pit once the excavation has fully exposed what would become the road prism supporting the 1,500-Foot Turn Radius for Longview Road Extension. This means that Mining Phase 3 in the North Pit would not be undertaken, resulting in a 9.83 gross million ton reduction (31.7 percent) in the overall material being extracted and processed. As such, this alternative would reduce the Project's footprint and duration.

When compared to the impacts described for the Project in EIR Chapter 4.0, the elimination of Mining Phase 3 – North Pit excavation would result in corresponding reductions in the stated impacts. If mining were to proceed at the same pace as that of the Project, most of the impacts would be the same impacts as those described for the Project in EIR Chapter 4.0, but would occur over a fewer number of years. Acres based impacts, such as those described in EIR sub-chapter 4.8 regarding biological resources, would be lessened because approximately 82.6 fewer acres would be excavated.

Under this alternative, it would also be possible to conduct a surface mining operation over the same number of years as would be for the Project, but at a reduced rate of production. Were this to occur, the impacts described for the Project in EIR Chapter 4.0 would be lessened somewhat proportionally by this alternative.

### 2.9.5 Reduced Project Alternative, 750-Foot Turn Radius (Reduced Footprint/Duration)

Under the Reduced Project Alternative, 750-Foot Turn Radius, surface mining activities would cease within the North Pit once the excavation has fully exposed what would become the road prism supporting the 750-Foot Turn Radius for the Longview Road Extension. This means that Mining Phase 3 in the North Pit would not be undertaken, resulting in a 6.88 gross million ton reduction (22.2 percent) in the overall material being extracted and processed. As such, this alternative would reduce the Project's footprint and duration.

When compared to the impacts described for the Project in EIR Chapter 4.0, the elimination of Mining Phase 3 – North Pit excavation would result in corresponding reductions in the stated impacts. If mining were to proceed at the same pace as that of the Project, most of the impacts would be the same as those described for the Project in EIR Chapter 4.0, but would occur over a fewer number of years. Acre-based impacts, such as those described in EIR sub-chapter 4.8 regarding biological resources, would be lessened because approximately 57.4 fewer acres would be excavated.

Under this alternative, it would also be possible to conduct the surface mining operation over the same number of years as would be for the Project, but at a reduced rate of extraction. Were this to occur, the impacts described for the Project in EIR Chapter 4.0 would be lessened somewhat proportionally by this alternative.

### 2.9.6 Lowered Facilities Alternative

The Lowered Facilities Alternative differs considerably from the Project in that work would initiate with pre-production mining for a period of up to five (5) years, and would include access road construction, the installation of a portable/temporary aggregate processing plant, excavation of permanent facility areas, and construction of permanent facilities. The portable/temporary plant and supporting utility infrastructure would be installed in the eastern portion of the pre-production mining phase area. Ready-mixed concrete, asphalt, and Vac-Lite concrete would not occur during the pre-production phase of the Project.

At the conclusion of pre-production mining, Project facilities woulod be placed and operated within an approximately 25- to 35-foot deep depression in the northwestern corner of the North Parcel. Key aspects of this alternative include the following:

- The Lowered Facilities Alternative assumes the 750-Foot Turn Radius for Longview Road Extension, whereas the Project assumes a realignment of the 1500-Foot Turn Radius for Longview Road Extension.
- Pre-production mining would begin with the excavation of an approximately 25- to 35-foot deep depression in the northwestern corner of the North Parcel (northwest of the 750-Foot Turn Radius for Longview Road Extension).
- Various berms would be installed upon the original grade level, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot to 7-foot berms on the eastern boundary, and a 5-foot berm on the northern boundary.
- Facilities would be installed and operated long-term within the excavated area, as depicted on EIR Figure 69 – Lowered Facilities Site Plan – Facilities Site Plan;

- Mining would occur in two phases, essentially the North Parcel and South Parcel;
- Mining slopes would be excavated to a 1:1 (h:v) slope down to an excavation depth of 65 vertical feet;
- Mining slopes would be excavated to a 2:1 (h:v) slope from an excavation depth of 65 vertical feet to the bottom of the mining pit;
- A 15-foot bench would be left at the transition point between the 1:1 (h:v) and 2:1 (h:v) cut slopes;
- Excavation of the rail transfer facility bench, to a depth of 25 feet, would proceed from west to east and would either occur concurrently or after completion of pre-production mining; and
- Reclamation would include the use of blended unsold sand and processing fines to backfill cut slopes to an overall final slope of 2:1 (h:v), with County required 8-foot terraces, one for every 30 feet of vertical depth.

The *Drainage Concept Addendum* (EIR Appendix 3, Addendum) prepared specifically for the Lowered Facilities Alternative concluded:

> *The mine drainage concept would have no adverse impact on properties adjacent to and downstream of the mine during the Capital Flood. The interceptor drains located on the upstream (southern and eastern) sides of the mine pits are adequately sized to capture and convey any flows arriving at each interceptor drain for delivery to the down drains and subsequent discharge to the mine pits. Hence, there would be no backwater effects or associated increases in flood depths caused by the interceptor drains. Therefore, flooding on adjacent properties would not be impacted.*

The extent of excavation and mining within the North Parcel would depend upon whether, or not, the Longview Road Extension is deleted during the General Plan Update. If deleted, the area occupied by the Longview Road Extension Right-of-Way would be mined and the material processed (refer to EIR sub-chapter 6.6.3).

When compared to the impacts described for the Project in EIR Chapter 4.0, this alternative would substantially reduce impacts to visual quality over the life of the project and would reduce noise levels due to the placement and operation of project facilities within a bermed 25- to 35-foot depression. Depending upon what the General Plan Update adopts with regard to the deletion or realignment of the Longview Road Extension Right-of-Way, this alternative could result in:

- Acre-based impacts, such as those described in EIR sub-chapter 4.8 regarding biological resources, would be lessened.
- Possible shortening of the duration of the project, if the area to be mined is reduced in size and mining were to proceed at the same pace as that of the Project.

The Lowered Facilities Alternative is expected to result in **Less than Significant Impacts** related to the slope stability during mining operations and post-reclamation. However, the *Pit Slope Stability Evaluation* noted the proposed 1:1 (h:v) slopes are considered "temporary cut slopes" by the County

and, as such, are subject to the factor of safety criteria for static conditions (i.e., factor of safety of 1.5). Although the *Pit Slope Stability Evaluation* determined these slope did exceed the minimum factor of safety, it did offer caution since these 1:1 (h:v) slopes will exist much longer than what is normally considered a "temporary cut slope." Therefore, given their prolonged duration before final reclamation, it is concluded the excavation of temporary 1:1 (h:v) slopes could cause slope instability, resulting in **Significant Impacts**. In response, **Mitigation Measure LFA-1** (EIR sub-chapter 6.6.6.2.2) was developed to require field verification. Upon implementation of **Mitigation Measure LFA-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

## 2.10 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) specifies that:

> *"If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."*

As noted in EIR sub-chapter 6.6.1, the No Project Alternative is identified as the environmentally superior alternative. It is also necessary to identify an environmentally superior alternative from among the other alternatives, which is the Lowered Facilities Alternative (refer to EIR sub-chapter 6.6.6) because it would result in the following:

- Substantially reduced impacts to visual quality over the life of the project due to the placement and operation of project facilities within a bermed 25- to 35-foot depression;
- Reduced noise levels due to the placement and operation of project facilities within a bermed 25- to 35-foot depression;
- In the first phase of the Lowered Facilities Project Alternative, health risk impacts from industrial sources would be less than those predicted for the Project, due to the reduced throughput and limited activities;
- Once the Aggregate Processing Facilities and accessory facilities have been placed on the lowered Facilities Processing Site, approximately 25 to 35 feet below current grade, operations would result in a slight reduction of health risk impacts when compared to the Project due to the dispersion characteristics of plumes generated in a pit;
- Lower offsite pollutant concentrations and lower health risk, than the Project; and
- Depending upon the General Plan Update adoption with regard to the Longview Road Extension Right-of-Way (i.e., 750-Foot or deletion), the Lowered Facilities Alternative could result in:
  - Disturbed Acres being reduced from 282.4 acres to as few as 275.0 acres;
  - Tonnage Gross being reduced from 46,482,400 tons to 42,290,850 tons or less;
  - Tonnage Net being reduced from 36,837,300 tons to 33,515,500 tons or less; and
  - Duration being reduced from 47 years to 43 years or less.

## 2.11 SUMMARY OF ENVIRONMENTAL IMPACTS ANALYSIS

The following summarizes information presented in detail in EIR Chapter 4.0 – Environmental Impact Analysis regarding Project impacts and is categorized as:

- Findings of no impact or less than significant impact.
- Findings of less than significant impacts after mitigation measures have been implemented.
- Findings of significant impacts after mitigation measures have been implemented.

EIR Table 2 summarizes the potentially significant environmental impacts associated with the Project, the Mitigation Measures that would reduce or eliminate these potentially significant impacts, and the level of significance of these impacts after the Mitigation Measures have been implemented.

### 2.11.1 Findings of No Impact or Less than Significant Impacts

This EIR determined the Project would have **No Impacts** or **Less than Significant Impacts** in the following areas:

- Geotechnical Hazards
- Flood Hazards
- Water Quality
- Visual Quality
- Traffic and Circulation
- Hazards and Hazardous Materials
- Water Supply/Quantity

### 2.11.2 Findings of Less than Significant Impacts after Mitigation Measures Have Been Implemented

This EIR determined the Project would, after the implementation of Mitigation Measures, have **Less than Significant Impacts** in the following areas:

- Noise
- Air Quality, Health Risks and Climate Change
- Biological Resources – Sensitive Species Habitat/Loss of Habitat
- Traffic and Circulation

### 2.11.3 Findings of Significant Impacts after Mitigation Measures Have Been Implemented

This EIR determined that all **Significant Impacts** caused by the Project can be mitigated to levels considered **Less than Significant**.

### 2.11.4 Findings of Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

#### 2.11.4.1 Geotechnical Hazards

The Project exceeds County factor of safety threshold criteria under all conditions. As such, it was determined the Project would be stable and safe as designed. In addition, the relatively massive alluvial deposits have a low susceptibility to landsliding or lateral spreading due to the lack of geologic structures such as joints, contacts, and bedding, which may present preferred shear surfaces. The Project is expected to result in **Less than Significant Impacts** related to the slope stability during mining operations and post-reclamation.

The Project will be required to comply with UBC requirements for the construction/installation of new facilities and standard operational regulations will result in **Less than Significant Impacts**. Given the lack of cumulative projects, and the fact no geological impacts are anticipated offsite, impacts to geology and soils **are not expected to be cumulatively considerable**.

#### 2.11.4.2 Flood Hazards

Project mine pits would intercept the entire Capital Flood discharge via a system of interceptor-drains and convey the water into the pits via a system of down-drains and terrace drains. The total captured Capital Flood Volume, inundation depth and pit emptying time in each phase are summarized in EIR Table 25.

All flood water entering the mine pits, inclusive of that from a Capital Flood, would be emptied by three potential pathways: 1) evaporation, 2) vertical infiltration through the mine pit bottom, and 3) horizontal infiltration through the mine slope. Given the limited number of cumulative projects, and the fact that none of the captured Capital Flood would overflow from the pits and escape as surface flow, Project impacts **would not be cumulatively considerable.**

#### 2.11.4.3 Noise

Potential construction and operational noise impacts from the Project take into account the combined effects from multiple noise sources and from existing ambient conditions. Potential noise impacts from the Project were determined either to be **Less than Significant** or **Significant, but Mitigable to Less than Siginificant** upon implementation of the **Mitigation Measure NO-1** described in EIR sub-chapter 4.5.6. The limited number of cumulative projects, and the distance between the Project and other noise

generators precludes any cumulative impacts from onsite activities. Further reducing noise potential, other various berms would be installed upon the original grade level, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot berm on the eastern boundary (i.e., those segments not included in **Mitigation Measure NO-1**), and a 5-foot berm on the northern boundary.

Single-event haul truck pass-by noise would be similar to the existing conditions. The traffic noise model added Project traffic to existing levels, which provided a cumulative result, indicating the combined traffic related noise impacts would be **Less than Significant**.

Given the limited number of cumulative projects, and the implementation of Project **Mitigation Measure NO-1**, the Project **would not result in noise levels that are cumulatively considerable**.

#### 2.11.4.4 Water Quality

The Project would require the use and onsite storage of the chemicals, which would be stored atop the Fueling and Maintenance Pad, or within secondary containment elsewhere within the Processing Facilities Site. Refer to EIR sub-chapter 4.11.5 where Hazardous Materials are discussed and where EIR Table 88 provides a list of the types and quantities of chemicals that would be stored and used onsite.

Impacts to groundwater quality could occur if fuel, other hydrocarbons, or other onsite hazardous materials were to spill. To minimize potential impacts, all vehicle fueling and maintenance would take place atop the Fueling and Maintenance Pad within the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The concrete pad includes a curbed containment berm and is adjacent to the fuel storage tank, which would be placed within a concrete secondary containment area. These precautionary measures are designed to ensure fueling and maintenance activities do not adversely affect surface water or groundwater. The only exceptions to this would be repairs elsewhere on the Project site due to onsite equipment breakdowns.

The Project incorporates the following material control programs: Hazardous Materials Business Plan; hazardous materials inventory; SPCC; employee training; record keeping; preventive maintenance; BMP; and SWPPP. (Refer also to EIR sub-chapter 4.11.8.) In addition, the implementation of the *Drainage Concept* (EIR Appendix 3) and use of the Fueling and Maintenance Pad serve to further reduce Project impacts. Given these programs and the limited number of cumulative projects, operational and long-term Project impacts regarding hazards and hazardous materials are **not expected to be cumulatively considerable.**

#### 2.11.4.5 Air Quality, Health Risks and Climate Change

#### 2.11.4.5.1 *Air Quality and Climate Change*

#### 2.11.4.6 Air Quality

CEQA addresses cumulative significance in the following rule text:

> *"A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." (14 CCR 15130).*

There are a very limited number of cumulative projects in the Project's vicinity. Mobile source activity produces the majority of ozone precursor emissions and will be minimized by addition of a new mine as well as controlled by implementation of CARB regulations. Thus, the Project will be expected to implement its fair share of measures designed to alleviate the cumulative impacts that occur on regional ozone and particulate matter concentrations. The Project's impacts **would not be cumulatively considerable.**

#### 2.11.4.6.1 *Health Risk*

It is concluded that the Project could result in:

- Cancer risk impacts greater than the significance threshold of 10 in 1 million at Receptor **R4**, a **Significant Impact**.
- Chronic hazard impacts less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.
- Acute hazard impacts less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.

Regarding cancer risk impacts, **Mitigation Measures AQ-4 and AQ-5** (EIR sub-chapter 4.7.6) were developed. Upon implementation of **Mitigation Measures AQ-4 and AQ-5**, the Project's cancer risk would result in **Significant, but Mitigable to Less than Significant Impacts** at all Receptors. As such, and given the limited number of cumulative projects in the Project's vicinity, Project impacts **would not be cumulatively considerable.**

### 2.11.4.7 Biological Resources

With regard to the indirect and direct take of desert tortoise, it is concluded that the Project could result in indirect and direct take of the desert tortoise, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-1** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-1**, impacts to desert tortoise are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of Mohave ground squirrel, it is concluded that the Project could result in indirect and direct take of the Mohave ground squirrel, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-2** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-2**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-2**, impacts to Mohave ground squirrel are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of native and sensitive nesting birds, it is concluded that the Project could result in indirect and direct take of native and sensitive nesting birds, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-3** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-3**, the Project would result in **Significant, but**

**Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-3**, impacts to native and sensitive nesting birds are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of sensitive native plants, it is concluded that the Project could result in indirect and direct take of sensitive plant species, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-4** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-4**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-4**, impacts to sensitive native plants are **not expected to be cumulatively considerable**.

With regard to the an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife, It is concluded that the Project could result in an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-5** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-5**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-5**, these impacts are **not expected to be cumulatively considerable**.

With regard to Project trucks could result in nighttime truck traffic related wildlife mortality, it is concluded that the Project could result in adverse effects at night to wildlife along the haul routes, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-6** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-6**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. With regard to such nighttime impacts onsite, there are several **Mitigation Measures** that serve to reduce **Significant, but Mitigable Impact**. These Mitigation Measures include, **Mitigation Measure AQ-2** (15 mph speed limit on unpaved roads), and **Mitigation Measures BIO-1 through BIO-3**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of these mitigation measures, these impacts are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of special-status native wildlife (i.e., specifically Blainville's horned lizard, loggerhead shrike, LeConte's thrasher, American badger, and southern grasshopper mice) it was concluded the Project would result in **Less than Significant Impacts** because abundant habitat for these species would remain adjacent to the Project area and these species have no formal federal or state protection.

#### 2.11.4.8 Visual Quality

The Project is not anticipated to significantly impact visual quality due to the long intervening distances between the Project and nearest residential communities with a vantage point of the area. In addition, the Project would install berms along portions of its periphery would further lessen the Project's already **Less than Significant Impacts** and by painting tanks and taller equipment to lessen their visibility from Avenue T. This, when considering the limited number of cumulative projects, none of which contribute the visual impacts in the vicinity, Project impacts are **not expected to be cumulatively considerable**.

The Project would use nighttime lighting, both for safety and operations. The County's *Dark Sky Ordinance*, specifically Sections 22.44.590, exempts the Project from the provisions of this ordinance where such lighting is needed for safety reasons. To promote and maintain dark skies at night for the residents and wildlife in the district , all Project lighting would be installed and operated in accordance with the requirements of the County' *Dark Sky Ordinance*, specifically Sections 22.44.141 and 22.44.150. Lighting would be shielded/hooded and/or directional to minimize Project visual impacts and would be designed to incorporate the lighting needed for operations, repair and maintenance, and security. Lebata would ensure these lights are shielded/hooded and downward-directional to light only the area requiring illumination.

A *Photometric Study* (EIR Appendix 16) was prepared by Nate Mullen Visual Concepts, LLC to provide the basis for demonstrating light trespass levels beyond property line setbacks and Project related nighttime light impacts to surrounding property owners. On each sheet of the *Photometric Study*, the lumenaire schedule illustrates that the Project would not create light pollution that results in unacceptable levels of light trespass. As such, the Project would result in **Less than Significant Impacts**. This, when considering the limited number of cumulative projects, none of which contribute the nighttime light impacts in the vicinity, Project impacts are **not expected to be cumulatively considerable**.

#### 2.11.4.9 Traffic and Circulation

A capacity analysis for the seven critical intersections within the vicinity of the Project for existing, background conditions and cumulative conditions was conducted and reveals that the Project has no significant impact on the seven study intersections or the six State highway sections. The *Traffic Impact Analysis* (*TIA)* (EIR Appendix 9) has concluded the Project would result in **Less than Significant Impacts**.

Cumulative projects have been determined to have S**ignificant Impacts** under short-range cumulative conditions at the intersections of 82nd Street and Pearblossom Highway, and of 106th Street and Pearblossom Highway. Improvements have been identified for those cumulative projects to mitigate cumulative impacts to result in **Less than Significant Impacts**. However, because the Project does not add any PM peak hour trips to the intersection of 82nd Street and Pearblossom Highway and a 19.3 percent share at 106th Street and Pearblossom Highway, the Project would result in **Less than Significant Impacts** at this intersection. The Project adds trips to the AM peak hour, which result in cumulative traffic impacts at the 106th Street East and Pearblossom Highway intersection. Restriping the westbound right-turn lane as a shared through/right-turn will mitigate this cumulative impact to **Less than Significant** Impacts. The project has a 19.3 percent share of this cumulative mitigation.

The *TIA* recommends that the Project contribute a fair-share contribution to the proposed roadway improvements for the SR-138, SR-14 and I-5 Freeways based upon the fact it does add additional traffic, albeit minimally so (404 ADT and 14 peak hour trips). The Project will coordinate with Caltrans to ensure that any cumulative impacts to the subject facilities are addressed and mitigated to Caltrans' satisfaction. Contributing in this manner will ensure Project impacts **are not considered cumulatively considerable.**

Note: If the East-West High Desert Corridor (HDC) is approved, funded and constructed, Project impacts could be reduced by rerouting Project truck traffic so as to proceed 2 miles east from the Project along Avenue T to 165th Street East. Trucks would then turn north onto 165th

Street East, which immediately curves onto 170th Street East and proceeds north to the East-West HDC onramp. At the onramp, trucks would either turn west or east, thereby avoiding the more congested areas of Palmdale.

#### 2.11.4.10 Hazards and Hazardous Materials

The Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD), is the Certified Unified Program Agency (CUPA) responsible for administering the following programs within Los Angeles County:

- Hazardous Waste Generator Program;
- Hazardous Materials Release Response Plans and Inventory Program;
- California Accidental Release Prevention Program;
- Aboveground Storage Tank Program; and
- Underground Storage Tank Program.

The Project will be subject to CUPA requirements and oversight. The CUPA will provide oversight to the preparation of the required Hazardous Materials Business Plans (HMBPs), SPCC and SWPPP; and such matters as employee training, record keeping, preventive maintenance and implementation of BMPs. The CUPA will also require Project participation in the single fee system requirement that is mandated by the California Environmental Protection Agency (CalEPA) within the County's CUPA and Participating Agencies' (PA) jurisdictions. The implementation of the single fee system requirement maintains both the consolidation of program elements on one permit and also the coordination among the CUPA and PAs with the administration of the unified program.

The Project, which is located a considerable distance from other industrial development, will store, use and dispose of hazardous materials and waste typical of equipment and motor vehicles such as fueling, service and repair. As a result of the Project, the transport, use, storage and disposal of hazardous materials within the Antelope Valley would increase incrementally. Given the limited number of cumulative projects, and implementation of the various programs noted above, operational and long-term Project impacts involving the release of hazardous materials or waste into the environment are **not expected to be cumulatively considerable**.

#### 2.11.4.11 Water Supply/Quantity

The Antelope Valley Groundwater Basin (the Basin) is currently non-adjudicated, although a legal adjudication process has been underway since the late-1990s. It is anticipated that water rights will be quantified and assigned as part of the adjudication process. Lawsuits were filed against various Antelope Valley water districts and government agencies seeking priority water rights to water beneath their farmland. Several property owners and public water suppliers, including Los Angeles County Waterworks District No. 40 (LACWW40), also initiated legal proceedings, including a cross complaint, to determine the respective rights of existing and potential users of groundwater in the Basin. The lawsuits were filed separately in Riverside, Kern, and Los Angeles County Superior Courts and were transferred and consolidated into one coordinated proceeding currently before the Honorable Jack Komar who is presiding by special assignment.

The underlying dispute revolves around the priority/superior right to pump groundwater and the protection of the Basin. The parties have asserted multiple claims to be adjudicated, including claims for declaratory relief, prescriptive rights, quiet title to water rights, and claims that portions of the Basin should be treated as a separate area for management purposes if a physical solution for the Basin is established, among other claims. The resolution of many of these claims is likely to be affected by the nature and extent of the hydrologic connectivity of water within various portions of the aquifer. The Basin adjudication process is described in detail in EIR sub-chapter 4.12.2.4.

As a result of the Basin adjudication process, Lebata will either receive an entitlement to extract groundwater, or not. If Lebata receives an allocation, Project use of said allocation will, by definition, fall within the Court's definition of "safe yield" and Project impacts are **not expected to be cumulatively considerable**.

All other potential Project water sources described above would either not involve the use of Basin groundwater, or the purchase or lease of available local groundwater from a landowner entitled to extract groundwater through the Basin adjudication process. The cumulative impact of the Project using water provided from sources not using Basin groundwater is **not expected to be cumulatively considerable**.

Project use of water derived from Basin groundwater purchased or leased from a landowner entitled to extract such groundwater through the Basin adjudication process would fall within the Court's definition of "safe yield" and, as such, Project impacts are **not expected to be cumulatively considerable**.

The *Drawdown Assessment* (EIR Appendix 19) concludes the impact of a potential 312 afy water supply well located at the Project site would be relatively minor. Only a handful of nearby wells would see a measurable impact in water level, and the drawdown is not considered to be sufficient to effect capacity of these wells to supply water. When taking into consideration the background water level fluctuations (several tens of feet), it is unlikely that the impact on nearby wells would be discernible from background variations. In addition to establishing legal rights to pump groundwater, the Project will need to comply with Physical Solution, as determined by the Basin adjudication process. Project related drawdown is **not expected to be cumulatively considerable**.

Under most water supply scenarios, a water service connection for the Project would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project at the southeast corner of Avenue T and 116th Street. This pipeline would be sized and constructed specifically to meet the needs of the Project. As such, its construction is **not considered to be growth-inducing**.

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**Table 2 Summary of Significant Environmental Impacts and Mitigation Measures**

| Significant Impacts (Before Mitigation) | Mitigation Measures | Level of Significance (After Mitigation) |
|---|---|---|
| **Noise (at Receptor R4)** | **Mitigation Measure NO-1:**<br>A 7-foot-tall berm with sufficient length to break the line-of-sight between all of the industrial plants and facilities and R4 shall be constructed along the Project's eastern property line. | **Less than Significant** |
| **Air Quality –**<br><br>**Operational Emissions of NOx, $PM_{10}$ and $PM_{2.5}$** | **Mitigation Measure AQ-1:**<br>Disturbed surface areas and unpaved roads will be watered twice daily.<br>**Mitigation Measure AQ-2:**<br>Vehicle speed will be limited to 15 mph on unpaved roads.<br>**Mitigation Measure AQ-3:**<br>Low sulfur diesel fuel will be used in all equipment.<br>**Mitigation Measure AQ-4:**<br>Aggregate material will be excavated using a dragline and portable crusher prior to exceeding 800,000 tons per year of material fed to the Aggregate Processing Facility. The following changes to the off road equipment would be required before the amount mined exceeds 800,000 tons per year:<br>• The D8R dozer is eliminated;<br>• The 980G loader used in the pit is eliminated;<br>• The two 773 trucks used to transport material in the pit are eliminated; and<br>• A crane, equipped with a drag line, is required.<br>**Mitigation Measure AQ-5:**<br>The portable primary crusher will be located in the pit and off-road haul trucks will not be used in the pit.<br>**Mitigation Measure AQ-6:**<br>Unpaved roads will be controlled by the application of dust palliatives (chemical dust suppressants) and maintained in a controlled state by watering twice daily (AQ-1) or other means. The use of dust palliatives will be subject to the approval of the Regional Board of the EPA (Region 9).<br>**Mitigation Measure AQ-7:**<br>Blue Smoke Control equipment will be used to collect vapors from the asphalt plant's mixing drum, drag conveyor, silos, and loading area. | **Significant, but Mitigable to Less than Significant Impact** |

| Significant Impacts (Before Mitigation) | Mitigation Measures | Level of Significance (After Mitigation) |
|---|---|---|
| **Air Quality –**<br><br>**Health Risk (at Receptor R4)** | **Mitigation Measures AQ-4 and AQ-5 above.** | **Significant, but Mitigable to Less than Significant Impact** |
| **Biological Resources –**<br><br>**Indirect and direct take of desert tortoise** | **Mitigation Measure BIO-1:**<br>Summary: Describes the avoidance and minimization efforts to be used as methods to avoid accidental take of desert tortoises as a result of the Project. | **Significant, but Mitigable to Less than Significant Impact** |
| **Biological Resources –**<br><br>**Indirect and direct take of Mohave ground squirrel** | **Mitigation Measure BIO-2:**<br>Summary: Describes for protocol surveys, avoidance and minimization efforts to be used as methods to avoid accidental take of Mohave ground squirrel (MGS) as a result of the Project. | **Significant, but Mitigable to Less than Significant Impact** |
| **Biological Resources –**<br><br>**Indirect and direct take of native and sensitive nesting birds** | **Mitigation Measure BIO-3:**<br>Summary: Describes the avoidance and minimization efforts to be used as methods to avoid accidental take of all native nesting birds as a result of the Project. | **Significant, but Mitigable to Less than Significant Impact** |
| **Biological Resources –**<br><br>**Indirect and direct take of sensitive native plants** | **Mitigation Measure BIO-4:**<br>Summary: Describes the avoidance and minimization efforts to be used as methods to avoid accidental take of other sensitive native plants as a result of the Project. | **Significant, but Mitigable to Less than Significant Impact** |
| **Biological Resources –**<br><br>**Increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife** | **Mitigation Measure BIO-5:**<br>Summary: Describes the avoidance and minimization efforts to be used to avoid adverse effects on sensitive native plants and wildlife as a result of the Project. This requires implementation of an exotics and invasive species control program and invasive species control measures. | **Significant, but Mitigable to Less than Significant Impact** |
| **Biological Resources –**<br><br>**Truck traffic and nighttime wildlife mortality** | **Mitigation Measure BIO-6:**<br>To avoid nighttime impacts to wildlife by haul trucks along the haul routes, the Permittee shall require truck operators to limit truck speed to no more than 25 mph along 116th Street East, and along Avenue T, eastbound of the Project. | **Significant, but Mitigable to Less than Significant Impact** |

| Significant Impacts (Before Mitigation) | Mitigation Measures | Level of Significance (After Mitigation) |
|---|---|---|
| **Traffic and Circulation (Pavement Maintenance)** | **Mitigation Measure TC-1:**<br>Prior to the commencement of surface mining activities that result in the transport of processed materials offsite, Lebata shall document and submit all required information and/or material pertaining to the pavement conditions of Avenue T, 106th Street East and 165th Street East, including the formula for calculating the Project's fair share of any repair and/or reconstruction of Avenue T, 106th Street East and 165th Street East, to the satisfaction of the LACDPW. Lebata shall reimburse the County for the cost of any repairs and/or reconstruction of Avenue T, 106th Street East and 165th Street East attributable to the Project, as agreed to by the LACDPW. The timing of any necessary repairs and/or reconstruction of Avenue T, 106th Street East, and 165th Street East, and the required payment by the project proponent, shall be determined by LACDPW. | **Significant, but Mitigable to Less than Significant Impact** |

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# 3.0 PROJECT DESCRIPTION

## 3.1 PROJECT LOCATION

The Project site is located in the Antelope Valley, off Avenue T, in unincorporated Los Angeles County, east of the City of Palmdale, near the community of Pearblossom (EIR Figure 7 – Aerial Site Plan). The Project site is located immediately south of Avenue T and is bound by 136th Street East to the east, Avenue U to the south, and 126th Street East to the west. The Project site is located on the Littlerock USGS 7.5 Minute Topographic Quadrangle.

**Section**: 11
**Township**: 5 North
**Range**: 10 West
**Baseline**: San Bernardino
**Meridian**: San Bernardino

## 3.2 ASSESSOR'S PARCELS INFORMATION

Assessor's Parcels are noted in EIR Table 3 below which provides the size of the parcels as determined by a survey as well as the size listed in the Assessor's Book, the County of Los Angeles General Plan Designation, Antelope Valley Area Plan Designation, and Zoning.

**Table 3 Assessor's Parcel Numbers, General Plan and Zoning**

| APN | APN Acres | Surveyed Acres | County of Los Angeles General Plan Designation | Antelope Valley Areawide General Plan Designation | Zoning |
|---|---|---|---|---|---|
| 3039-021-009 | 140.17 | 136.10 | Non-Urban and Agricultural Mineral Resource Area | N1 | A-2-5 |
| 3039-036-001 | 10.79 | 14.27 | Non-Urban and Agricultural Mineral Resource Area | N1 | A-2-1 |
| 3039-036-002 | 160.00 | 159.10 | Non-Urban and Agricultural Mineral Resource Area | N1 | A-2-5 |

As noted above in EIR Table 3, the County of Los Angeles designates the Project area as "Non-Urban and Agricultural Mineral Resource Area" in the Land Use Element of the County General Plan and N1 (Non-Urban 0.5 dwelling units/acre) on the Antelope Valley Area Plan. APNs 3039-021-009 and 3039-036-002 are currently zoned "A-2-5" (Heavy Agricultural, Five-Acre Minimum Required Lot Area) and APN 3039-036-001 is zoned "A-2-1" (Heavy Agricultural, One-Acre Minimum Required Lot Area). (Please refer to EIR Figure 4 and Figure 5 – Assessor's Parcel Maps 1 and 2.)

## 3.3 REGIONAL SETTING

The Project site is located in the Antelope Valley near the unincorporated community of Pearblossom between Avenue T and Avenue U, in unincorporated Los Angeles County. The Antelope Valley is approximately 3,000 square miles in size and is located within a transitional area between the foothills of the San Gabriel and Sierra Pelona Mountains on the south and the Mojave Desert to the north and east. The valley is separated on the northwest from the San Joaquin Valley by the Tehachapi Mountains,

and on the south and southwest, it is separated from the Los Angeles Basin by the San Gabriel Mountains. The north and east boundaries of the Antelope Valley are distinguished by isolated buttes.

The Project site lies on a broad bajada extending north from the lower slopes of the San Gabriel Mountains. The Mojave Desert province has a typical, continental arid climate where months may pass in which little or no precipitation falls, separated by brief episodes of locally torrential rain. The brief, heavy precipitation over relatively small areas generally causes rapid erosion in higher elevations, followed by deposition of transported sediments immediately after the runoff leaves the steep gradients of mountainous areas and reaches relatively flat-lying terrain. The ground surface on the Project site is relatively flat and characterized by high desert scrubland and grassland.

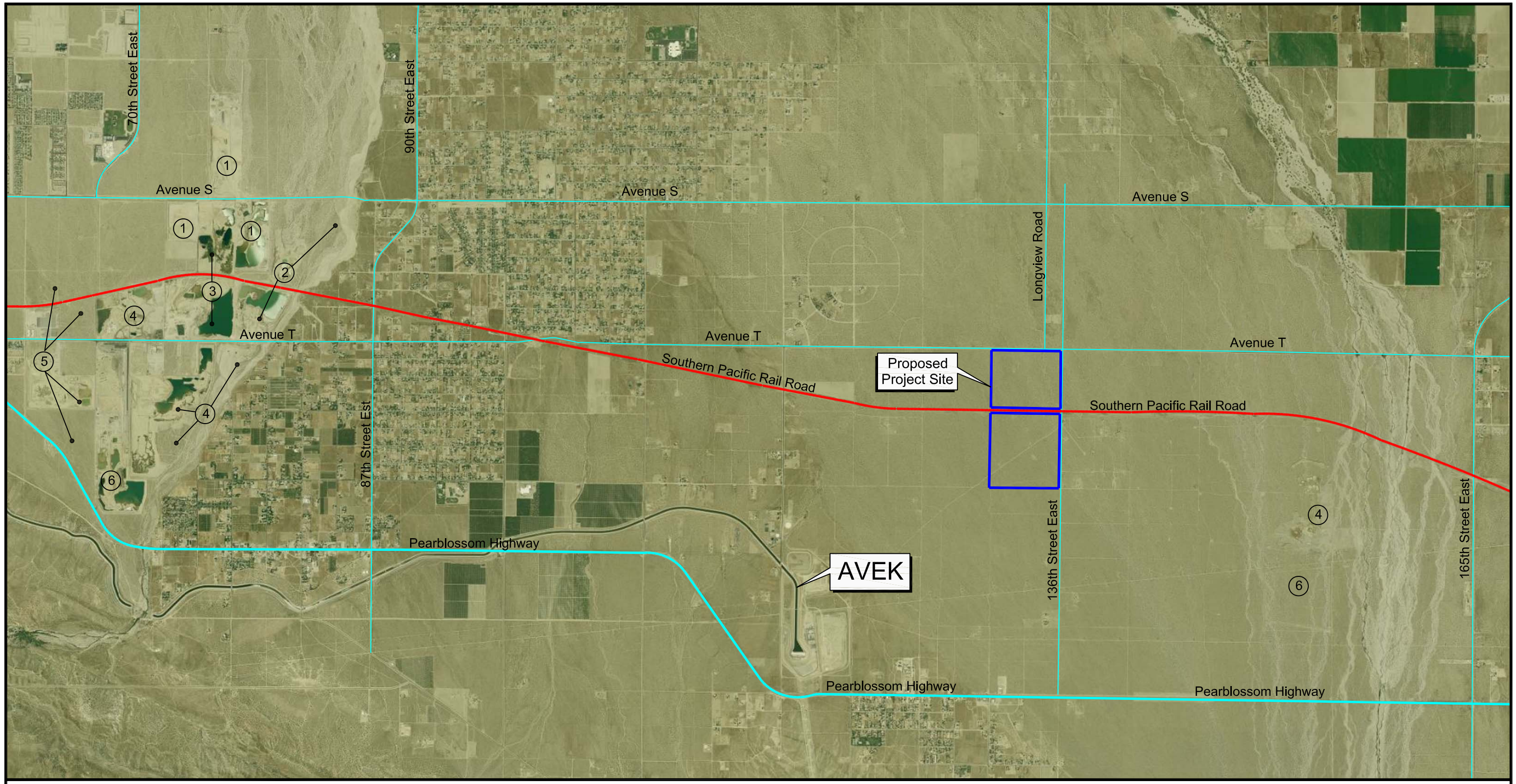
The Project lies within the High Desert Climate Zone, where the summers are very hot and dry, and winters are cool and windy. Palmdale has over 300 days of sunshine per year. The same weather pattern that brings the marine layer stratus and afternoon sea breeze to the Los Angeles Basin brings gusty winds to the Antelope Valley, especially near the foothills on the south side. Except during Santa Ana (northeast) wind events (usually fall and winter), gusty southwest winds blow over the Antelope Valley almost every afternoon and evening all year round. The wind is so reliable that wind turbines are used to generate electricity.

Winter is relatively chilly, wet and windy with temperatures dipping into the single-digits at times, with wind chill factors below zero. This is the Antelope Valley's rainy season and is prone to flash flooding during this time. On occasion, it will snow, sometimes with several inches of accumulation. Average day time highs are in the upper 50s to low 60s while being in the low to mid 30s overnight.

Spring provides moderate temperatures and is still occasionally wet and very windy. Transitional period from winter to summer temperatures is very short. Average daytime highs are in the upper 70s to low 80s while being in the upper 40s to low 50s overnight.

Summer provides very hot, dry heat with little or no precipitation. Temperatures frequently soar into triple-digits. However, the high desert where the Antelope Valley is located allows for the temperatures to cool down somewhat at night, unlike the low desert cities of Palm Springs and Blythe. Average day time highs are in the upper 90s, while dropping into the mid to upper 70s after midnight. Despite the hot temperature, it is very common to experience "summer storms" in which temperatures are consistent but there is heavy rain and thunderstorms.

Fall provides moderate temperatures with little or no precipitation. The transitional period from summer to winter temperatures is very short. Average day time highs are in the upper 70s and low 80s, while dropping into the mid 40s to mid 50s overnight.




LEGEND:

| | | | |
|---|---|---|---|
| (1) | Service Rock | (5) | Hi-Grade Materials |
| (2) | Holliday Rock | (6) | Granite Construction |
| (3) | Antelope Valley Aggregate | | |
| (4) | Vulcan Materials | | |

AVEK: Antelope Valley-East Kern Water Agency

N

NOT TO SCALE

SOURCE: West Coast Environmental 11/20/08

**Aerial Site Plan**
Vicinity of Big Rock Creek Site
Big Rock Creek Site
Antelope Valley, California

FIGURE 7

SCALE: AS SHOWN

DATE: 3-16-2012

## 3.4 LOCAL SETTING

The Project site is currently in an undeveloped condition and is located in a relatively remote and undisturbed area of the Antelope Valley. The property is bisected by an existing Union Pacific railroad track and is surrounded by vacant undeveloped properties on the north, west and south sides. Properties along the eastern boundary are mostly undeveloped, although there are a few residences, outbuildings and well houses. The nearest residence is immediately south of the railroad tracks, approximately 200 feet east of the Project's eastern boundary of the South Parcel.

## 3.5 PROJECT OBJECTIVES

The Project's primary objective is to produce marketable Portland Cement Concrete-grade (PCC) aggregate and related construction material products and supply these products where they are in demand. Lebata's overall Project objectives are to:

- Conduct aggregate surface mining and processing operations to produce high quality marketable PCC-grade aggregate and related products, which would include the installation and operation of various industrial plants and facilities, including:
  - Aggregate Surface Mining and Processing,
  - Ready-Mixed Concrete Plant,
  - Vac-Lite Plant,
  - Asphalt Mixing Plant,
  - Raw Cement and Aggregate Transfer and Distribution Facility, and
  - Water Reclamation and Fines Recovery Facilities;
- Develop an economically viable and competitive source of construction grade aggregate located near an existing major roadway;
- Distribute products primarily to the greater Los Angeles, the Saugus/Palmdale and the San Bernardino/Riverside market areas with PCC-grade aggregate (e.g., rock, sand and gravel), specialty sand, ready-mixed concrete, mortar, road base, asphalt and raw cement; and
- Provide for the environmentally sound and economically viable operation and closure of the site.

## 3.6 DESCRIPTION OF PROPOSED SURFACE MINING AND FACILITIES

Lebata seeks County approval to conduct surface mining activities within an approximately 282.4-acre area, install and operate the various related industrial plants and facilities described more fully below, and reclaim disturbed lands to an end use of open space/groundwater recharge and/or stormwater retention basins.

Mined lands would be reclaimed in compliance with the standards specified in the Surface Mining and Reclamation Act of 1975, as amended (SMARA), the County of Los Angeles Mining Ordinance, and a SMARA-approved Reclamation Plan/FACE. Reclamation is described more fully below in EIR sub-chapter 3.6.8. (Refer to EIR Appendix 2 – Reclamation Plan.)

The Project involves the surface mining and the processing of excavated materials at an onsite Aggregate Processing Facilities. In addition to these facilities, the project includes the following onsite accessory facilities, described in more detail in the sub-chapters that follow, as illustrated in EIR Figure 6 – Facilities Site Plan. These accessory industrial plants and facilities are listed below and include:

- Ready-Mixed Concrete Plant;
- Vac-Lite Plant (producing lightweight concrete);
- Asphalt Mixing Plant;
- Raw Cement and Aggregate Transfer and Distribution Facility;
- Water Reclamation and Fines Recovery Facilities;
- 24-foot by 60-foot office trailer (handicapped accessible); and
- 80-foot by 125-foot two-story building, which would include an equipment maintenance shop area, parts room, office, locker room, and restrooms (handicapped accessible).

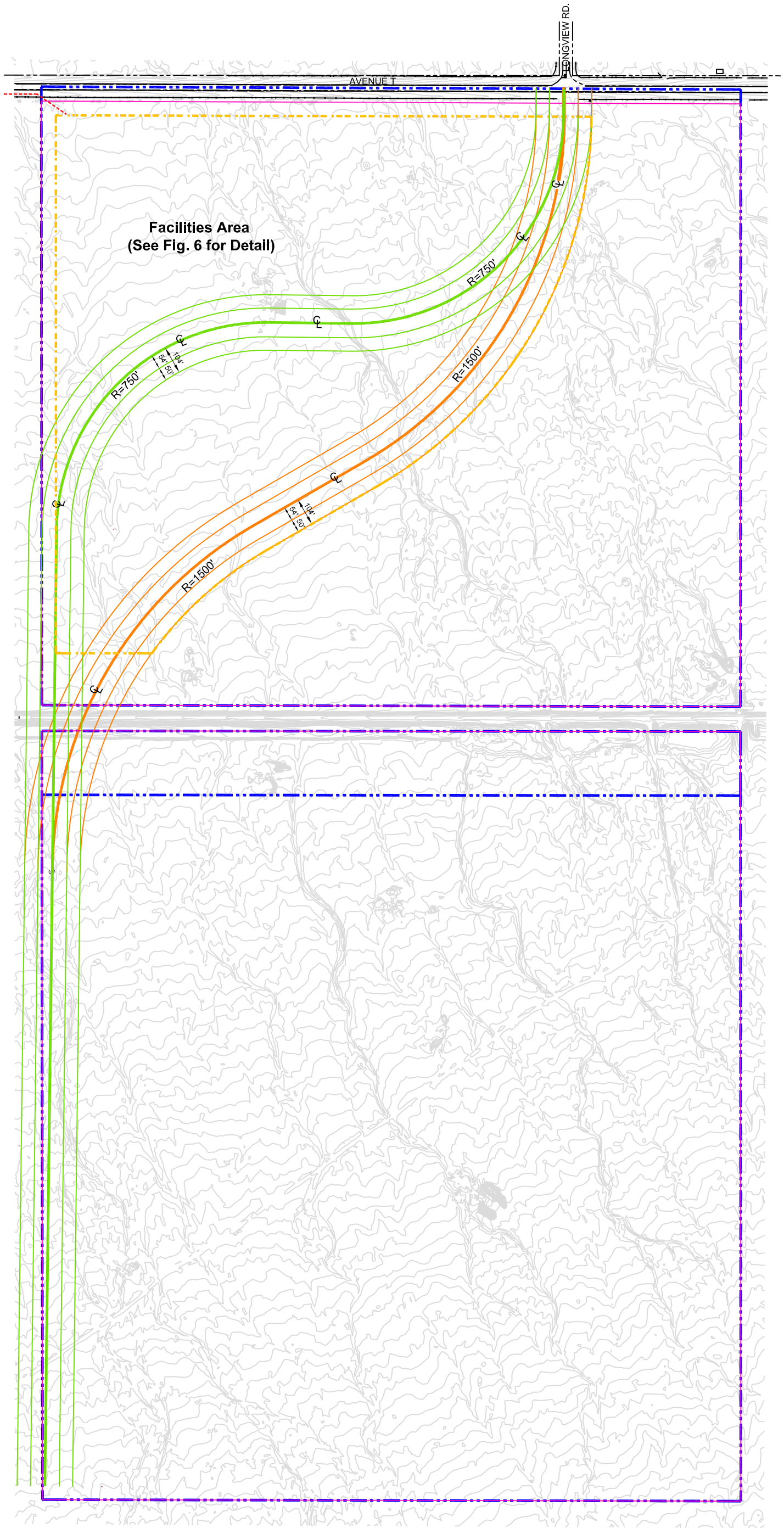
The Aggregate Processing Facilities and accessory facilities are described in more detail in the EIR sub-chapters that follow.

The Project application originally proposed that the Processing Facilities Site be located within the southwestern corner of the North Parcel. As a result of the environmental review process, the application was amended to relocate these industrial plants and facilities to the northwestern corner of the North Parcel of the Project site on approximately 30.4 acres. The combined use of this area is referred to herein as the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan).

The change in facilities location was made in response to LACDPW comments regarding a previously unidentified right-of-way (ROW) for Longview Road, referred to as CSB-2568-2. This ROW would pass diagonally through the Project site and connect the existing Longview Road (northeast side of the Project) to the yet-to-be-constructed Longview Road (southwest corner of the Project), which would connect to Pearblossom Highway. Following discussions with LACDPW staff, two alternative ROW alignments were developed. The Project Description was revised to incorporate the first of these, which meets the same 1,500-foot turn radius design standards of the existing ROW and reduces the ROW's impact to the Project. The second, discussed as a Project alternative in EIR sub-chapter 6.0, makes use of a tighter 750-foot turning radius and a companion request that LACDPW accept a lower road standard for the Longview Road Extension.

The existing ROW and the two alternatives described immediately above are illustrated above in EIR Figure 8 – Right-of-Way and Alternatives. A third alternative, the Project without Longview Road Extension Alternative, has been described in EIR sub-chapter 6.6.2.4.

Lebata currently has no rail transport option to receive raw cement from Northern California, primarily the Sacramento area, by rail and stored in onsite silos. To provide the capability, a Raw Cement and Aggregate Transfer and Distribution Facility is proposed on approximately 9.2 acres of the North Parcel, adjacent to and immdeiately north of the existing Union Pacific railroad tracks (EIR Figure 6 – Facilities Site Plan). If so constructed, the Project would receive approximately 300,000 tons of raw cement annually, which would be transferred pneumatically from the rail cars into two adjacent silos.




## LEGEND:

- Assessors Parcel Boundaries
- CUP Boundary
- Road Alignment - 750' Radius
- Road Alignment - 1500' Radius
- Existing Topo

SOURCE: WCE 01/28/09

**Right-of-Way Alternatives**

Big Rock Creek Site
Antelope Valley, California

FIGURE 8

SCALE: AS SHOWN

DATE: 3-16-2012

Raw cement would be used onsite as a component of ready-mixed concrete at the Ready-Mixed Concrete Plant and the remainder would be pneumatically loaded from the silos into raw cement haul trucks for transport by truck to third parties or operator-owned concrete plants in the Greater Los Angeles, and the San Bernardino and Riverside areas. In addition, if such a facility is constructed, aggregate materials would be delivered by rail from the Project to the Los Angeles Basin.

However, the rail carriers have little available rail capacity and currently do not consider either type of commodity a "preferred cargo" for rail shipment. In addition, receiver stations or commitments needed from the Rail authorities to make this economically viable are not available at the present time. As such, it is possible the proposed rail spur may not be constructed to receive raw cement deliveries or receive and transport aggregate materials. If not, the Project would take truck delivery of raw cement for its use onsite at the Ready-Mixed Concrete Plant.

### 3.6.1 Aggregate Surface Mining and Processing

#### 3.6.1.1 Amount and Type of Material to be Excavated and Processed

Although production would vary with market conditions, the extraction rate of unprocessed material over the life of the Project is expected to range between 500,000 to 2,500,000 tons per year. Peak daily sales would be limited to the physical capabilities of the processing equipment, stockpiles of processed materials onsite, and product demand. Peak annual sales would be further limited by daily truck trips. If all such trips were allocated to the delivery of aggregate materials processed onsite, sales would not exceed 2,000,000 net tons of processed materials. Actual sales levels would vary over time and are a direct function of the rate of development within the Project's market area, the number and type of contracts obtained (e.g., Caltrans), the overall economy, equipment downtime, as well as hours and days of operation. Initial testing indicates that the deposit is comprised of:

- ~ 26.73 percent Gravel
- ~ 52.52 percent Sand
- ~ 20.75 percent Fines

A 50-foot setback from all property lines and rights-of-way was assumed. Additionally, Assessor Parcel Number 3039-021-009 includes setbacks required by the County Department of Public Works, including 54 feet from the centerline of Longview Road, a 50-foot setback on either side of the Union Railroad right-of-way, a 32-foot right-of-way from the centerline along the property frontage on 136th Street East and Avenue U, a right-of-way for a cul-de-sac bulb on Avenue T-4 and Avenue T-10, and rights-of way for corner cutoffs at the intersections of Avenue T and 136$^{th}$ Street East, at Avenue T and Longview Road, and at Longview Road and Avenue U. In addition, a right-of-way for the proposed Avenue P-8 corridor freeway (90 to 150 feet from centerline) has been required. All known rights-of-way have been considered in the calculations of acres and volumes. The volume calculations are based on mining the approximately 282.4 acres to a depth of 80 feet below ground surface (bgs) at slopes no steeper than 2:1 horizontal to vertical (h:v) overall.

Gross volume of the material proposed to be excavated from the mining area is estimated to be approximately 30.98 million cubic yards. At an assumed density of 1.5 tons per cubic yard, this equates to a total of 46.48 million gross tons. Assuming that approximately 20.75 percent of the material would be unsuitable for sale as PCC-grade aggregate, the net reserves are estimated at 36.84 million tons.

Finished products would be PCC-grade aggregate and aggregate-using products, such as concrete and asphalt. Processing also creates scalped fines as a byproduct. These and other fine materials produced during processing would be marketed for use as soil amendments, slurry used in nonstructural concrete, landfill top cover, miscellaneous fill material, among other uses; used as a soil amendment onsite in association with revegetation activities; or placed within the mine pit after being blended with surplus sand to ensure permeability is maintained. The assumed material composition and quantities are based on limited data. As the deposit is mined, Lebata may encounter material that does not match these assumptions. While this may result in a different market, the operating parameters of the Project would not change.

Although production would vary with market conditions, the extraction rate of unprocessed material over the life of the Project is expected to range between 500,000 to 2,500,000 tons per year. Sales would not exceed 2,000,000 net tons of processed material per year. Because this resource could last about 47 years, Lebata is requesting a 50-year permit. EIR Table 4 provides a Mining Phase summary.

**Table 4 Mining Phase Summary**

| Mining Phase | Tonnage (gross) | Tonnage (net) | Fines/Silt (tons) | Area (acres) | Duration [1] (years) |
|---|---|---|---|---|---|
| Phase 1 | 6,608,200 | 5,237,000 | 1,371,200 | 49.3 | 7 |
| Phase 2 | 25,131,100 | 19,916,400 | 5,214,700 | 150.5 | 25 |
| Phase 3a | 12,224,000 | 9,687,500 | 2,536,500 | 73.4 | 12 |
| Phase 3b | 2,519,100 | 1,996,400 | 522,700 | 9.2 | 3 |
| TOTAL | 46,482,400 | 36,837,300 | 9,645,100 | 282.4 | 47 |

[1] Duration is based upon an annual extraction rate of 1.0 million tons per year.

### 3.6.1.2 Mining Method

The Project would extract aggregate from newly created pits in three distinct phases (Mining Phases). Mined materials would be excavated by dozers and shovels, either placed directly into the jaw crusher, or, during the initial part of each mining phase, placed into haul trucks for transport to the jaw crusher. As the mining pit deepens, material would be excavated by shovel and transported by articulating trucks for transport to the jaw crusher. From the jaw crusher, material would be conveyed out of the mining pit to the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). At the Processing Facilities Site, materials would be mechanically crushed, sorted by size and type using triple-deck and double-deck dry scalping screens. Sand would be washed to remove fine material. Finished products would be stockpiled, and products would be transported offsite via haul trucks.

To preclude erosion of the slope faces, floodwater interceptors and down drains would be installed as mining progresses. This is described in detail and illustrated in EIR sub-chapter 4.4.

All final mining slopes would be at a 2:1 horizontal:vertical overall inclination with County required benching at 30-foot vertical intervals (1.85:1 horizontal:vertical incremental slope). As proposed, the Project does not include backfilling.

#### 3.6.1.3 Mining Phases

Mining would be phased, which are described below and are illustrated as:

EIR Figure 9 – Mining Phase 1 – North Pit
EIR Figure 10 – Mining Phase 2 – South Pit
EIR Figure 11 – Mining Phase 3a – North Pit
EIR Figure 12 – Mining Phase 3a – South Pit
EIR Figure 13 – Mining Phase 3b – North Pit

Note about figures:

The source topographic map underlying the following figures was developed prior to Union Pacific Railroad's acquisition of the Southern Pacific Railroad. Therefore, the railroad bisecting the Project is labeled Southern Pacific Railroad, rather than Union Pacific Railroad. In addition, a fiber optic cable lies within the railroad right-of-way, approximately 30 feet north of and parallel to the northernmost rail. This cable will be unaffected by the Project.

##### 3.6.1.3.1 *Mining Phase 1*

Mining would begin in the North Parcel, which is located between Avenue T and the Union Pacific Railroad, and would involve approximately 49.3 acres. In Mining Phase 1, mining would start at the northeast quarter of the Project site and progress toward the south and southwest up to, but not including, the road prism of the Longview Road Extension right-of-way.

Minimum two-foot-high MSHA-required safety berm would be installed along the top of the mine pit slope around the entire northern, eastern, southern, and western rims of the mine pits and pit entrance/exit ramps would prevent the temporarily impounded water from creating a public safety hazard. A grader would be used to maintain the Project's interior roads.

Note: Refer to EIR sub-chapter 4.5.6, which describes **Mitigation Measure NO-1** to install a 7-foot-tall berm with sufficient length to break the line-of-sight between all of the industrial plants and facilities and one of the sensitive noise receptors (**R4**) along the Project's eastern property line. In addition, EIR sub- chapter 4.9.5.1.2 describes how the Project boundaries would be flanked by earthen berms of varying heights, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot berm on the eastern boundary, and a 5-foot berm on the northern boundary to minimize impacts upon visual quality. The *Drainage Concept* (EIR Appendix 3) describes how berms along all of the top slopes will be used to direct surface flow toward a permanent system of interceptor drains and terraces.

##### 3.6.1.3.2 *Mining Phase 2*

Mining would involve the South Parcel where excavated materials would be conveyed out of the Mining Pit under the railroad tracks to the Processing Facilities Site via a tunnel. The mined area would involve approximately 150.5 acres and would include all of the South Parcel, except for that portion comprising the road prism of the Longview Road Extension right-of-way, and the Raw Cement and Aggregate Transfer and Distribution Facility.

#### 3.6.1.3.3 *Mining Phases 3a and 3b*

Mining Phase 3a would involve the excavation of materials occupied by the Processing Plant Area, which would be relocated to the floor of the Mining Phase 1 area, as well as the road prism of the Longview Road Extension right-of-way, both in the North and South Parcel. This would involve approximately 73.4 acres.

Mining Phase 3b would involve the area underlying the Raw Cement and Aggregate Transfer and Distribution Facility Area, which would involve approximately 9.2 acres. Regarding Mining Phase 3b, the Applicant proposes the following options:

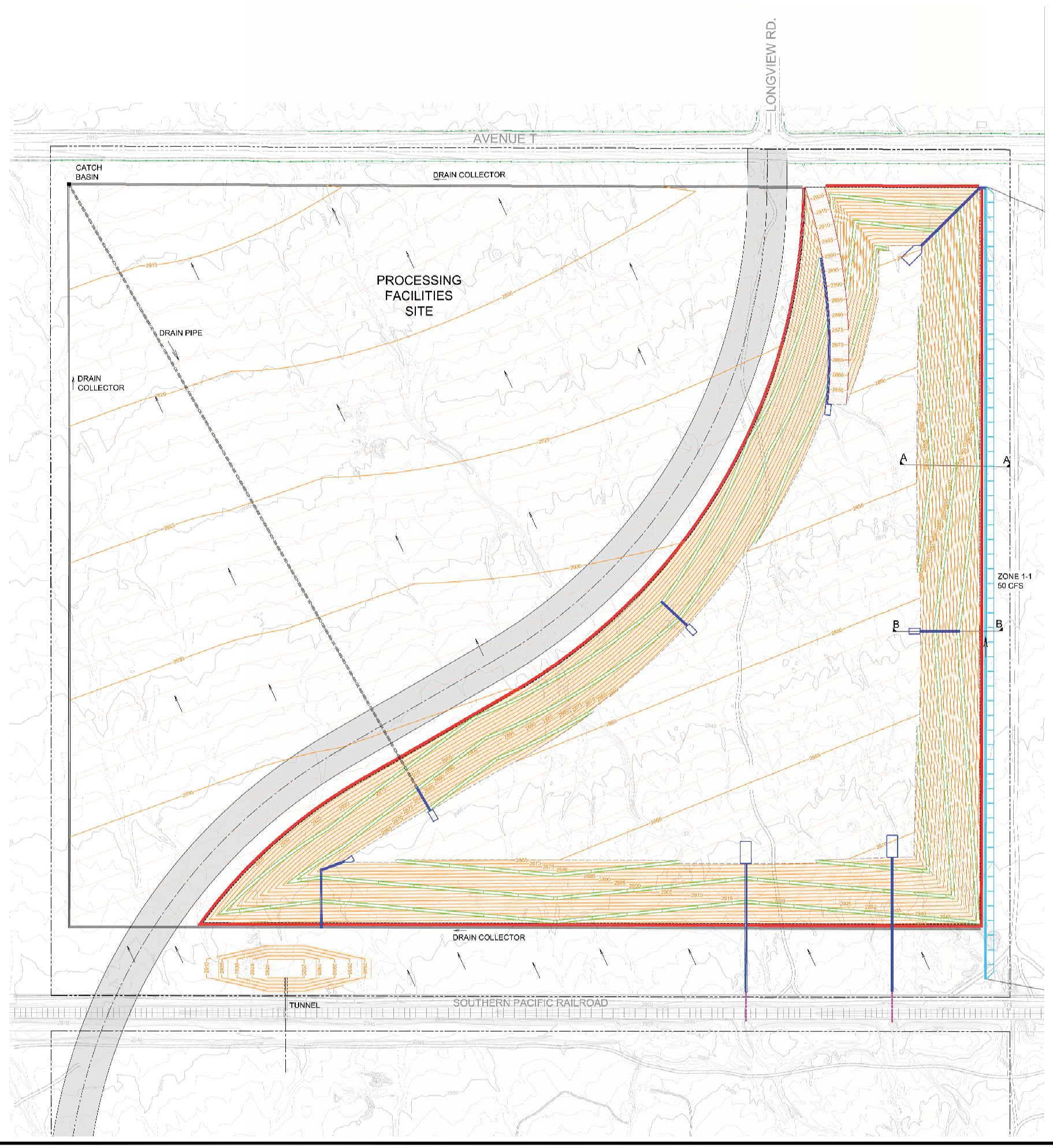
1. If it is decided to mine the area underlying the Raw Cement and Aggregate Transfer and Distribution Facility, the Facility would be relocated into the Mining Phase 1 pit and operated there. The removal of the material from this area would occur during Mining Phase 3b excavation.
2. If it is decided not to mine the area underlying the Raw Cement and Aggregate Transfer and Distribution Facility, the Facility would operate at that location during the life of the Project.

Note: The Project has been specifically designed as a dry surface mining operation with a maximum depth of 80 feet bgs. As a result, groundwater interception is not proposed. Lebata has developed information from onsite borings indicating groundwater is deeper than the 55.4 feet indicated by 1985 data from an adjacent well. Specifically, the *Pit Slope Stability Evaluation* (EIR Appendix 4 noted the following:

> *Perched groundwater was encountered in DH-1 at a depth of 70 feet bgs. No groundwater was encountered in DH-2 to the explored depth of 80 feet bgs.*

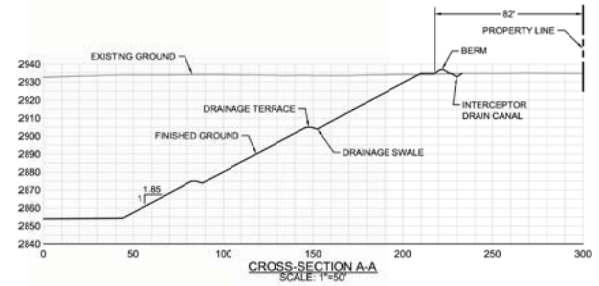
To ensure groundwater is protected, surface mining operations would be curtailed at a final mining depth of 80 feet bgs, or at a depth that is 5 feet above static groundwater levels for all pits, should groundwater be encountered. If groundwater is encountered and the final excavation depth reduced, the volume of material excavated and processed, and the life of the Project would be reduced accordingly. Within the first few years of Project operations, the static groundwater level would have been determined for the North Pit and the final mining depth defined accordingly at 5 feet above that level. The same precaution and determination of static groundwater level would be made for the South Pit.

In advance of Mining Phase 3a and 3b excavations, late in the life of the Project, the Processing Facilities Site would be relocated within the North Pit. Phase 1 mining would excavate the North Pit to a depth of 80 feet bgs, unless static groundwater level has been determined to be shallower. Prior to placement of the Processing Facilities Site into the North Pit, a pad of refill material would be constructed to a depth of 50 feet bgs. Placement of the Processing Facilities Site on the resulting pad will ensure they are kept above stormwater inundation levels within the North Pit.

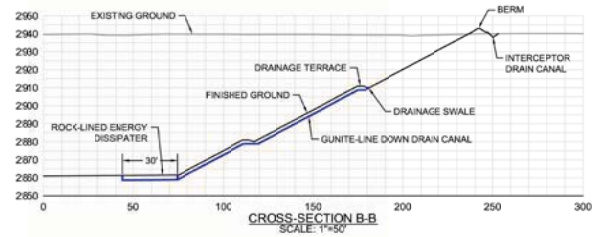



**LEGEND**

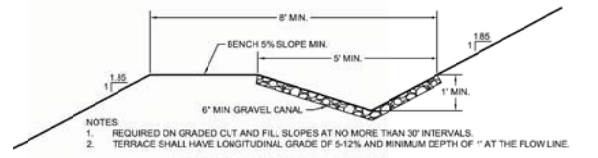
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

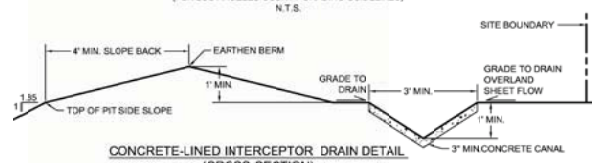



CROSS-SECTION B-B
SCALE: 1"=50'

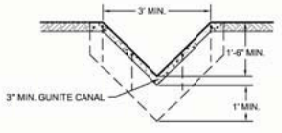



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF " AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

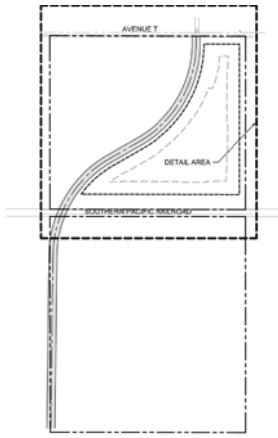



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4" O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

**CONCEPTUAL GRADING AND DRAINAGE PLAN**
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

PROJECT (RADIUS = 1500 FT)
PHASE 1

| | |
|---|---|
| Cut Volume: 4,405,000 CY | Date: December 5, 2008 |
| Topo Source: Inland Aerial Survey Inc. Date of Flight: 05/02/2006 | |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |

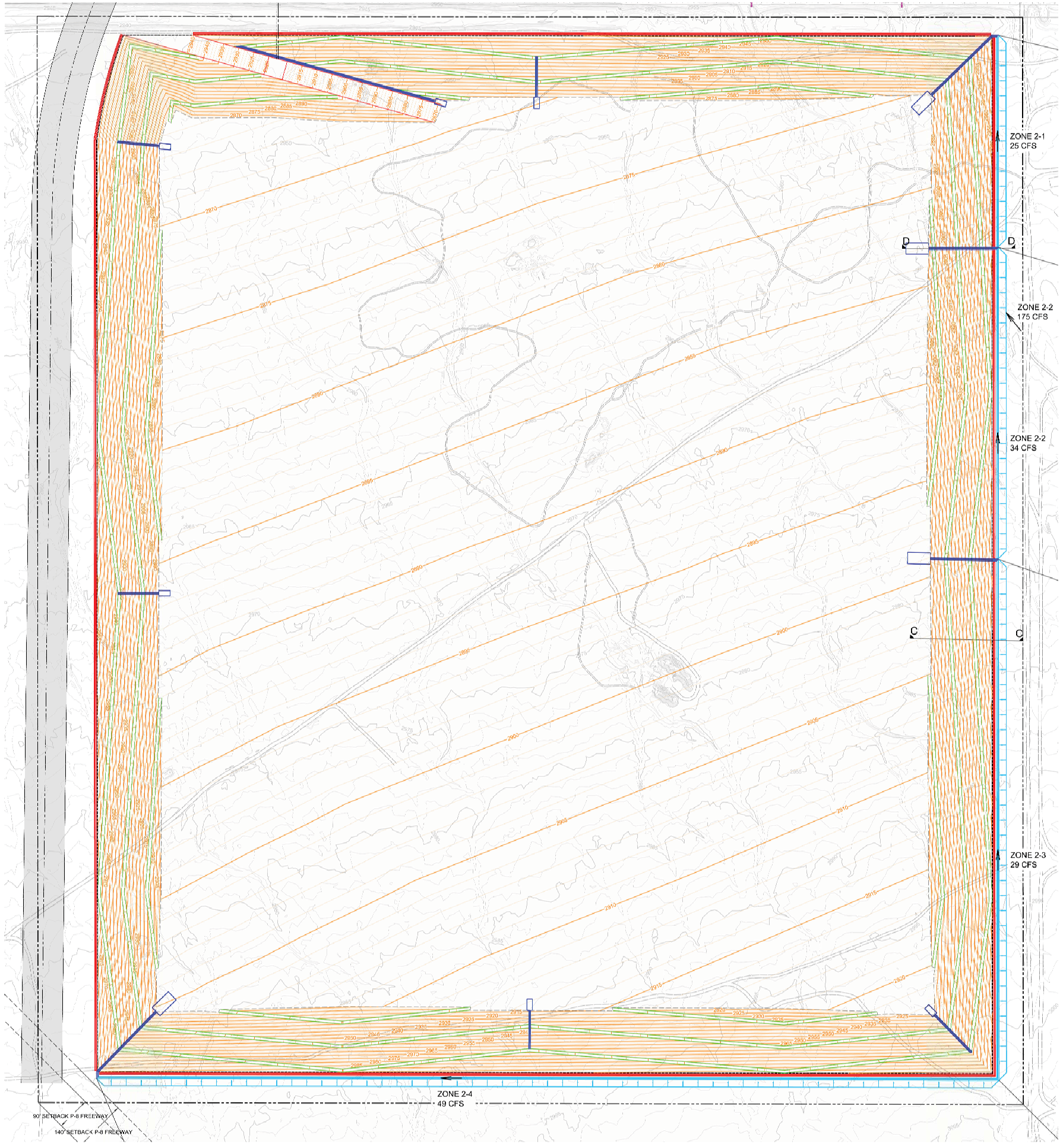
JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET 1

STETSON ENGINEERS INC

Source: West Coast Environmental, 12-30-2008

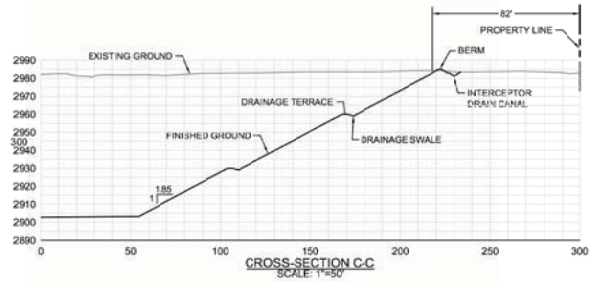
| | |
|---|---|
| Mining Phase I<br>North Pit<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 9 |
| Scale: As Shown | Date: 3-13-2012 |

MCG100 Confidential/Drafting 2008/figs 1-61 submittal 12-31-08.dwg

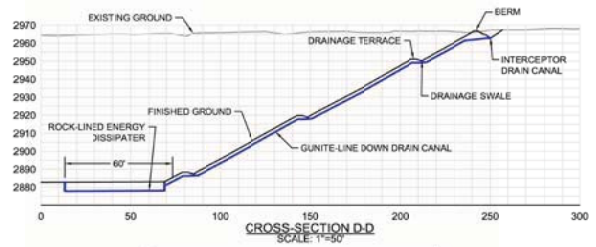



**LEGEND**

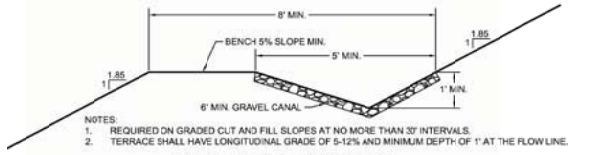
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C
SCALE: 1"=50'

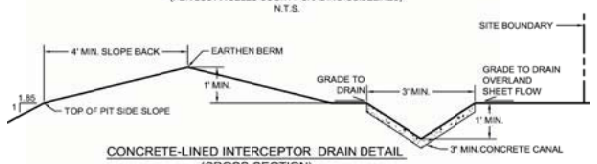



CROSS-SECTION D-D
SCALE: 1"=50'

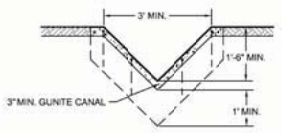



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

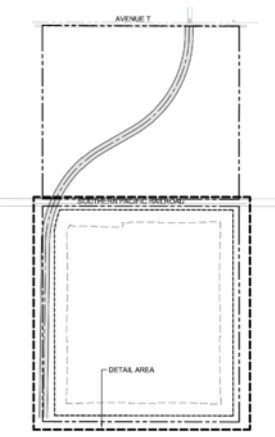



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4'O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

**CONCEPTUAL GRADING AND DRAINAGE PLAN**
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

PROJECT (RADIUS = 1500 FT)
PHASE 2

| | |
|---|---|
| Cut Volume: 16,754,000 CY | Date: December 5, 2008 |
| Topo Source: Inland Aerial Survey Inc. Date of Flight: 05/02/2005 | |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |

JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET 2

STETSON ENGINEERS INC.

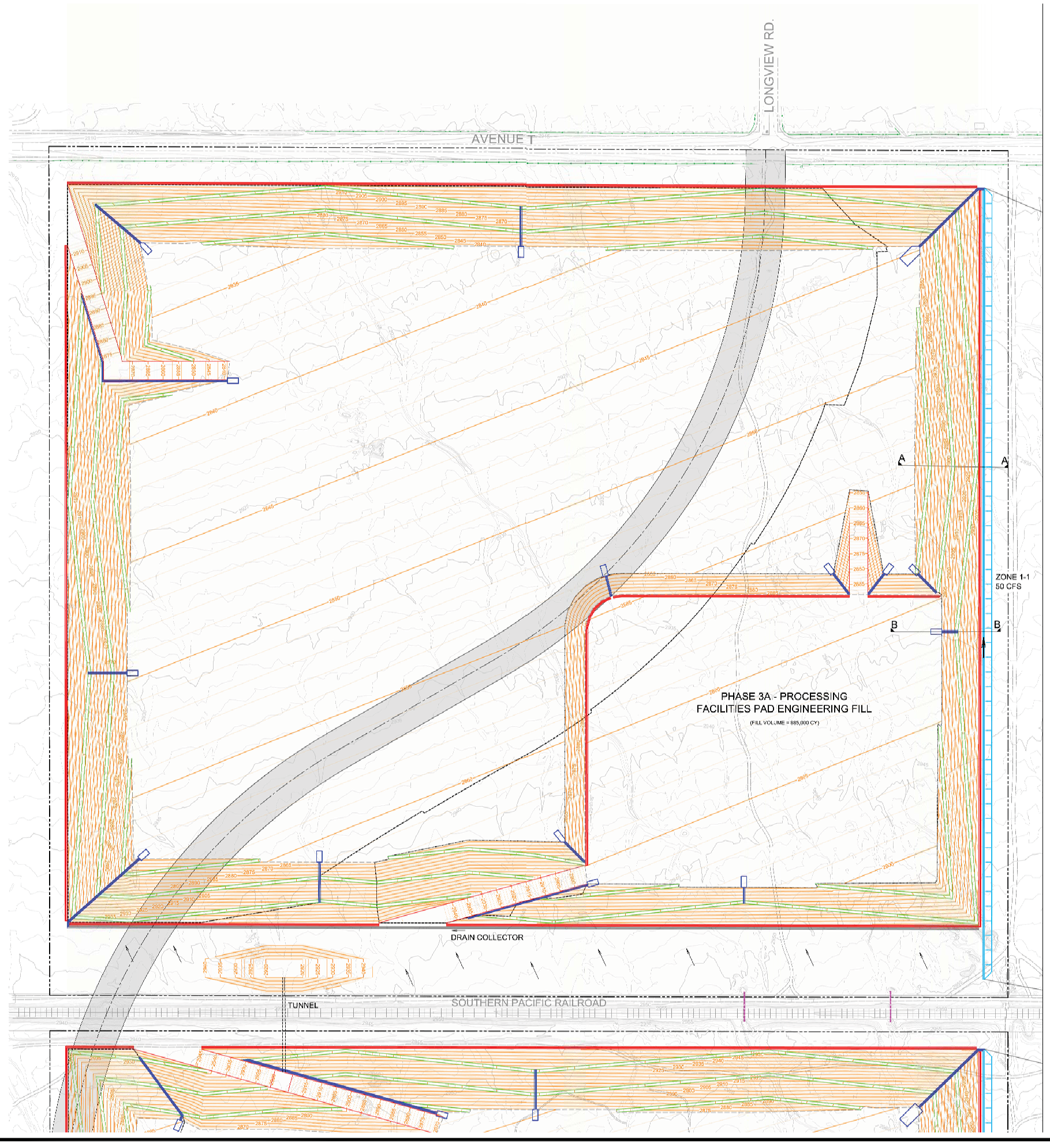
Source: West Coast Environmental, 12-30-2008

Mining Phase 2
South Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE 10

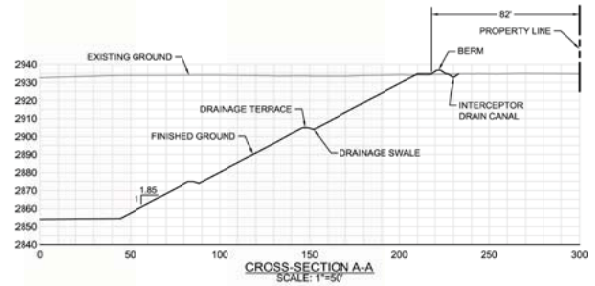
Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/figs 1-61 submittal 12-31-08.dwg

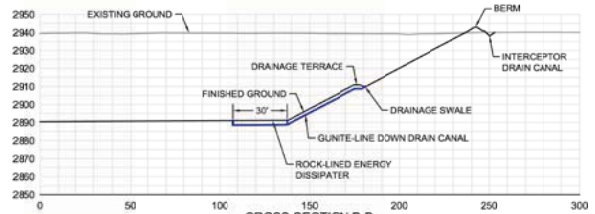



**LEGEND**

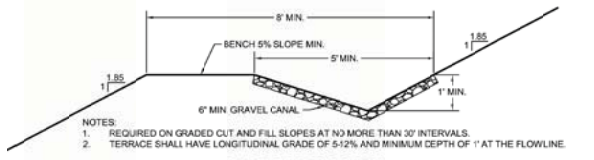
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

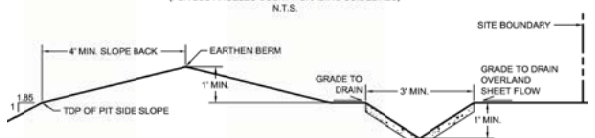



CROSS-SECTION B-B
SCALE 1"=50'

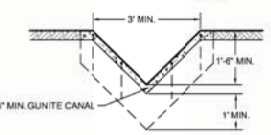



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOWLINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

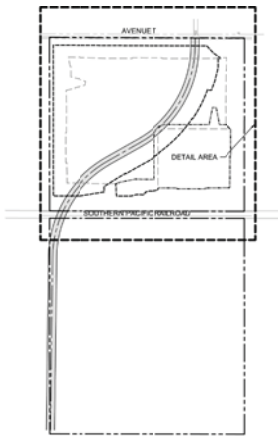



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

N

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

PROJECT (RADIUS = 1500 FT)
PHASE 3A - NORTH PIT

| | |
|---|---|
| Cut Volume: 8,149,000 CY | Date: December 5, 2008 |
| Topo Source: Inland Aerial Survey Inc. Date of Flight: 05/02/2008 | |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |

JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET 3

STETSON ENGINEERS INC.

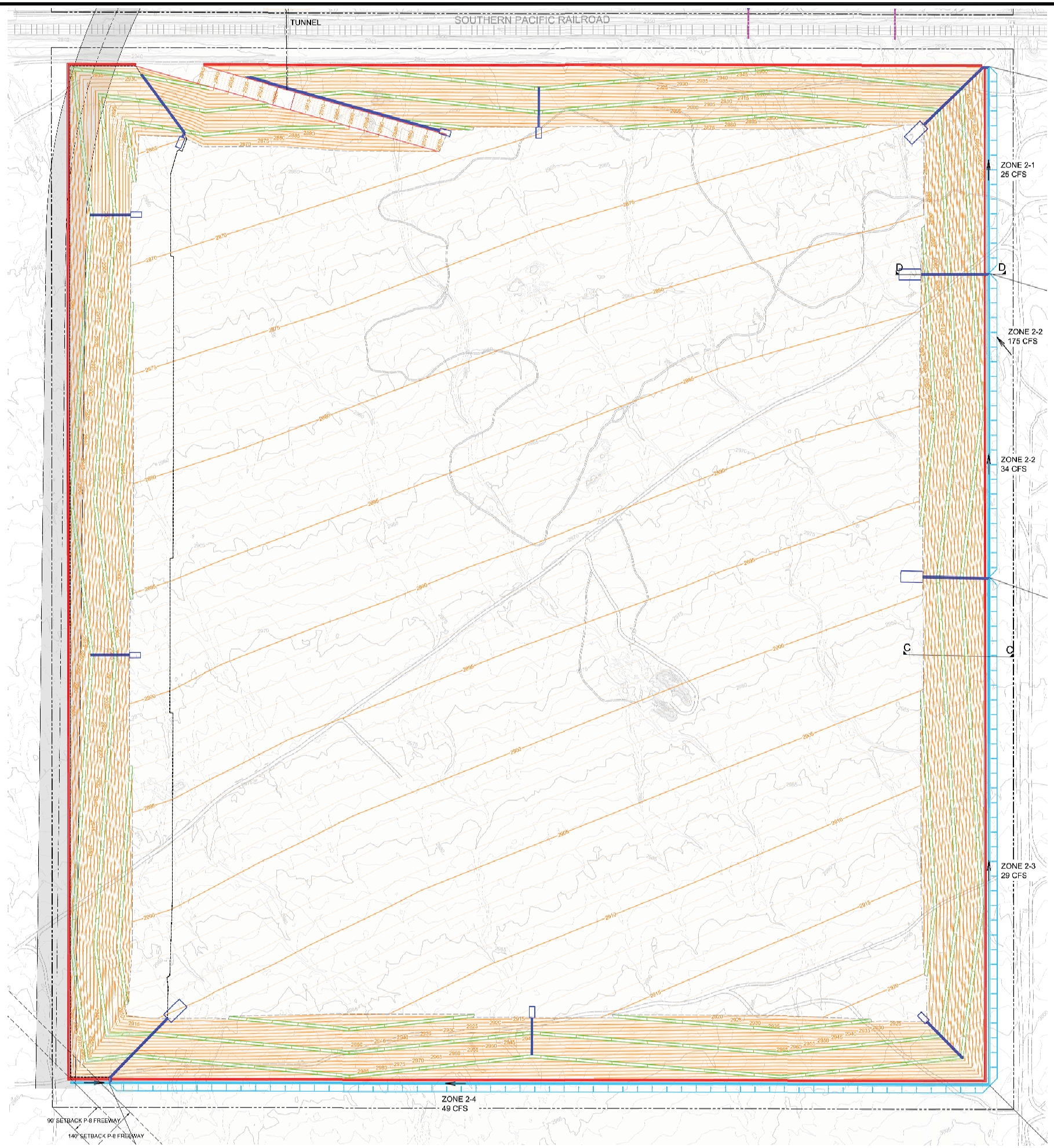
Source: West Coast Environmental, 12-30-2008

Mining Phase 3a
North Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE 11

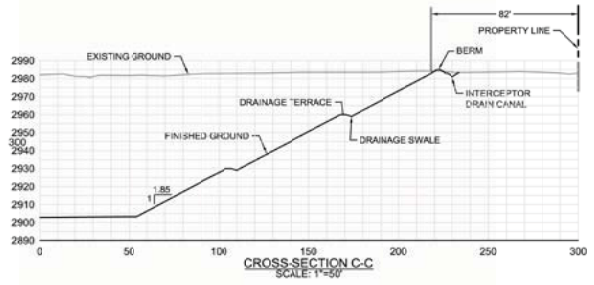
Scale: As Shown
Date: 3-13-2012

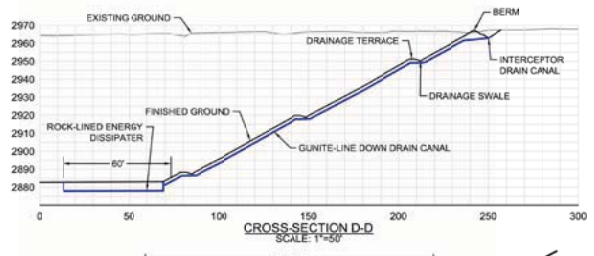
MCG100 Confidential/Drafting 2008/figs 1-61 submittal 12-31-08.dwg

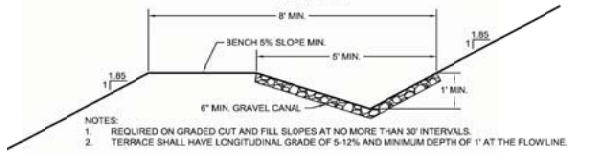



**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW

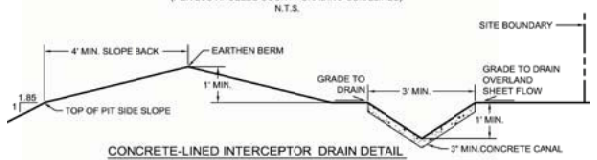


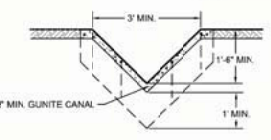




NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOWLINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

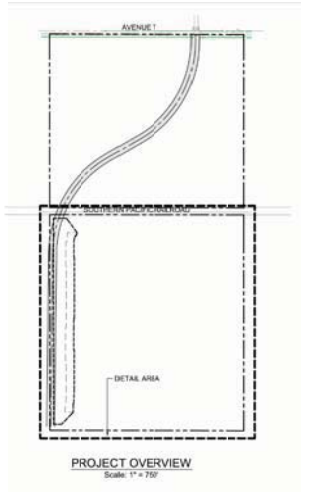



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 T.E. BARS 4'O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

PROJECT (RADIUS = 1500 FT)
PHASE 3A - SOUTH PIT

| | |
|---|---|
| Cut Volume: 840,000 CY | Date: December 5, 2008 |
| Topo Source: Inland Aerial Survey Inc. | Date of Flight: 05/02/2006 |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |

JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET
4

STETSON ENGINEERS

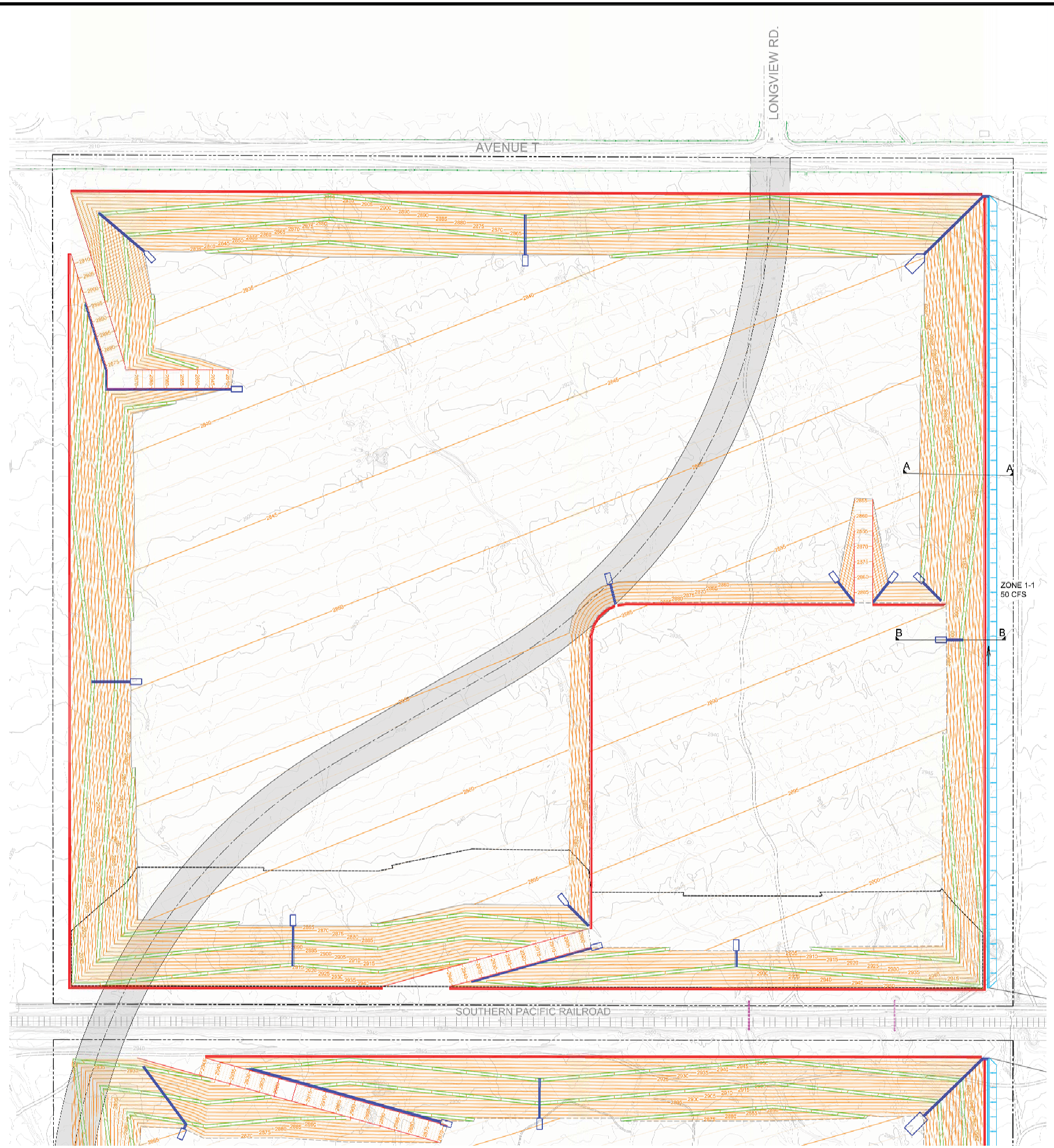
Source: West Coast Environmental, 12-30-2008

Mining Phase 3a
South Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE
12

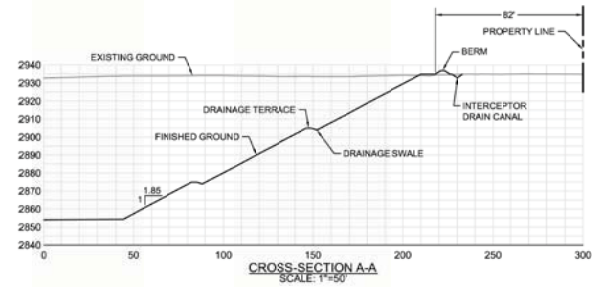
Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/figs 1-61 submittal 12-31-08.dwg

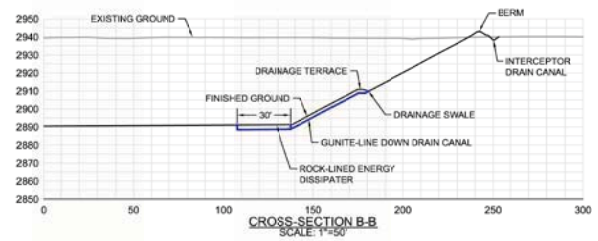



**LEGEND**

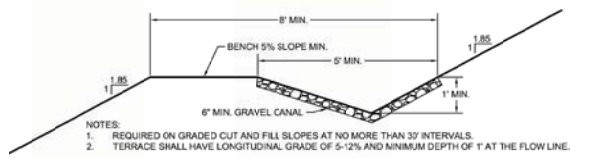
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

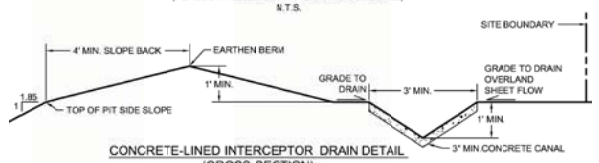



CROSS-SECTION B-B
SCALE: 1"=50'

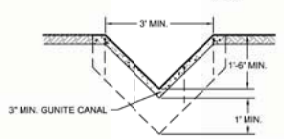



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

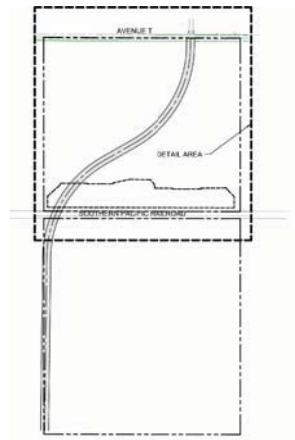



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

N

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

Source: West Coast Environmental, 12-30-2008

**CONCEPTUAL GRADING AND DRAINAGE PLAN**
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

PROJECT (RADIUS = 1500 FT)
PHASE 3B

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 992,000 CY
Date: December 5, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

SHEET 5

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

STETSON ENGINEERS INC.

Mining Phase 3b
North Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE 13

Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/figs 1-61 submittal 12-31-08.dwg

#### 3.6.1.4 Description of Mine Operations

Processing would occur at the electrically powered equipment on the Processing Facilities Site, capable of processing 650 tons of material per hour. The following is a brief process description, which refers to the Project components.

- Material is excavated using heavy mobile equipment and transported to the Loading Hopper. From this point on, material is moved throughout the Aggregate Processing Facilities via a system of conveyors.
- Once in the Loading Hopper, gravel and boulders are conveyed to the Jaw Crusher where they are reduced in size, then conveyed for placement onto the Surge Pile.
- From the Surge Pile, crushed aggregate falls into tunnels and is conveyed to the Dry Scalping Screens to remove oversized material.
- On the dry side of the Aggregate Processing Facilities, material too large for the Dry Scalping Screen is diverted and conveyed to the adjacent Cone Crusher for additional crushing, and is conveyed back through the Triple Deck Dry Scalping Screen. Material leaving the Triple Deck Dry Scalping Screen is conveyed onto the ⅜" Crush Rock, ½" Crush Rock, ¾" Crush Rock, or Rock Dust stockpiles.
- On the wet side of the Aggregate Processing Facilities, material is washed and screened, then conveyed onto the ⅜" Washed Rock or 1" Washed Rock stockpiles.
- Sand is conveyed through the sand screw, where it is washed, then conveyed onto the Washed Sand stockpile.
- Wash water and fines are recovered at the Water Reclamation and Fines Recovery Facilities described in EIR sub-chapter 3.6.6.
- Aggregate materials would be loaded into haul trucks for transport to market. Loading would be done by front end loaders.

### 3.6.2 Ready-Mixed Concrete Plant

Lebata proposes to install and operate a Ready-Mixed Concrete Plant to manufacture and deliver 150,000 cubic yards per year of ready mixed concrete on an average annual basis. This Plant would be located on the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The actual quantity would depend upon market demand and may be as much as 225,000 cubic yards per year during peak demand.

Concrete ingredients include aggregate (sand and gravel), Portland cement, fly ash, small amounts of admixtures and water. Although the relative proportion of ingredients in any batch is subject to change based upon the final use of the concrete, a typical mixture would contain the following approximate materials and amounts by weight:

- Aggregate (sand and gravel) – 78 percent
- Portland Cement – 12 percent
- Fly Ash – 2 percent
- Admixtures – less than 1 percent
- Water – 8 percent

Ready-Mixed Concrete, as a process, uses a central concrete mixer dual-drum and/or dry drum batch plant. Concrete ingredients are added to the large, enclosed rotating drums where they are thoroughly mixed. The wet concrete mixture is then transferred into concrete mix trucks for delivery to various job sites for placement. The control of the batching operations is accomplished from a portable control building located onsite. The mixing drums are fitted with a required bag-house and a vacuum that captures dust and emissions that emanate from the drums.

In addition to the dual drum central mixer and loading facility, the batch plant includes aggregate storage areas, two raw cement silos, one fly ash silo, a water tank, and conveyors. The silos are completely enclosed and the air exchanged during filling is vented through filters that remove dust particles. The tallest silo is approximately 59 feet high. The conveyors, mixing drums, and other machinery at the Project are powered by electric motors.

All trucks would exit the Project by driving over a vibrating grate to remove any loose materials. Trucks returning to the Project with unused concrete, or at the end of the workday, would wash their drums clean of concrete at the truck washout area. Truck wash water and left over concrete are collected and reclaimed in lined basins for use onsite. The resulting silts and sediments (i.e., fine material) would be transferred to a stockpile for eventual use offsite as landfill cover, among other uses.

### 3.6.3 Vac-Lite Plant

"Vac-Lite" is a strong, durable, porous glass pumice aggregate of volcanic origin, making it an ideal natural material for use in structural lightweight concrete. The pumice aggregate is vacuum treated to stabilize moisture content and to enhance qualities for pumping though hoses. The pumice aggregate is of volcanic origin and is formed when volcanic gases within ejected rock expand and then suddenly cool, resulting in a porous glass aggregate. The aggregate is light gray in color and is available in ½-inch maximum aggregate size.

Lebata proposes to install and operate a Vac-Lite Plant on the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). Unprocessed volcanic material would be shipped to the site in 25-ton bottom dump trucks. The material would be unloaded into a grizzly and transported by conveyor to the silo. The material would be treated in the silo with high pressure water and cement. Once processed, the material would be drained of water and sent via a radial stacker to stockpiles for quick shipment. Material would then be loaded into 25 tons on road trucks using a front end loader for offsite delivery.

Annual throughput would be no more that 30,000 tons imported for processing and exported for sale. The material must remain in a wet condition after processing, so it is typically made to order. If excess is produced, it would be stored in the three-sided bunker and kept wet until sold and transported offsite. The transportation of these materials would be done in a manner that does not increase the average and peak daily truck trips described in EIR Table 6.

### 3.6.4 Asphalt Mixing Plant

Lebata proposes to install and operate an Asphalt Mixing Plant to manufacture and deliver 200,000 tons of asphalt per year on an average annual basis. This Plant would be located on the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The actual quantity would depend upon market conditions and may be as much as 300,000 tons per year during peak demand.

The plant would be capable of utilizing both Recycled Asphalt Product (RAP) and ground crumb rubber. The Project consists mainly of the drying drum with baghouse and mixing drum. Utilizing a combination of the "continuous mix" and "counterflow drum mix" processes, aggregate, which has been proportioned by size gradations, is introduced into the drying drum at the end opposite the burner. As the drum rotates, aggregates are mixed and hot air is blown in a direction "counter" to the aggregate's movement through the drying drum. Hot dry aggregate is then transferred to the adjacent mixing drum where it is blended with pre-heated asphalt oil to form asphalt. The resulting asphalt mixture is discharged at the end of the mixing drum, and then conveyed to one of three 180-ton heated storage silos, where it is loaded into transport trucks. When RAP is being used, the RAP materials are mixed with the aggregate at the end of the Drying Drum, and the mixture is transferred to the mixing drum where asphalt oil is introduced.

When rubberized asphaltic concrete (RAC) is being produced, ground crumb rubber is blended with pre-heated asphalt oil which is pumped into a point approximately midway in the mixing drum unit where it is mixed with the hot, dry aggregate that has just come from the drying drum.

The Asphalt Mixing Plant would employ the latest generation of combustion technology. The burner is fuel-efficient, reduces emissions of NOx and Volatile Organic Compounds (VOCs), and keeps CO to a minimum. Natural Gas would be used to achieve the Best Available Control Technology (BACT) Guidelines for NOx, VOCs, CO and SOx. Furthermore, a fabric filter collector (baghouse) with 99.96 percent efficiency would be used to vent the rotary aggregate dryer. This would achieve the BACT guidelines for $PM_{10}$.

Of concern to permitting agencies, "blue smoke" contains tiny oil droplets that carry much of the characteristic asphalt odor. Air pollution control agencies are becoming more concerned with blue smoke, especially as RAP, rubberized asphalt and polymer blends are more routinely specified in asphalt materials contracts. Without the proper controls, these specialty mixes can produce an increased amount of blue smoke. To control this form of emission, the Project includes Blue Smoke Control, which utilizes a filtration system providing a control efficiency of 98 percent (1.8 microns or greater) to collect fugitive emissions from the mixing drum, conveyors delivering asphalt to the silos, and the silos.

The Asphalt Mixing Plant is of modular construction with pre-wiring and distributed controls for fast and easy plant setup and subsequent relocation. In this instance, Lebata is proposing to install a plant that affords:

- Precise computerized cold feed and batching controls to ensure good mix quality;
- Control of burner and mix temperatures to produce consistent asphalt mix; and
- Highly efficient plant design and pollution control equipment that exceeds environmental protection requirements.

The Asphalt Mixing Plant process description is as follows:

- Sorted aggregates are stored onsite by size and type in separate stockpiles. Aggregate is placed into the five-bin cold feed storage system where the different aggregate types/sizes are

proportioned by the calibrated belt feeders onto a common collecting belt that transports the aggregates to a scalping screen.

- Aggregates are passed over a vibrating "scalping" screen to remove over-sized material and the screened material is weighed by an aggregate belt scale located on the cold feed truss conveyor. The weigh scale generates a signal, which is sent via a blending computer to the drives on the asphalt pump system.
- The aggregate enters a hopper and falls onto a high-speed "slinger conveyor" which transports the material via conveyor into the drying drum.
- The drying drum is equipped with a natural gas burner to dry the aggregate.
- While the aggregate moves to the end of the drum, the emissions (air born dust, water vapor, and combustion products) from the drying process are pulled by an exhaust fan through a knock-out box and baghouse in the opposite direction of the aggregate flow.
- Dust removed by the baghouse is conveyed into the mixing drum and added to the asphalt being mixed.
- When RAP is used in the manufacturing of asphalt, the desired amount of RAP is added with the dry aggregate at the end of the counter flow drum for a brief pre-heat. Dried material is then conveyed from the end of the drying drum into the mixing drum via an enclosed chute.
- The aggregate, RAP and baghouse fines continue down through the mixing drum, where they are combined with the asphalt oil (amount determined at step 2) to create the final product. Asphalt oil is stored in one 20,000-gallon horizontal above-ground tank, which is pre-heated before it is introduced into the mixing drum.
- The asphalt oil vapors from the mixing drum, and from the finished product in the incline drag and load-out areas, are removed by a vacuum pulled by a scavenger fan on the mixing drum discharge housing. These vapors are fed into the burner flame of the counter flow dryer to be burned up. The flue gas recirculation incorporates BACT.
- The final product exits the mixing drum through a gravity-activated door into a sealed drag conveyor.
- The hot paving material exits the incline drag into the silos via sealed batchers and a sealed cross drag when filling the second and third silos. The sealed batchers and cross drag prevent asphalt oil vapors from escaping and allow the scavenged incline drag to return them to the drum burner.
- The paving material is stored in one of three 180-ton silos, 80 feet high, and is discharged into trucks passing beneath the silos. Vapors released during truck loading are removed through scavenger hoods and returned to the filtration system.
- The Blue Smoke Control six-stage filter cartridge is made from proprietary filter media developed exclusively for collecting oil mist. This media, combined with a special outer wrap, allows the filter cartridge to drain and prevents the collected liquid from entering the clean air stream. In addition, Blue Smoke Control filter cartridges sit vertically inside the collector, allowing gravity to aid the draining process. The result is more complete capturing of the oil droplets, easier maintenance and higher filtration efficiency.

- The entire operation is controlled from a control room that includes the following:
  - Elevated steel control cabin (insulated and air-conditioned) with access staircase and platform.
  - Tinted glass windows providing a plant view.
  - Pre-installed and pre-wired electrical panels.

### 3.6.5 Raw Cement and Aggregate Transfer and Distribution Facility

Lebata currently has no rail transport option to receive raw cement from Northern California, primarily the Sacramento area, and to deliver raw cement or aggregate materials from the Project to the Los Angeles Basin. The rail carriers have little available rail capacity and currently do not consider either type of commodity a "preferred cargo" for rail shipment. Moreover, Lebata, despite an intensive three year search, has been unable to locate a suitable rail receiver site in the Los Angeles Basin.

Approximately 9.2 acres of the North Parcel would be used for a Raw Cement and Aggregate Transfer and Distribution Facility. This area is directly north of, and adjacent to, the railroad tracks that bisect the North and South Parcels. The raw cement portion of the facility would be able to receive and accommodate railcars, then transfer the raw cement pneumatically from the rail cars into two adjacent silos. The Project would receive approximately 300,000 tons of raw cement annually.

Raw cement would be used onsite, as a component of ready-mixed concrete at the Ready-Mixed Concrete Plant, and the remainder would be pneumatically loaded from the silos located in the Raw Cement and Aggregate Transfer and Distribution Facility into raw cement haul trucks for transport by truck to third parties or operator-owned concrete plants in the Greater Los Angeles, San Bernardino and Riverside areas. Under average operating conditions, the Ready-Mixed Concrete Facility would produce 150,000 cubic yards per year, with each cubic yard weighing approximately 4,000 pounds. Of this, raw cement comprises 12 percent by weight, or 480 pounds per cubic yard. This means the onsite Ready-Mixed Concrete Plant would use 36,000 tons of raw cement per year (i.e., 150,000 cubic yards x 480 pounds per cubic yard / 2,000 pounds = 36,000 tons of raw cement).

At an annual production rate of 150,000 cubic yards, raw cement is expected to be used for concrete production as follows:

- Onsite Use by Applicant – 12 percent
- Greater Los Angeles area by Operator-Owned Concrete Plants or third-party purchasers – 88 percent

At a peak production rate of 225,000 cubic yards, raw cement is expected to be used for concrete production as follows:

- Onsite Use by Applicant – 18 percent
- Greater Los Angeles area by Operator-Owned Concrete Plants or third-party purchasers – 82 percent

The aggregate portion of the facility would be able to ship Project materials by rail to the Los Angeles Basin, and would be able to receive aggregate mined and processed elsewhere for further shipment by rail to the Los Angeles Basin. Since there is little opportunity to ship aggregate from the Project by rail, Lebata may find the need to receive aggregate by rail on occasion to supplement the Project's supply of aggregate. Such aggregate would provide certain grades of material the Project cannot produce in sufficient quantity to support operations at the Ready-Mixed Concrete Plant or Asphalt Mixing Plant. Such rail deliveries would serve to avoid the use of trucks to transport these supplemental materials to the Project.

In the future, if rail capacity becomes available and contracts are executed with the rail carrier, Lebata would then be in a position to make fuller use of the Raw Cement and Aggregate Transfer and Distribution Facility to transport raw cement and aggregate materials to the Los Angeles basin via rail.
In the absence of a Raw Cement and Aggregate Transfer and Distribution Facility, Lebata would import raw cement to the Project for use in at the Ready-Mixed Concrete Plant and Vac-Lite Plant.

### 3.6.6 Water Reclamation and Fines Recovery Facilities

At the Water Reclamation and Fines Recovery Facilities, aggregate processing wash water is drawn from the 45-foot diameter Fresh Water Tank and the used water from the Sand Washer and Dewatering Screen flows is pumped to a fines recovery system then it is pumped to the 45-foot diameter Thickener Tank. The Thickener tank separates whatever solids that are left and the clean water gravity flows back to the Fresh Water Tank. Fines are recovered and conveyed onto the Fines stockpile for subsequent sale. If this initial process does not recover the intended level of fines, Lebata would also use a traditional open pond system to settle out/recover fines. The use of an open pond system would be subject to approval by the Regional Water Quality Control Board.

This system would be comprised of three to four basins approximately 80 feet x 130 feet and 10 feet deep (depicted as Silt Ponds in EIR Figure 6 – Facilities Site Plan). Wash water from Aggregate Processing Facility would be collected, and would flow by gravity in a drainage system back to the Silt Ponds. To that water, a flocculant, comprised of organic polymers, would be added to cause the fine material to "settle out" from the water column. Settled fines would be removed and deposited on the Fines stockpile by a front-end loader. These and other fine materials produced during processing would be marketed for use as soil amendments, slurry used in nonstructural concrete, landfill top cover, miscellaneous fill material, among other uses; used as a soil amendment onsite in association with revegetation activities; or placed within the mine pit after being blended with surplus sand to ensure permeability is maintained. Only EPA-approved, non-toxic flocculant would be used to ensure there are no adverse impacts to water quality. To facilitate fines removal, the ends of each basin would be sloped, approximately 3:1 (h:v), to permit the entry and exit of equipment.

Of the 312 afy of water consumed by the Project, such consumption would be proportioned (approximately) as follows:

- 85.7% – Aggregate Processing Facilities
- 5.9% – Dust Control within the Aggregate Processing Facilities area
- 1.5% – Tire Wash
- 4.4% – Ready-Mixed Concrete Plant/Vac-Lite Plant and Wash-out

- 1.0% – Interior Haul Road Dust Control
- 2.0% – Stockpile Areas
- 0.5% – Landscaping
- 0.5% – Employee Facilities

### 3.6.7 Other Aspects of the Project

#### 3.6.7.1 Days and Hours of Operation and Employment

The Project would operate up to 303 days per year, employing 156 people, including plant operators and truck drivers, working two or three shifts per day, six days per week, depending on the type of facility. The maximum number of employees working per shift would be 88. The number of employees, by shift and type of facility operations, are as follows:

- Surface Mining and Aggregate Processing Facilities (19 employees, 2 shifts, followed by a maintenance shift; Water Reclamation and Fines Recovery Facilities included within these employees)
- Ready-Mixed Concrete Plant (26 employees, 2 shifts)
- Vac-Lite Plant (no additional employees, 2 shifts)
- Asphalt Mixing Plant (5 employees, one shift)
- Raw Cement and Aggregate Transfer and Distribution Facility (90 employees, 3 shifts)
- Shop, Maintenance and Sales Days and Hours of Operation and Employment (16 employees, 2 shifts)

Proposed operating hours are noted in EIR Table 5.

**Table 5 Days and Hours of Operation**

| Activity | Days of the Week [1] | Normal Hours of Operation |
|---|---|---|
| Mining Excavation | Mon.-Sat. | 6:00 am to 10:00 pm<br>depending on time of year<br>(no nighttime mining) |
| Aggregate Processing | Mon.-Sat. | 24 hours per day |
| Ready-Mixed Concrete Plant operations | Mon.-Sat. | 24 hours per day |
| Vac-Lite Plant operations | Mon.-Sat. | 24 hours per day |
| Asphalt Mixing Plant operations | Mon.-Sat. | 24 hours per day |
| Cement Transfer Station operations | Mon.-Sat. | 24 hours per day |
| Raw Cement Distribution operations | Mon.-Sat. | 24 hours per day |
| Equipment Fueling and Maintenance | 7 Days | 24 hours per day |
| Loading, Trucks Entering or Departing | Mon.-Sat. | 24 hours per day |

[1] Contracts often require that the suppliers of PCC-grade aggregate provide materials on a 24-hour basis. In addition, these projects may necessitate County approval of Sunday operations on a project-specific basis. These contracts involve large-scale projects, such as highway resurfacing by Caltrans, major public works road projects, and U.S. Army Corps of Engineer projects, among others.

So as to minimize impacts to the AM and PM peak travel hours (i.e., 7:00 to 9:00 AM and 4:00 to 6:00 PM), work shifts would begin at 5:30 AM and 3:30 PM.

The Project would provide a source for PCC-grade aggregate throughout Southern California and it is important to note that 24-hour/day construction projects would derive material from whatever sources are available, even if long-distance hauling is required. Providing a regional source for PCC-grade aggregate serves to reduce haul distances and the associated impacts. It is expected that up to 30 percent of deliveries from the Project would occur at night to provide the PCC-grade aggregate needed for Caltrans and public works projects, night paving, and industrial and commercial building construction.

With regard to the hours of operation for Mining Excavation, the proposed hours of 4:00 am to 10:00 pm would, in practice change with the seasons, with longer operating hours during the summer months, and shorter number of operating hours during the winter months. Because nighttime mining is not proposed, Mining Excavation will take place within the hours of operation provided in the following section of the County Planning and Zoning Code, which notes the following limitation:

> *22.56.1380 Development standards for mining operations.*
>
> *Unless the hearing officer deems otherwise, and so specifies in the permit, surface mining operations shall comply with Section 3503 of Title 14 of the California Code of Regulations and be conducted in accordance with the following requirements:*
> *.....*
>
> *J. Hours of Operation. All operations shall be restricted to the hours between 6:00 a.m. and 10:00 p.m., except in cases of public emergency, or whenever any reasonable or necessary repairs to equipment are required to be made.*

At first reading, it is possible to conclude "all operations" are limited to the stated hours, which would preclude the broader hours of operations noted for the other activities listed in EIR Table 5. However, the subsequent section of the County Planning and Zoning Code notes:

> *22.56.1390 Uses Authorized by Permit.*
>
> *Where a surface mining permit has been obtained pursuant to this Part 9 and while such permit is in full force and effect in conformity with the conditions of such permit, said property shall be used <u>exclusively for surface mining operations and the following specific uses</u>:* [underscore added for emphasis]
>
> *A. The stockpiling of rock, sand and gravel, and other minerals, including the installation, maintenance or operation of rock-crushing plants or apparatus;*
> *B. Batching plants or mixing plants for either portland cement or asphaltic concrete, except where specifically prohibited as a condition of such permit;*
> *C. Any use permitted in the zone, subject to the limitations and conditions set forth therein, provided the hearing officer specifically authorizes such use in the permit;*
> D. *Accessory uses to mining operations and processing of minerals.*

Comparing these two sections of the County Planning and Zoning Code, It becomes clear that a "surface mining operations" use is considered different than a use for "stockpiling of rock, sand and gravel," "batch plant or mixing plant" operations, or "accessory uses to mining operations." Given this difference, the hours of operation limitation of Section 22.56.1380 of the County Planning and Zoning Code should apply only to "surface mining operations" and not to the “specific uses” described in Section 22.56.1390 of the County Planning and Zoning Code.

The Project under normal operating conditions, would involve earlier hours of operation for facilities operations and the loading/departure of trucks carrying products to market, later hours of operations primarily for the pre-loading of aggregate into trucks for next day departure, and longer hours of operation for aggregate processing. The proposed truck schedule was specifically design to avoid both the AM and PM peak travel hours. However, there will be times when large Caltrans and public works projects will require deliveries be made during the night.

The hours of operation presented in EIR Table 5, as further described in this EIR sub-chapter, are consistent with the County Planning and Zoning Code and with recent County approvals of other surface mining projects (e.g., Soledad Canyon and the nearby Vulcan Materials Company projects).

#### 3.6.7.2 Project Generated Traffic

As previously noted, production levels would vary over time, which means Project-related truck traffic would vary accordingly. To correctly estimate truck traffic, two different rates of production are described: (1) Annual Average; and (2) Annual Peak. The daily truck trip estimates for both scenarios presented below in EIR Table 6 are “worst case” and are based on the following assumptions:

- 25-ton capacity haul trucks are used for outgoing deliveries of aggregate products;
- 9-cubic yard trucks are used for outgoing deliveries of ready-mixed concrete products;
- Railcars are used to deliver raw cement to the Project;
- 25-ton capacity hauls trucks are used for outgoing deliveries of bulk raw cement;
- 20-ton capacity hauls trucks are used for outgoing deliveries of asphalt;
- 24-hour aggregate processing operating day; and
- 80 percent of the haul trucks would deliver materials to third parties or owner-operated industrial plants and facilities in the greater Los Angeles area, while 20 percent would travel to third parties or owner-operated industrial plants and facilities in the Riverside/San Bernardino market area.

**Table 6 Traffic Trips**

| | Average Daily Loads | Peak Daily Loads |
|---|---|---|
| **Truck Trips – Outgoing Deliveries** | | |
| Aggregate Products | 70 | 112 |
| Ready-Mixed Concrete | 55 | 82 |
| Asphalt | 33 | 50 |
| Raw Cement | 35 | 32 |
| **Truck Trips – Incoming Deliveries** | | |
| Fly Ash and Ad-mixtures for Ready – Mixed Concrete Plant | 7 | 7 |
| Asphalt Oil | 2 | 3 |
| Fuel, Service Vehicles, Other | 15 | 15 |
| **TOTAL** | 217 | 301 [1] |

[1] Although the mix of truck loads would vary, by type of materials being delivered, this total represents a peak daily limitation.

EIR Table 6 includes the following assumptions:

**Loads:**

- EIR Table 6 represents "loads" (i.e., roundtrips), not ADT or one way trips.
- Operating days are assumed to be 303 days per year.
- EIR Table 6 does not include employee trips, which are estimated to be 156 roundtrips per day for average and peak operations. Employee traffic varies by type of facility and is estimated as follows:
  - Surface Mining and Aggregate Processing Facilities (19 roundtrips daily, 2 shifts,)
  - Ready-Mixed Concrete Plant (26 roundtrips daily, 2 shifts)
  - Vac-Lite Plants (no additional truck trips, 2 shifts)
  - Asphalt Mixing Plant (5 roundtrips daily, one shift)
  - Raw Cement and Aggregate Transfer and Distribution Facility (90 roundtrips daily, 3 shifts)
  - Shop, Maintenance and Sales (16 roundtrips daily, 2 shifts)

**Aggregate:**

- Average Daily Loads is based upon 800,000 net tons per year / 303 days per year / 25 tons per load = 105 loads per day. This number of trips assumes all other operations are ceased.

  To account for the fact that aggregate would be used onsite for the manufacture of ready-mixed concrete and asphalt, the number of average daily aggregate truck trips is expected to be reduced to 70 loads per day (i.e., 6.94 tons of aggregate per load of ready-mixed concrete is equivalent to 9 loads of aggregate per day; asphalt deliveries are comprised of 95 percent aggregate and are equivalent to 25 loads of aggregate per day).

- Peak Daily Loads is based upon 1,575,600 net tons per year/ 303 days per year / 25 tons per load = 166 loads per day.

  However, to account for the fact that aggregate would be used onsite for the manufacture of ready-mixed concrete and asphalt, the number of average daily aggregate truck trips is expected to be reduced to 112 loads per day (i.e., 6.94 tons of aggregate per load of ready-mixed concrete is equivalent to 14 loads of aggregate per day; asphalt deliveries are comprised of 95 percent aggregate and are equivalent to 40 loads of aggregate per day).

**Ready Mixed Concrete:**

- Average Daily Loads is based upon 150,000 cubic yards / 303 days per year / 9 cubic yards per load = 55 loads.
- Peak Daily Loads is based upon a 50 percent increase over Average Daily Loads, which is slightly higher than a daily average when operating at a peak annual rate of 225,000 cubic yards (i.e., 82 loads).

**Vac-Lite:**

- Annual throughput would be no more that 30,000 tons imported for processing and exported for sale. Any Vac-Lite related truck trips would be offset by reducing other product trips, resulting in no increase in the average and peak daily load total described in EIR Table 6.

**Asphalt:**

- Average Daily Loads is based upon 200,000 tons / 303 days per year / 20 tons per load = 33 loads.
- Peak Daily Loads is based upon 300,000 tons / 303 days per year / 20 tons per load = 50 loads.

**Raw Cement:**

- Average Daily Loads is based upon 264,000 net tons per year (the remainder would be used for onsite production of concrete) / 303 days per year / 25 tons per load = 35 loads.
- Peak Daily Loads represents a worst case scenario depicting periodic spikes in demand (i.e., 53 loads). However, it is more likely that such demand would coincide with peak production at the onsite Ready-Mixed Concrete Plant, which would reduce the amount of raw cement available for truck transport to 246,000 net tons per year / 25 tons per load = 32 loads.

#### 3.6.7.3 Water Use and Supply

Annually water use at the Aggregate Processing Facilities is estimated to be approximately 88.8 million gallons (MG) (approximately 272.4 acre-feet), with the water truck using approximately 7.5 MG (approximately 23 acre-feet) for fugitive dust control along haul roads and around the plant site. Annually, the Ready Mixed Concrete Plant is estimated to use approximately 5.4 MG (approximately

16.6 acre-feet). Total annual water use is estimated to be 101.7 MG (approximately 312 acre-feet). One acre-foot equals 325,851 gallons.

Aggregate processing wash water would be returned to the 45-foot diameter Fresh Water Tank and the used water from the Sand Washer and Dewatering Screen is pumped to a fines recovery system then it is pumped to the 45-foot diameter Thickener Tank. The Thickener tank separates whatever solids that are left and the clean water gravity flows back to the Fresh Water Tank. Fines are recovered and conveyed onto the Fines stockpile for subsequent sale. These recovery processes may also include the use of an open pond system (refer to EIR sub-chapter 3.6.6).

Lebata proposes to drill an onsite water well, the water from which would be used primarily for:

- Dust control using spray bar nozzles on the conveyors to wet aggregate materials being transported to the surge pile;
- Dust control by ground watering the area where loaders operate within the Processing Facilities Site and between the mining pit and the crusher;
- Dust control using sprayers at the three-deck and two-deck dry scalping screens;
- Ready-mixed concrete production; and
- Aggregate Processing Facility.

Note: Several lawsuits have been filed regarding the use of groundwater within the Basin. It is anticipated that water rights will be quantified and assigned as part of the Basin adjudication process. The underlying dispute revolves around the priority/superior right to pump groundwater and the protection of the Basin. The parties have asserted multiple claims to be adjudicated, including claims for declaratory relief, prescriptive rights, quiet title to water rights, and claims that portions of the Basin should be treated as a separate area for management purposes if a physical solution for the Basin is established, among other claims. The resolution of many of these claims is likely to be affected by the nature and extent of the hydrologic connectivity of water within various portions of the aquifer.

Please refer to EIR sub-chapter 4.12.2.4, which describes the Basin adjudication process and EIR sub-chapter 4.12.5.1, which describes the alternative water supply sources that have been identified.

#### 3.6.7.4 Track Out Control – Rumble Plates

Trucks exiting the Project would drive over rumble plates that would remove debris from fenders, running boards and tires.

#### 3.6.7.5 Utilities

Electrical power would be provided by Southern California Edison (SCE) from nearby power lines. SCE advised it will provide service. After reviewing the Project's electricity usage, SCE staff advised the Project does not present peak hour useage issues. (Source: Telephone conversations with Bob Kniss and Chris Murphy.) Propane gas would be delivered by truck for storage and use onsite.

#### 3.6.7.6 Lighting

The Project would use nighttime lighting, both for safety and operations. Lighting would be shielded/hooded and/or directional to minimize Project visual impacts and would be designed to incorporate the lighting needed for operations, repair and maintenance, and security. Lebata would ensure these lights are shielded/hooded and downward-directional to light only the area requiring illumination. Also proposed are light poles within the stockpile areas to provide the light needed for loader operators to work these piles. Light poles may be as high as 45 to 50 feet and would be shielded/hooded and downward-directional to keep light from affecting passing motorists.

#### 3.6.7.7 Onsite Mobile Equipment

Onsite mobile equipment would include:

**Surface Mining and Aggregate Processing Facilities**

- Hitachi 850 Excavator or HS875 Crane and Dragline (or similar)
- 10,000-gallon Water Truck (or similar)
- 980G Caterpillar Loader (2) (or similar)
- 140H Caterpillar Grader (or similar)
- 730 Caterpillar (or similar)
- D8R Caterpillar Dozer (or similar)
- 773 Caterpillar Truck (2) (or similar)
- Street Sweeper (or similar)

**Ready Mixed Concrete Plant/Vac-Lite Plant**

- 966G Caterpillar Loader (or similar)

**Asphalt Mixing Plant**

- 980G Caterpillar Loader (or similar)

**Other Equipment**

- Service Truck (lubrication vehicles for periodic servicing of vehicles and equipment)
- Welding Unit
- 50HP or less generator for the office

**Related Facilities**

- Propane tank
- Water tank
- 80-foot by 125-foot two-story building, which would include an equipment maintenance shop area, parts room, office, locker room, and restrooms (handicapped accessible)
- Above ground fuel tank (diesel), with secondary containment and pad
- Fuel island
- Aggregate product stockpiles

- Conveyor from the mining pit to the Aggregate Processing
- Concrete mix truck wash-out pit and clarifier weirs
- Approximately 3.12 acres of interior roads
- 7 Parking spaces (6 standard plus 1 handicapped)
- Parking area for 21 mixer trucks and 42 bottom dump materials trucks (truck drivers park their personal vehicles in empty truck parking spaces)
- Gas Supply for Asphalt Mixing Plant – propane delivered by truck and stored onsite in a tank.
- Onsite wastewater treatment system (OWTS).

#### 3.6.7.8 Administration, Security, and Public Safety

The Project would include an administration office and dispatch/operations building for everyday business. Nighttime and weekend security would be provided by 6-foot high perimeter cyclone fencing around the Processing Facilities Site, locked gates, lighting, and security trailer. The office area may be alarmed. Equipment would be disabled daily at the end of the shift. The active mining area would also be fenced with 6-foot high cyclone material.

The Project would require a variety of air permitting from the AVAQMD, specifically with regard to the following rules:

- Rule 201 – Permit to Construct
- Rule 203 – Permit to Operate
- Rule 403 – Fugitive Dust

The Project includes conveyor spray bars and other dust control measures to control fugitive dust. Mobile equipment used at the site would incorporate Tier 2 or better equipment and comply with the proposed Air Toxic Control Measure rules, if approved by the Air Resources Board, to reduce mobile emissions. Processing equipment would be electrically powered to reduce stationary source emissions, and conveyors are used extensively throughout the Project site to reduce equipment engine hour totals. Lebata proposes to include the following measures into the Project Description:

- Non-road mobile equipment would be recent model years.
- Water spray would be used on unpaved roads to control fugitive dust. Dust control of onsite roads and within the mining area would be accomplished by a 10,000-gallon water truck, which would operate throughout the work day. As an alternative, dust palliatives (chemical dust suppressants) may be used.
- BACT would be applied to all stationary sources to control fugitive dust.
- Water spray on stockpiles and in the mining pit to control fugitive dust.
- Limit sale to no more than 2,000,000 net tons of processed materials per year.

### 3.6.7.9 Onsite Hazardous Materials

The Project would make use of the hazardous materials listed in EIR Table 7. The Project would receive, store, use and dispose of hazardous materials and waste typical of processes, equipment and motor vehicles being used, fueled, serviced and repaired.

The Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD), is the Certified Unified Program Agency (CUPA) responsible for administering the following programs within Los Angeles County:

- Hazardous Waste Generator Program;
- Hazardous Materials Release Response Plans and Inventory Program;
- California Accidental Release Prevention Program;
- Aboveground Storage Tank Program; and
- Underground Storage Tank Program.

The Project will be subject to CUPA requirements and oversight. The CUPA will provide oversight to the preparation of the required Hazardous Materials Business Plans (HMBPs), SPCC and SWPPP; and such matters as employee training, record keeping, preventive maintenance and implementation of BMPs. The CUPA will also require Project participation in the single fee system requirement that is mandated by the California Environmental Protection Agency (CalEPA) within the County's CUPA and Participating Agencies' (PA) jurisdictions. The implementation of the single fee system requirement maintains both the consolidation of program elements on one permit and also the coordination among the CUPA and PAs with the administration of the unified program.

### 3.6.7.10 Spill Prevention, Control and Countermeasure Plan

A SPCC will be prepared to meet the requirements of:

- Title 40, Code of Federal Regulations (CFR), Part 112
- California H&S Code, Chapter 6.67, §25270 - Aboveground Petroleum Storage Act (1989)

The purpose of the SPCC is to identify procedures and controls to prevent accidental releases of petroleum products and to minimize the impact if a release occurs.

**Table 7 Hazardous Materials List**

| COMMON NAME | CHEMICAL NAME | CONTAINER SIZE |
|---|---|---|
| Pozzolith nls34 | Calcium nitrate | 1,500 gal |
| Gear lube 85-140 | Solvent dewaxed residual oil | 55 gal |
| Fly ash | Calcium oxide | 174,000 lbs |
| Pozzolith 200n | Triethanolamine | 1,500 gal |
| Acid truck wash | Hydrochloric acid | 300 gal |
| Caustic soda | Sodium hydroxide | 20 gal |
| Batteries | Sulfuric acid lead | 12-volt; 10 each heavy-duty and light-duty |
| Diesel fuel # 2 | Naphthalene | 20,000 gal |
| Acetylene | Acetylene | 147 cubic feet |
| Motor oil | Petroleum distillates, hydrotreated heavy paraffinic | 550 gal |
| Hydraulic oil | Petroleum lubricating oil | 550 gal |
| Polyheed 997 | Sodium nitrate | 1,000 gallons |
| Oxygen | Oxygen | 251 cubic feet |
| Calcium chloride | Calcium chloride | 100 lbs |
| Cement | Calcium compounds | 348,000 lbs |
| Glenium 3000s | Copolymer mixture | 500 gallons |
| Carbon dioxide | Carbon dioxide argon | 255 cubic feet |
| Nitrogen | Nitrogen | 225 cubic feet |
| Calcium nitrate | Calcium nitrate | 1,500 lbs |
| Chromix l-10 or similar color agent | Carbon black | As needed |
| Industrial oil | Petroleum distillates, hydrotreated light paraffinic | 550 gal |
| Coolant | Ethylene glycol | 55 gal |
| Propane | Dimethylmethane | 10,000 cubic feet |
| Callaway 4330 | Polyacrylamide (polymer) | 500 lbs |
| Asphalt oil | Hydrocarbon | 20,000 gallons |

### 3.6.7.11 Storm Water Pollution Prevention Plan

In 1987, Congress enacted the Water Quality Act, amending the federal Water Pollution Control Act to include regulation of the discharge of storm water from industrial and certain municipal sources. The U.S. Environmental Protection Agency (US EPA) issued final regulations establishing permit application requirements for storm water in the November 16, 1990 Federal Register (55 CFR 47990). The regulations provide for individual and group applications and for the issuance of individual and general permits.

In California, the State Water Resources Control Board (SWRCB) adopted a statewide General Storm Water Permit for Industrial Activities. The permit is reissued every 5 years. The last reissuance was in 1997 when the SWRCB adopted Order 97-03-DWQ. Ten categories of industrial activity are required to obtain permit coverage. Industrial plants and facilities obtain permit coverage based on whether or not

their Standard Industrial Classification (SIC) code is included in those categories. A general description of the categories includes:

1. Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR Subchapter N);
2. Manufacturing facilities;
3. Mining/oil and gas facilities;
4. Hazardous waste treatment, storage, or disposal facilities;
5. Landfills, land application sites, and open dumps that receive industrial waste;
6. Recycling facilities such as metal scrap yards, battery reclaimers, salvage yards, automobile yards;
7. Steam electric generating facilities;
8. Transportation facilities that conduct any type of vehicle maintenance such as fueling, cleaning, repairing, etc.;
9. Sewage treatment plants;
10. Certain facilities (often referred to as "light industry") where industrial materials, equipment, or activities are exposed to storm water.

All permit holders are required to implement BMPs to prevent the discharge of polluted storm water off site. The site specific plan to implement BMPs is called the SWPPP. Permit holders are required to sample their storm water runoff during a minimum of two storm events each rainy season. Samples are analyzed for pH, Total Suspended Solids, Specific Conductance, and Oil &Grease or Total Organic Compounds. Table D of the permit lists other parameters that must be tested for based on the SIC code of the facility. Visual Observations are required throughout the rainy season. The monitoring and sampling results are recorded on an annual report, which is submitted to our office on July 1 of each year.

To obtain authorization for continued and future storm water discharge under this General Permit, each facility operator must submit a Notice of Intent (NOI). The General Permit requires facility operatoes to:

1. Eliminate unauthorized non-storm water discharges;
2. Develop and implement the SWPPP; and
3. Perform monitoring of storm water discharges and authorized non-storm water discharges.

The SWPPP will be developed to comply with the requirements set forth in SWRCB Water Quality Order 97-03-DWQ, which pertain to NPDES General Permit No. CAS000001. The SWPPP has two major objectives:

1. To help identify the sources of pollution that affect the quality of industrial storm water discharges and authorized non-storm water discharges, and
2. To describe and ensure the implementation of BMPs to reduce or prevent pollutants in industrial storm water discharges and authorized non-storm water discharges.

Source: http://www.waterboards.ca.gov/rwqcb3/water_issues/programs/stormwater/industrial.shtml

http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/induspmt.pdf

### 3.6.8 Reclamation Plan

A Reclamation Plan (EIR Appendix 2) has been prepared to assure that mined lands are reclaimed to a natural condition and that adverse environmental effects are prevented or minimized. The proposed mining operation was designed to avoid or minimize any potentially significant adverse environmental impacts, and to return the site to a usable condition which is readily adaptable to alternative land uses.

Upon completion of the mining operation, stockpiled material, equipment, structures, and facilities will be dismantled and removed from the site. The ground surface under and around these structures and facilities will be uniformly graded and seeded in accordance with the approved Revegetation Plan, which is described in Section 5.2.4 of the Reclamation Plan (EIR Appendix 2).

The following is a summary of the Reclamation Plan (EIR Appendix 2), including the stated end use, topsoil salvage, the revegetation plan including design overview, phased/concurrent reclamation, final reclamation, and erosion control for the Project. The Final Reclamation Plan is illustrated below in EIR Figure 14 – Final Reclamation – North Pit and EIR Figure 15 – Final Reclamation – South Pit.

#### 3.6.8.1 End Use

It is estimated that the mine site would be in operation for up to 47 years. Lebata proposes to reclaim disturbed lands to an end use of open space/groundwater recharge and/or stormwater retention basins. When completed, mining activities would result in depressions of approximately 80 feet, as illustrated in EIR Figure 14 – Final Reclamation – North Pit and EIR Figure 15 – Final Reclamation – South Pit.

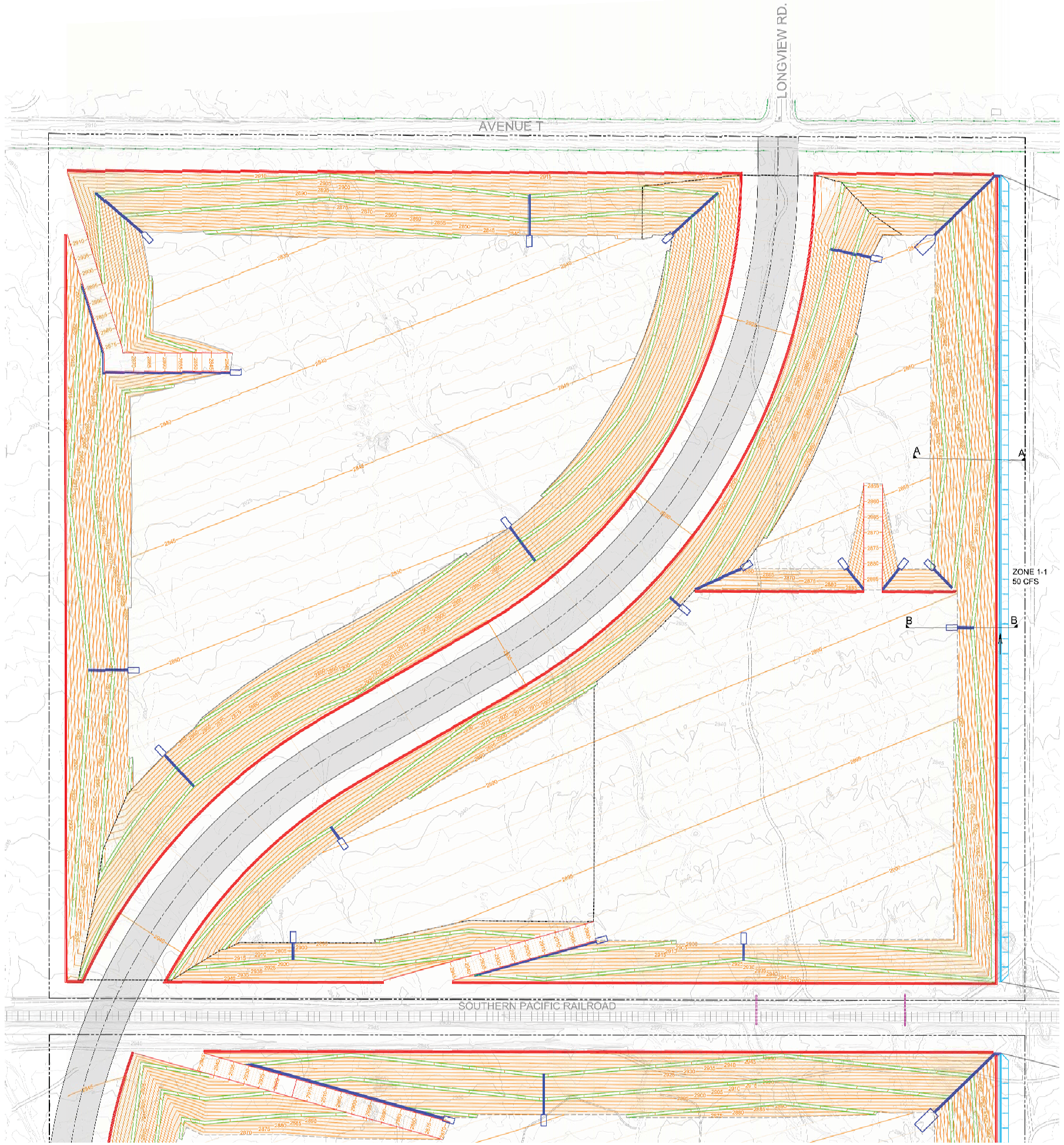
However, it is likely that wash fines and a good portion of the processed sand will not be sold, resulting in their placement back into the excavated area. A portion of this material will be blended with the other material needed to reconstruct the road prism underlying the Longview Road Extension to DPW standards if not abandoned by the County.

#### 3.6.8.2 Reclamation Standards

Reclamation activities must comply with 14 CCR §3700-3713 Reclamation Standards. Refer to EIR Appendix 2 – Reclamation Plan which provides the details regarding the performance standards listed below. Although EIR sub-chapter 3.6.8.3 summarizes how many of the performance standards would be achieved, more detail is provided in the various sub-chapters of EIR chapter 4.0.

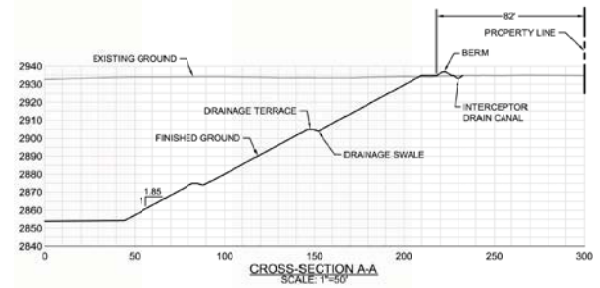
#### 3.6.8.3 Revegetation Plan

The objectives of the Revegetation Plan are to salvage a portion of the Joshua trees, provide immediate erosion control following phased mining completion, and increase habitat value by reintroducing native species to the mine site. Plant density varies over the Project site and creosote shrubs are abundant. Overall plant cover is approximately 40 to 50 percent.

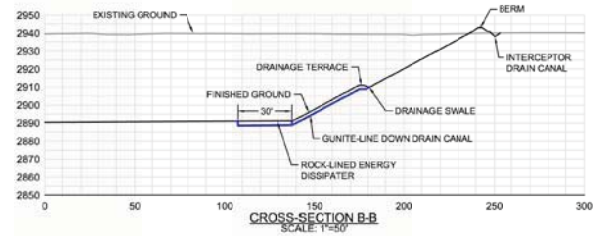



**LEGEND**

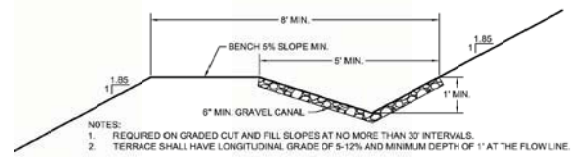
- PROFERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROFOSED ROAD (1500-FOOT TURNING RADILS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

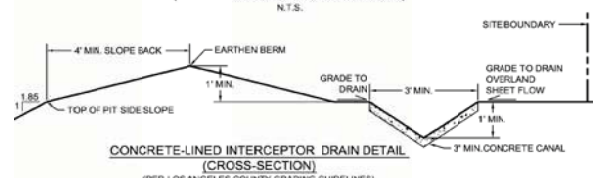



CROSS-SECTION B-B
SCALE: 1"=50'

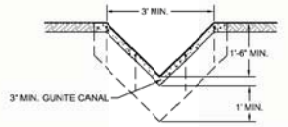



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

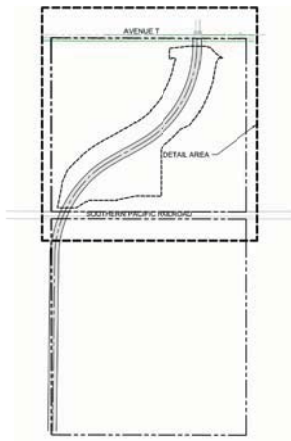



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. AND/OR DOWEL TO BE TIED TO LINGITUDINAL 6" WILDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

PROJECT (RADIUS = 1500 FT)
FINAL RECLAMATION - NORTH PIT

Engineering Fill Volume: 3,156,000 CY | Date: December 5, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

JN: 2192
Scale: 1" = 100'
1 - Inch

SHEET
6

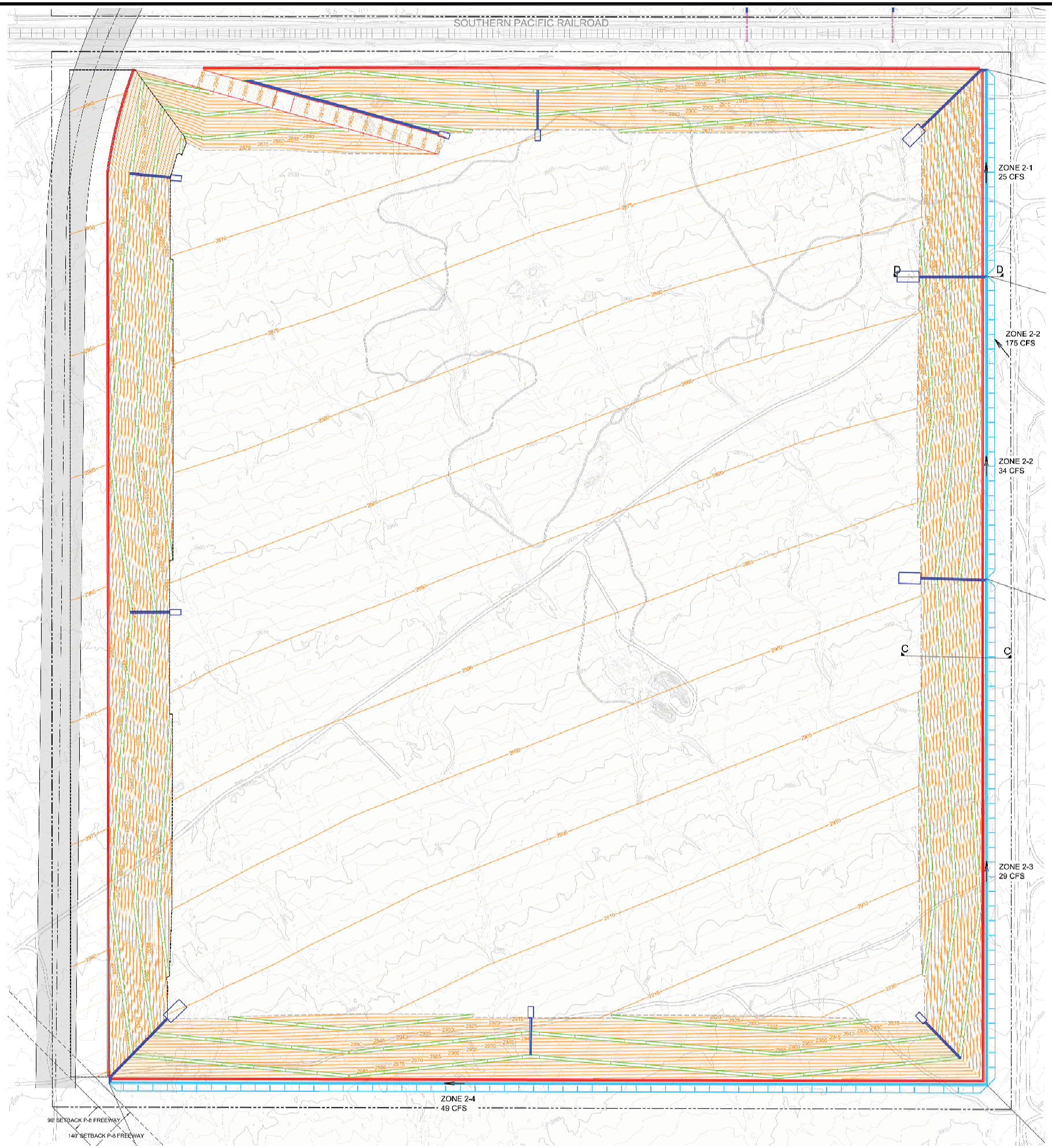
Source: West Coast Environmental, 12-30-2008

Final Reclamation
North Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE
14

Scale: As Shown | Date: 3-13-2012

MCG100 Confidential/Drafting 2008/figs 1-61 submittal 12-31-08.dwg




**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
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- GUNITE-LINED DOWN DRAIN CANAL
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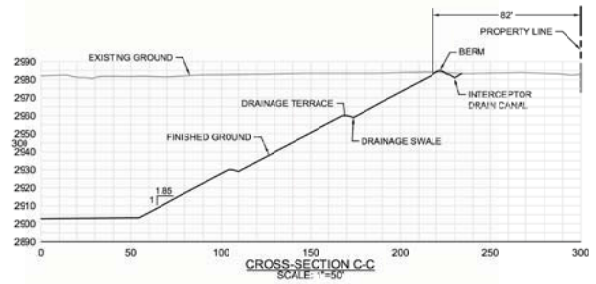
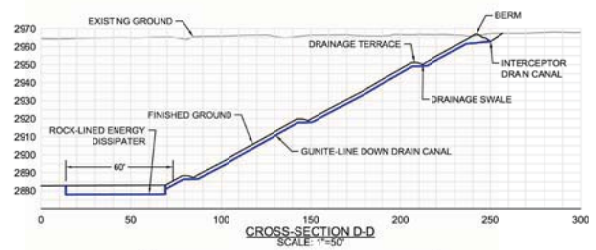
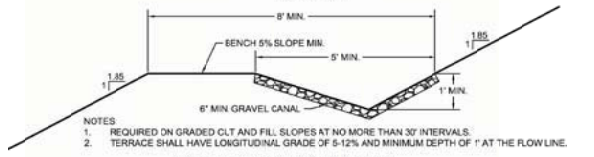



CROSS-SECTION C-C
SCALE: 1"=50'

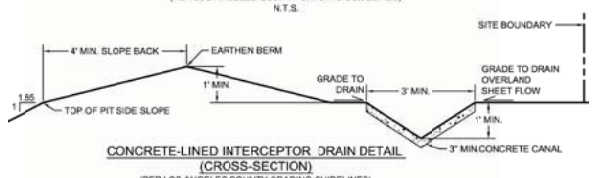



CROSS-SECTION D-D
SCALE: 1"=50'

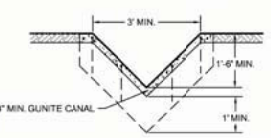



NOTES
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

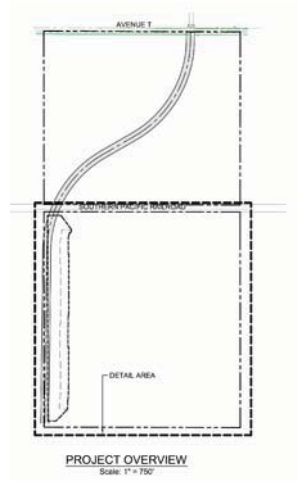



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

N
W E
S

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

PROJECT (RADIUS = 1500 FT)
FINAL RECLAMATION - SOUTH PIT

Engineering Fill Volume: 850,000 CY | Date: December 5, 2008

JN: 2192
Scale: 1" = 100'
1 - Inch

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

SHEET 7

STETSON ENGINEERS INC.

Source: West Coast Environmental, 12-30-2008

Final Reclamation
South Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE 15

Scale: As Shown | Date: 3-13-2012

MCG100 Confidential/Drafting 2008/figs 1-61 submittal 12-31-08.dwg

#### 3.6.8.4.1 *Joshua Tree Salvage*

Where Joshua trees are present, there are approximately three to five trees per acre, with an estimated total population of 200. Joshua trees have been successfully transplanted for more than 30 years in the area. Small, young trees with a less developed root system respond better to relocation. Because of their higher success rate, unbranched specimens greater than three feet and less than ten feet in height would be relocated. Removal and relocation of trees would be timed to coincide with winter or early spring rains.

Prior to soil salvage and vegetation removal of Mining Phase 1, Joshua trees between three and ten feet in height would be marked and thoroughly watered. The added moisture would cause sandy soil and other soil particles to cling to roots. Trees would be removed, transported and replanted by a qualified landscape contractor with experience in relocating this particular species. Trees would be removed with a "tree spade" capable of removing approximately 40 to 60 inches of soil and root material or by other suitable equipment.

Joshua trees do not grow well on sloped terrain, which are the main areas available for revegetation at the Project site. Joshua trees would be transplanted and maintained within the more level setback areas around the Project perimeter (refer to EIR Figure 14 and EIR Figure 15). The Joshua trees transplated from Mining Phase 1 would be monitored to determine transplant success rates and to provide the information needed to revise the transplanting process, if needed.

#### 3.6.8.4.2 *Vegetation Removal*

Prior to excavation, but no more than one year prior to surface mining activities, existing vegetation would be removed following Joshua tree removal and relocation. Crushed vegetation would be stored, and later placed on top of the salvaged topsoil. The material would act as mulch and protect the stockpiles from wind and water erosion. In time, material would decompose and add to the soil's organic matter.

#### 3.6.8.4.3 *Topsoil Salvage and Storage*

Topsoil salvage, maintenance and redistribution would be accomplished based on required performance standards stated in § 3711 of SMARA. Topsoil and subsoil removal would not precede mining activities by more than one year. If additional planting material is needed for revegetation, fines produced by the mining operation would be mixed with subsoil and covered by a layer of topsoil. Topsoil is best collected in the dry season. Topsoil, which varies in thickness and occurrence, and crushed vegetation would be stripped prior to mining and stored within the identified Topsoil Storage Area. Salvaged topsoil contains the beneficial microorganisms, soil animals, seeds of native plants and physical components that contribute to soil heterogeneity and successful revegetation. Trash and objectionable material would be removed prior to topsoil excavation.

Topsoil and subsoil salvaged during Mining Phase 1 would be stockpiled and used during the reclamation of that Mining Phase. Topsoil and subsoil salvaged during subsequent mining phases would be similarly stockpiled and used for reclamation. Refer to EIR Appendix 2 – Reclamation Plan, sub-chapter 5.2.4 for a more complete description.

#### 3.6.8.4.4 *Seed Collection*

Seeds would be collected by a revegetation specialist at the site at least one year prior to any disturbance and during the mine operation. In desert environments, adequate seed-set may happen only after rainy years, which happens on average once every ten years. Timing of seed collection is critical. Seed would be collected when it is ripe and before it falls from the plant. Once harvested, seed would be dried, cleaned and stored by seed collection specialists. If seed collection fails to collect the necessary seed, supplemental seeds would be purchased from a reputable native plant nursery, if necessary.

#### 3.6.8.4.5 *Baseline Surveys*

Prior to the initiation of mining activities, baseline surveys will be carried out to determine the vegetative density, cover and diversity of the naturally occurring habitat. The baseline surveys will be conducted, using valid sampling techniques to develop the quantitative performance standards required under § 3705(m) of SMARA.

**Method -** Data collected will generally include at least 12 samples, using Line Intercept (or Point-Line Intercepts), to obtain an 80 percent confidence level. The following data will be collected, which will serve to establish the "Shrubs and Forbs baseline" referenced in the Revegetation Performance Criteria (EIR Table 9):

- Relative cover by native species (of total transect length)
- Total vegetative cover (all native species combined, of total transect length)
- Total cover of exotic and/or noxious weed cover
- Plant species density within a 2-meter belt, centered along transect
- Species richness (which for the purposes of SMARA compliance is considered diversity)
- Estimated average height of trees and shrubs
- Evidence of biological activity (for example, ant mounds, rodent disturbance, fecal pellets)
- Evidence of erosion

*Photographic Documentation*

At each revegetation site, multiple permanent photo locations will be identified and recorded using GPS. Photo locations will be shown on maps of the monitoring sites and permanently marked in the field. Whenever feasible, a meter stick or range pole will be used as a scale to illustrate the relative size of plants in photographs.

#### 3.6.8.4.6 *Revegetation Test Plot*

A Revegetation Test Plot program would be established to determine the effectiveness of the proposed seeding methods and species composition, seeding rates and irrigation application rates, if any. The test plots will be used to determine the necessary germination rate of the proposed seed palette, the ultimate vegetative cover of native plants and weeds that may emerge. Refer to EIR Appendix 2 – Reclamation Plan, sub-chapter 5.2.4 for a more complete description.

EIR Table 8 shows the preliminary seed mix that would be used. This mixture would be hydroseeded or broadcast by hand over the test plots. If alterations are needed, additional testing would be

undertaken. Results of the test plots would be matched against baseline information gathered from a representative, undisturbed area.

**Table 8 Preliminary Seed Mix for Test Plot**

| SPECIES NAME | COMMON NAME | LBS/ACRE | PURITY GERMINATION |
|---|---|---|---|
| **Shrubs and Sub-Shrubs** | | | |
| *Ambrosia dumosa* | Burro-weed | 2 | 80/50 |
| *Atriplex canescens* | Four-winged saltbush | 2 | 90/40 |
| *Atriplex spinifera* | Mojave saltbrush | 3 | 95/20 |
| *Bebbia juncea* | Sweetbrush | 1 | 20/10 |
| *Brickellia californica* | Brickelbush | 1 | 10/20 |
| *Croton californicus var. mohavensis* | Mojave Croton | 1 | 90/30 |
| *Encelia farinosa* | Brittlebush | 3 | 40/60 |
| *Ephedra nevadensis* | Mormon tea | 3 | 90/50 |
| *Ericameria pinifolia* | Goldenbush | 2 | 10/30 |
| *Eriogonum fasciculatum* | California buckwheat | 4 | 50/10 |
| *Hymenoclea salsola* | Cheesebush | 3 | 95/60 |
| *Larrea tridentata* | Creosote bush | 4 | 70/40 |
| *Yucca brevifolia* | Joshua tree | 2 | 90/70 |
| **Grasses and Herbs** | | | |
| *Acnatherum hymenoides* | Indian ricegrass | 4 | 95/80 |
| *Amsickia menziesii* | Rancher's fireweed | 1 | 40/50 |
| *Aristida purpurea* | Purple three-awn | 3 | 90/50 |
| *Festuca octoflora* | Six-week fescue | 2 | 90/50 |
| *Lotus strigosus* | Stiff-haired lotus | 2 | 90/70 |
| *Lupinus arizonicus* | Arizona lupine | 3 | 95/70 |
| *Plantago ovata* | Desert plantain | 10 | 95/85 |
| *Pleuraphis rigida* | Big galleta | 2 | 30/50 |
| *Sphaeralcea ambigua* | Desert mallow | 1 | 95/75 |
| *Sporobolus airoides* | Alkali sakaton | 2 | 95/80 |
| **Total lbs per acres** | | **61** | |
| For hydroseeding, the following materials would be added to the hydroseed slurry:<br>• 500 lbs per acre of cellulose wood fiber; and<br>• 160 lbs per acre of organic soil stabilizer | | | |

Density, cover and diversity of the representative site would be measured. If necessary, monitoring criteria of the seeding prescription would be altered to conform to the naturally occurring species composition and distribution.

Test Plots for the seed mix would be monitored for at least five years. Results of the Test Plots would be matched against the baseline conditions gathered prior to the initiation of mining activities from a representative, adjacent, undisturbed area. If necessary, the seed palette and/or planting procedures would be adjusted to be similar to the adjacent naturally occurring species composition and distribution. Results would be memorialized and used at the time of reclamation. Test plots would be subject to the same performance standards and monitoring criteria presented in the Reclamation Plan.

Refer to EIR Appendix 2 – Reclamation Plan, sub-chapter 5.2.4 for a more complete description of planting procedures.

Success of Joshua trees transplants will also be evaluated. If proven successful, trees will continue to be transplanted within the setback areas surrounding the Project perimeter. If success cannot be achieved, the trees will be salvager and either donated or sold to public agencies, i.e., to the City of Palmdale, Saddleback Buttes State Park, other governmental entities, or land owners who must comply with the City of Palmdale Joshua Tree and Native Desert Vegetation Preservation Ordinance.

#### 3.6.8.4.7 *Phased / Concurrent Reclamation*

Mining would take place in three major phases described in EIR sub-chapter 3.6.1.3. Reclamation of Mining Phase 1 would start with the north and east slopes of Mining Phase 1, as soon as the slopes are finished and the down-drains have been installed. The south and west slopes and pit bottoms would be revegetated within two years after secession of mining, followed by the revegetation of the north slope.

Reclamation of Mining Phase 2 would start in the northern-most area and would entail revegetation of the north, east and west slopes. As excavations are completed, the side slopes would be revegetated. At this time, the south, east and west slopes would be replanted.

Reclamation of Mining Phase 3a would proceed in the same manner as described for Mining Phases 1 and 2 above. Mining Phase 3b is comprised of the final mining phase, if the Applicant chooses to remove aggregate material from under the Raw Cement and Aggregate Transfer and Distribution Facility.

The proposed planting plan would be followed, unless Test Plots indicate that the original seed mix should be altered to achieve the objectives of the Revegetation Plan. It is estimated that it would take approximately two years to reclaim each slope and to complete the full Reclamation Plan after all mining has ceased.

Joshua trees removed from Mining Phase 1 would be planted at the Test Plot areas, both on flat and on sloped land, at a density similar to that growing naturally.

#### 3.6.8.4.8 *Final Reclamation*

Stockpiles, mining equipment and accessory structures would be removed at the conclusion of mining activities. Where the surface mining activities resulted in compaction of soil, ripping, disking or other means would be used in areas that would be revegetated to eliminate compaction and to establish a suitable root zone in preparation of planting and to increase infiltration of precipitation.

Prior to reclamation, all access roads, haul roads and other traffic routes would be stripped of any remaining road base, ripped and covered with topsoil and subsoil and revegetated. The access roads shown on the Reclamation Plan Map and constructed as part of the mining operation would remain at the site during the reclamation and monitoring process.

#### 3.6.8.4.9 *Soil Testing and Respreading*

Respread soil would be tested for nutrient components prior to seeding and planting. Site samples would be compared to soil test results taken from adjacent, undisturbed areas. Respread soils would be augmented if growth inhibiting deficiencies of essential elements are noted

The slopes would be track-walked with a dozer, perpendicular to the slope. This would bind the re-applied topsoil to the subsoil.

Following the completion of each mining phase, salvaged soils would be respread onto mined slopes. All native vegetation established on the soil stockpiles can be spread with the soil. The broken branches of plants growing on the stockpiles would act as mulch after soil respreading, and would provide partial shade to emerging seedlings. In addition, viable seed would be transported in the seed bank and additional ripe seed may be carried along with the vegetation.

The depth of respread top- and subsoils would be no less than 4 inches. Subsoil, mixed with no more than 5 percent of the fines, if necessary to obtain required depth, would be respread over the slopes and pit bottom. Topsoil would be spread as a final dressing. Site samples would be compared to soil test results from adjacent, undisturbed areas. Respread soils would be augmented if growth-inhibiting deficiencies in essential elements are noted.

#### 3.6.8.4.10 *Erosion Control*

Erosion control is often necessary during the establishment phase, since vegetative cover is usually not adequate to prevent erosion. Angular gravel, ranging in size from 0.2 to 0.6 inches would be spread on the exposed fines at a rate that would provide not less than 50 percent and not more than 80 percent coverage.

### 3.6.8.5 Reclamation Maintenance and Monitoring

#### 3.6.8.5.1 *Maintenance*

Reclamation Plan (EIR Appendix 2) describes the maintenance activities developed to meet the performance standards set for the revegetation program. Maintenance of revegetation areas would include the following:

- Maintenance Staff Training

- Weed Control
- Methods of Weed Removal
- Herbicide Treatment Guidelines
- Replacement of Dead or Diseased Plant Materials

#### 3.6.8.5.2 *Monitoring Plan and Performance Standards*

Monitoring is designed to evaluate the success of the seeding and planting procedures and subsequent native plant growth over time and to implement contingency measures in the event the specified performance criteria are not achieved. Pursuant to § 2773(a) of SMARA, the success of reclamation will be monitored annually until performance criteria have been met. Remedial measures will be implemented as necessary to achieve the performance criteria presented in EIR Table 9.

### 3.6.8.6 Security and Public Safety

The reclamation slopes would be seeded to stabilize the soil, minimize erosion and slope failure and to alleviate any potentially dangerous conditions. Access to the slopes would not be permitted except to enter the reclamation area. Six-foot high cyclone fencing around the reclamation area would remain for the duration of the monitoring period, until the reclamation is deemed complete.

### 3.6.8.7 Future Mining

The excavation of sand and gravel at the Project site to the proposed mining depth would preclude the availability of additional materials at that location. It does not affect the availability of aggregate in the surrounding areas, which were also designated as having significant mineral resources.

### 3.6.8.8 Financial Assurance Cost Estimate

In accordance with the Surface Mining and Reclamation Act of 1975 (SMARA), as amended, and Public Resources Code Section 2710 et. seq.., surface mining operators are required to obtain a lead agency approved FACE for reclamation. Based on the estimate, operators must then obtain a financial assurance mechanism to prevent the public from bearing the cost of reclaiming abandoned surface mining operations should mining operators be unable to fulfill their obligations. In the event of such abandonment or financial inability, the funds provided by the financial assurance mechanism may be used by the lead agency or the Department of Conservation to reclaim the mined site in compliance with the approved Reclamation Plan. The FACE prepared specifically for the Project is provided as Attachment D of EIR Appendix 2 (Reclamation Plan). Once a project becomes operational, the FACE is recalculated on an annual basis to reflect the activities that have taken place, and those forecast to take place, including any reclamation that may have occurred.

**Table 9 Revegetation Performance Criteria**

| | |
|---|---|
| **Shrub and Forbs** | |
| Goal | Reestablish native vegetation exhibiting cover, density and species richness comparable to that of the undisturbed condition. |
| Performance Criteria | Overall cover: 60 percent of baseline<br>Density: 80 percent of baseline<br>Species Richness: 80 percent of baseline<br>(Refer to EIR sub-chapter 3.6.8.4.5, which describes the baseline surveys to be completed in advance of land disturbing activities to fully identify percent cover, density and species richness.) |
| Contingency Action | Hand weed if weeds interfere with native plant establishment and reseed if density and/or diversity of native plants are low. |
| **Joshua trees** | |
| Goal | Reestablish over the entire Project site at a density 50 percent of the undisturbed condition. (Where Joshua trees are present, there are 3 to 5 trees per acre, with an estimated total population of 200.) |
| Performance Criteria | Density of two (2) trees per acre, where planted. Density will be increased on available level terrain if tree reestablishment on slopes cannot be achieved at a density of two (2) trees per acre. |
| Contingency Action | Alter transplanting technique or increase number of relocated trees. |
| **Erosion** | |
| Goal | Erosion does not interfere with native plant establishment.<br>Loss of topsoil from wind erosion is minimal. |
| Performance Criteria | Erosion control measures employed onsite are designed to capture and accommodate the Capital Flood flows described in the Drainage Concept (EIR Appendix 3), which are considerably greater than the those of a 20-year, 1-hour intensity storm event. Evaluation of the effectiveness of erosion control measures and a check on slope stability will be conducted and recorded yearly as part of the SMARA annual inspection. |
| Contingency Action | Backfilling activities, if needed, will be in accordance with the Drainage Concept. |
| **Resistance to Invasion by Non-Natives** | |
| Goal | Less than 25 percent of any 20 square foot area |
| Performance Criteria | Weeds present in the revegetation areas will be removed if more than 25 percent of any 20 square foot area is occupied by weeds greater than six inches in height. |
| Contingency Action | Remove manually or mechanically. No herbicide treatment will be permitted without specific, written authorization from the Project Biologist/Revegetation Specialist. |

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# 4.0 ENVIRONMENTAL IMPACT ANALYSIS

## 4.1 INTRODUCTION

This chapter of the EIR contains an evaluation of environmental impacts of the Project. The Los Angeles Department of Regional Planning prepared an Initial Study, dated October 4, 2007, in which ten (10) issue topics were identified for study in this EIR. On December 12, 2007, a Notice of Preparation (NOP) of an EIR was submitted to the State Clearinghouse for circulation to Responsible and Trustee Agencies. The NOP was also mailed to Local, County, State and federal agencies, local libraries, surrounding property owners, newspapers, and to individuals and organizations who had expressed an interest in the Project. The Initial Study, NOP, NOP mailing list, and written comments on the NOP, and the revised format Initial Study Checklist are contained in EIR Appendix 1. The following topics are analyzed in detail in this EIR in the following sub-chapters:

4.2 Land Use Consistency and Compatibility (not identified for study in the Initial Study)

4.3 Geotechnical Hazards

4.4 Flood Hazards

4.5 Noise

4.6 Water Quality

4.7 Air Quality, Health Risks and Climate Change

4.8 Biological Resources – Sensitive Species Habitat/Loss of Habitat

4.9 Visual Quality

4.10 Traffic and Circulation

4.11 Hazards and Hazardous Materials

4.12 Water Supply/Quantity

Although not identified as having a potentially significant impact, a discussion of Land Use Consistency and Compatibility (EIR sub-chapter 4.2) precedes the others listed above and is intended to provide the proper context within which the Project is being evaluated.

With the exception of the Land Use Consistency and Compatibility sub-chapter, each sub-chapter describes the threshold criteria used to evaluate potentially significant effects of the Project, the Mitigation Measures needed to reduce or eliminate impacts found to be significant, and a description of the level of impact significance after Mitigation Measures have been implemented.

For those areas of potentially significant impacts, the sub-chapters of this EIR employ the following format:

- Topic Title and Introduction
- Regulatory Setting
- Environmental Setting

- Threshold Criteria
- Impact Analysis
- Mitigation Measures
- Level of Significance after Mitigation
- Cumulative Impacts

The following nomenclature is used to describe various levels of impact within this EIR:

- **Significant Impacts** – Significant environmental impacts that cannot be mitigated to a less than significant level. Pursuant to Section 15092(b) of the CEQA Guidelines, the County must issue a Statement of Overriding Considerations for these impacts prior to approving the Project. Mitigation Measures designed to minimize these impacts are described.
- **Significant, but Mitigable to Less than Significant Impacts** – Significant environmental impacts that can be mitigated to a less than significant level with the implementation of the Mitigation Measures identified in this EIR. Prior to approving the Project, the County must make specific "findings" pursuant to Section 15091(a) of CEQA Guidelines.
- **Less than Significant Impacts** – Environmental impacts that are potentially adverse, but are less than significant.

Distinction is made throughout this EIR between the "production" and "sales" of aggregate materials and other products. Production speaks to the onsite rate of mining, processing and manufacturing activities. Sales speak to the delivery of products offsite. This distinction is necessary because some impacts need to be evaluated in terms of their onsite levels (e.g., air emissions, noise, others), while other impacts need to be evaluated in terms of their offsite impacts (e.g., truck traffic and Levels of Service).

## 4.2 LAND USE CONSISTENCY AND COMPATIBILITY

### 4.2.1 Introduction

This sub-chapter of the EIR presents the provides a discussion of some of the aspects of land use, focusing primarily on matters of land use consistency and compatibility. The discussion begins first with an explanation of mineral classification and designation.

### 4.2.2 Regulatory Setting

The Project is subject to a variety of land use regulatory requirements and designations. These requirements and designations are described in the following:

- *Open File Report 94-14: Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California, Part II – Los Angeles County. Miller, R.V., 1994*
- California Surface Mining and Reclamation Act of 1975 (SMARA), as amended (Public Resources Code Section 2719 et. seq.)
- County of Los Angeles Planning and Zoning Code, Chapter 22.56 Part 9.
- *County of Los Angeles General Plan*, as adopted November 25, 1980, as subsequently amended
- *Antelope Valley Areawide General Plan*, Country of Los Angeles Department of Regional Planning, December 4, 1986
- Los Angeles County, Department of Regional Planning, *lnterpretation of Antelope Valley Area Plan Provisions Regarding Non-Residential Uses in Non-Urban Areas*, signed by Bruce W. McClendon, Director of Planning, September 11, 2007

### 4.2.3 Mineral Classification and Designation

As noted in *Aggregate Sustainability in California*, SMARA requires the:

> *…State Geologist to classify land based on the known or inferred mineral resource potential of that land. SMARA, its regulations and guidelines, are described in Special Publication 51 (Division of Mines and Geology, 2000).*
>
> *The Mineral Land Classification process identifies lands that contain economically significant mineral deposits. The primary goal of mineral land classification is to ensure that the mineral resource potential of lands is recognized and considered in land-use planning. The classification process includes an assessment of the quantity, quality, and extent of aggregate deposits in a study area.*
>
> *Mineral land classification reports may be specific to aggregate resources, may contain information about both aggregate and other mineral resources, or they may only contain information on minerals other than aggregate. Reports that focus on aggregate include aggregate resource classification and mapping, estimates of permitted and non-permitted aggregate resources, projected 50-year demand for aggregate resources, and an estimate of*

*when the permitted reserves will be depleted. Map Sheet 52 is a statewide updated summary of 50-year demands and permitted resource calculations for all SMARA classification reports pertaining to construction aggregate.*

*Mineral land classification studies for aggregate may use either a Production-Consumption (P-C) region or a County as the study area boundary. A P-C region is one or more aggregate production districts (a group of producing aggregate mines) and the market area they serve. P-C Regions sometimes cross county boundaries. Mineral land classification reports include information from one or more P-C regions, or from a county. For ease in discussion, the area covered by each P-C region or county aggregate study is referred to as an "aggregate study area". These areas are shown at the lower left-hand corner of the map along with their respective report number and publication date. It should be noted that a report may include more than one aggregate study area.*

In implementing the requirements of SMARA, the State Geologist classified lands into MRZs, and where appropriate, the SMGB designate mineral resources of regional or statewide significance. This classification-designation process provides Lead Agencies with useful information regarding the location, need, and importance of mineral resources within their respective jurisdictions.

The calculated 50-year demand for aggregate resources and discussion of permitted resources are discussed below in EIR sub-chapter 4.2.8.

Classification of mineral lands by the State Geologist is based solely on the geological factors and does not consider land uses. The four types of MRZ classifications issued include:

- **MRZ-1**: Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
- **MRZ-2**: Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- **MRZ-3**: Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4**: Areas where available information is inadequate for assignment to any other MRZ zone.

The SMGB is responsible for designating mineral resources of regional or statewide significance. Designation differs from classification in that the area's land use is also considered to assess significance. Areas to be considered for such designation contain one or more deposits believed to be of statewide or regional significance. Classification of a mineral deposit as MRZ-2 by the State Geologist constitutes adequate evidence that an area contains significant mineral deposits.

**Determination:** The Project site is located in an area identified by the State of California and the Los Angeles County General Plan as MRZ-2. This site is also designated by the State as having aggregate deposits of regional significance.

### 4.2.4 Requirements of SMARA

As growth and development has occurred in California, the demand for aggregate resources has increased, often in locations rich in aggregate resources, which have been developed by uses incompatible with mining activities. As SMGB classification reports and designation information were transmitted to the appropriate Lead Agencies, each was required under SMARA Section 2762(a) to:

> *…establish mineral resource management policies to be incorporated in its general plan which will:*
>
> *(1) Recognize mineral information classified by the State Geologist and transmitted by the board.*
>
> *(2) Assist in the management of land use which affect areas of statewide and regional significance.*
>
> *(3) Emphasize the conservation and development of identified mineral deposits.*

As required, these mineral resource management policies were submitted to the SMGB for review and comment prior to adoption, as are any subsequent amendments.

The SMGB has developed land use categories to guide local governments in establishing land uses on or adjacent to lands that have been designated as Regionally Significant or of Statewide Significance. The Project would be located within Aggregate Resources Sectors E-3 and E-4, both of which have been designated as Regionally Significant and of Statewide Significance (EIR Figure 16 – Mineral Resource Designation). Because the Project site falls within an area designated by the SMGB as being of regional significance, and designated in the Los Angeles County General Plan as having important minerals to be protected, SMARA Sections 2763(a) and (b) provide protective status to the underlying mineral resources by requiring that:

> *"…prior to permitting a use which would threaten the potential to extract minerals in that area, the lead agency shall prepare a statement specifying its reasons for permitting the proposed use, in accordance with the requirements set forth in subdivision (d) of Section 2762."*

The intent of this provision is to ensure the SMGB is kept apprised of land use development pressures that may result in a reduction of the mineral resources of the State.

With regard to mineral resource management policies, Section 3675 of the SMGB Reclamation Regulations provides the following definitions:

- **Incompatible Land Use** – Land uses inherently incompatible with mining and/or that require public or private investment in structures, land improvements, and landscaping and that may prevent mining because of the greater economic value of the land and its improvements. Examples of such uses may include, but shall not be limited to, high density residential, low density residential with high unit value, public facilities, geographically limited but impact intensive industrial, and commercial.

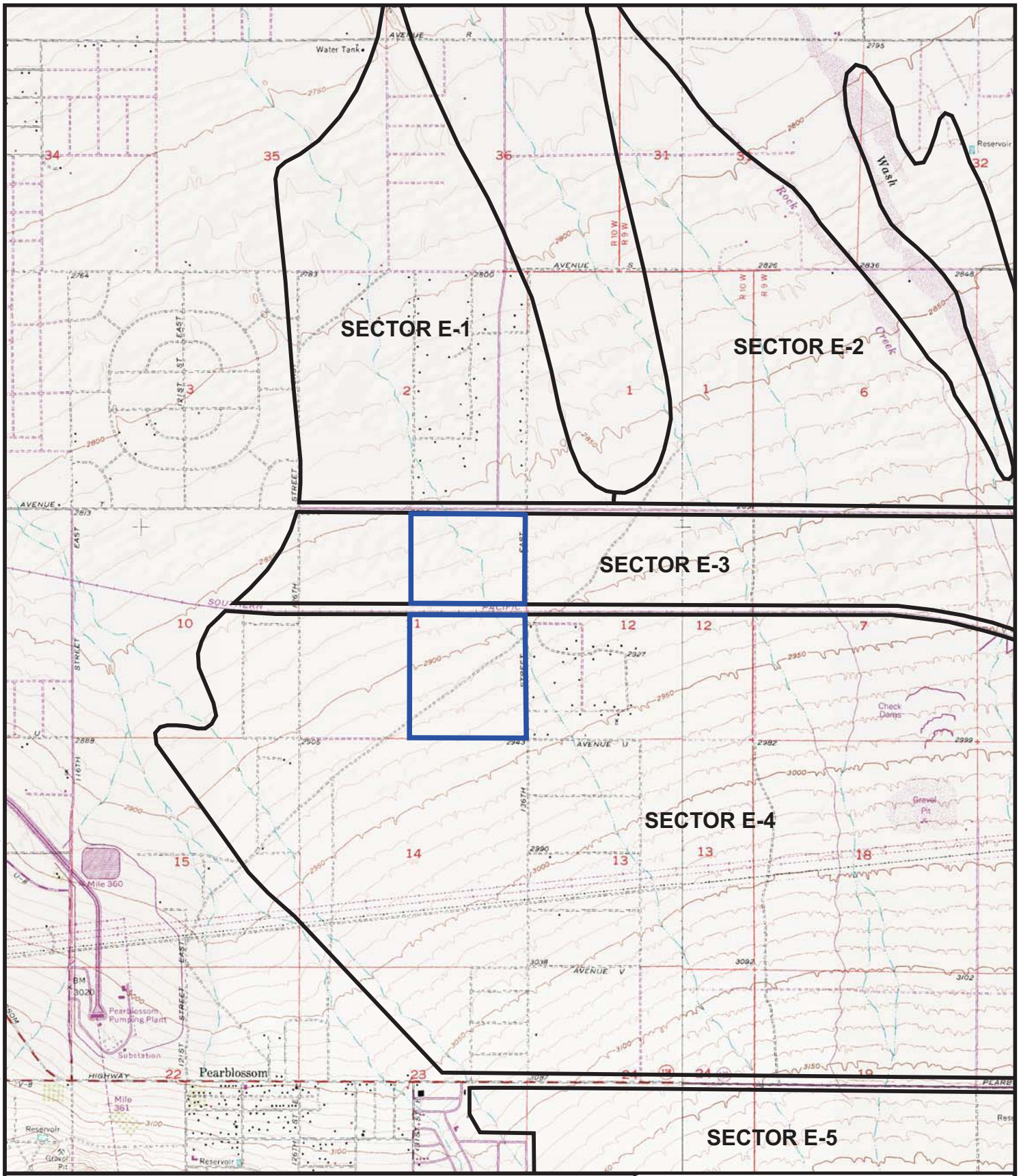
- **Compatible Land Use** – Land uses inherently compatible with mining and/or that require a minimum public or private investment in structures, land improvements, and which may allow mining because of the relative economic value of the land and its improvements. Examples of such uses may include, but shall not be limited to, very low density residential, geographically extensive but low impact industrial, recreational, agricultural, silvicultural, grazing, and open space.

To implement adopted mineral resource management policies, Section 3676 of the SMGB Reclamation Regulations describes the following implementation procedures:

- Reference in the General Plan of the location of identified mineral deposits and a discussion of areas targeted for conservation and possible future excavation by the Lead Agency, and
- Use of overlay maps or inclusion of information on appropriate planning maps that clearly identify mineral deposits and those areas targeted by the Lead Agency for conservation and possible future extraction.

Implementation is also to include at least one of the following:

- Use of special-purpose overlay zones, mineral resource/open space zoning, or any other appropriate zoning that identifies the presence of identified mineral deposits and restricts the encroachment of incompatible land uses in those areas that are to be conserved;
- Record, on property titles in the affected mineral resource areas, a notice identifying the presence of identified mineral deposits; and/or
- Impose conditions upon incompatible land uses in and surrounding areas containing identified mineral deposits for the purpose of mitigating the significant land use conflicts prior to approving a use that would otherwise be incompatible with mineral extraction.




Source: USGS 7.5 Minute Topographic Quadrangle
Littlerock & Lovejoy Buttes, California 1957
Photorevised 1992
(C)2002 DeLorme, XMap(R) 3.5

SMARA Designation Report No. 6, Jan. 1987

Legend:

Sector Boundary

Project Boundary

N

0 2000' 4000'

10' Contour Interval
National Geodetic Vertical Datum 1929

Source: West Coast Environmental, 11-20-2008

Mineral Resource Designation
Aggregate Resource Sectors
Palmdale P-C Region
Big Rock Creek Site
Antelope Valley, California

FIGURE 16

Scale: As Shown

Date: 3-13-2012

MCG100-Conf:\Drafting 2008\EIR NOV 20 2008\Mineral Resource Designation

### 4.2.5 County of Los Angeles Zoning

As noted in EIR Table 3 in EIR sub-chapter 3.2, the parcels underlying the Project have been zoned "A-2-5" (Heavy Agriculture, 5-acre minimum) and "A-2-1" (Heavy Agriculture, 1-acre minimum) by the County of Los Angeles. County of Los Angeles Planning and Zoning Code, Chapter 22.24.150 (Agricultural Zones - Uses subject to permits) notes the following:

> *Property in Zone A-2 may be used for:*
>
> *A. The following uses, provided a conditional use permit has first been obtained as provided in Part 1 of Chapter 22.56, and while such permit is in full force and effect in conformity with the conditions of such permit for:*
>
> *...*
>
> *-- Surface mining operations, as provided in Part 9 of Chapter 22.56.*

**Determination:** The Project site is located upon lands zoned A-2 and, as such, is a permitted use, subject to first having obtained a Surface Mining Permit.

The permitting of a surface mine is subject to the requirements of County Planning and Zoning Code Chapter 22.56 Part 9 (Surface Mining Permits). Section 22.56.1250 Establishment--Purpose notes the following:

> *A. The surface mining permit is established to regulate surface mining and reclamation of mined lands in compliance with the California Surface Mining and Reclamation Act of 1975, Division 11, Chapter 9, Public Resources Code, beginning with Section 2710.*
>
> *B. It is the intent in regulating surface mining activities to insure that:*
>
> *1. The production and conservation of minerals is encouraged while addressing concerns relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment during and after mining operations; and*
>
> *2. Adverse effects on the environment, including air pollution, impedance of groundwater movement and water quality degradation, damage to wildlife habitat, flooding, erosion and excessive noise are prevented or mitigated; and*
>
> *3. Mined lands are returned to a usable condition readily adaptable for alternative land uses, with no residual hazards to public health or safety; and*
>
> *4. Consistency is achieved with the mineral resources management policies of the Los Angeles County General Plan. (Ord. 92-0032 § 4, 1992: Ord. 1494 Ch. 5 Art. 11 § 511.1, 1927.)*

**Determination:** The Project may be permitted under a Surface Mining Permit provided the Section 22.56.1250 concerns have been addressed, the effects prevented or mitigated, the land is returned to a usable condition, and the use is consistent with the mineral resources management policies of the Los Angeles County General Plan. It is the purpose of this EIR to identify and describe how the Project is consistent with the intent of Section 22.56.1250. These items are discussed in detail in the various EIR sub-chapters below.

### 4.2.6 County of Los Angeles General Plan Mineral Resource Management Policies

The *County of Los Angeles General Plan* (*General Plan*) provides goals and policies regarding the protection and development of mineral resources. As noted in EIR Table 3 in EIR sub-chapter 3.2, the County of Los Angeles designates the Project area as "Non-Urban and Agricultural Mineral Resource Area" in the *Land Use Element* of the *General Plan*, and "Non-Urban" on the *Antelope Valley Area Plan*. The *Land Use Element* of the *General Plan* notes that decentralized development can result in the loss of mineral resources areas and provides the following policy:

> *11: Protect known mineral resource reserves (including sand and gravel) from encroachment of incompatible land uses.*

In designating the Project site as a Mineral Resource Area, the *Land Use Element* provisions under Section 16 – Mineral Resources Areas are also applicable, which address the need to ensure the compatibility of proposed development with existing and potential mineral development. SMARA requirements are noted as the overarching requirements for mineral development within designated Mineral Resource Areas.

Within the *Conservation, Open Space and Recreation Element* of the *General Plan* the following goal and policy are described:

> *Goal: To protect mineral resources.*
>
> *17: Protect and conserve existing mineral existing resources, evaluate the extent and value of additional deposits, and require future reclamation of depleted sites.*

**Determination:** The Project is consistent with the Mineral Resource Management Goals and Policies of the *County of Los Angeles General Plan*.

### 4.2.7 Antelope Valley Areawide General Plan Policies

The *Antelope Valley Areawide General Plan* contains the following applicable policies:

> *Resource Conservation*
>
> *39. Ensure conservation of natural resources through the establishment of public programs to encourage continued agricultural production and to control energy consumption, mineral extraction, groundwater recharge, construction, and other public and private activities which affect the future availability and quality of such resources.*
>
> *Managed Resource Production*
>
> *150. Protect important mineral resources by a long-range approach toward mineral resource utilization.*
>
> *Non-residential Uses in Non-urban Areas*
>
> *In the case of proposals for waste disposal and mineral extraction uses and other appropriate proposals, approved site restoration shall be required at the termination of such use. Subject to compliance with the General Conditions for Development, (Section D of this Chapter) non-residential uses can include:*
>
> *…*

*(f) Mineral extraction uses such as quarries and oil and gas fields.*

On September 11, 2007, Bruce W. McClendon (Director of Planning, Los Angeles County Department of Regional Planning) issued a letter providing his *Interpretation of Antelope Valley Area PIan Provisions Regarding Non-Residential Uses in Non-Urban Areas*. In this letter he noted:

> *Since non-urban map designations are considered to be residential in nature and there is separate language pertaining to the commercial, industrial, and public facilities map designations, the cited language indicates that non-residential uses can be established in non-urban map designations without changing the map designation, i.e., without a Plan Amendment. However, these non-residential uses must conform to the criteria (a) through (f) cited above.*

In making this determination, Mr. McClendon also noted the following standards:

> *In addition, there are "general guidelines" for non-residential uses in non-urban areas. In part, the Area PIan states:*
>
> > *The application process for a non-residential use in a non-urban residential area shall involve the public hearing process and appropriate conditioning of the design of the project such that the negative impacts on adjacent land uses will be minimized.*
> >
> > *All applications for environmentally sensitive uses including waste disposal facilities, mining operations, quarries, airports or other similar uses shall require a full environmental analysis to identify potential negative impacts.*
>
> *This language indicates that non-residential uses can be established in non-urban map designations without changing the map designation but require discretionary review, including applicable review under the provisions of the California Environmental Quality Act (CEQA).*

**Determination:** The Project is consistent with the policies of the *Antelope Valley Areawide General Plan.* It is the discretionary project, the review of which has resulted in the preparation of this EIR and the subsequent public hearing process that will be utilized by the County to consider and decide the Project application.

### 4.2.8 Aggregate Sustainability in California

The DOC, California Geological Survey (CGS) has updated Map Sheet 52 and the accompanying report entitled: *Aggregate Sustainability in California*, by John P. Clinkenbeard, 2012. This report assesses the 50-year demand and supply of "permitted aggregate resources" within the 31 Production-Consumption (P-C) Regions of California. The *Aggregate Sustainability in California* provides the following key definitions:

> **Aggregate:**
>
> *All aggregate data and any reference to "aggregate" in this report and on the map pertain to "construction aggregate" defined for this report as alluvial sand and gravel or crushed stone that meets standard specifications for use in PCC* [portland cement concrete-grade aggregate] *or AC* [asphalt concrete] *unless otherwise noted.*

**Permitted Aggregate Resources:**

*Approximately 4 billion tons of permitted aggregate reserves lie within the 31 aggregate study areas shown on Map Sheet 52. Permitted aggregate reserves are aggregate deposits that have been determined to be acceptable for commercial use, exist within properties owned or leased by aggregate producing companies, and have permits allowing mining of aggregate material. A "permit" is a legal authorization or approval by a lead agency, the absence of which would preclude mining operations. Although some permitted reserves face legal challenges, these reserves are included in this study pending resolution of those challenges. In California, mining permits usually are issued by local lead agencies (county or city governments). Map Sheet 52 shows permitted aggregate reserves as a percentage of the 50-year demand on each pie chart (See Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves section).*

In assessing demand and permitted aggregate resources, the *Aggregate Sustainability in California* found the only factor showing a strong correlation to historical aggregate use was population change. Consequently, for each of the 31 aggregate study areas, the DOC used a per capita aggregate consumption model to forecast 50-year aggregate demand.

The Project is located in close proximity to the P-C Regions noted below, to which it would contribute net reserves of approximately 36.87 million tons during the life of the permit:

- Palmdale
- San Fernando Valley-Saugus-Newhall
- San Gabriel Valley (inclusive of Los Angeles)
- San Bernardino

EIR Table 10 illustrates the change in permitted aggregate resources and 50-year aggregate demand, then presents the number of years remaining in each of the four subject P-C Regions before permitted aggregate resources are exhausted.

**Table 10 Change in Permitted Aggregate Resources and 50-Year Aggregate Demand**

| Aggregate Study Area (P-C Region) | Permitted Aggregate Resources (million tons) | | Percent Change | 50-Year Aggregate Demand (million tons) | | Percent Change | Number of Years to Exhaust Permitted Aggregate Resources |
|---|---|---|---|---|---|---|---|
| | as of 01/01/01[1] | as of 01/01/11[2] | | as of 01/01/01[1] | as of 01/01/11[2] | | |
| **Palmdale** | 216 | 152 | -30 | 172 | 557 | +324 | 13.6 |
| **San Fernando Valley-Saugus-Newhall** | 154 | 77 | -50 | 732 | 476 | -35 | 8.1 |
| **San Gabriel Valley** | 241 | 322 | +37 | 1250 | 809 | -35 | 19.9 |
| **San Bernardino** | 356 | 241 | -32 | 969 | 993 | +3 | 12.1 |

[1] Source: *Aggregate Availability in California,* by Susan L. Kohler, 2006

[2] Source: *Aggregate Sustainability in California,* by John P. Clinkenbeard, 2012

One of the largest changes in the State of California involves the Palmdale P-C Region, where permitted reserves dropped from 216 to 152 million tons while demand increased from 172 to 557 million tons. Given the projected demand, the Palmdale P-C Region can currently provide only 27 percent of the 50-year demand and would be exhausted in approximately 13.6 years.

The Palmdale P-C Region contains two Mineral Resource Zones that have been classified as MRZ-2 areas. These two areas are associated with the Little Rock Wash and the Big Rock Wash along with their respective streambeds, alluvial fans, and floodplains.[2] Sand and gravel are the primary resources that are mined in these areas for the purpose of aggregate use in construction activities. The Project is located on the Big Rock Creek fan deposit, which extends northward from the San Gabriel Mountains for about eight (8) miles and contains approximately 26 square miles of MRZ-2 land (1987 DOC Mineral Land Classification).

The CGS has designated Little Rock Wash as Sector D and Big Rock Wash as Sector E. Each sector has been further subdivided to show areas that have been converted to urbanized areas, areas controlled by aggregate producers, areas planned for further urbanization, and unplanned areas. Sector D is estimated to contain 350 million tons of aggregate resources while Sector E is estimated to contain 1,155 million tons of aggregate resources. The *Aggregate Sustainability in California* estimated that the 50 year demand for aggregate resources within the four P-C Regions listed above will be 2,835 million tons. By contrast, the permitted aggregate resources within these four P-C Regions total 792 million tons, or 27.9 percent of the estimated demand, indicating approximately 14 years to exhaustion.

The *Aggregate Sustainability in California* notes that the Palmdale P-C Region is one of 13 aggregate study areas in or adjacent to urban areas with high aggregate demands. Such proximity has significant influence upon the amount of aggregate material being exported from the Palmdale P-C Region to the greater Los Angeles area. The *Aggregate Sustainability in California* notes that:

> *These numbers are estimates and the actual lifespan of existing permitted reserves in a study area can be influenced by many factors. In periods of high economic growth, demand may increase, shortening the life of permitted reserves. Large projects, such as the construction or maintenance of major infrastructure, or rebuilding after a disaster such as an earthquake could also deplete permitted reserves more rapidly. Increased demand from neighboring regions with dwindling or depleted permitted reserves may also accelerate the depletion of permitted reserves in a study area. Conversely, a slow economy may reduce demand for a period of time, extending the life of permitted reserves, or new or expanded permits may be granted in a study area increasing the permitted reserves and the lifespan of permitted reserves in that area.*

Compounding this supply-demand issue is the fact that the voters of California passed Propositions 1A through 1E, which require repayment of Proposition 42 monies and authorized the issuance of bonds to pay for the following infrastructure projects.

- Proposition 1A – Earmarking gas sales tax funds for use on transportation programs only, and requires full repayment to the Transportation Investment Fund of the total amount of

[2] California Division of Mines and Geology, Update of Mineral Land Classification of Portland Cement, 1994.

Proposition 42 revenue that was not transferred to that fund as a result of the suspension of Proposition 42;

- Proposition 1B – $20 billion bond for transportation improvements;
- Proposition 1C – $2.85 billion bond for low-income housing and shelters;
- Proposition 1D – $10 billion bond for public education facilities improvements; and
- Proposition 1E – $4 billion bond for levee improvements and flood control.

Given the recent multi-year economic downturn, these propositions have been implemented. Implementation of the projects authorized under Propositions 1A through 1E will result in a corresponding increase in the demand for PCC-grade aggregate materials, outstripping permitted aggregate resources at a faster pace.

**Determination:** There are fluctuations in the market economies affecting the demand for PCC-grade aggregate in any given year. Recently, the economic downturn, from which we are emerging, did result in reduced demand. In some instances, this resulted in reduced rates of processing by aggregate producers and the temporary idling of some surface mines. In drafting the language of SMARA, the Legislature anticipated such market variability and provided the following definition in Section 2727.1 to address such eventualities:

> *"Idle" means that an operator of a surface mining operation has curtailed production at the surface mining operation, with the intent to resume the surface mining operation at a future date, for a period of one year or more by more than 90 percent of its maximum annual mineral production within any of the last five years during which an interim management plan has not been approved.*

Section 2770(h)(1) of SMARA notes:

> *The interim management plan shall provide measures the operator will implement to maintain the site in compliance with this chapter, including, but not limited to, all permit conditions.*

Within the projected 47-year life of the Lebata Project, it is expected there will be periods of high and low demand for PCC-grade aggregate and economic conditions change. That said, such variability in annual demand is not expected to affect the 50-year demand within the Project's market areas. As noted in EIR Table 10, the supply of Permitted Aggregate Reserves within the Palmdale P-C Region is projected to be exhausted in 13.6 years. If approved, Lebata would add an estimated 36.8 million tons to the 50-year supply of Permitted Aggregate Reserves. As a result, the number of years to exhaust Permitted Aggregate Reserves within the Palmdale P-C Region would increase approximately three (3) years, from 13.6 to 16.6 years. Were this to occur, the Palmdale P-C Region would require an additional 368.2 million tons of Permitted Aggregate Reserves to meet its projected 50-year demand.

### 4.2.9 Price Inelasticity

Price elasticity plays an important role in our local market conditions, including those producing or using aggregate materials, and it is important to understand this role so as to fully appreciate why certain operational constraints may work, while others will not.

Elastic Demand is defined by the following conditions:

- When the price goes up, less people will want to buy it, which causes the demand to be "sensitive" to the price;
- The product is "elastic" because there are alternatives; or
- The demand curve is shallow, representing the fact that when the price changes, the number of people that will buy changes a lot.

Gold is a good example of a product with elastic demand. When gold is relatively cheap, people buy gold jewelry. When the price of gold goes up, people switch to silver jewelry.

Inelastic Demand is defined by the following conditions:

- When the price goes down, some people will buy more, but not a lot more;
- When the price goes up, a small number of people buy less, but most people have to buy the same amount, indicating demand is "insensitive" to price;
- Demand becomes “inelastic” when products have no close substitutes; or
- The demand curve is very steep, representing the fact that, whether the price is high or low, almost the same number of people are buying.

Aggregate is a good example of a product with inelastic demand because the demand does not vary with increases or decreases in price. Those demanding aggregate need it on a daily basis to conduct their businesses or construct projects and there is no alternative commodity, only alternative sources, which serve a role in influencing price. The result is a demand condition that will be satisfied with little regard for price.

These conclusions are supported in Dr. Berck’s Working Paper No. 994, *A Note on the Environmental Costs of Aggregate*, which was prepared for the Department of Agricultural and Resource Economics and Policy, Division of Agriculture and Natural Resources, University of California at Berkeley, January 2005.

Dr. Berck wrote his paper to specifically address questions regarding new aggregate mines and whether or not they created demand (i.e., growth inducement). His paper also characterizes the effects new mines have in terms of local economics and haul distances. Aggregate-producing mines and aggregate-producing recycling operations are similar enough in this regard that the conclusions found in Dr. Berck’s paper can be applied to the Project. In his paper, Dr. Berck notes:

> *The opening of a new quarry for aggregates will change the pattern of transportation of aggregates in the area served by the quarry. In this note, we will show that, so long as aggregate*

*producers are cost minimizing, the new pattern of transportation requires less truck transport than the pattern of transportation that existed before the opening of the new quarry. Since the costs of providing aggregates falls, it is reasonable to assume that the price of delivered aggregates also will fall. This note also shows that the demand expansion effect is of very small magnitude. Since the demand increase from a new quarry is quite small, the dominant effect is that the quarries are on average closer to the users of aggregates and, as a result, the truck mileage for aggregate hauling decreases. To summarize the effects of a new quarry project:*

*a) The project in itself will not significantly increase the demand for construction materials in the region through market forces, which include the downward pressure on pricing.*

*b) Truck traffic (i.e., vehicle miles traveled) in the region will not increase and may decrease as a result of the project.*

As a result, the effect of a new or expanded aggregate production should be to reduce the overall air emissions from aggregate trucking. This potential reduction in regional emissions should be considered a positive impact of a Project.

In addition, Dr. Berck makes the following observations that are important when evaluating such projects:

*Transportation is a major element in the cost of delivered aggregate, so new sites are chosen, within the limits placed by the natural availability of aggregates, to minimize transport costs.*

*While it is a theoretical possibility that the quantity of aggregates demanded (that is, the quantity used in projects) is responsive to price, two facts about construction make this unlikely. First, the cost of aggregates is usually a tenth or less of the cost of a project. Second, the building of projects -- housing, roads, and commercial construction -- is not very sensitive to the costs of producing them.*

*Since a change in price of aggregates does not lead to either a substantial substitution of other materials for aggregates or a substantial increase in the quantity of projects, the demand for aggregates is very inelastic. This inelasticity of demand is exactly the reason that the State of California uses a fixed per-capita consumption rate for forecasting the need for construction materials.*

## 4.3 GEOTECHNICAL HAZARDS

### 4.3.1 Introduction

This sub-chapter of the EIR presents the geotechnical hazards encountered on the site of the proposed Project, which includes analyses of soils, seismic hazards, and slope stability, as well as an analysis of the impacts and mitigation measures, if applicable. The information provided in this sub-chapter has been derived from the following studies:

- *Pit Slope Stability Evaluation, Big Rock Creek Mine, Antelope Valley Near Pearblossom Los Angeles County, California,* prepared by Fugro West, Inc., August 2013. (*Pit Slope Stability Evaluation*), EIR Appendix 4.
- *Report of Geotechnical/Geologic Study Proposed Aggregate Production Facility Big Rock Creek Site South of Avenue 'T' Between Longview Road and 121 Street, Pearblossom Area of Los Angeles County, CA*, prepared by Hilltop Geotechnical, Inc., September 15, 2006 (*Geologic Study*), EIR Appendix 5.

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***7. Geology and Soils***

*Would the project:*

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

### 4.3.2 Regulatory Setting

Regulations, plans, and standards for management of geologic and seismic hazards have been promulgated by state, county and local government. Federal and state government allows local counties and cities to manage and/or implement many of the federal and state regulations relating to the construction and operation of facilities. A summary of potentially applicable regulatory programs are presented below.

#### 4.3.2.1 Alquist-Priolo Earthquake Fault Zoning Act (Act ) of 1972

The Alquist-Priolo Earthquake Fault Zoning Act (Act) of 1972 (Alquist-Priolo) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. The Act provides for the adoption and administration of zoning laws, ordinances, rules, and regulations by cities and counties in implementation of the general plan that is in effect in any city or county. It is intended to provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults. Further, it is the intent of the Act to provide the citizens of the state with increased safety and to minimize the loss of life during and immediately following earthquakes by

facilitating seismic retrofitting to strengthen buildings, including historical buildings, against ground shaking.

This Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be "sufficiently active" and "well defined" by detailed site-specific geologic explorations in order to determine whether building setbacks should be established.

#### 4.3.2.2 Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Division 2) directs the CGS to delineate Seismic Hazard Zones. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. Cities, counties, and state agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The Seismic Hazards Mapping Act requires that site specific geotechnical investigations be performed prior to permitting most urban development projects within seismic hazard zones. It addresses the effects of strong ground shaking, liquefaction, landslides, or other ground failure and other seismic hazards caused by earthquakes.

#### 4.3.2.3 Los Angeles County General Plan

The Safety Element of the Los Angeles County General Plan (LACDRP 1990) provides goals and policies to reduce impacts from seismic and geotechnical hazards and provide a safer environment. The two main policies that are potentially relevant to the Project are: 1) minimize injury and loss of life, damage, and social, cultural, and economic impacts caused by earthquake hazards, and 2) protect public safety and minimize the social and economic impacts from geotechnical hazards.

#### 4.3.2.4 Antelope Valley Areawide General Plan

The Antelope Valley Areawide General Plan (LACDRP 1986) is a component of the Los Angeles County General Plan and provides policies related to public planning in the Antelope Valley area, including policies related to seismic and geotechnical hazards. These policies generally include enforcing standards and criteria to reduce impacts from seismic and geotechnical hazards, advocating detailed site evaluations and improved seismic design and construction standards for critical linear system facilities, and programs and practices for dealing with erosion, settlement, and other soil-related hazards.

### 4.3.3 Environmental Setting

In proposing the Project, Lebata seeks approval to mine aggregate, within an approximately 310-acre area, and process the mined materials onsite. The Project is located about 2 miles north of Highway 138, about 2 miles north-northeast of Pearblossom Highway, and about 2½ miles west of Big Rock Wash between Avenue T and Avenue U near the community of Pearblossom, within an unincorporated area of the County of Los Angeles.

The Project is situated near the southwest margin of the Mojave Desert Geomorphic Province, one (1) of 11 provinces recognized in California. The Mojave Desert Geomorphic Province is a distinctive geological and physiographic region encompassing much of southeastern California, extending from the

Tehachapi Mountains on the west to an arbitrary boundary at the Colorado River on the east. The southern edge of the province abuts the east-west trending Transverse Ranges (combined San Gabriel, San Bernardino, Little San Bernardino and Eagle Mountains), while the northern boundary is generally recognized to be the Garlock fault zone. Characteristic landforms of the province include relatively narrow, elongated ranges separated by wider, intervening valleys.

Alluvial fans extending from isolated mountain ranges in the Mojave Desert often coalesce to form bajadas, broad, continuous alluvial slopes that extend away from the mountain ranges. The characteristic muted topography of the gently sloping bajadas, which form the margins of many relatively flat-floored valleys in this province, stand in contrast to the deeply eroded and incised, often jagged mountain ranges.

Most of the province is internally draining; thus, many valleys typically include at least one (1) flat playa surface, many of which become shallow, ephemeral lakes during seasons of heavy precipitation. The playa lakes and surrounding alluvial fans and bajadas usually conceal underlying fault-controlled, sedimentary basins that often contain thousands of feet of alluvium and soft rock. Topographic relief is subdued in the western Mojave, but becomes increasingly greater to the east and north.

The province contains a diverse array of rock types. Mesozoic-age igneous intrusive granitic rocks are predominant in the western and southern portions of the province, and are widely observed in the remainder. Quaternary and Holocene extrusive igneous rocks and volcanic formations may be observed throughout this province, though they are most common in the southern and western portions. Parts of the central and northern portions of the province include thick sequences of meta-volcanic rocks as well as a number of Paleozoic-age, sedimentary formations that can be correlated to similar formational units in Arizona and Nevada. Tertiary and Quaternary-age alluvial and lacustrine sediments fill basins and occasionally form low hills. The sediments often host economically significant deposits of gravel, clay, and evaporites including salts and borates. Limited areas of the Mojave Province contain large active aeolian deposits, generally in the form of large, shifting sand dunes.

The area surrounding the Project is underlain by a thick sequence of Quaternary and older alluvial sediments resulting from weathering, erosion, transport, and subsequent deposition of materials from the San Gabriel Mountains, located to the south of the Pearblossom area. Source rocks within nearby mountains include Mesozoic-age granitic igneous rocks and various metamorphic rock formations.

### 4.3.4 Threshold Criteria

In preparing an Initial Study, the County uses Thresholds of Significance to identity which project impacts are potentially **Significant**; **Significant, but Mitigable to Less than Significant;** or **Less than Significant**. The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Expose people or structures to major geological hazards.
- Expanding upon this threshold criterion more definitively, the following thresholds of significance were used for the Project with regard to slope stability:

- Would the geologic condition of the immediate area become unstable as a result of the project? For the purposes of this EIR, slopes with a calculated factor of safety greater than 1.0 can be considered safe without further analysis.

In evaluating slope stability, the County utilizes the following factor of safety criteria:

- Minimum factor of safety of 1.50 for static conditions.
- Minimum factor of safety of 1.10 for pseudostatic conditions in conjunction with a minimum horizontal acceleration coefficient of 0.15.
- Minimum factor of safety of 1.50 for surficial stability, based on infinite slope type evaluations assuming parallel seepage and minimum vertical depth of 4 feet for the slide mass.
- Minimum factor of safety of 1.5 for temporary cut slopes for static conditions[3].

### 4.3.5 Impact Analysis

#### 4.3.5.1 Impacts Determined to be Less than Significant/No Impact

The Project proposes a new surface mining operation. No residential or commercial buildings are proposed, thereby greatly reducing the exposure of people or structures to geologic risks. In considering potential impacts of the Project, the County of Los Angeles completed an Initial Study which determined the Project would result in **Less than Significant Impacts** with regard to the following, each of which are discussed in more detail below:

- Faulting and Seismicity
- Landslides
- Soil Erosion or Topsoil Loss
- High Subsidence
- Hydrocompaction
- High Groundwater Level
- Liquefaction
- Sensitive Uses
- Substantial Risks to Life or Property

##### 4.3.5.1.1 *Faulting and Seismicity*

The Project is located in an area of active and potentially active faults, as is most of metropolitan southern California. Reviews of the official map delineating the State of California earthquake fault zones (DOC, Division of Mines and Geology, Effective July 1, 1974, State of California Special Studies Zones, Littlerock Quadrangle, Official Map, Scale: 1:24,000) indicates the site is not located within a zone

[3] Applying surficial stability with parallel seepage to temporary slopes is very conservative based on observations of the Hi-Grade Material plant slopes and because the site is located in the desert.

of mandatory study for active faulting. To the southwest, the Mojave segment of the San Andreas fault passes within approximately 7.3 kilometers of the Project site. The Clamshell-Sawpit fault passes within approximately 22.2 kilometers to the south of the site. Accordingly, the potential for surface fault rupture on this site is considered to be very low.

Ground shaking is judged to be the primary hazard most likely to affect the site, based upon proximity to two (2) regionally significant, active faults: the San Andreas fault (Mojave Segment); and the Clamshell-Sawpit fault. Other significant fault zones, including the Sierra Madre fault, Cucamonga fault, and several zones in the high desert area, are located at distances exceeding 23 kilometers from the site. Greater distances, lower slip rates and lesser maximum magnitudes indicate much lower risk to the site from the latter fault zones than from the two (2) closest faults. Characteristics of the major active fault zones selected for inclusion in analysis of strong ground shaking are listed in EIR Table 11 below.

**Table 11 Regional Faults**

| Fault Zone | Distance from Site (km) [1] | Fault Length (km) [2] | Slip Rate (mm/yr) [2] | Reference Earthquake (Mmax) [2] | Fault Type [2] |
|---|---|---|---|---|---|
| **San Andreas (Mojave Segment)** | 7.3 | 103 | 30.0 | 7.4 | A |
| **Clamshell-Sawpit** | 22.2 | 16 | 0.5 | 6.5 | B |

[1] Blake, Thomas F., 2000, Preliminary Fault-Data for EQFault, EQSearch and FriskSP and Blake, Thomas, F., Computer Services and Software, Users Manuals, FriskSP v. 4.00, EQSearch v. 3.00, and EQFault v. 3.00.

[2] California Department of Conservation, Division of Mines and Geology, 1996 (Appendix A – Revised 2002), Probabilistic Seismic Hazard Assessment for the State of California, DMG Open-File Report 96-08.

km = kilometer

Deterministic analyses of the hazard of ground shaking at the site were considered for reference earthquakes on each of the regional faults listed above. The assigned reference earthquake for the San Andreas fault (Mojave Segment) is modeled as a single segment event producing a 100-percent, right-lateral, strike-slip, moment magnitude 7.4 earthquake. The Clamshell-Sawpit fault is modeled as a 6.5 moment magnitude source with reverse slip (45 NW) displacement.

Probabilistic seismic hazard maps and data files jointly prepared by the California Geological Survey (CGS) and the U.S. Geological Survey (USGS) assign a 10 percent likelihood of horizontal ground accelerations of approximately 0.61g at the Project within the next 50 years.

Source: USGS *Probabilistic Seismic Hazards Mapping Ground Motion* link:

www.conservation.ca.gov/cgs/rghm/pshamap/pshamain.html

The probabilistic hazard maps were calculated for alluvial sites such as the subject property. Actual shaking intensities at the site from any seismic source may be substantially higher or lower than estimated for a given earthquake magnitude, due to complex and unpredictable effects from variables such as:

- Near-source directivity effects.
- Direction, length, and mechanism of fault rupture (strike-slip, normal, reverse).

- Depth and consistency of unconsolidated sediments.
- Topography.
- Geologic structure underlying the site.
- Seismic wave reflection, refraction, and interference.

Secondary seismic hazards include induced instances of landsliding or mass wasting, liquefaction, flooding (from ruptured tanks and reservoirs, surface oscillations in larger lakes, or seismic sea waves), and subsidence as a result of soil densification. Landsliding and liquefaction susceptibility maps have been prepared for much of coastal Los Angeles County and Orange County by the DMG. Reviews of official maps delineating State of California seismic hazard zones (DOC, Division of Mines and Geology, Released October 17, 2003, State of California Seismic Hazard Zones, Littlerock Quadrangle, Official Map, Scale: 1:24,000) indicated the site is not located within a zone of mandatory study for seismic hazards.

The proposed structures include the Aggregate Processing Facilities, Ready-Mixed Concrete Plant, Vac-Lite Plant, Asphalt Mixing Plant, and Raw Cement and Aggregate Transfer and Distribution Facility. No residential structures are planned. Building officials and engineers have long recognized the impacts of earthquakes and ground shaking on structures in the State. Appropriate measures which reduce the effects of earthquakes are identified in the Uniform Building Code (UBC), including specific provisions for seismic design of structures. The County has adopted the UBC for design and implementation of all structures, including those of the Project. Design of structures in accordance with the UBC and current professional engineering practices, are sufficient to reduce the effects of seismic ground shaking to **Less than Significant Impacts.**

#### 4.3.5.1.2 *Landslides*

The Mojave Desert province has a typical, continental arid climate where months may pass in which little or no precipitation falls, separated by brief episodes of locally torrential rain. The brief, heavy precipitation over relatively small areas generally causes rapid erosion in higher elevations, followed by deposition of transported sediments immediately after the runoff leaves the steep gradients of mountainous areas and reaches relatively flat-lying terrain. The ground surface is characterized by high desert scrubland and grassland.

The earth materials encountered at the Project during the field exploration were identified as young alluvial deposits (Q). The alluvium generally consisted of slightly silty-to-silty, fine-to-coarse-grained sand with varying amounts of gravel and cobbles (SP/SM and SM), and gravely, fine- to coarse-grained sand with a trace of silt and a little gravel (SP). These strata generally were brown in color and dry near the surface to moist with depth.

Landslides or debris flows from higher elevations are not considered to be a geologic constraint at the Project, due to the flat-lying nature of the site and the surrounding area. Impacts related to landslides or debris flows are considered **Less than Significant.**

Refer to EIR sub-chapter 4.3.5.2 for a discussion of slope stability considerations as a result of mining activity.

#### 4.3.5.1.3 *Soil Erosion or Topsoil Loss*

The project incorporates many design considerations and practices to reduce the potential for, and impacts of erosion. The *Drainage Concept* (EIR Appendix 3) describes how down-drains and floodwater interceptors would be built to capture and deliver floodwater to the bottom of the mining pit, thereby minimizing erosion and ensuring the maintenance of slope stability (discussed in more detail in EIR sub-chapter 4.4.3.6.1). Pitting is a surface treatment included in the Reclamation Plan that creates depressions that serve as rain catchments, thereby increasing soil moisture to support revegetation, which in turn would enhance erosion control. Stockpiled topsoil and subsoil would be hand-seeded or hydro-seeded to stabilize the soil and minimize erosion. As a result, impacts due to erosion are considered **Less than Significant.**

#### 4.3.5.1.4 *High Subsidence*

The *Geologic Study* indicated a subsidence factor (loss of elevation due to compaction of alluvial soils in-place) of 0.06 to 0.11 foot per foot of compacted soil should be used in areas where the existing soils are compacted in-place to 90 to 95 percent relative compaction and to a depth of 12 inches. Subsidence of the site due to settlement from the placement of less than 10 feet of fill (not including the depth of over-excavation and replacement) during the planned grading operation is expected to be minimal, resulting in **Less than Significant Impacts.**

#### 4.3.5.1.5 *Hydrocompaction*

Hydrocompaction is the settling and hardening of land due to application of large amounts of water for irrigation. This condition produces ground surface collapse from excessive wetting of certain low-density weak soils. Wetting of these materials weakens the already weak or unstable soil structure, which undergoes internal collapse and densification (reduction of air voids). Densification of the weak soil column produces ground surface collapse and subsidence in the vicinity of excessive wetting. Removal of fine material by piping is probably an additional factor in some cases of subsidence by wetting. Such excessive wetting can occur from irrigation, broken water lines, surface ponding, or drainage diversions. Such land practices are not proposed, nor in evidence, resulting in **Less than Significant Impacts.**

#### 4.3.5.1.6 *High Groundwater*

The Project site is located within the Pearland groundwater subunit of the Antelope Valley. This subunit is bounded on the north, west and south by unnamed faults that are postulated from an analysis of water-level data. The consolidated rock of the San Gabriel Mountains forms the southeast boundary of the subunit.

Source: *Geohydrology of the Antelope Valley Area, California and a Design for a Ground Water Quality Monitoring Network*, compiled and published by the United States Geological Survey, the California State Water Resources Control Board, and the California Regional Water Quality Control Board – Lahontan Region (Report No. 84-4081, 1987).

State and County databases indicate there are active water wells located within approximately two miles of the Project. The location of these water wells is shown in EIR Figure 17 – Local Water Wells and summarized in EIR Table 12.

**Table 12 Local Water Wells**

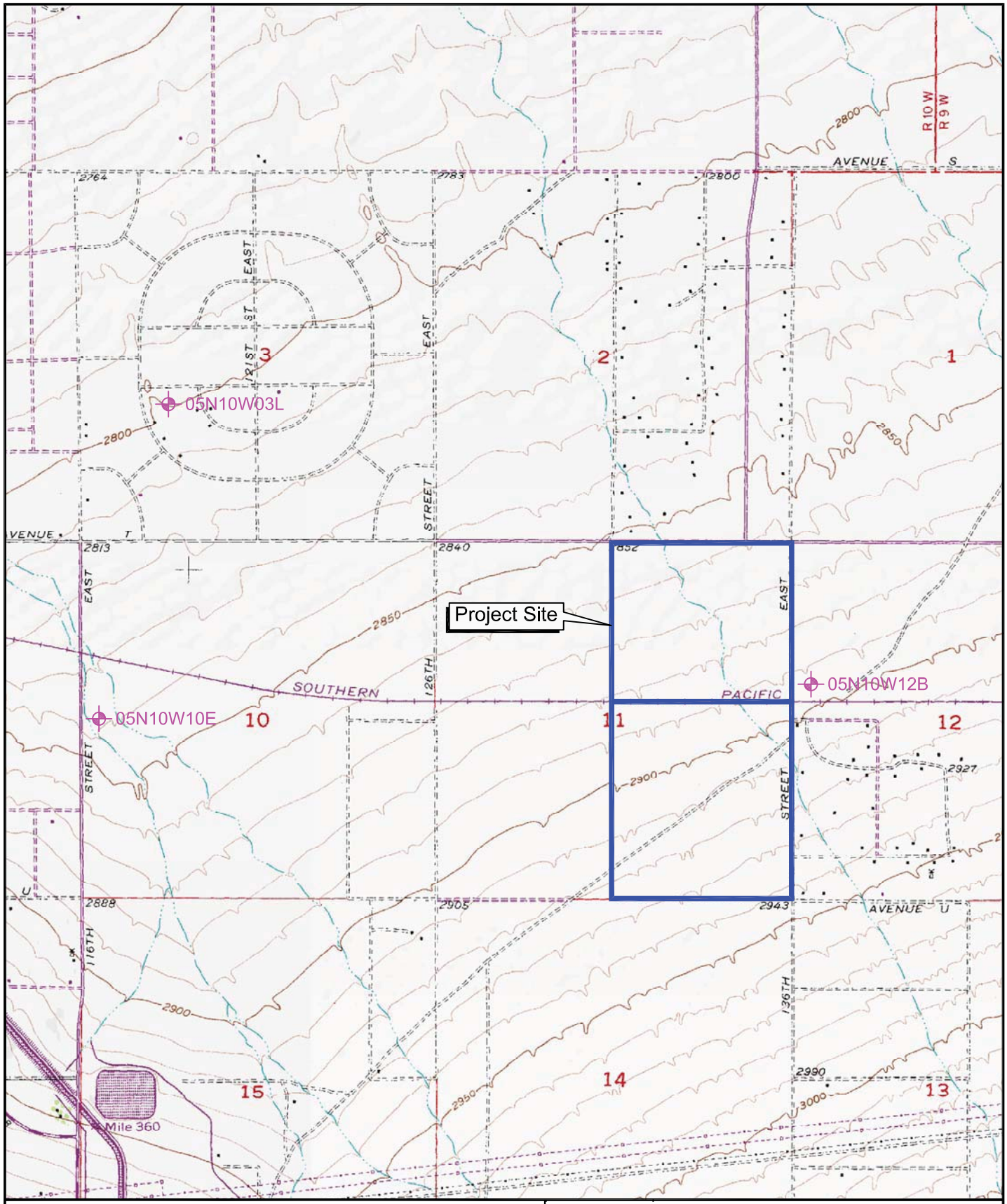
| Well Name | Lowest Groundwater Depth from Surface (feet) | Highest Groundwater Depth from Surface (feet) | Measurement Period | Last Reported Depth from Surface (feet/year) |
|---|---|---|---|---|
| 05N10W03L001S | 107.9 | 85.6 | 1961 – 1998 | 85.6 in 1999 |
| 05N10W10E001S | 140.0 | 90.0 | 1960 – 1964 | 120.9 in 1964 |
| 05N10W10E002S | 175.0 | 100.0 | 1960 – 1965 | 138.8 in 1965 |
| 05N10W12M002S | 77.8 | 55.4 | 1982 – 1999 | 59.4 in 1999 |

Source: http://www.water.ca.gov/waterdatalibrary/

The Project has been specifically designed as a dry surface mining operation with a maximum depth of 80 feet bgs. Although EIR Table 12 indicates groundwater levels in a nearby well at 55.4 feet below surface, Fugro West, Inc. (Fugro) prepared a *Pit Slope Stability Evaluation* (EIR Appendix 4), which indicated otherwise. During this evaluation, Fugro drilled two sampling holes on August 15, 2006. The first of these wells (DH-1) encountered perched groundwater at a depth of 70 feet bgs, while the second well (DH-2) did not encounter groundwater to the explored depth of 80 feet bgs. Therefore, it is believed that groundwater is considerably deeper than the 55.4 feet reported in 1985 for Well Name 05N10W12M002S.

To ensure groundwater is protected, surface mining operations would be curtailed at a final mining depth of 80 feet bgs, or at a depth that is 5 feet above static groundwater levels for all pits, should groundwater be encountered. If groundwater is encountered and the final excavation depth reduced, the volume of material excavated and processed, and the life of the Project would be reduced accordingly. Within the first few years of Project operations, the static groundwater level would have been determined for the North Pit and the final mining depth defined accordingly at 5 feet above that level. The samew precaution and determination of static groundwater level wwould be made for the South Pit.

In advance of Mining Phase 3a and 3b excavations, late in the life of the Project, the Processing Facilities Site would be relocated within the North Pit. Phase 1 mining would excavate the North Pit to a depth of 80 feet bgs, unless static groundwater level has been determined to be shallower. Prior to placement of the Processing Facilities Site into the North Pit, a pad of onsite refill material would be constructed to a depth of 50 feet bgs. Placement of the Processing Facilities Site on the resulting pad will ensure they are kept above stormwater inundation levels within the North Pit. Impacts related to high groundwater are considered **Less than Significant.**




Source: USGS 7.5 Minute Topographic Quadrangle
Littlerock & Lovejoy Buttes, California 1957
Photorevised 1992
(C) 2002 DeLorme, XMap (R) 3.5
Los Angeles County Water Works District #4

05N10W10E Well Number

0 1000 2000 3000 4000 5000 FEET

SCALE 1:24000

Source: West Coast Environmental, 11-20-2008

| Local Water Wells<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>17 |
|---|---|
| Scale: As Shown | Date: 3-13-2012 |

MCG100-Conf.\EIR NOV 20 2008\Local Water Wells

#### 4.3.5.1.7 *Liquefaction*

Liquefaction is a phenomenon in which cohesionless, saturated, fine-grained sand and sandy silt soils lose shear strength due to groundshaking. Hilltop Geotechnical determined that the liquefaction potential at the subject site is very low due to an estimated depth to groundwater of 50 feet bgs or greater. Using small-strain shear wave velocity (Vs) data to assess liquefaction potential due to an earthquake was considered a reasonable engineering approach for the Project because both Vs and liquefaction resistance are influenced by many of the same factors, such as void ratio, effective confining pressure, stress history, and geologic age. The Soil Profile Type judged applicable to this site is $S_D$, with Vs of 600 to 1,200 feet/second (180 to 360 m/s), which is considered very high. Typically Vs of 200 meters per second are regarded as the upper bound for liquefaction to occur. Consequently, the site underlying the Project is not likely to liquefy due to the specified earthquake shaking. Therefore, impacts related to liquefaction are considered **Less than Significant.**

#### 4.3.5.1.8 *Sensitive Uses*

The Project is not considered a sensitive use located in close proximity to a significant geotechnical hazard. Therefore, there are **no impacts**.

#### 4.3.5.1.9 *Substantial Risks to Life or Property*

As noted above in the discussion of Faulting and Seismicity, the County has adopted the UBC for design and implementation of all structures, including those of the Project. Design of structures in accordance with the UBC and current professional engineering practices, are sufficient to reduce the effects of seismic ground shaking to **Less than Significant Impacts.**

### 4.3.5.2 Impacts Determined to be Potentially Significant

In evaluating potential impacts of the Project, the threshold criteria were considered and it was determined via the County of Los Angeles Initial Study process that the Project may result in potentially significant impacts with regard to slope stability, which is discussed below.

The Project proposes permanent slopes ranging up to about 80 feet in height with average slope inclinations of about 2(h):1(v). Slopes will have about 8-foot-wide terrace drains, spaced vertically about every 25 to 30 feet, resulting in slope inclinations between terrace drains of approximately 1:85(h):1(v). No backfilling is proposed, except to restore the road prism underlying the Longview Road Extension, if required, which would be done in accordance with the requirements of the LACDPW. Down-drains and floodwater interceptors would be built as mining progresses to capture and deliver floodwater to the bottom of the mining pit, thereby minimizing erosion and ensuring the maintenance of slope stability (refer to discussion of the *Drainage Concept* in EIR sub-chapter 4.4.3.6.1).

The requirements for static equilibrium of a soil mass are used to compute a factor of safety with respect to shear strength. The factor of safety is defined as the ratio of available shear strength to strength required to maintain stability. When a slope falls below the factor of safety, it is considered unstable because the shear stresses on a potential failure plane exceed the shearing resistance of the soil.

To ensure that Project slopes maintain their stability, the *Pit Slope Stability Evaluation* (EIR Appendix 4) was prepared to evaluate static, pseudostatic and surficial conditions at the Project site, and determine the resulting factor of safety, based on the geologic conditions, the proposed slopes during mining excavation, and the proposed final slopes upon reclamation. The results of this evaluation are summarized in EIR Table 13.

**Table 13 Results of the Slope Stability Evaluation**

| Condition | Factor of Safety | | |
|---|---|---|---|
| | Static [1] | Pseudostatic [2] | Surficial [3] |
| Permanent 1.85:1 Fill over 1:1 Cut | 1.76 | 1.28 | 1.96 |
| Permanent 1.85:1 Fill Slope, Terrace to Terrace | 2.09 | | |
| Temporary 1:1 Cut Slope, 65 ft high | 1.58 | 1.26 | 1.97 |
| Temporary 1.5:1 Cut Slope, 65 ft high | 1.84 | 1.33 | 2.32 |
| Lower 2:1 Bench Slope, 7 ft high | 3.06 | | |
| **Threshold** | **1.50** | **1.10** | **1.50** |
| **Significant?** | No | No | No |

[1] Static Conditions = slope stability at soil mass equilibrium (i.e., self weight)

[2] Pseudostatic Conditions = slope stability under seismic conditions (i.e., including horizontal and vertical seismic acceleration forces)

[3] Surficial Conditions = slope stability of the outer 3 to 4 feet of slope material measured from perpendicular to the slope face.

As noted in in EIR Table 13, the Project exceeds County factor of safety threshold criteria under all conditions. As such, it was determined the Project would be stable and safe as designed. In addition, the relatively massive alluvial deposits have a low susceptibility to landsliding or lateral spreading due to the lack of geologic structures such as joints, contacts, and bedding, which may present preferred shear surfaces. The Project is expected to result in **Less than Significant Impacts** related to the slope stability during mining operations and post-reclamation.

### 4.3.6 Mitigation Measures

None.

### 4.3.7 Level of Significance after Mitigation

No significant impacts are associated with the Project.

### 4.3.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure

55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Project will be required to comply with UBC requirements for the construction/installation of new facilities and standard operational regulations will result in **Less than Significant Impacts**. Given the lack of cumulative projects, and the fact no geological impacts are anticipated offsite, impacts to geology and soils **are not expected to be cumulatively considerable**.

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## 4.4 FLOOD HAZARDS

### 4.4.1 Introduction

This chapter of the EIR presents the flood hazards encountered on the site of Project provides a description of the background drainage and erosion conditions, evaluates the potential Project impacts, and describes recommended mitigation measures, if applicable. The information provided in this chapter has been derived from the following studies:

- *Drainage Concept for Lebata Inc. Surface Mine, Project Alternative and Alternative 1, Big Rock Creek, Los Angeles County,* prepared by Stetson Engineers, Inc., December 2008 (*Drainage Concept*), EIR Appendix 3.
- *Drainage Concept for Lebata Inc. Surface Mine, Lowered Facilities Alternative, Los Angeles County,* prepared by Stetson Engineers, Inc., December 2010 (*Drainage Concept Addendum*), EIR Appendix 3, Addendum.
- *Pit Slope Stability Evaluation Big Rock Creek Mine Slopes Antelope Valley Near Pearblossom Los Angeles County, California*, prepared by Fugro West, Inc., August 2013 (*Pit Slope Stability Evaluation*), EIR Appendix 4.
- *Jurisdictional Delineation within the Big Rock Creek Surface Mining Project Site, Antelope Valley, Los Angeles County, California*, prepared by ECORP Consulting, Inc., March 6, 2013 (*Jurisdictional Delineation*), EIR Appendix 6.
- Los Angeles County Department of Water Resources Bulletin 118, *California's Groundwater, South Lahontan Hydrologic Region*, February 24, 2004 update (*Bulletin 118*).

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

> ***10. HYDROLOGY AND WATER QUALITY***
>
> *Would the Project:*
>
> *d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*
>
> *e) <u>Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems</u> or provide substantial additional sources of polluted runoff?* [underscore added for emphasis, also see EIR Chapter 4.6 – Water Quality]

### 4.4.2 Regulatory Setting

Development in the Project region that discharges stormwater runoff into and/or encroaches upon natural drainages, wetlands, and/or floodplains is potentially subject to the requirements of the CDFW, pursuant to the California Fish and Game Code Section 1600 et seq., and/or the U.S. Army Corps of Engineers (Corps), FEMA, RWQCB pursuant to the Clean Water Act (CWA); and the LACDPW.

The *Jurisdictional Delineation* (EIR Appendix 6) prepared to evaluate the Project, concludes the drainage features within the Project area do not meet CDFW jurisdictional criteria. (Refer to EIR sub-chapter 4.8.3.11 for more detail.)

The Corps has determined that the Project site is not subject to its jurisdiction under Section 401 of the CWA and that a Section 401 permit is not required. Refer to EIR Appendix 7 for a letter from the Corps, dated June 1, 2006, exempting the Project site.

Since all drainages are under the jurisdiction of the RWQCB, the Lahontan Region has advised that the Project would require a permit for Section 402 of the Clean Water Act.

#### 4.4.2.1 National Flood Insurance Program

FEMA administers the National Flood Insurance Program (NFIP). FEMA has completed Flood Insurance Rate Maps (FIRM) that identify Special Flood Hazard Areas. T o comply with the NFIP, communities must adopt a floodplain management ordinance addressing construction and habitation in flood zones. In California, the Department of Water Resources (DWR) encourages communities to adopt the California Model Floodplain Management Ordinance.

#### 4.4.2.2 Standardized Urban Stormwater Mitigation Plan

A municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit issued to Los Angeles County and 85 cities by the Los Angeles County RWQCB on July 15, 1996, required the development and implementation of a program addressing stormwater pollution issues in development planning for private projects. On December 10, 2012, the RWQCB issued Order No. R4-2012-0175, NPDES Permit No. CAS004001 (Los Angeles County MS4 Permit), updating these program requirements.

The Standardized Urban Stormwater Mitigation Plan (SUSMP) was developed as part of the municipal stormwater program to address stormwater pollution as required by the NPDES permit. The SUSMP contains a minimum of the required BMPs that must be used for a designated project.

#### 4.4.2.3 Los Angeles County General Plan

**Los Angeles County General Plan, Safety Policy 12.** Promote the use of flood plain management measures in high-risk inundation areas, and require expansion of existing and proposed new developments to be flood-proofed and secured to minimize future flood losses.

**Antelope Valley Areawide General Plan, Policy 114.** As an interim policy, pending construction of regional drainage facilities, require installation of appropriate systems and facilities to retain the increase in storm runoff due to development on the project site or equivalent mitigation measures.

**Antelope Valley Areawide General Plan, Policy 152.** Prevent public exposure to flood hazards by prohibiting residential, commercial, and industrial development in recognized flood inundation areas unless proper mitigation is instituted.

**County Code Title 12 Chapter 12.84, Low Impact Development Standards.** The purpose of the low impact development (LID) standards is to provide for sustainable growth while preserving the characteristics of the County's watersheds, drainage paths, water supplies, and natural resources.

Chapter 12.84 guides the use of structural devices, engineered systems, vegetated natural designs, and education in order to distribute stormwater and urban runoff across a development site.

#### 4.4.2.4 Los Angeles County Department of Public Works

The LACDPW is responsible for the design, construction, operation, maintenance, and repair of roads, bridges, airports, sewers, water supply, flood control, water quality, and water conservation facilities, and for the design and construction of capital projects. Additional responsibilities include regulatory and ministerial programs for the County of Los Angeles, Los Angeles County Water Resources Division, other special districts, and contract cities that request services.

The LACDPW has developed specific design, operation, and maintenance criteria for drainage facilities. The Project Preparation Instruction Manual for Drainage Facilities (LACDPW 1988) states that the criteria for drainage facility design shall be contained in the following LACDPW Manuals:

- Project Preparation Instruction Manual (February 1988)
- Hydraulic Design Manual (March 1982)
- Structural Design Manual (April 1982)
- Debris Dams and Basins Design Manual (January 1983)

The Project Preparation Instruction Manual states that deviations from LACDPW design criteria as provided in the above manuals shall be submitted to LACDPW for approval prior to use. The LACDPW also developed requirements for hydrologic design of flood control and stormwater management facilities, listed below:

- Antelope Valley Final Report on the Comprehensive Plan of Flood Control and Water
- Conservation
- Sedimentation Manual, 2nd Edition (March 2006)
- County of Los Angeles Low Impact Development Standards Manual (January 2009)
- Hydrology Manual (January 2006)

#### 4.4.2.5 Capital Flood

A LACDPW memorandum, dated March 31, 1986, has established the Los Angeles County policy on levels of flood protection. This policy describes which degree of flooding and, therefore, which design storms to use for different conditions and structures.

The design flood discharge is the maximum flood that would occur under average physiographic conditions of the watershed due to a design storm of a given frequency. The design storm is defined as the storm which gives rise to the design flood for the particular catchment (watershed) area and is selected based upon the "basin lag" time and the desired return period of flood for which the structures are designed.

In September 2003, LACDPW revised the hydrologic method that accounts for fire effects on runoff computations. The revised Capital Flood is based on a theoretical 50-year frequency storm event (an

event with the probability of 1/50 of being equaled or exceeded in any year) occurring right after the watershed has been burned with the resulting flow rate being increased again by a bulking factor (increase in flow due to increased sediment and debris), thereby yielding a peak flow rate that is much greater than a 50-year storm over an unburned-unbulked drainage basin.

The standard set by the Federal Flood Insurance Agency (FIA) for flood insurance protection is the 100-year flood, an elevation level based on historic runoff records; however, the standard makes no allowance for future urbanization or debris. In flood hazard areas, the federal standard requires the finished floor elevations of proposed buildings to be at least one (1) foot above the surface water level of the 100-year flood. The Capital Flood takes into account the effect of urbanization, burned and "bulked" flows, and typically meets or exceeds FIA standards for the 100-year flood (LACDPW 2006).

The Capital Flood also applies to all areas mapped as floodways and all culverts under major and secondary highways and to all facilities, including open channels, closed conduits, bridges, and dams and debris basins not under California's jurisdiction, that are constructed in or intercept floodwaters from natural watercourses. A natural watercourse is a path in which water flows due to natural topographic features. For definition purposes, a natural watercourse drains a watershed greater than 100 acres and also meets one or more of the following conditions during a Capital Flood (LACDPW 2006):

- Flow velocity of greater than 5 feet per second (fps).
- Flow depth greater than 1.5 feet.
- Water surface elevations within one (1) foot below the base of adjacent dwellings, if that elevation is the result of the construction of drainage facilities with less than a Capital Flood capacity. This applies only to those facilities that are intended to replace the natural watercourse.

#### 4.4.2.6 Water Resources Division

The Water Resources Division within LACDPW is responsible for collecting and analyzing hydrologic data to support the design, operation, and maintenance of flood control facilities within Los Angeles County. Among other duties, the Water Resources Division performs hydrology and sedimentation studies; collects stream flow, precipitation, and evaporation data; forecasts rainfall runoff; and analyzes flood flows. The data collected by the Water Resources Division is used in conjunction with design standards developed by LACDPW to ensure that flood control facilities are adequately sized, maintained, and operated. The Water Resources Division operates and maintains County flood control facilities, including open flood control channels, underground storm drains, catch basins, debris retaining structures, and concrete streambed stabilization structures.

The Water Resources Division uses site-specific data to prepare maps of watersheds burned by brush fires, potential mudflow areas, and debris flow zones. Hydrologic and topographic information is used by the Water Resources Division to prepare detailed flood hazard zone maps.

### 4.4.3 Environmental Setting

Big Rock Creek emerges from the San Gabriel Mountains onto a small valley along the SanAndreas Rift Zone near Valyermo. Big Rock Creek is joined by Pallett Creek just beforedebouching on its alluvial fan

along the mountain front. Big Rock Creek flow is perennialupstream of the mountain front and ephemeral downstream. Continuous surface flow oftenreaches Pearblossom Highway, but typically infiltrates completely to groundwaterdownstream from the highway.

On the alluvial fan, flows in Big Rock Creek are largely contained in its main channel, with two secondary braids breaking off from the main channel at the apex of the fan. This is evident in aerial photography of the area (Stetson Engineers, 2003). The secondary braid immediately to the west of the main channel flows parallel to the main channel, which was the focus of hydraulic analyses in previous studies undertaken by Stetson Engineers (2003), flows parallel to the main channel and ultimately flows through the Vulcan Materials Company (VMC) mine site farther downstream. For the purposes of this EIR, this braid will be referred to as the VMC Braid.

Another second secondary braid, which flows through the Project site farther downstream, is located farther to the west of the VMC Braid away from the main channel and closer to the mountain front. For the purposes of this EIR, this braid will be referred to as the Lebata Braid.

Historically, the VMC and Lebata Braids only conveyed flows during large flood events when the main channel began to overflow. Examination of historical aerial photos from 1928 to 1994 indicate that the VMC Braid conveyed flows twice during the 77 year stream gage record, during the 1938 event (100-year flood event) and the 1943 event (25-year flood event) (Stetson Engineers, 2003). The same aerial photos indicate no flow occurred in the Lebata Braid during this 77-year period.

A flood control levee was constructed by the State on the left bank of the main channel near the mountain front sometime after the 1943 flood event. The levee is approximately 8 to 10 feet high, 20 feet wide at the top and 1,000 feet long and serves to contain flood flows within the main channel, effectively cutting off the VMC and Lebata Braids from main channel overflows. Hence, the levee aided in preventing overflows from the main channel into the secondary channels during the 1969 (40-year flood) and the 1978 (34-year flood) events, both of which exceeded the 1943 event (25-year flood).

The California Aqueduct Siphon crosses under the Big Rock Creek channel bed immediately upstream of the mountain front and immediately downstream of the alluvial fan apex. The underground section is contained in a 10-foot-wide concrete encasement and controls the location of the main channel on the fan by training flood flows towards the low point of the siphon encasement. In addition, the siphon also acts as a structural grade control on the secondary braids, preventing headcutting upstream of the secondary braids and forcing all or the majority of the total flows in the main channel (Stetson Engineers, 2003).

#### 4.4.3.1 FEMA Flood Rate Insurance Mapping

With regard to flooding, the Big Rock Creek Wash, located just east of the subject site, is surrounded by a relatively wide 100-year flood zone. The precise limits of the 100-year flood zone could not be determined. The FEMA FIRM, Panel 410 for the Littlerock, CA area, indicates the eastern portion of the Project lies within an area designated as "Zone A," which is defined as an "*area(s) of 100-year flood; base flood elevations and flood hazard factors not determined.*" The remainder of the Project lies within an area designated as "Zone C," which is defined as an "*area(s) of minimal flooding.*" Refer to EIR Figure 19 – FEMA 100-Year Floodplain Map.

#### 4.4.3.2 Locally Generated Sheetflow

There is no flow in any of the channels on the inactive alluvial fan surface except for during and shortly following individual rainfall-runoff generating events. Short-duration shallow overland sheetflow is generated when rainfall intensity is greater than infiltration capacity. The resulting shallow overland sheetflow is collected and conveyed downstream primarily by numerous shallow low-capacity relict braids in a nearly random distributary pattern. Surface flow occurs less than approximately 0.1 percent of the time (Stetson Engineers, 2004). Refer to EIR sub-chapter 4.4.5.1.3 for a discussion of potential sheetflow under Capital Flood conditions.

#### 4.4.3.3 Railroad Embankment Culverts

The 10- to 12-foot-high Union Pacific Railroad embankment crosses the fan in an east-west direction and divides the site in two, forming the North and South Parcels. There are several Corrugated Metal Pipe (CMP) culverts that pass under the railroad embankment bisecting the Project site. Three culverts identified by Stetson Engineers (2003) as CMP 16, CMP 17 and CMP 18 would convey flows from upstream of the railroad, which would then continue downstream and into the north parcel of the Project site. CMP 17 and CMP 18 are located inside the Project site boundary. It is assumed that flows conveyed through these culverts would initially be concentrated and then dissipate, flowing through the area downstream of the railroad as sheetflow. The capacity of these culverts was estimated and is presented in EIR Table 14. The locations of the culverts are illustrated in EIR Figure18-2 – 2010 Conditions - Offsite and Onsite Drainage. Estimates for culvert capacity of CMP 16 and CMP 17 are based on a previous assessment undertaken by Stetson Engineers (2003). The estimate for culvert capacity of CMP 18 is based on a nomograph published by the American Iron and Steel Institute (1994) (refer to Appendix A of EIR Appendix 3 – *Drainage Concept*).

**Table 14 Railroad Embankment Culvert Capacities**

| Culvert | Dimensions | Estimated Capacity Cubic Feet per Second (cfs) |
|---|---|---|
| CMP 16 | 4’10” x 3’ (oval) | 100 |
| CMP 17 | 4’10” x 3’ (oval) | 100 |
| CMP 18 | 2’6” diameter | 50 |
| **TOTAL** | **-** | **250** |

Examination of detailed site survey and site observations indicate that flows in excess of the combined culvert capacities would be deflected west by the rail road embankment offsite and then conveyed under the embankment by the culverts located to the west of the site.

A fourth minor CMP (24-inch diameter) is located immediately east of the eastern Project site boundary. This culvert was found during site inspection on October 25, 2006 and was not identified in the previous study by Stetson (2003). The culvert is poorly maintained and was observed to be 50 percent blocked by sediment along its entire length. For the purposes of this EIR, this culvert is assumed to convey minimal flow and could become fully blocked during Capital Flood flows; hence, it is ignored in hydraulic calculations.

#### 4.4.3.4 Pearblossom Highway Improvements Overview

Pearblossom Highway crosses the Big Rock Creek alluvial fan in an east-west direction about 1.5 miles south of the Lebata mine site. An adjacent Vulcan Material Materials Company (VMC) mine, approximately 0.5 mile east of the Lebata mine site, is also located north of the Pearblossom Highway on the Big Rock Creek alluvial fan. Caltrans recently completed improvements to Pearblossom Highway consisting of construction of a new bridge over Big Rock Creek, raising of the grade of the highway, and associated drainage improvements.

Two roadside channels were constructed as trapezoidal earthen channels with flow direction from east to west. There are thirteen culverts located in the Lebata watershed. Twelve of them (Nos. 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27) would convey the portion of intercepted flows from the south-side channel onto the north-side channel, and one (No. 7) would directly discharge to the Lebata mine site. Three others (Nos. 8, 9, 10) located in the Vulcan watershed would discharge a portion of the intercepted flows to the VMC mine site. The improvements are summarized in EIR Table 15.

**Table 15 Dimensions and Capacities of Pearblossom Highway Drainage Improvements**

| Drainage Facility | Dimensions [1] | | Capacity |
|---|---|---|---|
| Earthen Channel (South) (Trapezoidal) | Bottom width: 12 ft<br>Channel depth: 2.9 ft | Side slope: 6H:1V<br>Bottom slope: 0.009 | 580 cfs |
| Earthen Channel (North) (Trapezoidal) | Bottom width: 12 ft;<br>Channel depth: 2.4 ft; | Side slope: 6H:1V<br>Bottom slope: 0.009 | 390 cfs |
| Culverts Nos. 8, 16,17, 18 ,19, 20, 21, 22, 23,24, 25, 26, 27 (Circular) | 3-ft diameter | | 40 cfs |
| Culverts No. 7, 9, 10 (Circular) | 4-ft diameter | | 70 cfs |

[1] Source: As-built design plans of the Pearblossom Highway drainage improvements obtained from Caltrans.

EIR Figure18-1 (2008 Conditions - Offsite and Onsite Drainage) illustrates the onsite drainage condition prior to the 2009 Caltrans improvements. EIR Figure18-2 (2010 Conditions - Offsite and Onsite Drainage) illustrates onsite drainage condition after the 2009 Caltrans improvements. As is evident, the Pearblossom Highway drainage improvements resulted in significant changes in flows patterns.

#### 4.4.3.5 Existing Capital Flood Flows

##### 4.4.3.5.1 *In-Channel Flow*

Stetson Engineers (2003) previously reported that the flow in Big Rock Creek during the Capital Flood is 21,700 cfs. As previously established in the hydrologic studies undertaken for the adjacent VMC mine site, flows in Big Rock Creek would normally be retained in the main channel due to:

- The California Aqueduct Siphon acting as a hydraulic control; and
- The flood levee near the mountain front directing flood flows towards the main channel, and effectively cutting off the VMC and Lebata Braids from main channel overflows (Stetson Engineers 2003).

However, there is a possibility that the mountain front flood levee could catastrophically fail during the Capital Flood since the levee was constructed from non-engineered fill. This represents a worst case scenario of the levee being absent.

The Lebata Braids were estimated using a split flow analysis assuming a worst case, complete failure of the mountain front flood levee. Historical aerial photography and observations taken during a site inspection on October 25, 2006 indicate that the Lebata Braid is an overflow of the main channel and not of the VMC Braid, and that the channel split is approximately in the same location as the VMC Braid – main channel split, at a location approximately 5,000 feet downstream of the mountain front. Hence, during the levee-failure scenario, the Capital Flood flow would split into three channels at the junction of the main channel and the secondary VMC and Lebata Braids, as shown in EIR Figure 20 – Schematic of Flow Split below the Fan Apex with Levee Failure.

The flow split at the junction was calculated using an energy-based analytical method described more fully in the *Drainage Concept* (EIR Appendix 3, beginning on page 14). The portion of main channel at field-surveyed cross section 1 in EIR Figure 21 (Big Rock Creek June 9, 1994 Air Photo) was used to represent the upstream controlling cross section, while the portions of main channel and secondary channel at field-surveyed cross section 2 in EIR Figure 21 were used to represent cross sections of the main and secondary channels for the flow split calculation, respectively. The surveyed cross section locations and profiles are shown on EIR Figure 21.

Assuming the friction losses from station 1 to 2, 3 and 4 are similar and the flow contraction coefficient is 0.3, then the water surface elevation, cross sectional area, and flow velocity at each station were be estimated and are shown in EIR Table 16 and depicted on EIR Figure18-2 (2010 Conditions - Offsite and Onsite Drainage).

**Table 16 Estimates of Flow Split for Capital Flood at the Mountain Front with Levee Failure**

| Item | Main Channel Station 2 | VMC Braid Station 3 | Lebata Braid Station 4 | TOTAL |
|---|---|---|---|---|
| Flow (cfs) | 21,385 | 140 | 175 | 21,700 |
| Water Surface Elevation (feet) | 3404.6 | 3404.7 | 3404.8 | - |
| Cross Sectional Area (sq.ft.) | 3022.9 | 30.7 | 37.6 | - |
| Velocity (ft/sec) | 7.07 | 4.56 | 4.65 | - |
| Manning's n [1] | 0.065 | 0.035 | 0.035 | - |

[1] The term "Manning's n" refers to the roughness coefficient assigned to each flow split, which used in concert with the Continuity Equation, serves to calculate flow velocities.

Given the Capital Flood flow of 21,700 cfs at the mountain front, the estimated flow in the Lebata Braid under the worst case scenario is 175 cfs (assuming levee failure at the mountain front). The total flow entering the mine site during the Capital Flood includes this braid-flow plus additional sheetflow generated by local rainfall-runoff on the alluvial fan upstream of the site.

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LEBATA PROJECT BOUNDARY (NORTH PIT)

LEBATA PROJECT BOUNDARY (SOUTH PIT)

ZONE 2-5 (5 cfs)

ZONE 1-1B (6 cfs)

ZONE 1-1A (44 cfs)

ZONE 2-1 (25 cfs)

ZONE 2-2 (35 cfs)

ZONE 2-3 (29 cfs)

ZONE 2-4 (49 cfs)

CMP 18 50 cfs (Qcap)

CMP 17 100 cfs (Qcap)

CMP 16 100 cfs (Qcap)

Southern Pacific Railroad

VMC Mine Site

LEVEE

CONCRETE BOX CULVERT (TYP)

LEBATA BRAID (175 CFS)

VULCAN BRAID (140 CFS)

MAIN CHANNEL (21,385 CFS)

BIG ROCK CREEK

SOUTH LEVEE

FAN APEX

21,700 cfs

| Hydrologic Data | |
|---|---|
| Storm Frequency | 50-Year |
| 24-Hour Rainfall Depth (Area Weighted Average) | 3.2 inches |
| Soil Type | 121 |
| Debris Production Area (DPA) | Zone 11 |
| Burn Factor | 0 |
| Bulking Factor | 1 |
| Percent Imperviousness | 1% |

**Estimated 50-Year Rainfall-Runoff Sheetflows for Sub-Watersheds**

| Basin/Zone | Basin Area (acres) | 50-yr Peak Discharge, Q (cfs) |
|---|---|---|
| 1-1A | 489 | 44 |
| 1-1B | 65 | 6 |
| 2-1 | 279 | 25 |
| 2-2 | 392 | 35 |
| 2-3 | 323 | 29 |
| 2-4 | 544 | 49 |
| 2-5 | 53 | 5 |
| Total | 2,132 | 194 |

**Legend**

- Main channel / VMC braid flow area
- Local rainfall - runoff drainage area
- Channel/braid flow
- Runoff flow direction
- Existing culvert

N W E S

SCALE (FEET) 0 1000 2000

STETSON ENGINEERS INC.

DATE: October 4, 2013 | JN: 2192

Project Alternative and Alternative 1

**Subwatershed Delineation Based on USGS Topography and Existing Offsite and Onsite Drainage**

2008 Conditions
Offsite and Onsite Drainage
Big Rock Creek Site
Antelope Valley, California

FIGURE 18-1

SCALE: AS SHOWN | DATE: 10-21-2013

F:\DATA\2192\2013Work\CAD\2010 Report Figure Edits\Figure 3a-b_2010_Existing Drainage Map.dwg

LEBATA PROJECT BOUNDARY (NORTH PIT)

LONGVIEW RD

E AVENUE T

36.9 cfs (34.3+2.6)

34.5 cfs

19.1 cfs

4.8 cfs

ZONE 2-6 (4.8 cfs)

34.3 cfs

EAST

ZONE 1-2 (2.6 cfs)

CMP 18 50 cfs (Qcap)

CMP 17 100 cfs (Qcap)

CMP 16 100 cfs (Qcap)

48.9 cfs (28.8+20.1)

28.8 cfs (17.6+11.2)

34.3 cfs (24.4+9.9)

11.2 cfs

19.1 cfs

17.6 cfs

20.1 cfs

STREET

AVENUE U

LEBATA PROJECT BOUNDARY (SOUTH PIT)

E AVENUE U14

136TH

Southern Pacific Railroad

Railway Culvert

LEVEE

CONCRETE BOX CULVERT (TYP)

Check Dams

VMC Mine Site

Gravel Pit

E AVENUE U8

Lebata Sub-Watershed Boundary

AVENUE U 12

Lebata Watershed Boundary

ZONE 2-5 (20.1 cfs)

ZONE 2-4 (17.6 cfs)

ZONE 2-3 (11.2 cfs)

ZONE 2-2 (19.1 cfs)

ZONE 2-1 (24.4 cfs)

ZONE 1-1 (34.5 cfs)

AVENUE V

Vulcan Watershed Boundary

E AVENUE V2

North-Side Roadway Channel

E AVENUE V4

E AVENUE V 6

Pearblossom Highway

88.9 cfs

No.16 No.17 No.18 No.19 No.20 No.21 No.22 No.23 No.24 No.25 No.26 No.27 No.7 No.8 No.9 No.10

9.9 cfs

10.4 cfs

12.9 cfs

12.9 cfs

Big Rock Creek Bridge (New)

PEARBLOSSOM

263.4 cfs (129.4+232.9 -9.9-88.9)

South-Side Roadway Channel

232.9 cfs (175 cfs BRC Overflow + 57.9 cfs Sheetflow)

129.4 cfs (165.6 cfs-10.4 cfs -12.9cfs -12.9cfs)

105.6 cfs (140 cfs BRC Overflow + 25.6 cfs Sheetflow)

Westside Channel

Eastside Channel

Reservoir

128TH ST E.

EAST AVE V 10

EAST AVE V 11

EAST AVE V 12

EAST AVE V 13

EAST AVE V 14

133RD ST E

EAST AVE W

EAST AVE W 2

EAST AVE W 4

EAST AVE W 6

EAST AVE W 8

131 TH ST E

136 TH ST.

EAST AVE W 12

EAST AVE W 14

VALYERMO ROAD

DITCH

BM 3298

Lebata Braid (175 cfs)

VMC Braid (140 cfs)

BIG ROCK CREEK Main Channel (21,385 cfs)

175 cfs

140 cfs

21,385 cfs

SOUTH LEVEE

California Aqueduct Siphon

21,700 cfs

FAN APEX

CRYSTALAIRE COUNTRY CLUB

Pumphouse

Well

| Hydrologic Data | |
|---|---|
| Storm Frequency | 50-Year |
| 24-Hour Rainfall Depth (Area Weighted Average) | 3.2 inches |
| Soil Type | 121 |
| Debris Production Area (DPA) | Zone 11 |
| Burn Factor | 0 |
| Bulking Factor | 1 |
| Percent Imperviousness | 1% |

**Estimated 50-Year Rainfall-Runoff Sheetflows for Sub-Watersheds**

| Basin/Zone | Basin Area (acres) | 50-yr Peak Discharge, Q (cfs) |
|---|---|---|
| 1-1 | 382 | 34.5 |
| 1-2 | 29 | 2.6 |
| 2-1 | 271 | 24.4 |
| 2-2 | 212 | 19.1 |
| 2-3 | 124 | 11.2 |
| 2-4 | 195 | 17.6 |
| 2-5 | 223 | 20.1 |
| 2-6 | 53 | 4.8 |
| Total | 1,489 | 134.4 |

**Legend**

- Roadside Channel Flow/Center Line
- Pearblossom Highway Culvert
- Flow Direction
- Runoff flow direction
- Roadside Channel Flow

N W E S

SCALE (Feet) 0 1000 2000

STETSON ENGINEERS INC.

DATE: October 4, 2013 JN: 2192

Lowered Facilities Alternative

**Subwatershed Delineation Based on USGS Topography and Existing Offsite and Onsite Drainage**

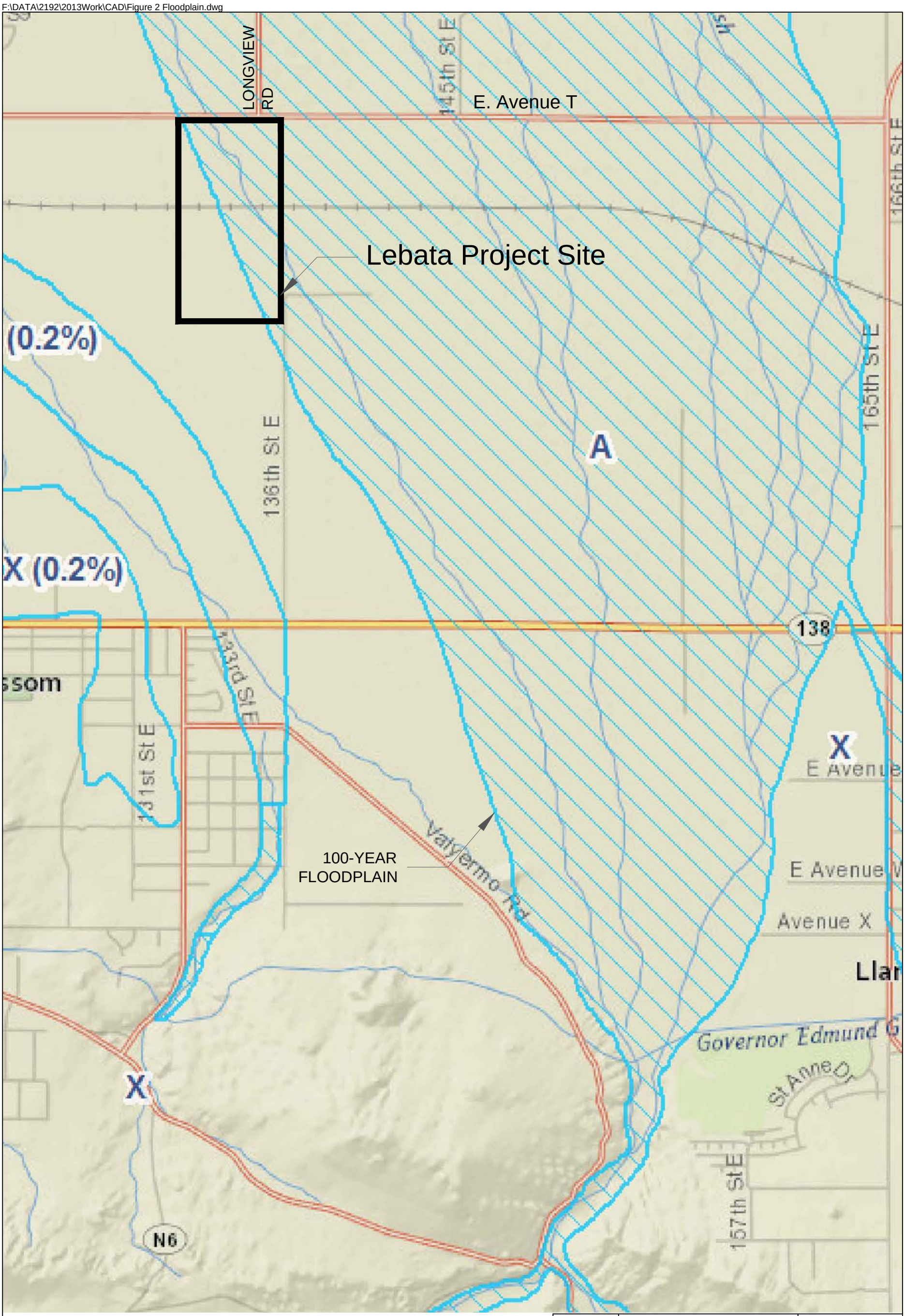
**2010 Conditions Offsite and Onsite Drainage**

Big Rock Creek Site
Antelope Valley, California

**FIGURE 18-2**

SCALE: AS SHOWN DATE: 10-21-2013

F:\DATA\2192\2013Work\CAD\Figure 2 Floodplain.dwg




LEGEND

100-YEAR FLOODPLAIN

500-YEAR FLOODPLAIN

NOTE: PROJECT SITE IS NOT WITHIN COUNTY ADOPTED FLOODWAY

SOURCE: FLOODPLAIN MAP OBTAINED FROM THE LOS ANGELES COUNTY WEBSITE: HTTP://DPW.LACOUNTY.GOV/WMD/FLOODZONE/

N W E S

SCALE: N.T.S.

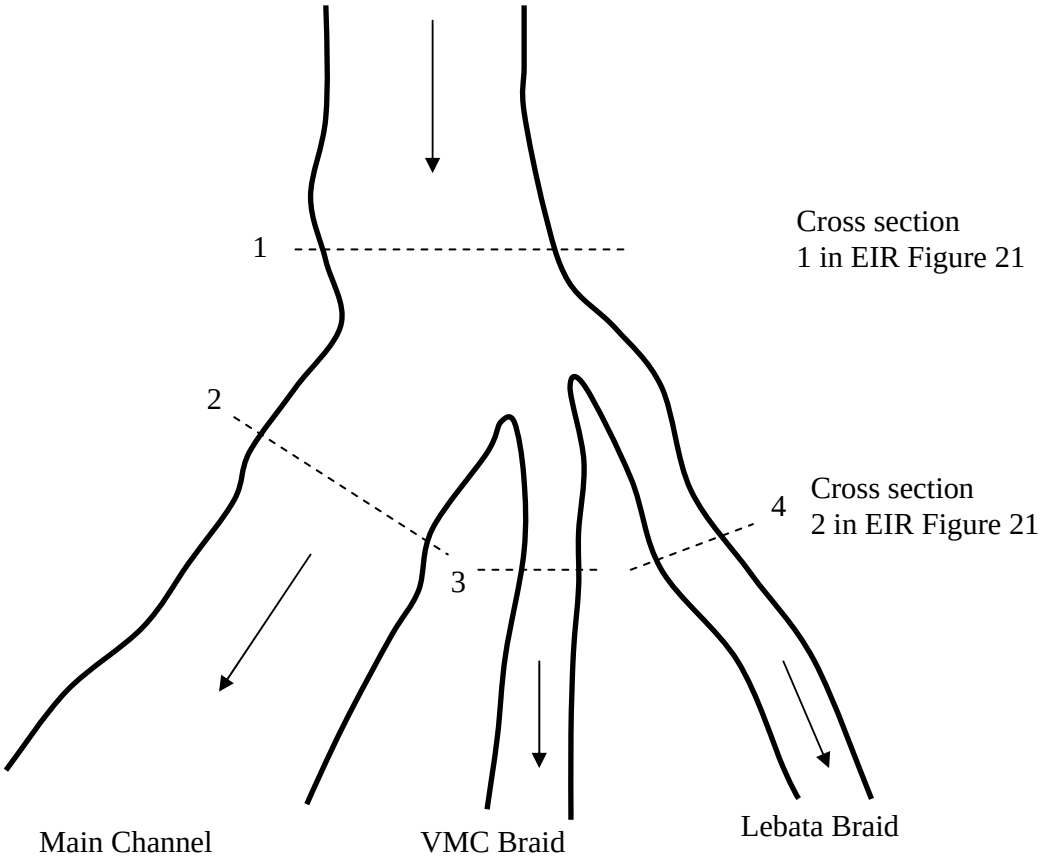
STETSON ENGINEERS INC.

DATE: October 4, 2013 | JN: 2192

# PROJECT LOCATION AND FEMA 100-YEAR FLOODPLAIN MAP

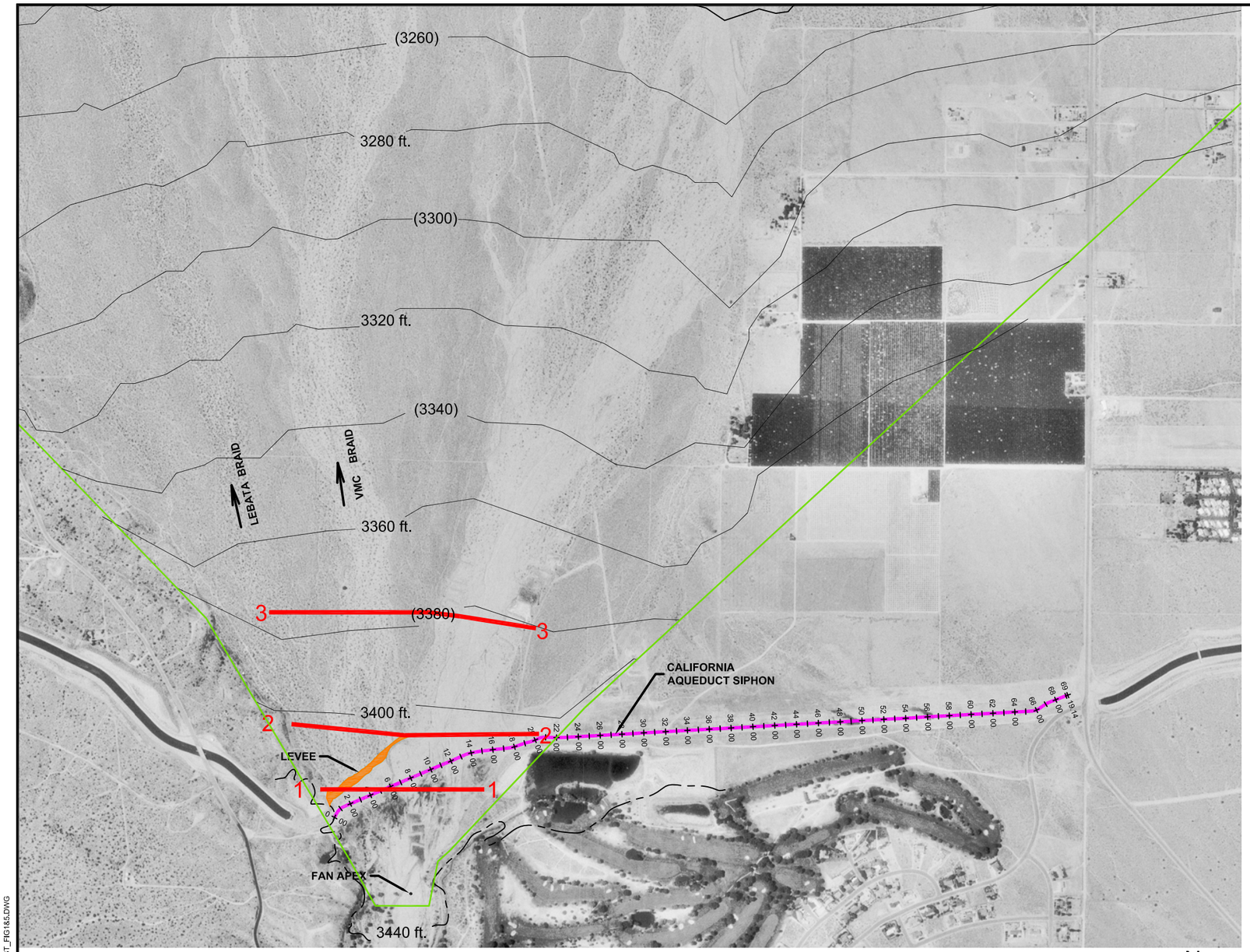
| FEMA 100-Year Floodplain Map<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 19 |
|---|---|
| SCALE: AS SHOWN | DATE: 10-21-2013 |

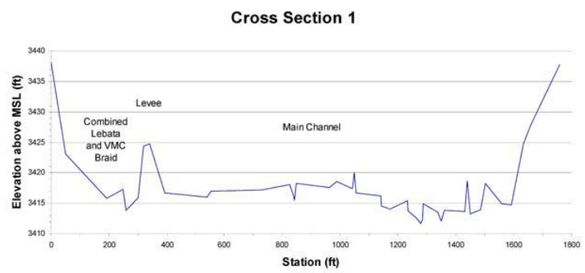
## SCHEMATIC OF FLOW SPLIT BELOW THE FAN APEX WITH LEVEE FAILURE

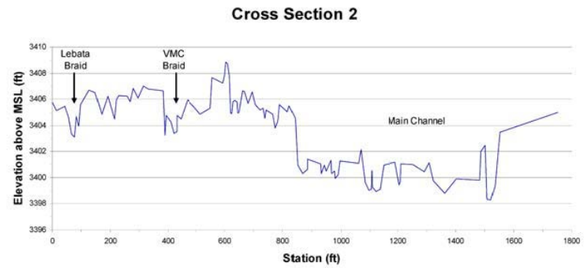


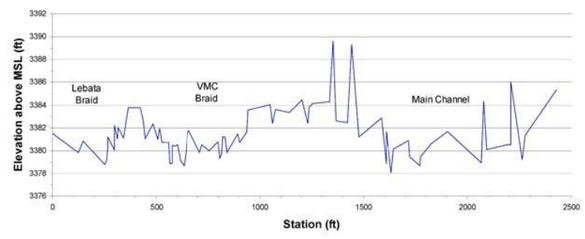

Source: Stetson Engineers Inc., 2008 Drainage Concept Report Lebata Inc., Dec. 2008

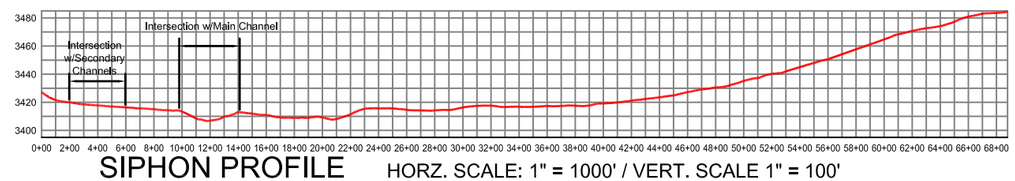
| | |
|---|---|
| **Schematic of Flow Split below the Fan Apex with Levee Failure**<br>Big Rock Creek Site<br>Antelope Valley, California | **FIGURE**<br>**20** |
| SCALE: **AS SHOWN** | DATE: **10-21-2013** |




SIPHON PROFILE

HORZ. SCALE: 1" = 1000' / VERT. SCALE 1" = 100'

PLAN VIEW

SCALE: 1" = 1000'

SCALE (FEET)

0 1000 2000

N W E S

\\NASMAIN\DATA\2192\2013\WORK\CAD\ST_FIG185.DWG

# BIG ROCK CREEK
## June 9, 1994 Air Photo

STETSON ENGINEERS INC.

PLAN VIEW, PROFILE AND CROSS-SECTIONS

FIGURE 5

| JN: | DATE: | SCALE: |
|---|---|---|
| 2192 | 12/23/2008 | AS INDICATED |

**BIG ROCK CREEK**
**June 9, 1994 Air Photo**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 21**

SCALE: **AS SHOWN**

DATE: **10-21-2013**

#### 4.4.3.6 Relevant Project Characteristics

As was previously discussed in EIR Chapter 3.6, the Project application originally proposed the Processing Facilities Site to be located within the southwestern corner of the North Parcel. This location was later changed to the northwestern corner of the North Parcel in response to LACDPW comments regarding a previously unidentified ROW of Longview Road Extension, referred to as CSB-2568-2. This ROW would pass diagonally through the Project site to connect existing Longview Road (northeast side of the Project) to a yet-to-be-constructed Longview Road (southwest corner of the Project), which would connect to Pearblossom Highway.

Following discussions with LACDPW staff, two alternative ROW alignments were developed in addition to the Project without Longview Road Extension Alternative. The Project Description was revised to incorporate the first of these, which meets the same 1,500-foot turn radius design standards of the existing ROW and reduces the ROW's impact to the Project. The second, discussed as a Project alternative, makes use of a tighter 750-foot turning radius and a companion request that LACDPW accept a lower road standard for the Longview Road Extension. The existing ROW and the two ROW alternatives are illustrated in EIR Figure 8 – Right-of-Way and Alternatives.

Accordingly, these two Longview Road Extension alignments were considered in the *Drainage Concept* (Appendix 3):

1) Relocating the 1,500-foot turning radius ROW alignment (Project); and
2) Reducing the ROW alignment to a 750-foot turn radius (750-Foor Turn Radius Project Alternative - refer to EIR sub-chapter 6.6.2).

The Project site would be mined to a depth of 80 feet bgs. In accordance with the County's Grading Guidelines, an 8-foot wide drainage terrace would be established on the cut slope at 30-foot depth intervals for the purpose of preventing surface erosion. All final mining slopes would be at a 2h:1v overall inclination, as measured from the top to the bottom of the mining pit and no backfilling is proposed. The side slope between the terraces is estimated to be about 1.85h:1v, which provides for a stable condition (FUGRO, Inc., Sam Bryant, August 22, 2008).

Mining would occur in three distinct Mining Phases. Mining Phase I would mine the North pit, Mining Phase 2 would mine the South Pit, and Mining Phases 3a and 3b would mine the area where the Processing Facilities Site, Raw Cement and Aggregate Transfer and Distribution Facility, and road prism were located during Mining Phases 1 and 2.

##### 4.4.3.6.1 *Overview of the Drainage Concept*

In accordance with the County's Grading Guidelines, the *Drainage Concept* (EIR Appendix 3) was prepared in December 2008 to describe the drainage system and technical basis for the mine drainage concept for both the Project and the 750-Turn Radius Project Alternative (refer to EIR sub-chapter 6.6.2). The design discharge for the drainage concept is the Los Angeles County designated Capital Flood event (refer to EIR sub-chapter 4.4.2.5) for the Big Rock Creek watershed combined with local surface flows generated by the 50-year rainfall-runoff over the 1,436-acre portion of the inactive alluvial fan surface located upstream from the site.

Subsequent to the completion of the *Drainage Concept* (EIR Appendix 3), a new Project alternative was developed. That alternative, the Lowered Facilities Alternative, is described in EIR sub-chapter 6.6.6. The assition of an alternative and 2009 completion of the Caltrans improvements (refer to EIR sub-chapter 4.4.3.4) resulted in the completion of a second drainage concept report in 2010, referred to herein as the *Drainage Concept Addendum* (EIR Appendix 3, Addendum). The purpose of the *Drainage Concept Addendum* was to to describe and analyze the drainage concept for the Lowered Facilities Alternative and determine how the Caltrans improvements affected Capital Flood flows. Both the *Drainage Concept* and the *Drainage Concept Addendum* were used in the writing of this EIR chapter.

The completed mine pits would intercept the entire Capital Flood discharge, via a system of interceptor drains, and convey the water to the bottom of the mining pits via a system of down drains and terrace drains. Interceptor drains would be located along the top of the mine pits to collect Capital Flood overflows and local sheetflows, and deliver these flows to down drains, which convey flows down the 2H:1V side slopes to the bottom of the mine pits. Terrace drains would be constructed on the pit slopes to capture runoff generated by the pit slopes and prevent slope surface erosion. The following is a summary of hydrologic and hydraulic design considerations:

- All onsite runoff and offsite runoff that enters the project site during the Capital Flood event are collected and conveyed to the mining pits for infiltration without any overflow to downstream of the mine site. The mining pits could be emptied via infiltration within 4 days after the Capital Flood event. The Project would have no adverse impact on properties adjacent to and downstream of the mine site.
- To prevent sedimentation, the 2008 LA County Grading Guidelines require that the slope of interceptor drains be not less than 2 percent. In cases where this ≥2 percent slope requirement can not be practically met due to the natural slope of the mine site, analysis was conducted to verify that these interceptor drains have sufficient flow velocities to prevent sedimentation.
- Interceptor drains were designed to have a 1-foot standard minimum depth and a minimum width of 3 feet at the inlet with 1.5h:1v side slopes, in accordance with the 2008 LA County Grading Guidelines.
- All down drains were designed in accordance with the minimum dimensions (i.e., 1.5-foot depth and 3-foot width) provided in the 2008 Los Angeles County Grading Guidelines. Energy dissipators at the base of all down drains were designed for erosion protection.
- 8-foot wide drainage terraces would be constructed on the pit slopes at 30-foot vertical depth intervals to prevent surface erosion and all terraces drains are required to have a minimum slope of 5 percent and a minimum depth of 1 foot, in accordance with the 2008 LA County Grading Guidelines. The terrace drains would be lined with crushed rock in consideration of the availability of these materials on site. The crushed rock was found to be stable enough to deliver the runoff flows generated by the pit slope surface.
- Minimum two-foot-high MSHA-required safety berms would be installed along the tops of the mine pit slopes around the entire northern, eastern, southern, and western edges and pit entrance/exit ramps to prevent the temporary inundated water from creating a public safety hazard.

- Stormwater runoff in the Processing Facilities Sitea would be collected and conveyed to a temporary mining pit for infiltration, no polluted stormwater will be discharged to offsite.

#### 4.4.3.6.2 *Hydraulic Design Considerations*

Sheetflow from the mountain front to Pearblossom Highway and the Lebata Braid flow would be captured by the new drainage facilities on Pearblossom Highway. Only about 10.8 cfs and 9.9 cfs would flow through Culvert No. 7 onto the Project site as sheetflow during Phase 1, and during Phases 2, 3 and Final Reclamation, respectively.

For drainage design purpose, the watershed from the northern border of Pearblossom Highway to the Project site was further divided into small sub-watersheds. The obstruction effects of the Union Pacific Railroad embankment on flow distribution have been considered in the delineation of the sub-watersheds.

Using the Tc-calculator, overland sheetflows were determined for two scenarios: Mining Phase 1, since it only involves the North Pit; and Mining Phases 2, 3 and Final Reclamation, which involve the North and South Pits. These scenarios are illustrated in EIR Figure 22 (Phase 1- Offsite and Proposed Onsite Drainage) and EIR Figure 23(Final Reclamation - Offsite and Proposed Onsite Drainage) and the results of the sheetflow calculations are summarized in EIR Table 17 and EIR Table 18.

**Table 17 Estimated 50-Year Rainfall-Runoff Sheetflow Discharges for Sub-watersheds from the Northern Border of Pearblossom Highway to the Project Site Boundary during Mining Phase 1**

| Basin/Zone | Basin Area (acres) | 50-yr Peak Discharge, Q (cfs) |
|---|---|---|
| 1-1 | 382 | 34.5 |
| 1-2 | 29 | 2.6 |
| 1-3 | 273 | 24.6 |
| 1-4 | 222 | 20.0 |
| **Total** | **906** | **81.7** |

**Table 18 Estimated 50-Year Rainfall-Runoff Sheetflow Discharges for Sub-watersheds from the Northern Border of Pearblossom Highway to the Project Site Boundary during Mining Phases 2, 3 and Final Reclamation**

| Basin/Zone | Basin Area (acres) | 50-yr Peak Discharge, Q (cfs) |
|---|---|---|
| 1-1 | 382 | 34.5 |
| 1-2 | 29 | 2.6 |
| 2-1 | 271 | 24.4 |
| 2-2 | 212 | 19.1 |
| 2-3 | 124 | 11.2 |
| 2-4 | 195 | 17.6 |
| 2-5 | 223 | 20.1 |
| **Total** | **1,436** | **129.6** |

The flows tabulated in EIR Table 17 and EIR Table 18 were used in the design and sizing of drainage structures on the site. Note that Zone 1-1 is separated by the railway embankment. Runoff from the south-side of the railway would flow through an existing railroad culvert CMP 16 (100 cfs capacity) to the North Pit. Similarly, during Phase 1 sheetflows from Zones 1-2 and 1-4 would pass through the existing culverts CMP 17 (100 cfs capacity) and CMP 18 (50 cfs capacity) into the North Pit via down drains.

**a) Interceptor Drains**

In accordance with the 2008 LA County Grading Guidelines, interceptor drains were designed to have a 1-foot standard minimum depth and a minimum width of 3 feet at the inlet with 1.5H:1V side slopes. Water depth and velocity of the design interceptor drains was computed using Manning's Equation and the Continuity Equation. EIR Table 19 summarizes the interceptor design hydraulics.

**Table 19 Interceptor-Drain Designs and Hydraulics**

| Interceptor | Capital Flow (cfs) | Design Flow Slope (percent) | Natural Slope (percent) | Velocity (ft/sec) | Water Depth (feet) | Cut Depth at Outlet (feet) | Freeboard at Outlet (feet) |
|---|---|---|---|---|---|---|---|
| Zone 1-1 | 34.5 | 1.5 | 1.33 | 10.4 | 1.5 | 2.4 | 0.9 |
| Zone 1-2 | 2.6 | 1.5 | 1.33 | 5.4 | 0.6 | 3.2 | 2.7 |
| Zone 2-1 | 34.3 [1] | 2.0 | 1.73 | 11.5 | 1.4 | 2.7 | 1.3 |
| Zone 2-2 | 19.1 | 2.0 | 1.73 | 9.9 | 1.8 | 1.3 | 0.2 |
| Zone 2-3 | 11.2 | 2.0 | 1.73 | 8.7 | 0.0 | 3.7 | 2.8 |
| Zone 2-4 | 17.6 | 1.0 | 0.75 | 7.5 | 1.3 | 4.0 | 2.8 |
| Zone 2-5 | 20.1 | 1.0 | 0.75 | 7.8 | 1.3 | 3.9 | 2.6 |

[1] Includes culvert flow (9.9 cfs) from Pearblossom Highway culvert No. 7 during Phase 2, 3 and Final Reclamation, and the sheetflow (24.4 cfs) generated by Zone 2-1, totaling 34.3 cfs.

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**No Flow Leaves the Project Site**

No Flow Leaves the Project Site

North Pit
Debris Production
Volume: 49,800 cu-ft

CMP 18 50 cfs (Qcap)
CMP 17 100 cfs (Qcap)

48.9 CFS (SAME AS EXISTING)

PHASE 1
Lebata Site
(North Pit)

3.4.5 CFS
ZONE 1-1
2.6 CFS
ZONE 1-2
20.0 CFS
35.4 CFS
(24.6 CFS SHEET FLOW + 10.8CFS CULVERT FLOW)
35.4 CFS SHEET FLOW HWY 138

CMP 16
100 cfs
(Qcap)

LONGVIEW RD
E AVENUE T
E AVENUE U14
E AVENUE U8
AVENUE U 12
136 TH ST E
E AVENUE V2
E AVENUE V4
E AVENUE V 6
EAST AVE V 10
EAST AVE V 11
EAST AVE V 12
EAST AVE V 13
EAST AVE V 14
EAST AVE W
EAST AVE W 2
EAST AVE W 4
EAST AVE W 6
EAST AVE W 8
EAST AVE W 12
EAST AVE W 14
133RD ST E
VALYERMO RD

Southern Pacific Railroad
Railway Culvert

LEVEE
CONCRETE BOX CULVERT (TYP)

VMC Mine Site

Lebata Sub-Watershed Boundary

Lebata Watershed Boundary

ZONE 1-4 (20.0 cfs)
ZONE 1-3 (24.6 cfs)
ZONE 1-1 (34.5 cfs)

Vulcan Watershed Boundary

North-Side Roadway Channel

Pearblossom Highway

South-Side Roadway Channel

32.2 cfs

290.4 cfs

No.22 No.23 No.24 No.25 No.26 No.27 No.7 No.8 No.9 No.10

10.8cfs
10.4cfs 12.9cfs12.9cfs
129.4cfs
(165.6 cfs-10.4cfs -12.9cfs -12.9cfs)

204.0cfs
(175cfs BRC Overflow + 29.0cfs Sheetflow)

165.6cfs
(140cfs BRC Overflow + 25.6cfs Sheetflow)

Big Rock Creek Bridge (New)

Westside Channel

Eastside Channel

Lebata Braid

VMC Braid

Big Rock Creek Main Channel

175 cfs
140 cfs
21,385 cfs

SOUTH LEVEE

California Aqueduct Siphon

FAN APEX

21,700 cfs

| Hydrologic Data | |
|---|---|
| Storm Frequency | 50-Year |
| 24-Hour Rainfall Depth (Area Weighted Average) | 3.2 inches |
| Soil Type | 121 |
| Debris Production Area (DPA) | Zone 11 |
| Burn Factor | 0 |
| Bulking Factor | 1 |
| Percent Imperviousness | 1% |

**Estimated 50-Year Rainfall-Runoff Sheetflows for Sub-Watersheds**

| Basin/Zone | Basin Area (acres) | 50-yr Peak Discharge, Q (cfs) |
|---|---|---|
| 1-1 | 382 | 34.5 |
| 1-2 | 29 | 2.6 |
| 1-3 | 273 | 24.6 |
| 1-4 | 222 | 20.0 |
| Total | 906 | 81.7 |

**Legend**

- Roadside Channel Flow/Center Line
- Pearblossom Highway Culvert
- Flow Direction
- Runoff flow direction
- Roadside Channel Flow

N W E S

SCALE (Feet)
0 1000 2000

STETSON ENGINEERS INC.

DATE: October 4, 2013 | JN: 2192

Lowered Facilities Alternative

# PHASE 1
# Existing Offsite and Proposed Onsite Drainage

**Phase 1**
**Offsite and Proposed Onsite Drainage**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 22**

SCALE: AS SHOWN | DATE: 10-21-2013

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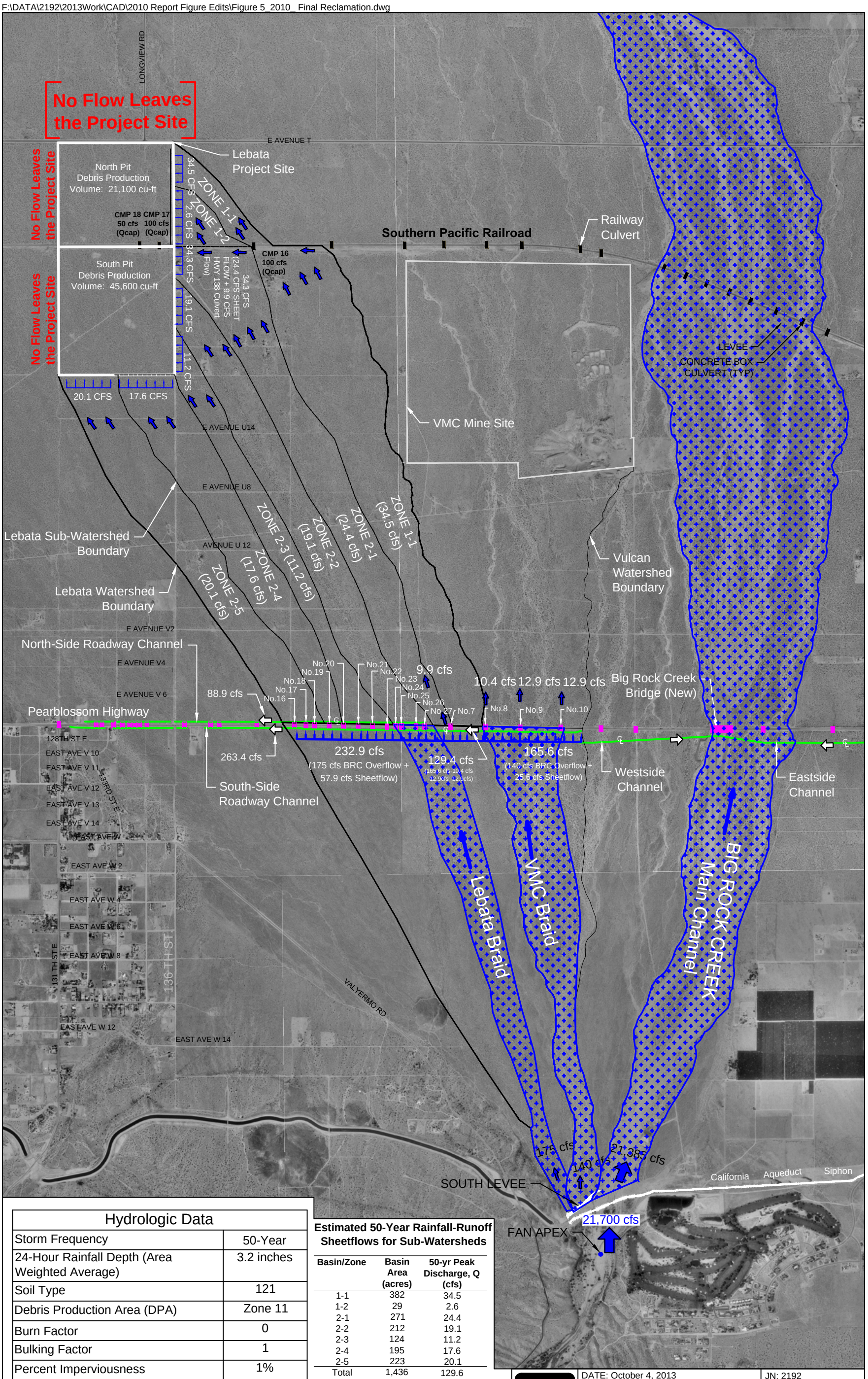


| Hydrologic Data | |
|---|---|
| Storm Frequency | 50-Year |
| 24-Hour Rainfall Depth (Area Weighted Average) | 3.2 inches |
| Soil Type | 121 |
| Debris Production Area (DPA) | Zone 11 |
| Burn Factor | 0 |
| Bulking Factor | 1 |
| Percent Imperviousness | 1% |

**Estimated 50-Year Rainfall-Runoff Sheetflows for Sub-Watersheds**

| Basin/Zone | Basin Area (acres) | 50-yr Peak Discharge, Q (cfs) |
|---|---|---|
| 1-1 | 382 | 34.5 |
| 1-2 | 29 | 2.6 |
| 2-1 | 271 | 24.4 |
| 2-2 | 212 | 19.1 |
| 2-3 | 124 | 11.2 |
| 2-4 | 195 | 17.6 |
| 2-5 | 223 | 20.1 |
| Total | 1,436 | 129.6 |

**Legend**

- Roadside Channel Flow/Center Line
- Pearblossom Highway Culvert
- Flow Direction
- Runoff flow direction
- Roadside Channel Flow

N W E S

SCALE (Feet) 0 1000 2000

STETSON ENGINEERS INC.

DATE: October 4, 2013 | JN: 2192

Lowered Facilities Alternative

# Final Reclamation Existing Offsite and Proposed Onsite Drainage

| Final Reclamation Offsite and Proposed Onsite Drainage<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 23 |
|---|---|
| SCALE: AS SHOWN | DATE: 10-21-2013 |

The 2008 LA County Grading Guidelines require the flow path slope of interceptor drains not to be less than 2 percent . Due to the natural slope of the project area, meeting 2 percent slope will require more than 10 feet cut depth at the interceptor outlets in the south side of the South Pit (Interceptors 1-1 and 1-2) and the east side of the North Pit (Interceptors 2-4 and 2-5). This was judged unrealistic and a less than 2 percent slope for these two interceptor drains was used in the concept design (refer to EIR Table 19). Although the flow path slopes of the interceptor drains along these sides are less than 2 percent, the design path slopes have been shown to be sufficient enough to prevent sedimentation. Using Lauren's Critical Velocity Method as described the *Drainage Concept* (EIR Appendix 3), it was determined that flow velocities in these interceptor are greater than the required velocities to transport any sediment particles that would likely enter the interceptor drains (refer to EIR Table 20).

**Table 20 Comparison of Interceptor Flow Velocity and the Critical Velocity to Transport the Sediments**

| Interceptor | Capital Flow (cfs) | Flow Slope (percent) | Flow Velocity (ft/sec) | Critical Velocity (ft/sec) |
|---|---|---|---|---|
| Zone 1-1 | 35.4 | 1.5 | 10.4 | 4.1 |
| Zone 1-2 | 2.6 | 1.5 | 5.4 | 3.5 |
| Zone 2-1 | 34.3 [1] | 2.0 | 11.5 | 4.0 |
| Zone 2-2 | 19.1 | 2.0 | 9.9 | 3.9 |
| Zone 2-3 | 11.2 | 2.0 | 8.7 | 3.8 |
| Zone 2-4 | 17.6 | 1.0 | 7.5 | 3.9 |
| Zone 2-5 | 20.1 | 1.0 | 7.8 | 4.0 |

[1] Includes culvert flow (9.9 cfs) from Pearblossom Highway culvert No. 7 during Phase 2, 3 and Final Reclamation, and the sheetflow (24.4 cfs) generated by Zone 2-1, totaling 34.3 cfs.

**b) Down Drains**

All down drains were designed in accordance with the minimum dimensions (1.5-foot depth and 3-foot width) provided in the 2008 Los Angeles County Grading Guidelines. Using Manning's Equation and the Continuity Equation, water depth and velocity of the design down drains which capture the offsite flows were computed and are summarized in EIR Table 21. The Manning's Equation is described in the *Drainage Concept Addendum* (EIR Appendix 3, Addendum, beginning on page 14). The Continuity Equation is described in the *Drainage Concept* (EIR Appendix 3, beginning on page 14).

**Table 21 Down Drain Design For Capital flow**

| Down Drain | Captured Capital Flow (cfs) | Mannings n | Normal Water Depth (feet) | Slope (percent) | Velocity (ft/sec) | Channel Depth (feet) | Freeboard (feet) |
|---|---|---|---|---|---|---|---|
| Zone 1-1 | 34.5 | 0.016 | 1.1 | 35 | 29.1 | 1.5 | 0.5 |
| Zone 1-2 | 2.6 | 0.016 | 0.4 | 54 | 18.0 | 1.5 | 1.1 |
| Zone 1-3 | 35.4 [1] | 0.016 | 1.0 | 54 | 34.5 | 1.5 | 0.5 |
| Zone 1-4 | 20 | 0.016 | 0.8 | 54 | 29.9 | 1.5 | 0.7 |
| Zone 2-1 | 34.3 [2] | 0.016 | 1.1 | 35 | 29.1 | 1.5 | 0.5 |
| Zone 2-2 | 19.1 | 0.016 | 0.8 | 54 | 29.6 | 3.0 | 0.7 |
| Zone 2-3 | 11.2 | 0.016 | 0.7 | 54 | 25.9 | 1.5 | 0.8 |
| Zone 2-4 | 17.6 | 0.016 | 0.8 | 54 | 29.0 | 1.5 | 0.7 |
| Zone 2-5 | 20.1 | 0.016 | 0.9 | 35 | 25.5 | 1.5 | 0.7 |

[1] Includes culvert flow (10.8 cfs) from Pearblossom Highway culvert No. 7 during Phase 1 and the sheetflow (24.6 cfs) generated by Zone 1-3, totaling 35.4 cfs.

[2] Includes culvert flow (9.9 cfs) from Pearblossom Highway culvert No. 7 during Phase 2, 3 and Final Reclamation, and the sheetflow (24.4 cfs) generated by Zone 2-1, totaling 34.3 cfs.

Note that Down Drains 1-3 and 1-4, which serving CMP17 and CMP18, would be eliminated during Phases 2, 3 and Final Reclamation, since their flows would be captured by the South Pit. Additional down drains are provided along the drainage terrace, the road ramp, and the notch in the North Pit to capture onsite runoff generated by the facility areas and pit slopes. Two down drains would be constructed along the notch in the North Pit during Phase 1 to covey the onsite runoff generated by the plant facility area into the bottom of the North pit. During Final Reclamation, this notch would be filled and the two down drains along the notch would be removed to restore the Longview extension roadway.

**c) Railroad Culvert Flow Management**

Rectangular Concrete Box Culverts (RCBCs) would be provided to convey flows from the existing railroad culverts CMP 17 and CMP 18, through the Raw Cement and Aggregate Transfer and Distribution Facility to down-drains that convey the flows down the side slopes of the North Pit. The RCBCs, using the nomograph for box culverts (refer to Appendix A of EIR Appendix 3 – *Drainage Concept*), would be located underground, beneath the Raw Cement and Aggregate Transfer and Distribution Facility. The RCBCs are sized to have the capacity at least equal to the railroad culvert capacities, assuming inlet controlled conditions and 30° to 75° wingwalls. Maximum acceptable headwater level is the ground surface level (culvert height plus cover). Dimensions and capacities for the RCBCs are indicated in EIR Table 22.

**Table 22 Dimensions and Capacities of Box Culverts for CMP 17 and CMP 18 Flows**

| Box Culvert | Dimensions | Maximum Cover | HW/D | $Q_{Cap}$ (cfs) | $Q_{Max}$ (cfs) |
|---|---|---|---|---|---|
| CMP 17 | 4' x 3' | 2' | 1.7 | 104 | 100 |
| CMP 18 | 4' x 2' | 2' | 2 | 68 | 50 |

Note: $Q_{Cap}$ is the capacity of the culvert for the given headwater, HW. $Q_{Max}$ is the maximum flow of the CMPs.

The down-drains serving CMP 17 and CMP 18 (i.e., Down Drains 1-2 and 1-3) are similar in design to those in other parts of the site. When Phase 3 mining is undertaken, the two RCBCs and down-drains would be removed as a part of mining the area underlying the Raw Cement and Aggregate Transfer and Distribution Facility. The down-drains would not need reconstruction to serve the railroad culverts, since flows upstream of the railroad culverts would be captured by the South Pit during and after Phase 2 mining, rendering the railroad culverts inactive.

**d) Drainage Terrace / Terrace Drains**

In accordance with the Los Angeles County Grading Guidelines, an 8-foot wide drainage terrace would be constructed on the pit slopes at 30-foot vertical intervals to prevent surface erosion All terrace drains are required to have a minimum slope of 5 percent and a minimum depth of 1 foot. The terrace drains would be lined with crushed rock in consideration of the availability of these materials onsite. Using the Rational Method, the maximum runoff generated by the pit slope surface and captured by any terrace drain was estimated to be less than 1 cfs. Applying the Manning's Equation with a roughness coefficient of 0.3 for coarse gravel, the calculated maximum flow velocity in any terrace drain is approximately 2 ft/sec. The averaged size of ¾-inch crushed rock lining in the terrace drain is found to be stable enough to deliver the runoff flows generated by the pit slope surface without being entrained into the flow (National Stone Association, 1978).

In addition, the Reclamation Plan and FACE has been developed and will be implemented in accordance with SMARA § 3704.1, which provides the performance standards specific to erosion and sediment control. This performance standard notes that:

> *"...no reclamation plan, including any reclamation plan in which the end use is for wildlife habitat, wildland conservation, or open space, or financial assurance for a surface mining operation subject to the provisions of this section, shall be approved by a lead agency unless the reclamation plan meets the provisions of this section. Financial assurances must be maintained in an amount sufficient to provide for the backfilling and contour grading of the mined lands as required in this section."*

**e) Drain Collector**

Drain collectors would be constructed along the northern, western, and southern edge of the North Pit to capture the onsite runoff during Mining Phase 1. The captured runoff would be conveyed through the drain collectors to a catch basin at the northwest corner of the Processing Facilities Site for discharge to the North Pit bottom through an 18-inch steel drain pipe. Similar to the interceptor drains, the drain collectors would be V-shaped with minimum dimensions of 1 foot depth and three foot width. The drain pipe would have an intake elevation of 2,905 feet with a minimum slope of 0.001 (0.1 percent) as recommended by the Los Angeles County *Hydraulic Design Manual*. The estimated flow velocity is

about 4 ft/sec under full flow condition. The drain collectors, catch basin, and the drain pipe are only temporary drainage facilities and would be eliminated during Mining Phase 3.

**f) Drain Collector**

Drain canals would be constructed around the Processing Facilities Site and along the southern and western edges of the rail facility area in the North Pit to capture onsite runoff. The captured onsite runoff would be conveyed through down drains to the North Pit bottom. The drain canal would be V-shaped with minimum dimensions of 1-foot depth and 3-foot width and lined with crushed rock.

### 4.4.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Cause substantial flooding, erosion or siltation.

Expanding upon this threshold criterion more definitively, impacts to Flood Hazards are considered to be significant if any of the following occurs through implementation of the Project.

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?
- *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?* [underscore added for emphasis, also see EIR Chapter 4.6 – Water Quality]

### 4.4.5 Impact Analysis

#### 4.4.5.1 Impacts Determined to be Less than Significant/No Impact

In considering potential impacts of the Project, the County of Los Angeles completed an Initial Study which determined the Project would result in **Less than Significant Impacts** with regard to the following, each of which are discussed in more detail below:

- Soil Erosion
- Pit Sedimentation
- Flooding
- Emptying of Flood Water
- Impacts of Drainage Concept on Adjacent Properties

Note: The information, tables and figures presented in the remainder of EIR sub-chapter 4.4.5 are derived from the *Drainage Concept* (EIR Appendix 3), which was completed in advance of the Caltrans Pearblossom Highway improvements in 2009. As a result, they do not reflect the resulting reduced flood flows within the Lebata watershed. Therefore, the information, tables and figures pertaining to sediment, flooding, inundation depth, and emptying time are overstated and conservative.

#### 4.4.5.1.1 *Soil Erosion*

The Reclamation Plan (EIR Appendix 2) incorporates many design considerations and practices to reduce the potential for, and impacts of erosion. One of the primary objectives of the Reclamation Plan is to provide immediate erosion control. The *Drainage Concept* includes down-drains and floodwater interceptors, which would be built as mining progresses to capture and deliver floodwater to the bottom of the mining pit, thereby minimizing erosion and ensuring the maintenance of slope stability. All down-drains which convey the Capital Flows would discharge onto 30-foot-wide, 60-foot-long rock-lined energy dissipators, excavated at a minimum of 5 feet below the surrounding mine pit floor grade. The rock-lined energy dissipators at the base of down-drains would be covered with 3-inch-thick gunite for added erosion protection. Also, as previously discussed, the Reclamation Plan and FACE has been developed and will be implemented in accordance with SMARA § 3704.1, which provides the performance standards specific to erosion and sediment control. As a result, impacts due to erosion are considered **Less than Significant.**

#### 4.4.5.1.2 *Pit Sedimentation*

All of the sediment transported into the pit by the Capital Flood inflow would be deposited on the pit floor. The depth of sediment deposition resulting from Capital Flood inflow on the completed mine pit bottom area would depend on the concentration of sediment in the inflowing water. According to the Los Angeles County Department of Public Works Sedimentation Manual (March 2006), the entire watershed is within LA County designated Debris Potential Area Zone 11 in the Antelope Valley Basin. The debris production rate of 1,300 cubic yards per square mile was obtained from the Debris Production curves in Sedimentation Manual B-1. Multiplying debris production rate by the approximated local watershed areas, the debris production volume during and after Mining Phase 1 are determined to be 2,500 cubic yards. EIR 0 summarizes the estimated depths of sediment deposited in the mine pits during and upon the completion of each Mining Phase and Final Reclamation.

The sediments would deposit in pond bottoms where the vertical infiltration occurs. Since the mine pits will be mined to the surface of clay layer, which would have a lower permeability than the deposited sediments, sediment deposition on the clay layer in the mining pits would not have an effect on the vertical infiltration rate. Furthermore, the horizontal infiltration is more important with regard to pit empty time. Sediment deposition in the bottom of pit would not have an effect on the horizontal infiltration rate and the pit empty time.

The *Drainage Concept* shows that even after the Capital Flood, sediment layer thickness is 0.13 feet or less. As a result, impacts due to sedimentation are considered **Less than Significant.**

**Table 23 Mine Pit Sedimentation by Mining Phase and Final Reclamation**

| Mining Pit | Local Watershed Area (sq mi) | Pond Bottom Area (sq ft) | Sediment Layer Thickness [1] (feet) |
|---|---|---|---|
| **Phase 1** | | | |
| North Pit | 1.9 | 718,561 | 0.09 |
| **Phase 2** | | | |
| North Pit | 1.9 | 457,078 | 0.07 |
| South Pit | 3.2 | 1,228,807 | 0.07 |
| **Phase 3** | | | |
| North Pit | 1.9 | 884,268 | 0.03 |
| South Pit | 3.2 | 1,336,548 | 0.06 |
| **Final Reclamation** | | | |
| North Pit | 1.9 | 228,515 | 0.13 |
| South Pit | 3.2 | 1,228,807 | 0.07 |

[1] Sediment estimates were derived from the *Drainage Concept* (EIR Appendix 3), which was completed in advance of the Caltrans improvements in 2009. As a result, these sediment estimates are conservative and do not reflect reduced flood flows, and therefore sediment, due to the Pearblossom Highway Improvements within the Lebata watershed.

#### 4.4.5.1.3 *Flooding*

As previously noted, the Tc-calculator was used to determine overland sheetflows, which were illustrated in EIR Figure 22 (Phase 1- Offsite and Proposed Onsite Drainage) and EIR Figure 23 (Final Reclamation - Offsite and Proposed Onsite Drainage), with the sheetflow calculations summarized in EIR Table 17 and EIR Table 18.

The total flood volume entering Project during a Capital Flood consists of Lebata Braid flow, local runoff, onsite runoff from the un-mined surface along the edges of the mining pits, and direct precipitation over the surface of the mining pits.

**a) Lebata Braid Flow (Main Channel Overflow)**

One component of the Capital Flood inflow to the site is the 175 cfs Lebata Braid flow produced by the hypothetical main channel overflow at the alluvial fan apex in the event of failure of the flood levee there. The duration of this flow cannot be determined by any provided methods in the Los Angeles County Hydrology Manual. For purposes of this EIR, the total duration of the 175 cfs main Lebata Braid flow was assumed to be 3 hours. This is a conservative assumption because the small amount of the overflow would only occur at the peak time of the Capital Flood (21,700 cfs). Under this conservative assumption, the Lebata Braid flow volume would equal to 175 cfs x 3 hours, or 43 acre-feet. During Mining Phase 1, the contribution of the Lebata Braid flow to the North Pit will be limited to the capacity of the culvert CMP18 which is 50 cfs. So the flood volume contribution of the Lebata Braid flow to the North Pit during Mining Phase 1 would equal to 50 cfs x 3 hours, or 12 acre-feet.

**b) Local and Onsite Runoff Volume**

According to the LACDPW Hydrology Manual, the 50-year design storm occurs over a period of four days, with the maximum rainfall falling on the fourth day, and the maximum 24-hour rainfall amounts

for the first three days are sequentially 10, 40, and 35 percent of the fourth day's rainfall. Based on the 50-year precipitation contour lines on the GIS drainage area overlay map, the calculated average area-weighted 50-year precipitation for the drainage area is 3.2 inches per 24 hours. This represents the maximum 24-hour rainfall amount in the fourth day. The maximum 24-hour rainfall amounts for the first three days would be 0.32 inches, 1.28 inches, and 1.12 inches respectively. The total rainfall during the four days for the 50-year design storm would be 5.92 inches. The rainfall amount for the four days was then input into the *Tc-calculator* to determine the total flood volume generated by the local watersheds.

The North Pit in Mining Phases 1 and 2 will have onsite runoff generated by the un-mined area (mainly the Processing Facilities Area) along the edges of the pit including a paved impervious area of about 7 acres. Using the same parameters that were used for the local runoff calculation, with the exception of rainfall intensity and impervious surface, the onsite flood volume was also determined by the *Tc calculator*. Based on the 50-year precipitation contour lines, maximum rainfall at the Project site ranges from 2.6 to 3.0 inches per 24 hours. The estimated average maximum rainfall of 2.8 inches per 24 hours during the 50-year design storm was used to calculate onsite flood volume.

**c) Direct Precipitation Volume**

The flood volume generated by the direct precipitation was obtained by multiplying the pit open area and the total onsite rainfall of 5.18 inches during the 50-year design storm (maximum 2.8 inches per 24 hour in the fourth day, and 0.28, 1.12, and 0.98 inches in the first, second, and third day respectively, totaling 5.18 inches).

EIR Table 24 summarizes the total flood volumes entering each mining pit during each Mining Phase and upon Final Reclamation. EIR Figure 24-1 through EIR Figure 27 illustrate flood volumes for each mining phase and final reclamation.

**Table 24 Flood Volume Received during Project Mining Phases and Final Reclamation**

| Mining Pit | Upstream Watershed Area (Acre) | Local Watershed Sheetflow Volume (acre-feet) | Lebata Braid Flow Volume (acre-feet) | Onsite Runoff Volume (acre-feet) | Onsite Direct Rainfall Volume (acre-feet) | Total Capital Flood Volume (acre-feet) | Inundation Depth (feet) |
|---|---|---|---|---|---|---|---|
| **Phase 1** | | | | | | | |
| North Pit | 1228 | 66 | 12 | 7 | 21 | 107 | 19 |
| **Phase 2** | | | | | | | |
| North Pit | 554 | 30 | 0 | 7 | 21 | 58 | 16 |
| South Pit | 1525 | 82 | 43 | 0 | 65 | 190 | 16 |
| **Phase 3** | | | | | | | |
| North Pit | 554 | 30 | 0 | 0 | 53 | 83 | 13 |
| South Pit | 1525 | 82 | 43 | 0 | 68 | 193 | 16 |
| **Final Reclamation** | | | | | | | |
| North Pit | 554 | 30 | 0 | 0 | 24 | 54 | 17 |
| South Pit | 1525 | 82 | 43 | 0 | 65 | 190 | 16 |

The inundation depth is well below the proposed 80 ft depth of the mine pits. Thus, the Capital Flood volume inside the pits would not overflow. In addition, minimum two-foot-high MSHA-required safety berms would be installed along the tops of the mine pit slopes around the entire northern, eastern, southern, and western edges and pit entrance/exit ramps. Therefore, Project flooding impacts are considered **Less than Significant.**

#### 4.4.5.1.4 *Emptying of Flood Water*

The *Drainage Concept* (EIR Appendix 3) provides a water budget analysis that estimated the Capital Flood water emptying time. Flood water entering the mine pits would be emptied by three potential pathways: 1) evaporation, 2) vertical infiltration through the mine pit bottom, and 3) horizontal infiltration through the mine slope.

The water budget analysis uses the principle of mass balance (i.e., the change in storage is equal to the inflows minus the outflows). Inflow components include Capital Flood inflow from the main channel overflow, offsite inflow, onsite inflow, and direct precipitation over the surface of the mining pit. Outflow components include evaporation, vertical infiltration and horizontal infiltration. Refer to the Drainage Concept (EIR Appendix 3, beginning on page 32) for a discussion of the related calculations.

The change in flood volume and its associated water depth due to evaporation and seepage were calculated using daily time steps. The emptying times after the Capital Flood are summarized in EIR Table 25. The estimated emptying time includes two columns, one is the total time required to empty the Capital Flood volume and the other is the emptying time after the Capital Flood event. The two columns have a difference in 4 days. This is because infiltration also occurs over the 4-day Capital Flood event.

**Table 25 Capital Flood Volume and Pit Emptying Time**

| Mining Pit | Total Capital Flood Volume (acre-feet) | Emptying Time | |
|---|---|---|---|
| | | Total (days) | After Capital Flood Volume (acre-ft) |
| **Phase 1** | | | |
| North Pit | 107 | 5 | 1 |
| **Phase 2** | | | |
| North Pit | 58 | 3 | 0 |
| South Pit | 190 | 9 | 5 |
| **Phase 3** | | | |
| North Pit | 83 | 7 | 3 |
| South Pit | 193 | 9 | 5 |
| **Final Reclamation** | | | |
| North Pit | 54 | 5 | 1 |
| South Pit | 190 | 9 | 5 |

Note: The lateral infiltration is the major factor contributing to the emptying time. If a higher permeability was used, instead of the average permeability, the estimated emptying time would be even shorter.

As shown in the EIR Table 25, all mining phases would be emptied within 5 days after the Capital Flood event and the Project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Therefore, Project impacts are considered **Less than Significant.**

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LONGVIEW RD.

AVENUE T

CATCH BASIN

DRAIN COLLECTOR

PROCESSING FACILITIES SITE

DRAIN COLLECTOR

18-INCH DRAIN PIPE INTAKE ELEV. 2905 0.1 % SLOPE

INUNDATION DEPTH = 19 FT

DOWN DRAIN ZONE 1-1 $Q_{50}$ = 50 CFS V = 38 FPS 54 % SLOPE

INTERCEPTOR ZONE 1-1 (A & B) $Q_{50}$ = 50 CFS V = 11 FPS 4 % SLOPE

A

A

B

B

DRAIN COLLECTOR

DOWN DRAIN ZONE 1-3 $Q_{CAP}$ = 50 CFS (CMP18 CAPACITY) V =38 FPS 54 % SLOPE

DOWN DRAIN ZONE 1-2 $Q_{50}$ = 25 CFS V = 32 FPS 54 % SLOPE

TUNNEL

SOUTHERN PACIFIC RAILROAD

NOTE: DOWN DRAIN SIZING IS BASED ON THE EXISTING CULVERT (CMP 18) CAPACITY WHICH IS LESS THAN THE TOTAL FLOW THAT WOULD ENTER THE NORTH PIT THROUGH THE CULVERT, SEE DRAINAGE REPORT, SECTION 3.4.1 AND FIGURE 4

CMP 18 **50 cfs** (Qcap)

CMP 17 **100 cfs** (Qcap)

ZONE 1-3 ( 35 CFS) & PORTION OF MAIN CHANNEL OVERFLOW ( 50 CFS ) $Q_{50}$ = 85 CFS

SEE DRAINAGE REPORT, SECTION 3.4.1 AND FIGURE 4

ZONE 1-2 $Q_{50}$ = 25 CFS

AVENUE T

DETAIL AREA

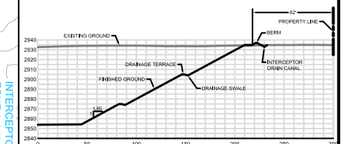
SOUTHERN PACIFIC RAILROAD

PROJECT OVERVIEW

Scale: 1" = 750'

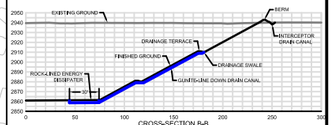
**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW
- FLOW PASS THROUGH THE EXISTING CULVERT



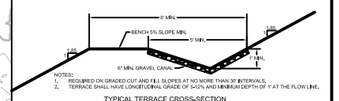

CROSS-SECTION A-A

SCALE: 1"=50'




CROSS-SECTION B-B

SCALE: 1"=50'

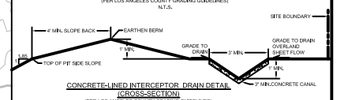



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION

(PER LOS ANGELES COUNTY GRADING GUIDELINES)

N.T.S.

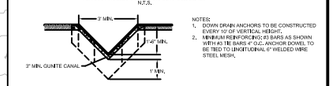



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL

CROSS-SECTION

(PER LOS ANGELES COUNTY GRADING GUIDELINES)

N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. ANCHORS TO BE PLACED AT 45 DEG AS SHOWN WITH #3 TIE BARS AT EACH ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL

CROSS-SECTION

(PER LOS ANGELES COUNTY GRADING GUIDELINES)

N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

N

W E

S

SCALE (FEET)

0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY FOR SURFACE MINING PROJECT 200700001 (Lebata Inc.)

PROJECT (RADIUS = 1500 FT)

PHASE 1 - NORTH PIT

Cut Volume: 4,405,000 CY

Date: December 24, 2008

JN: 2192

Scale: 1" = 100'

1 - Inch

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

SHEET 1

Designed By: G. Trinidad | Drawn By: G. Trinidad

Revised By: J. Reilly | Approved By:

STETSON ENGINEERS

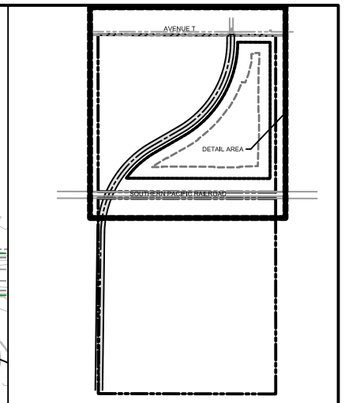
**Capital Flood Inundation Mining Phase 1 North Pit**

Big Rock Creek Site
Antelope Valley, California

**FIGURE 24-1**

SCALE: AS SHOWN

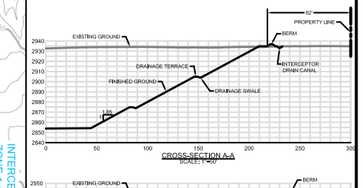
DATE: 10-21-2013



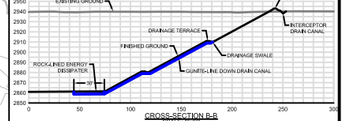

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

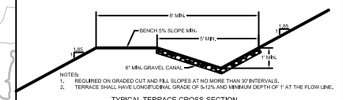
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE 1"=50'

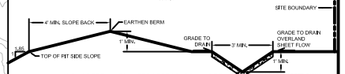



CROSS-SECTION B-B
SCALE 1"=50'

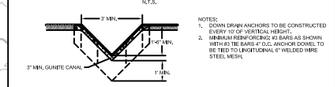



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.



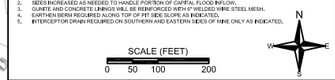

CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.




DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

PROJECT (RADIUS = 1500 FT)
PHASE 2 - NORTH PIT

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 0 CY
Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

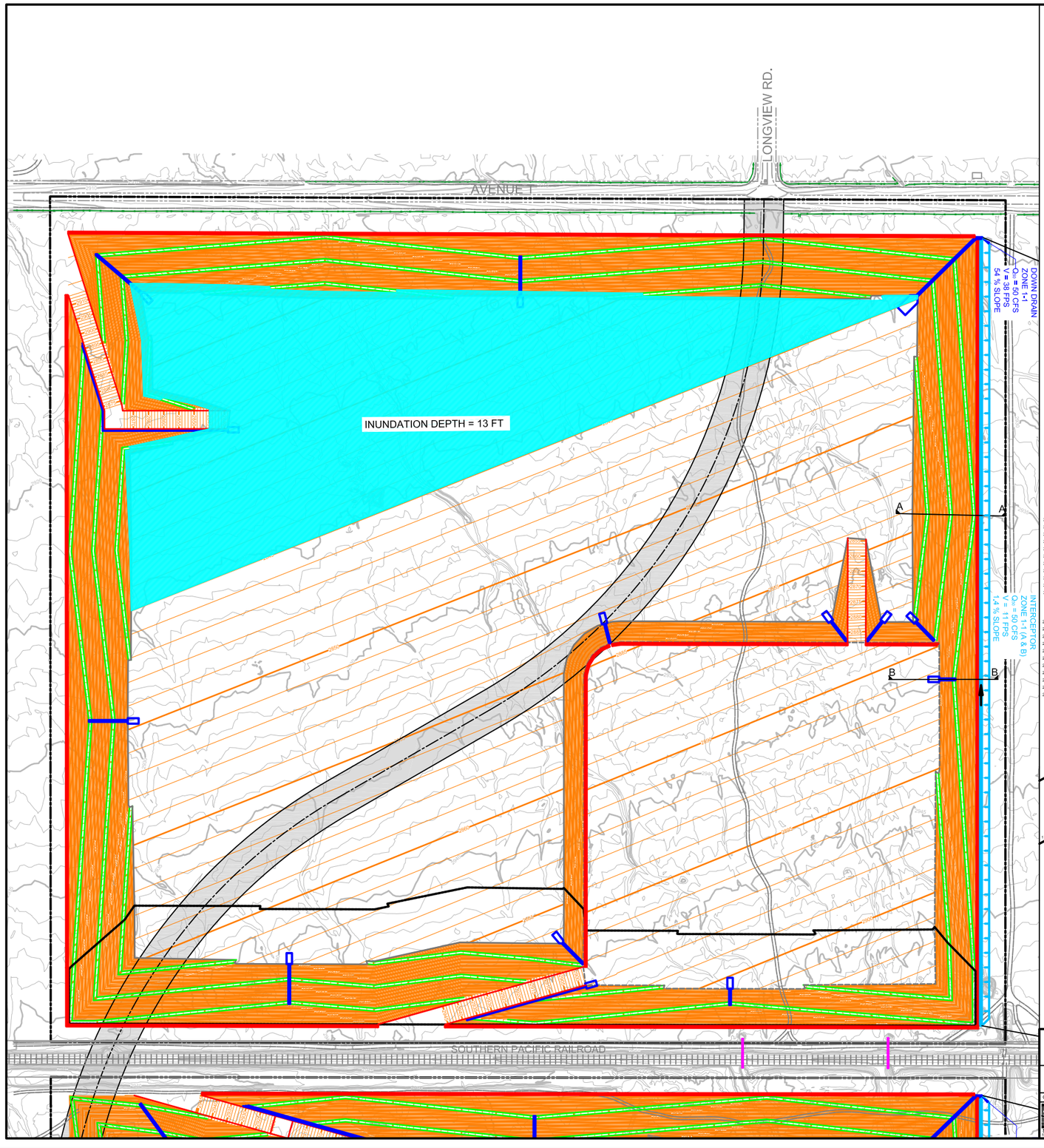
Designed By: G. Trikilad
Drawn By: G. Trikilad
Revised By: J. Reilly
Approved By:

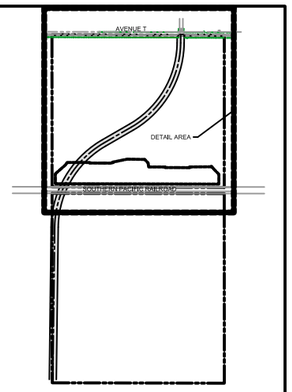
SHEET 2

**Capital Flood Inundation Mining Phase 2 North Pit**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 24-2**

SCALE: AS SHOWN
DATE: 10-21-2013

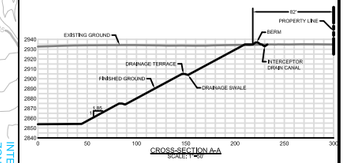



PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

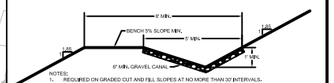
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

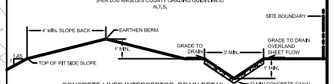



CROSS-SECTION B-B
SCALE: 1"=50'

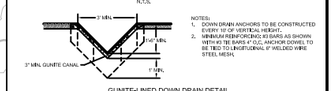



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACES SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

N
W
E
S

SCALE (FEET)
0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

PROJECT (RADIUS = 1500 FT)
PHASE 3 - NORTH PIT

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 8,989,000 CY
Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

SHEET
4

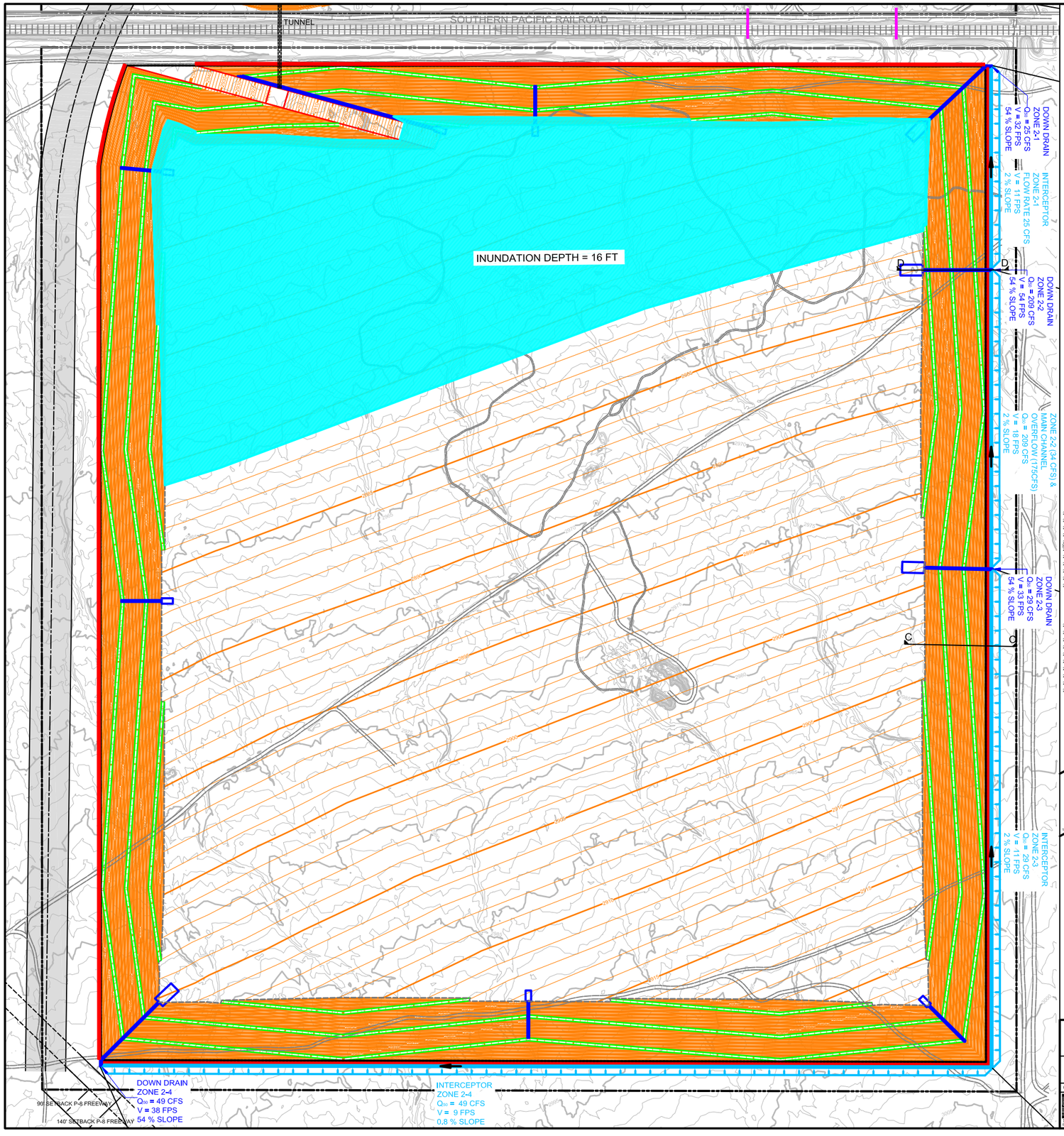
STETSON ENGINEERS INC.

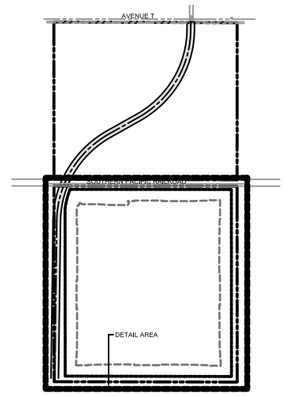
**Capital Flood Inundation**
**Mining Phase 3 North Pit**
Big Rock Creek Site
Antelope Valley, California

**FIGURE**
**24-3**

SCALE: AS SHOWN

DATE: 10-21-2013

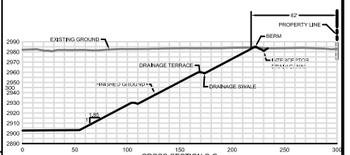


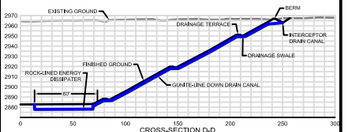

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

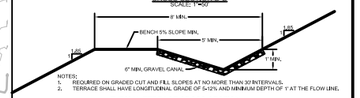
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C'
SCALE 1" = 50'

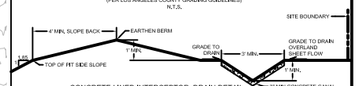



CROSS-SECTION D-D'
SCALE 1" = 50'

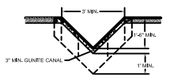



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

N
W E
S

SCALE (FEET)
0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

PROJECT (RADIUS = 1500 FT)
PHASE 2 - SOUTH PIT

Cut Volume: 16,754,000 CY | Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

JN: 2192
Scale: 1" = 100'
1 - Inch

SHEET
3

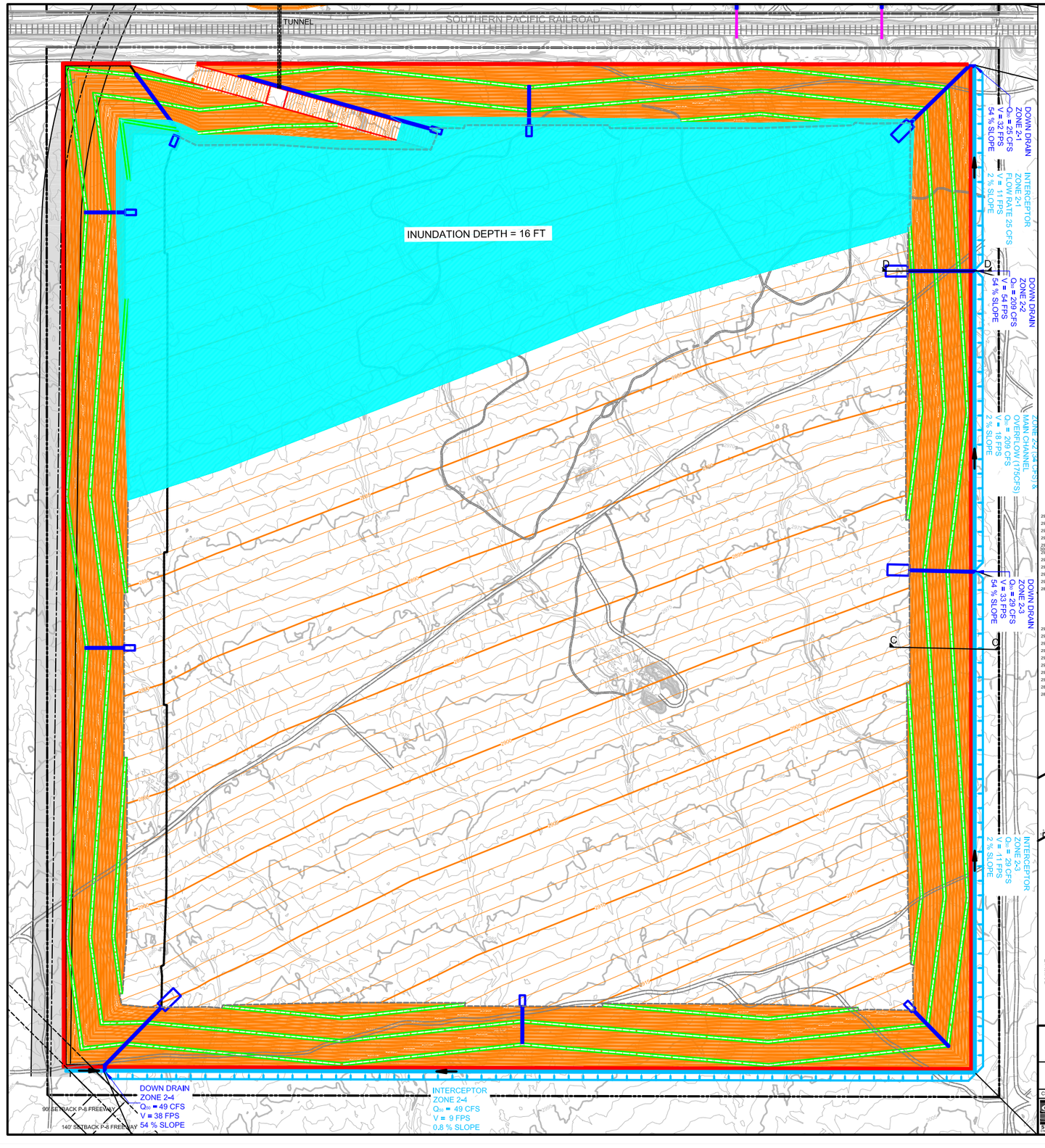
STETSON ENGINEERS INC.

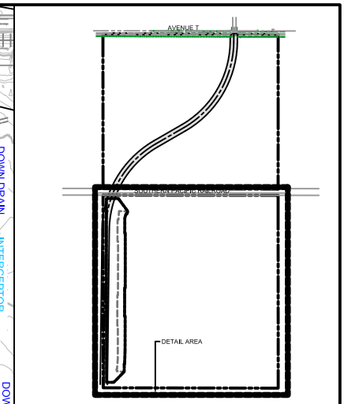
**Capital Flood Inundation**
**Mining Phase 2 South Pit**
Big Rock Creek Site
Antelope Valley, California

**FIGURE**
**25-1**

SCALE: AS SHOWN

DATE: 10-21-2013

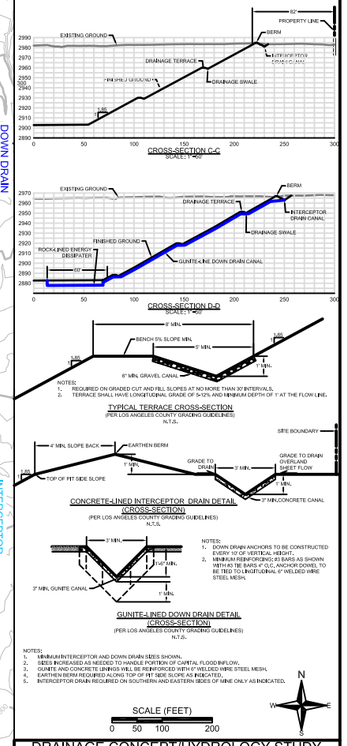



PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C
SCALE: 1"=50'

CROSS-SECTION D-D
SCALE: 1"=50'

NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

SCALE (FEET)
0 50 100 200

N
W E
S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

PROJECT (RADIUS = 1500 FT)
PHASE 3 - SOUTH PIT

| | |
|---|---|
| JN: | 2192 |
| Scale: | 1" = 100' |
| | 1 - Inch |
| Cut Volume: 840,000 CY | Date: December 24, 2008 |
| Topo Source: | Inland Aerial Survey Inc. Date of Flight: 05/02/2006 |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |

STETSON ENGINEERS INC.

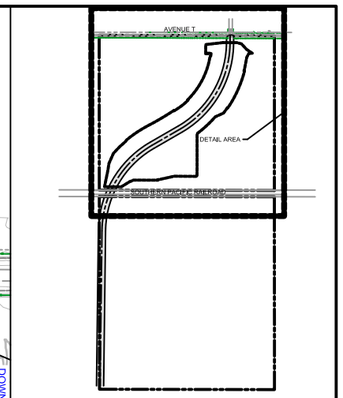
SHEET
5

**Capital Flood Inundation Mining Phase 3 South Pit**
Big Rock Creek Site
Antelope Valley, California

**FIGURE**
**25-2**

SCALE: AS SHOWN

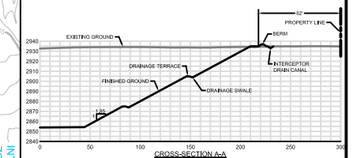
DATE: 10-21-2013



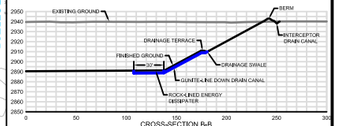

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

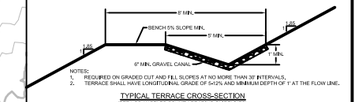
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

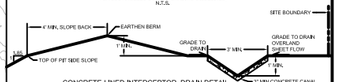



CROSS-SECTION B-B
SCALE: 1"=50'

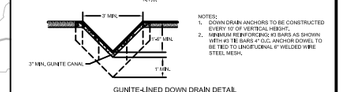



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5+0% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.



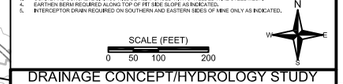

CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6' WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.




DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

PROJECT (RADIUS = 1500 FT)
FINAL RECLAMATION - NORTH PIT

JN: 2192
Scale: 1" = 100'
1 - Inch

Egineering Fill Volume: 3,156,000 CY | Date: December 24, 2008

STETSON ENGINEERING

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinklad | Drawn By: G. Trinklad
Revised By: J. Reilly | Approved By:

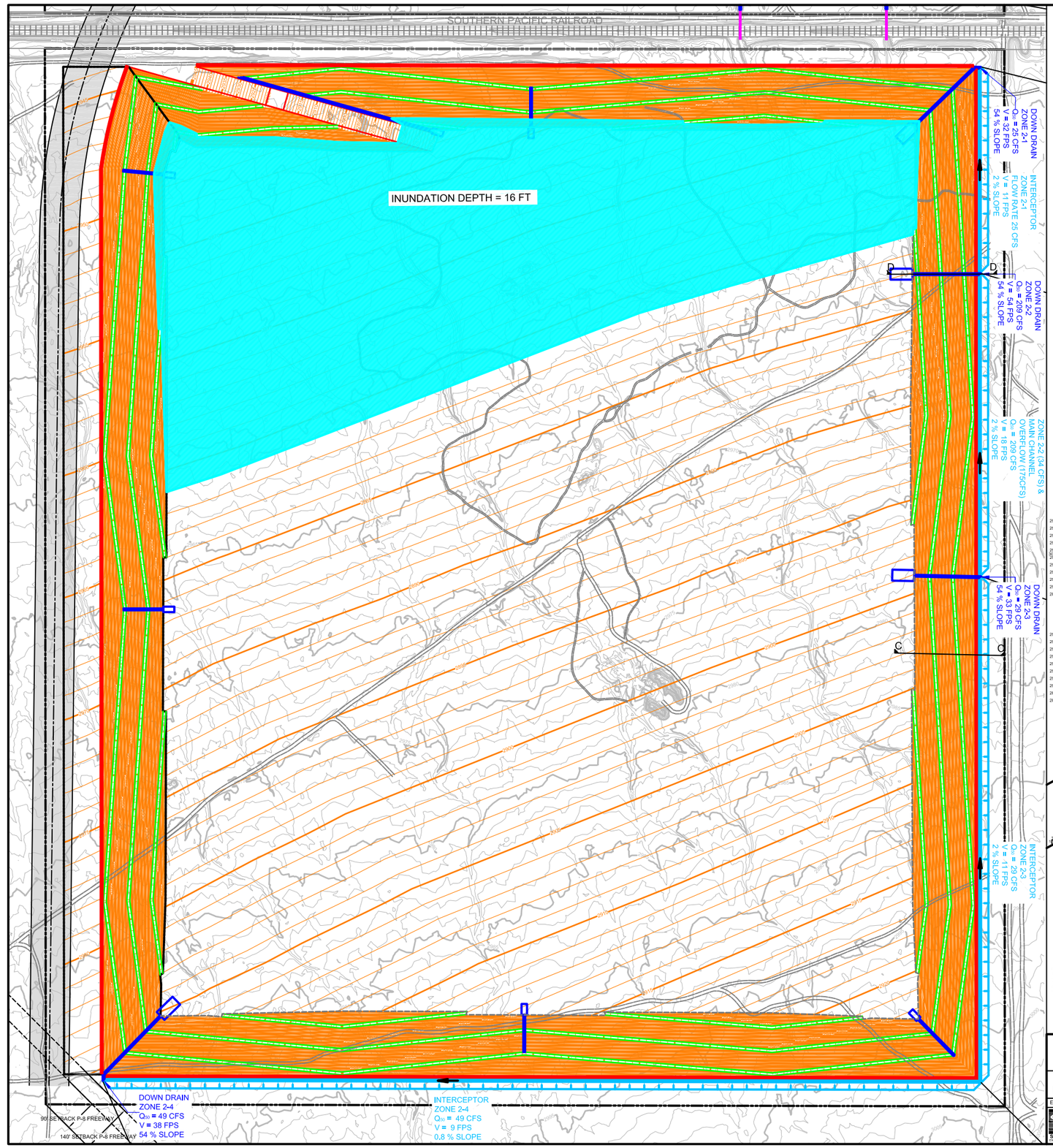
SHEET
6

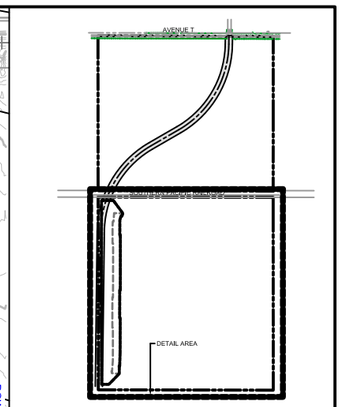
**Capital Flood Inundation**
**Final Reclamation North Pit**
Big Rock Creek Site
Antelope Valley, California

**FIGURE**
**26**

SCALE: AS SHOWN

DATE: 10-21-2013

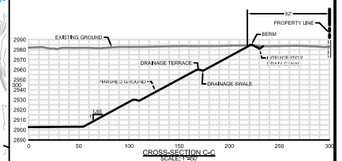



PROJECT OVERVIEW
Scale: 1" = 750'

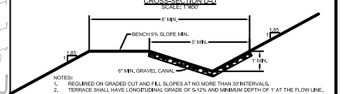
**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW



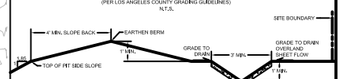

CROSS-SECTION C-C
SCALE 1"=50'

CROSS-SECTION D-D
SCALE 1"=50'

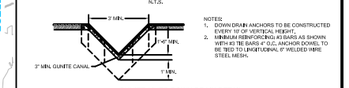



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30'INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO UNDAFORMM, 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
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2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

SCALE (FEET)
0 50 100 200

N
W E
S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

PROJECT (RADIUS = 1500 FT)
FINAL RECLAMATION - SOUTH PIT

JN: 2192
Scale: 1" = 100'
1 - Inch

Engineering Fill Volume: 850,000 CY | Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

SHEET 7

STETSON ENGINEERS INC.

**Capital Flood Inundation**
**Final Reclamation South Pit**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 27**

SCALE: AS SHOWN

DATE: 10-21-2013

#### 4.4.5.1.5 *Impacts of Drainage Concept on Adjacent Properties*

The mine drainage concept would have no adverse impact on properties adjacent to and downstream of the mine site during the Capital Flood. The interceptor drains located on the upstream (southern and eastern) sides of the mine pits are adequately sized to capture and convey any sheetflow and the Lebata Braid flow arriving at each interceptor drain for delivery to the down drains and subsequent discharge to the mine pits. Hence, there would be no backwater effects or associated increases in flood depths caused by the interceptor drains. Therefore, flooding on adjacent properties would not be impacted.

Following completion of mining, all flows arriving at the Project site boundary during the Capital Flood would be intercepted by the completed mine pits. No flows would be diverted around the mine. Hence, flows and flooding conditions downstream of the mine would not be exacerbated compared to existing conditions.

In the existing case, a portion of the Capital Flood arriving at CMP 18 would be deflected westwards by the rail road embankment due to constrained culvert capacity. The deflected flows would not be increased by Phase 1 mining as all mining activities would occur on the downstream side of the embankment. During and following Phase 2 mining, the deflected flows would be reduced or eliminated due to interception of flows by the South Pit.

The Project will not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite. The Project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. As a result, the Project is expected to result in **Less than Significant Impacts** to adjacent properties.

### 4.4.5.2 Impacts Determined to be Potentially Significant

None.

## 4.4.6 Mitigation Measures

None.

## 4.4.7 Level of Significance after Mitigation

No significant impacts are associated with the Project.

## 4.4.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Project mine pits would intercept the entire Capital Flood discharge via a system of interceptor-drains and convey the water into the pits via a system of down-drains and terrace drains. The total captured Capital Flood Volume, inundation depth and pit emptying time in each phase are summarized in EIR Table 25.

All flood water entering the mine pits, inclusive of that from a Capital Flood, would be emptied by three potential pathways: 1) evaporation, 2) vertical infiltration through the mine pit bottom, and 3) horizontal infiltration through the mine slope.Given the limited number of cumulative projects, and the fact that none of the captured Capital Flood would overflow from the pits and escape as surface flow, Project impacts **would not be cumulatively considerable.**

## 4.5 NOISE

### 4.5.1 Introduction

This sub-chapter of the EIR describes the existing acoustic environment on and adjacent to the proposed Project, describes the noise impacts associated with the construction and operation of the Project, and describes recommended mitigation measures, if applicable. This information provided in this sub-chapter is derived from the following:

- *Los Angeles County Noise Ordinance*, Los Angeles County Code, Title 12 Chapter 08, 1978 (*County Noise Ordinance*)
- *Antelope Valley Areawide General Plan*, Country of Los Angeles Department of Regional Planning, December 4, 1986 (*Areawide General Plan*)
- *Noise Element*, City of Palmdale General Plan, January 25, 1993 (*Palmdale Noise Element*)
- *Traffic Noise Analysis Protocol*, California Department of Transportation, Division of Environmental Analysis, August 2006 (http://www.dot.ca.gov/hq/env/noise/)
- *Technical Noise Supplement*, California Department of Transportation, October 1998 (http://www.dot.ca.gov/hq/env/noise/pub/Technical%20Noise%20Supplement.pdf)
- *Traffic Noise Model v2.5*, Federal Highway Administration (http://www.fhwa.dot.gov/environment/noise/tnm/index.htm)
- *Noise Assessment of Potential Noise Impacts of the Proposed Robertson Ready Mix Facility*, County of Los Angeles, Mestre Greve Associates, October 1998
- *Noise Impact Assessment Spreadsheet*, Federal Transit Administration, July, 3 2007 (http://www.fta.dot.gov/planning/environment/planning_environment_2233.html)
- *Noise Impact Assessment*, prepared by West Coast Environmental and Engineering, October 10, 2008 (*NIA*) (EIR Appendix 8)

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***13. Noise***

*Would the project result in:*

*a) Is Exposure of persons to, or generation of, noise levels in excess of standards established in the County General Plan or noise ordinance (Los Angeles County Code, Title 12, Chapter 12.08), or applicable standards of other agencies?*

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

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

### 4.5.2 Regulatory Setting

#### 4.5.2.1 Los Angeles County Noise Ordinance

The *County Noise Ordinance* (Title 12, Chapter 08) provides guidelines for measuring noise levels and determining if noise impacts are significant. Excerpts of applicable requirements can be found in Appendix B of the *NIA* (EIR Appendix 8).

#### 4.5.2.2 Antelope Valley Areawide General Plan

The *Areawide General Plan* was developed to provide decision makers with a policy framework to guide them in efforts to improve the quality of life in the Antelope Valley. The *Areawide General Plan* provides various Policy Statements regarding source and operational noise source controls. Because these Policy Statements are broad and generalized, they did not provide guidance useful to the preparation of the *NIA* (EIR Appendix 8). Accordingly, the *County Noise Ordinance* (discussed in EIR sub-chapter 4.5.2.1) was used as the primary resource to guide the development of the *NIA*.

#### 4.5.2.3 City of Palmdale General Plan

The Project is located approximately 4 miles outside of the City of Palmdale and outside the City's Sphere of Influence. Nevertheless, to evaluate traffic source noise impacts, the City of Palmdale's General Plan Noise Element (*Palmdale Noise Element*) is considered applicable to the Project. The *Palmdale Noise Element* discusses the important components of an acoustical analysis as well as presents a set of thresholds to determine Project impact significance. Excerpts from the *Palmdale Noise Element* are included in Appendix B of the *NIA* (EIR Appendix 8).

#### 4.5.2.4 Caltrans Guidance Documents

Caltrans has developed the following guidance documents for conducting traffic based noise impact assessments:

- **Traffic Noise Analysis Protocol (TNAP)**. This document contains Caltrans noise policies, which fulfill the highway noise analysis and abatement/mitigation requirements stemming from the following State and federal environmental statutes:
  - California Environmental Quality Act (CEQA);
  - National Environmental Policy Act;
  - Title 23 United States Code of Federal Regulations, Part 772 "Procedures for Abatement of Highway Traffic Noise and Construction Noise" (23 CFR 772); and
  - Section 216 et. seq. of the California Streets and Highways Code.
- **Technical Noise Supplement (TeNS)**. This document is a supplement to the TNAP, and contains Caltrans noise analysis procedures, practices, and other useful technical noise background information. Noise analysis activities that were performed to support the *NIA* (EIR Appendix 8) closely follow guidance in the TeNS.

### 4.5.3 Environmental Setting

Under CEQA, environmental setting includes physical as well as economic and social aspects of the environment. The environmental setting is affected by noise from day-to-day activities including automobile traffic, trains, airplanes, industrial processes, and residential activities. This sub-chapter discusses the regulatory and environmental settings of the Project site, thereby establishing the baseline conditions for evaluating Project impacts.

#### 4.5.3.1 Existing Noise Sources

Ambient noise in the area surrounding the Project is dominated by traffic on Avenue T. High intensity, low frequency noise from the railroad is also present. Various other noise sources that were observed during site visits include traffic on other paved and unpaved roads, barking dogs, and generator operations at residences.

#### 4.5.3.2 Receptors

Noise receptors are separated into the following four categories by the *County Noise Ordinance*:

- **Sensitive Receptors.** Areas that are designated by the Health Officer (Director of the County's Department of Public Health, Environmental Health) as requiring exceptional quiet.
- **Residential Receptors.** Property that is used in part or whole for residential purposes, except transient lodging such as hotels and motels.
- **Commercial Receptors.** Property that is used in part or whole for commercial purposes, such as stores, restaurants, and entertainment venues.
- **Industrial Receptors.** Property that is used in part or in whole for manufacturing purposes.

All receptors in the near vicinity of the Project are "Residential Receptors" are depicted on EIR Figure 28 - Noise Receptors:

- **Receptor 1 (R1)** is located west of the Project at the corner of Avenue T and 106$^{th}$ Street. This receptor is expected to experience noise impacts from haul truck travel.
- **Receptor 2 (R2)** is located west of the Project adjacent to Avenue T on the north side. This receptor is expected to experience noise impacts from Project traffic.
- **Receptor 3 (R3)** is located approximately 4,000 feet west of the Project, near 126th Street East. This is the closest receptor west of the Project and is expected to experience noise impacts from haul truck travel and industrial activities.
- **Receptor 4 (R4)** is east of, and adjacent to, the Project. It is also situated adjacent to the railroad, on the south side. This receptor is expected to experience noise impacts from industrial activities. Two residences exist at this location. The receptor is placed at the residence that would experience the higher impact.
- **Receptor 5 (R5)** is approximately 600 feet east of the south-east corner of the Project. This receptor is expected to experience noise from industrial activities.

#### 4.5.3.3 Definitions

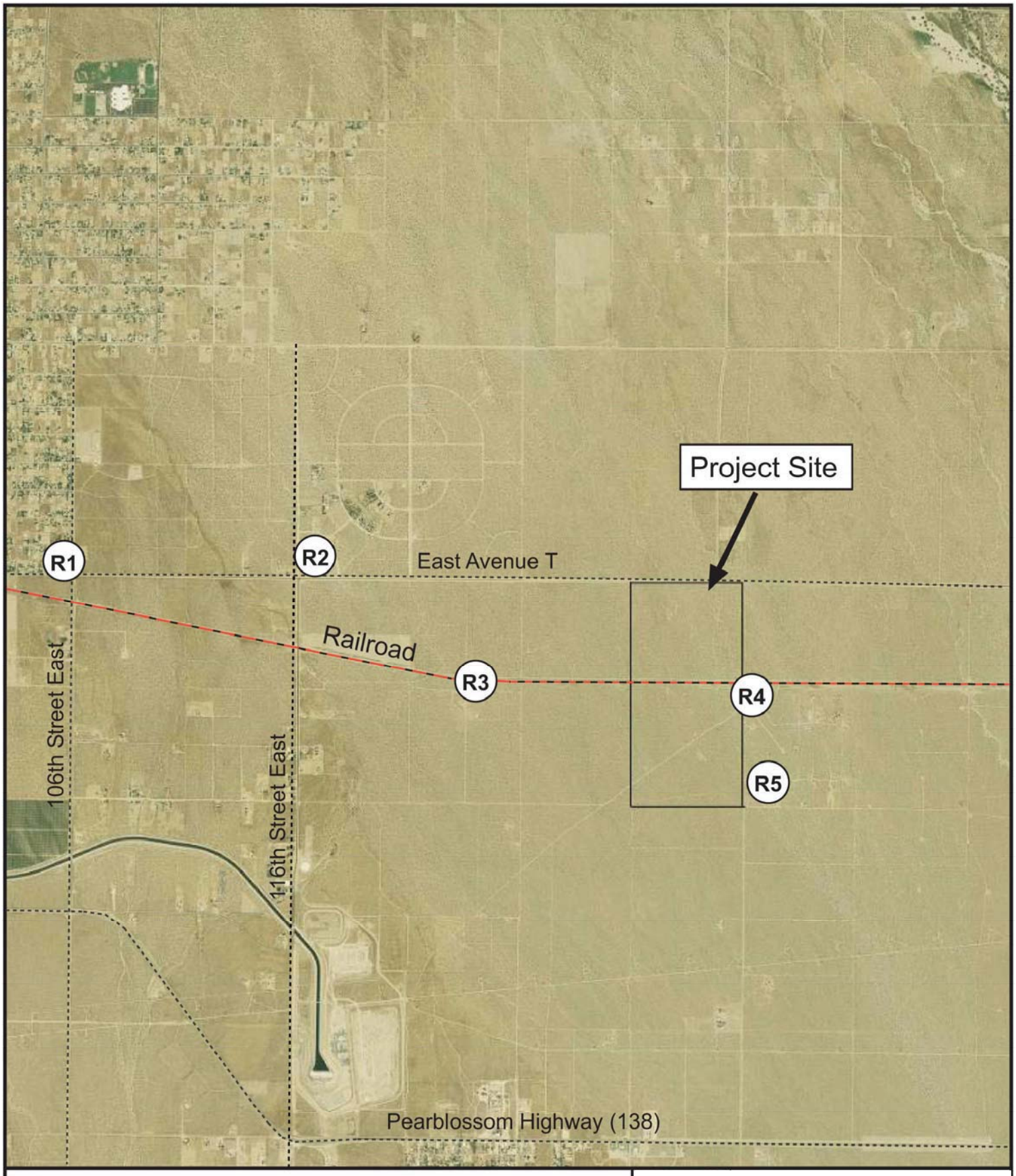
The following definitions of acoustical terms are pertinent to the understanding of this EIR sub-chapter:

- **Decibel (dB).** A logarithmic unit of measurement that expresses the magnitude of power relative to an implied reference level. The reference level (0 dB) for acoustics is generally set at the threshold of human perception.
- **Sound Pressure Level (SPL).** The logarithmic measure of the energy of a sound relative to a reference value, measured in dB.
- **Sound Power Level (SWL).** The acoustical energy emitted by the sound source. An absolute value that is not affected by the environment, unlike SPL.
- **A-Weighted Sound Level (dBA).** The sound level obtained using an A-weighted filter. This filter de-emphasizes the very low and very high frequency response of the human ear and correlates well with subjective reactions to noise.
- **$L_{01}$, $L_{10}$, $L_{50}$, $L_{90}$.** The A-weighted noise level that is equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 50 percent, or 90 percent of the stated time period.
- **Equivalent Continuous Noise Level ($L_{eq}$).** The level of steady sound that has the same A-weighted sound energy as the time varying sound in the stated time (i.e., the average).
- **Community Noise Equivalent Level (CNEL).** The 24-hour A-weighted average sound level obtained after the addition of 5 dBA to sound levels occurring in the evening (7:00 p.m. to 10 p.m.) and 10 dBA to sound levels occurring in the night (10:00 p.m. to 7:00 a.m.).
- **Ambient Noise Level.** The all-encompassing noise associated with an environment, usually a composite of sound from many different sources in different directions.
- **Insertion Loss.** The difference in the sound level at a receiver location with and without the presence of a noise barrier Used to predict the effectiveness of noise barriers.

#### 4.5.3.4 Ambient Noise Measurements

Ambient measurements were made using two Rion NL-21 sound level meters. Random-incidence type microphones were equipped with a windscreen and placed on a tripod approximately 5 feet above ground level. The microphones were calibrated using a YCT Sound Level Calibrator before each measurement. The sound level meter was programmed to log A-weighted energy equivalent sound levels at one (1) minute intervals on a slow response time, as described in the *County Noise Ordinance*. The following ambient noise measurements were made in the Project vicinity. Noise receptor locations (EIR Figure 28) also served as the following monitoring locations:

- **Monitoring Location A (ML-A)** is located on the Project site, the same distance from the railroad as **R4** and slightly closer to Avenue T than **R4**. One 24-hour and one 8-hour measurement was made at this location.
- **Monitoring Location B (ML-B)** is located at the intersection of Avenue T and 106$^{th}$ street, near **R1**. One 4-hour peak a.m. traffic measurement was made at this location.




R# Receptors

Source: West Coast Environmental, 10-01-08

| Receptor Locations<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>28 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

- **Monitoring Location C (ML-C)** is north of the site, equidistant from Avenue T (20 feet) and **R2**. One 4-hour peak p.m. traffic measurement was made at this location.
- **Monitoring Location D (ML-D)** is near **R3**, the same distance from Avenue T as **R3**. One 15-minute measurement was made at this location.
- **Monitoring Location E (ML-E)** is near **R4**, in a location that is the same distance from Avenue T and the Railroad as **R4**. One 15-minute measurement was made at this location.
- **Monitoring Location F (ML-F)** is near **R5**, in a location that is the same distance from Avenue T and the Railroad as **R5**. One 15-minute measurement was made at this location.

Traffic counts were taken from 4:11 to 5:11 PM and from 6:28 to 7:28 a.m. for the peak traffic hours and used to calibrate the traffic model discussed below in EIR sub-chapter 4.5.5.2.2.

Due to the high intensity, short duration, and infrequent occurrence of train noise, it has a larger effect on the CNEL parameter used in the *Areawide General Plan* than the median-based noise parameters ($L_{50}$, $L_{25}$, $L_{8.3}$, etc.) used in the *County Noise Ordinance*. However, traffic on Avenue T dominates the noise environment in the Project vicinity. Because a single source dominates the noise environment in the Project vicinity, noise levels are predicted based on distance from that source. Ambient noise levels at the receptors were developed using a composite of the 24-hour measurement at **ML-A** and the short term measurements near **ML-B** through **ML-F**. Ambient noise values are presented in EIR Table 26.

**Table 26 Receptor Ambient Noise**

| Value<br>Corresponding Receptor | ML-A<br>24 Hour | ML-B<br>R1 | ML-C<br>R2 | ML-D<br>R3 | ML-E<br>R4 | ML-F<br>R5 |
|---|---|---|---|---|---|---|
| Day Max Hour $L_{50}$ | 39.1 | 58.8 | 47.9 | 37.1 | 38.7 | 31.0 |
| Night Max Hour $L_{50}$ | 39.3 | 59.0 | 48.1 | 37.3 | 38.9 | 31.2 |
| CNEL | 64.1 | 65.4 | 70.6 | 63.4 | 73.1 | 59.4 |

It is important to note that **R4** has an electrical generator or other engine running on a fairly consistent basis (i.e., observed three separate times on three separate days), which creates the dominant source of noise in the area immediately surrounding that receptor. The measurement made at this receptor (**ML-E**) does not include the entire magnitude of generator noise because it could not be taken close enough. Therefore, while the engine is running, noise levels at **R4** are considerably higher than the represented ambient value.

### 4.5.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Increase substantially the ambient noise levels for adjoining areas.

Expanding upon this threshold criterion more definitively, the *County Noise Ordinance* is used to determine the significance of industrial source noise impacts while the *Palmdale Noise Element* is used to determine the traffic source noise impacts. The *Areawide General Plan* does not contain applicable significance thresholds.

#### 4.5.4.1 Industrial Source Threshold Criteria

EIR Table 27 presents the *County Noise Ordinance* (Chapter 12.08 of Title 12, Los Angeles County Code) thresholds for exterior noise from operational activities. Noise impacts are considered significant if:

- The stated threshold is exceeded for a cumulative period of more than 30 minutes in an hour (i.e., if the $L_{50}$ is greater than the threshold);
- The stated threshold plus 5 dBA is exceeded for a cumulative period of more than 15 minutes in an hour (i.e., if the $L_{25}$ is greater than the threshold plus 5 dBA);
- The stated threshold plus 10 dBA is exceeded for a cumulative period of more than 5 minutes in an hour (i.e., if the $L_{8.3}$ is greater than the threshold plus 10 dBA);
- The stated threshold plus 15 dBA is exceeded for a cumulative period of more than 1 minutes in an hour (i.e., if the $L_{1.7}$ is greater than the threshold plus 15 dBA); or
- The stated threshold plus 20 dBA is exceeded for any length of time.

**Table 27 County Noise Ordinance Operational Threshold Criteria**

| Receptor Type | Time | $L_{50}$ Threshold (dBA) |
|---|---|---|
| Noise Sensitive | Anytime | 45 |
| Residential | Nighttime – 10:00 pm to 7:00 am | 45 |
| | Daytime – 7:00 am to 10:00 pm | 50 |
| Commercial | Nighttime – 10:00 pm to 7:00 am | 55 |
| | Daytime – 7:00 am to 10:00 pm | 60 |
| Industrial | Anytime | 70 |

In the event that the ambient noise $L_{50}$ exceed the threshold, then the ambient $L_{50}$ becomes the exterior noise standard. This provision is applicable to all of the noise parameters ($L_{50}$, $L_{25}$, $L_{8.3}$, $L_{1.7}$, $L_{MAX}$).

#### 4.5.4.2 Threshold Criteria for Transportation Related Noise Sources

EIR Table 28 presents the *Palmdale Noise Element* significance threshold criteria. The 65 dBA CNEL exterior criterion for residential receptors is commonly used for determining the noise impact from transportation sources. This criterion is also noted in the City of Lancaster General Plan Noise Element, the *County Noise Element*, and the United States Department of Housing and Urban Development.

**Table 28 City of Palmdale General Plan Noise Element Threshold Criteria**

| Receptor Type | Exterior Threshold | Interior Threshold | Unit |
|---|---|---|---|
| Residential | 65 | 45 | dBA CNEL |
| Commercial | Level that does not jeopardize health, safety, or welfare of visitors | 55 | dBA Leq(h) |
| Institutional | Level that does not jeopardize health, safety, or welfare of visitors | 45 | dBA Leq(h) |
| Industrial | Level that does not interfere with normal business activity | 65 | dBA Leq(h) |
| Note: The h in Leq describes the duration of exposure (i.e., 8 hours for a normal work day). | | | |

#### 4.5.4.3 Summary of Applicable Threshold Criteria

Project specific threshold criteria are summarized in EIR Table 29 and EIR Table 30. Ambient $L_{50}$ values exceed the $L_{50}$ values identified in the *County Noise Ordinance* for receptors **R1** and **R2**. For these receptors, the significance threshold could have been increased to the ambient noise levels. However, the significance determination in the *NIA* is conservatively based on the *County Noise Ordinance* threshold criteria.

**Table 29 Industrial Source Threshold Criteria (dBA)**

| Parameter | $L_{max}$ | $L_{1.7}$ | $L_{8.3}$ | $L_{25}$ | $L_{50}$ |
|---|---|---|---|---|---|
| Industrial Impacts – Day | 70 | 65 | 60 | 55 | 50 |
| Industrial Impacts – Night | 65 | 60 | 55 | 50 | 45 |
| Note: These threshold criteria apply to all Receptors. As per *County Noise Ordinance* guidance, threshold criteria can be equal to the ambient noise levels when the ambient noise levels are louder than the threshold criteria (as is the case for **R1** and **R2**). However, the industrial noise threshold criteria in the *NIA* were not adjusted based on background noise. | | | | | |

**Table 30 Traffic Source Significance Thresholds (dBA)**

| Parameter | R1 | R2 | R3 | R4 | R5 |
|---|---|---|---|---|---|
| Traffic Impacts (CNEL) | 65.4 | 70.6 | 65.0 | 73.1 | 65.0 |
| Note: The traffic noise threshold criteria are adjusted to equal the background noise levels when the background noise levels are louder than the threshold criteria (as is the case for **R1**, **R2**, and **R4**). | | | | | |

### 4.5.5 Impact Analysis

Operational noise impacts are divided into three sections: Project Description Summary, Industrial Source Impacts, and Transportation Noise Impacts. Industrial noise impacts are compared to the *County Noise Ordinance* threshold criteria to determine significance, while transportation noise impacts are compared to the *Palmdale Noise Element* threshold criteria to determine significance. A discussion of each noise source is provided below, followed by a discussion of the combined sources.

#### 4.5.5.1 Relevant Project Characteristics

Lebata proposes to construct an Aggregate Surface Mining and Processing Facility, Ready-Mixed Concrete Plant, Vac-Lite Plant, Asphalt Mixing Plant, and Raw Cement Transfer and Aggregate Distribution Facility on an approximately 310-acre property. (Refer to EIR sub-chapter 3.0 for a more complete Project Description.) The Project site is currently undeveloped and is bisected by railroad tracks. Elements of the Project Description considered vital in preparing the *NIA* include the following noise-producing activities, which may operate up to 24 hours per day:

- **Surface Mining and Aggregate Processing Facilities.** Off-road equipment would excavate and load the unprocessed material into the processing plant. The processing plant, which consists of conveyors, screens, and crushers, is separated into two sections: a pit portion and a plant portion. Primary crushing and screening would be conducted in the pit. A series of conveyors would then transport material to the plant area for further crushing and screening.
- **Ready-Mixed Concrete Plant.** Aggregate material would be loaded into the concrete plant with a loader. Cement and fly ash used in the process are held in silos. The materials are weighed and conveyed to a mixer. An automated load out system then fills haul trucks with the concrete mixture.
- **Vac-Lite Plant.** "Vac-Lite" is a strong, durable, porous glass pumice aggregate of volcanic origin. Bottom dump trucks would deliver the volcanic aggregate to the Project and dump it into a grizzly hopper/screen. The material would be conveyed to a silo where it would be treated with high pressure water and cement. Once processed, the material would be drained of water and conveyed to radial stockpiles for shipment via truck. The Vac-Lite Plant's throughput would be only 30,000 tons per year, so its operation would be infrequent.
- **Asphalt Mixing Plant**. Aggregate material would be loaded into the asphalt mixing plant with a loader. It is then conveyed to a dryer, which heats the material. Hot aggregate is then transferred to a mixing drum where it is combined with heated asphalt oil. Finally, the asphalt is conveyed to and stored in heated silos for automated load out to haul trucks.
- **Haul Truck Traffic.** Haul trucks would be used to deliver the processed aggregate, ready-mixed concrete, raw cement, Vac-Lite materials, and asphalt to market. In addition, haul trucks would be used to deliver asphaltic oil and fly ash to the site. Approximately 80 percent of the trucks are assumed to head west to Los Angeles and 20 percent are assumed to head east to the Riverside area. EIR Table 31 presents the peak daily traffic (refer to EIR Appendix 9 – *Big Rock Creek Project Traffic Impact Analysis*).
- **Worker Commute Traffic.** The Project is expected to employ 156 people in three shifts. These trips are expected to originate and be destined for the Palmdale/Lancaster area. EIR Table 31 presents the peak daily employee traffic.

The excavation activities and corresponding pit processing equipment is proposed to operate for a maximum of 18 hours per day (4:00 am to 10:00 pm).

**Table 31 Peak Day Traffic Count**

| Vehicle Type | Total Trips | Trips to the West of the Facility on Ave. T | Trips to the East of the Facility on Ave. T |
|---|---|---|---|
| Haul Trucks | 301 | 241 | 60 |
| Passenger Vehicles | 312 | 312 | 0 |

### 4.5.5.2 Impacts Determined to be Less than Significant/No Impact

The following is a discussion of the transportation noise sources, assumptions, and results of the transportation noise model. Transportation sources include haul trucks operating offsite and trains delivering cement.

#### 4.5.5.2.1 *Transportation Noise Sources*

Traffic noise was modeled using the road segments and the Project induced traffic counts presented in EIR Table 32. The traffic counts represent the average hour of the peak day presented in EIR Table 31.

**Table 32 Road Source Description**

| Road Segment | Description | Hourly Haul Trips | Hourly Passenger Trips |
|---|---|---|---|
| Avenue T West | Project Entrance to 106$^{th}$ Street | 10 | 13 |
| 106$^{th}$ Street | South of Avenue T | 10 | 13 |
| Avenue T East | Project Entrance to 165$^{th}$ Street | 3 | 0 |
| Project Entrance | Avenue T to Plant Area | 13 | 13 |

Train travel on the rail exists with or without the Project. The Project would not induce any new train trips, but would require that the trains carrying cement slow down, idle, and speed up in the vicinity of the Project. Trains that pass by at full speed are traveling at a high rate of speed. Slower-moving trains result in less noise impact. A graph of the relationship between train speed and noise impact is included in the *NIA* (EIR Appendix 8) and is based on the Federal Transit Administration's *Noise Impact Assessment Spreadsheet.* Since the Project would result in a reduction of noise impact from train travel, train noise is not modeled.

#### 4.5.5.2.2 *Traffic Noise Model*

The Federal Highway Administration's Traffic Noise Model (TNM) version 2.5 was utilized to model traffic noise impacts. Source/receptor geometry, traffic flow controls (i.e., stop signs, lights), and traffic counts are entered into TNM, which calculates noise impact at the receptors.

The TNM suggests that "model calibrations are recommended if site conditions, highway alignment, and profile are not expected to change significantly before and after construction of a project, and until its design year." Model calibrations are meant to fine tune a model to account for actual site parameters that are not included in model calculations. In order to calibrate the model, the peak AM and peak PM traffic counts collected during the noise monitoring events were modeled and compared to actual noise monitoring data. EIR Table 33 presents the results of this calibration exercise.

**Table 33 TNM Calibration (dBA)**

| Monitoring Location | Model Prediction | Monitored Value | Difference |
|---|---|---|---|
| 20' from Avenue T (**ML-C**) | 69.4 | 63.4 | 6.0 |
| On Project Site (**ML-A**) | 40.5 | 36.7 | 3.8 |
| Avenue T/106$^{th}$ Intersection (**ML-B**) | 68.3 | 62.8 | 5.5 |

The most conservative calibration value of 3.8 dBA is utilized to determine traffic noise impacts (refer to EIR Table 34).

#### 4.5.5.2.3 *Traffic Noise Model Results*

EIR Table 34 presents the results of the traffic noise model and significance determination. Refer to *NIA* Appendix D (EIR Appendix 8) for the conversion between the TNM predicted Leq(1hr) and the CNEL. With regard to traffic noise, modeled results indicate that the Project would result in **Less than Significant Impacts** at all Receptors.

**Table 34 Traffic Noise Model Results (CNEL dBA)**

| Value | R1 | R2 | R3 | R4 | R5 |
|---|---|---|---|---|---|
| Predicted Noise Impact | 59.0 | 61.9 | 41.1 | 40.3 | 36.8 |
| Threshold | 65.4 | 70.6 | 65.0 | 73.1 | 65.0 |
| **Significant?** | **No** | **No** | **No** | **No** | **No** |

### 4.5.5.3 Combined Industrial and Traffic Noise Impacts

Noise impacts from industrial and traffic noise sources would combine to yield potentially higher total impacts. However, the magnitude of these combined impacts would not be significantly higher than the impacts predicted the industrial noise sources. The reason for this is that decibels are based on a logarithmic scale and noise levels are most affected by the loudest source. When two noise levels differ by ten or more decibels, their sum is equal to the larger of the two noise levels (i.e., the lower noise level has no effect on the combined noise level).

For the Project, the receptors primarily impacted by traffic noise (**R1** and **R2**) are far from industrial activities and experience low amounts of industrial noise (10 to 30 dBA below the applicable thresholds). The receptors primarily impacted by industrial noise (**R3**, **R4**, and **R5**) are distant from the traffic activities and experience low amounts of traffic noise (25 to 35 dBA below the applicable thresholds). For these reasons, sound levels are not summed.

### 4.5.5.4 Impacts Determined to be Potentially Significant

Industrial noise sources include the Aggregate Processing Facilities, Ready-Mixed Concrete Plant, Vac-Lite Plant, Asphalt Mixing Plant, Raw Cement and Aggregate Transfer and Distribution Facility, and related mobile equipment. Noise source data is presented in EIR Table 35. Industrial source noise levels are from the Robertson Ready Mix EIR (July, 2000). Sound pressure levels (SPL) were converted to

sound power levels (SWL) using the SoundPLAN Essential software. A SWL of 131.8 dBA is equivalent to a SPL of 100 dBA at 100 feet. The source height for all units is estimated to be 16.4 feet.

Operation of the cement distribution facility is infrequent and short in duration. This facility's noise originates from the fan used to pneumatically transfer the cement material. The Asphalt Mixing Plant includes larger fans and a number of other noise-generating sources. Therefore, the cement distribution facility is expected to generate less noise than the Asphalt Mixing Plant, which is already the quietest source in EIR Table 35. Since noise from the cement distribution facility is not expected to be audible when compared to the other industrial plants and facilities, it is not included in the noise level calculations.

The following two scenarios were modeled using the noise source information in EIR Table 35:

- Daytime operations (7:00 a.m. to 10:00 p.m.) would include all of the equipment identified in EIR Table 35.
- Nighttime operations (10:00 p.m. to 7:00 a.m.) would include all operations identified in EIR Table 35 except for the Aggregate Processing Facility pit operations.

**Table 35 Industrial Source Noise Levels (SWL dBA)**

| Source | Equipment Included in Noise Level | $L_{max}$ | $L_{1.7}$ | $L_{8.3}$ | $L_{25}$ | $L_{50}$ |
|---|---|---|---|---|---|---|
| Aggregate Processing Facility - Pit Operations | Aggregate Processing Equip. | 127.3 | 126.3 | 123.3 | 120.3 | 119.3 |
| | Two Loaders | | | | | |
| | Trucks Delivering Material | | | | | |
| | Trucks Receiving Material | | | | | |
| Aggregate Processing Facility - Plant Operations | Aggregate Processing Equip. | 127.3 | 126.3 | 123.3 | 120.3 | 119.3 |
| | Two Loaders | | | | | |
| | Trucks Delivering Material | | | | | |
| | Trucks Receiving Material | | | | | |
| RMC Plant | Ready-Mixed Concrete Plant | 122.8 | 122.3 | 121.3 | 118.8 | 118.8 |
| | Concrete Trucks | | | | | |
| HMA Plant | Asphalt Mixing Plant | 111.8 | 111.8 | 111.8 | 111.8 | 111.8 |
| | Asphalt Trucks | | | | | |
| Vac-Lite Plant [1] | Vac-Lite Plant | 122.8 | 122.3 | 121.3 | 118.8 | 118.8 |
| | Trucks | | | | | |

[1] The Vac-Lite plant's noise level is assumed to be equivalent to the Ready-Mixed Concrete Plant's noise level. This is a reasonable assumption because both industrial plants are made up of roughly the same number of comparable pieces of equipment (conveyors, hoppers, and silos).

SoundPLAN Essential Version 1.0 was used to model onsite noise sources. Impacts were modeled using the International Organization for Standardization 9613-2 methodology.

Daytime impact is dependent upon the location of the Aggregate Processing Facility pit operations and the depth of the operations. EIR Figure 29 illustrates Industrial Model Source Locations and EIR Figure 30 illustrates the Mining Plan Profile. Night operations do not include the pit operations, so night noise

impact remains constant regardless of the location of the pit operations. In order to determine the location of the pit operations with the highest impact, the following two scenarios were modeled:

- Mining Phase 2 initial conditions occur while the aggregate pit operations are located at 20 feet below grade on the west end of the southern pit, north of the railroad.
- Mining Phase 2 final conditions occur while the aggregate pit operations are located 80 feet below grade on the east side of the south pit, near **R4**.

The largest daytime noise impact occurs during Mining Phase 2 at initial conditions, which is why this situation is used to determine significance.

**Impact NO-1: Project activities could result in a significant daytime and nighttime noise impact at R4.**

EIR Table 36 and EIR Table 37 present the unmitigated daytime and nighttime results of the industrial noise model and significance determination. EIR Figure 31 and Figure 32 – Industrial Noise Model Results – Day (1 of 2) and (2 of 2) and EIR Figure 33 and Figure 34 – Industrial Noise Model Results – Night (1 of 2) and (2 of 2) illustrate the results of the model.

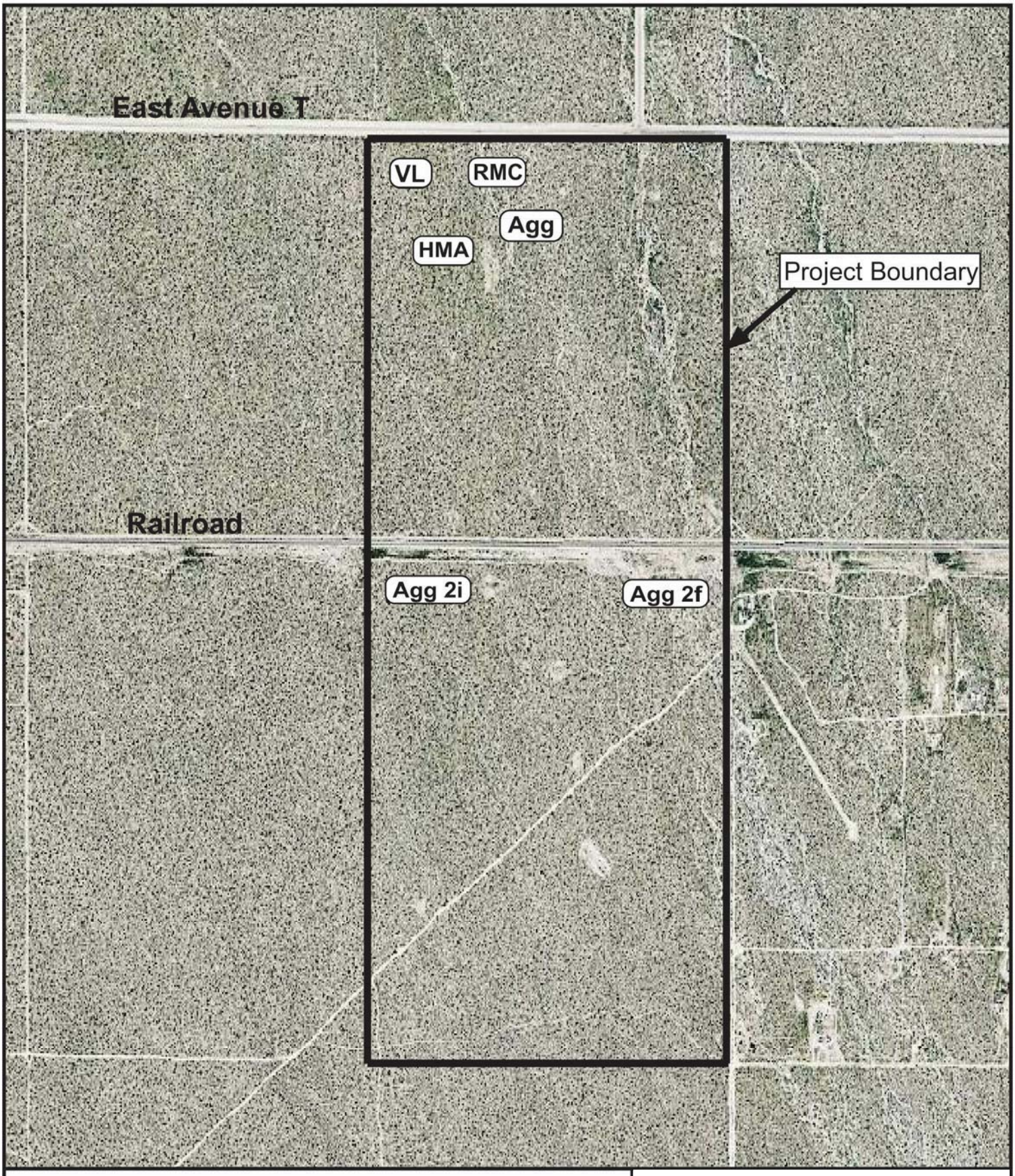
**Table 36 Unmitigated Daytime Industrial Noise Model Results**

| Receptor | $L_{max}$ | $L_{1.7}$ | $L_{8.3}$ | $L_{25}$ | $L_{50}$ | Significant? |
|---|---|---|---|---|---|---|
| R1 | 38.1 | 37.3 | 35.0 | 32.3 | 31.8 | No |
| R2 | 46.3 | 45.5 | 43.3 | 40.6 | 40.1 | No |
| R3 | 52.7 | 51.9 | 49.4 | 46.7 | 46.1 | No |
| R4 | 58.7 | 57.8 | 55.3 | 52.5 | **51.9** | **Yes** |
| R5 | 53.1 | 52.1 | 49.6 | 46.8 | 46.1 | No |
| **Threshold** | **70.0** | **65.0** | **60.0** | **55.0** | **50.0** | --- |

**Table 37 Unmitigated Nighttime Industrial Noise Model Results**

| Receptor | $L_{max}$ | $L_{1.7}$ | $L_{8.3}$ | $L_{25}$ | $L_{50}$ | Significant? |
|---|---|---|---|---|---|---|
| R1 | 35.9 | 35.2 | 33.3 | 30.8 | 30.4 | No |
| R2 | 44.3 | 43.5 | 41.7 | 39.1 | 38.8 | No |
| R3 | 49.4 | 48.6 | 46.8 | 44.2 | 43.9 | No |
| R4 | 56.2 | 55.4 | 53.2 | **50.5** | **50.1** | **Yes** |
| R5 | 49.6 | 48.8 | 46.7 | 44.1 | 43.6 | No |
| **Threshold** | **65.0** | **60.0** | **55.0** | **50.0** | **45.0** | --- |

It is concluded that unmitigated industrial noise impacts are **Less than Significant** at **R1, R2, R3, and R5.** However, the Project could result in a significant daytime and nighttime noise impact at **R4**, resulting in a **Significant Impact**. In response, **Mitigation Measure NO-1** (EIR sub- chapter 4.5.6) was developed. Upon implementation of **Mitigation Measure NO-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

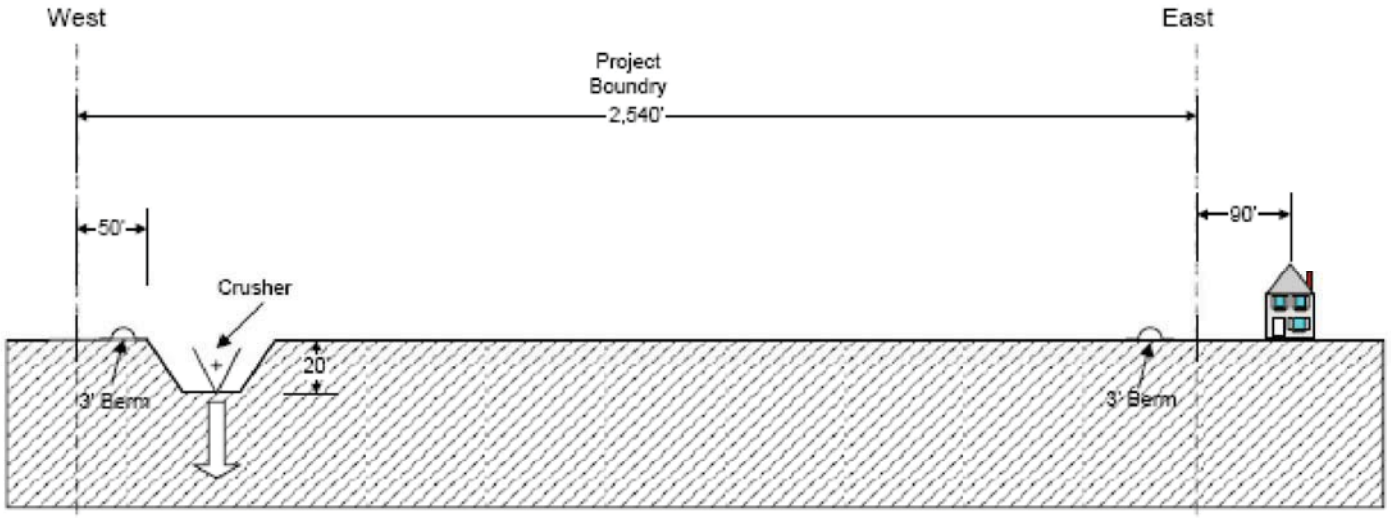



VL = Vac-Lite Plant
RMC = Ready Mix Concrete Plant
HMA = Hot Mix Asphalt Plant
Agg = Aggregate Plant
Agg 2i = Aggregate Pit Plant, Phase 2 Initial Location (see Figure 4)
Agg 2f = Aggregate Pit Plant, Phase 2 Final Location (see Figure 4)

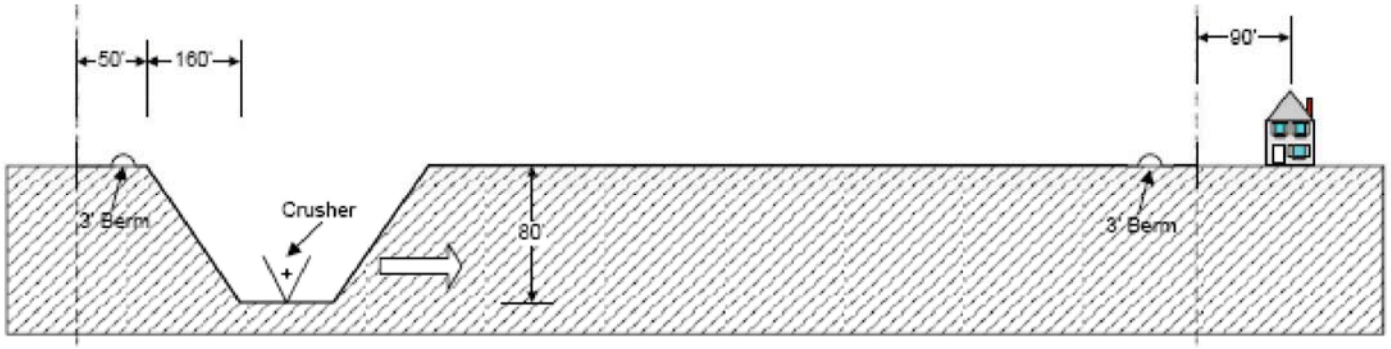
Source: West Coast Environmental, 07-08-08

| Industrial Model Source Locations<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 29 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

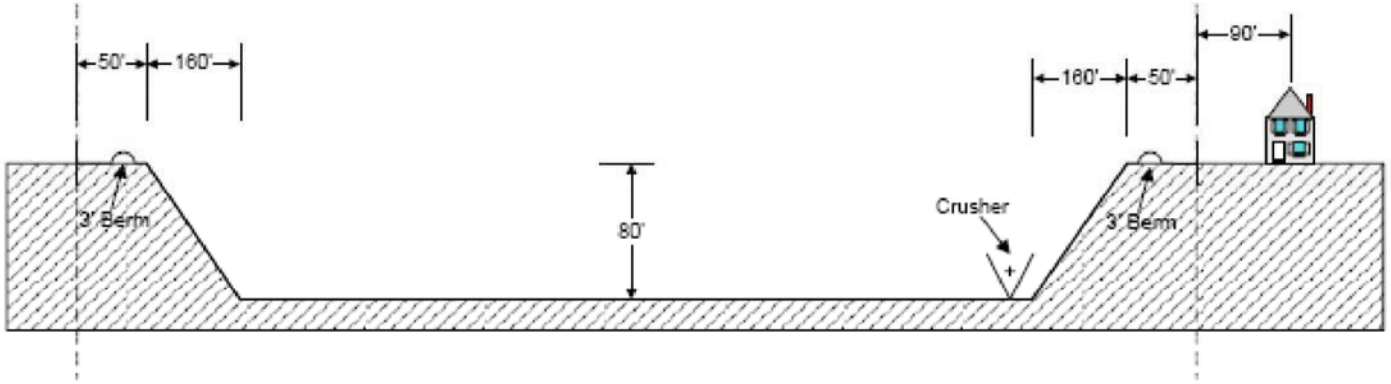
## Step 1 – Initial Operation




## Step 2 – Intermediate Operation

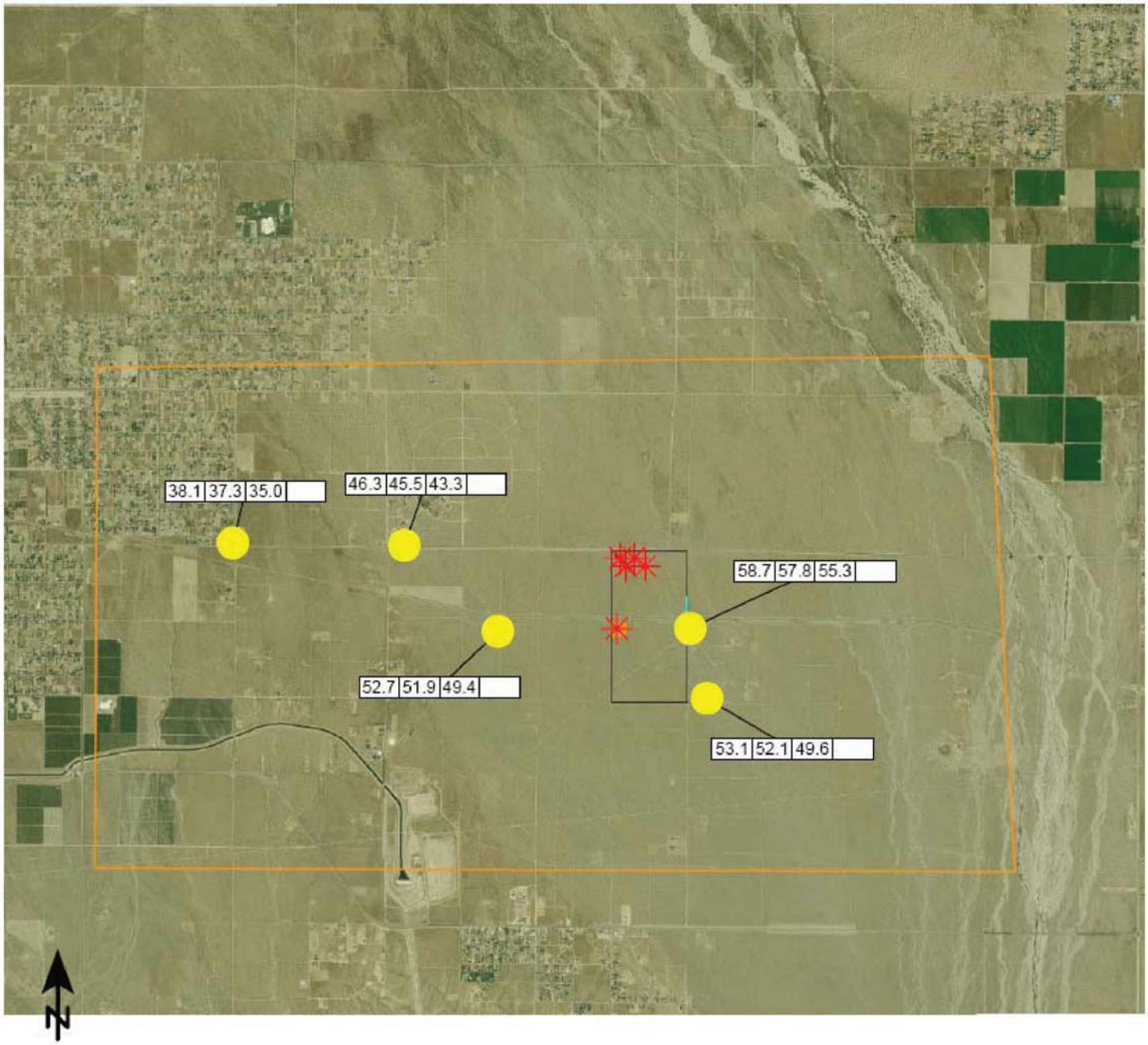



## Step 3 – Final Operation




Source: West Coast Environmental, 01-20-09

| Mining Operation Profile<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>30 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |




Noise impacts are presented in:
$L_{max}$, $L_{1.7}$, $L_{8.3}$ (dBA)

Signs and symbols
- Elevation line
- Berm slope
- Berm top
- Receiver
- Point source
- Facade with conflict

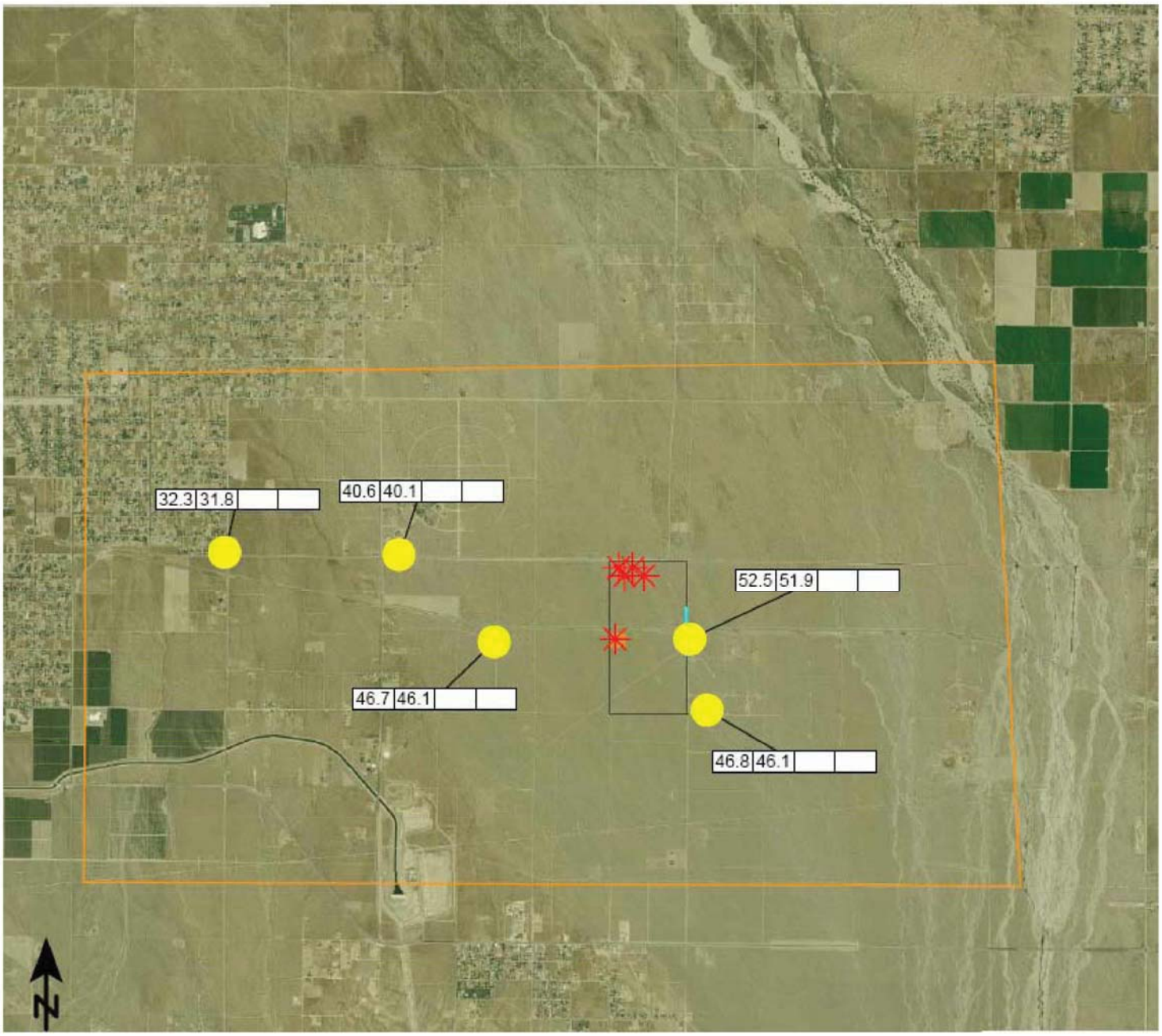
Source: West Coast Environmental, 01-20-09

Industrial Noise Model Results
Day (1 of 2)
Big Rock Creek Site
Antelope Valley, California

FIGURE 31

Scale: N/A

Date: 3-13-2012

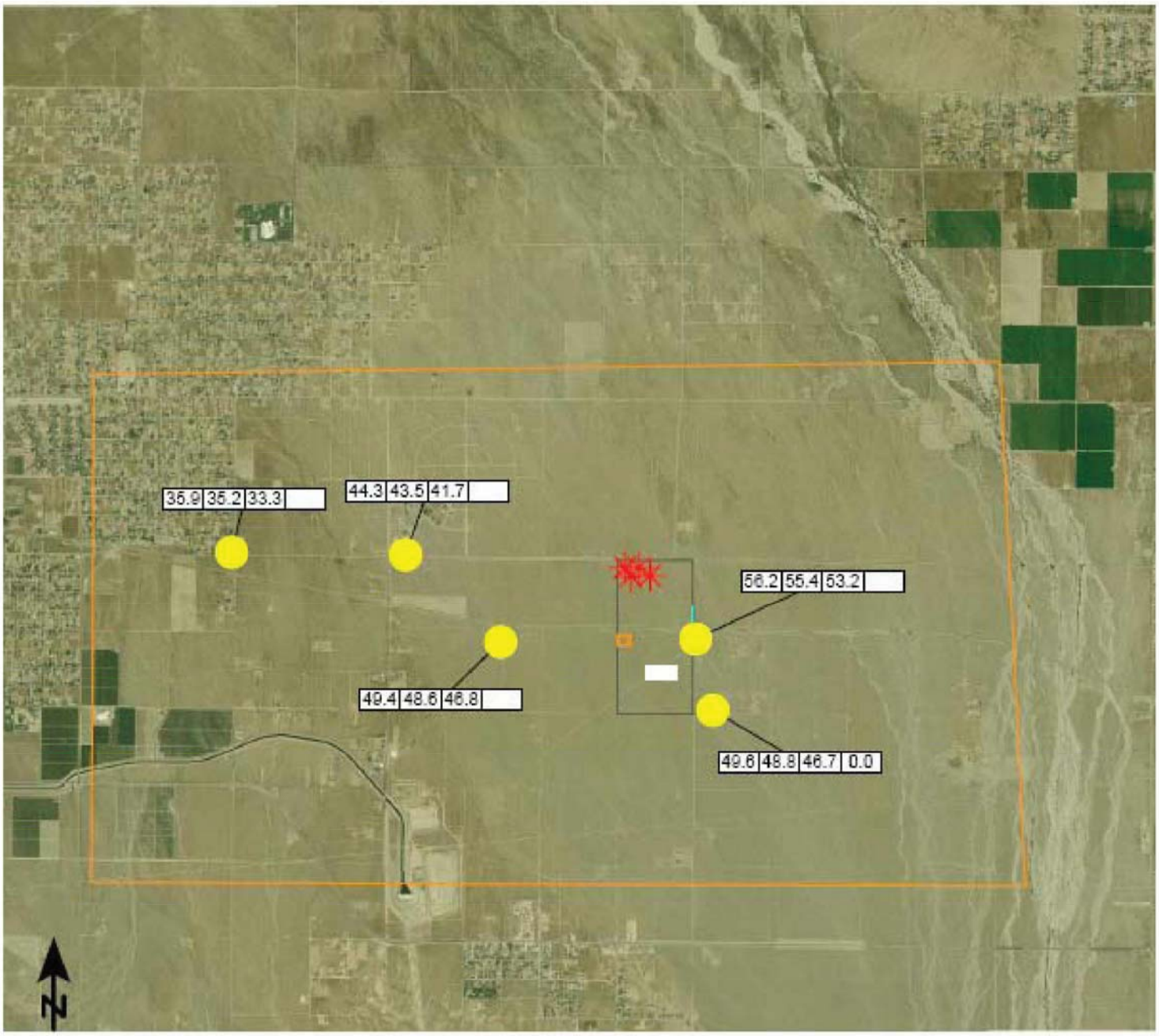



Noise impacts are presented in:
$L_{2.5}$, $L_{50}$ (dBA)

Signs and symbols
- Elevation line
- Berm slope
- Berm top
- Receiver
- Point source
- Facade with conflict

Source: West Coast Environmental, 01-20-09

| Industrial Noise Model Results Day (2 of 2) Big Rock Creek Site Antelope Valley, California | FIGURE 32 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |



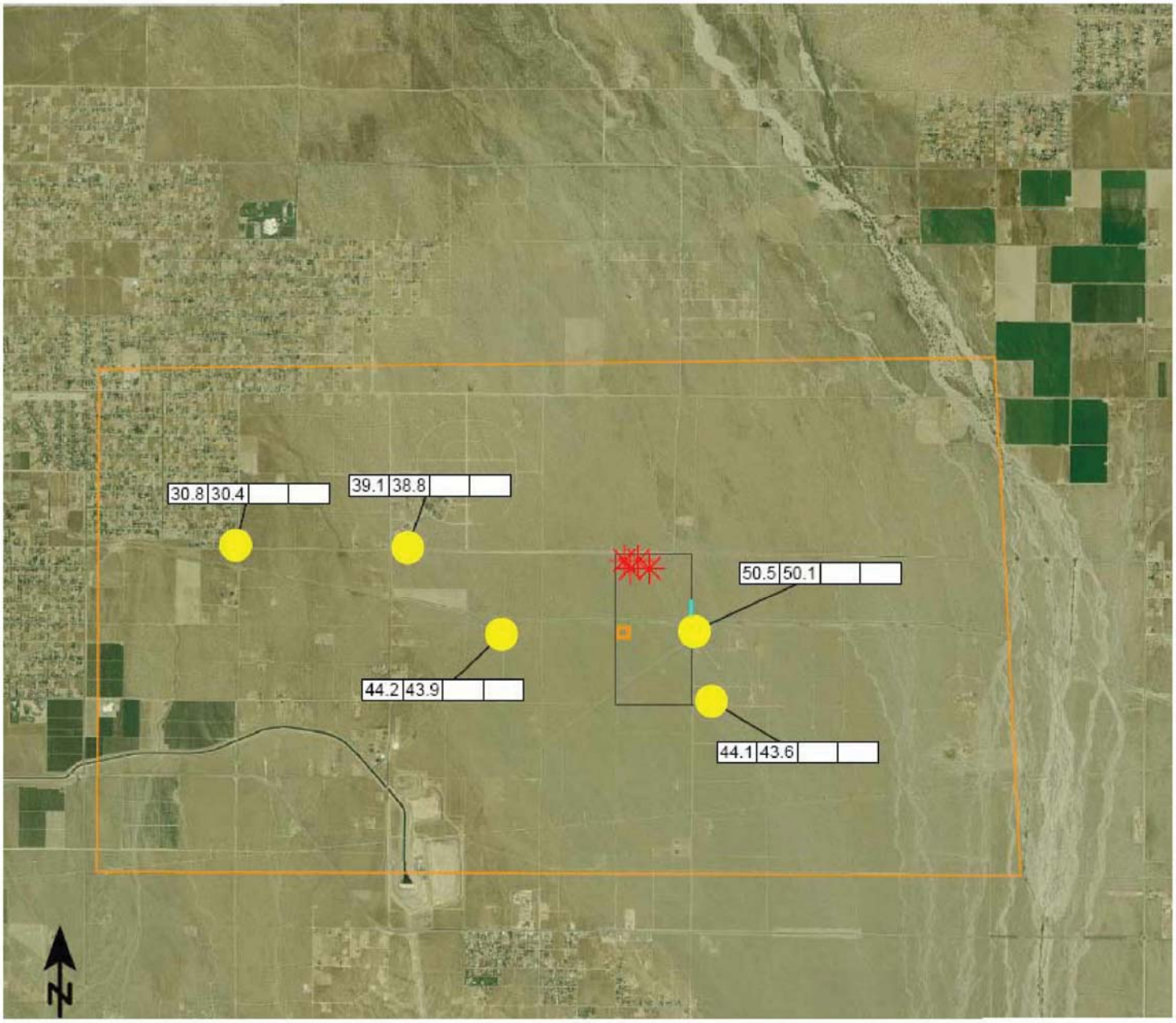

Noise impacts are presented in:
$L_{max}$, $L_{1.7}$, $L_{8.3}$ (dBA)

Signs and symbols

- Elevation line
- Berm slope
- Berm top
- Receiver
- Point source
- Facade with conflict

Source: West Coast Environmental, 01-20-09

| Industrial Noise Model Results<br>Night (1 of 2)<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>33 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

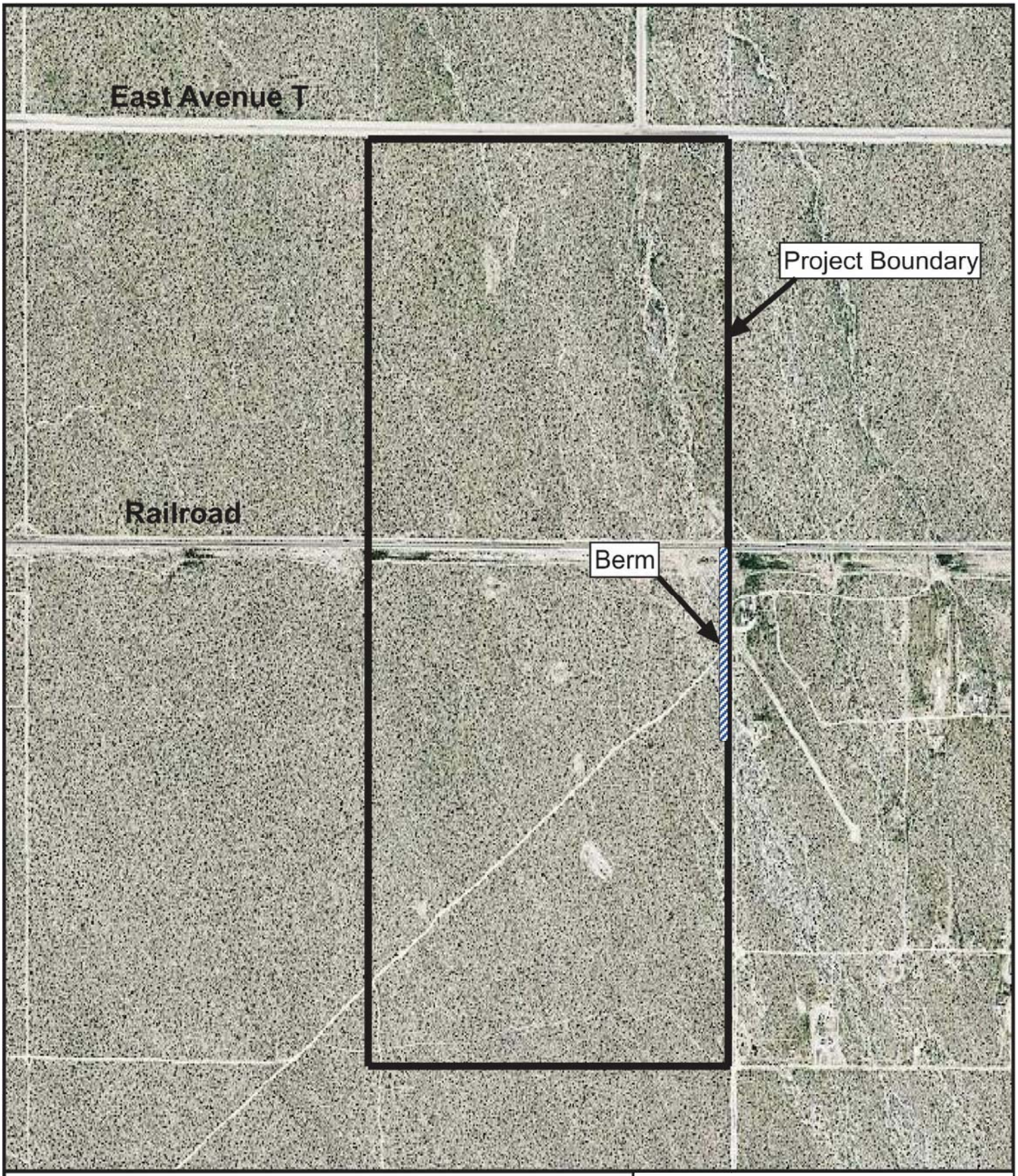



Noise impacts are presented in:
$L_{2.5}$, $L_{50}$ (dBA)

Signs and symbols
- Elevation line
- Berm slope
- Berm top
- Receiver
- Point source
- Facade with conflict

Source: West Coast Environmental, 01-20-09

| Industrial Noise Model Results<br>Night (2 of 2)<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>34 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |




Source: West Coast Environmental, 01-20-09

| Berm Location<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>35 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

### 4.5.6 Mitigation Measures

**NO-1** A 7-foot-tall berm with sufficient length to break the line-of-sight between all of the industrial plants and facilities and **R4** shall be constructed along the Project's eastern property line.

### 4.5.7 Level of Significance after Mitigation

As presented in EIR Table 36 and EIR Table 37, the largest noise impact at **R4** ($L_{50}$ during the nighttime) requires mitigation sufficient to obtain a 5.1 dBA reduction in Project noise levels. **Mitigation Measure NO-1** is sufficient to obtain this reduction.

Calculations that predict the noise attenuating effect of **Mitigation Measure NO-1** are included in *NIA* Appendix E (EIR Appendix 8). EIR Figure 35 illustrates the location of the berm. The berm would result in a 5.1 dBA insertion loss from sources in the Project's plant area. Mitigated industrial noise impacts are presented in EIR Table 38 and EIR Table 39. Noise impacts at **R4** are **Significant, but Mitigable to Less than Siginificant** upon implementation of **Mitigation Measure NO-1**.

**Table 38 Mitigated Daytime Industrial Noise Model Results**

| Receptor | $L_{max}$ | $L_{1.7}$ | $L_{8.3}$ | $L_{25}$ | $L_{50}$ | Significant? |
|---|---|---|---|---|---|---|
| R1 | 38.1 | 37.3 | 35.0 | 32.3 | 31.8 | No |
| R2 | 46.3 | 45.5 | 43.3 | 40.6 | 40.1 | No |
| R3 | 52.7 | 51.9 | 49.4 | 46.7 | 46.1 | No |
| **R4** | 53.6 | 52.7 | 50.2 | 47.4 | 46.8 | **No** |
| R5 | 53.1 | 52.1 | 49.6 | 46.8 | 46.1 | No |
| **Threshold** | **70.0** | **65.0** | **60.0** | **55.0** | **50.0** | --- |

**Table 39 Mitigated Nighttime Industrial Noise Model Results**

| Receptor | $L_{max}$ | $L_{1.7}$ | $L_{8.3}$ | $L_{25}$ | $L_{50}$ | Significant? |
|---|---|---|---|---|---|---|
| R1 | 35.9 | 35.2 | 33.3 | 30.8 | 30.4 | No |
| R2 | 44.3 | 43.5 | 41.7 | 39.1 | 38.8 | No |
| R3 | 49.4 | 48.6 | 46.8 | 44.2 | 43.9 | No |
| **R4** | 51.1 | 50.3 | 48.1 | 45.4 | 45.0 | **No** |
| R5 | 49.6 | 48.8 | 46.7 | 44.1 | 43.6 | No |
| **Threshold** | **65.0** | **60.0** | **55.0** | **50.0** | **45.0** | --- |

Upon implementation of the **Mitigation Measure NO-1** described above in EIR sub-chapter 4.5.6 the **Significant Impacts** of industrial noise experienced at **R4**, would be reduced to **Significant, but Mitigable to Less than Significant Impacts**.

### 4.5.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Potential construction and operational noise impacts from the Project take into account the combined effects from multiple noise sources and from existing ambient conditions. Potential noise impacts from the Project were determined either to be **Less than Significant** or **Significant, but Mitigable to Less than Siginificant** upon implementation of the **Mitigation Measure NO-1** described in EIR sub-chapter 4.5.6. The limited number of cumulative projects, and the distance between the Project and other noise generators precludes any cumulative impacts from onsite activities. Further reducting noise potential, other various berms would be installed upon the original grade level, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot berm on the eastern boundary (i.e., those segments not included in **Mitigation Measure NO-1**), and a 5-foot berm on the northern boundary.

Single-event haul truck pass-by noise would be similar to the existing conditions. The traffic noise model added Project traffic to existing levels, which provided a cumulative result, indicating the combined traffic related noise impacts would be **Less than Significant**.

Given the limited number of cumulative projects, and the implementation of Project **Mitigation Measure NO-1**, the Project **would not result in noise levels that are cumulatively considerable**.

## 4.6 WATER QUALITY

### 4.6.1 Introduction

This sub-chapter of the EIR provides a description of the water quality conditions, potential impacts of the Project, recommended mitigation measures, and proposed monitoring programs for the Project. Information for this sub-chapter was obtained from the following studies prepared for site evaluation:

- *Drainage Concept for Lebata Inc. Surface Mine, Project Alternative and Alternative 1, Big Rock Creek, Los Angeles County,* prepared by Stetson Engineers, Inc., December 2008 (*Drainage Concept*), EIR Appendix 3.
- *Pit Slope Stability Evaluation Big Rock Creek Mine Slopes Antelope Valley Near Pearblossom Los Angeles County, California*, prepared by Fugro West, Inc. in August 2013 (*Pit Slope Stability Evaluation*), EIR Appendix 4.
- Los Angeles County Department of Water Resources Bulletin 118, *California's Groundwater, South Lahontan Hydrologic Region*, February 24, 2004 update (*Bulletin 118*).
- *Geohydrology of the Antelope Valley, California, and a Design for a Ground-Water-Quality Monitoring Network. USGS Report No. 84-4081 (1987),* prepared by Duell, Lowell F.W., (*Geohydrology of the Antelope Valley*).

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***10. Hydrology and Water Quality***

*Would the project:*

*e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?* [underscore added for emphasis, also see EIR Chapter 4.4 – Flood Hazards]

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

*j) Otherwise substantially degrade water quality?*

Note: The following is a disclosure of water quality and the Project's impact upon water quality. For a disclosure of Project impacts regarding water supply and quantity, please refer to EIR sub-chapter 4.12.

### 4.6.2 Regulatory Setting

#### 4.6.2.1 FEMA Flood Insurance Rate Map

FIRM, Panel 410 for the Littlerock, CA area, indicates the eastern portion of the Project lies within an area designated as "Zone A." This zone is defined as an "*area(s) of 100-year flood; base flood elevations and flood hazard factors not determined*." The remainder of the Project lies within an area designated

as "Zone C," which is defined as an "*area(s) of minimal flooding*." Refer to the FEMA Map (EIR Figure 19).

#### 4.6.2.2 Clean Water Act

The Corps has determined that the Project site is not subject to its jurisdiction under Section 401 of the Clean Water Act and that a Section 401 permit is not required. Refer to EIR Appendix 7 for a letter from the Corps, dated June 1, 2006, exempting the Project site.

Since all drainages are under the jurisdiction of the California Regional Water Quality Control Board, the Lahontan Region has advised that the Project would require a permit for Section 402 of the Clean Water Act.

#### 4.6.2.3 Section 1605 Long-Term Streambed Alteration Agreement

The CDFW has advised that a 1605 Long-Term Streambed Alteration Agreement may be required for the Project once the requirements for CEQA have been satisfied.

### 4.6.3 Environmental Setting

The Project site is located on the alluvial fan of the Big Rock Creek. Big Rock Creek is a seasonal stream originating from the San Gabriel Mountains to the south, and is fed by precipitation runoff and spring flows. The result is a mean annual runoff of 11,500 acre-feet. Much of this water infiltrates the permeable surface and recharges the groundwater sub-basins. Combined, Big Rock Creek and Little Rock Creek account for more than 50 percent of the runoff recharge to the Antelope Valley.

Pearblossom Highway crosses the Big Rock alluvial fan in an east-west direction about 1.5 miles upstream from the Project site. The 10- to 12-foot high Union Pacific Railroad embankment crosses the fan in an east-west direction and divides the site into approximately half length-ways, forming the North and South Parcels. The Big Rock Creek main channel flows south-north approximately 1 mile to the east of the site.

#### 4.6.3.1 Regional Groundwater Resources

The database of the California Department of Water Resources shows that the Project site lies within the Big Rock Creek Hydrologic Subarea of the Antelope Hydrologic Unit. The data indicate an overall average groundwater depth of approximately 170 feet bgs with a gradient to the north and laterally away from the creek bottom.

*Bulletin 118* describes the Antelope Valley Groundwater Basin as follows:

> *Runoff in Big Rock and Little Rock Creeks from the San Gabriel Mountains and in Cottonwood Creek from the Tehachapi Mountains flows toward a closed basin at Rosamond Lake (Jennings and Strand 1969). Rogers Lake is a closed basin in the northern part of Antelope Valley that collects ephemeral runoff from surrounding hills (Rogers 1967). Average annual rainfall ranges from 5 to 10 inches.*

#### 4.6.3.2 Regional Surface Water

On the alluvial fan, flows in Big Rock Creek are largely contained in its main channel, with two secondary braids breaking off from the main channel at the apex of the fan. Aerial photos from 1928 to 1994 indicate no flow in the braid that flows through the Project site (Lebata Braid) during this period.

A flood control levee constructed in 1943 has cut off flow to both of the secondary braids from main channel overflows. Flows in Big Rock Creek would normally be retained in the main channel due to the California Aqueduct Siphon acting as a hydraulic control; and the flood levee near the mountain front directing flood flows towards the main channel, and effectively cutting off the VMC and Lebata Braids from main channel overflows. There is however a possibility that the mountain front flood levee could catastrophically fail during the Capital Flood. This represents a worst case scenario of the levee being absent. The estimated flow in the Lebata Braid under the worst case scenario Capital Flood is 175 cfs, assuming levee failure. The total flow entering the mine site during the Capital Flood includes this in-channel flow plus additional sheetflow generated by rainfall-runoff on the alluvial fan upstream of the site.

Most drainage courses in the Antelope Valley are unimproved, thereby allowing storm water to overflow into adjacent flat areas, contributing to sheetflow. Heavy and prolonged rainfall can cause flooding, which local jurisdictions address with a variety of retention and detention basins, pipes and channels.

#### 4.6.3.3 Local Groundwater Resources

The *Geohydrology of the Antelope Valley Area* notes the Project site is located within the Pearland groundwater subunit of the Antelope Valley. This subunit is bounded on the north, west and south by unnamed faults that are postulated from an analysis of water-level data. The consolidated rock of the San Gabriel Mountains firms the southeast boundary of the subunit. The location of local water wells is shown in EIR Figure 17 (Local Water Wells) in EIR sub-chapter 4.3.5.1.6.

*Bulletin 118* notes the following regarding groundwater recharge:

> *Recharge to the basin is primarily accomplished by perennial runoff from the surrounding mountains and hills. Most recharge occurs at the foot of the mountains and hills by percolation through the head of alluvial fan systems. The Big Rock and Little Rock Creeks, in the southern part of the basin, contribute about 80 percent of runoff into the basin (Durbin 1978). Other minor recharge is from return of irrigation water and septic system effluent (Duell 1987).*

In preparing a *Pit Slope Stability Evaluation* for the Project, Fugro West, Inc. (Fugro) drilled two sampling holes on August 15, 2006. The first of these wells (DH-1) encountered a static water depth at about 70 feet bgs, while the second well (DH-2) did not encounter static water depth at its termination depth of 80 feet bgs. Refer to EIR Appendix F of the *Pit Slope Stability Evaluation* (EIR Appendix 4).

The Project has been specifically designed as a dry surface mining operation with a maximum depth of 80 feet bgs. As a result, groundwater interception is not proposed. Lebata has developed information from onsite borings indicating groundwater is deeper than the 55.4 feet indicated by 1985 data from an adjacent well. Specifically, the *Pit Slope Stability Evaluation* (EIR Appendix 4) noted the following:

*Perched groundwater was encountered in DH-1 at a depth of 70 feet bgs. No groundwater was encountered in DH-2 to the explored depth of 80 feet bgs.*

To ensure groundwater is protected, surface mining operations would be curtailed at a final mining depth of 80 feet bgs, or at a depth that is 5 feet above static groundwater levels for all pits, should groundwater be encountered. If groundwater is encountered and the final excavation depth reduced, the volume of material excavated and processed, and the life of the Project would be reduced accordingly. Within the first few years of Project operations, the static groundwater level would have been determined for the North Pit and the final mining depth defined accordingly at 5 feet above that level. The same precaution and determination of static groundwater level would be made for the South Pit.

#### 4.6.3.4 Local Surface Water

There is no flow in any of the channels on the inactive alluvial fan surface except for during and shortly following individual rainfall-runoff generating events. Short-duration shallow overland flow (sheetflow) is generated when rainfall intensity is greater than infiltration capacity. The resulting sheetflow is collected and conveyed downstream primarily by numerous shallow low-capacity relict braids in a nearly random distributary pattern. Surface flow occurs less than approximately 0.1 percent of the time (Stetson Engineers, 2004).

The Union Pacific Railroad tracks bisecting the Project, include a 10- to 12-foot high railroad embankment that runs nearly perpendicular to the direction of surface runoff. To accommodate surface runoff, several Corrugated Metal Pipe (CMP) culverts pass under the railroad embankment. Three culverts would convey flows from upstream of the railroad (south), which would then continue downstream and into the north parcel of the mine site. Two culverts are located inside the Project boundary. Surface flows conveyed through the culverts would initially concentrate then dissipate by flowing through the area downstream of the railroad as sheetflow. The area does not exhibit well-defined channels.

### 4.6.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Substantially degrade water quality.
- Contaminate a public water supply.
- Substantially degrade or deplete groundwater resources.

Expanding upon this threshold criterion more definitively, the following criteria were derived from the Initial Study (EIR Appendix 1). Based upon these criteria, the Project may result in significant impacts if it will:

- *Create or contribute runoff water which would provide substantial additional sources of polluted runoff.*

- *Generate construction or post-construction runoff that would violate applicable stormwater NPDES permits or otherwise significantly affect surface water or groundwater quality.*
- *Otherwise substantially degrade water quality.*

### 4.6.5 Impact Analysis

#### 4.6.5.1 Relevant Project Characteristics

The aspects of the Project described below serve to minimize the potential for significant water quality impacts.

##### 4.6.5.1.1 *Fueling and Maintenance Pad*

Impacts to groundwater quality and surface water quality could occur if fuel, other hydrocarbons, or other onsite chemicals were to spill. Lebata proposes that all vehicle fueling and maintenance take place atop the Fueling and Maintenance Pad within the Processing Facilities Site (EIR Figure 6). The concrete pad includes a curbed containment berm and is adjacent to the fuel storage tank, which would be placed within a concrete secondary containment area. These precautionary measures are designed to ensure fueling and maintenance activities do not adversely affect surface water or groundwater.

##### 4.6.5.1.2 *Hazardous Materials*

The Project would require the use and onsite storage of the chemicals, which would be stored atop the Fueling and Maintenance Pad, or within secondary containment elsewhere within the Processing Facilities Site. Refer to EIR sub-chapter 4.11.5 where Hazardous Materials are discussed and where EIR Table 88 provides a list of the types and quantities of chemicals that would be stored and used onsite.

##### 4.6.5.1.3 *Aggregate Processing Wash Water Recycling*

Lebata proposes to drill an onsite water well. It is likely the Basin adjudication will result in future limitations being placed upon existing groundwater users, and those proposing new or increased levels of groundwater extraction (refer to EIR sub-chapters 4.12.5.1 and 4.12.5.2). Water would be used primarily for:

- Dust control using spray bar nozzles on the conveyors to wet aggregate materials being transported to the surge pile.
- Dust control by ground watering the area where loaders operate within the Processing Facilities Site and between the mining pit and the crusher.
- Dust control using sprayers at the three-deck and two-deck dry scalping screens.
- Ready-mixed concrete production.
- Aggregate Processing Facility.

Annually water use at the Aggregate Processing Facilities is estimated to be approximately 88.8 MG (approximately 272.4 acre-feet), with the water truck using approximately 7.5 MG (approximately 23 acre-feet) for fugitive dust control along haul roads and around the plant site. Annually, the Ready Mixed Concrete Plant is estimated to use approximately 5.4 MG (approximately 16.6 acre-feet). Total annual water use is estimated to be 101.7 MG (approximately 312 acre-feet). (Note: One acre-foot equals 325,851 gallons.)

At the Water Reclamation and Fines Recovery Facilities, aggregate processing wash water is drawn from the 45-foot diameter Fresh Water Tank and the used water from the Sand Washer and Dewatering Screen flows is pumped to a fines recovery system then it is pumped to the 45-foot diameter Thickener Tank. The Thickener tank separates whatever solids that are left and the clean water gravity flows back to the Fresh Water Tank. Fines are recovered and conveyed onto the Fines stockpile for subsequent sale. If this initial process does not recover the intended level of fines, Lebata would also use a traditional open pond system to settle out/recover fines. The use of an open pond system would be subject to approval by the Regional Water Quality Control Board.

This system would be comprised of three to four basins approximately 80 feet x 130 feet and 10 feet deep (depicted as Silt Ponds in EIR Figure 6 – Facilities Site Plan). Wash water from Aggregate Processing Facility would be collected, and would flow by gravity in a drainage system back to the Silt Ponds. To that water, a flocculant, comprised of organic polymers, would be added to cause the fine material to "settle out" from the water column. Settled fines would be removed and deposited on the Fines stockpile by a front-end loader. These and other fine materials produced during processing would be marketed for use as soil amendments, slurry used in nonstructural concrete, landfill top cover, miscellaneous fill material, among other uses; used as a soil amendment onsite in association with revegetation activities; or placed within the mine pit after being blended with surplus sand to ensure permeability is maintained. Only EPA-approved, non-toxic flocculant would be used to ensure there are no adverse impacts to water quality. To facilitate fines removal, the ends of each basin would be sloped, approximately 3:1 (h:v), to permit the entry and exit of equipment.

#### 4.6.5.1.4 *Spill Prevention, Control and Countermeasure Plan*

The County will require the Project to prepare the SPCC, described in EIR sub-chapter 4.11.5.1.2, to meet the requirements of:

- Title 40, Code of Federal Regulations (CFR), Part 112
- California H&S Code, Chapter 6.67, §25270 – Aboveground Petroleum Storage Act (1989)

The purpose of the SPCC is to identify procedures and controls to prevent accidental releases of petroleum products and to minimize the impact if a release occurs.

#### 4.6.5.1.5 *Storm Water Pollution Prevention Plan*

The County will require the Project to prepare the SWPPP described in EIR sub-chapter 4.11.5.1.3. The SWPPP is intended to ensure compliance with the requirements set forth in Industrial Storm Water General Permit Order 97-03-DWQ, which pertains to the General Permit No. CAS000001, the purpose of which is to fulfill two major objectives:

- Identify sources of pollution that may contaminate industrial storm water discharges.
- Describe and ensure the implementation of practices to reduce pollutants in storm water discharges.
- File Notice of Intent (NOI).

#### 4.6.5.2 Impacts Determined to be Less than Significant/No Impact

In considering potential impacts of the Project, the County of Los Angeles completed an Initial Study which determined the Project would result in **Less than Significant Impacts** with regard to the following, each of which are discussed in more detail below:

- Onsite Wastewater Treatment System
- Drainage Patterns

##### 4.6.5.2.1 *Onsite Wastewater Treatment System*

The Project will use an onsite wastewater treatment system (OWTS) meeting the requirements of the Los Angeles County Code, Title 11 (Health & Safety) and Title 28 (Plumbing) and those established by the Los Angeles Regional Water Quality Control Board. As such, the County of Los Angeles Initial Study determined the Project would result in the following **Less than Significant Impact**, because it will not be necessary to install an onsite wastewater treatment system.

##### 4.6.5.2.2 *Drainage Patterns*

Refer to EIR sub-chapter 4.4 for a complete discussion of drainage patterns, flooding potential and the system of interceptor-drains, down-drains and drainage called for in the *Drainage Concept* (EIR Appendix 3).

The method and system components for capturing and conveying offsite runoff into the mine pits similar to that adopted by the adjacent VMC mine, which was previously approved by LACDPW. The *Drainage Concept* demonstrates that the mine pits would not overflow during the Capital Flood. As a result, Project impacts are considered **Less than Significant.**

#### 4.6.5.3 Impacts Determined to be Potentially Significant

Comments from the Initial Study (EIR Appendix 1) include:

> *A well is proposed. The Lahontan RWQCB will identify water quality problems.*
>
> *The groundwater table of the project site is at an approx. depth of 70 feet (Slope Stab. Eval). The proposed depth of the mine pits is 80 feet. Mining activities could degrade quality of ground water.*
>
> *Two 80 foot depressions will remain after mining activities, which have a potential use as storm water catch basins.*

##### 4.6.5.3.1 *Groundwater Quality and Surface Water Quality*

The Project has been specifically designed as a dry surface mining operation with a maximum depth of 80 feet bgs. Although EIR Table 12 indicates groundwater levels in a nearby well at 55.4 feet below surface level, Fugro West, Inc. (Fugro) prepared a *Pit Slope Stability Evaluation* (EIR Appendix 4), which indicated otherwise. During this evaluation, Fugro drilled two sampling holes on August 15, 2006. The first of these wells (DH-1) encountered perched groundwater at a depth of 70 feet bgs, while the second well (DH-2) did not encounter groundwater to the explored depth at its termination depth of 80 feet

bgs. Therefore, it is believed that groundwater is considerably deeper than the 55.4 feet bgs reported in 1985 for Well Name 05N10W12M002S.

To ensure groundwater is protected, surface mining operations would be curtailed at a final mining depth of 80 feet bgs, or at a depth that is 5 feet above static groundwater levels for all pits, should groundwater be encountered. If groundwater is encountered and the final excavation depth reduced, the volume of material excavated and processed, and the life of the Project would be reduced accordingly. Within the first few years of Project operations, the static groundwater level would have been determined for the North Pit and the final mining depth defined accordingly at 5 feet above that level. The same precaution and determination of static groundwater level would be made for the South Pit.

In advance of Mining Phase 3a and 3b excavations, late in the life of the Project, the Processing Facilities Site would be relocated within the North Pit. Phase 1 mining would excavate the North Pit to a depth of 80 feet bgs, unless static groundwater level has been determined to be shallower. Prior to placement of the Processing Facilities Site into the North Pit, a pad of refill material would be constructed to a depth of 50 feet bgs. The *Drainage Concept* (EIR Appendix 3) indicates a Capital Flood inundation level of 19 feet bgs or less in the North Pit. Placing the Processing Facilities Site atop a pad constructed to a depth of 50 feet bgs in the North Pit will ensure it remains well above stormwater inundation levels of a Capital Flood.

Other aspects of the Project have also been designed to ensure groundwater and surface water resources are not significant impacted. These include the following, the purpose of which is described above in EIR sub-chapter 4.6.5.1:

- Fueling and Maintenance Pad
- Aggregate Processing Wash Water Recycling
- Spill Prevention, Control and Countermeasure Plan
- Storm Water Pollution Plan

EIR sub-chapter 4.11.5 provides an impact analysis of Hazards and Hazardous Materials, where it is noted that the measures listed immediately above, in combination with other aspects of the project will cause the Project to result in **Less than Significant Impacts**.

In addition, managing water recycling operations in this manner described in EIR sub-chapter 4.6.5.1.3 would serve to further minimize the introduction of contaminants into the groundwater and surface water systems. As a result, the Project is expected to result in **Less than Significant Impacts** to water quality. Factors contributing to this determination include the use of the Fueling and Maintenance Pad, implementation of County-approved SPCC and SWPPP, and implementation of the *Drainage Concept* (EIR Appendix 3).

EIR sub-chapter 4.6.3.3 notes that the Project includes operation measures to ensure groundwater is protected, surface mining operations would be curtailed at a final mining depth of 80 feet bgs, or at a depth that is 5 feet above static groundwater levels for all pits, should groundwater be encountered. If

groundwater is encountered and the final excavation depth reduced, the volume of material excavated and processed, and the life of the Project would be reduced accordingly. Within the first few years of Project operations, the static groundwater level would have been determined for the North Pit and the final mining depth defined accordingly at 5 feet above that level. The same precaution and determination of static groundwater level would be made for the South Pit. As a result, the Project is expected to result in **Less than Significant Impacts** to groundwater quality.

Project construction activities would largely be comprised of the work needed to install the various pieces of equipment and other plant facilities. Such work would include minor surface grading, including the removal of topsoil for onsite storage, the excavation and pouring of concrete support footings, road grading (also minor), and the drilling of a new water well.

Prior to commencing the excavation of the first mining area, vegetation and topsoil would be removed from the area to be mined, perimeter berms constructed and fences installed. The berm, as described in the *Drainage Concept* (EIR Appendix 3) serves to direct surface waters, which flow on extremely rare occasions, into the mining pit so as not to concentrate their flow onto other properties, thereby reducing the potential for offsite erosion. Water entering the mining pits would percolate to groundwater or evaporate.

Upon reclamation, the site would include the infrastructure described in the *Drainage Concept* (EIR Appendix 3), which was designed to ensure that the quality of storm water runoff is not degraded and that there are no post-development non-storm water discharges contributing potential pollutants to the storm water conveyance system and/or receiving bodies.

As a result, Project impacts in terms of water quality and/or the quality of groundwater and/or storm water runoff to the storm water conveyance system and/or receiving water bodies are considered to be **Less than Significant**.

### 4.6.6 Mitigation Measures

None.

### 4.6.7 Level of Significance after Mitigation

No significant impacts are associated with the Project.

### 4.6.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Project would require the use and onsite storage of the chemicals, which would be stored atop the Fueling and Maintenance Pad, or within secondary containment elsewhere within the Processing Facilities Site. Refer to EIR sub-chapter 4.11.5 where Hazardous Materials are discussed and where EIR Table 88 provides a list of the types and quantities of chemicals that would be stored and used onsite.

Impacts to groundwater quality could occur if fuel, other hydrocarbons, or other onsite hazardous materials were to spill. To minimize potential impacts, all vehicle fueling and maintenance would take place atop the Fueling and Maintenance Pad within the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The concrete pad includes a curbed containment berm and is adjacent to the fuel storage tank, which would be placed within a concrete secondary containment area. These precautionary measures are designed to ensure fueling and maintenance activities do not adversely affect surface water or groundwater. The only exceptions to this would be repairs elsewhere on the Project site due to onsite equipment breakdowns.

The Project incorporates the following material control programs: Hazardous Materials Business Plan; hazardous materials inventory; SPCC; employee training; record keeping; preventive maintenance; BMP; and SWPPP. (Refer also to EIR sub-chapter 4.11.8.) In addition, the implementation of the *Drainage Concept* (EIR Appendix 3) and use of the Fueling and Maintenance Pad serve to further reduce Project impacts. Given these programs and the limited number of cumulative projects, operational and long-term Project impacts regarding hazards and hazardous materials are **not expected to be cumulatively considerable**.

## 4.7 AIR QUALITY, HEALTH RISKS AND CLIMATE CHANGE

### 4.7.1 Introduction

This sub-chapter of the EIR provides analyses of air quality, health risk and greenhouse gas (GHG) impacts of the Project and recommends Mitigation Measures. The methodologies used and the information provided in this sub-chapter are described more fully in the following:

- *Air Quality and Climate Change Impact Assessment*, September 30, 2013. Sespe Consulting, Inc. (*AQCCIA)* (EIR Appendix 10).
- *Air Quality Health Risk Assessment*, March 8, 2012. Sespe Consulting, Inc. (*AQHRA)* (EIR Appendix 11).

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***3. Air Quality***

*Would the project:*

*a) Conflict with or obstruct implementation of applicable air quality plans of either the South Coast AQMD (SCAQMD) or the Antelope Valley AQMD (AVAQMD)?*

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

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

*d) Expose sensitive receptors to substantial pollutant concentrations?*

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

***8. Greenhouse Gas Emissions***

*Would the project:*

*a) Generate greenhouse gas (GHGs) emissions, either directly or indirectly, that may have a significant impact on the environment?*

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

### 4.7.2 Regulatory Setting

The Project site is located in the Antelope Valley within the southernmost boundary of the Mojave Desert Air Basin (MDAB), which encompasses the northern, desert portion of Los Angeles County. Air Quality in the Project area is within the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD).

#### 4.7.2.1 Air Quality Regulations

The federal Clean Air Act and the California Clean Air Act each contain comprehensive frameworks for air quality planning and regulation. Title 40 of the Code of Federal Regulations and Title 17 of the California Code of Regulations contain requirements that have been promulgated under authority granted to the US EPA and California Air Resources Board (CARB) by these two Acts.

##### 4.7.2.1.1 *Criteria Air Pollutants*

Criteria air pollutants include sulfur oxides ($SO_x$), nitrogen oxides ($NO_x$), particulate matter (PM), carbon monoxide (CO), Lead (Pb), and ground-level ozone ($O_3$). Ambient Air Quality Standards (AAQS) are developed by the US EPA and CARB for each of the criteria pollutants.

Primary AAQS are designed to protect human health, with an adequate margin of safety to protect sensitive populations such as children, the elderly, and individuals suffering from respiratory disease. Secondary AAQS are designed to protect public welfare from any known or anticipated adverse effects of a pollutant (e.g. building facades, visibility, crops, and domestic animals).

AAQS and related monitoring programs are among the many devices established by air quality regulations (40 CFR 50 – 51). Geographic areas called "attainment areas" are classified by the US EPA and CARB based on whether they have attained the AAQSs. An "attainment area" is an area in which pollutant concentrations are less than the AAQS while "non-attainment areas" have yet to reduce pollution levels below the AAQS. State and federal AAQS are shown in EIR Table 40.

In order to work towards attainment, each state and air district containing federal non-attainment areas is required to develop a written plan for cleaning the air in those areas. The plans developed are called state implementation plans (SIP) and Air Quality Management Plans (AQMP). California's SIP contains mobile source and consumer product emission control strategies proposed by CARB and a compilation of stationary and area source strategies that have been developed by local air districts under CARB supervision. Through these plans, the states and local air districts outline efforts that they will make to reduce air pollutant concentrations and bring their areas back into federal attainment. AVAQMD attainment status is presented in EIR Table 41.

California AAQS (CAAQS) are more stringent than the National AAQS (NAAQS) but have less severe consequences when they are exceeded. Existing law requires district plans for attaining CAAQS to assess the cost-effectiveness of available and proposed emission control measures.

In 2004, a list of readily available, feasible, and cost-effective particulate matter (PM) control measures was published by CARB as required by Senate Bill 656 (2003, Sher). Each non-attainment air district has considered the list of measures, developed an implementation schedule for measures they plan to adopt, and most have made new rules as a result. AVAQMD's implementation schedule was adopted on August 16, 2005.

**Table 40 State and Federal Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards [1] | | National Standards [2] | | |
|---|---|---|---|---|---|---|
| | | Concentration [3] | Method [4] | Primary [3,5] | Secondary [3,6] | Method [7] |
| **Ozone ($O_3$)** | 1 Hour | 0.09 ppm (180 µg/m$^3$) | Ultraviolet Photometry | — | Same as Primary Standard | Ultraviolet Photometry |
| | 8 Hour | 0.070 ppm (137 µg/m$^3$) | | 0.075 ppm (147 µg/m$^3$) | | |
| **Respirable Particulate Matter ($PM_{10}$)** | 24 Hour | 50 µg/m$^3$ | Gravimetric or Beta Attenuation | 150 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 20 µg/m$^3$ | | — | | |
| **Fine Particulate Matter ($PM_{2.5}$)** | 24 Hour | — | — | 35 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 3<br>12 µg/m | Gravimetric or Beta Attenuation | 12 µg/m$^3$ | | |
| **Carbon Monoxide (CO)** | 1 Hour | 20 ppm (23 mg/m$^3$) | Non-Dispersive Infrared Photometry (NDIR) | 35 ppm (40 mg/m$^3$) | — | Non-Dispersive Infrared Photometry (NDIR) |
| | 8 Hour | 9.0 ppm (10 mg/m$^3$) | | 9 ppm (10 mg/m$^3$) | — | |
| | 8 Hour (Lake Tahoe) | 3<br>6 ppm (7 mg/m ) | | — | — | |
| **Nitrogen Dioxide ($NO_2$) [8]** | 1 Hour | 0.18 ppm (339 µg/m$^3$) | Gas Phase Chemiluminescence | 100 ppb (188 µg/m$^3$) | — | Gas Phase Chemilumin-escence |
| | Annual Arithmetic Mean | 0.030 ppm (57 µg/m3) | | 0.053 ppb (100 µg/m$^3$) | Same as Primary Standard | |
| **Sulfur Dioxide ($SO_2$) [9]** | 1 Hour | 0.25 ppm (655 µg/m$^3$) | Ultraviolet Fluorescence | 75 ppb (196 µg/m$^3$) | — | Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method) |
| | 3 Hour | — | | — | 0.5 ppm (1300 µg/m$^3$) | |
| | 24 Hour | 0.04 ppm (105 µg/m$^3$) | | 0.14 ppm (for certain areas)[9] | — | |
| | Annual Arithmetic Mean | — | | 0.030 ppm (for certain areas)[9] | — | |
| **Lead [10,11] (Pb)** | 30 Day Average | 1.5 µg/m$^3$ | Atomic Absorption | — | — | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | — | | 1.5 µg/m$^3$ (for certain areas)[11] | Same as Primary Standard | |
| | Rolling 3-Month Average | — | | 0.15 µg/m$^3$ | | |
| **Visibility Reducing Particles [12]** | 8 Hour | See footnote 12 | Beta Attenuation and Transmittance through Filter Tape | No National Standards | | |
| **Sulfates** | 24 Hour | 25 µg/m$^3$ | Ion Chromatography | | | |
| **Hydrogen Sulfide** | 1 Hour | 0.03 ppm (42 µg/m$^3$) | Ultraviolet Fluorescence | | | |
| **Vinyl Chloride [10]** | 24 Hour | 0.01 ppm (26 µg/m$^3$) | Gas Chromatography | | | |
| **See footnotes at:** http://www.arb.ca.gov/research/aaqs/aaqs2.pdf (last checked June 24, 2013) | | | | | | |

**Table 41 Attainment Status**

| Pollutant | Federal Designation | California Designation |
|---|---|---|
| One-hour Ozone | --- | Nonattainment (Extreme) |
| Eight-hour Ozone | Nonattainment (Moderate) | Nonattainment (Severe-17) |
| Particulate Matter ($PM_{10}$) | Unclassified | Nonattainment |
| Particulate Matter ($PM_{2.5}$) | Unclassified/Attainment | Unclassified |
| Carbon Monoxide | Attainment | Attainment |
| Nitrogen Dioxide | Attainment/Unclassified | Attainment/Unclassified |
| Sulfur Dioxide | Attainment/Unclassified | Attainment/Unclassified |
| Lead | Attainment | Attainment |
| Sulfates | --- | Unclassified |
| Hydrogen Sulfide | --- | Unclassified |
| Visibility Reducing Particles | --- | Unclassified |
| Sources: http://www.arb.ca.gov/desig/adm/adm.htm<br>http://www.epa.gov/air/oaqps/greenbk/index.html (last checked by Sespe on 12/30/2011) | | |

#### 4.7.2.1.2 *Toxic Air Contaminants*

Toxic air contaminants (TAC) are pollutants listed by the State of California that pose acute, chronic, and/or cancer health risks to exposed individuals. Hazardous air pollutants (HAP) are pollutants listed by the US EPA that pose acute, chronic, and/or cancer health risks to exposed individuals.

The California Office of Environmental Health Hazard Assessment (OEHHA) is responsible for developing the scientific basis for listing TACs while CARB is responsible for implementing air toxic control measures (ATCM). Assembly Bill (AB) 1807 was passed in 1983 and requires California to identify and control TACs. TACs are formally identified through a detailed process which starts when a chemical's risk to human health and the environment are above certain criteria. Once TACs are identified, the emission sources, controls, technologies and costs are reviewed to determine if regulation is needed to reduce emissions. In 1993, AB 1807 was amended by passage of AB 2728 which requires the State to list the 189 Federal HAPs in the TAC list.

In 1987, AB 2588 air toxics "hot spots" program was established. It requires certain facilities to report their TAC emissions, determine localized health risk impacts, and notify nearby residents of significant risks. The program was amended in 1992 to require facilities to reduce any significant risks through the development of a risk management plan. The Hotspots Analysis and Reporting Program (HARP) is a tool that is used to assist with calculating TAC emission inventories and performing health risk assessments under the AB 2588 Program.

Diesel particulate matter (DPM) is identified as a TAC and accounts for roughly 70 percent of the cancer risk from air pollution in urban areas where on-road sources dominate the inventory. Diesel engines are a ubiquitous source and thus it is not surprising that stationary source TAC effects "*are generally much*

*lower than region-wide risk levels, region-wide risks tend to overwhelm any potential local 'hot spots.'"* (SCAQMD MATES II, Section 6.3.)

CARB has promulgated air toxic control measures (ATCM) for both on-road and off-road diesel engines. Recently published EMFAC2011 and OFFROAD2011 models each contain the effects of control measures and turnover on the statewide and regional fleets.

#### 4.7.2.1.3 *Prevention of Significant Deterioration for Greenhouse Gases*

On December 7, 2009, US EPA Administrator Lisa Jackson signed a final action, under Section 202(a) of the Federal Clean Air Act, finding that six key GHGs constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to the climate change problem US EPA, 2009). The "*endangerment finding*" allowed the US EPA to begin regulating the six GHGs that are identified. Key effects that the US EPA claims support the determination that GHGs endanger public health include:

> ***Temperature***. *There is evidence that the number of extremely hot days is already increasing. Severe heat waves are projected to intensify, which can increase heat-related mortality and sickness. Fewer deaths from exposure to extreme cold is a possible benefit of moderate temperature increases. Recent evidence suggests, however, that the net impact on mortality is more likely to be a danger because heat is already the leading cause of weather-related deaths in the United States.*
>
> ***Air Quality***. *Climate change is expected to worsen regional ground-level ozone pollution. Exposure to ground-level ozone has been linked to respiratory health problems ranging from decreased lung function and aggravated asthma to increased emergency department visits, hospital admissions, and even premature death. The impact on particulate matter remains less certain.*
>
> ***Climate-Sensitive Diseases and Aeroallergens***. *• Potential ranges of certain diseases affected by temperature and precipitation changes, including tick-borne diseases and food and water-borne pathogens, are expected to increase. • Climate change could impact the production, distribution, dispersion and allergenicity of aeroallergens and the growth and distribution of weeds, grasses, and trees that produce them. These changes in aeroallergens and subsequent human exposures could affect the prevalence and severity of allergy symptoms.*
>
> ***Vulnerable Populations and Environmental Justice***. *• Certain parts of the population may be especially vulnerable to climate impacts, including the poor, the elderly, those already in poor health, the disabled, those living alone, and/or indigenous populations dependent on one or a few resources. • Environmental justice issues are clearly raised through examples such as warmer temperatures in urban areas having a more direct impact on those without air-conditioning.*
>
> ***Extreme Events***. *• Storm impacts are likely to be more severe, especially along the Gulf and Atlantic coasts. Heavy rainfall events are expected to increase, increasing the risk of flooding, greater runoff and erosion, and thus the potential for adverse water quality effects. These*

> *projected trends can increase the number of people at risk from suffering disease and injury due to floods, storms, droughts and fires."* (US EPA, 2009)

Subsequent to the endangerment finding, GHGs became regulated under the Federal Clean Air Act. On May 13, 2010, the US EPA finalized the GHG Tailoring Rule which sets emissions thresholds to define when a Prevention Significant Deterioration (PSD) permit is required for new and modified sources. AVAQMD has not been delegated authority to implement PSD requirements and so the US EPA would administrate permitting for major sources of attainment pollutants (e.g. GHGs, CO, and $NO_2$).

The CAA major source thresholds for criteria pollutants such as lead, sulfur dioxide and nitrogen dioxide, are 100 and 250 tons per year (tpy), depending on the pollutant. While these thresholds are appropriate for criteria pollutants, they are not feasible for GHGs because GHGs are emitted in much higher quantities.

Under the GHG Tailoring Rule, PSD permitting requirements will cover, for the first time, new construction projects that emit GHG emissions of at least 100,000 tpy even if they do not exceed the permitting thresholds for any other pollutant. Modifications at existing facilities that increase GHG emissions by at least 75,000 tpy will be subject to permitting requirements, even if they do not significantly increase emissions of any other pollutant.

#### 4.7.2.2 Local Regulations

The Project is located within the jurisdictional boundary of the AVAQMD. The AVAQMD has published a CEQA advisory document entitled *Antelope Valley AQMD California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (*AVAQMD Guidelines*, August 2011) in order to provide lead agencies, consultants, and project applicants with a framework and uniform methods for preparing air quality evaluations for environmental documents. The *AQCCIA* follows the methodologies outlined in the *AVAQMD Guidelines*.

The AVAQMD also has a series of rules aimed at controlling emission from stationary sources of air pollution. The Project will be required to obtain stationary source permits from AVAQMD before construction and operation of those sources. The Project will be required to comply with a number of rules, including:

- **Regulation IV – Prohibitions.** Rule 401 limits opacity of visible emissions. Rule 402 prohibits air pollutants from becoming a nuisance. Rule 403 includes performance standards for particulate matter emissions (e.g. no visible dust beyond the property line) and best available control measures that must be employed.
- **Regulation IX – New Sources Performance Standards**. This rule is enacted to adopt by reference all the applicable provisions regarding standards of performance for new stationary sources as set forth in 40 Code of Federal Regulations, Part 60 (40 CFR 60). Parts of the CFR section applicable to the Project include Part I that applies to hot mix asphalt plants and Part OOO which applies to non-metallic mineral processing plants.
- **Regulation XIII – New Source Review (NSR).** NSR requires that new stationary sources of non-attainment air pollutants to be equipped with the BACT, which is the most stringent emission

control technology achieved in practice. In addition, NSR requires that any new or modified facility with the potential to emit pollutants in levels in excess of the thresholds indicated in the rule offset a portion of its emissions.

- **Regulation XIV – Toxics and Other Non-Criteria Pollutants.** This regulation includes NSR for toxic air contaminants as well as other rules that implement ATCMs. For instance, the purpose of Rule 1414 is to prevent the future sale and use of asbestos-containing serpentine material for surfacing applications in the South Coast Air Basin.

#### 4.7.2.3 Climate Change Regulations

Climate change regulation and guidance is under development and the subject of ongoing litigation as stakeholders challenge regulatory reforms by local, regional and state government entities. CEQA GHG regulations from the Governor's Office of Planning and Research have been adopted. Potentially applicable laws, regulations, and executive orders are discussed below, followed by a discussion of available guidance for evaluating climate change impacts under CEQA.

##### 4.7.2.3.1 *Laws, Regulations, and Executive Orders*

California has passed several bills and the Governor has signed at least three executive orders aimed at reducing GHG emissions and related climate change impacts. The most prominent of these is Assembly Bill 32 (Nunez, 2006) - the "California Global Warming Solutions Act of 2006" (AB 32). Among other things, it is designed to reduce California's statewide GHG emissions to 1990 levels by 2020.

AB 32 states that it is the intent of the Legislature that CARB design emissions reduction measures to meet the statewide emissions limits for GHG in a manner that minimizes costs and maximizes benefits for California's economy, improves and modernizes California's energy infrastructure and maintains electric system reliability, maximizes additional environmental and economic co-benefits for California, and complements the state's efforts to improve air quality.

CARB approved the Scoping Plan at the Board hearing on December 12, 2008. The Scoping Plan contains the main strategies that California will use to reduce GHGs as required by AB 32. On August 24, 2011, CARB approved the Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (2011 Supplement) which incorporates present year circumstances:

- **Development of measure-specific regulations already in effect**. The 2011 Supplement adopted by the Board includes estimates of reductions anticipated by 2020. These regulations, which reflect ARB's progress towards reducing statewide GHG emissions, include comprehensive documentation detailing the data sources and methods used to develop measures in the Scoping Plan. Each regulation's Initial Statement of Reasons (ISOR) contains the information necessary to evaluate how the reduction was calculated (documents are available on ARB's website.)
- **Severe and prolonged economic downturn**. The revised measure-specific emission reductions consider the economic downturn through the use of an updated GHG emission forecast. The updated forecast was developed using average emissions over a three-year period (2006-2008) projected to 2020. For energy consuming sectors, the projection is based on future demand for electricity and transportation fuels described in the California Energy Commission's 2009

Integrated Energy Policy Report. This report accounts for the recession using economic and demographic data. The 2009 document is available on the California Energy Commission's website.

The 2008 Scoping Plan called for approximately 29 percent reduction in GHG emissions statewide. This value was updated in the 2011 Supplement to approximately 16 percent reduction statewide. Control measures contained in the Scoping Plan that may affect Project emissions include, but are not limited to:

- **Transportation Measures**. These measures propose to reduce GHG's from vehicles by making vehicles more efficient, reducing the carbon content of the fuels, and reducing the vehicle miles traveled. Thus, vehicles would emit less GHG emissions in the future.
  - Light Duty Vehicle GHG Standard (T-1). This measure implements AB 1493 (Pavley) standards and planned second phase of the program. Align zero-emission vehicle, and alternative and renewable fuel and vehicle technology programs with long-term climate change goals.
  - Low Carbon Fuel Standard (T-2). This measure will reduce the carbon intensity of California's transportation fuels by at least ten percent (10 percent) by 2020. On December 29, 2011, a U.S. District Judge issued a preliminary injunction that ruled the CARB's low-carbon fuel regulations violated the U.S. Constitution's commerce clause by discriminating against crude oil and biofuels producers located outside California. CARB has said it will appeal the decision.
  - Vehicle Efficiency Measures (T-4). This includes measures such as sustainable tire practices, properly inflating vehicle's tires, and possibly fuel-efficient tire standards.
- **Energy Measures.** These measures propose that utility operators replace some fossil fuel electricity generation capacity with renewable sources and reinforces incentives that are offered by local governments to encourage the placement of solar panels on new and existing structures. The Renewables Portfolio Standard increases renewables from 12 percent in the baseline year(s) to 20 percent in 2020.

  The Renewable Electricity Standard is a separate measure that requires 33 percent renewables by 2020 and is implemented by the California Energy Commission and CPUC under SBX1-2, signed by Governor Brown in April 2011. Thus, electricity used by the Project will be less GHG intensive in the future.
- **Green Buildings (GB-1).** Energy use from buildings in California is the second largest contributor to GHG emissions. This measure sets energy efficiency standards which will help reduce energy use and therefore GHG's. The California Building Standards Commission has adopted Green Building Standards Codes of 2008 and 2010. The 2008 Code regulates outdoor water use. The ARB encourages local governments to raise the bar by adopting "beyond-code" green building requirements. To assist this effort, State government would develop and regularly tighten voluntary standards, written in GBSC language for easy adoption by local jurisdictions.
- **Water.** Approximately one-fifth of the electricity and one-third of the non-power plant natural gas consumed in the state are associated with water delivery, treatment and use. Six reduction measures are proposed including three measures to reduce energy requirements associated

with providing reliable water supplies at the urban end use and two measures are aimed at reducing the amount of non-renewable electricity associated with conveying and treating water. The final measure focuses on providing sustainable funding for implementing these actions.

**Senate Bill 375 (SB 375)** "Transportation planning: travel demand models: sustainable communities strategy: environmental review" was signed by the Governor on September 30, 2008. According to the Governor's press release:

> "*SB 375 requires the ARB to develop regional greenhouse gas emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. The 18 [metropolitan planning organizations] MPOs in California will prepare a "sustainable communities strategy" to reduce the amount of vehicle miles traveled (VMT) in their respective regions and demonstrate the ability for the region to attain ARB's targets.*
>
> - *ARB would later determine if each region is on track to meet their targets.*
> - *Builders also would get relief from certain environmental reviews under California Environmental Quality Act if they build projects consistent with the new sustainable community strategies.*
> - *In addition, cities would get extra time -- eight years instead of five -- to update housing plans required by the state.*" (www.gov.ca.gov)

SB 375 is most concerned with automobile and light truck traffic, but the goal of reducing GHGs covers all transportation sources based on the need for sustainable communities.

> *"each transportation planning agency … shall prepare and adopt a regional transportation plan directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement, and aviation facilities and services."* (Section 65080(a), underline added.)

The regional transportation plan is to be an internally consistent document and include a sustainable communities strategy.

> "*The sustainable communities strategy shall …(v) gather and consider the best practically available scientific information regarding resource areas and farmland in the region ….*" (Section 65080(b)(2)(B)(v), underline added.)

Resource areas include:

> "*areas of the state designated by the State Mining and Geology Board as areas of statewide or regional significance pursuant to Section 2790 of the Public Resources Code, and lands under Williamson Act contracts.*" (Section 65080.01(a)(4).)

Thus, SB 375 recognizes construction aggregate as a regionally significant resource that requires special consideration in transportation and land use planning efforts. Lastly, the Metropolitan Planning Organizations:

"*shall consider financial incentives for cities and counties that have resource areas*." (Section 65080(b)(4)(C).)

#### 4.7.2.3.2 *Guidance for Evaluating Climate Change Impacts under CEQA*

The AVAQMD Guidelines contain a significance threshold for GHG emissions of 100,000 tons per year that is compared to emissions totals presented below.

Methods used and judgments made in the inventorying of emissions are informed by the CEQA amendments adopted by the California Natural Resources Agency on December 29, 2009. The amendments, which formally became incorporated into the AVAQMD Guidelines on March 18, 2010, modified fourteen (14) sections of the State CEQA Guidelines, with notable amendments including the following new sections/subsections:

§15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions.

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable

notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

15126.4.(c) Mitigation Measures Related to Greenhouse Gas Emissions.

Consistent with section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:

(1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;

(2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures, such as those described in Appendix F;

(3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;

(4) Measures that sequester greenhouse gases;

(5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

#### 4.7.2.4 Health Risk Assessment Regulations

California regulates new development projects under the California Environmental Quality Act and toxic TACs from stationary sources under the Air Toxics Hot Spots Act (AB 2588) and other sources under ATCMs that regulate TACs for various source types.

As discussed in the AQCCIA (EIR Appendix 10), the CARB has developed ATCMs that require the reduction of TAC emissions including DPM from compression ignition engines. The primary health risk causing pollutant associated with this Project and statewide is DPM. The potential health effects caused by exposure to DPM are discussed in CARB's Toxic Contaminant Identification (Appendix B of EIR Appendix 11). ATCMs exist that apply to both on- and off-road diesel vehicles. The effects of applicable ACTM requirements with future effective dates are considered in the *AQHRA* (EIR Appendix 11) by assuming Project equipment is represented by the average unit of that size and type in the statewide fleet as reported by EMFAC2011 and OFFROAD2011.

Refer to the discussion of Toxic Air Contaminants in EIR sub-chapter 4.7.2.1.2.

### 4.7.3 Environmental Setting

The Project site is currently in an undeveloped condition and is located in a relatively remote and undisturbed area of the Antelope Valley. The property is bisected by an existing Union Pacific railroad track and is surrounded by vacant undeveloped properties on the north, west and south sides. Properties along the eastern boundary are mostly undeveloped, although there are a few residences, outbuildings and well houses. The nearest residence is immediately south of the railroad tracks, approximately 200 feet east of the Project's eastern boundary of the South Parcel.

#### 4.7.3.1 Criteria Air Pollutants

Criteria air pollutants are monitored by the State and AVAQMD to ensure progress towards, or maintenance of, attainment with AAQS (see EIR Table 40 and EIR Table 41). The "*AVAQMD 2004 Ozone Attainment Plan (State and Federal)*" and "*List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code §39614(d)*" present control measures that will be implemented to reduce non-attainment pollutant concentrations and result in eventual attainment. Excerpts from each of these documents and the Guidelines discussing key aspects of environmental setting and trends are presented below.

> *"The jurisdiction of the AVAQMD covers 1300 square miles of wide arid valley with primarily desert like terrain and contains 400,000 persons. The District is a mixture of urban areas, primarily located in the cities of Lancaster and Palmdale, and outlying agricultural operations.*
>
> *The climate in the AVAQMD is desert. The cool moist costal air from the South Coast Air Basin is blocked by the San Gabriel and San Bernardino mountain ranges. The area is characterized by hot, dry summers and mild winters with annual rainfall averaging 2 to 5 inches per year. Meteorology tends to be influenced by a moderately intense anticyclonic circulation except during frontal activity (storms) in the winter. During the winter there are an average to 20-30 frontal systems. In the summer the AVAQMD is usually influenced by a Pacific Subtropical High cell that sits off the coast of California. The prevailing winds are out of the west and south, resulting in a general west to east flow across the AVAQMD."* (Page 2, List and Implementation Schedule for District Measures to Reduce PM).
>
> *"The Antelope Valley is downwind of the Los Angeles basin, and to a lesser extent, is downwind of the San Joaquin Valley. Prevailing winds transport ozone and ozone precursors from both regions into and through the Antelope Valley during the summer ozone season. These transport couplings have been officially recognized by CARB.[1] Local Antelope Valley emissions contribute to exceedances of both the NAAQS and CAAQS for ozone, but the Antelope Valley would be in attainment of both standards without the influence of this transported air pollution from upwind regions.*
>
> [1] *"Ozone Transport: 2001 Review," April 2001, CARB identifies the South Coast Air Basin as having an overwhelming and significant impact on the Mojave Desert Air Basin (which includes the Antelope Valley) and the San Joaquin Valley as having an overwhelming impact on the MDAB."* (Page 6, Ozone Attainment Plan).

*"The AVAQMD's PM tends to be primarily fugitive dust. This dust appears to be generated by both local sources and by region-wide dust during moderate to high wind episodes. These regional episodes tend to be multi-district and sometimes interstate in scope. The AVAQMD has identified the local source of fugitive dust to be primarily unpaved road travel, construction and local disturbed areas of soil concentrating in the urban populated areas within the district, and seasonal agricultural operations."* (Page 2. "*List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code §39614(d)*").

*"The MDAB is classified as a dry-hot desert climate (BWh), with portions classified as dry-very hot desert (BWhh), to indicate at least three months have maximum average temperatures over 100.4° F." (Page 4, Guidelines.)*

#### 4.7.3.2 Toxic Air Contaminants

DPM is the main TAC of concern for the Project and statewide because it accounts for a majority of the cancer risk from pollutants in ambient air. CARB risk maps show that ambient air in urban areas of AVAQMD exhibits a total cancer risk of between 100 and 250 excess cancer cases per one million people exposed.

#### 4.7.3.3 Greenhouse Gases

GHGs in the atmosphere contribute to climate change. Historically, the California Energy Commission had been maintaining an inventory of California's statewide GHG emissions. EIR Table 42 provides a summary of the 2004 statewide GHG emissions by sector.

**Table 42 Summary of California's 2006 GHG Emissions**

| Sector | 1990 Actual [Target] | 2008 Actual | 2020 BAU – 2008 Scoping Plan | 2020 BAU – 2011 Update |
|---|---|---|---|---|
| Transportation | 150.67 | 174.99 | 225.4 | 192 |
| Electricity | 108.05 | 116.35 | 139.2 | 118 |
| Commercial and Residential | 44.09 | 43.13 | 46.7 | 40 |
| Industry | 96.18 | 92.66 | 100.5 | 85 |
| Recycling and Waste | 6.26 | 6.71 | 7.7 | 7 |
| High GWP | 3.17 | 15.65 | 46.9 | 40 |
| Agriculture | 23.62 | 28.06 | 29.8 | 25 |
| Forestry Net Emissions | -4.7 | 0.19 | 0.0 | 0.0 |
| **Emissions Total** | **427** | **477.74** | **596** | **507** |

Appendix F, Climate Change Scoping Plan, December 2008.
http://www.arb.ca.gov/cc/inventory/archive/tables/ghg_inventory_ipcc_90-04_all_2007-11-19.pdf
http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-08_2010-05-12.pdf
http://www.arb.ca.gov/cc/scopingplan/document/Supplement_to_SP_FED.pdf (Details by sector estimated based upon ratio to total.)

#### 4.7.3.4 Inelastic Demand

The *Aggregate Sustainability in California* notes the following:

> *Sand, gravel, and crushed stone are "construction materials." These commodities, collectively referred to as aggregate, provide the bulk and strength to Portland Cement Concrete (PCC), Asphaltic Concrete (AC, commonly called "black top"), plaster, and stucco. Aggregate is also used as road base, subbase, railroad ballast, and fill. Aggregate normally provides from 80 to 100 percent of the material volume in the above uses.*
>
> *The building and paving industries consume large quantities of aggregate and future demand for this commodity is expected to increase throughout California. Aggregate materials are essential to modern society, both to maintain the existing infrastructure and to provide for new construction. Therefore, aggregate materials are a resource of great importance to the economy of any area. Because aggregate is a low unit-value, high bulk weight commodity, it must be obtained from nearby sources to minimize economic and environmental costs associated with transportation. If nearby sources do not exist, then transportation costs can quickly exceed the value of the aggregate. Transporting aggregate from distant sources results in increased construction costs, fuel consumption, greenhouse gas emissions, air pollution, traffic congestion, and road maintenance.*

The *Aggregate Sustainability in California* estimated that the 50-year demand for aggregate resources within the four P-C Regions listed below in EIR Table 43 will be 2,835 million tons. By contrast, the permitted aggregate resources within these four P-C Regions total 792 million tons, or 27.9 percent of the estimated the 50-year demand, indicating approximately 14 years to exhaustion. The insufficient supply is especially problematic in Southern California where aggregate is shipped long distances across county lines to satisfy the large demand in the Los Angeles, Ventura, and San Diego areas.

The Project is expected to supply aggregate and related construction materials to the Palmdale, San Fernando, San Gabriel, and San Bernardino production-consumption areas. The 50-year aggregate demand in all of these areas is not satisfied by currently permitted supply, as noted in EIR Table 43. In order to satisfy the demands of an increasing Southern California population, more aggregate reserves will need to be mined.

**Table 43 Surrounding 50-Year Supply/Demand Situation**

| Production-Consumption Area | 50-Year Supply (Million Tons) | | 50-Year Demand (Million Tons) | | Percent of Demand Satisfied | |
|---|---|---|---|---|---|---|
| | 2006 | 2012 | 2006 | 2012 | 2006 | 2012 |
| Palmdale | 181 | 152 | 665 | 577 | 27% | 26% |
| San Fernando Valley | 88 | 77 | 457 | 476 | 19% | 16% |
| San Gabriel Valley | 370 | 322 | 1,148 | 809 | 32% | 40% |
| San Bernardino Valley | 262 | 241 | 1,074 | 993 | 24% | 24% |
| **Total** | 901 | 792 | 3,344 | 2,855 | 27% | 28% |
| Source: Map Sheet 52, California Geological Survey (Kohler, 2006; revised and Clinkenbeard, 2012). | | | | | | |

The demand for aggregate, asphalt, and concrete is inelastic. Inelastic demand means that neither the supply nor the price of aggregate influences its demand. In fact, aggregate demand is most closely related to population which is used by the CGS in estimating 50-Year Demand. Population is also used to estimate existing and future year demand in the *AQCCIA* (EIR Appendix 10). Population forecasts for the market areas served by the Project are presented in EIR Table 44.

**Table 44 Population Forecasts for the Project Market Area**

| Location | 2010 | 2012 | 2020 | 2035 |
|---|---|---|---|---|
| Outside Los Angeles County | 2,150,836 | n/a | 2,427,067 | 2,876,309 |
| City of Los Angeles | 1,730,818 | n/a | n/a | n/a |
| Los Angeles County | 126,361 | n/a | n/a | n/a |
| **Total** | **4,008,015** | **4,130,903** | **4,622,455** | **5,600,178** |
| Appendix B of EIR Appendix 10 describes how these population estimates were made. | | | | |

The Project will not affect demand for construction materials but will affect supply. Initially, the Project will replace existing haul truck traffic related to the delivery of aggregate, rather than generate new trips. In addition, there is a real possibility that the average trip length will be reduced. These concepts are supported by Dr. Peter Berck's Working Paper No. 994 – *A Note on the Environmental Costs of Aggregate* (Department of Agricultural and Resource Economics and Policy, Division of Agriculture and Natural Resources, University of California at Berkeley, January 2005, Appendix B). An excerpt of this paper follows:

> *The opening of a new quarry for aggregates will change the pattern of transportation of aggregates in the area served by the quarry. In this note, we will show that, so long as aggregate producers are cost minimizing, the new pattern of transportation requires less truck transport than the pattern of transportation that existed before the opening of the new quarry. Since the costs of providing aggregates falls, it is reasonable to assume that the price of delivered aggregates also will fall. This note also shows that the demand expansion effect is of very small magnitude. Since the demand increase from a new quarry is quite small, the dominant effect is that the quarries are on average closer to the users of aggregates and, as a result, the truck mileage for aggregate hauling decreases. To summarize the effects of a new quarry project:*
>
> *a) The project in itself will not significantly increase the demand for construction materials in the region through market forces, which include the downward pressure on pricing.*
>
> *b) Truck traffic (i.e., vehicle miles traveled) in the region will not increase and may decrease as a result of the project.*
>
> *As a result, the effect of a new quarry project will be to reduce the air emissions from aggregate trucking. The reduction in emissions should be included as a positive impact of a quarry project in any analysis of the environmental consequences of a new quarry.*

Caltrans has issued a fact sheet titled, "*Construction Aggregate Supply Limitations – Some Estimates of Economic Impact*" (Fact Sheet, November 2011) that expands upon the ideas in Dr. Berck's paper. The Fact Sheet (Appendix B of EIR Appendix 10) estimates the financial and environmental costs associated with adequacy and cost-effectiveness limitations that currently affect the aggregate supply in California.

In summary, haul truck trips related to the delivery of aggregate already occur in the existing physical setting to satisfy current demand. The inelasticity of aggregate demand also applies to products that utilize aggregate as the primary ingredient, such as ready mix concrete and hot mix asphalt. Future growth in population will result in growth in aggregate demand over current levels. The Project is assessed for its fair share of the future increase in aggregate and other building materials consumed in the market that will be served.

This basis for analysis is consistent with that taken in the Monterey County Board of Supervisors approved Handley Ranch Quarry DEIR (SCH No. 2002041005, May 2003) and affects the quantification of offsite haul truck emissions.

#### 4.7.3.5 Nearby Sources and Existing Health Risk

The existing physical setting is comprised mainly of emissions from vehicles on nearby roads. The SCAQMD MATES II study found that a majority (approximately 70 percent) of cancer risk comes from diesel exhaust particulate. Accordingly, the 2010 risk map prepared by CARB shows health risk in the region of the Project to be higher in urban areas (up to 250 excess cancer cases per 1 million people exposed) than in areas near the Project site (approximately 50 excess cancer cases per 1 million people exposed). Refer to EIR Appendix 11 (Appendix A, Figure 2). The follow-up study, MATES III, enabled SCAQMD to produce an interactive risk map shows the district boundary in Agua Dulce area to be between 150 and 200 excess cancer cases per 1 million people exposed. MATES II also ruled out crystalline silica as an air toxic of concern, as is evidenced by the fact that crystalline silica was not retained as a constituent in MATES III. Other studies performed by SCAQMD near aggregate mines (e.g. at Valley View School in Duarte) showed that crystalline silica levels outside those facility boundaries were acceptable.

##### 4.7.3.5.1 *Meteorological Data*

The following meteorological data is utilized for modeling pollutant dispersion for the *AQHRA*:

| | |
|---|---|
| Location: | Lancaster |
| Year: | 1981 |
| File Name: | LANCASTR.ASC |

This meteorological data was obtained from the SCAQMD. A wind rose generated from this data is presented in EIR Appendix 11 (Appendix A, Figure 3). The predominant wind direction is from west to east.

##### 4.7.3.5.2 *Spatial Data*

Universe Transverse Mercator (UTM) coordinates were used to model the source and receptor geometry. The Northing UTM coordinate is specified as the distance in kilometers between the point of interest (e.g. source or receptor) and the equator of the earth. The Easting UTM coordinate is the

distance from the point of interest to the baseline for UTM Zone 11. The UTM coordinates were based on the USGS, NAD82, Zone 11 map.

#### 4.7.3.5.3 *Terrain Elevations*

The following terrain elevation data was used for modeling pollutant dispersion in the *AQHRA* (EIR Appendix 11):

Location: Littlerock
File Name: 9047_75m.dem

Location: Lovejoy Buttes
File Name: 9048_75m.dem

These digital elevation models were obtained from http://www.webgis.com/.

#### 4.7.3.5.4 *Receptors*

In preparing the *AQHRA*, receptors are divided into three categories:

- **Residential Receptors** are places where people live.
- **Commercial Receptors** are places where people work.
- **Sensitive Receptors** are places where sensitive populations are expected to be found, such as schools, hospitals, and day care centers.

Receptors near the Project are residential in nature. The closest sensitive receptor to the Project is Littlerock High School, approximately 3 miles to the northwest. Project effects were assessed at the following receptors and are illustrated in EIR Appendix 11 (Appendix A, Figure 4).

- **Receptor 1 (R1)** is located west of the Project, in the north-west corner of the intersection of Avenue T and 106$^{th}$ Street.
- **Receptor 2 (R2)** is located west of the Project, adjacent to Avenue T on the north side.
- **Receptor 3 (R3)** is located approximately 4,000 feet west of the Project, near 126th Street East.
- **Receptor 4 (R4)** is the closest receptor to the Project, located adjacent to both the Project and the railroad on the east side. Two residences exist at this location.
- **Receptor 5 (R5)** is approximately 600 feet east of the south-east corner of the Project.

### 4.7.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations.

Expanding upon this threshold criterion more definitively, Pages 5 and 6 of the *AVAQMD Guidelines* note that:

"*Any project is significant if it triggers or exceeds the most appropriate evaluation criteria. The District will clarify upon request which threshold is most appropriate for a given project; in general, the emissions comparison (criteria number 1) is sufficient:*

1. *Generates total emissions (direct and indirect) exceeding the thresholds given in* [EIR Table 45]; *and/or,*
2. *Generates a violation of any ambient air quality standard when added to the local background;[*] and/or,*
3. *Does not conform with the applicable attainment or maintenance plan(s);[1] and/or,*
4. *Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.[*]*

[1] *A project is deemed to not exceed this threshold, and hence not be significant, if it is consistent with the existing land use plan. Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to not exceed this threshold.*

* *Refer to the Sensitive Receptor Land Use discussion above [Industrial projects within 1,000 feet of a sensitive receptor require health risk assessment].*

*A significant project must incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that a multi-phased project (such as a project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value."*

**Table 45 AVAQMD Significance Thresholds**

| Pollutant | AVAQMD Annual Threshold (tons) | AVAQMD Daily Threshold (lb) [1] |
|---|---|---|
| Greenhouse Gases ($CO_2e$) | 100,000 | 548,000 |
| Carbon Monoxide (CO) | 100 | 548 |
| Oxides of Nitrogen (NOx) | 25 | 137 |
| Volatile Organic Compounds (VOC) | 25 | 137 |
| Oxides of Sulfur (SOx) | 25 | 137 |
| Particulate Matter ($PM_{10}$) | 15 | 82 |
| Particulate Matter ($PM_{2.5}$) | 15 | 82 |
| Hydrogen Sulfide ($H_2S$) | 10 | 54 |
| Lead (Pb) | 0.6 | 3 |

The AVAQMD significance threshold for GHGs (100,000 tons/yr), while higher than other screening criteria (e.g. SCAQMD 10,000 MTCO2e/yr), is applied because it is supported by substantial evidence and most directly applicable to the Project. Specifically, 100,000 tons/year of GHG emissions from a single facility constitutes a major source that requires a federal operating permit. Similarly, the AVAQMD NOx significance threshold of 25 tons/year is equal to the major source threshold applicable to areas designated severe non-attainment for ozone.

Other air districts (primarily Mojave Desert and South Coast) will experience travel of haul trucks carrying materials to and from the Project within their boundaries. EIR Table 46 presents thresholds for the other districts.

**Table 46 Significance Thresholds of Other Air Districts**

| District | Units | VOC | NOx | CO | SOx | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|---|
| Mojave Desert AQMD | tpy | 25 | 25 | 100 | 25 | 15 | 15 |
| SCAQMD | lb/day | 55 | 55 | 550 | 150 | 150 | 55 |

The AVAQMD Guidelines and Toxics New Source Review (Rule 1401) contain the following significance thresholds for health risk:

- Cancer risk – 10 in 1 million at the maximum individual receptor.
- Chronic non-cancer risk – 1.0 hazard index.
- Acute non-cancer risk – 1.0 hazard index.

### 4.7.5 Impact Analysis

#### 4.7.5.1 Impacts Determined to be Less than Significant/No Impact

##### 4.7.5.1.1 *Construction Emissions*

Construction emissions were calculated using CARB's URBEMIS2007 model version 9.2.0. A 30.4 acre portion of land would require grading to prepare for the construction of the facility. The following phases and URBEMIS2007 default assumptions were utilized to calculate emissions:

- **Mass site grading**, which is performed by one (1) grader, one (1) dozer, two (2) loaders, and one (1) water truck. The default emission factor of 20 lbs/acre-day is used.
- **Fine site grading**, which is performed by one (1) grader, one (1) dozer, two (2) loaders, and one (1) water truck. The default emission factor of 20 lbs/acre-day is used.
- **Paving**, which is performed by four (4) cement and mortar mixers, one (1) paver, two (2) pieces of paving equipment, and one (1) roller.
- **Building construction**, which is performed by one (1) crane, two (2) forklifts, one (1) generator, one (1) loader, and three (3) welders.

Note: URBEMIS2007 is an older model that produces conservatively high results compared to what would be estimated by newer models (e.g. CalEEMod and OFFROAD2011). In addition,

construction phase is short and should have less significant effects on air quality than the Project operation phase. Therefore, the older URBEMIS2007 results were used.

EIR Table 47 presents results of the construction emissions calculations and presents significance determination for each pollutant. As described in EIR sub-chapter 4.7.4, the pound per day threshold is used because construction lasts for less than one year.

**Table 47 Construction Emissions**

| Peak Day Emissions | VOC (lb/day) | $NO_x$ (lb/day) | CO (lb/day) | $SO_x$ (lb/day) | $PM_{10}$ (lb/day) | $PM_{2.5}$ (lb/day) |
|---|---|---|---|---|---|---|
| Unmitigated Total | 15.88 | 132.53 | 158.67 | 0.23 | 154.04 | 33.62 |
| Mitigated Total | 15.88 | 129.80 | 158.67 | 0.23 | 69.43 | 15.22 |
| Threshold | 137 | 137 | 548 | 137 | 82 | 82 |
| **Significant?** | **No** | **No** | **No** | **No** | **No** | **No** |

Construction emissions were determined to be **Less than Significant Impacts**.

### 4.7.5.2 Impacts Determined to be Potentially Significant

#### 4.7.5.2.1 *Impact AQ-1: Operational phase emissions of the Project could be significant.*

Impacts attributable to the Project's operation phase emissions are addressed below within the broader discussions of:

1. *Direct Sources;*
2. *Indirect Sources;*
3. *Greenhouse Gas Emissions;and*
4. *Conformance with the Local Air Quality Plans*.

***1. Direct Sources***

The analyses presented in the EIR are based upon the peak yearly material throughput assumptions presented in EIR Table 48 and use of the off-road equipment operation presented in EIR Table 49 for the number of hours indicated. These assumptions were used to calculate direct and indirect emissions from stationary and mobile equipment. Aggregate tonnage is the amount mined. Aggregate production would be 20 percent less, or 2,000,000 net tons of processed material per year.

**Table 48 Material Throughput**

| Parameter | Aggregate (tpy) | Ready-Mixed Concrete ($yd^3$/yr) | Asphalt (tpy) | Vac-Lite (tpy) | Cement (tpy) |
|---|---|---|---|---|---|
| Peak Annual | 2,500,000 | 225,000 | 300,000 | 30,000 | 300,000 |

**Table 49 Project Off-Road Equipment**

| Equipment Type | Maximum Annual Hours of Operation |
|---|---|
| 140 H Grader | 606 |
| 980G Loader (Aggregate Processing Facility) | 3,188 |
| 980G Loader (HMA Plant) | 615 |
| Water Truck | 2,424 |
| Street Sweeper | 606 |
| Hitachi Excavator | 1,872 |
| 966G Loader (RMC / Vac-Lite Plants) | 1,397 |
| D8R Dozer [1] | 1,212 |
| 980G Loader (Pit) [2] | 4,444 |
| 773 Truck (#1) [1] | 4,444 |
| 773 Truck (#2) [1] | 4,444 |

[1] Mitigation eliminates this equipment and add a crane to the list (see EIR sub-chapter 4.7.6).
[2] Mitigation is assumed to reduce hours of operation for this loader to be equal to plant operation (3,188 hr/yr).

The determination of Project significance is based upon the analyses of the variety of emission sources. EIR Table 50 summarizes the peak year unmitigated emissions and compares them to the significance thresholds. Following EIR Table 50, summary discussions describe the analytical assumptions used to determine emission levels for each type of direct emission source. Emissions are based on the material throughput and emission factors from AP42. Emission calculations are included in Appendix D of EIR Appendix 10.

**Table 50 Peak Year Unmitigated Emissions (tpy)**

| Source | VOC | $NO_x$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| Aggregate Processing Facility | --- | --- | --- | --- | 3.68 | 1.06 |
| RMC Plant | --- | --- | --- | --- | 0.15 | 0.23 |
| Asphalt Plant | 2.45 | 1.88 | 3.45 | 0.04 | 3.45 | 3.38 |
| Oil Heaters | 0.03 | 0.75 | 0.43 | 0.01 | 0.03 | 0.03 |
| Vac-Lite Plant | --- | --- | --- | --- | 0.01 | 0.00 |
| Raw Cement and Aggregate Transfer and Distribution Facility | --- | --- | --- | --- | 0.10 | 0.03 |
| Emergency Generators | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 |
| Haul Trucks (offsite) | 0.25 | 2.16 | 1.25 | 0.01 | 0.16 | 0.00 |
| Road Trucks (offsite) | --- | --- | --- | --- | 1.23 | 0.30 |
| Haul Trucks (onsite) | 0.20 | 2.33 | 0.72 | 0.00 | 0.05 | 0.01 |
| Worker Commutes | 0.63 | 0.74 | 8.78 | 0.01 | 0.15 | 0.06 |
| Train | 0.03 | 1.14 | 0.11 | 0.07 | 0.02 | 0.02 |
| Off-Road | 2.28 | 34.08 | 45.38 | --- | 1.39 | 1.28 |
| Fugitive Dust | --- | --- | --- | --- | 39.51 | 4.66 |
| **TOTAL** | **5.87** | **43.09** | **60.13** | **0.15** | **50.56** | **11.06** |
| **Significance Threshold** | **25** | **25** | **100** | **25** | **15** | **15** |
| **Potentially Significant?** | No | **Yes** [1] | No | No | **Yes** [1] | No |

[1] Mitigated impacts (EIR sub-chapter 4.7.6) are **Less than Significant**

**a) Aggregate Processing Facility Emissions**

Aggregate would be mined and transported to the Aggregate Processing Facility using off-road equipment. Unprocessed aggregate would then be transferred by haul trucks to hoppers and then conveyed to a jaw crusher (the Mitigation Measures described in EIR sub-chapter 4.7.6 modify this process). After crushing, the aggregate would be conveyed to a surge pile. From the surge pile, an underground conveyor would transfer the aggregate onto a conveyor to be screened. From there, the material would be stockpiled or conveyed through another series of crushers and screens until appropriately sized. About 40 percent of the aggregate would go through a wet screening process. Water spray sufficient to maintain at least 3 percent moisture at all other processing points would be utilized. Fines would be conveyed to a backfill area. Emissions from wet operations and underground transfers would be zero.

**b) Ready-Mixed Concrete Plant Emissions**

Approximately 225,000 cubic yards of ready-mixed concrete would be produced during the peak year of operation, which equates to approximately 360,600 tpy. Ready-mixed concrete is made of 78 percent aggregate material (281,300 tons), which would be transferred by loader from stockpiles to the Ready-Mixed Concrete Plant aggregate storage area. From the storage bin it would be conveyed to a hopper and then loaded into the mixer. Cement and fly ash make up 14 percent of ready-mixed concrete. About 63,000 tpy of cement and fly ash would be pneumatically loaded into silos. It would then be conveyed via a closed system to the hopper. Water and admixtures would be added to the aggregate, cement, and fly ash in the mixer to produce the product, which would then be loaded out into concrete trucks.

**c) Asphalt Mixing Plant Emissions**

Operation of the Asphalt Mixing Plant includes the following sources of air emissions.

- **Dryer/mixer emissions**. Wet aggregate would be dried prior to being sent to the mixer where it would be combined with asphaltic oil. The low $NO_x$ propane burner used during the drying process has a rating of 100 MMBtu/hr. The burner would comply with BACT which is assumed to be consistency with AVAQMD Rule 1146(c)(1) which limits NOx emissions to less than 0.05 lb/MMBtu. $PM_{10}$ emissions from the dryer and mixer would be controlled by a knock out box and a baghouse (fabric filter). This control technology is assumed to provide an overall control efficiency of 89.9 percent for particulate material (90 percent capture efficiency and 99.9 percent control efficiency). In addition, emissions from the mixer would be recirculated through the dryer burner to achieve 88.2 percent control of VOCs (90 percent capture and 98 percent control).
- **Silo loading emissions**. $PM_{10}$ emissions from silo loading would be controlled by a Blue Smoke Control filtration system. As per manufacturer specifications, this system is assumed to provide 95 percent control of $PM_{10}$ emissions.
- **Asphalt load out emissions**. $PM_{10}$ emissions from load out would be controlled by a Blue Smoke Control filtration system, which is assumed to provide 95 percent control of $PM_{10}$. Blue smoke filtration will control emissions of some semi-volatiles, but these effects are not quantified in this analysis.

**d) Oil Heater Emissions**

Asphalt oil must be heated in order to flow as a liquid. To keep the oil from hardening in the oil storage tank, oil heaters would be used twenty-four (24) hours per day, 365 days per year. The emission calculations are based on a burner firing at 1.2 MMBtu/hr, or 10,512 MMBtu/yr. This corresponds to approximately 115,000 gallons of propane each year.

**e) Vac-Lite Plant Emissions**

Volcanic aggregate would be delivered to the plant via bottom dump haul truck. The haul trucks would dump the aggregate onto a grizzly hopper/screen, which would then load onto a conveyor. The unprocessed material would be conveyed into a vessel where it would be treated with high pressure water and cement. The processed material would then be conveyed to a stockpile. Stockpiled material would either be loaded immediately into haul trucks for delivery or kept wet for

later delivery. Since the plant would run on electricity, the only emissions that occur from operation of the Vac-Lite plant are particulates. In addition to the AP-42 emission factors, the peak year throughput of 30,000 tons was used to calculate particulate emissions. Once the material enters the processing vessel, it is wet and, therefore, does not have any PM emissions. Emissions before that point would be controlled using water spray sufficient to maintain 3 percent moisture in the aggregate.

**f) Cement Loading Emissions**

For the purposes of this analysis, it is assumed the Raw Cement and Aggregate Transfer and Distribution Facility is constructed. Cement is purchased from an outside source and would be delivered to the plant via train. During the peak year, 300,000 tpy will be pneumatically unloaded from the train into an elevated silo. About 82% of this (246,000 tpy) is sold as raw cement during the peak year (as opposed to 88% in the average year). All cement loading and unloading transfer points are controlled by a fabric filter.

**g) Generator Emissions**

The diesel generator would only be used for emergency situations and would run for testing a maximum of fifty (50) hours per year. Emissions calculations are based on the fifty (50) hours per year run time with an emission factor equivalent to the Tier 2 off-road equipment standards.

**h) Onsite On-Road Haul Truck Emissions**

On road haul trucks travel several routes through the facility depending upon what material they carry. Vehicles are assumed to operate at 15 mph and each vehicle is assumed to idle for five minutes while on-site. Vehicle activity also creates road dust. Both running exhaust and road dust emissions are dependent on the distance traveled.

Note: The Project running emissions were compared to the Lowered Facilities Alternative running emissions calculated in Appendix E of EIR Appendix 10 to show that the Lowered Facilities Alternative results in slightly greater travel distances and emissions. Therefore, this AQCCIA conservatively assumes that the Lowered Facilities Alternative emissions from on-site truck operation are also representative of the Project emissions which are slightly less.

**i) Worker Commute Emissions**

One hundred and fifty-six (156) employees, including plant operators and truck drivers, will make one round trip (i.e. commute to and from work) per day for 303 days per year (47,268 round trips per year). The plant will operate two or three shifts per day, six days per week, with a maximum of 88 employees working per shift. Travel distances were approximated using the assumption that the employees will be commuting from Palmdale and Lancaster. Emission factors were developed using EMFAC2011 for gasoline powered, light duty auto vehicles operating in AVAQMD.

**j) Rail Emissions**

Emissions from train deliveries of raw cement were based on the number of trips required annually to supply 300,000 tpy of raw cement and emission factors from CARB's Locomotive Emission Study (January 1991). Emissions were calculated for each of the following segments:

- **Incoming.** Trains approaching the facility from the north, spending 41.5 minutes cruising at a speed of 40 mph (notch 5) in the AVAQMD jurisdiction, and 10 minutes braking.
- **Idling.** Trains idling for 30 minutes at the Project while the Raw Cement silos are filled at the Raw Cement and Aggregate Transfer and Distribution Facility.
- **Outgoing.** Trains leaving the Project toward the south, spending 14.5 minutes accelerating (increasing from notch 1 to notch 5), and 48.5 minutes cruising at 40 mph in the AVAQMD jurisdiction.

**k) Off-Road Equipment Emissions**

Off-road vehicles would be used to mine, load, and transport materials as well as to maintain on site roads. Project off-road equipment include the following:

- One grader to maintain roads and surfaces;
- One loader serving the Aggregate Processing Facilities;
- One loader serving the Asphalt Mixing Plant;
- One loader serving the Ready-Mixed Concrete Plant;
- One loader serving the aggregate pit operations (the Mitigation Measures described in EIR sub-chapter 4.7.6 eliminate this piece of equipment);
- One water truck to wet roads and surfaces;
- One street sweeper to control dust on paved roads;
- One articulated truck for material transport in the Aggregate Processing Facilities;
- One excavator used in mining operations;
- One dozer used in mining operations (the Mitigation Measures described in EIR sub-chapter 4.7.6 eliminate this piece of equipment); and
- Two off-road trucks for material transport in the pit (the Mitigation Measures described in EIR sub-chapter 4.7.6 eliminate this piece of equipment).

In addition to the equipment related Mitigation Measures noted immediately above, another Mitigation Measure adds a crane (i.e., drag line) to the equipment list.

The hours of operation used in the emissions analysis of Project loaders, pit haul trucks, and excavator was based on cycle time analyses, using Caterpillar Performance Handbook Edition 37 methodologies. For the remaining equipment, hours of operation were based upon the Project Description and yearly throughputs. Vehicle horsepowers were based on manufacturer specifications for units described by Lebata, where known, and CalEEMod defaults. Load factors were based on URBEMIS2011 defaults. Emission factors are based on the equipment type, engine model year, and engine horsepower. Welding and fuel service/maintenance vehicles were not included because their use is considered incidental and often in place of more heavy equipment.

Emissions from off-road equipment decrease over time, due to the ATCM regulation. Emissions for each year of Project operation were calculated to determine the year with the greatest level of Project induced emissions from mobile sources.

**l) Fugitive Dust**

Project activities that would produce fugitive dust include:

- Material loading;
- Material drops/unloading;
- Movement of vehicles on paved roads; and
- Movement of both on and off-road vehicles on unpaved roads/disturbed areas.

Emissions from material loading and unloading were calculated based on the amount of material moved and AP-42 emission factors, assuming 3 percent moisture content in the materials. Emissions from vehicle travel on unpaved roads were based on VMT and the AP-42 emission factors. Emissions from vehicle travel on paved roads were based on VMT and an emission factor determined by equation in AP-42 Section 13.2.1 (January 2011). Emission calculations are included in Appendix F of EIR Appendix 10.

It is concluded that the $NO_x$ and $PM_{10}$ emissions generated by the Project could result in **Significant Impacts**. In response, **Mitigation Measures AQ-1 through AQ-7** (EIR sub-chapter 4.7.6) were developed. Upon implementation of **Mitigation Measures AQ-1 through AQ-7**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

***2. Indirect Sources***

Indirect impacts are the result of changes that occur due to the existence of the Project, but are not a part of the Project. According to the Guidelines, indirect impacts include:

- Construction of support infrastructures;
- Housing constructed and/or occupied by mine employees; and
- Changes in traffic/circulation patterns.

**a) Worker Related Emissions**

Project The Project would employ 156 people, most of whom are expected to already live in the surrounding areas. If a portion of the employees do move into the area, the magnitude of the population increase is expected to be within the bounds of normal population growth. Furthermore, the Project is not growth-inducing, as is discussed in EIR sub-chapters 4.2.9 and 5.0. For these reasons, the construction of support infrastructures and/or housing in exceedance of what is necessary to accommodate normal growth is not expected.

**b) Off-Site Electricity Generation Emissions**

The Project facilities, including conveyors, would run on electricity, resulting in an indirect source of emissions at the power plant where the electricity is produced. Indirect impacts from electricity usage are quantified for the GHG impact assessment.

**c) Haul Truck Emissions**

As previously discussed in EIR sub-chapter 4.7.3.4, aggregate demand is inelastic and, therefore, the Project will not have an effect on demand. Furthermore, haul truck trips already exist to meet the current demand. Initially, the Project will not generate new haul truck trips, it will replace existing trips. This concept extends to material which is made with aggregate as the primary ingredient, such as concrete and asphalt.

Demand for aggregate and related materials increases as the population grows and emissions from material transport have a corresponding increase. The Project would not satisfy all demand resulting from future population growth but would be responsible for its fair share of future increases in aggregate consumption and impacts resulting from new trips beyond those already occurring in the existing physical setting. For this reason, haul emissions associated with the Project's market share of this increase in demand are calculated and utilized to determine Project significance for pollutants effects that are assessed on a regional or larger scale. Potential to emit approach was also used to calculate haul truck emissions and those results are disclosed in Appendix I of EIR Appendix 10.

Project generated haul truck emissions for the first year of operation are assumed to be zero, because Project trips replace existing trips originating elsewhere. The increase in annual aggregate demand after the first year of operation is calculated based on population estimates for the Project's Market Area (refer to EIR Table 44) and the statewide average rate of consumption reported in Map Sheet 52 (2006) of 6.6 tons per person per year. The Project's fair share of this growth is calculated based on the ratio of Project peak production (2 MMtpy) to demand in the Project's Market Area (27 MMtpy). This value is then used to calculate emissions from haul trucks. This approach is consistent with that used in the approved Handley Ranch DEIR (State Clearinghouse No. 2002041005, May 2003). Emission calculations and more information regarding this approach are included in Appendices B and E of EIR Appendix 10.

Vehicle miles traveled (VMT) are calculated using a VMT/ton aggregate factor (2.73 VMT/ton aggregate overall and less within each air district). This value is determined based on conservative estimates of delivery and import distance. Only emissions occurring within AVAQMD (2.21 VMT/ton) jurisdiction are included in the regional criteria pollutant threshold comparisons (refer to EIR Table 50 and EIR Table 55). GHG emissions impacts are evaluated for the entire length of the haul (refer to EIR Table 51 and EIR Table 56). VMT due to imports of raw materials are included because they are governed by the aggregate throughput. The calculation for the VMT/ton aggregate factor is included in Appendix E of EIR Appendix 10. Truck trips associated with the Vac-Lite plant are not directly included in the calculations because they are assumed to replace other trips (aggregate, RMC, or asphalt) and thus do not increase the number of trips.

Emissions are calculated using the Project's share of increased aggregate demand projected for the region, the VMT/ton factor, and emission factors from EMFAC2011. As time passes, haul truck emissions per VMT reduce due to cleaner burning fuel and engines. Emissions from on road haul truck

activity are calculated for each project year in order to determine the year with the largest amount of Project induced emissions.

It is concluded that the indirect emissions generated by the Project would result in **Less than Significant Impacts**.

***3. Greenhouse Gases***

GHG emissions are generated by stationary and mobile equipment. Stationary sources include propane combustion in the asphalt plant, propane combustion in the asphaltic oil heaters, and diesel combustion in the emergency generator. Mobile sources include off-road equipment, on road haul trucks, and worker commutes. GHG emissions have been calculated based on the CCAR's General Reporting Protocol (v3.1) methodologies. The results of these calculations are presented in EIR Table 51.

**Table 51 Unmitigated Greenhouse Gas Emissions (metric tons/year)**

| Source | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
|---|---|---|---|---|
| Stationary Source Total | 5,366 | 0.28 | 0.09 | 5,401 |
| Mobile Source Total | 5,531 | 0.16 | 0.24 | 5,608 |
| Electricity Use | --- | --- | --- | 729 |
| Water Use | --- | --- | --- | 36 |
| **Total Activities** | --- | --- | --- | **11,774** |
| Threshold | --- | --- | --- | 100,000 |
| **Significant?** | --- | --- | --- | **No** |

It is concluded that the $CO_2e$ emissions generated by the Project would result in **Less than Significant Impacts**.

***4. Conformance with the Air Quality Plans***

A Project is considered to be "non-conforming with local Air Quality Plans" if it conflicts with or delays implementation of any applicable attainment or maintenance plan. In order to demonstrate consistency with the AQMP, a project must demonstrate consistency with the population forecasts contained therein. Since The Project is not growth-inducing, it is expected to remain consistent with the AQMP population forecasts. Furthermore, **the Project would remain consistent with the control strategies outlined in the AQMP** by complying with with stationary source BACT requirements and regulations promulgated by local, state and federal air agencies. In order to eliminate conformity impacts, the Project would:

- Reduce emissions to less than the significance thresholds;
- Meet AVAQMD New Source Review standards; and
- Follow zoning specifications, as required, for permitting.

It is concluded that the Project would remain consistent with the control strategies outlined in the AQMP and would result in **Less than Significant Impacts**.

#### 4.7.5.2.2 *Impact AQ-2: Operational phase emissions of the Project could increase health risks.*

The Lowered Facilities Alternative described in EIR sub-chapter 6.6.6 includes Project facilities that are in closest proximity to Receptors, when compared to the Project and other alternatives. Specifically, the Asphalt Plant and its emissions are at a lower elevation, thus closer to Receptors. As such, the *AQHRA* (EIR Appendix 11) prepared for the Lowered Facilities Alternative affords the most conservative assessment of risk and it is safe to conclude that all other configurations of the Project and its alternatives fall within levels of risk identified in the *AQHRA* (EIR Appendix 11). Therefore, the *AQHRA* (EIR Appendix 11) was utilized to evaluate the impacts of the Project as proposed. The following Project TAC emission sources were evaluated in the:

- Operation of the Asphalt Mixing Plant and the asphaltic oil heater, including natural gas combustion;
- Fugitive organics from silo filling and load out of hot asphalt;
- Truck travel onsite and in route to Pearblossom Highway;
- Truck idling onsite;
- Off road equipment operating onsite; and
- Train idling.

The Aggregate Processing Facilities, Ready-Mixed Concrete Plant, Vac-Lite Plant, and Raw Cement and Aggregate Transfer and Distribution Facility activities are not included in the *AQHRA* because they do not emit considerable amounts of TACs. However, the off-road and on road mobile equipment associated with their operation are included.

The *AQHRA* included the preparation of two air dispersion models: the first for the Project site and adjacent traffic on Avenue T; and the second to evaluate conditions west of the Project along Avenue T and at the intersection with 106$^{th}$ Street where a majority of trucks will turn left and proceed south. The dispersions models are described in detail in the *AQHRA*

The risk assessment calculations are described in detail in the *AQHRA* and were performed using HARP, which calculates the cancer risk, chronic HI, and acute HI. After risk was calculated the HARP output file was converted to a contoured plot and exported to GoogleEarth. To summarize, exposure to TACs via methods other than inhalation was included through the use of multipathway risk assessment. Exposure through home grown produce, dermal absorption, soil ingestion, and mother's milk was also included. Deposition is assumed to occur at a rate of 0.02 meters per second. EIR Table 52, EIR Table 53, and EIR Table 54 serve to summarize unmitigated risks for each of the receptor locations.

**Table 52 Unmitigated Cancer Risk**

| Parameter | R1 | R2 | R3 | R4 | R5 |
|---|---|---|---|---|---|
| Cancer Risk[1] | 1.2 | 3.6 | 1.8 | 11.5 | 7.4 |
| **Threshold[1]** | **10** | **10** | **10** | **10** | **10** |
| **Significant?** | **No** | **No** | **No** | **Yes** | **No** |

[1] Excess cancer cases per million people exposed.

**Table 53 Unmitigated Chronic Hazard Index**

| Parameter | R1 | R2 | R3 | R4 | R5 |
|---|---|---|---|---|---|
| Chronic Index | ND | ND | 0.01 | 0.09 | 0.06 |
| **Threshold** | **1** | **1** | **1** | **1** | **1** |
| **Significant?** | **No** | **No** | **No** | **No** | **No** |

ND: Not determined quantitatively because comparison of chronic to cancer health risk shows that cancer risk is a more conservative threshold.

**Table 54 Unmitigated Acute Hazard Index**

| Parameter | R1 | R2 | R3 | R4 | R5 | PMI[1] |
|---|---|---|---|---|---|---|
| Acute Index | ND | ND | 0.14 | 0.2 | 0.12 | 0.97 |
| **Threshold** | **1** | **1** | **1** | **1** | **1** | **1** |
| **Significant?** | **No** | **No** | **No** | **No** | **No** | **No** |

[1] The acute hazard PMI occurs at the following UTM: 417,900/3,822,700, which is located north of the Project on Avenue T.

ND: Not determined quantitatively because comparison of chronic to cancer health risk shows that cancer risk is a more conservative threshold.

It is concluded that the Project could result in:

- Cancer risk impacts would be greater than the significance threshold of 10 in 1 million at Receptor **R4**, a **Significant Impact**.
- Chronic hazard impacts would be less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.
- Acute hazard impacts would be less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.

### 4.7.6 Mitigation Measures

For each potential adverse impact, mitigation measures are identified to reduce impacts below the applicable threshold of significance.

Note: For ease of reference, and because many of the Mitigation Measures described below apply to Impact AQ-1 and Impact AQ-2, they have been combined into a single list. **Mitigation Measures AQ-1 through AQ-7** apply to the reduction of $PM_{10}$ and $PM_{2.5}$ emissions (i.e., fugitive dust), $NO_x$ emissions, and odor. **Mitigation Measures AQ-4 and AQ-5** apply to the reduction of cancer risks. These combinations are noted in EIR Table 2 and Table 103.

As shown in EIR Table 50, unmitigated emissions of NOx and $PM_{10}$ during the Project's operational phase exceed the significance thresholds. These impacts would be mitigated by changing the mining process. Rather than loading mine haul trucks, material would be piled using a dragline and then loaded into a portable crusher by an excavator.

$PM_{10}$ emissions (i.e., fugitive dust) would be reduced to **Less than Significant** levels by the following **Mitigation Measures**:

**AQ-1** Disturbed surface areas and unpaved roads will be watered twice daily.

**AQ-2** Vehicle speed will be limited to 15 mph on unpaved roads.

**AQ-3** Low sulfur diesel fuel will be used in all equipment.

$NO_x$ emissions (and cancer risk impacts) would be reduced to **Less than Significant** levels by proposed **Mitigation Measures AQ-4**, **AQ-5** and **AQ-6** which reflect the above equipment list changes and the purchase of some new equipment:

**AQ-4** Aggregate material will be excavated using a dragline and portable crusher prior to exceeding 800,000 tons per year of material fed to the Aggregate Processing Facility. The following changes to the off road equipment would be required before the amount mined exceeds 800,000 tons per year:

- The D8R dozer is eliminated;
- The 980G loader used in the pit is eliminated;
- The two 773 trucks used to transport material in the pit are eliminated; and
- A crane, equipped with a drag line, is required.

**AQ-5** The portable primary crusher will be located in the pit and off-road haul trucks will not be used in the pit.

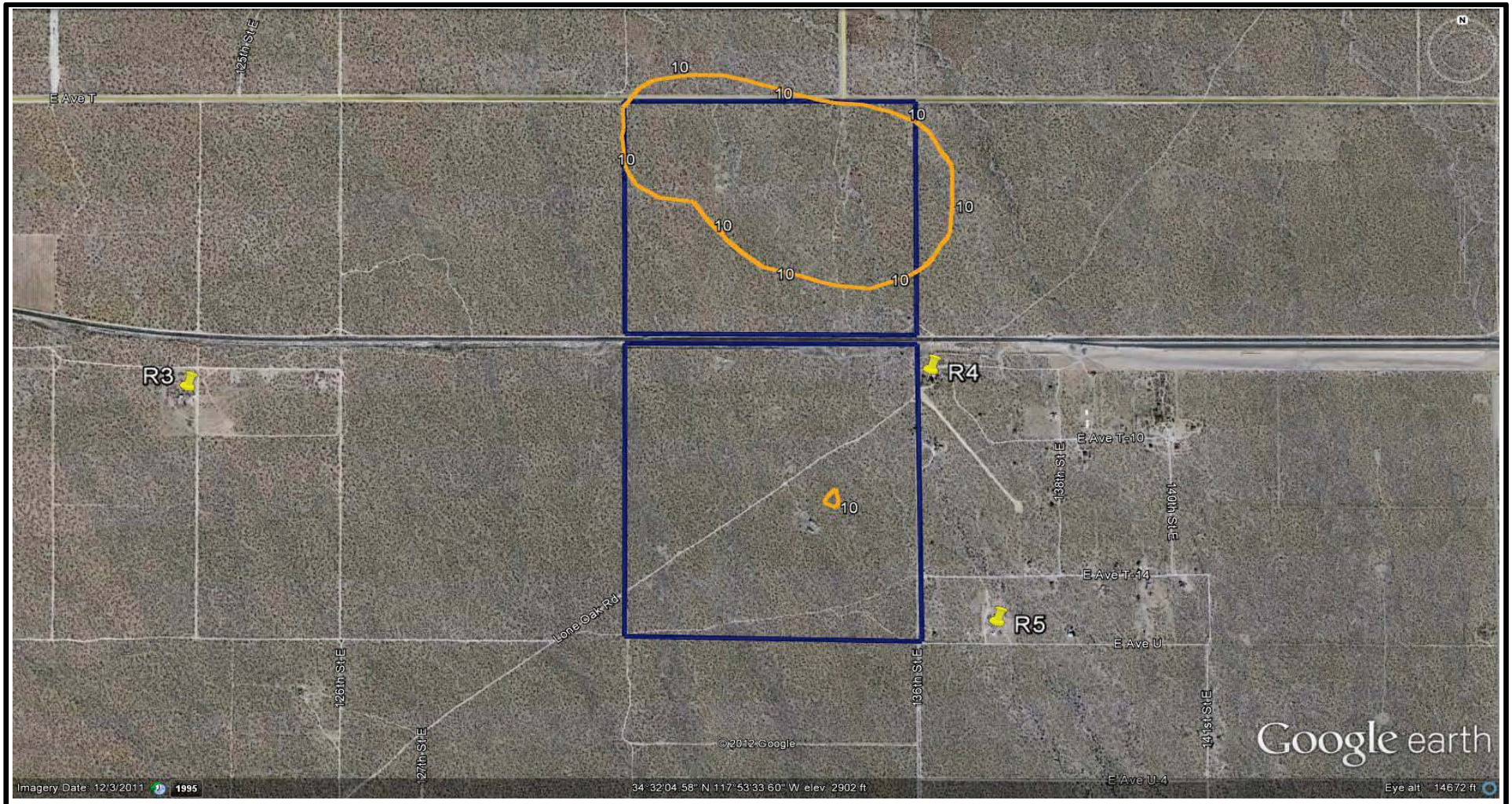
Fugitive dust emissions are also reduced as a result of **Mitigation Measure AQ-5** due to the elimination of off-road truck travel on unpaved roads. $PM_{10}$ and $PM_{2.5}$ emissions (i.e., fugitive dust) would be further reduced to **Less than Significant** levels by **Mitigation Measure AQ-6**:

**AQ-6** Unpaved roads will be controlled by the application of dust palliatives (chemical dust suppressants) and maintained in a controlled state by watering or other means. The use of dust palliatives will be subject to the approval of the Regional Board of the EPA (Region 9).

Odor will be caused by the asphalt plant due to emissions of oil mist (i.e., blue smoke). Blue smoke filtration technology will be used to control emissions and related odor as discussed in proposed **Mitigation Measure AQ-7**:

**AQ-7** Blue Smoke Control equipment will be used to collect vapors from the asphalt plant's mixing drum, drag conveyor, silos, and loading area.

Regarding cancer risk impacts, **u**pon implementation of **Mitigation Measures AQ-4 and AQ-5**, the Project's cancer risk impacts would be **Significant, but Mitigable to Less than Significant Impacts** at all Receptors. EIR Figure 36 illustrates the mitigated cancer risk contours.




Comments: Contour represents the cancer risk significance threshold of 10 in a million. Annotated "push-pins" represent individual receptors. Project boundary shown in dark blue.

Source: Air Quality Health Risk Assessment - Lebata Inc., Big Rock Creek Project Sespe Consulting, Inc., March 8, 2012.

| Mitigated Cancer Risk Contour<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>36 |
|---|---|
| Scale: As Shown | Date: 3-13-2012 |

### 4.7.7 Level of Significance after Mitigation

Upon implementation of the Mitigation Measures described above in EIR sub-chapter 4.7.6, Project impacts will be reduced to **Significant, but Mitigable to Less than Significant Impacts**. EIR Table 55 summarizes mitigated Project emission levels. Note that, due to the modified equipment list and the phasing in of the off-road ATCM regulations, the second Project year has the largest emission levels. Refer to Appendix H in the *NIA* (EIR Appendix 10), which provides a timeline of this effect and the mitigated emission calculations).

**Table 55 Peak Year Mitigated Emissions (tpy)**

| Source | VOC | $NO_x$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| Aggregate Processing Facility | --- | --- | --- | --- | 3.68 | 1.06 |
| RMC Plant | --- | --- | --- | --- | 0.78 | 0.23 |
| Asphalt Plant | 2.45 | 1.88 | 3.45 | 0.04 | 3.45 | 3.38 |
| Oil Heaters | 0.03 | 0.75 | 0.43 | 0.01 | 0.03 | 0.03 |
| Raw Cement and Aggregate Transfer and Distribution Facility | --- | --- | --- | --- | 0.01 | 0.00 |
| Vac-Lite Plant | --- | --- | --- | --- | 0.10 | 0.03 |
| Emergency Generators | 0.00 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 |
| Haul Trucks (offsite) | 0.25 | 2.16 | 1.25 | 0.01 | 0.16 | 0.00 |
| Road Trucks (offsite) | | | | | 1.23 | 0.30 |
| Haul Trucks (onsite) | 0.17 | 0.94 | 0.63 | 0.00 | 0.01 | 0.01 |
| Worker Commutes | 0.63 | 0.74 | 8.78 | 0.01 | 0.15 | 0.06 |
| Haul Train | 0.03 | 1.14 | 0.11 | 0.07 | 0.02 | 0.02 |
| Off-Road Equipment | 0.83 | 12.26 | 20.34 | 0.00 | 0.48 | 0.44 |
| Fugitive Dust | --- | --- | --- | --- | 4.13 | 0.53 |
| **TOTAL** | **4.39** | **19.90** | **35.00** | **0.15** | **14.20** | **6.09** |
| **Significance Threshold** | **25** | **25** | **100** | **25** | **15** | **10** [1] |
| **Significant?** | **No** | **No** | **No** | **No** | **No** | **No** |
| Mitigation Reduction | 1.48 | 23.21 | 25.13 | 0.00 | 36.33 | 4.97 |
| Percent Reduction | 25% | 54% | 42% | 0% | 72% | 45% |

[1] Note: multiply tons by 90.7% to calculate metric tonnes (i.e. threshold is 100,000 tons per year).

**Mitigation Measures AQ4 and AQ5** were developed to mitigate criteria pollutants but also have a co-benefit of mitigating GHG emissions. Mitigated GHG emissions are presented in EIR Table 56 and the emission calculations are included in Appendix H of EIR Appendix 10.

**Table 56 Mitigated Greenhouse Gas Emissions (metric tons/year)**

| Source | $CO_2$ | $CH_4$ | $N_2O$ | $CO_2e$ |
|---|---|---|---|---|
| Stationary Source Total | 5,366 | 0.28 | 0.09 | 5,401 |
| Mobile Source Total | 4,118 | 0.13 | 0.16 | 4,170 |
| Electricity Use | --- | --- | --- | 729 |
| Water Use | --- | --- | --- | 36 |
| **Total Activities** | --- | --- | --- | 10,336 |
| **Significance Threshold** | --- | --- | --- | **100,000** |
| **Significant?** | --- | --- | --- | **No** |

EIR Table 57 summarizes the mitigated cancer risk, indicating Project impacts will be reduced **Significant, but Mitigable to Less than Significant Impacts** at all Receptors.

**Table 57 Mitigated Cancer Risk**

| Parameter | R1 | R2 | R3 | R4 | R5 |
|---|---|---|---|---|---|
| Cancer Risk[1] | 1.2 | 3.6 | 1.0 to 1.2 | 4.2 to 9.9 | 2.4 to 6.3 |
| **Threshold[1]** | **10** | **10** | **10** | **10** | **10** |
| **Significant?** | **No** | **No** | **No** | **No** | **No** |

[1] Excess cancer cases per million people exposed.

### 4.7.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

#### 4.7.8.1 Air Quality

CEQA addresses cumulative significance in the following rule text:

> *"A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." (14 CCR 15130).*

By their nature, air quality significance thresholds assess cumulative effects. Impacts of the Project on regional ozone and particulate matter concentrations would be less than cumulatively considerable because Project-related emissions do not exceed the tons per year significance thresholds. The Project's contribution remains less than cumulatively considerable when the effects are combined with the effects of all other mining projects in the region because the tons per year thresholds (i.e. amount that is cumulatively considerable) are not exceeded. No other mines exist in the immediate vicinity of the Project that would contribute to local concentrations of pollutants. The nearest mining operations are located 1.2 miles to the east and more than 5 miles to the west (refer to EIR Figure 7). In addition, there are a very limited number of cumulative projects in the Project's vicinity. Mobile source activity produces the majority of ozone precursor emissions and will be minimized by addition of a new mine as well as controlled by implementation of CARB regulations. Thus, the Project will be expected to implement its fair share of measures designed to alleviate the cumulative impacts that occur on regional ozone and particulate matter concentrations. The Project's impacts **would not be cumulatively considerable.**

#### 4.7.8.2 Health Risk

It is concluded that the Project could result in:

- Cancer risk impacts greater than the significance threshold of 10 in 1 million at Receptor **R4**, a **Significant Impact**.
- Chronic hazard impacts less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.
- Acute hazard impacts less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.

Regarding cancer risk impacts, **Mitigation Measures AQ-4 and AQ-5** (EIR sub-chapter 4.7.6) were developed. Upon implementation of **Mitigation Measures AQ-4 and AQ-5**, the Project's cancer risk would result in **Significant, but Mitigable to Less than Significant Impacts** at all Receptors. As such, and given the limited number of cumulative projects in the Project's vicinity, Project impacts **would not be cumulatively considerable.**

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## 4.8 BIOLOGICAL RESOURCES

### 4.8.1 Introduction

This sub-chapter of the EIR describes the existing vegetation and wildlife occurring on the Project site. The potential impacts of the mining operations and the long-term reclamation plan to both the existing vegetation and wildlife communities are analyzed below. Also discussed are Mitigation Measures. The information provided below has been derived from the following studies, which are included in the Appendices:

- *Longview Road Pearblossom Area, Los Angeles County, California Desert Tortoise Presence/Absence Survey*; *Burrowing Owl Survey Phase I (Habitat Assessment) and Phase II (Burrow Survey)*, Pacific Southwest Biological Services, Inc., March 2006. (EIR Appendix 12)
- *Biological Assessment, Big Rock Wash Surface Mining Project Site, Pearblossom, Los Angeles County, California*, Impact Sciences, Inc., March 2008 (*Biological Assessment)*. (EIR Appendix 13)
- *Sensitive Plant Survey Report, Lebata, Inc. - Big Rock Creek Surface Mining Project, Los Angeles County, CA*, ECORP Consulting, Inc., July 2008 (*Sensitive Plant Survey Report*). (EIR Appendix 14)
- *Updated Information for the Sensitive Plant Survey Report for the Lebata Big Rock Creek Surface Mining Project in Los Angeles County, California,* ECORP Consulting, Inc., July 30, 2010 (*Sensitive Plant Survey Report Addendum*). (EIR Appendix 14, Addendum)
- *Drainage Concept for Lebata Inc. Surface Mine Big Rock Creek, Los Angeles Coun*ty, Stetson Engineers, Inc., December 2008. (*Drainage Concept*). (EIR Appendix 3)
- *Jurisdictional Delineation within the Big Rock Creek Surface Mining Project Site, Antelope Valley, Los Angeles County, California* (*Jurisdictional Delineation*), ECORP Consulting, Inc., March 6, 2013. (EIR Appendix 6)

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***4. Biological Resources***

*Would the project:*

*a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?*

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

*c) Have a substantial adverse effect on federally or state protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, and drainages) or waters of the United*

*States, as defined by § 404 of the federal Clean Water Act or California Fish & Game code § 1600, et. seq. through direct removal, filling, hydrological interruption, or other means?*

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

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

### 4.8.2 Regulatory Setting

#### 4.8.2.1 Federal Endangered Species Act

The United States Congress passed the federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act to help protect the ecosystems upon which endangered and threatened species depend.

The FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Actions that result in take can result in civil or criminal penalties.

#### 4.8.2.2 Clean Water Act (33 U.S.C. 1251-1376)

The Clean Water Act provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 404 of the Clean Water Act establishes a permit program, administered by the Corps, regulating discharge of dredged or fill materials into waters of the U.S., including wetlands. Implementing regulations by the Corps are found at 33 C.F.R. Parts 320–330. Guidelines for implementation are referred to as the Section 404(b)(1). Guidelines were developed by the US EPA in conjunction with the Corps (40 C.F.R. Part 230). The Guidelines allow the discharge of fill materials into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

#### 4.8.2.3 Water Quality Certification (Clean Water Act Section 401)

"*Under federal Clean Water Act (CWA) section 401 every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification (Certification) that the proposed activity will comply with state water quality standards.*"

Source:
http://www.waterboards.ca.gov/lahontan/water_issues/programs/clean_water_act_401/index.shtml

The Corps has determined that the Project site is not subject to its jurisdiction under Section 401 of the Clean Water Act and a Section 401 permit is not required. Refer to EIR Appendix 7 for a letter from the Corps, dated June 1, 2006, exempting the Project site.

#### 4.8.2.4 Migratory Bird Treaty Act (16 U.S.C. 703-11)

The Migratory Bird Treaty Act (MBTA) governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over-utilization. Migratory birds are also protected, as defined in the MBTA, under Section 3513 of the California Fish and Game Code. In addition, Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or other regulations.

#### 4.8.2.5 California Endangered Species Act (Fish and Game Code 2050 et. seq.)

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. It establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats, and requires state agencies to consult with the CDFW when preparing CEQA documents to ensure that the state lead agency actions do not jeopardize the existence of listed species if reasonable and prudent alternatives are available that would avoid jeopardy. It directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify “reasonable and prudent alternatives” to the Project consistent with conserving the species.

CESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFW exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFW may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFW requires preparation of mitigation plans in accordance with published guidelines.

For projects that affect both state- and federally listed species, compliance with FESA satisfies CESA, if CDFW determines that the federal incidental take authorization is consistent with CESA under Fish and Game Code Section 2080.1. For projects that result in a "take" of a state-only listed species, the lead agency may apply for a take permit under Section 2081(b).

#### 4.8.2.6 Native Plant Protection Act (Fish and Game Code 1900-1913)

California’s Native Plant Protection Act of 1977 requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of this Act prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use which would adversely impact listed plants. This allows CDFW to require the salvaging of listed plant species that would otherwise be destroyed.

#### 4.8.2.7 Streambed Alterations (Fish and Game Code 1601-1603)

Under these sections of the Fish and Game Code, a lead agency must notify CDFW prior to implementing a project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications may be formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the Project.

#### 4.8.2.8 Surface Mining and Reclamation Act of 1975, as Amended

SMARA requires a process of reclamation, which includes maintaining water and air quality, and minimizing flooding, erosion and damage to wildlife and aquatic habitats caused by surface mining. Reclamation activities must comply with the reclamation performance standards prescribed under 14 CCR §3700-3713. These include performance standards for:

- Financial Assurances (§ 3702)
- Wildlife Habitat (§ 3703)
- Backfilling, Regrading, Slope Stability, and Recontouring (§ 3704)
- Revegetation (§ 3705)
- Drainage, Diversion Structures, Waterways, and Erosion Control (§ 3706)
- Prime Agricultural Land Reclamation (§ 3707)
- Other Agricultural Land (§ 3708)
- Building, Structure and Equipment Removal (§ 3709)
- Stream Protection, Including Surface and Groundwater (§ 3710)
- Topsoil Salvage, Maintenance, and Redistribution (§ 3711)
- Tailing and Mine Waste Management (§ 3712)
- Closure of Surface Openings (§ 3713)

Refer to EIR sub-chapter 4.2.4 for a discussion of the requirements of SMARA. The ReclamationPlan appears as EIR Appendix 2.

#### 4.8.2.9 Significant Ecological Areas

Los Angeles County defines and delineates significant ecological areas (SEAs) in conjunction with the Land Use and Open Space Elements of the county general plan. An area qualifies for recognition as an SEA if the area:

- Exists as habitat for endangered, threatened, or sensitive plant or animal species;
- Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution on a regional basis;
- Represents biotic communities, vegetative associations, or habitat of plant or animal species that are either one-of-a-kind, or are restricted in distribution in Los Angeles County;

- Is habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability;
- Represents biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or they represent an unusual variation in a population or community;
- Is important as game species habitat or as fisheries;
- Would provide for the preservation of relatively undisturbed examples of the natural biotic communities in Los Angeles County; and/or
- Is a special area, worthy of inclusion, but does not fit any of the above criteria.

The objectives are to preserve biological diversity and ensure future sustainability of biological diversity. To this end, the program seeks to identify areas that possess examples of biotic resources that cumulatively represent biological diversity and consolidate these areas into larger interconnected SEAs. There are over 60 designated SEAs in Los Angeles County. There are an additional 12 proposed SEAs totaling 442,983 acres in unincorporated Los Angeles County, which expand and interconnect existing SEAs. The Los Angeles General Plan Land Use Element sets forth SEA design compatibility criteria for proposed development within a designated SEA.

The Project site is currently not located in a SEA. However, the County is currently working to revise its Significant Ecological Area Ordinance (SEA Ordinance). A portion of the Project does fall within the proposed Antelope Valley SEA. Referring to EIR Figure 2, the portion of the Project falling within the proposed SEA is roughly that including the blue line and the area to the northeast of that line.

Source: http://planning.lacounty.gov/assets/upl/project/sea_antelope-valley-map.pdf

As it pertains to the Project, the County's *June 2012 Draft SEA Ordinance: Summary Draft* notes the following:

*C. Applicability*
*Any ground disturbance/development activity wholly or partially within a Significant Ecological Area or Ecological Transition Area, including but not limited to infrastructure and fuel modification, shall require a SEA conditional use permit, as provided in Part 1 of Chapter 22.56, except for the following uses which are exempted from the permit standards of this section.*

*.....*
*7. Mining projects and reclamation plans that require a Surface Mining Permit, as provided in Part 9 of Chapter 22.56.*

Source:
http://planning.lacounty.gov/assets/upl/sea/SEA_Ordinance_Summary_Draft_June_2012.pdf

As such, the Project would be exempt from the requirements of the SEA Ordinance if the Proposed SEA is adopted as currently mapped. It is also exempt due to the fact the Project application was received prior to the adoption of any new updates.

### 4.8.3 Environmental Setting

#### 4.8.3.1 Project Location

The Project site is situated in northeastern, unincorporated Los Angeles County, California, on the outskirts of the community of Pearblossom, approximately 2 miles to the northeast. The Project site is located south of Avenue T between 136th Street East and 121st Street East in the Pearblossom area of Los Angeles County, California. The west side of the property is approximately 2,000 feet to the west of the intersection of the 136th Street East and Avenue T. Please refer to EIR Figure 2 – Vicinity Map.

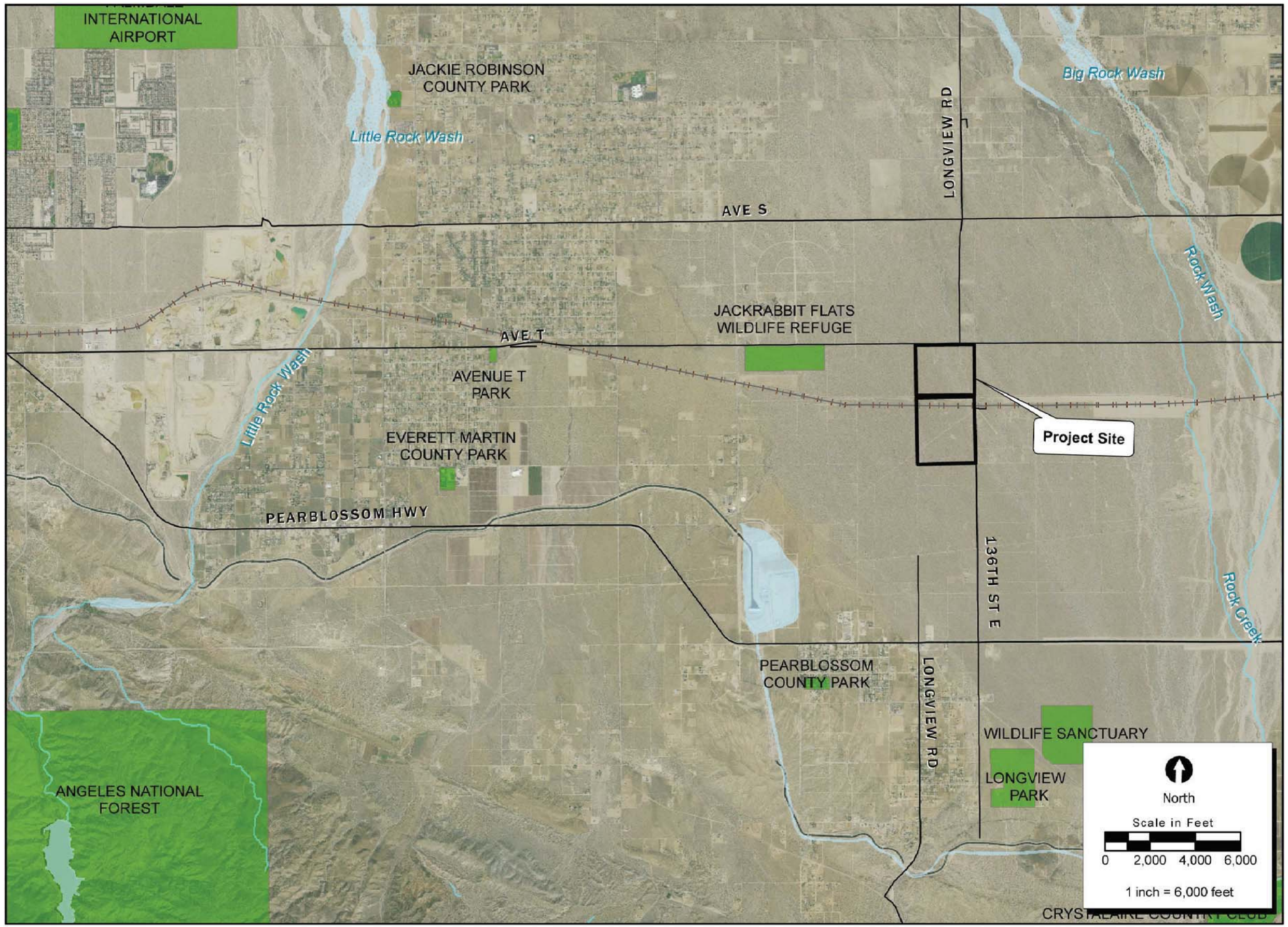
#### 4.8.3.2 Regional Setting

The site is located in the Antelope Valley, the westernmost portion of the Mojave Desert, with the San Gabriel Mountains approximately 4 miles to the south. The site lies on a broad bajada extending north from the lower slopes of the San Gabriel Mountains. The Mojave Desert province has a typical, continental arid climate where months may pass in which little or no precipitation falls, separated by brief episodes of locally torrential rain. The brief, heavy precipitation over relatively small areas generally causes rapid erosion in higher elevations, followed by deposition of transported sediments immediately after the runoff leaves the steep gradients of mountainous areas and reaches relatively flat-lying terrain. The ground surface on the Project site is relatively flat and characterized by high desert scrubland and grassland.

#### 4.8.3.3 Local Setting

Elevations at the site range from approximately 870 to 896 meters (2,850 to 2,940 feet) above mean sea level (msl), and topography slopes downward from the southeast toward the northwest. Soils on the site have been mapped by the Natural Resources Conservation Service as Arizo gravelly, loamy sand with 0 to 5 percent slopes, and Arizo loamy, fine sand with 0 to 2 percent slopes. Soil on the Project site was observed to be sand with gravel and scattered rocks and boulders. The Project site includes braided tributaries that are historically associated with Big Rock Wash, which lies about 2.5 miles to the east.

Land uses in the Project area consist primarily of undeveloped lands, with widely scattered residential units and intermittent agricultural, mining, and industrial uses. Adjacent land to the north, south, northeast, and west consists of smaller parcels, largely of undeveloped open space vegetated with desert scrub. There are four single-family residences within 1,000 feet of the Project's eastern-most boundary. Land use on the Project site consists of undeveloped native habitat with some disturbance associated with onsite unimproved roads and trash dumping. A Union Pacific Railroad line traverses the center of the Project site from east to west. The Los Angeles County owned and operated Jackrabbit Flats Wildlife Sanctuary is located approximately one (1) mile west of the Project site on Avenue T (EIR Figure 37). Representative photographs of the Project site are provided in EIR Figure 38.




Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\ALTERNATIVE_ANALYSIS\SiteVicinity\LBRC_Vicinity_v2.mxd

Source: West Coast Environmental, 01-20-09

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| | |
|---|---|
| Project Vicinity to Jackrabbit Flats Wildlife Sanctuary<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 37 |
| Scale: As Shown | Date: 3-13-2012 |

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

**Photo 01 – South-facing view of Mojave Creosote Bush Scrub on project site (north of railroad tracks) with San Gabriel Mountains in background.**

**Photo 02 - South-facing view of project site with dirt access road.**

NOT TO SCALE

**SOURCE:** Impact Sciences, Inc. – June 2007

Source: West Coast Environmental, 01-20-09

| | |
|---|---|
| Project Site Photographs<br>1 of 3<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>38a |
| Scale: N/A | Date: 3-13-2012 |

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

**Photo 03 – South-facing view of Mojave Creosote Bush Scrub on project site (south of railroad tracks).**

**Photo 04 – East-facing view of wash channel adjacent to railroad tracks on project site.**

NOT TO SCALE

SOURCE: Impact Sciences, Inc. – June 2007

Source: West Coast Environmental, 01-20-09

| | |
|---|---|
| Project Site Photographs<br>2 of 3<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>38b |
| Scale: N/A | Date: 3-13-2012 |

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

**Photo 01 – South-facing view of Mojave Creosote Bush Scrub on project site (north of railroad tracks) with San Gabriel Mountains in background.**

**Photo 02 - South-facing view of project site with dirt access road.**

NOT TO SCALE

**SOURCE:** Impact Sciences, Inc. – June 2007

Source: West Coast Environmental, 01-20-09

| Project Site Photographs<br>3 of 3<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>38c |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

#### 4.8.3.4 Existing Plant Communities

The dominant vegetation community, which was observed on approximately 270 acres (87 percent) of the Project site, is Creosote Bush Series (Sawyer and Keeler-Wolf 1995). CDFW classifies this vegetation community as Mojave Creosote Bush Scrub as based on the Holland classification scheme (CDFW 2003). Holland (1986) provides descriptions of distinct but general community types whereas vegetation is classified on a more refined scale in Sawyer and Keeler-Wolf's Manual of California Vegetation. The dominant plant species observed in the Project site is creosote bush (*Larrea tridentata*), with the co-dominant plant species observed to be white bursage (*Ambrosia dumosa*) and cheesebush (*Ambrosia salsola*). An estimated 200 Joshua trees (*Yucca brevifolia*) also grow on the property. Other species observed within the onsite Mojave Creosote Bush Scrub include big sagebrush (*Artemisia tridentata*), four-wing saltbush (*Atriplex canescens*), spinescale (*Atriplex spinifera*), rubber rabbitbrush (*Ericameria nauseosa*), Nevada ephedra (*Ephedra nevadensis*), California buckwheat (*Eriogonum fasciculatum*), matchweed (*Gutierrezia sarothrae*), winterfat (*Krascheninnikovia lanata*), desert alyssum (*Lepidium fremontii*), Anderson boxthorn (*Lycium andersonii*), short-jointed beavertail cactus (*Opuntia basilaris* var. *brachyclada*)[4], golden cholla (*Cylindropuntia echinocarpa*), antelope bush (*Purshia tridentata*), Mexican bladdersage (*Salazaria mexicana*), Russian thistle (*Salsola tragus*), and Mojave horsebrush (*Tetradymia stenolepis*). The scrub understory contains annuals, including soft chess (*Bromus hordeaceus*), red-stemmed filaree (*Erodium cicutarium*), and Mediterranean grass (*Schismus barbatus*).

Approximately 34 acres (11 percent) of the site comprises drainage channels vegetated with Rubber Rabbitbrush Series (Sawyer and Keeler-Wolf 1995) and classified as Rabbitbrush Scrub (CDFW 2003). The onsite drainages contain rubber rabbitbrush as the dominant species, and four-wing saltbush and antelope bush. The remaining approximately 7 acres (2 percent) of the Project site has been disturbed by dirt access roads and off-road driving. Dumping of trash is evident in multiple portions of the site.

#### 4.8.3.5 Observed Wildlife

California harvester ants (*Pogonomyrmex californicus*) were observed on the Project site, as were praying mantis (*Stagmomantis californica*) egg cases. Two reptile species, Great Basin whiptail (*Aspidoscelis tigris tigris*) and western side-blotched lizard (*Uta stansburiana elegans*), were observed onsite. Wildlife observed onsite during the site visit included the following bird species: American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), ash-throated flycatcher (*Myiarchus cinerascens*), common raven (*Corvus corax*), barn swallow (*Hirundo rustica*), verdin (*Auriparus flaviceps*), and sage thrasher (*Oreoscoptes montanus*). Antelope ground squirrel (*Ammospermophilus leucurus*) was observed on the property adjacent to the Project site, to the east, and small mammal burrows were observed periodically throughout the site. Black-tailed jackrabbit (*Lepus californicus*) was observed onsite, and jackrabbit scat, as well as coyote (*Canis latrans*) scat, was observed in numerous locations throughout the Project site.

[4] The individuals of the study were determined to be intermediates expressing some genes of the sensitive variety (*brachyclada*) along with the common variety (*basilaris*). It was confirmed that these individuals are most likely intermediates containing physical characteristics of both the common and the sensitive varieties and that they are not likely the pure *brachyclada* varietal.

#### 4.8.3.6 Sensitive Species

Sensitive plant and wildlife species include those listed as rare, threatened and/or endangered (or proposed for threatened or endangered status) by state or federal agencies such as the USFWS, CDFW, and Bureau of Land Management (BLM), or by resource conservation organizations such as California Native Plant Society (CNPS). All special-status species identified during the literature review were assessed for their potential to occur on site based on the following criteria guidelines:

**Present:** Species was observed within the site during a site visit or focused survey.

**High:** Habitat (including soils and elevation factors) for the species occurs within the site and a known occurrence has been recorded within 5 mile (8 km) of the site.

**Moderate:** Habitat (including soils and elevation factors) for the species occurs within the site and a documented observation occurs within the database search, but not within 5 mile (8 km) of the site; or a documented observation occurs within 5 mile (8 km) of the site and marginal or limited amounts of habitat occurs in the site.

**Low:** Limited habitat for the species occurs within the site and a documented observation occurs within the database search, but not within 5 mile (8 km) of the site; or suitable habitat strongly associated with the species occurs on-site, but no records were found within the database search.

**Presumed Absent:** Species was not observed during focused surveys conducted in accordance with protocol guidelines at an appropriate time for identification; habitat (including soils and elevation factors) does not exist on-site; or the known geographic range of the species does not include the survey area.

Note: Location information on some special-status species may be of questionable accuracy or unavailable; therefore, for survey purposes, environmental factors associated with species occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence.

##### 4.8.3.6.1 *Special-Status Plant Species*

*Methods*

The *Biological Assessment* concluded there is no potential for special-status plant species to occur onsite, with one exception, the short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*), a CNPS list 1B.2 and BLM sensitive plant species. Furthermore, short-joint beavertail cactus was the only special-status plant species found onsite[5]. The CNPS is an authority recognized by the CDFW on the status of rare or threatened plant species in California, and the criteria for placement on List 1 or List 2 of the CNPS lists is similar to criteria that CDFW and the USFWS use for species considered as candidates for listing as Threatened or Endangered. Short-joint beavertail was observed in two locations on the Project site. Refer to EIR Figure 39 – Vegetation Communities.

[5] The individuals of the study were determined to be intermediates expressing some genes of the sensitive variety (*brachyclada*) along with the common variety (*basilaris*). It was confirmed that these individuals are most likely intermediates containing physical characteristics of both the common and the sensitive varieties and that they are not likely the pure *brachyclada* varietal.

Subsequent to the surveys conducted for the *Biological Assessment,* the Project site experienced an unusually wet winter, which provided an opportunity to conduct a floristic survey of the Project site. ECORP Consulting, Inc. (ECORP) was contracted to conduct a literature review and focused survey on the site for the presence or absence of listed and/or sensitive plant species. This survey was intended to supplement the information contained in the *Biological Assessment* prepared by Pacific Southwest Biological Services, Inc. Prior to conducting the focused survey, the literature review was conducted in order to identify the potential for occurrence of plant species based on the habitat types present on the Project site, which resulted in an expanded list of 20 potential species. Based on the habitats present on the Project site, it was determined that suitable habitat was present on the site for six of the plant species, including Preuss' milk-vetch (*Astragalus preussii* var. *preussii*) (CNPS 2B.1), alkali mariposa-lily (*Calochortus striatus*) (CNPS 1B. 2, BLM sensitive), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) (CNPS 2B.2, BLM sensitive), Peirson's lupine (*Lupinus peirsonii*) (CNPS 1B.3), short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*) (CNPS 1B. 2), and Parish's popcorn-flower (*Plagiobothrys parishii*) (CNPS 1B.1). In April 2008, ECORP's botanists conducted a sensitive plant survey in the Project area and documented the findings in the *Sensitive Plant Survey Report* (EIR Appendix 14).

Two special-status plant species were observed during the focused surveys conducted in April of 2008. Individuals of beavertail cactus with some characteristics of the sensitive variety (*Opuntia basilaris* var. *brachyclada*) were recorded at numerous locations on site. In addition, crowned muilla (*Muilla coronata*), which was not identified as being previously reported in the area, was found during the survey of the Project area. EIR Figure 40 shows the locations of all beavertail cactus[6] and the crowned muilla that were found in the Project area.

In July 2010, ECORP's botanists conducted a variety of database searches to determine if any new special-status plant species occurrences had been reported in the vicinity of the Project site. The results of these searches are documented in the *Sensitive Plant Survey Report Addendum* (EIR Appendix 14, Addendum). No new special-status plant species occurrences were reported in any of the databases. However, it should be noted that databases such as the California Natural Diversity Data Base (CNDDB) can have a lag time of several years between when an observation is submitted to the database and when it appears in the database. Additionally, although no new special-status plant species occurrences were reported, three special-status plant species not discussed in the *Sensitive Plant Survey Report* (EIR Appendix 14) were noted in the updated database search results. These additional plants were the Lancaster milk-vetch (*Astragalus presussii* var. *laxiflorus*) (CNPS 1B.1) and white pygmy-poppy (*Canbya candida*) (CNPS 4.2) from the CNDDB search and Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*) (CNPS 1B.2) from the CNPS search. The Project site does not appear to have suitable habitat to support Lancaster milk-vetch or Palmer's mariposa lily, but it does have suitable habitat for white pygmy-poppy. This species was not detected during the 2008 surveys. The 2008 surveys were conducted during a good rain year and during the blooming period of April through May for the pygmy poppy (i.e., appropriately timed to detect potentially occurring sensitive plant species). Since the Project site has not experienced any major habitat-altering events, such as fire or flood, no additional sensitive plant species surveys were necessary.

[6] The individuals of the study were determined to be intermediates expressing some genes of the sensitive variety (*brachyclada*) along with the common variety (*basilaris*). It was confirmed that these individuals are most likely intermediates containing physical characteristics of both the common and the sensitive varieties and that they are not likely the pure *brachyclada* varietal.

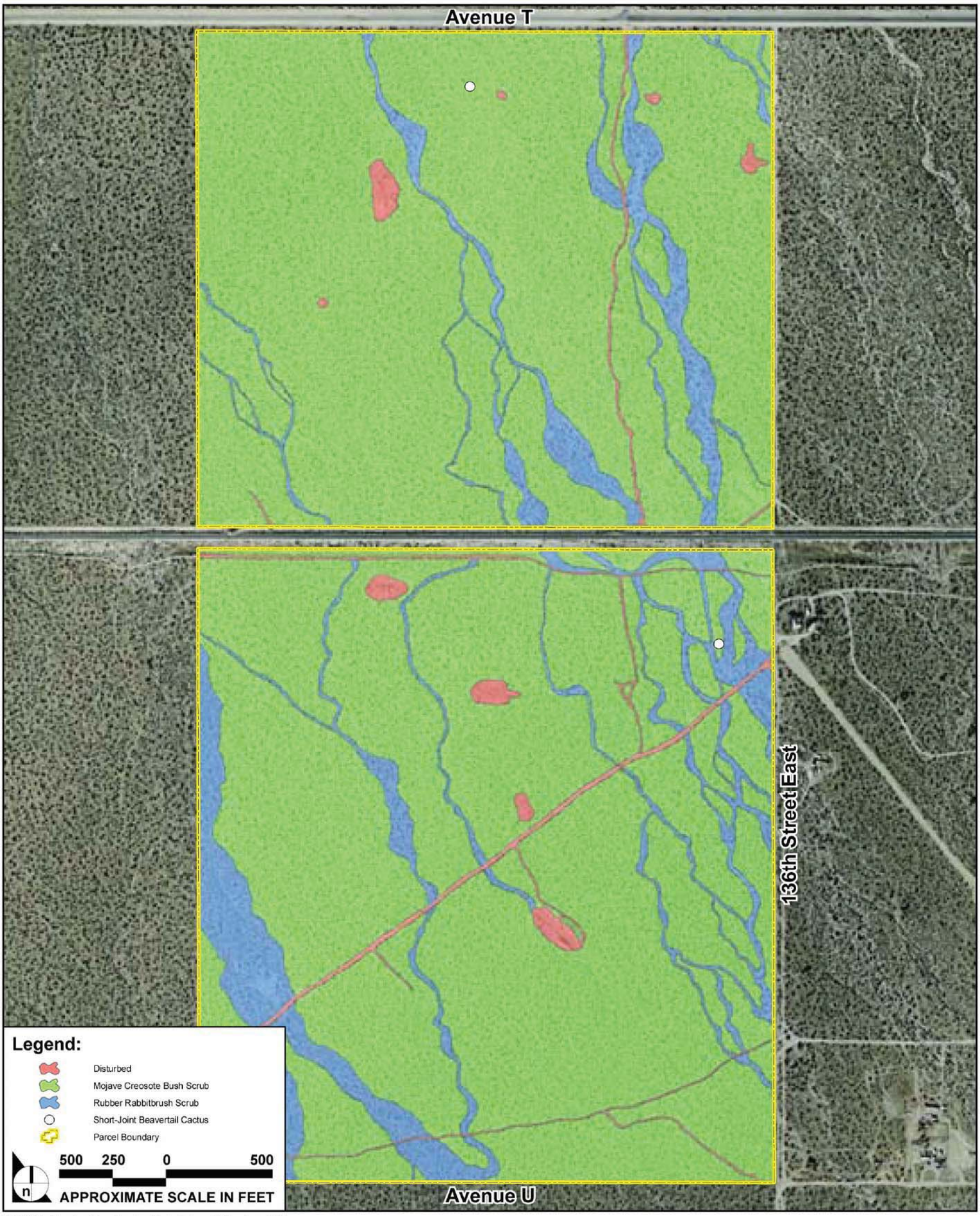
A second search of the CNDDB and CNPS databases was conducted by ECORP's botanists in July 2013 to determine if any additional special-status plant species occurrences had been reported in the vicinity of the Project site. Two more special-status plant species, Robbin's nemacladus (*Nemocladus secundiflorus* var. *robbinsii*) (CNPS 1B.2) and woolly mountain-parsley (*Oreonana vestita*) (CNPS 1B.3), were reported in the CNDDB database. However, the Project site does not have suitable habitat for either species. In addition, one species identified as having potential to occur in the *Sensitive Plant Survey Report,* Preuss' milk-vetch, was not included in the 2013 search results.

*Literature Review*

The 2013 review of the CNDDB and CNPS databases (Littlerock USGS 7.5 Minute Topographic Quadrangle), as well as the *Biological Assessment* (EIR Appendix 13) and *Sensitive Plant Survey Report* and *Addendum* (EIR Appendix 14 and Addendum), identified 24 special-status plant species that have been recorded in the vicinity of the Project site:

- *Abronia villosa* var. *aurita* (chaparral sand-verbena)
- *Arctostaphylos glandulosa* ssp. *gabrielensis* (San Gabriel manzanita)
- *Astragalus lentiginosus* var. *antonius* (San Antonio milk-vetch)
- *Astragalus preusii* var. *laxiflorus* (Lancaster milk-vetch)
- *Calochortus palmeri* var. *palmeri* (Palmer's mariposa-lily)
- *Calochortus striatus* (alkali mariposa lily),
- *Calystegia peirsonii* (Peirson's morning-glory)
- *Canbya candida* (white pygmy-poppy)
- *Castilleja gleasoni* (Mount Gleason Indian paintbrush)
- *Chorizanthe parryi* var. *parryi* (Parry's spineflower)
- *Clarkia xantiana* ssp. *parviflora* (Kern Canyon clarkia)
- *Layia heterotricha* (pale-yellow layia)
- *Lilium parryi* (lemon lily)
- *Linanthus concinnus* (San Gabriel linanthus)
- *Loeflingia squarrosa* var. *artemisiarum* (sagebrush loeflingia)
- *Lupinus peirsonii* (Peirson's lupine)
- *Muhlenbergia californica* (California muhly)
- *Muilla coronata* (crowned muilla)
- *Nemacladus secundiflorus* var. *robbinsii* (Robbins' nemacladus)
- *Opuntia basilaris* var. *brachyclada* (short-joint beavertail cactus)
- Oreonana vestita (woolly mountain-parsley)
- *Orobanche valida* ssp. *valida* (Rock Creek broomrape)
- *Plagiobothrys parishii* (Parish's popcorn-flower)
- *Symphyotrichum (Aster) greatae* (Greata's aster)

The majority of the special-status plant species identified during the literature review are presumed absent based on the lack of suitable habitat and/or non-detection during the focused survey. However, seven species were found to have potential to occur on the Project site. One of these species, crowned




**SOURCE:** County of Los Angeles GlobeXplorer 2006 - June 2007

FIGURE 7

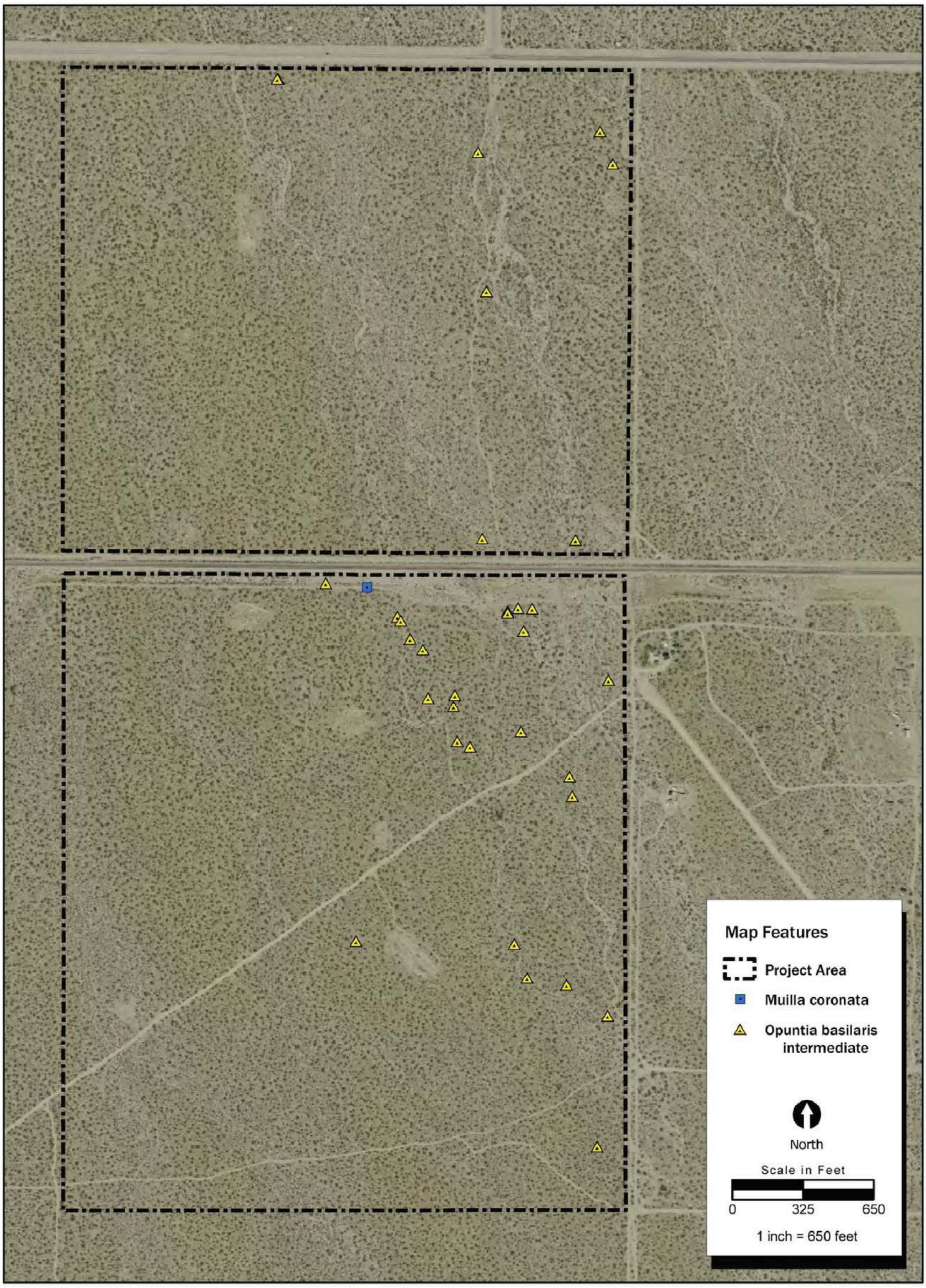
# Big Rock Wash Surface Mining Vegetation Communities

913-001•06/07

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

Source: West Coast Environmental, 01-20-09

| Vegetation Communities<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>39 |
|---|---|
| Scale: As Shown | Date: 3-13-2012 |




Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\VEGETATION\sensitive_plants.mxd

Image Source: Digital Globe, March 01, 2008

*2008-055 Lebata Big Rock Creek*

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Source: West Coast Environmental, 01-20-09

Beavertail Cactus & Crowned Muilla Locations within the Project Area
Big Rock Creek Site
Antelope Valley, California

FIGURE 40

Scale: As Shown

Date: 3-13-2012

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

muilla, was identifed on site during the 2008 focused surveys. Beavertail cactus has also been identifed on site but the individuals were determined to be intermediates expressing some genes of the sensitive variety (*brachyclada*) along with the common variety (*basilaris*). This species was thus assigned a low potential for occurrence. White pygmy-poppy has a moderate potential to occur on the Project site. The five species that typically occur in habitat similar to that of the Project site, as well as the two species present, are discussed individually in EIR Table 58.

**Table 58 Potential for Occurrence of Sensitive Plant Species**

| Scientific Name<br>Common Name | Status | | Flowering Period<br>Elevation<br>(meters) | Potential for Occurrence; Habitat |
|---|---|---|---|---|
| ***Abronia villosa* var. *aurita***<br>chaparral sand-verbena | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.1<br>SEN | January – September<br>75 – 1600 | **Presumed Absent:** reported from chaparral, coastal scrub, desert dunes/sandy. Appropriate habitat may be present within drainages and sand drifts, but the site is outside the species' known range. Plants previously reported from the region of the site are likely *A. villosa* var. *villosa*. |
| ***Arctostaphylos glandulosa* ssp. *gabrielensis***<br>San Gabriel manzanita | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>none | March<br>595 - 1500 | **Presumed Absent:** reported from chaparral/rocky. No suitable habitat occurs on the site. No manzanita are present and the site is outside the species' geographic range. |
| ***Astragalus lentiginosus* var. *antonius***<br>San Antonio milk-vetch | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.3<br>none | April – July<br>1500 – 2600 | **Presumed Absent:** reported from lower and upper montane coniferous forest. No suitable habitat is present and the site is below the species' elevational range. |
| ***Astragalus preussii* var. *laxiflorus***<br>Lancaster milk-vetch | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.1<br>none | March – May<br>700 | **Presumed Absent:** Chenopod scrub. No suitable habitat is present and the site is above the species' elevational range. |
| ***Calochortus palmeri* var. *palmeri***<br>Palmer's mariposa lily | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>SEN | April - July<br>1000 - 2390 | **Presumed Absent:** Meadows and seeps/mesic, chaparral, lower montane coniferous forest. No suitable habitat is present and the site is below the species' elevational range. |
| ***Calochortus striatus***<br>alkali mariposa lily | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>SEN | April – June<br>70 – 1595 | **Low:** reported from chaparral, chenopod scrub, Mojavean Desert scrub, meadows and seeps/alkaline, mesic. Suitable habitat occurs on the site, but no records within 10 miles of the Project site. This species was not observed during focused surveys conducted during the bloom period. |

**Table 55 Potential for Occurrence of Sensitive Plant Species (cont)**

| **Scientific Name** Common Name | **Status** | | **Flowering Period Elevation (meters)** | **Potential for Occurrence; Habitat** |
|---|---|---|---|---|
| ***Calystegia peirsonii*** Peirson's morning glory | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>4.2<br>SEN | April – June<br>30 – 1500 | **Presumed Absent:** reported from chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland. No suitable habitat is present and the site is outside the species' geographic range. |
| ***Canbya candida*** white pygmy-poppy | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>4.2<br>none | March – June<br>600 – 1460 | **Moderate:** Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland/gravelly, sandy, granitic. Suitable habitat occurs on the site and a known occurrence exists within 10 miles, but this species was not observed during focused surveys conducted during the bloom period. |
| ***Castilleja gleasoni*** Mount Gleason paintbrush | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>**RAR**<br>1B.2<br>SEN | May – June<br>1160 – 2170 | **Presumed Absent:** reported from lower montane coniferous forest, pinyon and juniper woodland/granitic. No suitable habitat is present and the site is below the species' elevational range. |
| ***Chorizanthe parryi* var. *parryi*** Parry's spineflower | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.1<br>SEN | April – June<br>275 – 1220 | **Presumed Absent:** reported from coastal scrub, chaparral, cismontane woodland, valley and foothill grasslandl/sandy or rocky, openings. No suitable habitat is present and the site is outside the species' geographic range. |
| ***Clarkia xantiana* ssp. *parviflora*** Kern Canyon clarkia | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>4.2<br>none | May – June<br>700 – 3620 | **Presumed Absent:** reported from chaparral, cismontane woodland, Great Basin scrub, Valley and foothill grassland/often sandy, sometimes rocky, slopes, sometimes roadsides. No suitable habitat is present and the site is outside the species' geographic range. |

**Table 55 Potential for Occurrence of Sensitive Plant Species (cont)**

| **Scientific Name** Common Name | **Status** | | **Flowering Period Elevation (meters)** | **Potential for Occurrence; Habitat** |
|---|---|---|---|---|
| ***Layia heterotricha*** Pale-yellow layia | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.1<br>SEN | March – June<br>300 - 1705 | **Presumed Absent:** reported from cismontane woodland, pinyon and juniper woodland, valley and foothill grassland/alkaline or clay. No suitable habitat is present and the site is outside the species' geographic range. |
| ***Lilium parryi*** lemon lily | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>none | July – August<br>1220 – 2745 | **Presumed Absent:** reported from Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest/mesic.. No suitable habitat is present and the site is below of the species' elevational range. |
| ***Linanthus concinnus*** San Gabriel linanthus | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>none | April – July<br>1520 – 2800 | **Presumed Absent:** reported from chaparral, lower montane coniferous forest, upper montane coniferous forest/rocky, openings. No suitable habitat is present and the site is below the species' elevational range. |
| ***Loeflingia squarrosa* var. *artemisiarum*** sagebrush loeflingia | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>2B.2<br>SEN | April – May<br>700 – 1615 | **Low:** reported from Great Basin scrub, Sonoran Desert scrub, desert dunes. Limited suitable habitat occurs on the site but no records within 10 miles of the Project site. This species was not observed during focused surveys conducted during the bloom period. |
| ***Lupinus peirsonii*** Peirson's lupine | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.3<br>none | April – June<br>1000 – 2500 | **Low:** reported from Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest/gravelly or rocky. Limited suitable habitat occurs on the site, but no records within 10 miles of the Project site. This species was not observed during focused surveys conducted during the bloom period.. |

**Table 55 Potential for Occurrence of Sensitive Plant Species (cont)**

| **Scientific Name** Common Name | **Status** | | **Flowering Period Elevation (meters)** | **Potential for Occurrence; Habitat** |
|---|---|---|---|---|
| ***Muhlenbergia californica*** California muhly | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>4.3<br>none | June – September<br>100 – 2000 | **Presumed Absent:** reported from coastal scrub, chaparral, lower montane coniferous forest, meadows and seeps/mesic, seeps and streambanks. No suitable habitat is present and the site is outside the species' geographic range. |
| ***Muilla coronata*** crowned muilla | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>4.2<br>none | March – April (May)<br>765 – 1960 | **Present:** reported from chenopod scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Suitable habitat is present and this species was observed on site during the 2008 focused surveys. |
| ***Nemacladus secundiflorus* var. *robbinsii*** Robbins' nemacladus | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>none | April - June<br>350 – 1700 | **Presumed Absent:** reported from chaparral, valley and foothill grassland/openings. No suitable habitat is present and the the site is outside the species' range. |
| ***Opuntia basilaris* var. *brachyclada*** Short-joint beavertail | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>SEN | April – August<br>425 – 1800 | **Low:** reported from chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. *Opuntia basilaris* individuals were observed during the 2008 focused survey and determined to be an intermediate form, not pure *brachyclada.* No records exist within 5 miles of the Project site. |
| ***Oreonana vestita*** woolly mountain-parsley | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.3<br>none | March – September<br>1615 – 3500 | **Presumed Absent:** reported from lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest/gravel or talus. No suitable habitat is present and the site is below the species' elevational range. |

**Table 55 Potential for Occurrence of Sensitive Plant Species (cont)**

| **Scientific Name** Common Name | **Status** | | **Flowering Period Elevation (meters)** | **Potential for Occurrence; Habitat** |
|---|---|---|---|---|
| ***Orobanche valida* ssp. *valida*** Rock Creek broomrape | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>none | May – September 1250 – 2000 | **Presumed Absent:** reported from chaparral, pinyon and juniper woodland/granitic; parasitic on various chaparral shrubs. No suitable habitat is present and the site is below the species' elevational range. |
| ***Plagiobothrys parishii*** Parish's popcorn-flower | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.1<br>none | March – November 750 – 1400 | **Low:** reported from Great Basin scrub, Joshua tree woodland/alkaline; mesic. Limited suitable habitat occurs on the site and a known occurrence exists within 10 miles of the Project site, but this species was not observed during the focused surveys during the bloom period. |
| ***Symphyotrichum defoliatum*** San Bernardino aster | Fed:<br>Ca:<br>CNPS:<br>BLM: | none<br>none<br>1B.2<br>SEN | July – November 2 – 2040 | **Presumed Absent:** reported from cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland/vernally mesic; near ditches, streams, springs.. No suitable habitat is present on the site. |

**Status Key:**

Federal: FE = Federal Endangered
FT = Federal Threatened

State: CT = California Threatened
CE = Endangered
RAR = Rare

CNPS: 1B = Plants Rare, Threatened, or Endangeredin California and elsewhere
2B = Plants Rare, Threatened, or Endangeredin California, more common elsewhere
3 = Plants about which more information is needed - A Review List
4 = Limited distribution - A Watch List
0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

BLM: SEN = BLM Sensitive

Alkali mariposa lily (*Calochortus striatus*) is a BLM sensitive and CNPS List 1B.2 bulbiferous herb. This species typically occurs in chaparral, chenopod scrub, Mojave Desert scrub, alkaline meadows, and ephemeral washes at elevations ranging from 295 to 5,233 feet above msl and usually blooms from April to June. Suitable habitat exists on site but no occurrence records were found within a 10-mile radius. Focused surveys were conducted during the appropriate bloom period for this species. However, no individuals were observed. Therefore, this species has a low potential for occurrence on the site.

White pygmy-poppy (*Canbya candida*) is a CNPS List 4.2 annual herb. This species is associated with Joshua tree woodland, Mojave desert scrub, and pinyon and juniper woodland in gravelly, sandy, or granitic soils. White pygmy-poppy blooms from March to June at elevations ranging from 1,968 to 4,790 feet above msl. Suitable habitat occurs on the site, but this species was not observed during focused surveys conducted during the appropriate bloom period. However, a known occurrence of white pygmy-poppy exists within 10 miles of the Project site, resulting in a moderate potential for occurrence.

Sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) is a BLM-listed sensitive species and a CNPS List 2B.2 species that is associated with Great Basin scrub, Sonoran Desert scrub, desert dunes, sandy flats and dune habitats, often around clay slicks. It is found from 2,296 to 3,937 feet above msl and its bloom period is from April to May. Even though limited suitable habitat is present on site, this species was not observed during the focused surveys. Furthermore, no records were found within a 10-mile radius of the Project site. This species therefore has a low potential for occurrence.

Peirson's lupine (*Lupinus peirsonii*) is a CNPS List 1B.3 species that typically occurs in Joshua tree woodland, lower montane coniferous forest, pinyon/juniper woodland and upper montane coniferous forest from 3,281 to 8,202 feet above msl. Only limited suitable habitat is present on siteand no records were found within a 10-mile radius. This species was not observed during the focused surveys (conducted within the appropriate bloom period [April to June] for this species). Therefore, it has a low potential for occurrence.

Although crowned muilla (*Muilla coronata*) was not identified in the literature review as occurring in the vicinity, it is discussed here due to observations made during the field surveys. This species is a CNPS List 4.2 bulbiferous herb that typically occurs in chenopod scrub, Joshua tree woodland, Mojave desert scrub, and pinyon and juniper woodland from 2,510 to 6,430 feet above msl. One individual of crowned muilla was observed on the site in 2008.

Short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*) is a CNPS List 1B.2 and BLM sensitive species that is usually found in a range of habitats including chaparral, Joshua tree woodland, Mojave Desert scrub, pinyon/juniper woodland, and riparian woodland between 4,101 to 5,971 feet above msl. Suitable habitat exists on site and known populations occur within 10 miles of the Project site. The locations of numerous individuals of *Opuntia basilaris* were recorded within the Project site (EIR Figure 40 – Beavertail Cactus and Crowned Muilla Locations within the Project Area). A taxonomic study including collection and comparative propagation through Rancho Santa Ana Botanic Garden was conducted of similar beavertail specimens on a nearby property in Big Rock Wash. The individuals of the study were determined to be intermediates expressing some genes of the sensitive variety (*brachyclada*) (Chambers Group 2005) along with the common variety (*basilaris*). It was confirmed that these individuals are most likely intermediates containing physical characteristics of both the common and the sensitive varieties and that they are not likely the pure *brachyclada* varietal (pers. comm. 2008).

Parish's popcorn-flower (*Plagiobothrys parishii*) is a CNPS List 1B.1 species that occurs within Great Basin scrub and Joshua tree woodland habitats in mesic areas with alkaline soils from 2,460 to 4,593 feet above msl. Limited suitable habitat for the popcorn-flower exists on site but no individuals were observed during focused surveys (conducted during the appropriate bloom period [March to June]). No known occurrences exist within 10 miles of the Project site, giving this species a low potential for occurrence.

#### 4.8.3.6.2 *Special-Status Wildlife Species*

Nineteen wildlife species were originally identified in the literature review as occurring on the Project site or in the surrounding vicinity. A second CNDDB database search was conducted in July 2013 and it was determined that four additional species, ferruginous hawk (*Buteo regalis*), loggerhead shrike (*Lanius ludovicianus*), least Bell's vireo (*Vireo bellii pusillus*), and western mastiff bat (*Eumops perotis californicus*), had been reported in the area. Based on the updated review of the CNDDB database (Littlerock USGS 7.5 Minute Topographic Quadrangle), the *Biological Assessment* (EIR Appendix 14), previous biological survey reports for the Project site (Psomas, January 1998) and a survey of the various habitat types, a total of 23 special-status wildlife species are known to exist in the vicinity of the Project site:

- *Anaxyrus californicus* (arroyo toad)
- *Rana mucosa* (Sierra Madre yellow-legged frog)
- *Gopherus agassizii* (desert tortoise)
- *Phrynosoma blainvillii* (Blainville's horned lizard)
- *Anniella pulchra pulchra* (silvery legless lizard)
- *Thamnophis hammondii* (two-striped garter snake)
- *Accipiter cooperii* (Cooper's hawk [nesting])
- *Buteo regalis* (ferruginous hawk [wintering])
- *Buteo swainsoni* (Swainson's hawk [nesting])
- *Charadrius montanus* (mountain plover)
- *Falco mexicanus* (prairie falcon [nesting])
- *Agelaius tricolor* (tricolored blackbird [nesting colony])
- *Lanius ludovicianus* (loggerhead shrike)
- *Toxostoma lecontei* (Le Conte's thrasher)
- *Athene cunicularia* (*burrowing owl* [*bu*rrow sites])
- *Vireo bellii pusillus* (least Bell's vireo)
- *Eumops perotis californicus* (western mastiff bat)
- *Xerospermophilus mohavensis* (Mohave ground squirrel)
- *Chaetodipus fallax pallidus* (Pallid San Diego pocket mouse)
- *Dipodomys merriami parvus* (San Bernardino kangaroo rat)
- *Onychomys torridus ramona* (southern grasshopper mouse)
- *Perognathus inornatus inornatus* (San Joaquin pocket mouse)
- *Taxidea taxus* (American badger)

Of the 23 special-status wildlife species identified during the literature review, 15 of them are presumed absent or have low potential to occur on the Project site based on the criteria described above. Several of these species require a permanent water source or riparian or other habitats that do not exist on or near the Project site, including arroyo toad (*Anaxyrus californicus*), Sierra Madre yellow-legged frog (*Rana mucosa*), two-striped garter snake (*Thamnophis hammondii*), mountain plover (*Charadrius montanus*), tricolored blackbird (*Agelaius tricolor*),least Bell's vireo (*Vireo bellii pusillus*), pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*), and San Joaquin pocket mouse (*Perognathus inornatus inornatus*).

Four raptor species (Cooper's hawk [*Accipiter cooperii*], ferruginous hawk [*Buteo regalis*], Swainson's hawk [*Buteo swainsoni*], and prairie falcon [*Falco mexicanus*]) may all forage on the Project site, but none of these species are likely to nest on the site. The Project site contains relatively little moisture, but seasonal drainages provide limited habitat for the silvery legless lizard (*Anniella pulchra pulchra*); this species has a low potential for occurrence in the Project site. The western mastiff bat (*Eumops perotis californicus*) may roost in houses present in the surrounding vicinity, but is not likely to roost in the Project site itself.

Two records within the CNDDB suggest that the San Bernardino kangaroo rat (*Dipodomys merriami parvus*) was captured in the vicinity of the project area in 1958 and 1962 (CDFW 2011). However, the Project area is located well outside the historic and current range for this species. The San Bernardino kangaroo rat, a subspecies of Merriam's kangaroo rat (*D. merriami*), was federally listed as endangered in 1998, with final Critical Habitat designation occurring in 2008 (USFWS 1998, 2007, and 2008). The historic range for this species, as defined in the Final Rule to List the San Bernardino Kangaroo Rat as Endangered (Federal Register, USFWS 1998, 2007) extended from Menifee Valley in Riverside County north to the San Bernardino Valley in San Bernardino County. The current range of this species is limited to seven locations within the historic range: Santa Ana River, Lytle and Cajon Washes, San Jacinto River, City Creek, Etiwanda, Reche Canyon, and South Bloomington. It is likely that the animals captured in 1958 and 1962 were of a non-special-status subspecies of Merriam's kangaroo rat.

None of the remaining species have been recorded within the Project site or observed during focused surveys. However, eight species, including two reptiles, three birds, and three mammals, were found to have a moderate or better potential to occur on the Project site. These species are discussed individually in EIR Table 59.

**Table 59 Potential of Occurrence of Sensitive Wildlife Species**

| Scientific Name<br>Common Name | Status | | Habitat | Potential for Occurrence |
|---|---|---|---|---|
| **AMPHIBIANS** | | | | |
| BUFONIDAE(true toads) | | | | |
| ***Anaxyrus californicus***<br>arroyo toad | Fed:<br>Ca:<br>BLM: | FE<br>SSC<br>none | Semi arid regions near washes or intermittent streams, including valley-foothill and desert riparian or desert wash habitat. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in the drier parts of the range. | **Presumed Absent:** Onsite wash channels do not provide suitable habitat. |
| RANIDAE (frogs) | | | | |
| ***Rana muscosa***<br>Sierra Madre yellow-legged frog | Fed:<br>Ca:<br>BLM: | FE<br>CCE<br>SEN | Mountain species, always found within a few feet of water; tadpoles may require 2 to 4 years to complete their aquatic development. The federal listing refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only. | **Presumed Absent:** This species has been reported to the CDFW from the San Gabriel Mountains approximately 4 miles to the south. Suitable aquatic habitat does not occur on the Project site. |
| **REPTILES** | | | | |
| TESTUDINIDAE (land tortoises) | | | | |
| ***Gopherus agassizii*** desert tortoise | Fed:<br>Ca:<br>BLM: | FT<br>CT<br>none | Occurs in almost every desert habitat, but most common in desert scrub, desert wash, and Joshua tree habitats. Requires friable soils for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms is preferred. | **Moderate:** Suitable habitat is present. Although not detected in earlier surveys and presumed to be absent in 2006, during an April 2007 field meeting with CDFW representatives on the Project site, it was indicated that future desert tortoise protocol surveys on the site may be appropriate, to ensure that individuals of the species do not move back onto the site prior to Project implementation. |

**Table 56 Potential of Occurrence of Sensitive Wildlife Species (cont)**

| Scientific Name<br>Common Name | Status | | Habitat | Potential for Occurrence |
|---|---|---|---|---|
| PHRYNOSOMATIDAE (fringe-toed lizards, horned lizards and relatives) | | | | |
| ***Phrynosoma blainvillii***<br>Blainville's horned lizard | Fed:<br>Ca:<br>BLM: | none<br>SSC<br>SEN | Coastal sage scrub and chaparral, in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils. | **Moderate:** This species has been reported to the CDFW from 14 locations in the Project vicinity. Onsite friable soils, especially within drainage channels, provide potentially suitable habitat. The main food source for this species, harvester ants, was observed onsite. |
| ANNIELLIDAE (legless lizards) | | | | |
| ***Anniella pulchra***<br>California legless lizard | Fed:<br>Ca:<br>BLM: | none<br>SSC<br>none | Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential; prefer soils with a high moisture content. | **Low:** This species has been reported to the CDFW from a site just north of Pearblossom Highway, approximately 11 miles to the west of the Project site. The site was vegetated with juniper trees, desert scrub, and Joshua trees on alluvial soil. Although no juniper trees are present, some alluvial soils and seasonal drainages may provide limited moisture to support this species. |
| NATRICIDAE (live-bearing snakes) | | | | |
| ***Thamnophis hammondii***<br>two-striped garter snake | Fed:<br>Ca:<br>BLM: | none<br>SSC<br>SEN | Coastal California, from sea level to about 7,000 feet elevation. Highly aquatic, found in permanent or near permanent fresh water, often along streams with rocky beds and riparian growth. | **Presumed Absent:** Onsite wash channels do not provide suitable aquatic habitat for this species. |
| **BIRDS** | | | | |
| ACCIPITRIDAE (hawks, kites, harriers and eagles) | | | | |
| ***Accipiter cooperii***<br>Cooper's hawk (nesting) | Fed:<br>Ca:<br>BLM: | none<br>WL<br>none | Nests in woodlands, chiefly of open, interrupted, or marginal type. Nest site is mainly found in riparian growths of deciduous trees, such as canyon bottoms on river floodplains, or live oak trees. Will nest in low scrub of treeless areas. | **Low:** This species could forage onsite, although breeding habitat is not present. |

**Table 56 Potential of Occurrence of Sensitive Wildlife Species (cont)**

| Scientific Name<br>Common Name | Status | | Habitat | Potential for Occurrence |
|---|---|---|---|---|
| ***Buteo regalis***<br>ferruginous hawk<br>(wintering) | Fed:<br>Ca:<br>BLM: | none<br>WL<br>none | Found in prairie, grassland, forest and desert habitats; nests along streams or on steep slopes. | **Low:** This species could forage onsite, although suitable habitat is not present. |
| ***Buteo swainsoni***<br>Swainson's hawk (nesting) | Fed:<br>Ca:<br>BLM: | BCC<br>CT<br>none | Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah. Requires adjacent suitable foraging areas, such as grasslands or alfalfa or grain fields supporting rodent populations. | **Low:** Suitable nesting habitat does not occur onsite and the nearest known occurrence is more than 5 miles away. The Project site may support the number of rodents required for foraging. |
| CHARADRIIDAE (plovers and relatives) | | | | |
| ***Charadrius montanus***<br>mountain plover<br>(wintering) | Fed:<br>Ca:<br>BLM: | FPT<br>SSC<br>SEN | Winters in short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Prefers short vegetation, bare ground, and flat topography for wintering, especially grazed areas and areas with burrowing rodents. | **Presumed Absent:** This species requires grassy or agricultural habitats. The lack of agricultural fields or grasslands on the Project site makes it unlikely that this species would occur. |
| FALCONIDAE (falcons) | | | | |
| ***Falco mexicanus***<br>prairie falcon (nesting) | Fed:<br>Ca:<br>BLM: | BCC<br>WL<br>none | Breeds on cliffs in dry, open terrain and forages far afield, even to marshlands and ocean shores. | **Low:** This species may forage onsite; however, breeding habitat is not present. |
| ICTERIDAE (blackbirds) | | | | |
| ***Agelaius tricolor***<br>tricolored blackbird<br>(nesting colony) | Fed:<br>Ca:<br>BLM: | BCC<br>SSC<br>SEN | Nests in colonies near open water, with a protected nesting substrate and a foraging area with insect pretty within a few kilometers of the colony. Most numerous in the Central Valley and vicinity. | **Presumed Absent:** Suitable wetland habitat is not present onsite, and known colonies are beyond range for foraging. |
| LANIIDAE (shrikes) | | | | |
| ***Lanius ludovicianus***<br>loggerhead shrike | Fed:<br>Ca:<br>BLM: | BCC<br>SSC<br>none | Inhabits large, open areas conducive to hunting. Nests in dense brush and shrubs. | **Moderate:** Suitable habitat is present and records exist within 10 miles of the Project site. |

**Table 56 Potential of Occurrence of Sensitive Wildlife Species (cont)**

| Scientific Name<br>Common Name | Status | | Habitat | Potential for Occurrence |
|---|---|---|---|---|
| MIMIDAE (mockingbirds and thrashers) | | | | |
| ***Toxostoma lecontei***<br>Le Conte's thrasher | Fed:<br>Ca:<br>BLM: | BCC<br>SSC<br>none | Desert wash, desert scrub, desert alkali scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2 to 8 feet above the ground. | **High:** Suitable habitat is present and this species is known to occur within 5 miles of the Project site. |
| STRIGIDAE (owls) | | | | |
| ***Athene cunicularia***<br>burrowing owl (burrow sites) | Fed:<br>Ca:<br>BLM: | BCC<br>SSC<br>SEN | Open, dry grassland and desert habitats throughout California, or scrublands characterized by low-growing, widely spaced vegetation. Dependent upon burrowing mammals, especially California ground squirrel. | **High:** Onsite small mammal burrows within desert scrub, as well as dumped soil and trash piles, provide potentially suitable burrowing habitat for this species. A burrowing owl survey conducted on the Project site in February 2006 did not result in the observation of active burrowing owl burrows. However, a burrowing owl individual was observed exiting a burrow approximately 400 feet west of the Project site. Additionally, the species could move onto the Project site and take up habitation of burrow sites prior to implementation of proposed surface mining activities. |
| VIREONIDAE (vireos) | | | | |
| ***Vireo bellii pusillus***<br>least Bell's vireo | Fed:<br>Ca:<br>BLM: | FE<br>CE<br>none | Riparian habitats particularly dense brush, mesquite, willow-cottonwood forest, streamside thickets, scrub oak, moist woodland, bottomlands, woodland edge, scattered cover, and hedgerows in cultivated areas. | **Presumed Absent:** Suitable habitat for this species does not occur within the project site. |

**Table 56 Potential of Occurrence of Sensitive Wildlife Species (cont)**

| Scientific Name<br>Common Name | Status | | Habitat | Potential for Occurrence |
|---|---|---|---|---|
| **MAMMALS** | | | | |
| MOLOSSIDAE (free-tailed bats) | | | | |
| ***Eumops perotis californicus***<br>western mastiff bat | Fed:<br>Ca:<br>BLM: | none<br>SSC<br>SEN | Arid and semiarid, rocky canyon country habitats. Roosts in crevices and shallow caves on the sides of cliffs and rock walls, and in buildings. | **Low:** This species has been reported from a location approximately 10 miles to the southwest of the Project site. Nearby houses provide suitable habitat. |
| SCIURIDAE (squirrels and relatives) | | | | |
| ***Xerospermophilus mohavensis***<br>Mohave ground squirrel | Fed:<br>Ca:<br>BLM: | none<br>CT<br>none | Restricted to the Mojave Desert. Open desert scrub, alkali scrub, and Joshua tree woodland. Will feed in annual grasslands. Prefers sandy to gravelly soils, and avoids rocky areas. Uses burrows at base of shrubs for cover, and nests are in burrows. | **High:** This species has been reported from 21 locations in the Project vicinity. Although this species has not been sighted in recent years, because the species likely historically occurred on the site, and because suitable habitat occurs on the site, this species cannot be ruled out. |
| HETEROMYIDAE (kangaroo rats, pocket mice and kangaroo mice) | | | | |
| ***Chaetodipus fallax pallidus***<br>pallid San Diego pocket mouse | Fed:<br>Ca:<br>BLM: | none<br>SSC<br>none | Sandy, herbaceous areas, usually in association with rocks or coarse gravel. Found within desert border areas in eastern San Diego County, in desert wash, desert scrub, desert succulent scrub, and pinyon-juniper habitats. | **Presumed Absent:** This species has been reported to the CDFW from three locations at the base of the San Gabriel mountains, approximately 4 to 5 miles south of the Project site. This species is strongly associated with steep slopes with junipers and yucca. This species does not occur on desert flats such as present in the Project site. |
| ***Dipodomys merriami parvus***<br>San Bernardino kangaroo rat | Fed:<br>Ca:<br>BLM: | FE<br>SSC<br>none | Sandy, open habitats with little to moderate amounts of vegetation. Typically found in sage scrub vegetation and alluvial scrub, which is comprised of elements of desert, chaparral, and coastal scrub communities. Rarely occurs in communities with dense vegetative cover. | **Presumed Absent:** The range of this species does not include the Project site. There are two records of captures of this species in the CNDDB from 1958 and 1962. These are likely non-sensitive subspecies of Merriam's kangaroo rat (*D. merriami*) based on habitat. Additionally, the federal listing of the San Bernardino kangaroo rat does not include the Littlerock area as part of the historic or current ranges of this species (USFWS 1998). |

**Table 56 Potential of Occurrence of Sensitive Wildlife Species (cont)**

| Scientific Name<br>Common Name | Status | | Habitat | Potential for Occurrence |
|---|---|---|---|---|
| ***Onychomys torridus ramona***<br>southern grasshopper mouse | Fed:<br>Ca:<br>BLM: | none<br>SSC<br>none | Desert areas, especially scrub habitats with friable soils for digging; prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects. | **Moderate:** This species has been reported from a location approximately 6 miles to the east of the Project site. Onsite scrub with friable soils provides suitable habitat. |
| ***Perognathus inornatus inornatus***<br>San Joaquin pocket mouse | Fed:<br>Ca:<br>BLM: | none<br>none<br>SEN | Friable soils within grassland and blue oak savannah. | **Presumed Absent:** Suitable habitat for this species does not occur and the project site is outside the subspecies' range. According to the CDFW, the identification of the specimen reported from near-by (Palmdale) is likely *P. inornatus neglectus*. |
| MUSTELISAE (weasels and relatives) | | | | |
| ***Taxidea taxus***<br>American badger | Fed:<br>Ca:<br>BLM: | none<br>SSC<br>none | Drier, open stages of most shrub, forest, and herbaceous habitats with friable soils. | **High:** Onsite scrub habitat with friable soils provides suitable habitat and records exist within 5 miles of the Project site. |

**Status Key:**

Federal: FE = Federal Endangered
FPT = Federal Proposed Threatened
FT = Federal Threatened
BCC = USFWS Bird of Conservation Concern

State: CT = California Threatened
CCE = California Candidate Endangered
SSC = California Species of Special Concern
WL = CDFW Watch List

BLM: SEN = BLM Sensitive

Desert Tortoise (*Gopherus agassizii*), is listed as a federally Threatened and California Threatened species. In California, the desert tortoise has been found in areas up to 4,500 feet in elevation. Tortoises inhabit mostly flats and bajada areas, but also washes, canyon bottoms, and rocky hillsides in dry areas with primarily sandy or sandy-gravel soils. The desert tortoise is found in areas of scattered shrubs with annual plants growing under and between shrubs, and most often inhabits Mojave creosote bush scrub communities. Desert tortoises spend approximately 95 percent of the year underground avoiding extreme temperatures, seasons of poor food supply, and a variety of predators. They construct and maintain burrows with one opening that may be as long as 30 feet and one tortoise may use several burrows. Generally, tortoises are active during the spring, early summer, and autumn. They emerge in the early spring to feed and mate when annual plants are most abundant and temperatures are moderate.

This species likely historically occurred on the Project site, but has not been reported from the Project vicinity for many years. A protocol desert tortoise presence/absence survey was conducted in February 2006, resulting in negative findings for the species or any sign of the species. During an April 2007 field meeting with CDFW representatives on the Project site, it was indicated that future desert tortoise protocol surveys on the site may be appropriate to ensure that individuals of the species do not move back onto the site prior to Project implementation. Refer to EIR Figure 41 for an illustration of the on-site survey area for the desert tortoise.

Blainville's horned lizard (*Phrynosoma blainvillii*) is a California Species of Special Concern (SSC) and a BLM sensitive species. This species has been reported to the CDFW from 14 locations in the vicinity of the Project. Onsite friable soils, especially within drainage channels, provide potentially suitable habitat. Furthermore, the main food source for this species, harvester ants, was observed onsite.

Loggerhead shrike (*Lanius ludovicianus*) is a USFWS Bird of Conservation Concern (BCC) and a SSC. This species can be found foraging in open areas with perches and nests in denser shrub stands within Mojave Desert scrubs and wash areas. Suitable habitat is present and this species is known to occur within 10 miles of the Project site.

Le Conte's thrasher (*Toxostoma lecontei*) is also a SSC and can be found in a variety of desert wash and scrub communities, nesting in spiny shrubs or cacti. LeConte's thrasher has been identified less than five miles away and is likely to occur in the onsite desert scrub habitat.

Burrowing owl (*Athene cunicularia*), a BCC, SSC, and BLM sensitive species, has the potential to burrow/nest on or adjacent to the Project site. Surveys for burrowing owl were conducted on the site in February 2006. The surveys resulted in negative findings for the species or sign of the species on the Project site. However, an individual of this species was observed exiting a burrow on a property adjacent to the site, approximately 400 feet to the west. Small mammal burrows were observed scattered throughout the Project site, and suitable burrows sites were observed on the Project site, both in small mammal burrows and dumped trash/soil piles. Therefore, the potential for this species to utilize the Project site both for burrowing and foraging is high, and individuals of this species could move onto the Project site prior to implementation of future proposed surface mining activities. Refer to EIR Figure 41 for an illustration of potential burrowing owl burrows.

Mohave ground squirrel (*Xerospermophilus mohavensis*) is found in a variety of Mojave Desert communities, mostly in more open and sandy areas of Joshua tree woodlands, creosote bush scrub, and alkali scrub communities. Suitable habitat is present on the Project site and this species is known to occur less than five miles away. This species is currently listed as threatened by the state of California.

Southern grasshopper mouse (*Onychomys torridus ramona*), a SSC, inhabits desert scrub communities with low shrub cover, and appropriate soils for burrowing. No nocturnal trapping has been conducted on the Project site, but this species is likely to be found at the site because there is suitable habitat and recent records of the species nearby.

American badger (*Taxidea taxus*) is a SSC and is found in low numbers throughout many habitat types with friable soils, including open desert areas such as that found on the Project site. Although not previously identified, this species is likely to occur on the site. American badger has been reported to the CDFW in various locations within five miles of the Project site.

#### 4.8.3.7 Native Bird Nests

Many shrubs and Joshua trees occur throughout the Project site, providing suitable nesting habitat for a variety of bird species. In addition, shrubs, forbs and grasses found on the site provide potential nesting habitat for ground-nesting bird species (such as mourning doves, an individual of which was observed nesting on the site, on the ground, within a creosote bush).

#### 4.8.3.8 Protected Trees

The County of Los Angeles zoning ordinance protects oak trees (the genus *Quercus*). None of the trees protected under County's ordinance occur on site.

Joshua trees (*Yucca brevifolia*) are neither listed nor are they candidate species for either state or federal programs. They are, however, considered sensitive California Desert Native Plants and are protected by the California Desert Native Plants Act of 1981. Additional protection for this species is afforded by the Antelope Valley Areawide General Plan, which prohibits harvesting or transplanting in non-natural areas. The *Biological Assessment* prepared by Impact Sciences, Inc. estimated 200 individuals of this species were onsite.

The CDFW recognizes habitat with Joshua trees as sensitive, due to the presence of Joshua trees, which are considered a biologically and aesthetically valuable, as well as declining, plant species. The value of Joshua trees as important biological and aesthetic resources is recognized by many desert communities, including nearby City of Palmdale, which states that protection of desert vegetation, particularly Joshua trees, is important to retain the unique natural desert aesthetics of the area. In addition, Joshua trees are known to provide habitat for a variety of desert wildlife species, including desert woodrat (*Neotoma lepida*), ladder-backed woodpecker (*Picoides scalaris*), Scott's oriole (*Icterus parisorum*), night snake (*Hypsiglena torquata*), desert night lizard (*Xantusia vigilis*), and yucca moth (*Tegeticula maculata*). Joshua trees, which are endemic to the Mojave Desert, face a population decline, due largely to habitat loss. However, during the April 27, 2007 site visit with California Department of Fish and Wildlife personnel (Scott Harris and Jamie Jackson), it was observed that the population of Joshua trees onsite was sparse and not representative of a Joshua tree community. Joshua trees within the Project site would be protected per state and local ordinances, but that protection does not extend to the vegetation community as a whole.

#### 4.8.3.9 Wildlife Movement

Wildlife movement corridors are linear landscape elements that serve as linkages between historically connected habitat/natural areas, thereby facilitating wildlife movement between these natural areas (McEuen 1993). The Project site is currently open space, which allows for local wildlife movement. Property surrounding the Project site on all sides consists of open space vegetated with desert scrub. These open space areas, in conjunction with the subject site, increase opportunities for wildlife movement through the area. However, due to the availability of open space throughout the Project area, the Project site does not function in an appreciable manner to any significant regional wildlife movement corridor. Further, upon completion of usage of the Project site for surface mining, the area is intended to remain open space, which would allow some continued future use of the site for wildlife movement. Open pits that are expected to occur on the site upon completion of mining would likely hinder, but not completely interfere with, wildlife movement.

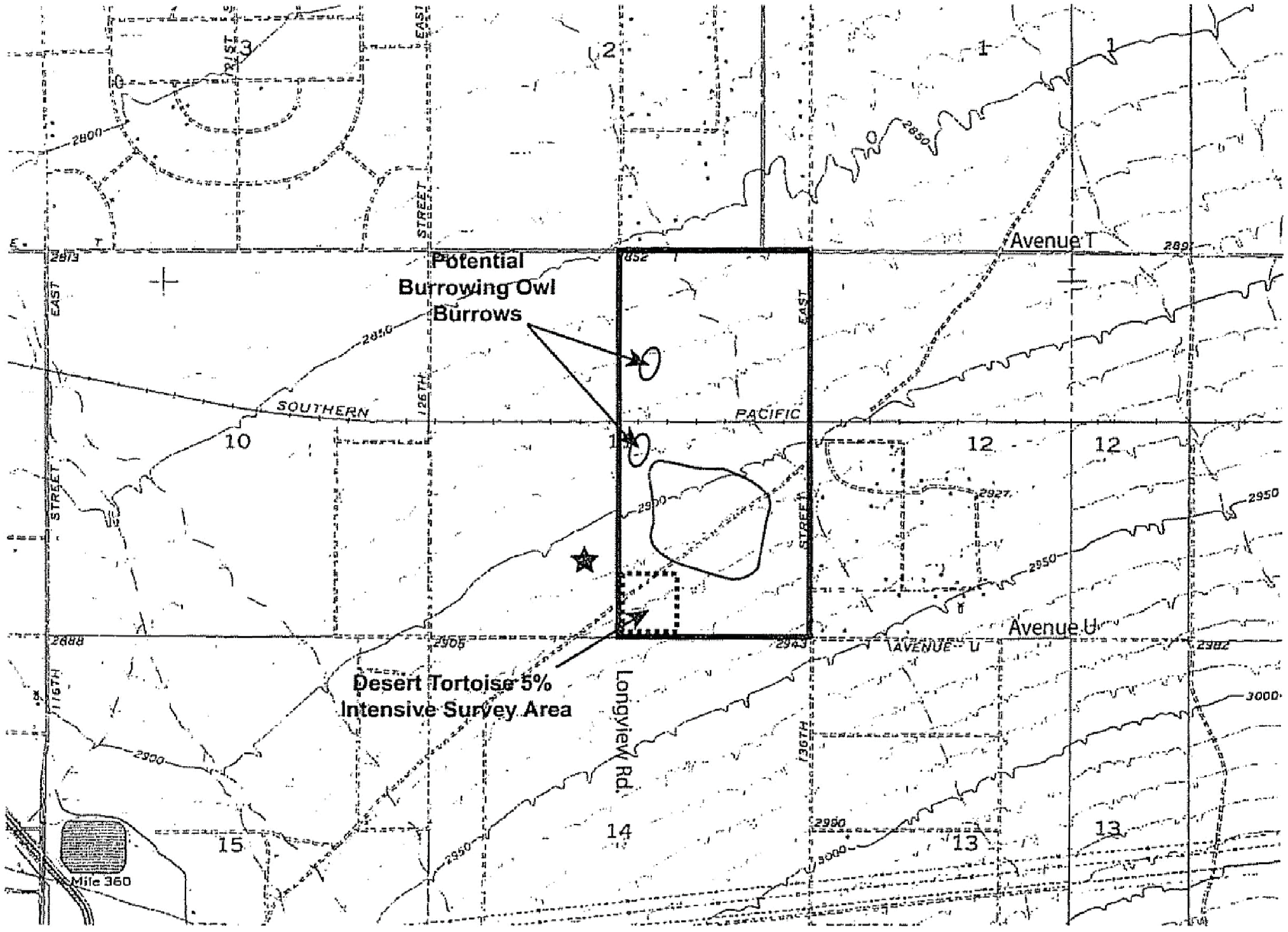



Figure 2. Project Location, Longview Road, Pearblossom Area, Los Angeles County
USGS 7.5' Littlerock, CA Quadrangle

★ Location of Burrowing Owl Observation

Scattered Debris Piles

N

1' = 2,200"

Source: West Coast Environmental, 01-20-09

| | |
|---|---|
| Desert Tortoise Intensive Survey Area & Potential Burrowing Owl Burrows<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 41 |
| Scale: As Shown | Date: 3-13-2012 |

3-02-06 MAP SOURCE: DELORME® 3-D TOPO QUADS 2.0 PACIFIC SOUTHWEST BIOLOGICAL SERVICES, INC.

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

### 4.8.3.10 Sensitive Habitat

Sensitive habitats include seasonal and perennial marshes and other wetlands, streams, and riparian corridors. Wetlands perform a variety of physical, chemical, and biological functions and are generally considered sensitive by most regulatory agencies as well as local jurisdictions. Wetlands and other waters on the Project site are subject to the Regional Water Quality Control Board Lahontan Region (RWQCB) and CDFW jurisdiction as discussed below.

The RWQCB adopts and implements Water Quality Control Plans (Basin Plans) which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities. All drainages are under the jurisdiction of the RWQCB. CDFW regulates the alteration of streambeds which cause impacts to related fish and wildlife resources (riparian habitat) through the California Fish and Game Code Sections 1600 - 1616. A 1605 Long Term Streambed Alteration Agreement may also be required for the Project.

### 4.8.3.11 Jurisdictional Waters

The main branch of Big Rock Wash, an intermittent stream that flows from the Angeles National Forest into the Antelope Valley, is located approximately 2.5 miles to the east of the Project site. Several historically linked channels of Big Rock Wash traverse the Project site. Water flows on the site drains to the wash channels, which carry water to the north, where the wash ultimately flows into Rogers (dry) Lake, located approximately 20 miles to the north, on Edwards Air Force Base.

The Big Rock Creek main channel flows south-north approximately 1 mile to the east of the site. On the alluvial fan, flows in Big Rock Creek are largely contained in its main channel, with a few secondary braids breaking off from the main channel at the apex of the fan. This is evident in aerial photography of the area (Stetson Engineers, 2003). One of the secondary braids crosses the Project site and would historically only convey flows in large flood events when the main channel began to overflow. However, as was noted in EIR sub-chapter 4.4.3 aerial photos indicate there has been no historic flow and upgradient improvements serve to force any flows into the main channel.

A levee was built on the left bank of the channel by the state sometime after the 1943 flood event, and it serves to contain flood flows within the main channel, effectively cutting off the secondary braids that flow toward/through the Project site. (Please refer to EIR sub-chapter 4.4 Flood Hazards.) The Big Rock Creek secondary braid would not flow into the Project site except under conditions of a Capital Flood, which include a catastrophic fail of the levee. The drainage plan for the Project site has been designed for worst case scenario (assuming levee failure). Refer to EIR Appendix 3 – *Drainage Concept*.

In a letter dated June 1, 2006 (EIR Appendix 7), the Corps determined that the Project

> *"…does not discharge dredged or fill material into a water of the United States or an adjacent wetland, pursuant to the 2001 Solid Waste Agency of Northern Cooke County Supreme Court decision. Therefore, the project is not subject to jurisdiction under Section 404 of the Clean Water Act and a Section 404 permit is not required from our office."*

CDFW defines a stream (including creeks and rivers) as a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation. The CDFW definition of lake includes "natural lakes or man-made reservoirs." CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife and may include the following:

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated by CDFW as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions.

The *Jurisdictional Delineation* (EIR Appendix 6) prepared to evaluate the Project, concludes the drainage features within the Project area do not meet CDFW jurisdictional criteria. This conclusion takes into consideration the findings of the *Drainage Concept* (EIR Appendix 3) and a variety of stormwater flow projects that reduce the potential for surface flows to reach the Project. Among these improvements, the *Jurisdictional Delineation* notes the following:

> *Through the years, highway improvements along State Route 138 have resulted in progressively less potential for stormwater flows to reach the Lebata site. Currently Caltrans improvements along State Route 138 have included enlarging of drainage swales along the north and south sides of the highway, upgrades to culverts, and other upgrades. In general, the swale on the south side of the highway collects the majority of flows; the culverts direct a portion of flows under the highway into the swale on that side. Both swales lead to Big Rock Creek, diverting flows that would otherwise reach the Lebata site.*

The *Jurisdictional Delineation* concludes the drainage features within the Project area do not meet CDFW jurisdictional criteria as noted below:

> *Due to historic changes noted in the Big Rock Wash, its watershed and alluvial fan, the Lebata site is not expected to contain flows except under extreme conditions, such as the failure of the mountain front levee during a 50-year storm. In spite of these documented changes, it is likely that there are apparent drainage features within the Lebata site due to its position within the historic alluvial fan. Based on the evidence, it is likely that any drainages present are non-functional relicts and would not convey flows as they did historically. It is common for drainage features in desert areas to remain physiographically similar to their historic conditions even if they have been dewatered for many years.*
>
> *The presence of bed and bank and the existence of a source (presumably Big Rock Creek) alone do not conclusively indicate the presence of Waters of the State if there is reason to believe that a feature may be a relict drainage. In the desert regions of California, landscape features can*

*change very little over time. Within alluvial fan situations, large portions can be inactive for decades and yet still exhibit bed and bank.*

*The Lebata site has very limited potential for flooding due to hydrological changes in the watershed and improvements such as the State Route 138 Widening Project. There is no riparian vegetation recorded on the Lebata site and no chance for aquatic species, since no permanent water exists on site. Periodic subsurface flows (at depth) may occur rarely in one or more of the drainage features due to very localized sheetflows, but the area exhibits a very high rate of percolation and has been effectively cut off from its historic sources in Big Rock Wash. Surface flows are not expected to occur, even during a Capital Flood event.*

*Based on the information collected in the Drainage Concept study, and documented changes in flows due to highway construction, it is my opinion the drainage features within the Project area do not meet CDFW jurisdictional criteria. Drainage features are unlikely to contain consistent enough, discrete surface or subsurface flows to qualify as perennial, intermittent or ephemeral.*

### 4.8.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Substantially affect a rare or endangered species of animal or plant or habitat of the species.
- Interfere substantially with the movement of any resident fish or wildlife species, or migratory fish or wildlife species.
- Substantially diminish habitat for fish, wildlife or plants.

To expand threshold criteria more definitively, the following additional considerations were used to determine Project significance.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?

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

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

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

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

The Project is considered to have a significant effect on the environment if it will result in:

- an indirect and direct take of desert tortoise.
- an indirect and direct take of Mohave ground squirrel.
- an indirect and direct take of native and sensitive nesting birds.
- an indirect and direct take of sensitive native plants.
- an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife.
- adverse effects to jurisdictional waters.
- nighttime truck traffic related wildlife mortality.

### 4.8.5 Impact Analysis

#### 4.8.5.1 Relevant Project Characteristics

The Reclamation Plan (EIR Appendix 2) was developed to restore indigenous vegetation within the mine pits and otherwise disturbed areas of the Project as required by the California Surface Mining and Reclamation Act (SMARA) of 1975, as amended (Public Resources Code Section 2719 et. seq.) and per the Performance Standards for Revegetation (California Resources Code § 3705) and for Topsoil Salvage, Maintenance and Redistribution (California Resources Code § 3711). The Reclamation Plan includes a number of measures designed to avoid and/or minimize Project impacts to biological resources. These measures correlate to the Performance Standards required by SMARA. Key among these are the following:

- All salvageable topsoil, an average of approximately four inches in depth, would be removed as a separate layer and stored in designated topsoil storage areas onsite. Most of the site is covered with cobbles and large rocks considered part of the subsoil, and approximately 30 percent of the area contains a topsoil layer. To maintain the viability of topsoil removed from the site, it will be used as a top layer atop berms, once they have been constructed. Since the amount of topsoil needed to cover all surfaces that would be revegetated may not be present onsite, subsoil would also be salvaged and stored within the designated topsoil storage areas, separately from the topsoil layer, as determined by a restoration specialist.
- Down-drains and floodwater interceptors would be built as mining progresses. These interceptors would remain to aid in stabilizing the site and to prevent erosion.

- A comprehensive Revegetation Plan requiring the restoration of indigenous vegetation within the mine pits and otherwise disturbed areas of the Project area. The objectives of the Revegetation Plan are to salvage a portion of the Joshua trees, provide immediate erosion control following phased mining completion, and increase habitat value by reintroducing native species to the mine site.
- SMARA requires a FACE to ensure the cost of implementing site reclamation.

Mining would occur over a 50 year period in three distinct Mining Phases. Reclamation is expected to occur concurrently with the completion of mining activities. For example, reclamation would start with the south and east slopes of Mining Phase 1 as soon as the slopes are finished and the facilities associated with the *Drainage Concept* (EIR Appendix 3), such as down-drains, etc., have been installed. The finished slopes would be revegetated within two years after secession of mining. Pit bottoms will be recontoured and revegetated in accordance with the requirements of the Streambed Alteration Agreement, if required by the CDFW.

Test Plots would be conducted in order to indicate whether or not the identified seed mix should be altered to achieve the objectives of the Reclamation Plan. It is estimated that it would take approximately two years to complete reclamation activities once all mining activities have ceased.

#### 4.8.5.2 Impacts Determined to be Less than Significant/No Impact

The Project includes numerous design measures as discussed above to avoid adverse impact to biological resources. The design of the Mining Plan and its reclaimed end use are consistent with local policies. As a result, the Project is expected to result in **Less than Significant Impacts** to the following:

- The Project site is not located within a Significant Ecological Area (SEA), SEA Buffer, or coastal Sensitive Environmental Resource (ESHA, etc.).
- The Project site consists of relatively undisturbed and natural habitat, a condition that would be restored through reclamation activities. Furthermore, adundant habitat is present in the surrounding vicinity.
- The Vicinity Map (EIR Figure 2) provides a USGS quad sheet illustrating an ephemeral river course (i.e., a dashed blue line) transecting the Project from the southeast toward the northwest. The *Drainage Concept* prepared for the Project (EIR Appendix 3) addresses concerns regarding Capital Flood events along this historic relict of an ephemeral river course. The *Jurisdictional Drainage* (EIR Appendix 6) also concludes the onsite drainages are a historic relict of an ephemeral river course. The Corps has determined the Project is not subject to its jurisdiction under Section 404 of the Clean Water Act and a Section 404 permit is not required. Habitat concerns are addressed herein and may be further addressed by a long-term Streambed Alteration Agreement between Lebata and CDFW (1605 Agreement), if the CDFW so requires. A Streambed Alteration Agreement may include a habitat restoration plan, revegetation plan, and habitat improvement.
- The Project site does not contain a major riparian habitat or other sensitive vegetation community.

- The Project site does not contain oak trees or other unique native trees except Joshua trees. Refer to EIR sub-chapter 4.8.5.3 - Impact BIO-4.

With regard to the potential interception of surface runoff needed to support habitat across Avenue T, the surrounding area is so permeable that surface flows across Avenue T do not develop. As a result, the Project is expected to result in **Less than Significant Impacts**.

### 4.8.5.3 Impacts Determined To Be Potentially Significant

**Impact BIO-1: Project activities could result in indirect and direct take of desert tortoise.**

EIR sub-chapter 4.8.3.6.2 notes the potential for the desert tortoise (*Gopherus agassizii*) to occur onsite. Listed as a federally Threatened and California Threatened species, the desert tortoise may have historically occurred on the Project site, but has not been reported from the Project vicinity for many years. The absence of this species was confirmed in the protocol desert tortoise presence/absence survey that was conducted in February 2006. In reviewing the survey results during an April 2007 field meeting with CDFW representatives on the Project site, it was indicated that future desert tortoise protocol surveys on the site may be appropriate to ensure that individuals of the species do not move back onto the site prior to Project implementation. It is concluded that the Project could result in indirect and direct take of the desert tortoise, **resulting in a Significant Impact**. In response, **Mitigation Measure BIO-1** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

Mining activities have the potential to increase the local population of ravens, a desert tortoise predator, by providing a source of food, water, and nesting materials. This would have potential indirect effects on the regional desert tortoise population through increased predation of juvenile desert tortoises by an increased raven population. A 2002 USGS study on reducing predation by common ravens on desert tortoises in the Mojave and Colorado deserts determined that a vector/raven control plan is effective in reducing the availability of human-provided food to ravens (United States Geological Survey 2002). Raven control methods recommended in the 2002 USGS study include covering and/or removing trash and keeping areas clean and free of standing water. With the implementation of raven control methods, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**, regarding raven effects on desert tortoise populations.

**Impact BIO-2: Project activities could result in indirect and direct take of Mohave ground squirrel.**

EIR sub-chapter 4.8.3.6.2 notes the potential for the Mohave ground squirrel (*Xerospermophilus mohavensis*) to occur onsite. State listed as Threatened, this species has been reported from 21 locations in the Project area. Although not sighted in the vicinity of the Project site in recent years, the Mohave ground squirrel may have historically occurred on the Project site. Because suitable habitat occurs on the project site, this species cannot be ruled out. As such, it is concluded that the Project could result in indirect and direct take of the Mohave ground squirrel, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-2** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-2**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

**Impact BIO-3: Project activities could result in indirect and direct take of native and sensitive nesting birds.**

EIR sub-chapter 4.8.3.6.2 notes the potential for a variety of native and sensitive nesting birds to occur onsite, including the following (the listing status of each is noted in EIR Table 59):

- *Lanius ludovicianus* (loggerhead shrike)
- *Toxostoma lecontei* (Le Conte's thrasher)
- *Athene cunicularia* (*burrowing owl* [*bu*rrow sites])

It is concluded that the Project could result in indirect and direct take of native and sensitive nesting birds, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-3** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-3**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

**Impact BIO-4: Project activities could result in indirect and direct take of sensitive native plants.**

EIR sub-chapter 4.8.3.6 notes the potential for a variety of sensitive native plants to occur within the Project region (refer to EIR Table 58). However, only one special-status plant species was identifed on site (*Muilla coronata* [crowned muilla]) and six other species may occur onsite, including:

- *Calochortus striatus* (alkali mariposa lily),
- *Canbya candida* (white pygmy-poppy)
- *Loeflingia squarrosa* var. *artemisiarum* (sagebrush loeflingia)
- *Lupinus peirsonii* (Peirson's lupine)
- *Opuntia basilaris* var. *brachyclada* (short-joint beavertail cactus)[7]
- *Plagiobothrys parishii* (Parish's popcorn-flower)

It is concluded that the Project could result in indirect and direct take of sensitive plant species, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-4** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-4**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

Although Joshua trees are not federally or state listed, they are protected by state and local ordinances. Thus, some of the objectives of the Revegetation Plan are to salvage a portion of the Joshua trees, provide immediate erosion control following phased mining completion, and increase habitat value by reintroducing native species to the mine site. Plant density varies over the Project site and creosote

[7] The individuals previously identified on the Project site were determined to be intermediates expressing some genes of the sensitive variety (*brachyclada*) along with the common variety (*basilaris*). It was confirmed that these individuals are most likely intermediates containing physical characteristics of both the common and the sensitive varieties and that they are not likely the pure *brachyclada* varietal.

shrubs are abundant. Overall plant cover is approximately 40 to 50 percent. Where Joshua trees are present, there are approximately three to five trees per acre, with an estimated total population of 200. Young Joshua trees will be transplanted prior to soil disturbance. Topsoil and sub-soil will be salvaged and stored separately. Upon completion of mining phases, and in compliance with the phased Reclamation Plan prepared for this site (EIR Appendix 2), plants will be reintroduced by seeding native species and transplanting Joshua trees. Because small, young trees with a less developed root system respond better to relocation, unbranched specimens greater than three feet and less than ten feet in height would be relocated, nurtured and used to revegetate the site. A Test Plot will enable the refinement of the seeding mixtures, if necessary. Temporary irrigation will enable species to establish. A Monitoring Plan provides performance criteria designed to determine the success or failure of revegetation. Contingency measures are suggested in the event that revegetation goals are not met.

With regard to Joshua trees, it is concluded that the Project would result in **Less than Significant Impacts**.

**Impact BIO-5: Project activities could result in an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife.**

EIR sub-chapter 3.6.8.4.3 notes that during topsoil salvage and storage, the stockpiles would be seeded with native seed material and would be maintained free of exotic, invasive weeds. It is concluded that the Project could result in an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-5** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-5**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

**Impact BIO-6: Project trucks could result in nighttime truck traffic related wildlife mortality.**

The Project has the potential to cause nighttime truck traffic related wildlife mortality along the connector roads to the Pearblossom Highway (i.e., 116th Street East for westbound traffic and Avenue T for eastbound traffic). It is concluded that the Project could result in adverse effects at night to wildlife along the haul routes, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-6** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-6**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. With regard to such nighttime impacts onsite, there are several **Mitigation Measures** that serve to reduce **Significant, but Mitigable Impact**. These Mitigation Measures include, **Mitigation Measure AQ-2** (15 mph speed limit on unpaved roads), and **Mitigation Measures BIO-1 through BIO-3**, as described immediately below.

**Impact BIO-7: Project activities could result in indirect and direct take of special-status native wildlife.**

EIR sub-chapter 4.8.3.6 notes the potential for a variety of sensitive native wildlife to occur within the Project region (refer to EIR Table 58). No sensitive wildlife species have been observed or detected on the Project site to date, but eight species have a moderate or greater potential to occur:

- *Gopherus agassizii* (desert tortoise)
- *Phrynosoma blainvillii* (Blainville's horned lizard)

- *Lanius ludovicianus* (loggerhead shrike)
- *Toxostoma lecontei* (Le Conte's thrasher)
- *Athene cunicularia* (*burrowing owl* [*bu*rrow sites])
- *Xerospermophilus mohavensis* (Mohave ground squirrel)
- *Onychomys torridus ramona* (southern grasshopper mouse)
- *Taxidea taxus* (American badger)

Small numbers of Blainville's horned lizard may be directly and indirectly affected by the Project. Direct impacts would include the removal of individuals and burrows of these species during vegetation clearing associated with mining activities and are addressed above. Indirect impacts would include the loss of foraging habitat. In this regard, the Project would result in **Less than Significant Impacts** because abundant habitat for this species would remain adjacent to the Project area and this species has no formal federal or state protection.

Small numbers of loggerhead shrike and LeConte's thrasher may be directly and indirectly affected by the Project. Direct impacts would include the removal of nests of these species during vegetation clearing associated with mining activities and are addressed above. Indirect impacts would include the loss of nesting and foraging habitat. In this regard, the Project would result in **Less than Significant Impacts** because abundant habitat for these species would remain adjacent to the Project area and these species have no formal federal or state protection.

Small numbers of American badger and southern grasshopper mice may be directly and indirectly affected by the Project. Mining activities could directly remove individuals and burrows, and the loss of habitat for these species could indirectly affect individuals who burrow and/or forage in these areas. The Project would result in **Less than Significant Impacts** in regards to these two species because abundant habitat would remain adjacent to the Project area and these species have no formal federal or state protection at this time.

### 4.8.6 Mitigation Measures

**BIO-1** The following avoidance and minimization efforts shall be used as methods to avoid accidental take of desert tortoises as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures to minimize impacts to the desert tortoise, plus a measure of protection in the event that a desert tortoise enters within the Project boundary will be implemented:

1. In order to avoid any disturbance to potential desert tortoise habitat beyond the Project area, as well as the direct take of desert tortoises, undisturbed habitat areas outside the Project area and any unsurveyed construction areas, such as future phase areas, shall be designated as temporary "Environmental Sensitive Areas" (ESAs). All construction activities shall be confined within the Project impact areas only. At no time shall equipment or personnel be allowed within ESAs.
2. Before installation of the temporary ESA and desert tortoise fencing, and prior to initiation of construction activities, a qualified biologist (referred to below as the Desert Tortoise Biologist), approved by the Department of Regional Planning (DRP), with an appropriate

tortoise handling permit issued from USFWS shall perform a pre-construction survey for desert tortoise. If any desert tortoises are present in the Project area, the Desert Tortoise Biologist shall be retained by the Permittee to relocate them. (If a tortoise has to be touched or moved off the Project site, then a Section 7, or a Section 10 Incidental Take Permit will be required from the USFWS, and a 2081 permit from the CDFW will also be required.) Tortoises are to be moved to suitable habitat outside the impact area and placed in a natural or artificial burrow, or under a shrub, depending on time of day and year. The Desert Tortoise Biologist shall also be available to relocate any tortoises that may wander into the impact area during construction.

3. Prior to any ground disturbing activities, the Permittee shall install a desert tortoise exclusion fencing (wire mesh) to exclude all tortoises from entering the Project area. This fencing may be used in conjunction with, but not replaced by, orange ESA fencing for protection of desert tortoise habitat in identified ESAs. The Desert Tortoise Biologist shall be present during all fence installation activities to ensure no impacts to sensitive biological resources occur. The exclusion fence shall be maintained by the Permittee and inspected to ensure its integrity on a daily basis.
4. All personnel involved in Project construction shall receive Project-related environmental protection training, including desert tortoise awareness as approved by USFWS and CDFW, prior to performing onsite work. Training shall include discussion of the:
    - fragility of desert habitat,
    - importance of listed species likely to be in the area, including the desert tortoise,
    - protections afforded to these species by the California and National Endangered Species Acts,
    - locations of temporary Environmental Sensitive Areas (ESAs) and their functions, and
    - correct protocol to follow should a desert tortoise or other sensitive species be encountered.
5. At the end of each working day, the Permittee shall inspect the integrity of all temporary ESA and desert tortoise fencing to ensure that they are in good condition and that desert tortoises would be prohibited from entry. If the fences are compromised, repairs shall be completed at that time.
6. Open trenches, auger holes, or other excavations that may act as pit-fall traps shall be inspected by the Desert Tortoise Biologist before back filling. Any desert tortoise or other species found within the holes shall be safely removed and relocated out of harm's way by the Desert Tortoise Biologist. For open trenches, earthen escape ramps shall be maintained at intervals of no greater than 0.25 mile (0.40 kilometers). The open trenches shall be inspected three times per day (four times per day during the summer) by the Desert Tortoise Biologist. Other excavations that remain open overnight shall be covered to prevent them from becoming traps.
7. Project personnel shall carefully check under parked vehicles and equipment for desert tortoises or other species before operation, especially in the morning during Project startup and anytime after being parked during the day. The Desert Tortoise Biologist shall move

desert tortoises found within the parking, staging, construction, or other traffic areas, to a location away from danger, as specified in Item 2 above.

8. To avoid impacts caused by increased raven populations on desert tortoise, raven control methods will be implemented. Within the Project site, raven-proof trash bins shall be used for construction trash storage and trash shall be placed in a sealed container and emptied at the close of business each day. All personnel will be required to pick up trash and food wrappers from the site each day. To help discourage ravens, construction water sources shall not be allowed to pool or to form permanent puddles that may offer suitable water for ravens, and tortoises shall not be able to access construction water.
9. Construction water sources shall be designed to preclude their being accessed by tortoise.
10. Culverts and other drains shall be installed in such a way for tortoises to enter and exit safely from each end.
11. If a desert tortoise or other listed species, whether dead, injured, or entrapped, is found, the Permittee or Desert Tortoise Biologist shall immediately notify USFWS or CDFW directly. Work in the immediate area is to be temporarily halted until approved to resume by CDFW and USFWS. Any entrapped desert tortoise shall be permitted to escape. The disposition of any carcasses or recovery of dead animals shall be coordinated by the Desert Tortoise Biologist through CDFW and USFWS.
12. If a desert tortoise or other listed species is injured during the course of construction, the Permittee shall be notified and the Desert Tortoise Biologist shall transport the animal to a qualified veterinarian. If a desert tortoise is killed during the course of construction, it must be left in place, as is, and the Permittee and Desert Tortoise Biologist must be notified. The Desert Tortoise Biologist shall document and remove the carcass.
13. No firearms or pets are permitted in the Project area.
14. Compliance with the avoidance, minimization, and Mitigation Measures shall be documented by the Permittee and the Desert Tortoise Biologist, and provided to the regulatory agencies on a regular basis as determined by the agreements established for the Project.

**BIO-2** The following protocol survey, avoidance and minimization efforts shall be used as methods to avoid accidental take of Mohave ground squirrel (MGS) as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures:

1. In order to avoid any disturbance to MGS habitat beyond the Project area, as well as the direct take of MGS, undisturbed habitat areas outside the Project area and any unsurveyed construction areas, such as future phase areas, shall be designated as temporary "Environmental Sensitive Areas" (ESAs). All construction activities shall be confined within the Project impact areas only. At no time shall equipment or personnel be allowed within temporary ESAs.
2. Prior to any ground disturbing activities, temporary exclusion fencing (orange construction fencing or sight weave silt fencing) will be installed and maintained along the common

boundary of the temporary ESA and Project area, and in drainages leading off of the Project area in order to prevent unauthorized entry into the temporary ESA.

3. A qualified DRP-approved biologist, working under the authority of a CDFW Memorandum of Understanding (referred to below as the MGS Biologist), will conduct surveys to determine the presence of Mohave ground squirrel (MGS) on the Project site. Mining is expected to proceed incrementally, sequentially affecting 10 to 30 acres of land at a time, over the course of the Project's permitted life (i.e., approximately 50 years). Prior to the grading or clearing of each new area of land, one CDFW protocol MGS survey grid will be established on the parcel in an area determined to be the best potential habitat for MGS. The site will be trapped for three, five consecutive day sessions throughout the spring and early summer. An additional day will be necessary for each session to set up the traps the day before trapping and to pick them up when done. As each subsequent undisturbed area is trapped, the first session for each area will be trapped between March 15 and April 30. The second session will be trapped between May 1 and May 31. The third session will be trapped between June 15 and July 15. A technical report will be prepared following the completion each of the field sessions that will describe the survey methods and results, as well as a description of the onsite habitat quality for supporting MGS. Consultation with CDFW will need to occur, in addition to obtaining the appropriate permits if MGS are detected. All technical reports will be submitted to the County.
4. Grubbing performed post-survey is to be conducted in a manner that directs wildlife away from Project activities and does not result in the creation of an interior island where wildlife could become isolated and trapped. The operating premise is to provide wildlife an opportunity to successfully flee the Project site.
5. All personnel involved in Project construction shall receive Project related environmental protection training including sensitive species awareness training prior to performing onsite work. Training shall include discussion of the:
    - fragility of desert habitat,
    - importance of listed species likely to be in the area, including the MGS, the protections afforded to these species by the California and National Endangered Species Acts,
    - locations of temporary ESAs and their functions, and
    - correct protocol to follow should a MGS or any other sensitive species be encountered.
6. At the end of each working day, the Permittee shall inspect the integrity of all fencing around temporary ESAs to ensure that they are in good condition. If the fence is compromised, repairs shall be completed at that time.
7. Open trenches, auger holes, or other excavations that may act as pit-fall traps shall be inspected by the MGS Biologist before back filling. Any MGS or other species found within the holes shall be safely removed and relocated out of harm's way by the MGS Biologist. For open trenches, earthen escape ramps shall be maintained at intervals of no greater than 0.25 mile (0.40 kilometers). The open trenches shall be inspected three times per day (four times per day during the summer) by the MGS Biologist. Other excavations that remain open overnight shall be covered to prevent them from becoming traps.

8. Project personnel shall carefully check under parked vehicles and equipment for wildlife species before operation. The MGS Biologist shall move sensitive wildlife found within the parking, staging, construction or other traffic areas to a location away from danger.
9. Culvert extensions shall be installed in such a way for sensitive wildlife to enter and exit safely from each end.
10. If a MGS, or other listed species, whether dead, injured, or entrapped, are found, the Permittee or MGS Biologist shall immediately notify CDFW directly. Work in the immediate area shall be temporarily halted while the Permittee/MGS Biologist consults with CDFW. Any entrapped MGS shall be permitted to escape. The disposition of any carcasses or recovery of dead animals shall be coordinated by the MGS Biologist through CDFW.
11. If a MGS or other listed species is injured during the course of construction, the Permittee must be notified and the MGS Biologist shall transport the animal to a qualified veterinarian. If it was killed during the course of construction, it must be left in place as is and the Permittee and MGS Biologist must be notified. The MGS Biologist would document and remove the carcass.
12. No firearms or pets are permitted in the Project area.
13. Compliance with the avoidance, minimization, and Mitigation Measures shall be documented by the Permittee and MGS Biologist, and provided to the regulatory agencies on a regular basis as determined by the agreements established for the Project.

**BIO-3** The following avoidance and minimization efforts shall be used as methods to avoid accidental take of all native nesting birds as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures to minimize impacts to all native nesting birds:

1. Pre-construction biological surveys are to be conducted by qualified wildlife biologist (approved by CDFW and DRP) for sensitive birds and other sensitive species (referred to below as the Sensitive Birds Biologist) prior to any site preparation activities in association with any phase. The surveys shall be conducted no later than three days prior to any site preparation activities (vegetation clearing). Results of surveys, including negative findings, shall be submitted to CDFW within three days of their conclusion. If any sensitive species are present onsite, the Permittee shall develop and implement a plan for the protection of these species, to be approved by CDFW in a timely manner. The results of any protective measures instituted as a part of the protection and monitoring plan shall be provided to CDFW in electronic format within one week of implementation. The Permittee shall be responsible for reporting all observations of threatened/endangered species or of species of special concern to CNDDB within ten (10) days of sighting.
2. Nesting native birds, including both sensitive and non-sensitive native birds and all migratory birds that may be present in the Project area, shall be protected during the breeding season. If any active nests are present, the Permittee, under the direct supervision of the Sensitive Birds Biologist, shall install a fence and exclude the nest site from all Project related activities. The fence shall be placed at a distance of 300 feet (500 feet for raptors) and no work or Project related activities shall occur within this buffer until the Sensitive

Birds Biologist determines that either the nest has failed or the young have fledged. The breeding season extends from February 15th through September 1st.

3. Prior to any site preparation or construction related activities during the raptor nesting season, January 31st to August 1st, the Sensitive Birds Biologist shall conduct a site survey for active nests two weeks prior to any scheduled site development or Project related activities. If an active nest is located, then no Project related activities shall be conducted within a 500-foot radius from the nest until the Sensitive Birds Biologist has determined that the young have fledged and are independent of the adults, or that the nest has failed.
4. The Permittee shall protect all migratory nongame native bird species, as they are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13), and by Sections 3503, 3503.5 and 3513 of the California Fish and Game Code, which prohibit the take of all native birds and their active nests including raptors and other migratory nongame birds (as listed under the MBTA). This Agreement therefore does not allow the Permittee, any employees, or agents to destroy or disturb any active bird nest (§3503 Fish and Game Code) or any raptor nest (§3503.5) at any time of the year.
5. If clearing is to be conducted outside of the breeding season or no breeding/ nesting birds are observed during the pre-construction survey, site preparation and Project related activities can begin. If clearing is to be conducted in the breeding season, all protective measures are in place, and concurrence has been received from CDFW, site preparation and Project related activities can begin.
6. No firearms or pets are permitted in the Project area.
7. Compliance with the avoidance, minimization, and Mitigation Measures shall be documented by the Permittee and Sensitive Birds Biologist, and provided to the regulatory agencies on a regular basis as determined by the agreements established for the Project.

Burrowing owl

8. The Sensitive Birds Biologist shall inspect all burrows that exhibit typical characteristics of owl activity no sooner than three days prior to any site preparation activities. If it is evident that the burrows are actively being used by burrowing owls, the Permittee shall not commence activities until no owl sign is present and that the burrows are not being used by adults or juvenile owls (as determined by the Sensitive Birds Biologist).
9. (This measure was designed to determine if burrowing owls are present in upcoming phase areas. It allows for the Sensitive Birds Biologist to conduct spring and winter surveys to determine if just wintering or if breeding owls are present.)

   The Sensitive Birds Biologist shall perform a spring and winter burrowing owl survey of any area within one year of clearing any vegetation from that area. If evidence exists that burrowing owls are utilizing the site, the Sensitive Birds Biologist shall directly supervise the installation of Department approved exclusionary devices in order to prevent the owls from entering the burrows and shall implement an artificial burrow program near the site in one of the areas considered for restoration/creation or preservation, as part of the mitigation measures for this agreement. The approved devices shall be placed at least 60 days prior to

any site related Project activities and monitored for one year to ensure they are functioning and being used by owls.

10. (This measure includes the pre-construction survey that needs to occur just prior to clearing the next phase of mining.)

    The Permittee shall have the Sensitive Birds Biologist perform a burrowing owl survey in accordance with the standard survey protocol guidelines within 30 days prior to clearing any area. The Sensitive Birds Biologist shall inform CDFW (contact to be provided by CDFW) immediately if any birds are present. If birds are present, he Sensitive Birds Biologist shall install approved exclusionary or artificial devices immediately and at least two weeks prior to clearing.

**BIO-4** The following avoidance and minimization efforts shall be used as methods to avoid accidental take of other sensitive native plants as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measure to minimize impacts to all sensitive native plants:

1. Pre-construction sensitive plant surveys shall be conducted by a qualified Sensitive Plant Species Biologist, approved by CDFW and DRP. Survey results, including negative findings, shall be submitted to CDFW within 90 days of their conclusion. If any sensitive plant species are present onsite, the Permittee shall develop a protection and monitoring plan and submit it to CDFW for approval. The Permittee is responsible for implementing the CDFW-approved protection and monitoring plan.
2. The results of any protective measures instituted as a part of the protection and monitoring plan shall be provided to CDFW, in electronic format, within 30 days of implementation. Within ten (10) days of sighting(s), the Permittee shall report all observations of threatened/endangered species, or of species of special concern, to CDFW for incorporation within the CDFW Natural Diversity Data Base.

**BIO-5** The following avoidance and minimization efforts shall be used to avoid adverse effects on sensitive native plants and wildlife as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures to minimize the occurrence of exotic plant species:

1. Prior to land disturbing activities onsite, the Permittee shall prepare an Exotic and Invasive Plant Species Control Program and submit it to DRP for review and approval by a DRP-approved Exotic and Invasive Plant Species Biologist. The Permittee is responsible for implementing the approved exotics and invasive plant species control program as part of the operational plan for the Project.
2. Invasive species control measures may include, but are not limited to, avoidance of streambed disturbance, herbicide application (upland areas only), native species re-vegetation, and washing off construction equipment tires to prevent introduction of invasive species seeds.

**BIO-6** To avoid nighttime impacts to wildlife by haul trucks along the haul routes, the Permittee shall require truck operators to limit truck speed to no more than 25 mph along 116th Street East, and along Avenue T, eastbound of the Project.

If required by the Los Angeles County Sheriff's Department, the Permittee shall install nighttime truck speed limit signs for Project trucks entering 116th Street East from East Avenue T or SR 138.

### 4.8.7 Level of Significance after Mitigation

Upon implementation of **Mitigation Measures BIO-1 through BIO-6**, described in EIR sub-chapter 4.8.6, the Project impacts to biological resources is expected to result in **Significant, but Mitigable to Less than Siginificant to Less than Significant Impacts**.

### 4.8.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

With regard to the indirect and direct take of desert tortoise, it is concluded that the Project could result in indirect and direct take of the desert tortoise, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-1** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-1**, impacts to desert tortoise are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of Mohave ground squirrel, it is concluded that the Project could result in indirect and direct take of the Mohave ground squirrel, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-2** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-2**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-2**, impacts to Mohave ground squirrel are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of native and sensitive nesting birds, it is concluded that the Project could result in indirect and direct take of native and sensitive nesting birds, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-3** (EIR sub-chapter 4.8.6) was developed.

Upon implementation of **Mitigation Measure BIO-3**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-3**, impacts to native and sensitive nesting birds are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of sensitive native plants, it is concluded that the Project could result in indirect and direct take of sensitive plant species, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-4** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-4**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-4**, impacts to sensitive native plants are **not expected to be cumulatively considerable**.

With regard to the an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife, It is concluded that the Project could result in an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-5** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-5**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-5**, these impacts are **not expected to be cumulatively considerable**.

With regard to Project trucks could result in nighttime truck traffic related wildlife mortality, it is concluded that the Project could result in adverse effects at night to wildlife along the haul routes, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-6** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-6**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. With regard to such nighttime impacts onsite, there are several **Mitigation Measures** that serve to reduce **Significant, but Mitigable Impact**. These Mitigation Measures include, **Mitigation Measure AQ-2** (15 mph speed limit on unpaved roads), and **Mitigation Measures BIO-1 through BIO-3**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of these mitigation measures, these impacts are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of special-status native wildlife (i.e., specifically Blainville's horned lizard, loggerhead shrike, LeConte's thrasher, American badger, and southern grasshopper mice) it was concluded the Project would result in **Less than Significant Impacts** because abundant habitat for these species would remain adjacent to the Project area and these species have no formal federal or state protection.

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## 4.9 VISUAL QUALITY

### 4.9.1 Introduction

This EIR sub-chapter discusses the visual setting of the Project area and the aesthetic impact on the surrounding areas that may result from the Project. The potential impacts to aesthetics associated with the aggregate mining and processing for the Project, and recommended mitigation measures for impacts determined to be potentially significant are assessed. Information for this sub-chapter of the EIR was derived from the following studies prepared for site evaluation.

- County of Los Angeles Planning and Zoning Code, Chapter 22.44 Part 9;
- County of Los Angeles Rural Outdoor Lighting District Ordinance (*Dark Skies Ordinance*);
- Jordan, Gilbert & Bain, *Visual Analysis for Big Rock Canyon,* September 20, 2008. (*Visual Analysis*) (EIR Appendix 15); and
- Nate Mullen Visual Concepts, LLC, *Photometric Study, Big Rock Creek Site*, February 29, 2008 (*Photometric Study*) (EIR Appendix 16).

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***1. Aesthetics***

*Would the project:*

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

### 4.9.2 Regulatory Setting

#### 4.9.2.1 CEQA

The significance of potential impacts to visual quality is determined based on CEQA guidelines (14 CCR §§ 15000 et .seq.) and other relevant considerations. Using these thresholds, impacts arising from the development of the Project and ancillary facilities are evaluated and assigned a significance level.

#### 4.9.2.2 Los Angeles County General Plan

The Goals and Policies Element of the Los Angeles County General Plan identifies the following visual related policy to guide the future development within unincorporated Los Angeles County.

**General Goal 15.** Protect areas that have significant natural resources and scenic values, including significant ecological areas, the coastal zone, and prime agricultural lands (General Plan Goals and Policies, 1993).

**Conservation and Open Space Policy 16.** Protect the visual quality of scenic areas including ridgelines and scenic views from public roads, trails, and key vantage points. (General Plan Conservation and Open Space Element, 1980).

**Scenic Highways Policy Map.** The County identifies officially designated and first and second priority proposed scenic highways. Scenic highways indicate where special land management standards and zoning requirements are recommended. The County's First and Second Priority Scenic Highway categories do not designate scenic status, but identify where further study (i.e., corridor study) is proposed to evaluate the road's aesthetic and transportation value. Additionally, Second Priority Scenic Highways would be studied once the studies for the First Priority Scenic Highways have been completed (LACDRP 1974). There are no County designated scenic highways, corridors or routes within the Project vicinity.

#### 4.9.2.3 Los Angeles County "Dark Skies Ordinance"

Effective December 13, 2012, the County implemented the Rural Outdoor Lighting District Ordinance (Ordinance No. 2012-00047), amending Chapter 22 - Planning and Zoning of the Los Angeles County Code. The purpose of this amendment, commonly referred to as the *Dark Skies Ordinance*, was to establish a rural outdoor lighting district and regulate outdoor lighting in the Rural Outdoor Lighting District to promote and maintain dark skies at night for the residents and wildlife in the district. The amendment also modifies the community standards districts located within the Rural Outdoor Lighting District to be consistent with this new *Dark Skies Ordinance*.

The Project is located within the Rural Outdoor Lighting District that is subject to the rerquirements of *Dark Skies Ordinance*, specifically Section 22.44.141, which pertain to the Southeast Antelope Valley Community Standards District. As such, Project outdoor lighting is to be "*provided in accordance with the applicable provisions of Part 9 of Chapter 22.44.*" To is intended to promote and maintain dark skies for the health and enjoyment of individuals and wildlife by:

*A. Curtailing light pollution and preserving the nighttime environment.*

*B. Permitting reasonable uses of outdoor lighting for nighttime safety, security, productivity, and enjoyment, while protecting the natural environment from the adverse effects of excessive outdoor nighttime lighting from artificial sources.*

*C. Conserving energy and resources.*

*D. Minimizing adverse ollsite impacts of outdoor lighting, such as light trespass.*

Section 22.44.550 specifies the *Additonal Standards for Commercial, Industrial, and Mixed Uses*. Most applicable among these standards are:

*B. Hours of operation.*

*1. Outdoor lighting shall be turned off between the hours of 10:00 p.m., and sunrise every day, unless the use on the involved property operates past 10:00 p.m., and then the outdoor lighting shall be turned off within one hour after the use's operation ends for the day. Notwithstanding the foregoing, if the use on the involved property requires outdoor lighting between 10:00 p.m., and sunrise every day for safety or security reasons, outdoor lighting shall be allowed during these hours, but only if:*

*a. Fully-shielded motion sensors are used to turn the outdoor lighting on after 10:00 p.m., and these sensors turn the outdoor lighting off automatically no more than 10 minutes after the involved area has been vacated; or*

*b. Where the use is commercial or industrial, at least 50 percent of the total lumen levels for the outdoor lighting are reduced, or 50 percent of the total number of outdoor light fixtures are turned off, between 10:00 p.m., and sunrise.*

*2. Exemption from hours of operation. Outdoor lighting shall be exempt from the hours of operation requirements of this subsection B if such lighting:*

*a. Is required by the County Building Code for steps, stairs, walkways, or points of ingress and egress to buildings; or*

*b. Is governed by a discretionary land use permit which specifically provides for different hours of operation.*

Section 22.44.550 specifies the following exemption for industrial facilities:

*The following outdoor lighting shall be exempt from the provisions of this Part 9:*

*E. Outdoor lighting for industrial facilities and sites, including but not limited to, rail yards, maritime shipyards and docks, piers and marinas, chemical and petroleum processing plants, and aviation facilities, where such lighting is needed for safety reasons.*

### 4.9.3 Environmental Setting

The Project is located near the community of Pearblossom, approximately 2 miles north of Highway 138, approximately 2 miles north-northeast of Pearblossom Highway, and approximately 2-1/2 miles west of Big Rock Wash on Avenue T. The site is nearly-rectangular in shape and includes the entirety of two Assessors Parcels that are separated by the Union Pacific Railroad that bisects them. The total land area of the Project is approximately 310 acres. The location of the site is depicted in EIR Figure 1 – Regional Map.

With the exception of the eastern boundary, the surrounding land use is vacant land. A few homes are located within 200 feet to one mile east of the Project boundary of the South Parcel. This area of the Antelope Valley is home to several surface mining operations. Refer to EIR Figure 42 – Existing Surface Mines.

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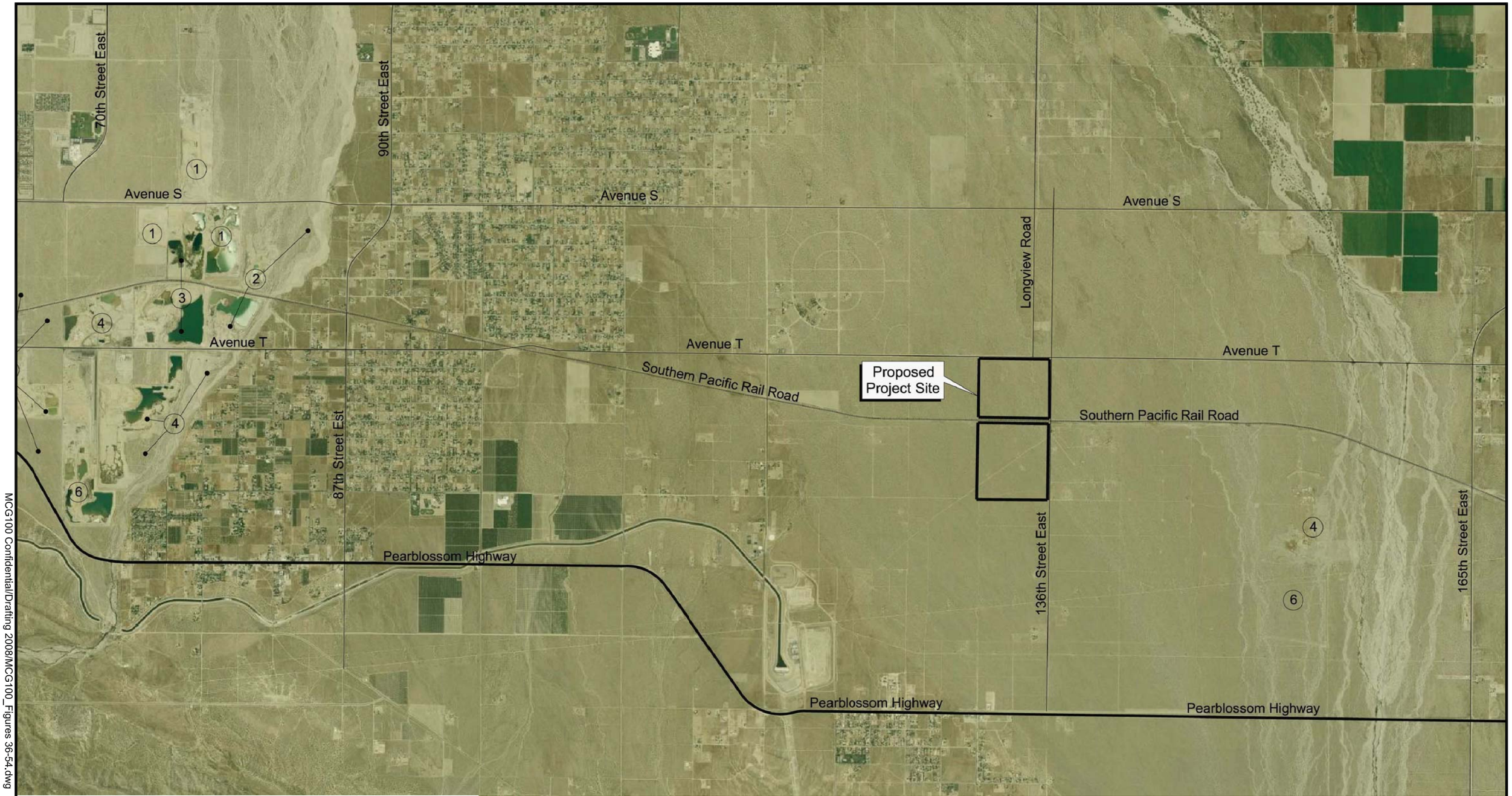


LEGEND:

1. Service Rock
2. Holliday Rock
3. Antelope Valley Aggregate
4. Vulcan Materials
5. Hi- Grade Materials
6. Granite Construction

NOT TO SCALE

Source: West Coast Environmental, 01-20-09

Existing Surface Mines
Big Rock Creek Site
Antelope Valley, California

FIGURE 42

Scale: NTS

Date: 3-13-2012

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### 4.9.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Have a substantial, demonstrable negative aesthetic effects.

Expanding upon this threshold criterion more definitively, Project impacts to the visual resource are considered to be significant if the Project will:

- Substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features.
- Create a new source of substantial shadows, light, or glare, which would adversely affect day or nighttime views in the area.

Although the County has not adopted specific threshold criteria regarding light, the County's recently adopted *Dark Skies Ordinance* definitions, which are useful:

> *F. Light pollution. Any adverse effect of artificial lighting including glare, light trespass, obtrusive light, sky glow, or other lighting impacts on the nocturnal environment.*
>
> *H. Light Trespass. The falling of light across a property line onto an adjoining lot or public right-of-way. The measurement of light trespass shall be determined by a photometer, taken at ground level from the subject property line. For purposes of this Part 9, an unacceptable level of light trespass shall be 0.5 (half) foot-candles or greater when the light trespass falls onto an adjoining public right-of-way or an adjoining residentially-zoned lot, open space zoned lot, or agriculturally-zoned lot, and 1.0 (one) foot-candle or greater when the light trespass falls onto an adjoining lot with any other zoning classification.*

For the purposes of this EIR, Project impacts to the visual resource are considered to be significant if the Project will:

- Create light pollution that results in unacceptable levels of light trespass.

Note: Although the County's Initial Study Checklist indicates the Project would result in **Less than Significant Impacts** with respect to nighttime lighting, it was decided to evaluate and disclose such potential impacts in this EIR.

### 4.9.5 Impact Analysis

#### 4.9.5.1 Impacts Determined to be Less than Significant/No Impact

##### 4.9.5.1.1 *Visual Quality*

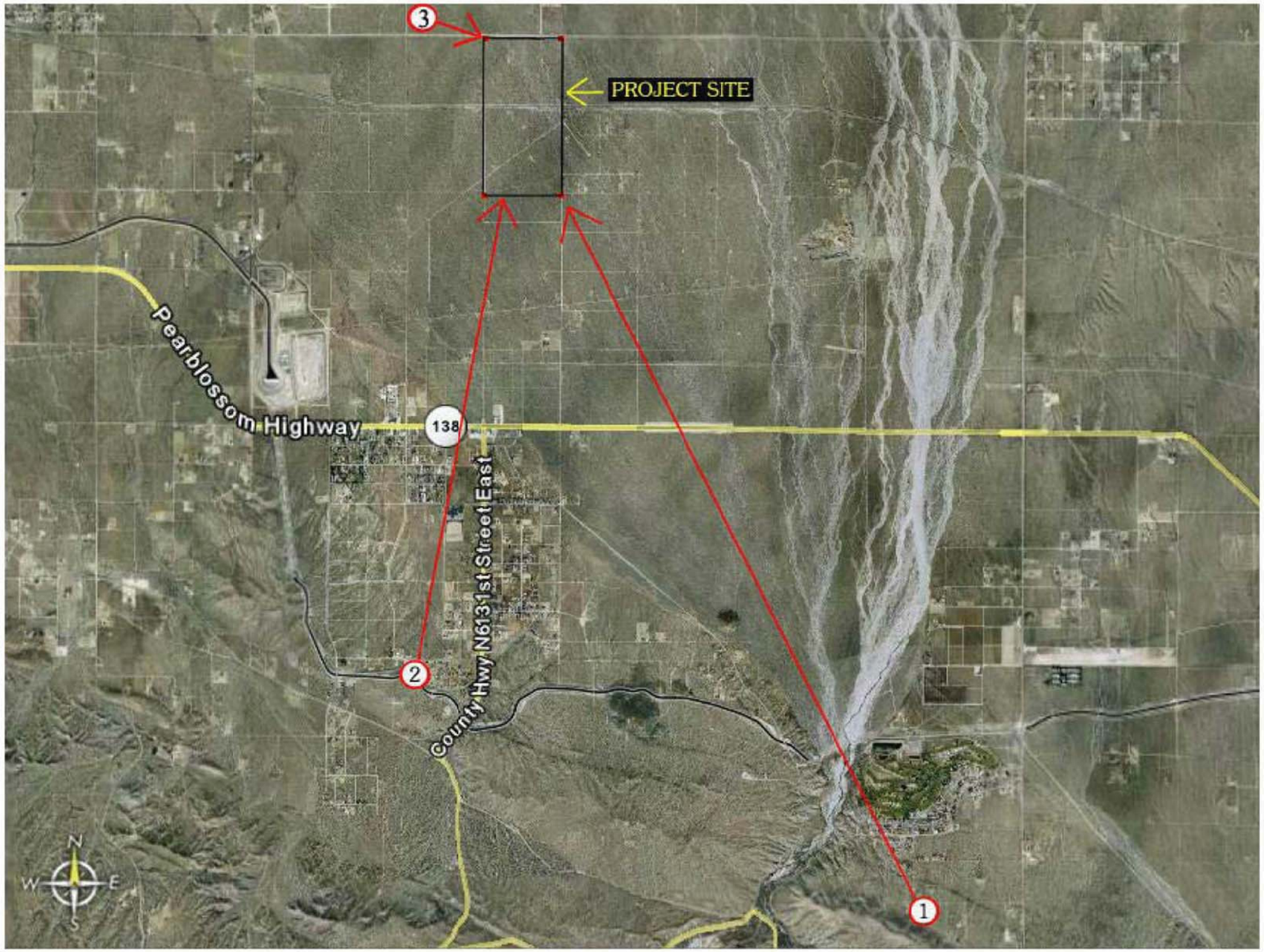
Using digitally enhanced photographs, a series of visual simulations were developed to assess the Project's visual impacts as viewed from three specific vantage points. These three views were identified largely by their relative elevation (i.e., above the Project), presence of existing residential development,

and public roads in close proximity to the Project. Due to the generally flat terrain in and around the Project site, a simulation was not made of the site from Pearblossom Highway.

All photographs taken to demonstrate existing conditions, and then altered digitally to simulate the Project at full construction, were shot with a 50mm lens on a digital camera. Site flag markers and a digital terrain model program were used to establish the simulated size and location of the site in the images. EIR Figure 43 (Visual Analysis Photo Locations) provides the reference points for Views 1 through 3 discussed below.

## VISUAL ANALYSIS

### Visual analysis photo locations




1. 157TH Street East & East Ave. Y-8, Llano, California (Crystalaire Country Club).

2. East Ave. X & Pearblossom Vista, Pearblossom, California

3. Ave. "T", Northwest corner of site

Source: West Coast Environmental, 01-20-09

| Visual Analysis<br>Photo Locations<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>43 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |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▲

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**View #1 –** The first view location is at an elevation of approximately 990 feet above the Project site. The photos were taken from the intersection of 157th Street East and East Avenue Y8, in the town of Llano near the Crystalaire Country Club. The Project site is located approximately 6 miles to the Northwest. EIR Figure 44 (View #1A) represents the existing view from this location as of September 20, 2007. EIR Figure 44 (View #1B) represents a simulation of the Project at full build out. The brightness of the simulated exposed earth was estimated, by imitating the color and contrast of the various areas of exposed earth that are visible, in a predominant manner, within the existing view.

Due to the extensive distance between the Project site and this viewpoint, all of the proposed structures planned for the site, are so small, they are of minimal visual impact in this simulation. Therefore, it is concluded the Project would result in **Less than Significant Impacts**.

**View #2 –** The second view location is at an elevation of approximately 520 feet above the Project site. The photos were taken from the intersection of East Avenue X and Pearblossom Vista, in the town of Pearblossom. The Project is located approximately 3.5 miles North. EIR Figure 45 (View #2A) represents the existing view from this location as of September 20, 2007. EIR Figure 45 (View #2B) represents a simulation of the Project at full build out. The brightness of the simulated exposed earth was estimated, by imitating the color and contrast of the various areas of exposed earth that are visible, within the existing view, at approximately the same distance.

Due to the extensive distance between the Project site, and this viewpoint, all of the proposed structures planned for the site, are so small, they are not readily visible in this simulation. Therefore, it is concluded the Project would result in **Less than Significant Impacts**.

**View #3 –** The third view location is from East Avenue T, at the Northwest corner of the Project site. This is the location of the future entry road to the site. EIR Figure 46 (View #3A) represents the existing view from this location as of September 20, 2007. EIR Figure 46 (View #3B) represents a simulation of the Project after all components of the equipment have been installed. Scale and heights for the pictured pieces of equipment is all estimated to be as close as possible to the proposed sizes from these views and perspectives, upon installation.

EIR Figure 46 (View #3C) represents the view after the addition of a 5-foot-berm along the perimeter, as well as the establishment of native vegetation and transplantation of Joshua trees from other disturbed areas of the site. With the berm and native plantings, it will be possible to screen most of the lower buildings, roads, equipment and vehicle movement from view along East Avenue T. Therefore, it is concluded the Project would result in **Less than Significant Impacts**.

The *Visual Analysis* recommended that the tanks and other taller equipment be painted a color specified by the Los Angeles County Regional Planning Department that would help them blend with the surrounding landscape. Not only will the buildings be less visible from the distant existing housing areas, but the color will help mask staining, and create a visual effect of a smaller size.

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**View # 1 –Looking North West from - 157TH Street East & East Ave. Y-8, Llano, California (Crystalaire Country Club).**

A - Existing conditions

B - View after facility is installed

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Source: West Coast Environmental, 01-20-09

| View #1<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>44 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

MCG100 Confidential/Drafting 2008/MCG100_Figures 36-54.dwg

# View # 2 – Looking North from - East Ave. X & Pearblossom Vista, Pearblossom, California

A - Existing conditions

B - View after proposed facility is installed.

Source: West Coast Environmental, 01-20-09

| View #2<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>45 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

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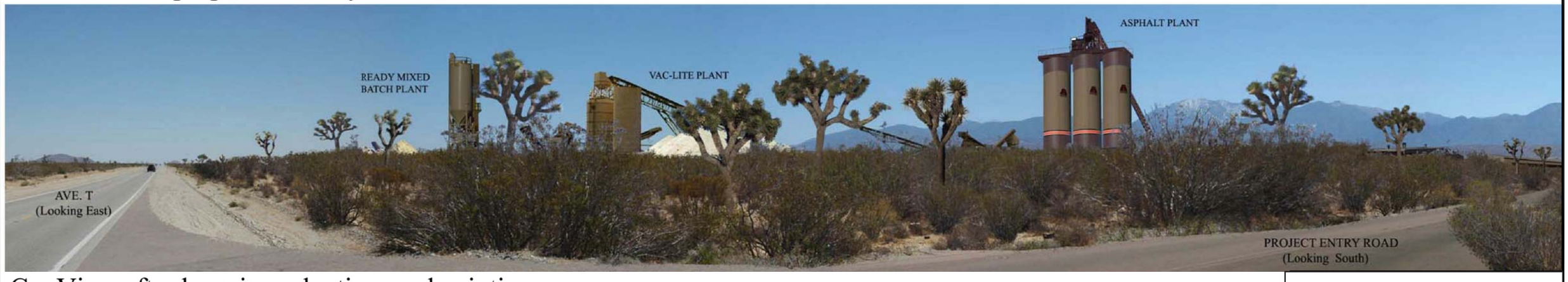
## View # 3 – Looking Southeast from – Ave. T, at Northwest corner of site

A - Existing conditions

B - View after proposed facility is installed.




C – View after berming, planting, and painting.

Source: West Coast Environmental, 01-20-09

| View #3<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>46 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

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#### 4.9.5.1.2 *Nighttime Lighting*

The Project would use nighttime lighting, both for safety and operations. The County's *Dark Sky Ordinance*, specifically Sections 22.44.590, exempts the Project from the provisions of this ordinance where such lighting is needed for safety reasons. To promote and maintain dark skies at night for the residents and wildlife in the Rural Outdoor Lighting District, all Project lighting would be installed and operated in accordance with the requirements of the County's *Dark Sky Ordinance*, specifically Sections 22.44.141 and 22.44.150. Lighting would be shielded/hooded and/or directional to minimize Project visual impacts and would be designed to incorporate the lighting needed for operations, repair and maintenance, and security. Lebata would ensure these lights are shielded/hooded and downward-directional to light only the area requiring illumination. Also proposed are light poles within the stockpile areas to provide the light needed for loader operators to work these piles. Light poles may be as high as 45 to 50 feet and would be shielded/hooded and downward-directional to keep light from affecting passing motorists.

A *Photometric Study* (EIR Appendix 16) was prepared by Nate Mullen Visual Concepts, LLC to provide the basis for demonstrating light trespass levels beyond property line setbacks and Project related nighttime light impacts to surrounding property owners. The Project boundaries would be flanked by earthen berms of varying heights, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot berm on the eastern boundary, and a 5-foot berm on the northern boundary. These berms provide a natural barrier to offsite light trespass. Refer to **Mitigation Measure NO-1** in EIR sub- chapter 4.5.6 which requires a 7-foot-tall berm be installed along the Project's eastern property line.

The light poles and fixtures used to perform the *Photometric Study* are identified in terms of height and light intensity. The *Photometric Study* provides a numerical representation of intensity of Project light estimated to be experienced offsite. These numbers are an expression of foot-candles (fc) and, as can be seen, the levels of Project light are all 0.00 fc, indicating there would be no light trespass offsite. The photometric calculation points are spaced on a 20-foot x 20-foot grid. The light levels have been estimated to a distance of 140 feet beyond the berms.

On each sheet of the *Photometric Study*, the lumenaire schedule illustrates that the Project would not create light pollution that results in unacceptable levels of light trespass. As such, the Project would result in **Less than Significant Impacts**.

#### 4.9.5.1.3 *State Scenic Highway System*

Many state highways are located in areas of outstanding natural beauty. California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code (Section 260 et. seq.). A highway may be designated scenic based upon the natural landscape that can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

The State Scenic Highway System includes both "Eligible" and "Officially Designated" Scenic Highways. The status of a State Scenic Highway changes from "Eligible" to "Officially Designated" when the local

jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation for Scenic Highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway.

The nearest Officially Designated State Scenic Highway is SR 2 (Angeles Crest Highway), which is more than 11 miles south of the Project in the San Gabriel Mountains. The nearest Eligible State Scenic Highway is SR 39 (San Gabriel Canyon Road), the northern-most portion of which intersects SR 2 more than 11 miles south of the Project. SR 138 (Pearbloosom Highway) is nearest to the Project, which is not identified as an Eligible State Scenic Highway or an Officially Designated Scenic Highway. Therefore the Project would result in **Less than Significant Impacts**.

#### 4.9.5.2 Impacts Determined to be Potentially Significant

None.

### 4.9.6 Mitigation Measures

None.

### 4.9.7 Level of Significant After Mitigation

No significant impacts are associated with the Project.

### 4.9.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Project is not anticipated to significantly impact visual quality due to the long intervening distances between the Project and nearest residential communities with a vantage point of the area. In addition, the Project would install berms along portions of its periphery would further lessen the Project's already **Less than Significant Impacts** and by painting tanks and taller equipment to lessen their visibility from Avenue T. This, when considering the limited number of cumulative projects, none of which contribute the visual impacts in the vicinity, Project impacts are **not expected to be cumulatively considerable**.

The Project would use nighttime lighting, both for safety and operations. The County's *Dark Sky Ordinance*, specifically Sections 22.44.590, exempts the Project from the provisions of this ordinance where such lighting is needed for safety reasons. To promote and maintain dark skies at night for the residents and wildlife in the district , all Project lighting would be installed and operated in accordance

with the requirements of the County' *Dark Sky Ordinance*, specifically Sections 22.44.141 and 22.44.150. Lighting would be shielded/hooded and/or directional to minimize Project visual impacts and would be designed to incorporate the lighting needed for operations, repair and maintenance, and security. Lebata would ensure these lights are shielded/hooded and downward-directional to light only the area requiring illumination.

A *Photometric Study* (EIR Appendix 16) was prepared by Nate Mullen Visual Concepts, LLC to provide the basis for demonstrating light trespass levels beyond property line setbacks and Project related nighttime light impacts to surrounding property owners. On each sheet of the *Photometric Study*, the lumenaire schedule illustrates that the Project would not create light pollution that results in unacceptable levels of light trespass. As such, the Project would result in **Less than Significant Impacts**. This, when considering the limited number of cumulative projects, none of which contribute the nighttime light impacts in the vicinity, Project impacts are **not expected to be cumulatively considerable**.

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## 4.10 TRAFFIC AND CIRCULATION

### 4.10.1 Introduction

Included in this sub-chapter of the EIR is a description of the existing circulation system that would provide access to and from the Project. This traffic analysis examines the impacts of adding the new project-generated traffic to existing and future traffic on the surrounding arterial network. Information for this sub-chapter of the EIR was derived from the following studies prepared for site evaluation.

- Austin-Foust Associates, Inc., *Big Rock Creek Project Traffic Impact Analysis,* March 2013. (*TIA*). (EIR Appendix 9)
- Stantec Consulting Services, Inc., *Lebata Big Rock Creek Project - 2012 Update*, February 8, 2012 (*TIA Addendum*). (EIR Appendix 9, Addendum)
- Stantec Consulting Services, Inc., *Deletion of Longview Road from Los Angeles County Master Plan of Highways Traffic Study*, August 2012 (TIA Second Addendum). (EIR Appendix 9, Second Addendum)

The *TIA* provided background future projections of Levels of Service (LOS) under a variety of scenarios, including with and without the Project, as well as cumulatively with and without the Project. The *TIA* also describes the thresholds of significance used to evaluate whether or not impacts are considered significant. The *TIA* examines the impacts of adding the new project-generated traffic to existing and future traffic on the surrounding arterial network.

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***17. Transportation/Traffic***

*Would the project:*

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

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

### 4.10.2 Regulatory Setting

The regulatory setting is derived from the Los Angeles County *Traffic Impact Analysis Report Guidelines (County TIA Guidelines)*, as well as the *Congestion Management Program* (*CMProg*) for the County of Los Angeles, and *Guide for Preparation of Traffic Impact Studies, State of California, December 2002 (Caltrans TIS Guidelines)* for the California Department of Transportation (Caltrans). Each is described more fully below.

#### 4.10.2.1 Traffic Impact Analysis Report Guidelines

The *County TIA Guidelines* require analysis of projects generating more than 500 daily trips, and specifies a study area within a one-mile radius of the project site. The Project will generate approximately 774 daily trips, and due to the long-distance nature of the truck traffic generated by the Project, the study area includes intersections up to eight miles from the project site and freeway segments as far as 40 miles from the site.

Los Angeles County utilizes the intersection capacity utilization (ICU) methodology for analysis of signalized study intersections. The ICU is a means of representing the peak hour volume to capacity (V/C) ratio at signalized intersections. The County assumes a capacity of 1,600 vehicles per hour per lane (vphpl) and 2,880 vehicles per hour (vph) for dual left-turns lanes. Project impacts are considered significant if the project related V/C increase is .04 or more at level of service (LOS) C, .02 or more at LOS D, or .01 or more at LOS E or F. This was used to develop the intersection threshold criteria presented in EIR Table 65 and EIR Table 66.

#### 4.10.2.2 Congestion Management Program

The Project is subject to a *CMProg* analysis if the project is not determined to be exempt under the *CMProg* guidelines for the County of Los Angeles. The goals of the *CMProg* are to reduce traffic congestion and provide a mechanism for coordinating land use development and transportation decisions. Each development project is required to be analyzed for impacts from measurable project-generated traffic and determine if the impacts will cause *CMProg* intersections or links to exceed their LOS standards, thereby requiring feasible mitigation measures to maintain the adopted LOS standard.

*CMProg* monitoring intersections where the Project will add 50 or more trips during the AM or PM weekday peak hours are to be analyzed. In addition, mainline freeway monitoring locations where the Project will add 150 or more trips in either direction during the AM or PM weekday peak hours are included. Although the Project adds less than 50 peak hour trips to any intersection, *CMProg* monitoring intersections, which are included in this analysis, include Fort Tejon Road at Pearblossom Highway/Avenue T and 82nd Street East at Pearblossom Highway. No *CMProg* mainline freeway monitoring locations are included in this analysis since the Project adds significantly less than 150 peak hour trips to any mainline freeway segment.

The *CMProg* utilizes the ICU methodology for determining project impacts, with the same capacity assumptions outlined above. For purposes of the *CMProg*, a significant impact occurs when the proposed project increases the V/C ratio by .02 or more, causing or worsening LOS F at the intersection.

#### 4.10.2.3 Caltrans TIS Guidelines

The Caltrans *TIS Guidelines* are designed to maintain a target LOS at the transition between LOS C and LOS D for freeway roadway segments and ramps. These guidelines require preparation of a Traffic Impact Study based upon the following criteria:

1. Generates over 100 peak hour trips assigned to a State highway facility.

2. Generates 50 to 100 peak hour trips assigned to a State highway facility – and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (LOS C or D).
3. Generates 1 to 49 peak hour trips assigned to a State highway facility – the following are examples that may require a full Traffic Impact Study or some lesser analysis:
    a. Affected State highway facilities experiencing significant delay; unstable or forced traffic flow conditions (LOS E or F).
    b. The potential risk for a traffic incident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.).
    c. Change in local circulation networks that impact a State highway facility (i.e., direct access to State highway facility, a non-standard highway geometric design, etc.).

### 4.10.3 Environmental Setting

The Project is located in a relatively remote and undisturbed area of the Antelope Valley off Avenue T in unincorporated Los Angeles County. Project traffic would access the site from an onsite roadway connecting to Avenue T. Avenue T is a two-lane undivided arterial with a 55-mph speed limit in the project vicinity.

Regional access to the Project vicinity is from State Route 14 to the Pearblossom Highway, a four-lane divided road, to its multi-way intersection with Fort Tejon Road and Avenue T (approximately eight miles west of the site). This portion of Pearblossom Highway is not designated as SR-138. Pearblossom Highway is designated as SR-138 on that portion traveling southeast and east beyond its multi-way intersection with Fort Tejon Road and Avenue T. From this intersection:

- SR-138 turns north and west along Fort Tejon Road, 47th Street East, and Palmdale Boulevard; and
- SR-138 (Pearblossom Highway) turns southeast and east as a two-lane undivided roadway to its intersection with Antelope Highway. At that intersection, Antelope Highway becomes SR-138, and Pearblossom Highway becomes SR-18.

**Westbound Haul Route**

As westbound traffic departs the Project, vehicles would turn left onto Avenue T, proceed to and turn left onto 106$^{th}$ Street East, then proceed to and turn right onto the Pearblossom Highway (SR-138). Vehicles would proceed along Pearblossom Highway (SR-138) to its multi-way intersection with Fort Tejon Road and Avenue T. At that intersection vehicles would bear left and remain on Pearblossom Highway (the non-SR-138 portion) to State Route 14. This westbound route serves to minimize truck travel the length of Avenue T to its intersection with Pearblossom Highway, avoiding densely residential areas, and avoiding other surface mining operations where trucks are exiting/entering those facilities.

The Project proposes the use of 106$^{th}$ Street East for westbound truck traffic for the following reasons:

- Westbound SR-138 is a one-lane roadway at its intersection with 106th Street East. On approach to this intersection, westbound traffic wishing to turn right 106th Street East merges into a dedicated right-turn-only lane directly onto 106th Street East. West of this intersection, SR-138 is a two-lane roadway, which permits westbound traffic to enter SR-138 via a free-lane. This configuration permits Project trucks entering SR-138 to do so safely without the need to merge into existing traffic.
- Eastbound SR-138 is a two-lane roadway at its intersection with 106th Street East with an additional dedicated left-turn lane onto 106th Street East. This left-turn lane is of sufficient length to accommodate several trucks. This configuration permits trucks returning to the Project from the west to safely exit the flow of traffic and await an opportunity to safely execute a left-hand turn onto 106th Street East.

**Eastbound Haul Route**

As eastbound traffic departs the Project, vehicles would turn right onto Avenue T, proceed to and turn right onto 165th Street East, then turn left onto the Pearblossom Highway (SR 138). Vehicles would then proceed east along Pearblossom Highway (SR 138), then either east along Pearblossom Highway (which becomes SR-18), or southeast along Antelope Highway (which becomes SR-138).

The Project proposes the use of 165th Street East for eastbound truck traffic for the following reasons:

- Westbound SR-138 is a two-lane roadway at its intersection with 165th Street East. On approach to this intersection, westbound traffic can merge into a dedicated right-turn-only lane directly onto 165th Street East. This right-turn lane is of sufficient length to accommodate several trucks. This configuration permits trucks returning to the Project from the east to do so safely without causing other westbound traffic to slow.
- Eastbound SR-138 is a two-lane roadway at its intersection with 165th Street East. Southbound 165th Street East is a two-lane roadway, with the right lane becoming a dedicated right-turn-only lane onto SR-138. Project trucks turning left onto SR-138 (eastward) have two lanes into which they may enter, before merging to the right-most lane. This configuration permits Project trucks entering SR-138 to do so safely due to the excellent line-of-sight in all directions.

### 4.10.3.1 Study Area Analysis Locations

The Project will provide a source for PCC- grade aggregate throughout southern California, and on-going construction projects will derive materials 24 hours a day from sources available, even if long-distance hauling is required. A generalized market demand has been identified with the Project serving the PCC grade aggregate material needs for Los Angeles County, Riverside County, San Bernardino County and Orange County locations. Providing a regional source for PCC-grade aggregate serves to reduce haul distances and the associated impacts. Based on these guidelines and the major market areas for aggregate materials, seven intersections and six State highway facility segments along the expected truck routes within the Project's sphere of influence have been included in the *TIA* for the AM and PM peak hours. These intersections and State highway segments are summarized in the following list:
truck routes within the Project's sphere of influence have been included in the *TIA* for the AM and PM peak hours. These intersections and State highway segments are summarized in the following list:

Intersections

1. Fort Tejon Rd (SR-138) & Pearblossom Hwy/Ave T
2. 82nd St East & Pearblossom Hwy (SR-138)
3. 106th St East & Pearblossom Hwy (SR-138)
4. 106th St East & Ave T
5. 116th St East & Ave T
6. 165th St East & Ave T
7. 165th St East & Pearblossom Hwy (SR-138)

State Highway Segments

1. SR-138 w/o Ave T
2. SR-138 e/o Ave T
3. SR-138 w/o I-15 Junction
4. SR-14 s/o SR-138 Junction
5. SR-14 n/o I-5 Junction
6. I-5 s/o SR-14 Junction

#### 4.10.3.2 Existing Traffic Conditions

Of the seven intersections identified for analysis, two are *CMProg* monitoring intersections. Existing peak hour intersection volumes are from counts taken in March 2007 and August 2008. The "peak hour" volume is determined from the highest four consecutive fifteen-minute periods between 7:00 and 9:00 AM and between 4:00 and 6:00 PM at each intersection, and might not be the same one-hour period from one intersection to the next. For example, the AM peak hour volume for the intersection of Fort Tejon Road at Pearblossom Highway/Avenue T occurs from 7:00 to 8:00 whereas the peak hour volume at 82nd Street at Pearblossom Highway occurs from 8:00 to 9:00. This ensures that the analysis evaluates the worst-case peak hour condition at each intersection.

Counts were collected for the approach volumes at 106th Street at Avenue T, 106th Street at Pearblossom Highway, 116th Street East at Avenue T, and 165th Street at Avenue T. The turning movement volumes for these intersections were estimated from the percentage of traffic from each leg and adjusted to balance the flow of traffic between adjacent intersections.

Note: Traffic counts were collected in 2012 to verify that the original count data is still valid. The results of the 2012 traffic counts reveal that traffic volumes overall in the study area have decreased since 2007 and 2008. Therefore, the traffic analysis is based on the original count data to provide a more conservative impact analysis.

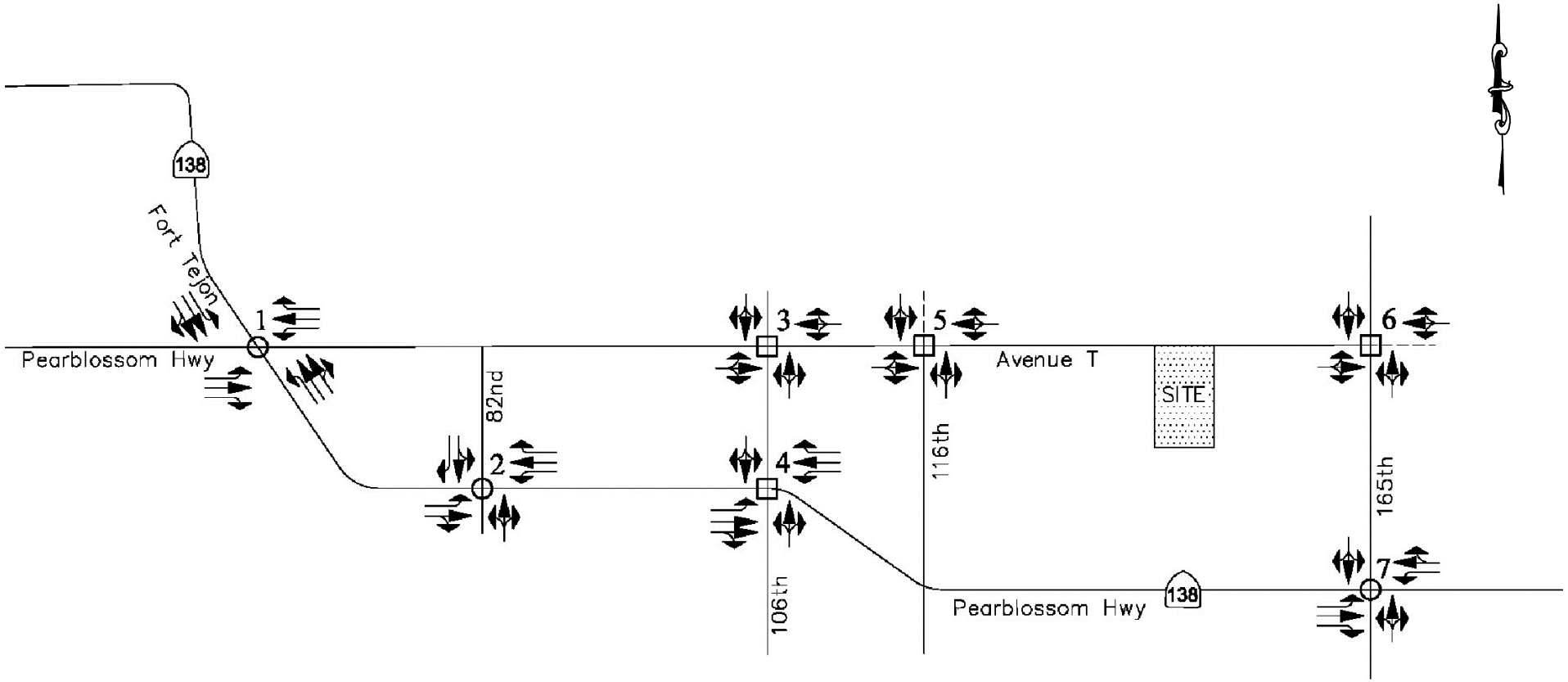
EIR Figure 47 illustrates the locations of the study intersections and the existing traffic control at each location. Existing AM and PM peak hour volumes are illustrated in EIR Figure 48. In addition, six State highway segments were included in the analysis. Existing State highway traffic volumes are from the most current count data available from Caltrans.

The LOS is a scale used to evaluate circulation system performance based on volume/capacity (V/C) ratios. The levels range from A to F, with LOS A representing free flow traffic and LOS F representing severe traffic congestion. Signalized intersections are evaluated using ICU methodology and stop-controlled intersections are evaluated using Highway Capacity Manual (HCM) delay methodology. EIR Table 60 describes each LOS.

**Table 60 Summary of Level of Service Descriptions – Intersections**

| LOS | Description | V/C Ratio |
|---|---|---|
| A<br>Free Flow | **Delay:** Very slight or no delay. If signalized, conditions are such that no approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.<br>**Maneuverability** – Turning movements are easily made and nearly all drivers find freedom of operation | 0.00 – 0.60 |
| B<br>Stable Flow | **Delay** –Slight delay. If signalized, an occasional approach phase is fully utilized.<br>**Maneuverability** – Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles. | 0.61 – 0.70 |
| C<br>Stable Flow | **Delay** – Acceptable delay. If signalized, a few drivers arriving at the end of a queue may occasionally have to wait through one signal cycle.<br>**Maneuverability** – Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted. | 0.71 – 0.80 |
| D<br>Approaching Unstable Flow | **Delay** – Tolerable delay. Delays may be substantial during short periods, but excessive back-ups do not occur.<br>**Maneuverability**– Maneuverability is severely limited during short periods due to temporary back-ups. | 0.81 – 0.90 |
| E<br>Unstable Flow | **Delay** – Intolerable delay. Delay may be great up to several signal cycles.<br>**Maneuverability** – There are typically long queues of vehicles waiting upstream of the intersection. | 0.91 – 1.00 |
| F<br>Forced Flow | **Delay** -- Excessive delay<br>**Maneuverability** – Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions. | > 1.00 |

Source: Highway Capacity Manual 2000, Transportation Research Board, National Research Council



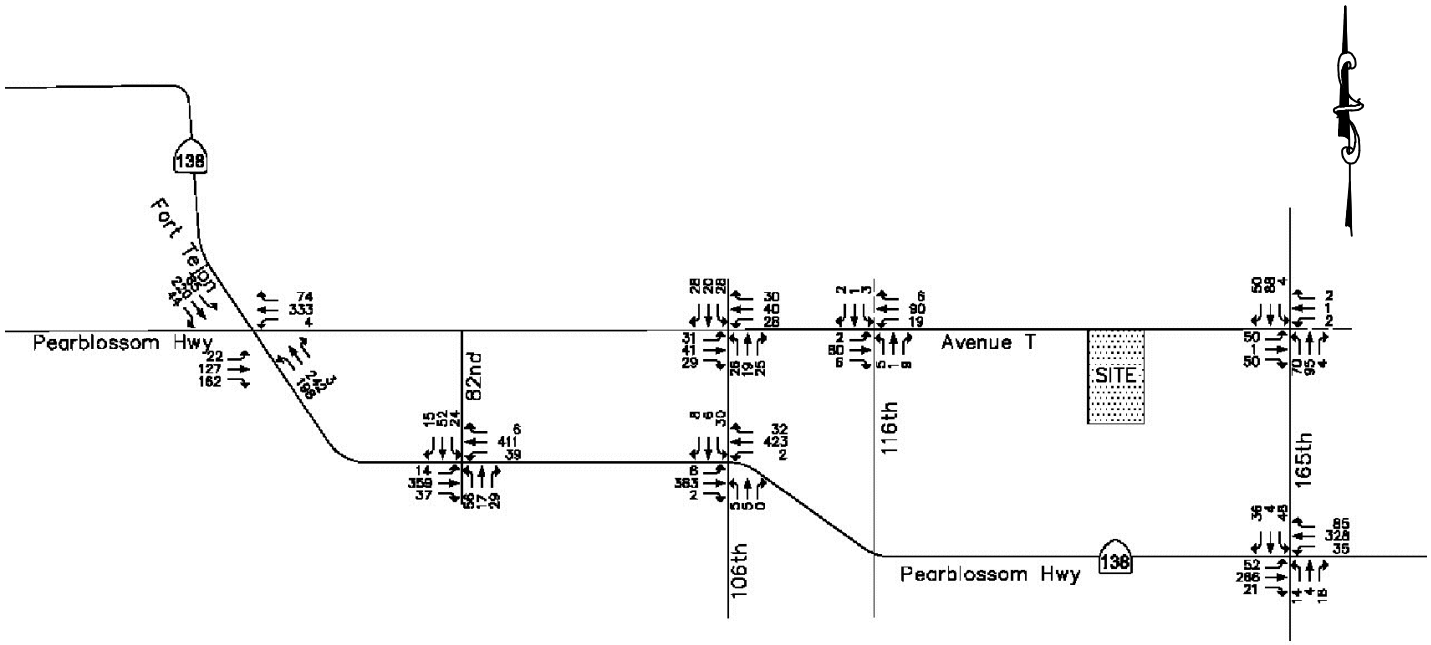

Legend

- Signalized study intersection
- Stop-controlled study intersection
- Dirt road

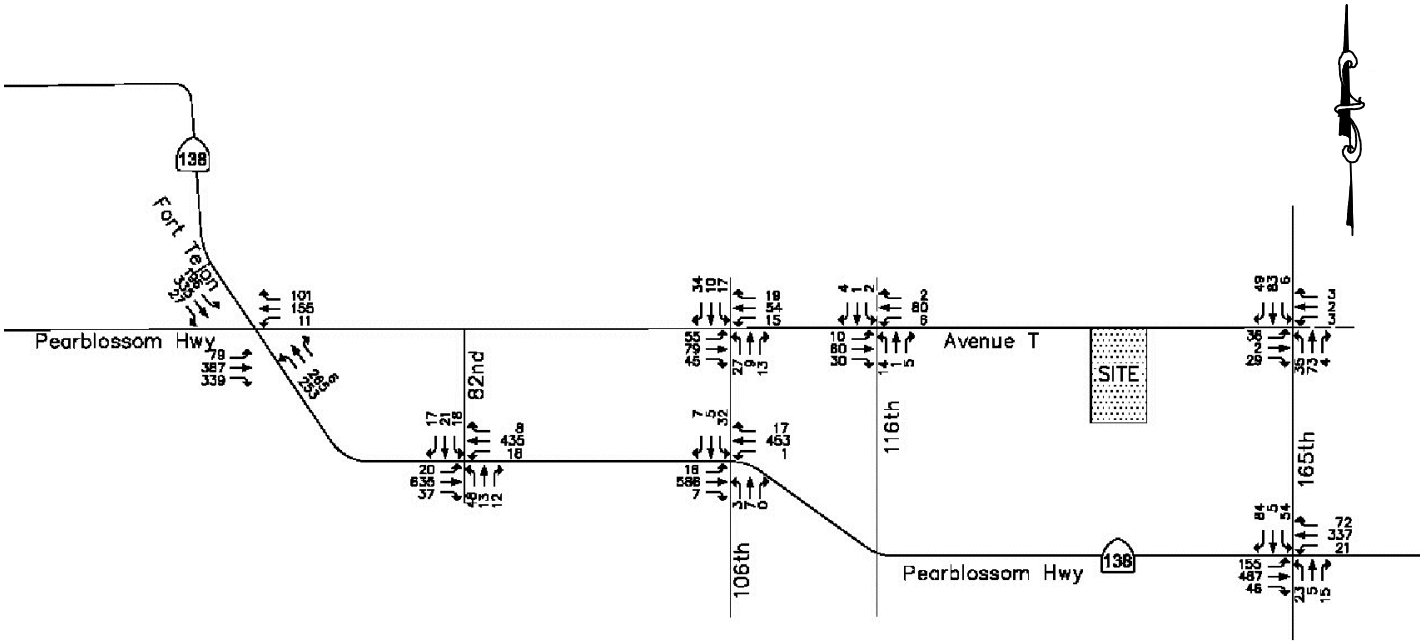
**Source:**
**Austin-Foust Associates, Inc.**
**Lebata Inc. Big Rock Creek Surface Mining Project**
**Traffic Impact Analysis**
**1134003 TIA Fig 2-1.dwg**

| Study Intersection Location and Existing Intersection Control<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 47 |
|---|---|
| SCALE: AS SHOWN | DATE: 3-8-2013 |

MC01 ADEIR.Fig47.dwg




**AM PEAK HOUR**




**PM PEAK HOUR**

**Source:**
**Austin-Foust Associates, Inc.**
**Lebata Inc. Big Rock Creek Surface Mining Project**
**Traffic Impact Analysis**
**1134003 TIA Fig 2-2.dwg**

| | |
|---|---|
| **Existing Peak Hour Intersection Volumes**<br>Big Rock Creek Site<br>Antelope Valley, California | **FIGURE 48** |
| **SCALE:** AS SHOWN | **DATE:** 3-8-2013 |

MC01 DEIR.Fig48.dwg

Existing LOS for the study intersections are presented in EIR Table 61. (Refer to EIR Appendix 9 –Traffic Impact Analysis, where Appendix A presents the intersection capacity utilization [ICU] calculations and Appendix B presents delay calculations.)

**Table 61 Intersection Level of Service (LOS) Summary – Existing Conditions**

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|---|
| | | ICU/Delay | LOS | ICU/Delay | LOS |
| 1. Fort Tejon & Pearblossom Hwy/Ave T | Signal | .56 | A | .66 | B |
| 2. 82nd St & Pearblossom Hwy | Signal | .52 | A | .67 | B |
| 3. 106th St & Ave T | Stop | 8.00 | A | 8.00 | A |
| 4. 106th St & Pearblossom Hwy | Stop | 20.00 | C | 27.00 | D |
| 5. 116th St E & Ave T | Stop | 10.00 | A | 10.00 | A |
| 6. 165th St & Ave T | Stop | 11.00 | B | 10.00 | B |
| 7. 165th St & Ave T | Signal | .46 | A | .54 | A |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| .00 – .60 A | 0.0 – 10.0 sec/veh A |
| .61 – .70 B | 10.1 – 15.0 sec/veh B |
| .71 – .80 C | 15.1 – 25.0 sec/veh C |
| .81 – .90 D | 25.1 – 35.0 sec/veh D |
| .91 – 1.00 E | 35.1 – 50.0 sec/veh E |
| Above 1.00 F | Above 50.0 sec/veh F |

Note: Signalized intersection LOS based on ICU, stop-controlled intersection LOS based on delay (sec/veh).

State highway segment LOS is summarized in EIR Table 62. Refer to EIR Appendix 9 –Traffic Impact Analysis, where Appendix C presents State highway segment density calculations). All State highway segments within the study currently operate at LOS D or better, with the exception of southbound I-5 south of SR-14, which currently operates at LOS F during the peak hour.

**Table 62 State Highway Segment Los Summary – Existing Conditions**

| Roadway Segment | Terrain | Dir | Number of Lanes | Percent Trucks | Peak Hour Volume | Density (pc/mi/ln) | LOS |
|---|---|---|---|---|---|---|---|
| SR-138 w/o Ave T | Level | EB | 2 | 10 | 743 | 6.2 | A |
| | | WB | 2 | 12 | 908 | 7.6 | A |
| SR-138 e/o Ave T | Level | EB | 2 | 9 | 810 | 6.7 | A |
| | | WB | 2 | 10 | 990 | 8.3 | A |
| SR-138 w/o I-15 | Level | EB | 1 | 9 | 833 | 13.8 | B |
| | | WB | 1 | 9 | 1,018 | 16.9 | B |
| SR-14 s/o SR-138 | Rolling | NB | 2 | 10 | 2,970 | 28.5 | D |
| | | SB | 3 | 10 | 3,630 | 22.2 | C |
| SR-14 n/o I-5 | Rolling | NB | 6 | 10 | 5,670 | 17.2 | B |
| | | SB | 5 | 10 | 6,930 | 26.0 | C |
| I-5 s/o SR-14 | Rolling | NB | 6 | 11 | 9,315 | 31.1 | D |
| | | SB | 6 | 11 | 11,385 | ** | F* |

* Denotes exceeds LOS D

** Denotes exceeds programmed calculated threshold range

Level of service ranges:

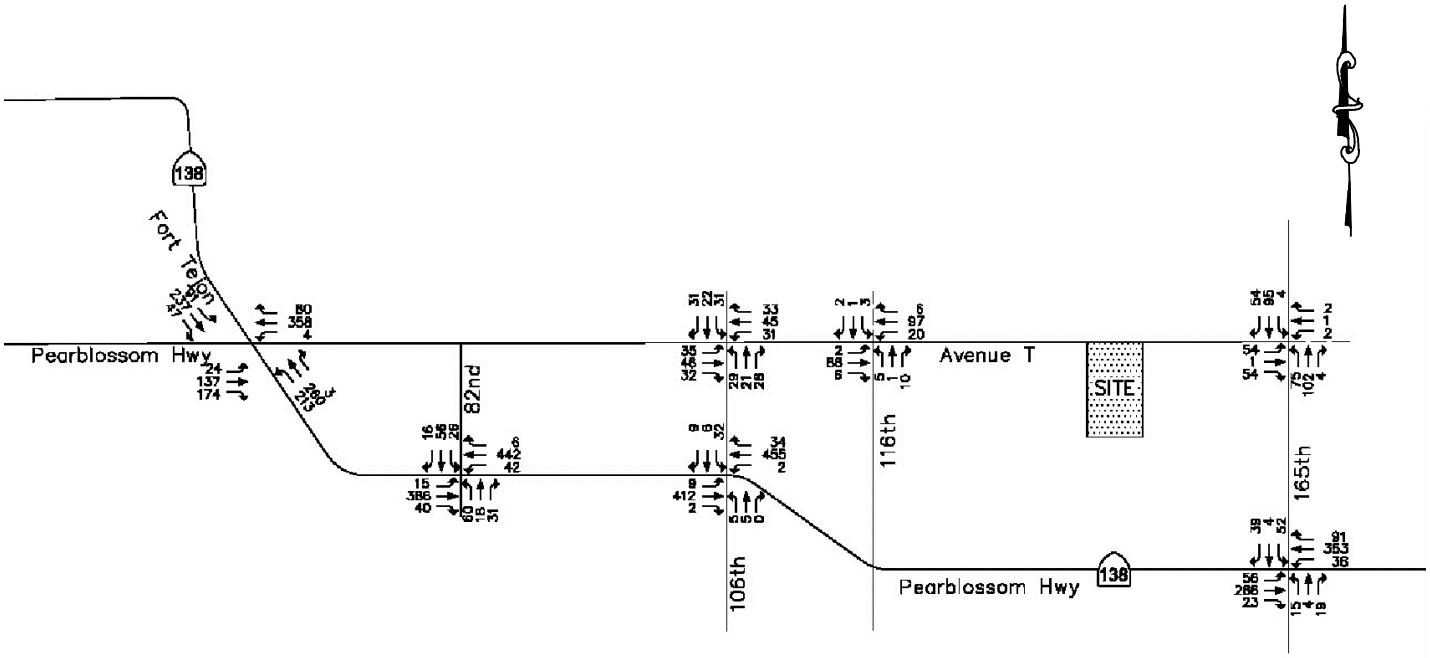
| Freeway Density | |
|---|---|
| 0 – 11.0 pc/mi/ln | A |
| 11.1 – 18.0 pc/mi/ln | B |
| 18.1 – 26.0 pc/mi/ln | C |
| 26.1 – 35.0 pc/mi/ln | D |
| 35.1 – 45.0 pc/mi/ln | E |
| Above 45.0 pc/mi/ln | F |

pc/mi/ln = passenger cars per mile per lane

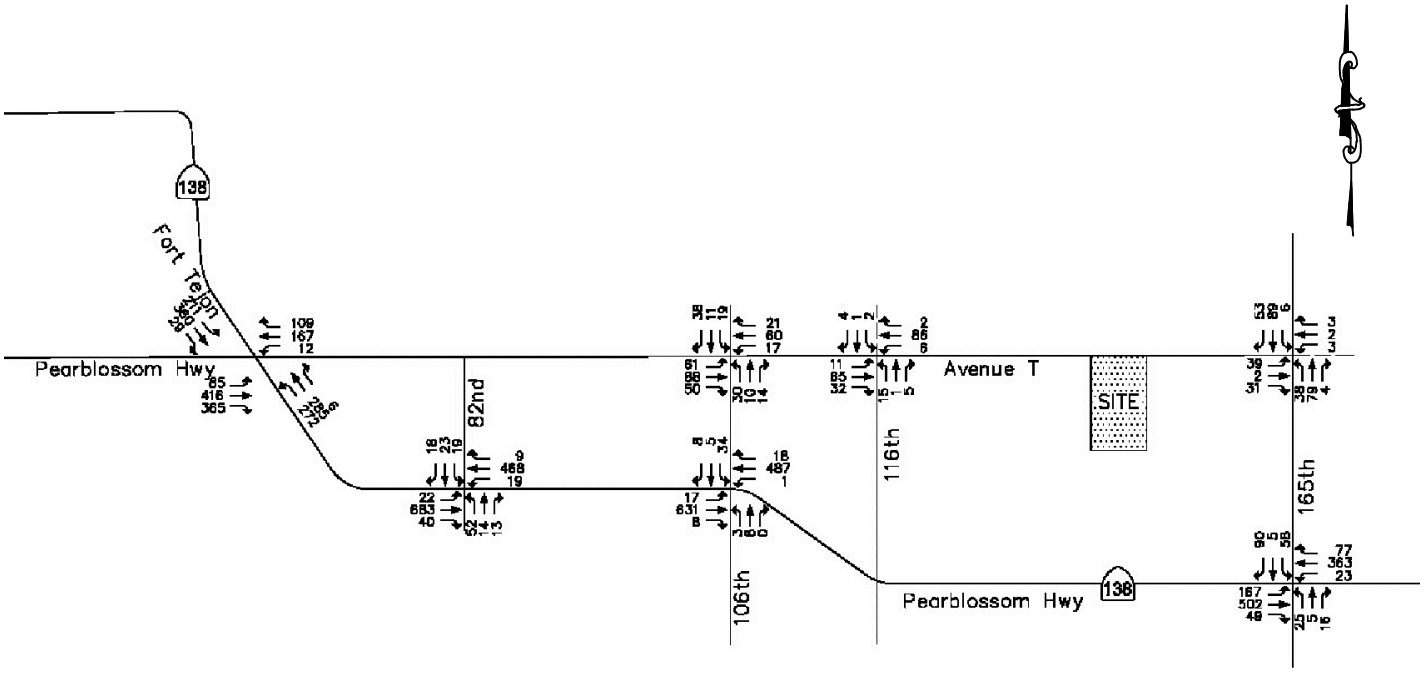
Note: Calculation of roadway segment LOS based on density is a surrogate for the speed-based LOS used by Caltrans for traffic operational analysis. LOS F(1) through F(3) designations are assigned where severely congested (less than 25 mph) conditions prevail for more than one hour, converted to an estimate of peak hour demand in the table above. Note that calculated LOS F traffic demands may therefore be greater than observed traffic volumes.

Note: It was decided in 2012 to conduct another count of the study intersections to determine if the original conclusions based on 2007/2008 traffic data are still valid. EIR Appendix 9, Addendum includes the *Lebata Big Rock Project – 2012 Update*, which serves to compare the 2007/2008 and 2012 ICU values for the Project. The ICU value is used to compare the old and new data at all of the study intersections to show the relative increase or decrease in traffic.

The original *TIA* (EIR Appendix 9) found a cumulative impact at two intersections (82nd Street and Pearblossum Highway, and 106th Street and Pearblossum Highway). The *Lebata Big Rock Project – 2012 Update* indicates that the peak hour volumes at these two intersections have decreased since the original analysis was performed. In addition, at the two intersections where there is a small increase in existing traffic during the PM peak hour (165th Street and Avenue T, and 165th Street and Pearblossum Highway), the intersections operate at LOS B or better with the addition of background growth, Project traffic, and cumulative projects described in the EIR Table 84. It was concluded the *TIA* (EIR Appendix 9) represents the more conservative analysis of Project impacts in the study area, and the original *TIA* conclusions remain valid.




**AM PEAK HOUR**




**PM PEAK HOUR**

**Source:**
**Austin-Foust Associates, Inc.**
**Lebata Inc. Big Rock Creek Surface Mining Project**
**Traffic Impact Analysis**
**1134003 TIA Fig 2-3.dwg**

| Short-Range No Project Peak Hour Intersection Volumes<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 49 |
|---|---|
| SCALE: AS SHOWN | DATE: 3-12-2013 |

MC01 DEIR.Fig49.dwg

### 4.10.3.3 Background Traffic Conditions

The Project is located in an undeveloped area of Los Angeles County. The opening year of the Project is estimated to be 2014. The County's *CMProg* forecasts a 118 percent growth from 2001 to 2025, which is equivalent to approximately 3.8 percent per year. To determine the short-range background peak hour intersection volumes, a 3.8 percent annual growth factor was applied to the existing roadway volumes. EIR Figure 49 illustrates the short-range no-Project peak hour volumes, and EIR 4.10.3.3 summarizes the short-range background LOS for the study intersections. All of the study locations will operate at LOS "D" or better under short-range no-project conditions.

The short-range background State highway segment volumes were estimated using a straight-line growth curve derived from year 2007 volumes to year 2025 volumes identified in *North County Combined Highway Corridors Study - Final Report*. The LOS for State highway segments are summarized in EIR Table 63, which reveals that the State highway segments within the study area will operate at LOS D or better during the peak hour under short-range background conditions, with the exceptions of SR-14 south of SR-138 and I-5 south of SR-14.

**Table 63 Intersection Los Summary – Short-Range Background Conditions**

| Intersection | Control Type | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|---|
| | | ICU/Delay | LOS | ICU/Delay | LOS |
| 1. Fort Tejon & Pearblossom Hwy/Ave T | Signal | .59 | A | .70 | B |
| 2. 82nd St & Pearblossom Hwy | Signal | .55 | A | .70 | B |
| 3. 106th St & Ave T | Stop | 8.00 | A | 8.00 | A |
| 4. 106th St & Pearblossom Hwy | Stop | 22.00 | C | 30.00 | D |
| 5. 116th St E & Ave T | Stop | 10.00 | B | 10.00 | A |
| 6. 165th St & Ave T | Stop | 12.00 | B | 11.00 | B |
| 7. 165th St & Pearblossom Hwy | Signal | .47 | A | .56 | A |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| .00 – .60 A | 0.0 – 10.0 sec/veh A |
| .61 – .70 B | 10.1 – 15.0 sec/veh B |
| .71 – .80 C | 15.1 – 25.0 sec/veh C |
| .81 – .90 D | 25.1 – 35.0 sec/veh D |
| .91 – 1.00 E | 35.1 – 50.0 sec/veh E |
| Above 1.00 F | Above 50.0 sec/veh F |

Note: Signalized intersection LOS based on ICU, stop-controlled intersection LOS based on delay (sec/veh).

**Table 64 State Highway Segment Los Summary – Short-Range Background Conditions**

| Roadway Segment | Terrain | Dir | Number of Lanes | Percent Trucks | Peak Hour Volume | Density (pc/mi/Ln) | LOS |
|---|---|---|---|---|---|---|---|
| SR-138 w/o Ave T | Level | EB | 2 | 10 | 900 | 7.5 | A |
| | | WB | 2 | 12 | 1,040 | 8.7 | A |
| SR-138 e/o Ave T | Level | EB | 2 | 9 | 1,070 | 8.9 | A |
| | | WB | 2 | 10 | 1,220 | 10.2 | A |
| SR-138 w/o I-15 | Level | EB | 1 | 9 | 1,190 | 19.7 | C |
| | | WB | 1 | 9 | 1,290 | 21.5 | C |
| SR-14 s/o SR-138 | Rolling | NB | 2 | 10 | 3,650 | 41.7 | E* |
| | | SB | 3 | 10 | 4,210 | 26.4 | D |
| SR-14 n/o I-5 | Rolling | NB | 6 | 10 | 6,590 | 20.1 | C |
| | | SB | 5 | 10 | 7,780 | 30.5 | D |
| I-5 s/o SR-14 | Rolling | NB | 6 | 11 | 12,900 | ** | F* |
| | | SB | 6 | 11 | 15,080 | ** | F* |

* Denotes exceeds LOS D

** Denotes exceeds programmed calculated threshold range

Level of service ranges:

| Freeway Density | |
|---|---|
| 0 – 11.0 pc/mi/ln | A |
| 11.1 – 18.0 pc/mi/ln | B |
| 18.1 – 26.0 pc/mi/ln | C |
| 26.1 – 35.0 pc/mi/ln | D |
| 35.1 – 45.0 pc/mi/ln | E |
| Above 45.0 pc/mi/ln | F |

pc/mi/ln = passenger cars per mile per lane

Note: Calculation of roadway segment LOS based on density is a surrogate for the speed-based LOS used by Caltrans for traffic operational analysis. LOS F(1) through F(3) designations are assigned where severely congested (less than 25 mph) conditions prevail for more than one hour, converted to an estimate of peak hour demand in the table above. Note that calculated LOS F traffic demands may therefore be greater than observed traffic volumes.

### 4.10.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system.

Expanding upon this threshold criterion more definitively, the Project may have a significant effect in terms of Traffic and Circulation if it would:

- Conflict with an applicable congestion management program (CMProg), including, but not limited to, level of service standards and travel demand measures, or other standards established by the CMP for designated roads or highways.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

The Project is also subject to analysis criteria contained in the *County TIA Guidelines*, as well as the *CMProg* for the County of Los Angeles, and *Caltrans TIS Guidelines*. In considering the requirements of these documents, the following threshold criteria were identified. Project impacts are considered significant if the project related V/C increase is .04 or more at level of service (LOS) C, .02 or more at LOS D, or .01 or more at LOS E or F, as is summarized in EIR Table 65.

**Table 65 Intersection Threshold Criteria**

| Pre-Project | | |
|---|---|---|
| **LOS** | **V/C** | **Project V/C Increase** |
| C | 0.71 to 0.80 | 0.04 or more |
| D | 0.81 to 0.90 | 0.02 or more |
| E/F | 0.91 or more | 0.01 or more |
| Source: Los Angeles County Traffic Impact Analysis Report Guidelines. | | |
| **Pre-Project** | | |
| **LOS** | **Delay** | **Project Delay Increase** |
| C | 0 to 25 sec/veh | Cause LOS D or worse |
| D | 25.1 to 35 sec/veh | 5 sec/veh or more |
| E/F | 35.1 sec/veh or more | 2.5 sec/veh or more |
| Source: Los Angeles County Department of Public Works Staff. | | |

The ICU methodology assumes signalization of the intersection. Four study intersections are currently stop-controlled. For these study intersections, the HCM delay methodology was utilized to determine the intersection LOS and project impacts. Project impacts are considered significant if the project causes a stop-controlled intersection to worsen from LOS A, B, or C to LOS D, E, or F, increases the average delay at LOS D by 5 seconds per vehicle, or increases the average delay at LOS E or F by 2.5 seconds/vehicle. The Project's impacts on two-lane roadways used for Project access (i.e., Avenue T) was assessed utilizing the threshold criteria summarized in EIR Table 66.

**Table 66 Two-Lane Roadways Threshold Criteria**

| Directional Split | Total Capacity (PCPH) | Percentages Increase in Passenger Car Per Hour (PCPH) by Project Pre-Project LOS | | |
|---|---|---|---|---|
| | | **C** | **D** | **E/F** |
| 50/50 | 2,800 | 4 | 2 | 1 |
| 60/40 | 2,650 | 4 | 2 | 1 |
| 70/30 | 2,500 | 4 | 2 | 1 |
| 80/20 | 2,300 | 4 | 2 | 1 |
| 90/10 | 2,100 | 4 | 2 | 1 |
| 100/0 | 2,000 | 4 | 2 | 1 |
| Source: Los Angeles County Traffic Impact Analysis Report Guidelines. | | | | |

### 4.10.5 Impact Analysis

#### 4.10.5.1 Relevant Project Characteristics

##### 4.10.5.1.1 *Days and Hours of Operation*

Days and hours of operation for the Project are presented below in EIR Table 67.

**Table 67 Days and Hours of Operation**

| Activity | Days of the Week [1] | Normal Hours of Operation |
|---|---|---|
| **Mining Excavation** | Mon.-Sat. | 4:00 am to 10:00 pm, depending on time of year (no nighttime mining) |
| **Aggregate Processing** | Mon.-Sat. | 24 hours per day |
| **Ready-Mixed Concrete Plant operations** | Mon.-Sat. | 24 hours per day |
| **Vac-Lite Plant operations** | Mon.-Sat. | 24 hours per day |
| **Asphaltic Concrete Plant operations** | Mon.-Sat. | 24 hours per day |
| **Cement Transfer Station operations** | Mon.-Sat. | 24 hours per day |
| **Raw Cement Distribution operations** | Mon.-Sat. | 24 hours per day |
| **Equipment Fueling and Maintenance** | 7 Days | 24 hours per day |
| **Loading, Trucks Entering or Departing** | Mon.-Sat. | 24 hours per day |

[1] Contracts often require that the suppliers of PCC-grade aggregate provide materials on a 24-hour basis. In addition, these projects may necessitate County approval of Sunday operations on a project-specific basis. These contracts involve large-scale projects, such as highway resurfacing by Caltrans, major public works road projects, and U.S. Army Corps of Engineer projects, among others.

##### 4.10.5.1.2 *Vehicle Trips*

Production levels of Project-related products would vary over time as will product-related truck traffic. To estimate truck traffic, two different rates of production are described: (1) Annual Average; and (2) Annual Peak. The daily truck trip estimates for both scenarios presented below in EIR Table 68 are "worst case" and are based on the following assumptions:

- 25-ton capacity haul trucks are used for outgoing deliveries of aggregate products;
- 9-cubic yard trucks are used for outgoing deliveries of ready-mixed concrete products;
- Railcars are used to deliver raw cement to the Project;
- 25-ton capacity hauls trucks are used for outgoing deliveries of bulk raw cement;
- 20-ton capacity hauls trucks are used for outgoing deliveries of asphalt;
- 24-hour aggregate processing operating day; and
- 80 percent of the haul trucks would deliver materials to third parties or owner-operated industrial plants and facilities in the greater Los Angeles area, while 20 percent would travel to the third parties or owner-operated industrial plants and facilities in the Riverside/San Bernardino market area.

**Table 68 Truck Trips**

| | Average Daily Loads | Peak Daily Loads |
|---|---|---|
| **Truck Trips – Outgoing Deliveries** | | |
| **Aggregate Products** | 70 | 112 |
| **Ready-Mixed Concrete** | 55 | 82 |
| **Asphaltic Concrete** | 33 | 50 |
| **Raw Cement** | 35 | 32 |
| **Truck Trips – Incoming Deliveries** | | |
| **Fly Ash and Ad-Mixtures** | 7 | 7 |
| **Raw Cement for Ready-Mixed Concrete Plant** | 0 | 0 |
| **Asphaltic Oil** | 2 | 3 |
| **Fuel, service Vehicles, Other** | 15 | 15 |
| **TOTAL** | 217 | 301 |

Note: Lebata currently has no rail transport option to receive raw cement from Northern California, primarily the Sacramento area, by rail and stored in onsite silos. To provide the capability, a Raw Cement and Aggregate Transfer and Distribution Facility is proposed on approximately 9.2 acres of the North Parcel, adjacent to and immdeiately north of the existing Union Pacific railroad tracks (EIR Figure 6 – Facilities Site Plan). If so constructed, the Project would receive approximately 300,000 tons of raw cement annually, which would be transferred pneumatically from the rail cars into two adjacent silos. Raw cement would be used onsite as a component of ready-mixed concrete at the Ready-Mixed Concrete Plant and the remainder would be pneumatically loaded from the silos into raw cement haul trucks for transport by truck to third parties or operator-owned concrete plants in the Greater Los Angeles, and the San Bernardino and Riverside areas. In addition, if such a facility is constructed, aggregate materials would be delivered by rail from the Project to the Los Angeles Basin, resulting in a substantial reduction in aggregate delivery related truck trips.

However, the rail carriers have little available rail capacity and currently do not consider either type of commodity a "preferred cargo" for rail shipment. In addition, receiver stations or commitments needed from the Rail authorities to make this economically viable are not available at the present time. As such, it is possible the proposed rail spur may not be constructed to receive raw cement deliveries or receive and transport aggregate materials. If not, the Project would take truck delivery of raw cement for its use onsite at the Ready-Mixed Concrete Plant, which would result in substantially fewer truck trips than indicated for Raw Cement in EIR Table 68, making the analysis of raw cement related truck trips presented herein conservative.

All finished products would be stockpiled, and products would be transported offsite via haul trucks with a 25-ton capacity. Daily production levels would vary based on market demand. Peak daily production would be limited to the physical capabilities of the processing equipment, which is capable of processing 5,200 tons per day (650 tons per hour).

The *TIA* evaluated project impacts during the peak hour of adjacent street traffic which is assumed to occur from 7:00 to 8:00 AM and 5:00 to 6:00 PM; although, the background intersection peak hour volumes actually represent the highest four consecutive fifteen-minute periods between 7:00 to 9:00 AM and 4:00 to 6:00 PM at each intersection. This ensures a worst-case analysis of the project impacts.

Project trips would consist of employee trips and truck trips. Employee shifts would be scheduled to avoid employee traffic during the weekday peak hours of 7:00 to 9:00 AM and 4:00 to 6:00 PM. The truck trips would be comprised of owner-operated plant deliveries and outside customer deliveries.

Ten other owner-operated industrial plants and facilities in Los Angeles, Riverside, San Bernardino, and Ventura Counties would be receiving deliveries from the Project. A fleet of haul trucks would be used to make scheduled deliveries to these other industrial plants and facilities on a daily basis. Each haul truck would make two daily deliveries, a morning delivery and an evening delivery, with the exception of 11 haul trucks that would make three daily deliveries to the plant in Sun Valley. The morning deliveries would leave the Project between 5:00 AM and 5:20 AM. Trucks will be loaded and parked onsite the night before and would be ready to leave when the drivers arrive at 5:00 AM. The entire fleet of haul trucks would be on the road by 5:20 AM and would be out of the study area before the AM peak period begins (7:00 AM). The haul trucks will make deliveries and return to the Project before the PM peak period begins (4:00 PM) to be loaded for the evening deliveries. Drivers for the evening deliveries would arrive and begin their deliveries after the PM peak period ends (6:00 PM).

A relatively small amount of Project truck traffic would consist of deliveries to outside customers. These deliveries would occur throughout the morning. Approximately 27 daily deliveries are assumed to outside customers with approximately nine deliveries occurring during the AM peak hour (7:00 to 8:00 AM). No deliveries to outside customers are assumed during the PM peak hour (5:00 to 6:00 PM).

Assumptions made regarding the truck delivery schedule are summarized in EIR Table 69.

The project will operate up to 303 days per year, employing 156 people, including plant operators and truck drivers, working two or three shifts per day, six days per week depending on the type of facility. The maximum number of employees working per shift will be 88, the vast majority of which would be delivery truck drivers. The number of employees by shift and type of facility operations are as follows:

- Surface Mining and Aggregate Processing Facilities (19 roundtrips: 19 employees, two shifts, followed by a maintenance shift)
- Ready-Mixed Concrete Plant (26 roundtrips: 26 employees, two shifts)
- Vac-Lite Plant (no additional employees, 2 shifts)
- Asphalt Mixing Plant (five roundtrips: five employees, one shift)
- Raw Cement and Aggregate Transfer and Distribution Facility (90 roundtrips: 90 employees, three shifts)
- Shop, maintenance and sales (16 roundtrips: 16 employees, two shifts)

**Table 69 Truck Delivery Summary**

| Destination | Pre-AM Peak Hour (12:00 AM – 7:00 AM) | | AM Peak Hour (7:00 AM - 8:00 AM) | | Mid-Day (8:00 AM – 5:00 PM) | | PM Peak Hour (5:00 PM – 6:00 PM) | | Post-PM Peak Hour (6:00 PM – 12:00 AM) | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | In | Out | In | Out | In | Out | In | Out | |
| Gardena plant | 0 | 20 | 0 | 0 | 20 | 0 | 0 | 0 | 19 | 19 | 78 |
| Long Beach plant | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | 9 | 9 | 38 |
| Torrance plant | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 5 | 20 |
| Los Angeles plant | 0 | 29 | 0 | 0 | 29 | 0 | 0 | 0 | 28 | 28 | 114 |
| Downey plant | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 8 |
| Sun Valley plant | 0 | 11 | 0 | 0 | 22 | 11 | 0 | 0 | 11 | 11 | 66 |
| Lancaster plant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 8 |
| Ventura plant | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 7 | 28 |
| Perris plant | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 6 | 6 | 24 |
| Rialto plant | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 6 | 6 | 24 |
| Outside Customers | 0 | 9 | 9 | 9 | 18 | 9 | 0 | 0 | 0 | 0 | 54 |
| **TOTAL** | 0 | 105 | 9 | 9 | 125 | 20 | 0 | 0 | 97 | 97 | 462 |

The project is forecast to generate 18 truck trips in the AM peak hour (7:00 to 8:00 AM) and no truck trips during the PM peak hour (5:00 to 6:00 PM). Employee shifts will be scheduled so that no employee trips occur during the AM or PM peak periods. The total trip generation is summarized in EIR Table 70.

**Table 70 Trip Generation Summary**

| Trip Generation | Amount | Unit | AM Peak Hour (7:00 AM – 8:00 AM) | | | PM Peak Hour (5:00 PM – 6:00 PM) | | | ADT |
|---|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total | |
| **Mining Facility** | 1 | Site | 9 | 9 | 18 | 0 | 0 | 0 | 462 |
| **Employee** | 156 [1] | Emp | 0 | 0 | 0 | 0 | 0 | 0 | 312 |
| **TOTAL** | | | 9 | 9 | 18 | 0 | 0 | 0 | 774 |

[1] 24 hours operation with 2-3 shifts

#### 4.10.5.1.3 *Trip Distribution*

Approximately 88 percent of the haul trucks making deliveries to the owner-operated or third-party industrial plants and facilities are oriented toward the Los Angeles area and 12 percent are oriented toward the Riverside/San Bernardino area. The general directional distribution of outside customer delivery truck traffic is determined by market demand, but typically 80 percent of the trucks will deliver materials to the greater Los Angeles market area, while 20 percent will travel to the Riverside/San Bernardino market area. The trucks oriented toward the greater Los Angeles market area will travel from the Antelope Valley Freeway (SR-14) along SR-138, 106th Street East, and Avenue T to the project site. The trucks oriented toward the Riverside/San Bernardino market area will travel from I-15 along SR-138, 165th Street East, and Avenue T to the site. Employee trips will be oriented toward residential areas in the region and are not limited to truck routes.

EIR Figure 50 illustrates the general project truck distribution, and EIR Figure 51 illustrates the general employee distribution. Peak hour and daily project trips are illustrated in EIR Figure 52.

#### 4.10.5.1.4 *Passenger-Car Equivalent Factor*

Vehicles larger than passenger cars have a proportionately greater effect on traffic flow. Therefore, for the impact analysis, each project truck vehicle count was given more weight by applying the passenger car equivalent (PCE) factors contained in the HCM, which are summarized in EIR Table 71. The freeway PCE factors are different from the PCE factor used at intersections. A PCE of 2.0 is used at intersections under level terrain conditions.

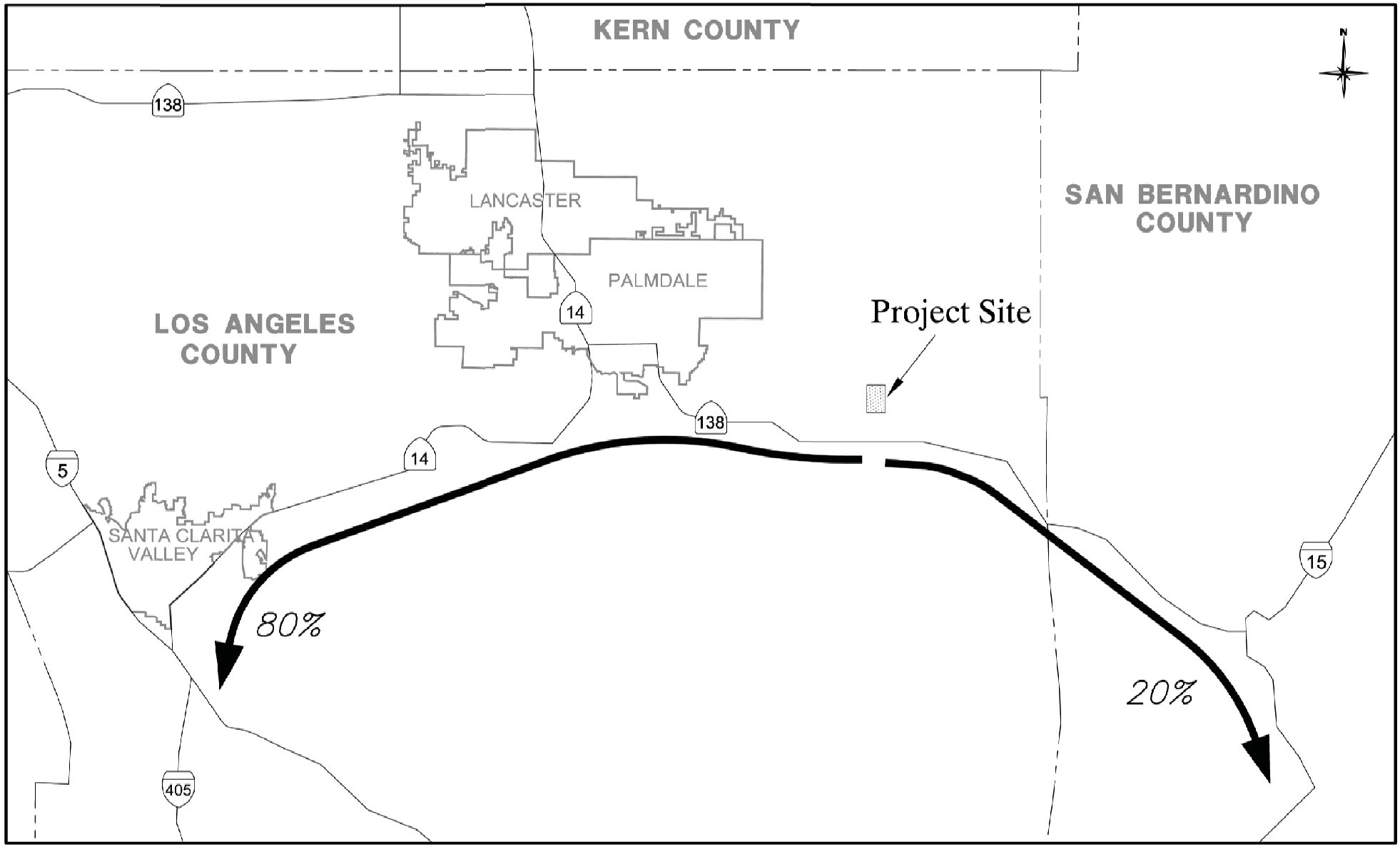
**Table 71 Passenger-Car Equivalent Factor On Extended General Freeway Segments**

| PCE Factor | Type of Terrain | | |
|---|---|---|---|
| | Level | Rolling | Mountainous |
| $E_T$ (trucks and buses) | 1.5 | 2.5 | 4.5 |
| $E_R$ (RVs) | 1.2 | 2.0 | 4.0 |
| Source: Highway Capacity Manual 2000 – Exhibit 21-8 | | | |

The six respective State highway segments have been defined in EIR Table 72 as either level, rolling, or mountainous based on the terrain. Peak hour project truck trips used in this analysis on the freeway segments have been converted to PCE volumes based on the State highway segment terrain and the corresponding PCE factor from EIR Table 71. Project truck trips at intersections have been converted to PCE volumes based on a PCE factor of 2.0.

**Table 72 Project Passenger-Car Equivalent Volumes**

| State Highway Segment | Terrain Type | Project Distribution | Project Truck Volume | PCE Factor | Project PCE Volume |
|---|---|---|---|---|---|
| SR-138 w/o Ave T | Level | 80% | 14 | 1.5 | 21 |
| SR-138 e/o Ave T | Level | 20% | 14 | 1.5 | 21 |
| SR-138 w/o I-15 | Level | 20% | 4 | 1.5 | 6 |
| SR-14 s/o SR-138 | Rolling | 80% | 14 | 2.5 | 35 |
| SR-14 n/o I-5 | Rolling | 80% | 14 | 2.5 | 35 |
| I-5 s/o SR-14 | Rolling | 80% | 14 | 2.5 | 35 |




MCG100 Confidential/Drafting 2008/figures 20-23 and 48-58.dwg

Austin-Foust Associates, Inc.
1134003tiaFig3-1.dwg

Source: West Coast Environmental, 01-20-09

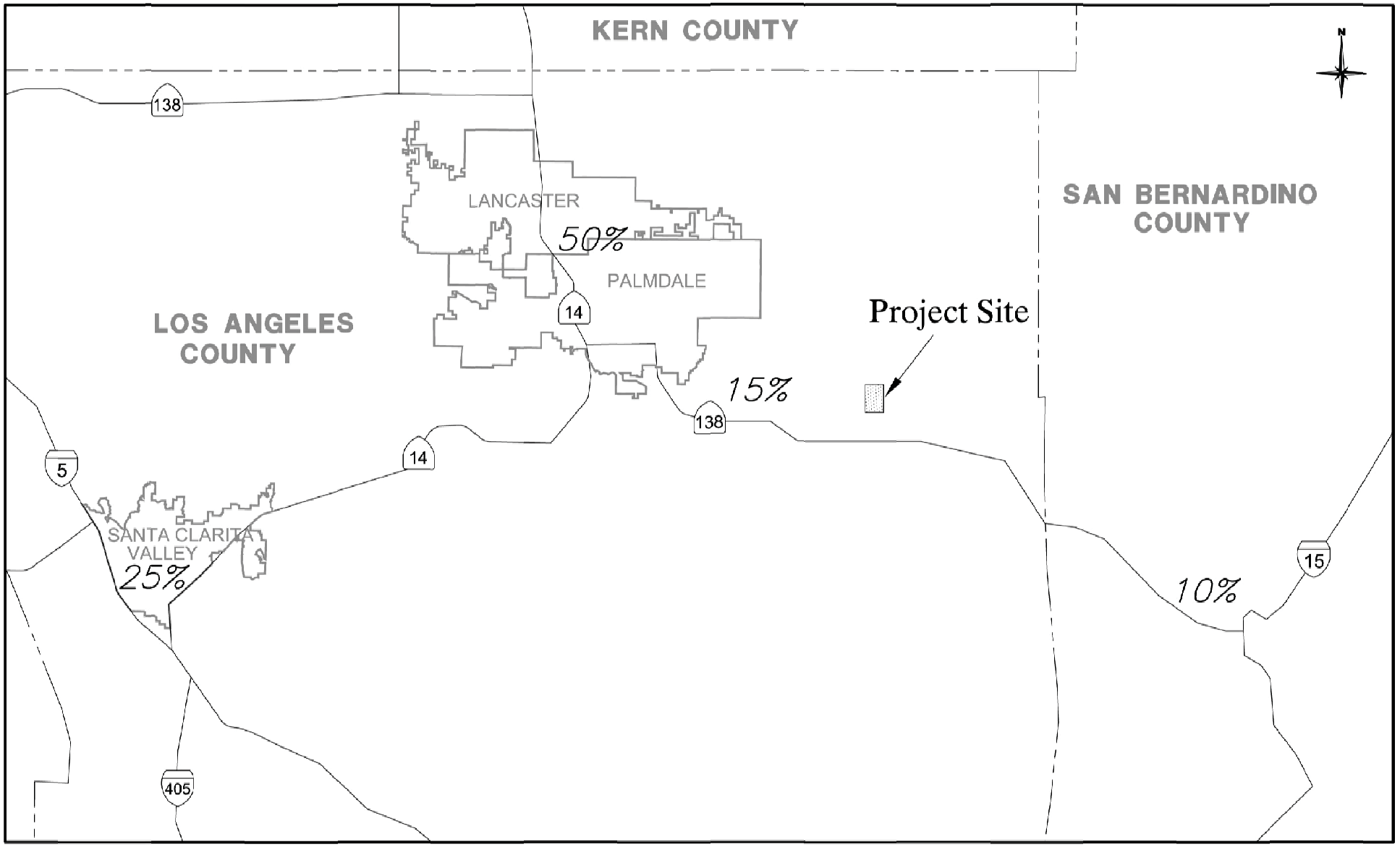
Trucks

Project Trip Distribution
Big Rock Creek Site
Antelope Valley, California

FIGURE 50

Scale: N/A

Date: 3-13-2012




Austin-Foust Associates, Inc.
1134003tiaFig3-2.dwg

Source: West Coast Environmental, 01-20-09

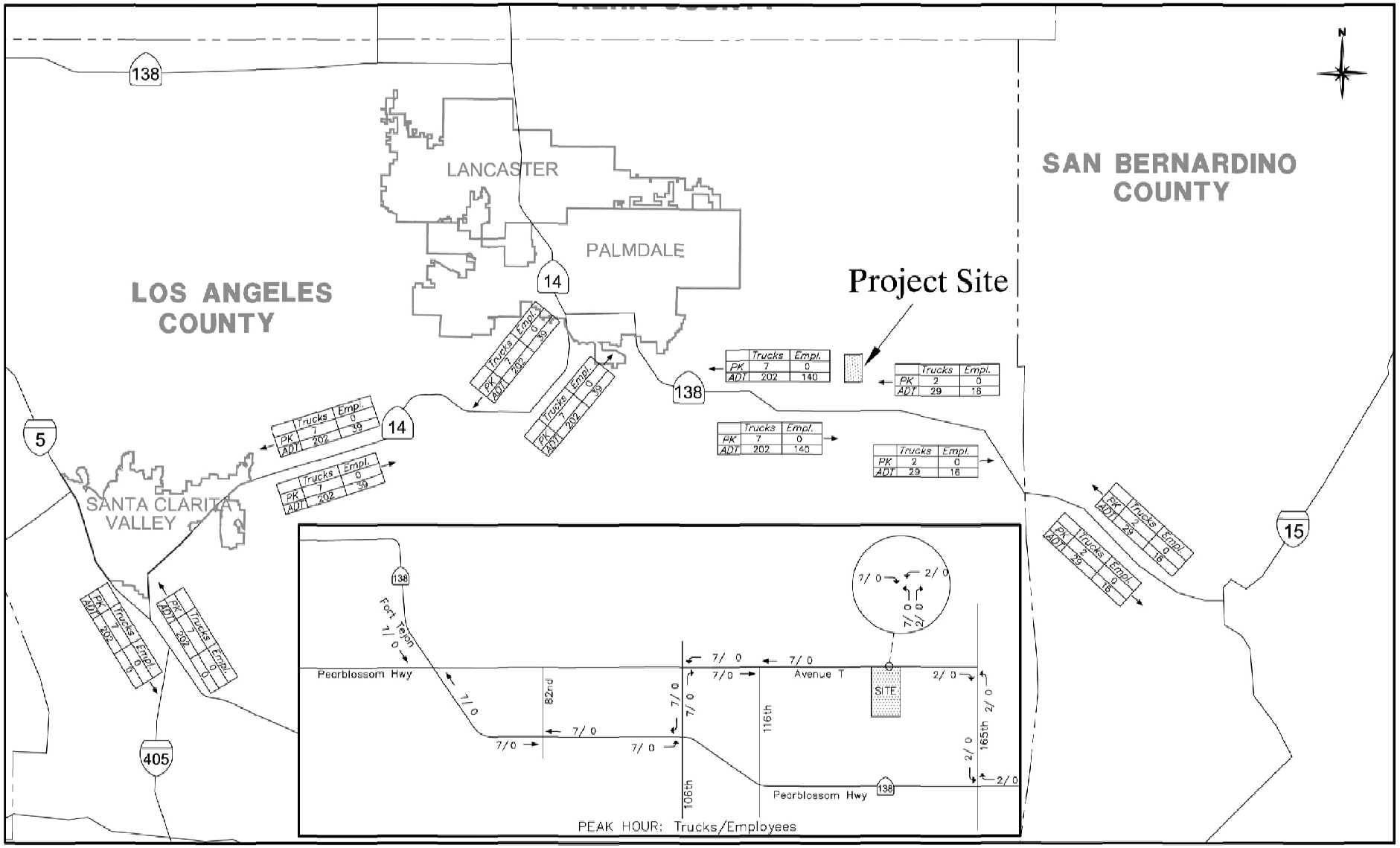
Employees
Project Trip Distribution
Big Rock Creek Site
Antelope Valley, California

FIGURE 51

Scale: N/A

Date: 3-13-2012

MCG100 Confidential/Drafting 2008/figures 20-23 and 48-58.dwg




Austin-Foust Associates, Inc.
1134003tiaFig3-3.dwg

Source: West Coast Environmental, 01-20-09

| Project Generated Volumes<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 52 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

MCG100 Confidential/Drafting 2008/figures 20-23 and 48-58.dwg

### 4.10.5.2 Analysis Methodology

Traffic volumes generated by the Project are incrementally added to future forecast volumes before evaluating the Project impacts to intersection and State highway roadway segment LOS and capacity. In conformance with the County of Los Angeles requirements, AM and PM peak hour intersection operations at signalized locations are evaluated using ICU methodology. Caltrans locations are analyzed using methodology contained in the HCM. The principal objectives are to determine the anticipated traffic impacts that would likely result from the Project, and to recommend improvements and modifications necessary to improve roadway capacities and operational efficiencies to mitigate those impacts attributed directly to Project traffic. The *County TIA Guidelines* require identification of traffic impacts under background (i.e., opening day) and cumulative conditions.

### 4.10.5.3 Impacts Determined to be Less than Significant/No Impact

#### 4.10.5.3.1 *Background-plus-Project Conditions*

Background-plus-Project volumes were generated by adding the Project PCE volumes to the AM and PM peak hour Short-Range Background (Project opening year) volumes. These combined volumes are illustrated in EIR Figure 53 - Short-Range-with-Project (PCE) Peak Hour Intersection Volumes. The County of Los Angeles defines a significant impact at a signalized intersection as a project-related V/C increase of .04 or more at LOS C, .02 or more at LOS D, or .01 or more at LOS E or F. At stop-controlled intersections, a significant impact is defined as a worsening from LOS A, B, or C to LOS D, E, or F, an increase in the average delay at LOS D by 5 seconds per vehicle, or an increase in the average delay at LOS E or F by 2.5 seconds/vehicle as a result of the proposed project. The results of this analysis indicate that the addition of Project traffic does not cause a significant impact to any of the study intersections, which results in **Less than Significant Impacts**.

The Project's impacts on the two-lane roadway providing the main access to the Project are summarized in EIR Table 74. As this table indicates, Avenue T west and east of the Project will operate at LOS A with the addition of Project traffic. Therefore, the Project results in **Less than Significant Impacts** on these two-lane roadway segments.

EIR Table 75 summarizes the State highway segments LOS. A significant impact on the State highway segments is defined as a change from LOS A, B, or C to LOS D, E, or F. Two segments will operate at LOS D, one segment will operate at LOS E, and two segments will operate at LOS F. However, the Project does not cause the segments to operate at LOS D, E, or F. Therefore, the Project results in **Less than Significant Impacts** on the State highway segments.

Peak hour intersection delay for the study intersections along SR-138 under Caltrans jurisdiction is summarized in EIR Table 76. As this table shows, the intersection of 106th Street East at Pearblossom Highway will operate at LOS D, during the AM peak hour, and LOS E, during the PM peak hour. Because the Project does not cause a change in the LOS at this location it results in **Less than Significant Impacts** and **does not cause a significant change** to the study intersections under Caltrans guidelines.

The Project does not conflict with the CMProg nor does it substantially increase hazards due to a design feature.

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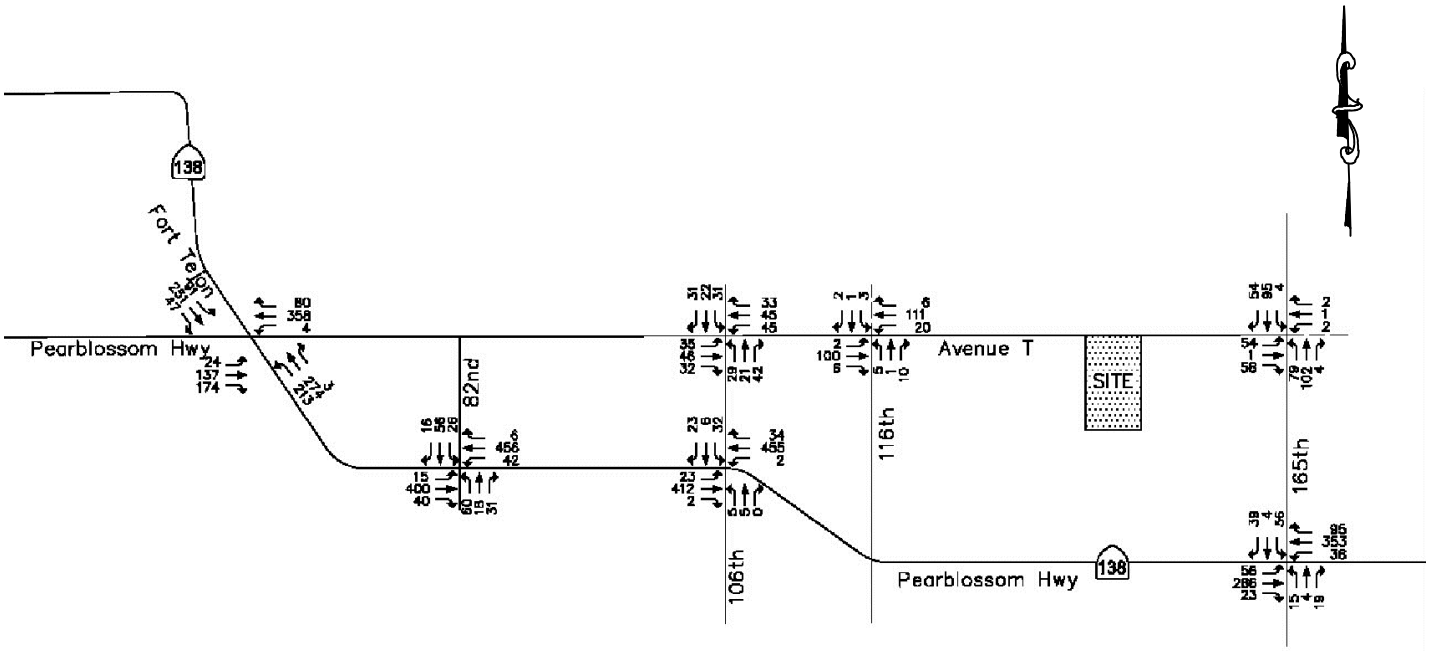
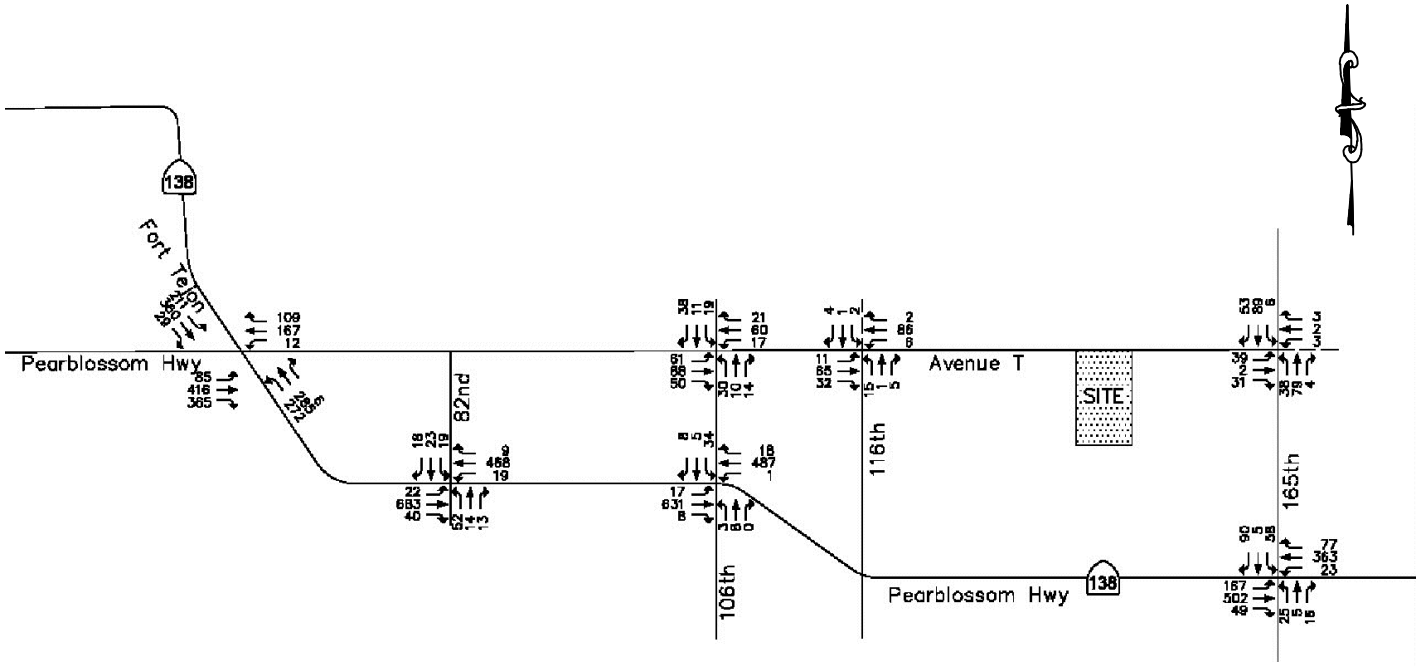



**AM PEAK HOUR**




**PM PEAK HOUR**

**Source:**
**Austin-Foust Associates, Inc.**
**Lebata Inc. Big Rock Creek Surface Mining Project**
**Traffic Impact Analysis**
**1134003 TIA Fig 3-4.dwg**

| | |
|---|---|
| **Short-Term-with-Project (PCE) Peak Hour Intersection Volumes**<br>Big Rock Creek Site<br>Antelope Valley, California | **FIGURE 53** |
| **SCALE:** AS SHOWN | **DATE:** 3-8-2013 |

MC01 DEIR.Fig53.dwg

**Table 73 Intersection LOS Summary – Short-Range Background-plus-Project**

| Intersection | Control Type | Short-Range Background | | | | Short-Range Background + Project | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | Project Increase | |
| | | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | AM | PM |
| 1. Fort Tejon & Pearblossom Hwy/Ave T | Signal | .59 | A | .70 | B | .59 | A | .70 | B | .01 | .00 |
| 2. 82nd St & Pearblossom Hwy | Signal | .55 | A | .70 | B | .56 | A | .70 | B | .01 | .00 |
| 3. 106th St E & Ave T | Stop | 8.00 | A | 8.00 | A | 8.00 | A | 8.00 | A | .01 | .00 |
| 4. 106th St E & Pearblossom Hwy | Stop | 22.00 | C | 30.00 | D | 23.00 | C | 30.00 | D | 1.00 | .00 |
| 5. 116th St E & Ave T | Stop | 10.00 | A | 10.00 | A | 10.00 | B | 10.00 | A | .00 | .00 |
| 6. 165th St & Ave T | Stop | 12.00 | B | 11.00 | B | 12.00 | B | 11.00 | B | .00 | .00 |
| 7. 165th St & Pearblossom Hwy | Signal | .47 | A | .56 | A | .47 | A | .56 | A | .00 | .00 |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| .00 – .60 A | 0.0 – 10.0 sec/veh A |
| .61 – .70 B | 10.1 – 15.0 sec/veh B |
| .71 – .80 C | 15.1 – 25.0 sec/veh C |
| .81 – .90 D | 25.1 – 35.0 sec/veh D |
| .91 – 1.00 E | 35.1 – 50.0 sec/veh E |
| Above 1.00 F | Above 50.0 sec/veh F |

Note: Signalized intersection LOS based on ICU, stop-controlled intersection LOS based on delay (sec/veh).

**Table 74 Two-Lane Roadways – Short-Range Background-plus-Project**

| Roadway | AM Peak Hour | | | | | PM Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Directional Split | Total Capacity (PCPH) | Short-Range Background Volume | LOS | Project PCE Volume | Directional Split | Total Capacity (PCPH) | Short-Range Background Volume | LOS | Project PCE Volume | Significant Project Impact? |
| Ave T w/o Site | 60/40 | 2,650 | 240 | A | 21 | 60/40 | 2,650 | 200 | A | 0 | **No** |
| Ave T e/o Site | 60/40 | 2,650 | 240 | A | 6 | 60/40 | 2,650 | 200 | A | 0 | **No** |

PCPH = passenger cars per hour
PCE = passenger car equivalent

**Table 75 State Highway Segment LOS Summary – Short-Range Background-plus-Project**

| Roadway Segment | Terrain | Dir | Number of Lanes | Percent Trucks | Peak Hour Background Volume | Density (pc/mi/ln) | LOS | Project PCE Volume | Peak Hour Short-Range Background + Project Volume | Density (pc/mi/ln) | LOS | Significant Project Impact? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SR-138 w/o Ave T | Level | EB | 2 | 10 | 900 | 7.5 | A | 11 | 911 | 7.6 | A | **No** |
| | | WB | 2 | 12 | 1,040 | 8.7 | A | 11 | 1,051 | 8.8 | A | **No** |
| SR-138 e/o Ave T | Level | EB | 2 | 9 | 1,070 | 8.9 | A | 11 | 1,081 | 9.0 | A | **No** |
| | | WB | 2 | 10 | 1,220 | 10.2 | A | 11 | 1,231 | 10.3 | A | **No** |
| SR-138 w/o I-15 | Level | EB | 1 | 9 | 1,190 | 19.7 | C | 3 | 1,193 | 19.8 | C | **No** |
| | | WB | 1 | 9 | 1,290 | 21.5 | C | 3 | 1,293 | 21.5 | C | **No** |
| SR-14 s/o SR-138 | Rolling | NB | 2 | 10 | 3,650 | 41.7 | E* | 18 | 3,668 | 42.2 | E* | **No** |
| | | SB | 3 | 10 | 4,210 | 26.4 | D | 18 | 4,228 | 26.5 | D | **No** |
| SR-14 n/o I-5 | Rolling | NB | 6 | 10 | 6,590 | 20.1 | C | 18 | 6,608 | 20.1 | C | **No** |
| | | SB | 5 | 10 | 7,780 | 30.5 | D | 18 | 7,798 | 30.7 | D | **No** |
| I-5 s/o SR-14 | Rolling | NB | 6 | 11 | 12,900 | ** | F* | 18 | 12,918 | ** | F* | **No** |
| | | SB | 6 | 11 | 15,080 | ** | F* | 18 | 15,098 | ** | F* | **No** |

* Denotes exceeds LOS D

** Denotes exceeds programmed calculated threshold range

Level of service ranges:

| Freeway Density | |
|---|---|
| 0 – 11.0 pc/mi/ln | A |
| 11.1 – 18.0 pc/mi/ln | B |
| 18.1 – 26.0 pc/mi/ln | C |
| 26.1 – 35.0 pc/mi/ln | D |
| 35.1 – 45.0 pc/mi/ln | E |
| Above 45.0 pc/mi/ln | F |

pc/mi/ln = passenger cars per mile per lane

Note: Calculation of roadway segment LOS based on density is a surrogate for the speed-based LOS used by Caltrans for traffic operational analysis. LOS F(1) through F(3) designations are assigned where severely congested (less than 25 mph) conditions prevail for more than one hour, converted to an estimate of peak hour demand in the table above. Note that calculated LOS F traffic demands may therefore be greater than observed traffic volumes.

**Table 76 Intersection LOS Summary – Caltrans Locations**

| Intersection | Control Type | Short-Range Background | | | | Short-Range Background + Project | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | |
| | | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS |
| 1. Fort Tejon & Pearblossom Hwy/Ave T | Signal | 17 | B | 20 | C | 17 | B | 20 | C |
| 2. 82nd St & Pearblossom Hwy | Signal | 7 | A | 8 | A | 7 | A | 8 | A |
| 4. 106th St E & Pearblossom Hwy | Stop | 22 | C | 30 | D | 23 | C | 30 | D |
| 7. 165th St & Pearblossom Hwy | Signal | 8 | A | 6 | A | 8 | A | 6 | A |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| 0.0 – 10.0 sec/veh A | 0.0 – 10.0 sec/veh A |
| 10.1 – 20.0 sec/veh B | 10.1 – 15.0 sec/veh B |
| 20.1 – 35.0 sec/veh C | 15.1 – 25.0 sec/veh C |
| 35.1 – 55.0 sec/veh D | 25.1 – 35.0 sec/veh D |
| 55.1 – 80.0 sec/veh E | 35.1 – 50.0 sec/veh E |
| Above 80.0 sec/veh F | Above 50.0 sec/veh F |

#### 4.10.5.3.2 *Second-Highest Peak Hour Project Impact Analysis*

Los Angeles County Staff requested that an analysis of project impacts during the 8:00 to 9:00 AM and the 4:00 to 5:00 PM periods be included in addition to the peak hour (7:00 to 8:00 AM and 5:00 to 6:00 PM) analysis. EIR Table 77 summarizes this second peak hour trip generation for the proposed project. These trips are distributed and assigned to the circulation system using the same assumptions as the peak hour traffic presented earlier, and added to the peak hour background volumes. By using the peak hour background volumes, the project's worst-case project impacts during the second peak hour are identified.

**Table 77 Trip Generation Summary - Second Peak Hour**

| Trip Generation | Amount | Unit | Second AM Peak Hour (8:00 AM – 9:00 AM) | | | Second PM Peak Hour (4:00 PM – 5:00 PM) | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| **Mining Facility** | 1 | Site | 4 | 4 | 8 | 0 | 0 | 0 |
| **Employee** | 156 [1] | Emp | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | | | 4 | 4 | 8 | 0 | 0 | 0 |

[1] 24 hours operation with 2-3 shifts

EIR Table 78, Table 79, Table 80, and Table 81 present the results of this second peak hour analysis. As these tables show, the Project results in **Less than Significant Impacts** during the second peak hour.

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**Table 78 Intersection LOS Summary – Short-Range Background-plus-Project – Second Peak Hour**

| Intersection | Control Type | Short-Range Background | | | | Short-Range Background + Project | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Second AM Peak Hour | | Second PM Peak Hour | | Second AM Peak Hour | | Second PM Peak Hour | | Project Increase | |
| | | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | AM | PM |
| 1. Fort Tejon & Pearblossom Hwy/Ave T | Signal | .59 | A | .70 | B | .59 | A | .70 | B | .00 | .00 |
| 2. 82nd St & Pearblossom Hwy | Signal | .55 | A | .70 | B | .55 | A | .70 | B | .00 | .00 |
| 3. 106th St E & Ave T | Stop | 8.00 | A | 8.00 | A | 8.00 | A | 8.00 | A | .00 | .00 |
| 4. 106th St E & Pearblossom Hwy | Stop | 22.00 | C | 30.00 | D | 23.00 | C | 30.00 | D | 1.00 | .00 |
| 5. 165th St & Ave T | Stop | 10.00 | A | 10.00 | A | 10.00 | A | 10.00 | A | .00 | .00 |
| 6. 165th St & Ave T | Stop | 12.00 | B | 11.00 | B | 12.00 | B | 11.00 | B | .00 | .00 |
| 7. 165th St & Pearblossom Hwy | Signal | .47 | A | .56 | A | .47 | A | .56 | A | .00 | .00 |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| .00 – .60 A | 0.0 – 10.0 sec/veh A |
| .61 – .70 B | 10.1 – 15.0 sec/veh B |
| .71 – .80 C | 15.1 – 25.0 sec/veh C |
| .81 – .90 D | 25.1 – 35.0 sec/veh D |
| .91 – 1.00 E | 35.1 – 50.0 sec/veh E |
| Above 1.00 F | Above 50.0 sec/veh F |

Note: Signalized intersection LOS based on ICU, stop-controlled intersection LOS based on delay (sec/veh).

**Table 79 Two-Lane Roadways – Short-Range Background-plus-Project – Second Peak Hour**

| Roadway | Second AM Peak Hour | | | | | Second PM Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Directional Split | Total Capacity (PCPH) | Short-Range Background Volume | LOS | Project PCE Volume | Directional Split | Total Capacity (PCPH) | Short-Range Background Volume | LOS | Project PCE Volume | Significant Project Impact? |
| Ave T w/o Site | 60/40 | 2,650 | 240 | A | 9 | 60/40 | 2,650 | 200 | A | 0 | **No** |
| Ave T e/o Site | 60/40 | 2,650 | 240 | A | 3 | 60/40 | 2,650 | 200 | A | 0 | **No** |

PCPH = passenger cars per hour
PCE = passenger car equivalent

**Table 80 State Highway Segment LOS Summary – Short-Range Background-plus-Project – Second Peak Hour**

| Roadway Segment | Terrain | Dir | Number of Lanes | Percent Trucks | Short-Range Peak Hour Background Volume | Density (pc/mi/ln) | LOS | Project Second Peak Hour PCE Volume | Short-Range Second Peak Hour Background + Project Volume | Density (pc/mi/ln) | LOS | Significant Project Impact? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SR-138 w/o Ave T | Level | EB | 2 | 10 | 900 | 7.5 | A | 5 | 905 | 7.6 | A | **No** |
| | | WB | 2 | 12 | 1,040 | 8.7 | A | 5 | 1,045 | 8.8 | A | **No** |
| SR-138 e/o Ave T | Level | EB | 2 | 9 | 1,070 | 8.9 | A | 5 | 1,075 | 8.9 | A | **No** |
| | | WB | 2 | 10 | 1,220 | 10.2 | A | 5 | 1,225 | 10.2 | A | **No** |
| SR-138 w/o I-15 | Level | EB | 1 | 9 | 1,190 | 19.7 | C | 2 | 1,192 | 19.8 | C | **No** |
| | | WB | 1 | 9 | 1,290 | 21.5 | C | 2 | 1,292 | 21.5 | C | **No** |
| SR-14 s/o SR-138 | Rolling | NB | 2 | 10 | 3,650 | 41.7 | E* | 8 | 3,658 | 42.0 | E* | **No** |
| | | SB | 3 | 10 | 4,210 | 26.4 | D | 8 | 4,218 | 26.5 | D | **No** |
| SR-14 n/o I-5 | Rolling | NB | 6 | 10 | 6,590 | 20.1 | C | 8 | 6,598 | 20.1 | C | **No** |
| | | SB | 5 | 10 | 7,780 | 30.5 | D | 8 | 7,788 | 30.6 | D | **No** |
| I-5 s/o SR-14 | Rolling | NB | 6 | 11 | 12,900 | ** | F* | 8 | 12,908 | ** | F* | **No** |
| | | SB | 6 | 11 | 15,080 | ** | F* | 8 | 15,088 | ** | F* | **No** |

* Denotes exceeds LOS D

** Denotes exceeds programmed calculated threshold range

Level of service ranges:

| Freeway Density | |
|---|---|
| 0 – 11.0 pc/mi/ln | A |
| 11.1 – 18.0 pc/mi/ln | B |
| 18.1 – 26.0 pc/mi/ln | C |
| 26.1 – 35.0 pc/mi/ln | D |
| 35.1 – 45.0 pc/mi/ln | E |
| Above 45.0 pc/mi/ln | F |

pc/mi/ln = passenger cars per mile per lane

Note: Calculation of roadway segment LOS based on density is a surrogate for the speed-based LOS used by Caltrans for traffic operational analysis. LOS F(1) through F(3) designations are assigned where severely congested (less than 25 mph) conditions prevail for more than one hour, converted to an estimate of peak hour demand in the table above. Note that calculated LOS F traffic demands may therefore be greater than observed traffic volumes.

**Table 81 Intersection LOS Summary – Caltrans Locations – Second Peak Hour**

| Intersection | Control Type | Short-Range Background | | | | Short-Range Background + Project | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Second AM Peak Hour | | Second PM Peak Hour | | Second AM Peak Hour | | Second PM Peak Hour | |
| | | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS |
| 1. Fort Tejon & Pearblossom Hwy/Ave T | Signal | 17 | B | 20 | C | 17 | B | 20 | C |
| 2. 82nd St & Pearblossom Hwy | Signal | 7 | A | 8 | A | 7 | A | 8 | A |
| 4. 106th St E & Pearblossom Hwy | Stop | 22 | C | 30 | D | 23 | C | 30 | D |
| 7. 165th St & Pearblossom Hwy | Signal | 8 | A | 6 | A | 8 | A | 6 | A |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| 0.0 – 10.0 sec/veh A | 0.0 – 10.0 sec/veh A |
| 10.1 – 20.0 sec/veh B | 10.1 – 15.0 sec/veh B |
| 20.1 – 35.0 sec/veh C | 15.1 – 25.0 sec/veh C |
| 35.1 – 55.0 sec/veh D | 25.1 – 35.0 sec/veh D |
| 55.1 – 80.0 sec/veh E | 35.1 – 50.0 sec/veh E |
| Above 80.0 sec/veh F | Above 50.0 sec/veh F |

#### 4.10.5.3.3 *Signal Warrants*

Four of the study intersections are currently stop-controlled. These intersections were investigated for satisfaction of Caltrans Peak Hour Signal Warrant. EIR Table 82 and EIR Figure 54 summarize the results of the Signal Warrant Analysis. The total two-way approach volume on the major street is plotted against the higher approach volume on the minor street on the graph. If the point falls above the line representing the number of lanes at the intersection, then a traffic signal is warranted. The study intersections do not have sufficient peak hour traffic under short-range with-project and short-range cumulative conditions to satisfy the signal warrant. Therefore the Project would result in **Less than Significant Impacts**.

**Table 82 Peak Hour Signal Warrant Analysis Summary**

| Intersection | AM Peak Hour | | PM Peak Hour | | Warrant Satisfied? * |
|---|---|---|---|---|---|
| | Major St Volume | Minor St Volume | Major St Volume | Minor St Volume | |
| **Short-Range Background-with-Project** | | | | | |
| 3. 106th St & Ave T | 229 | 85 | 297 | 68 | **No** |
| 4. 106th St & Pearblossom Hwy | 921 | 54 | 1,162 | 47 | **No** |
| 5. 165th St & Ave T | 231 | 16 | 202 | 21 | **No** |
| 6. 165th St & Ave T | 336 | 111 | 269 | 72 | **No** |
| **Short-Range Background-with-Project + Related** | | | | | |
| 3. 106th St & Ave T | 239 | 87 | 309 | 70 | **No** |
| 4. 106th St & Pearblossom Hwy | 1,035 | 57 | 1,321 | 49 | **No** |
| 5. 165th St & Ave T | 233 | 25 | 211 | 26 | **No** |
| 6. 165th St & Ave T | 336 | 111 | 269 | 72 | **No** |
| * Refer to EIR Figure 54 | | | | | |

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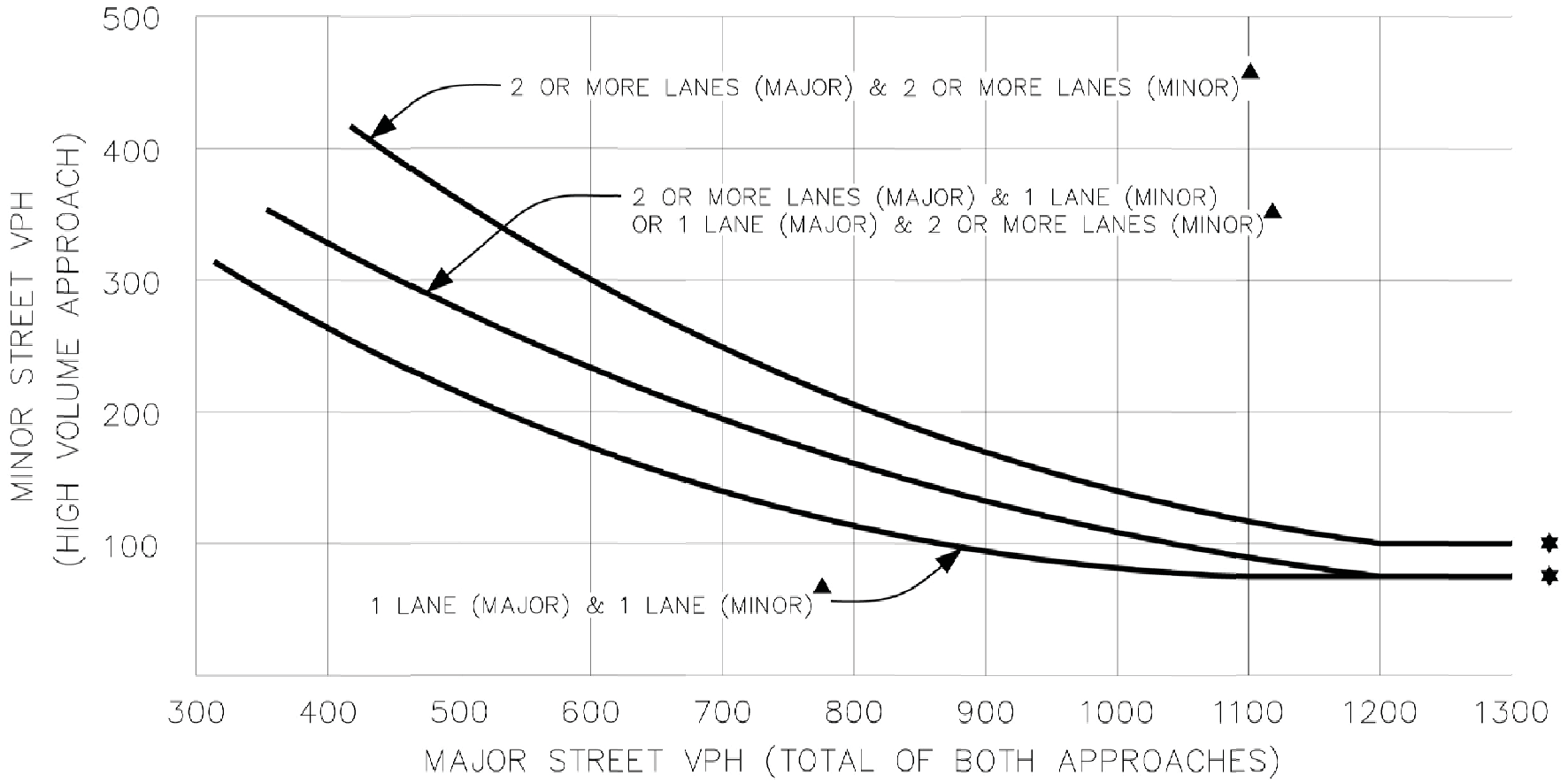


▲ NOTE: THESE CURVES ARE RECOMMENDED FOR USE IN AREAS OF RURAL CLASSIFICATION (i.e. POSTED SPEED LIMIT ON THE MAJOR STREET IS 64 km/hr OR 40 MPH OR HIGHER OR COMMUNITY LESS THAN 10,000 POPULATION).

✸ NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES, AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

Source: MUTCD – Figure 4C–4

Austin-Foust Associates, Inc.
1134003tiaFig3-7.dwg

Source: West Coast Environmental, 01-20-09

| Signal Warrant Analysis<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 54 |
|---|---|
| Scale: N/A | Date: 3-13-2012 |

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#### 4.10.5.3.4 *Roadway Traffic Index Analysis*

The traffic index (TI) values for roadways along the Project truck routes were determined to ensure the integrity of the roadways. EIR Table 83 summarizes the 10-year and 20-year TI values under no-project and with-project conditions. The TI value is used with the soil's R value to determine the appropriate pavement design. The soil in the study area has a very high R value of 80 indicating the pavement design is relatively insensitive to the roadway's TI value. Therefore, a standard pavement design of four inches of asphaltic concrete over six inches of aggregate base is sufficient to accommodate the future traffic loads.

**Table 83 Traffic Index (TI) Value Summary**

| Location | Existing ADT | 10 Year TI | | 20 Year TI | |
|---|---|---|---|---|---|
| | | No-Project | W/Project | No-Project | With-Project |
| 1. Ave T e/o 165th St | 1,500[1] | 7.0 | 9.5 | 7.5 | 11.0 |
| 2. Ave T w/o 165th St | 1,600[1] | 7.0 | 8.0 | 7.5 | 9.0 |
| 3. 106th St s/o of Ave T | 1,200[1] | 6.5 | 9.5 | 7.5 | 11.0 |
| 4. 165th St s/o of Ave T | 3,000[1] | 7.5 | 8.0 | 8.5 | 9.0 |
| 5. SR-138 w/o 106th St | 17,300[2] | 9.0 | 10.0 | 10.0 | 11.5 |
| 6. SR-138 e/o 165th St | 17,900[2] | 9.5 | 9.5 | 10.5 | 10.5 |

Count Sources:
[1] 2008 TDS count (Appendix F)
[2] 2007 Caltrans

Assumptions:
7 percent trucks
Truck axle breakdown per Caltrans
3.8 percent annual growth

### 4.10.5.4 Impacts Determined to be Potentially Significant

Use of the public roadways by Project trucks is expected to have a direct impact on the integrity of the road pavement along Avenue T, 106th East and 165th Street East. The LACDPW will require that Lebata provide a pavement analysis study to identify potential impacts to the pavement along Avenue T, 106th Street East and 165th Street East for review and approval by LACDPW. Any potential impacts identified in the pavement analysis will be mitigated by Lebata, either through fair share payment and/or through reimbursement to the County for the cost of any repairs and/or reconstruction of Avenue T, 106th street East and 165th Street East attributable to the Project, as agreed solely by LACDPW, or Lebata can initiate pavement rehabilitation repair through County permits to the satisfaction of LACDPW. With regard to the intergrity of road pavement along Avenue T, 106th East and 165th Street East, the Project would result in a **Significant Impact**.

### 4.10.6 Mitigation Measures

**TC-1** Prior to the commencement of surface mining activities that result in the transport of processed materials offsite, Lebata shall document and submit all required information and/or material pertaining to the pavement conditions of Avenue T, 106th Street East and 165th Street East, including the formula for calculating the Project's fair share of any

repair and/or reconstruction of Avenue T, 106th Street East and 165th Street East, to the satisfaction of the LACDPW. Lebata shall reimburse the County for the cost of any repairs and/or reconstruction of Avenue T, 106th Street East and 165th Street East attributable to the Project, as agreed to by the LACDPW. The timing of any necessary repairs and/or reconstruction of Avenue T, 106th Street East, and 165th Street East, and the required payment by the project proponent, shall be determined by LACDPW.

### 4.10.7 Level of Significance after Mitigation

Upon implementation of **Mitigation Measure TC-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

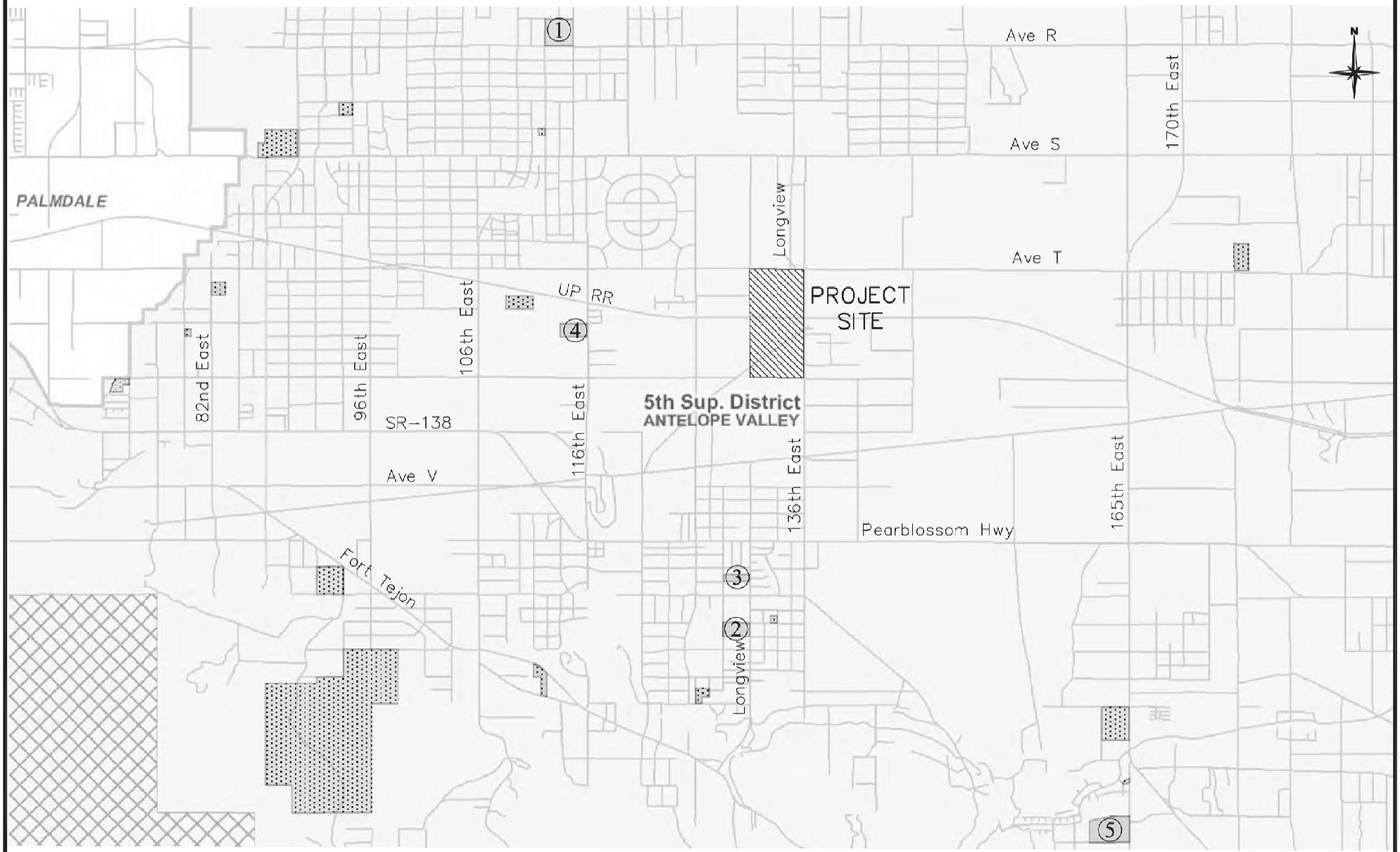
### 4.10.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The *County TIA Guidelines* indicate that cumulative projects within 1½ miles of the Project are to be included within the analysis of cumulative impacts. However, due to the relatively remote location of the site, active projects consisting of more than 10 dwelling units within an approximate five-mile radius of the Project site were included.

**Table 84 Cumulative Projects Summary**

| Project | Description | Status |
|---|---|---|
| 1. TR49916 | 38 Dwelling Units | Approved |
| 2. TR48471 | 25 Dwelling Units | Pending |
| 3. TR47068 | 16 Dwelling Units | Pending |
| 4. TR068193 | 17 Dwelling Units | Pending |
| 5. TR47296 | 161 Dwelling Units | Pending |




Austin-Foust Associates, Inc.
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Legend

(X) See Table 3-10

Inactive or less than 10 dwelling units

Source: West Coast Environmental, 01-20-09

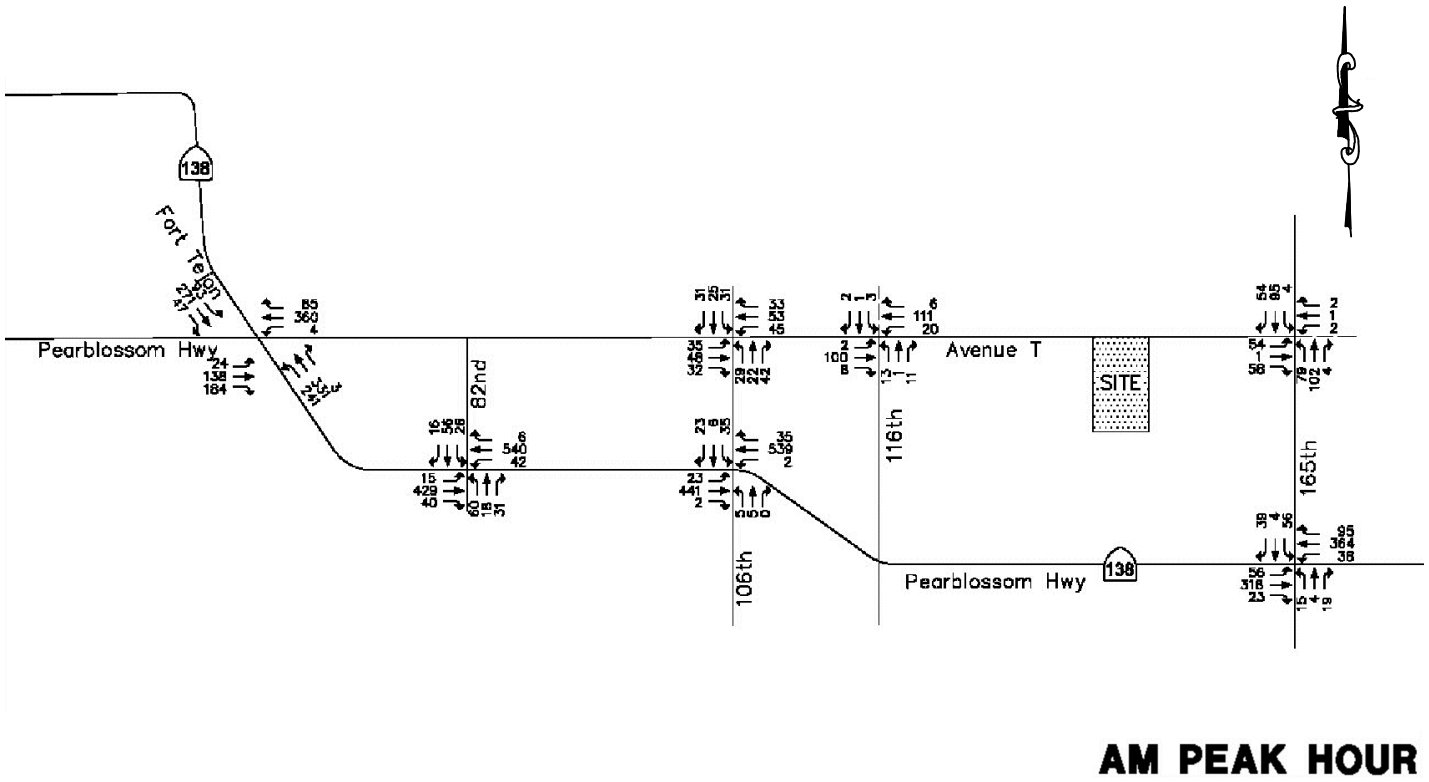
**Cumulative Projects Locations**
Big Rock Creek Site
Antelope Valley, California

FIGURE 55

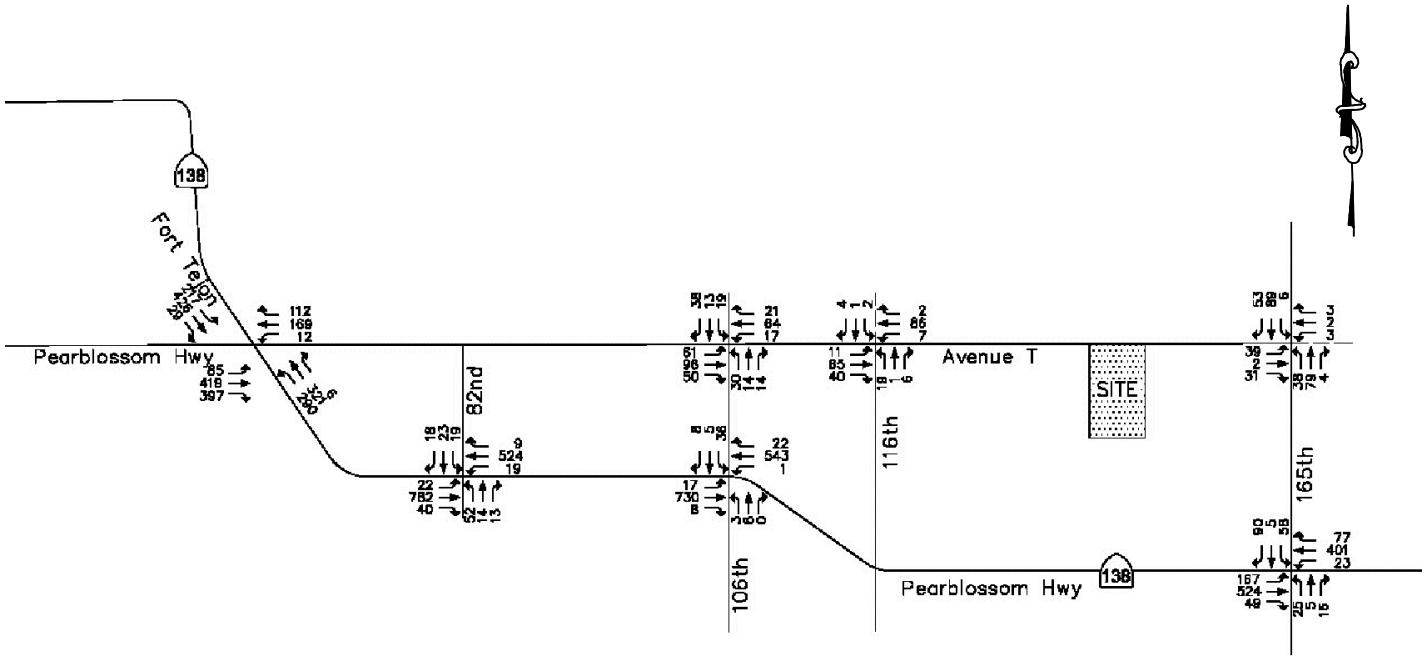
Scale: N/A

Date: 9-6-2013

MCG100 Confidential/Drafting 2008/figures 20-23 and 48-58.dwg




**AM PEAK HOUR**




**PM PEAK HOUR**

**Source:**
**Austin-Foust Associates, Inc.**
**Lebata Inc. Big Rock Creek Surface Mining Project**
**Traffic Impact Analysis**
**1134003 TIA Fig 3-6.dwg**

| Short-Range-with-Project + Related Peak Hour Intersection Volumes<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 56 |
|---|---|
| SCALE: AS SHOWN | DATE: 3-8-2013 |

MC01 DEIR.Fig56.dwg

**Table 85 Intersection LOS Summary – Short-Range Cumulative Conditions**

| Intersection | Control Type | Short-Range Background + Project | | | | Short-Range Background + Project + Related | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | Cumulative Increase | |
| | | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | AM | PM |
| 1. Fort Tejon & Pearblossom Hwy/Ave T | Signal | .59 | A | .70 | B | .63 | B | .73 | C | .04 | .03 |
| 2. 82nd St & Pearblossom Hwy | Signal | .56 | A | .70 | B | .61 | B | .76 | C | .05 | .06 |
| 3. 106th St & Ave T | Stop | 8.00 | A | 8.00 | A | 8.00 | A | 8.00 | A | .00 | .00 |
| 4. 106th St & Pearblossom Hwy | Stop | 23.00 | C | 30.00 | D | 28.00 | D | 38.00 | E | 5.00 | 8.00 |
| 5. 165th St & Ave T | Stop | 10.00 | B | 10.00 | A | 10.00 | B | 10.00 | A | .00 | .00 |
| 6. 165th St & Ave T | Stop | 12.00 | B | 11.00 | B | 12.00 | B | 11.00 | B | .00 | .00 |
| 7. 165th St & Pearblossom Hwy | Signal | .47 | A | .56 | A | .48 | A | .58 | A | .01 | .02 |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| .00 – .60 A | 0.0 – 10.0 sec/veh A |
| .61 – .70 B | 10.1 – 15.0 sec/veh B |
| .71 – .80 C | 15.1 – 25.0 sec/veh C |
| .81 – .90 D | 25.1 – 35.0 sec/veh D |
| .91 – 1.00 E | 35.1 – 50.0 sec/veh E |
| Above 1.00 F | Above 50.0 sec/veh F |

Shaded = Significant Short-Range Cumulative Impact

Note: Signalized intersection LOS based on ICU, stop-controlled intersection LOS based on delay (sec/veh).

**Table 86 State Highway Segment LOS Summary – Short-Range Cumulative Conditions**

| Roadway Segment | Terrain | Dir | Number of Lanes | Percent Trucks | Peak Hour Background +Project Volume | Density (pc/mi/Ln) | LOS | Peak Hour Background + Project +Related Volume | Density (pc/mi/ln) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| SR-138 w/o Ave T | Level | EB | 2 | 10 | 911 | 7.6 | A | 983 | 8.2 | A |
| | | WB | 2 | 12 | 1,051 | 8.8 | A | 1,113 | 9.4 | A |
| SR-138 e/o Ave T | Level | EB | 2 | 9 | 1,081 | 9.0 | A | 1,180 | 9.8 | A |
| | | WB | 2 | 10 | 1,231 | 10.3 | A | 1,315 | 11.0 | A |
| SR-138 w/o I-15 | Level | EB | 1 | 9 | 1,193 | 19.8 | C | 1,225 | 20.3 | C |
| | | WB | 1 | 9 | 1,293 | 21.5 | C | 1,331 | 22.2 | C |
| SR-14 s/o SR-138 | Rolling | NB | 2 | 10 | 3,668 | 42.2 | E* | 3,686 | 42.8 | E* |
| | | SB | 3 | 10 | 4,228 | 26.5 | D | 4,244 | 26.7 | D |
| SR-14 n/o I-5 | Rolling | NB | 6 | 10 | 6,608 | 20.1 | C | 6,626 | 20.2 | C |
| | | SB | 5 | 10 | 7,798 | 30.7 | D | 7,814 | 30.8 | D |
| I-5 s/o SR-14 | Rolling | NB | 6 | 11 | 12,918 | ** | F* | 12,927 | ** | F* |
| | | SB | 6 | 11 | 15,098 | ** | F* | 15,106 | ** | F* |

* Denotes exceeds LOS D

** Denotes exceeds programmed calculated threshold range

Level of service ranges:

| Freeway Density | |
|---|---|
| 0 – 11.0 pc/mi/ln | A |
| 11.1 – 18.0 pc/mi/ln | B |
| 18.1 – 26.0 pc/mi/ln | C |
| 26.1 – 35.0 pc/mi/ln | D |
| 35.1 – 45.0 pc/mi/ln | E |
| Above 45.0 pc/mi/ln | F |

pc/mi/ln = passenger cars per mile per lane

Note: Calculation of roadway segment LOS based on density is a surrogate for the speed-based LOS used by Caltrans for traffic operational analysis. LOS F(1) through F(3) designations are assigned where severely congested (less than 25 mph) conditions prevail for more than one hour, converted to an estimate of peak hour demand in the table above. Note that calculated LOS F traffic demands may therefore be greater than observed traffic volumes.

**Table 87 Intersection LOS Summary – Short-Range Mitigated Cumulative Conditions**

| Intersection | Control Type | Short-Range with Project | | | | Short-Range with Project + Related | | | | Short-Range with Project + Related with Mitigation | | | | Project Share | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | | |
| | | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | ICU/ Delay | LOS | AM | PM |
| 2. 82nd St & Pearblossom Hwy | Signal | -- | -- | 0.70 | B | -- | -- | 0.76 | C | -- | -- | 0.58 | A | -- | 0% |
| 4. 106th St E & Pearblossom Hwy | Stop | 23.00 | C | 30.00 | D | 28.00 | D | 38.00 | E | 22.00 | C | 33.00 | D | 19.3% | 0% |

Level of services ranges:

| Signalized | Stop-Controlled |
|---|---|
| 0.0 – 10.0 sec/veh A | 0.0 – 10.0 sec/veh A |
| 10.1 – 20.0 sec/veh B | 10.1 – 15.0 sec/veh B |
| 20.1 – 35.0 sec/veh C | 15.1 – 25.0 sec/veh C |
| 35.1 – 55.0 sec/veh D | 25.1 – 35.0 sec/veh D |
| 55.1 – 80.0 sec/veh E | 35.1 – 50.0 sec/veh E |
| Above 80.0 sec/veh F | Above 50.0 sec/veh F |

Note: Signalized intersection LOS based on ICU, stop-controlled intersection LOS based on delay (sec/veh). Project share determined from the percentage of non-PCE project trips of the total increase over existing peak hour intersection volume.

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#### 4.10.8.1 Short-Range Cumulative Traffic Impacts

Traffic from the cumulative projects was distributed over the surrounding circulation system and was added to the short-range Background-plus-Project volumes to obtain short-range cumulative conditions. The short-range cumulative peak hour volumes are illustrated in EIR Figure 56. EIR Table 85 and EIR Table 86 summarize intersection and State highway segment LOS, respectively, under short-range cumulative conditions. The results of the cumulative conditions mitigation are summarized in EIR Table 87 (actual ICU and delay calculations are included in the TIA (EIR Appendix 9, Appendix A and Appendix B, respectively).

Cumulative projects have been determined to have S**ignificant Impacts** under short-range cumulative conditions at the intersections of 82nd Street and Pearblossom Highway, and of 106th Street and Pearblossom Highway. Improvements have been identified for those cumulative projects to mitigate cumulative impacts to result in **Less than Significant Impacts**. However, because the Project does not add any PM peak hour trips to the intersection of 82nd Street and Pearblossom Highway and a 19.3 percent share at 106th Street and Pearblossom Highway, the Project would result in **Less than Significant Impacts** at this intersection. The Project adds trips to the AM peak hour, which result in cumulative traffic impacts at the 106th Street East and Pearblossom Highway intersection. Restriping the westbound right-turn lane as a shared through/right-turn will mitigate this cumulative impact to **Less than Significant** Impacts. The project has a 19.3 percent share of this cumulative mitigation.

The *TIA* recommends that the Project contribute a fair-share contribution to the proposed roadway improvements for the SR-138, SR-14 and I-5 Freeways based upon the fact it does add additional traffic, albeit minimally so (404 ADT and 14 peak hour trips). The Project will coordinate with Caltrans to ensure that any cumulative impacts to the subject facilities are addressed and mitigated to Caltrans' satisfaction. Contributing in this manner will ensure Project impacts **are not considered cumulatively considerable.**

#### 4.10.8.2 2030 Build-Out Conditions

The *North County Combined Highway Corridors Study - Final Report* developed individual plans, or Locally Preferred Strategies, for the three north County corridors. The plans were initially segregated based on their ability to serve their respective travel markets. Each corridor is unique in function, capacity, operational and safety issues. The I-5 Freeway is a *goods movement corridor* linking the Central Valley with the Ports of Los Angeles and Long Beach, while SR-14 may be generally described as a *commute corridor*. The geography of SR-138 makes it a *bypass corridor*, which could help avoid congestion in the central region by routing traffic around congested Los Angeles freeways. Ultimately, the three North County Corridors must function together to serve the collective transportation needs in northern Los Angeles County.

The *North County Combined Highway Corridors Study – Final Report* included an analysis of future regional travel patterns along the three corridor systems. It identified locations and opportunities for operational applications such as reversible carpool/high-occupancy vehicle (HOV) lanes in locations where traffic has pronounced directional imbalances and the need for continuity in the system south of the I-5/SR-14 Interchange, called the I-5 "throat," where nearly all north County traffic must travel to reach the Los Angeles Basin.

An integrated multi-modal long-range corridor plan was developed to serve the long-range demands of the north County. The combined recommendations will allow the three north County corridors to function together in a seamless system to serve the diverse transportation needs in northern Los Angeles County.

#### 4.10.8.3 Long-Range Improvements

The SR-138 Plan, as modified for corridor integration includes:

- Widening of existing SR-138 to four lanes from Pearblossom Highway east to the San Bernardino County line.
- Construction of a limited access High Desert Corridor (HDC), a brand new freeway/expressway between I-5 and I-15. The east-west segment between SR-14 and I-15 would be an eight-lane freeway (including an HOV lane in each direction) from SR-14 past the Palmdale Airport to 50th Street East along an alignment paralleling P-8 in Palmdale; a six-lane freeway/expressway from 50th Street East to 240th Street East; and a 4/6-lane expressway from 240th Street East past the planned Southern California Logistics Airport to I-15 and beyond.
- Between I-5 and SR-14, the HDC would be a six-lane freeway or expressway along the current SR-138 alignment.
- A north-south HDC expressway would begin at SR-14 and Avenue D, jog south to Avenue E at the Old Sierra Highway, head south along 90th Street East, jog southeast to intersect with the east-west HDC at 126th Street East, and continue south to the existing SR-138 near 150th Street East. This north-south HDC expressway would complement SR-14 in carrying through traffic around the Palmdale and Lancaster communities.

The I-5 Plan, as modified for corridor integration includes:

- Doubling the current four lanes to a total of eight lanes in each direction between SR-14 and SR-126 West. Two of these lanes would be for HOVs, two lanes for trucks, and four lanes for general use.
- North of SR-126 West, extend one new HOV lane to Lake Hughes and add a new truck lane to the existing four lanes in each direction.
- North of Lake Hughes to the Kern County Line, add a new truck lane in each direction to the existing four lanes.

The SR-14 Plan, as modified for corridor integration includes:

- Create three reversible HOV lanes (achieved by converting two existing HOV lanes and adding one new HOV lane) plus the existing 4/6 lanes in each direction between I-5 and Pearblossom Highway.
- Create two reversible HOV lanes (achieved by converting programmed HOV lanes) plus the existing/committed 3/4 lanes between Pearblossom Highway and Avenue P.
- Add a general-purpose lane between San Fernando Road and Sand Canyon.

- Add a truck lane from I-5 to Placerita Canyon. North of Avenue P, add one new lane to the two to three current lanes. The new lane would be designated for HOV use north to Avenue L and for general-purpose use from Avenue L to the Kern County line.

#### 4.10.8.4 Short-Range Improvements

Short-range improvements emphasize right-of-way protection and implementation of key high priority early actions that address the most critical near-term bottlenecks, as well as safety, operational, and connectivity needs.

The SR-138 Plan

- Complete the work currently under way to improve SR-138 from one lane in each direction to two lanes in each direction from Avenue T to the San Bernardino County Line.
- Complete right-of-way acquisition along Avenue P-8 from SR-14 to 50th Street. Preserve the right-of-way needed to ultimately implement the proposed improvements identified for the long-range plan by purchasing and preserving new right-of-way along several area roadways.
- Complete the work currently under way to construct the four lane expressway along the HDC from US 395 to the existing SR-18.

The I-5 Plan

- Add an HOV lane and a truck lane in each direction from the I-5/SR-14 interchange to Calgrove Boulevard.
- Add an HOV lane in each direction from Calgrove Boulevard to the I-5/SR-126 separation.

The SR-14 Plan

- Create three HOV reversible lanes (achieved by converting two existing HOV lanes and adding one new HOV lane) from the I-5/SR-14 interchange to Pearblossom Highway. Create two HOV reversible lanes (achieved by converting programmed HOV lanes) from Pearblossom Highway to Avenue P.
- Create three continuous mix flow lanes (2-3 existing plus 0-1 new lane) in each direction from Sand Canyon Road to Avenue P.

The High Desert Corridor Project

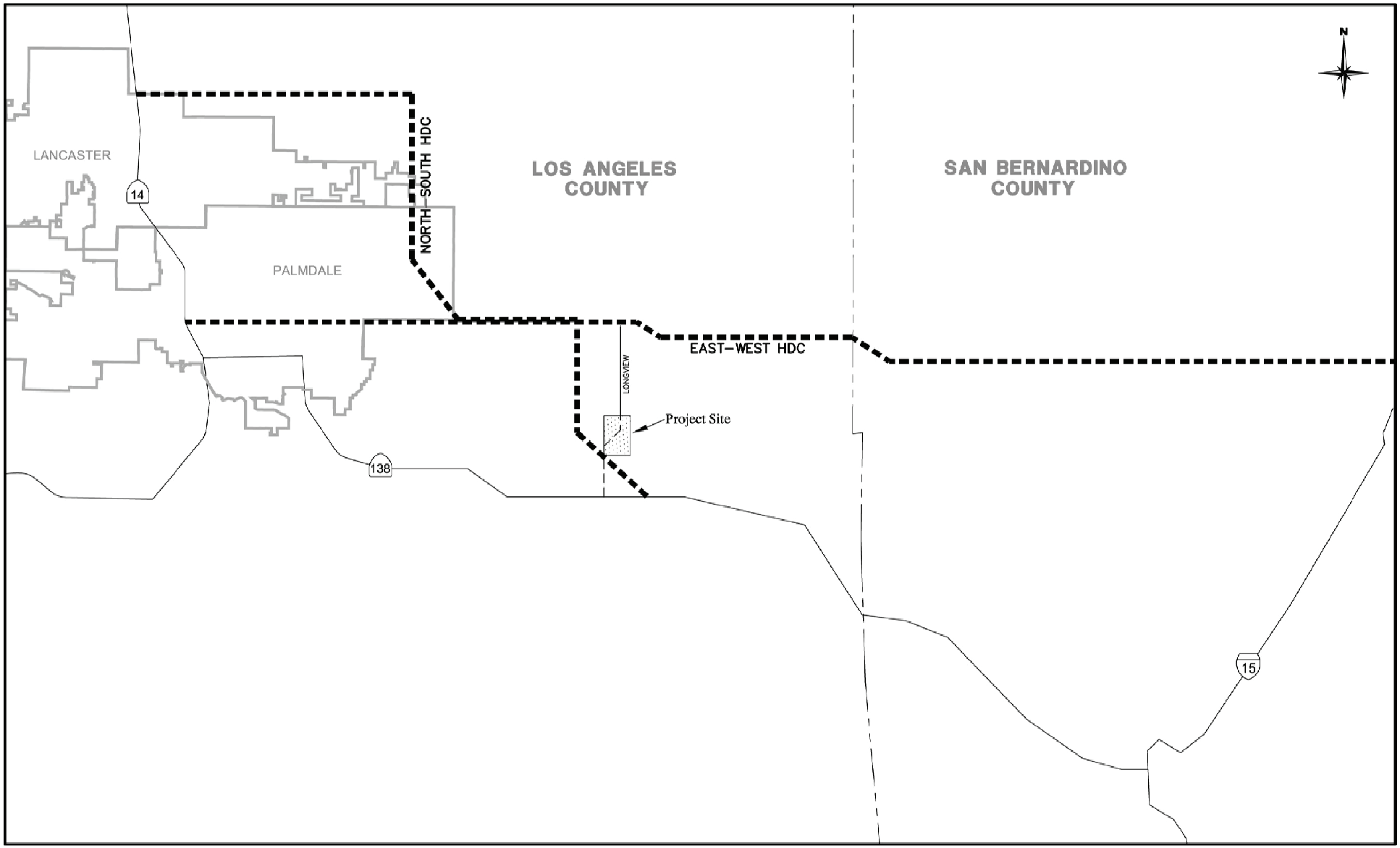
The High Desert Corridor (HDC) Project proposes the construction of new freeway/expressway linkages to address traffic safety and support the growing need to move goods through the region, including the:

- North-South HDC – an expressway from SR-14 and Avenue D, south to Avenue E at the Old Sierra Highway, south along 90th Street East, southeast to intersect with the East-West HDC at 126th Street East, then continuing south to the existing SR-138 near 150th Street East. This

expressway will complement SR-14 in carrying through traffic around the Palmdale and Lancaster communities. Because the southwest corner of the Project site is captured by the right-of-way easement, the required setback was made and is reflected in various EIR figures.

- East-West HDC – an approximately 63-mile freeway/expressway, linking SR-14 in Los Angeles County with SR-18 in San Bernardino County. As this portion is currently under Caltrans review, it is discussed more fully below

EIR Figure 57-1-1 illustrates the general location of the North-South and East -West HDC, while Figure 57-2 illustrates the more definitive location and alternatives associated with the East -West HDC currently under review.




Austin-Foust Associates, Inc.
1134003tiaFig3-7.dwg

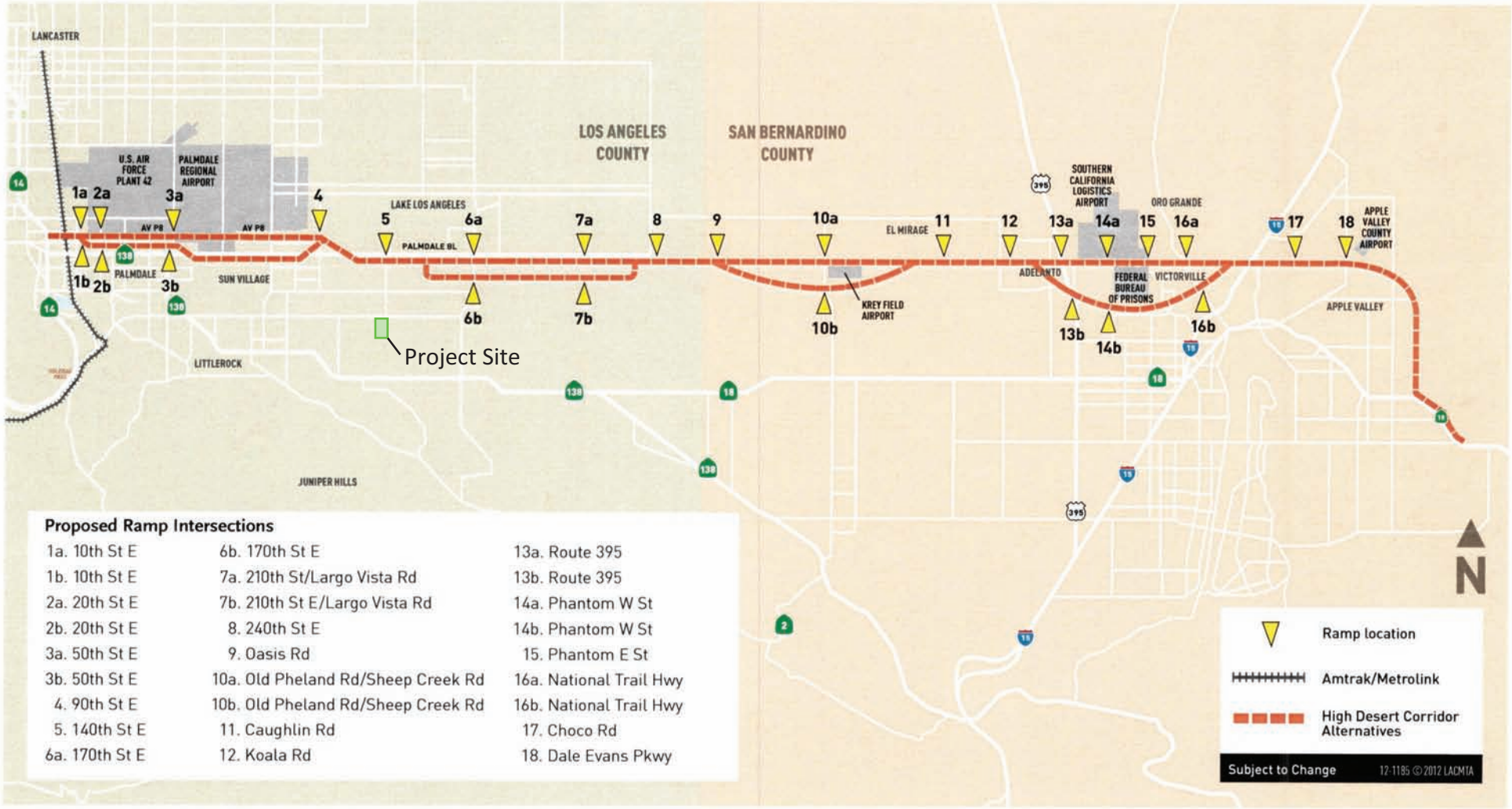
Legend

– – – – – – – Future roadway

Source: West Coast Environmental, 01-20-09

| High Desert Corridor<br>Location Map<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>5T |
|---|---|
| Scale: N/A | Date: 9-5-2012 |

MCG100 Confidential/Drafting 2008/figures 20-23 and 48-58.dwg




Metro

Caltrans

Source: California Depart. of Transportation

| | |
|---|---|
| High Desert Corridor<br>Showing Proposed Ramp Locations<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>58 |
| Scale: N/A | Date: 9-5-2012 |

***North-South HDC*** – The North-South HDC expressway would be located within ¾ mile of the future planned Longview Road extension (discussed below). The North-South HDC expressway is forecast to carry approximately 34,800 annual daily traffic (ADT) in the Project vicinity, under build-out conditions. A volume of 35,000 ADT can be accommodated by a four-lane arterial. However, the status of the North-South HDC expressway is in doubt and, if not built, then 126th Street East, built as a four lane arterial, would be sufficient to carry the demand. (Build-out volumes with the HDC system were obtained from *North County Combined Highway Corridors Study – Final Report*.)

***East-West HDC*** – The HDC was originally proposed in the 1970s as a metropolitan by-pass for trucks to alleviate truck traffic in the Los Angeles Basin and to facilitate truck movement from Mexico to points north and east. In 2004, the Metro Board adopted the North County Combined Highway Corridor Study that recommended strategies for addressing the high volume of truck traffic traveling north and south on the I-5, SR-14 and SR-138 Freeways. The HDC was one of the preferred strategy improvements for some of the following reasons:

- The High Desert communities in the northern Los Angeles and San Bernardino Counties are some of the fastest growing subregions in Southern California.
- Both counties have experienced tremendous growth and demographic changes in the last 20 years.
- The rapid growth has caused travel demands to exceed roadway capacity resulting in deteriorating east-west travel speeds for an area that is served primarily by two-lane rural highways.

In April 2010, the Metro Board authorized entry into a Memorandum of Understanding (MOU) for the implementation of the HDC Project. Metro is working on an MOU involving the following:

- High Desert Corridor Joint Powers Authority (HDCJPA),
- Southern California Association of Governments (SCAG),
- San Bernardino Associated Governments (SANBAG),
- State of California represented by the Department of Transportation (Caltrans) Districts 7 and 8,
- Counties of Los Angeles and County of San Bernardino represented by their respective Departments of Public Works, and the Cities of Lancaster, Palmdale, Victorville, Adelanto and the town of Apple Valley for the implementation of the HDC.

Currently under review, the East-West HDC will accommodate an expected three to six fold increase in traffic between the Antelope and Victor Valleys. It will provide a new level of intra-valley accessibility and carry truck and other through traffic safely around existing communities. Caltrans is serving as the CEQA Lead Agency for the environmental review currently underway. The project development process is well defined by federal and state environmental and funding requirements. The Draft EIS/EIR for East-West HDC project is currently being prepared and its release date is unknown as of this writing.

#### 4.10.8.5 Future Corridor Analysis

Extending I-5 Corridor improvements to the south through the I-5/SR-14 interchange and continuing down to the I-5/I-405 split including:

- Added Truck Lanes – one new truck lane plus two existing truck lanes between SR-14 and I-210 and two new truck lanes from I-210 to I-405.

- Added HOV Lanes – three new HOV lanes plus one programmed HOV lane between SR-14 and I-405, to be operated as a reversible four lane HOV facility.

- Added Mixed Flow Lanes – three new mixed flow lanes plus six existing mixed flow lanes from SR-14 to I-210, three new mixed flow lanes plus four mixed flow lanes from I-210 to I-405, three of the mixed flow lanes could be operated as a reversible connector between SR-14 and I-405.

Completion of the County's Circulation Plan also includes the extension of Longview Road from Avenue T to Pearblossom Highway. Longview Road currently terminates at Avenue T opposite the Project site. Extending Longview Road south of Avenue T would require construction of the roadway through the Project site, making the site infeasible for the Project, which is why the Project Description was revised to include realignment of this right-of-way and a variety of alternatives discussed in EIR Chapter 6.6, including the Project without Longview Road Extension Alternative.

The *Deletion of Longview Road from Los Angeles County Master Plan of Highways Traffic Study* was prepared (EIR Appendix 9, Second Addendum) concluded the following:

> *The projected 2035 future traffic volumes in the study area can easily be accommodated by the existing roadway system without the extension of Longview Road, and Longview Road should be deleted from the Master Plan of Highways. The cost of constructing the extension, which would include a substantial curvature in alignment, would not be offset by any significant improvement in the resulting level of service. The levels of service on existing roadways will not be significantly impacted by the deletion of Longview Road from the Master Plan of Highways.*

#### 4.10.8.6 Cumulative Impacts Conclusion

The Project is located in an undeveloped area of Los Angeles County where the County's *CMProg* forecasts a 118 percent growth from 2001 to 2025, which is equivalent to approximately 3.8 percent per year. To determine the 2010 background peak hour intersection volumes, a 3.8 percent annual growth factor was applied to the existing roadway volumes. The 2010 background State highway segment volumes were estimated using a straight-line growth curve derived from year 2007 volumes to year 2025 volumes identified in *North County Combined Highway Corridors Study - Final Report*.

Cumulative projects consisting of pending, approved, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. The *County TIA Guidelines* indicate that cumulative projects within 1½ miles of the Project are to be included within the analysis of cumulative impacts. However, due to the relatively remote location of the site, active projects consisting of more than 10 dwelling units within approximately five miles of the site were

included. EIR Table 84 (EIR sub-chapter 4.10.8) summarizes the cumulative projects included in this analysis, and EIR Figure 55 (EIR sub-chapter 4.10.8.1) illustrates the locations of the cumulative projects.

A capacity analysis for the seven critical intersections within the vicinity of the Project for existing, background conditions and cumulative conditions was conducted and reveals that the Project has no significant impact on the seven study intersections or the six State highway sections. The *TIA* (EIR Appendix 9) has concluded the Project would result in **Less than Significant Impacts**.

Cumulative projects have been determined to have S**ignificant Impacts** under short-range cumulative conditions at the intersections of 82nd Street and Pearblossom Highway, and of 106th Street and Pearblossom Highway. Improvements have been identified for those cumulative projects to mitigate cumulative impacts to result in **Less than Significant Impacts**. However, because the Project does not add any PM peak hour trips to the intersection of 82nd Street and Pearblossom Highway and a 19.3 percent share at 106th Street and Pearblossom Highway, the Project would result in **Less than Significant Impacts** at this intersection. The Project adds trips to the AM peak hour, which result in cumulative traffic impacts at the 106th Street East and Pearblossom Highway intersection. Restriping the westbound right-turn lane as a shared through/right-turn will mitigate this cumulative impact to **Less than Significant** Impacts. The project has a 19.3 percent share of this cumulative mitigation.

The *TIA* recommends that the Project contribute a fair-share contribution to the proposed roadway improvements for the SR-138, SR-14 and I-5 Freeways based upon the fact it does add additional traffic, albeit minimally so (404 ADT and 14 peak hour trips). The Project will coordinate with Caltrans to ensure that any cumulative impacts to the subject facilities are addressed and mitigated to Caltrans' satisfaction. Contributing in this manner will ensure Project impacts **are not considered cumulatively considerable.**

Note: If the East-West HDC is approved, funded and constructed, Project impacts could be reduced by rerouting Project truck traffic so as to proceed 2 miles east from the Project along Avenue T to 165th Street East. Trucks would then turn north onto 165th Street East, which immediately curves onto 170th Street East and proceeds north to the East-West HDC onramp. At the onramp, trucks would either turn west or east, thereby avoiding the more congested areas of Palmdale.

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## 4.11 HAZARDS AND HAZARDOUS MATERIALS

### 4.11.1 Introduction

This sub-chapter of the EIR discusses any potential hazards that currently exist of could occur as a result of Project development, which would include the storage and uses of fuels, flammable material, and hazardous materials used in conjunction with surface mining operations and the operation of the Ready-Mixed Concrete Plant, Vac-Lite Plant and Asphaltic Concrete Plant. Information provided below regarding existing onsite conditions was derived from the following study:

- *Phase I Environmental Site Assessment Report, 310 Acres of Vacant Land Avenue T at Longview Road, Big Rock Creek, CA* prepared by Orswell & Kasman, Inc., May 11, 2006. (EIR Appendix 17)

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***9. Hazards and Hazardous Materials***

*Would the project:*

*a) Create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials?*

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

### 4.11.2 Regulatory Setting

The management of hazardous materials, hazardous waste, and public safety is subject to numerous laws and regulations at all levels of government. Regulations applicable to the Project are designed to regulate hazardous materials and hazardous wastes, as well as to manage sites contaminated by hazardous waste. These regulations are designed to limit the risk of upset during the use, transport, handling, storage, and disposal of hazardous materials. It is necessary to begin with the following two definitions:

- **Hazardous Material:** Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (California Health and Safety Code, Section 25501 [o]). A number of properties may cause a substance to be considered hazardous, including toxicity, ignitibility, corrosivity, or reactivity.
- **Hazardous Waste:** A waste or combination of waste which, because of its quantity, concentration, or physical, chemical, or infection characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitation-reversible illness; or pose a substantial present or potential hazard to human health or the

environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, disposed of, or otherwise managed (California Health and Safety Code, Section 25141). California waste identification and classification regulations are found in Title 22 of the California Code of Regulations.

#### 4.11.2.1 U.S. Environmental Protection Agency

The US EPA is the principal regulatory agency responsible for the safe use and handling of hazardous materials.

#### 4.11.2.2 U.S. Department of Transportation

The U.S. Department of Transportation has the regulatory responsibility for the safe transportation of hazardous materials. The Federal Hazardous Materials Transportation Law, 49 U.S.C. Section 5101, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce."

#### 4.11.2.3 California Office of Emergency Services

The California Office of Emergency Services coordinates the emergency response to an accidental release of acutely/extremely hazardous materials.

#### 4.11.2.4 California Health and Safety Code Section 25500

The California Health and Safety Code (CHSC), Section 25500, requires companies that handle hazardous materials in sufficient quantities to develop a Hazardous Materials Business Plan (HMBP). The HMBP includes basic information on the location, type, quantity, and health risks of hazardous materials handled, stored, used, or disposed of that could be accidentally released into the environment. It also includes a plan for training new personnel and for annual training of all personnel in safety procedures to follow in the event of a release of hazardous materials. Additionally, the HMBP includes an Emergency Response Plan and identifies the business representative able to assist emergency personnel in the event of a release.

#### 4.11.2.5 Department of Toxic Substances Control

The objective of the Department of Toxic Substances Control (DTSC) is to protect human health and the environment from exposure to hazardous materials and waste. The DTSC has the authority to respond to and enforce the cleanup of hazardous substance releases, pursuant to the Hazardous Substance Account Act (HSA Act), Chapter 6.8, Division 20, of the Health and Safety Code, and the cleanup of hazardous waste under the Hazardous Waste Control Law, Chapter 6.6 (commencing with Section 25100).

Transportation of hazardous waste must be done by transporter registered with the DTSC. Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations; the California State Fire Marshal Regulations; and the United States Department of Transportation Regulations. In addition, hazardous waste transporters must comply with Division 20,

Chapter 6.5, Article 6 and 13 of the California Health and Safety Code and the Title 22, Division 4.5, Chapter 13 of the California Code of Regulations, which are administered by DTSC.

#### 4.11.2.6 Certified Unified Program Agency

During the 1970s and early 1980s, the occurrence of major hazardous materials incidents nationally and in Los Angeles County focused public attention on the need for safe handling, storage, transportation, and disposal of hazardous materials and wastes. In 1982, the Los Angeles County Board of Supervisors established the Hazardous Materials Control Program in the Department of Health Services for the inspection of businesses generating hazardous waste.

In 1991, the program merged into the Fire Department and it became the Health Hazardous Materials Division (HHMD). All Hazardous Material Specialists are sworn and badged Los Angeles County Deputy Health Officers. In 1997, HHMD was certified by the DTSC as the Certified Unified Program Agency (CUPA) responsible for conducting the Unified Program within Los Angeles County, which includes the following:

- Hazardous Waste Generator Program;
- Hazardous Materials Release Response Plans and Inventory Program;
- California Accidental Release Prevention Program;
- Aboveground Storage Tank Program; and
- Underground Storage Tank Program.

The Project will be subject to CUPA requirements and oversight. The CUPA will provide oversight to the preparation of the required Hazardous Materials Business Plans (HMBPs), SPCC and SWPPP; and such matters as employee training, record keeping, preventive maintenance and implementation of BMPs. The CUPA will also require Project participation in the single fee system requirement that is mandated by the California Environmental Protection Agency (CalEPA) within the County's CUPA and Participating Agencies' (PA) jurisdictions. The implementation of the single fee system requirement maintains both the consolidation of program elements on one permit and also the coordination among the CUPA and PAs with the administration of the unified program.

The Los Angeles County Fire Department HHMD Site Mitigation Unit (SMU) oversees corrective action at contaminated sites in Los Angeles County. The RWQCB also has regulatory jurisdiction over sites that potentially threaten groundwater or surface waters of the State.

### 4.11.3 Environmental Setting

The Project site is located in a relatively remote and undisturbed area of the Antelope Valley. The Project area is undeveloped desert, bisected by a railway. The surrounding lands are vacant, with the exception of a few single family dwellings along the eastern Project boundary of the South Parcel, the closest being approximately 200 feet away.

A Phase I Environmental Site Assessment (*Site Assessment*) was conducted by Orswell & Kasman, Inc. (EIR Appendix 17) to determine if any recognized environmental conditions or historical recognized environmental conditions exist on or near the subject property. The *Site Assessment* is based on a

preliminary study into the past and current uses of the subject property and the surrounding area. A visual inspection was made of the property and adjacent sites, and a review of regulatory agency records, aerial photographs, and other historic record sources was completed. Orswell & Kasman, Inc. concluded the following:

> *Based on a review of regulatory records, historical site information, and a visual inspection of the subject property and surrounding area, this assessment has revealed no recognized environmental conditions or historical recognized environmental conditions in connection with the Property, except as follows:*
>
> *1) The subject property is approximately 310 acres of vacant unimproved land. There is an unimproved dirt road along the east side of the northern parcel of land, and another unimproved dirt road bisecting the southern parcel of land. Abandoned furniture, construction debris, automotive parts and tires, paint cans, trash and other non-hazardous debris were observed alongside the dirt roads. In addition, containers of motor oil have been abandoned along the northern road. The oil spills around the containers appear to be confined to the upper few inches of soil and not a threat to the groundwater; and*
>
> *2) No offsite locations have been identified as potential risks or threats to the subject property.*
>
> *Based on the results of this assessment, no further environmental studies are recommended for the site. The abandoned cast-off materials and containers of waste oil should be properly removed from the site, however, since the property is located in the open desert along a main road, it is likely additional cast-off materials will be illegally abandoned on the site in the future.*

### 4.11.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Create a potential public health or safety hazard; or involve the use, production or disposal of materials which pose a hazard to people or animals or plant populations in the area affected.

Expanding upon this threshold criterion more definitively, the Project may have a significant effect in terms of hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment.

### 4.11.5 Impact Analysis

#### 4.11.5.1 Relevant Project Characteristics

The Hazardous Materials and their container sizes associated with the Project are listed below in EIR Table 88.

**Table 88 Hazardous Materials List**

| COMMON NAME | CHEMICAL NAME | CONTAINER SIZE |
|---|---|---|
| **Ready-Mixed Concrete Plant** | | |
| **Pozzolith nls34** | Calcium nitrate | 1,500 gal |
| **Fly ash** | Calcium oxide | 174,000 lbs |
| **Pozzolith 200n** | Triethanolamine | 1,500 gal |
| **Polyheed 997** | Sodium nitrate | 1,000 gallons |
| **Calcium chloride** | Calcium chloride | 100 lbs |
| **Glenium 3000s** | Copolymer mixture | 500 gallons |
| **Chromix l-10 or similar color agent** | Carbon black | As needed |
| **Cement** [1] | Calcium compounds | 348,000 lbs |
| **Asphalt Mixing Plant** | | |
| **Asphalt oil** | Hydrocarbon | 20,000 gallons |
| **Water Reclamation and Fines Recovery Facilities** | | |
| **Callaway 4330** | Polyacrylamide (polymer) | 500 lbs |
| **24-foot by 60-foot office trailer** | | |
| **Propane** | Dimethylmethane | 10,000 cubic feet |
| **Equipment Maintenance Shop** | | |
| **Gear lube 85-140** | Solvent dewaxed residual oil | 55 gal |
| **Acid truck wash** | Hydrochloric acid | 300 gal |
| **Caustic soda** | Sodium hydroxide | 20 gal |
| **Batteries** | Sulfuric acid lead | 12-volt; 10 each heavy-duty and light-duty |
| **Diesel fuel # 2** | Naphthalene | 20,000 gal |
| **Acetylene** | Acetylene | 147 cubic feet |
| **Motor oil** | Petroleum distillates, hydrotreated heavy paraffinic | 550 gal |
| **Hydraulic oil** | Petroleum lubricating oil | 550 gal |
| **Oxygen** | Oxygen | 251 cubic feet |
| **Carbon dioxide** | Carbon dioxide argon | 255 cubic feet |
| **Nitrogen** | Nitrogen | 225 cubic feet |
| **Calcium nitrate** | Calcium nitrate | 1,500 lbs |
| **Industrial oil** | Petroleum distillates, hydrotreated light paraffinic | 550 gal |
| **Coolant** | Ethylene glycol | 55 gal |

[1] If the Raw Cement and Aggregate Transfer and Distribution Facility is constructed, the Project would receive approximately 300,000 tons of raw cement annually, which would be transferred pneumatically from the rail cars into two adjacent silos.

#### 4.11.5.1.1 *Above Ground Storage Tanks*

The receipt, storage, handling use and disposition of all materials listed in EIR Table 88 would be in compliance with the requirements of the Business Plan, Hazardous Materials Inventory, and Above-Ground Storage Tank (diesel) permit approved by the County Department of Public Health, Environmental Health.

#### 4.11.5.1.2 *Spill Prevention, Control, and Countermeasure Plan*

The SPCC will be prepared to meet the requirements of:

- Title 40, Code of Federal Regulations (CFR), Part 112
- California H&S Code, Chapter 6.67, §25270 - Aboveground Petroleum Storage Act (1989)

The purpose of the SPCC is to identify procedures and controls to prevent accidental releases of petroleum products and to minimize the impact if a release occurs.

#### 4.11.5.1.3 *Storm Water Pollution Prevention Plan*

The SWPPP will be developed to comply with the requirements set forth in Industrial Storm Water General Permit Order 97-03-DWQ, which pertains to the General Permit No. CAS000001, the purpose of which is to fulfill two major objectives:

- Identify sources of pollution that may contaminate industrial storm water discharges.
- Describe and ensure the implementation of practices to reduce pollutants in storm water discharges.
- File Notice of Intent (NOI).

Note: Compliance with Low Impact Development (LID) and MS4 Permit are required for land development projects that increase runoff and/or pollutant loading to runoff. These requirements are not applicable to the Project because it does neither.

#### 4.11.5.1.4 *Administration, Security, and Public Safety*

The Project would include an administration office and dispatch/operations building for everyday business. Nighttime and weekend security would be provided by perimeter fencing around the Processing Facilities Site, locked gates, lighting, and security trailer. The office area may be alarmed. Equipment would be disabled daily at the end of the shift. A 6-foot-high perimeter fence, using cyclone fence materials, would be installed around the Processing Facilities Site and excavated areas.

#### 4.11.5.1.5 *Flood Waters*

Flood waters have the potential of inundating north of the Project site and could potentially impact workers at the quarry. Per the *Drainage Concept* (EIR Appendix 3) prepared by Stetson Engineers, Inc., in order to alleviate the likelihood of the flooding of the quarry site, management of offsite flows into the Project site would be built to mitigate any potential, hydrological impacts. A system of interceptor drains and down-drains would be incorporated at the two points of inflow (south and east) sides of the pits. Low earth berms approximately 2 feet high are also proposed along the top of the northern and western pit slopes to prevent localized drainage of runoff into the mine pits via these sides of the mine.

#### 4.11.5.1.6 *Fueling and Maintenance*

All vehicle fueling and maintenance would take place atop the Fueling and Maintenance Pad within the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The concrete pad includes a curbed containment berm and is adjacent to the fuel storage tank, which would be placed within a concrete secondary containment area. These precautionary measures are designed to ensure fueling and maintenance activities do not adversely affect surface water or groundwater.

#### 4.11.5.1.7 *Fire Protection*

The Project incorporates fire protection systems and water storage required by the County Fire Department. In addition, the Project will be subject to the standard conditions applied to industrial projects to ensure fire safety is maintained at maximum levels.

#### 4.11.5.1.8 *Blasting*

No blasting would occur.

### 4.11.5.2 Impacts Determined to be Less than Significant/No Impact

**Would the Project:**

- **Create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials?**
- **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment?**

The Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD), is the Certified Unified Program Agency (CUPA) responsible for administering the following programs within Los Angeles County:

- Hazardous Waste Generator Program;
- Hazardous Materials Release Response Plans and Inventory Program;
- California Accidental Release Prevention Program;
- Aboveground Storage Tank Program; and
- Underground Storage Tank Program.

The Project will be subject to CUPA requirements and oversight. The CUPA will provide oversight to the preparation of the required Hazardous Materials Business Plans (HMBPs), SPCC and SWPPP; and such matters as employee training, record keeping, preventive maintenance and implementation of BMPs. The CUPA will also require Project participation in the single fee system requirement that is mandated by the California Environmental Protection Agency (CalEPA) within the County's CUPA and Participating Agencies' (PA) jurisdictions. The implementation of the single fee system requirement maintains both the consolidation of program elements on one permit and also the coordination among the CUPA and PAs with the administration of the unified program.

The Project, which is located a considerable distance from other industrial development, will store, use and dispose of hazardous materials and waste typical of equipment and motor vehicles such as fueling, service and repair. As a result of the Project, the transport, use, storage and disposal of hazardous materials within the Antelope Valley would increase incrementally. Given these CUPA requirements and oversight, Project impacts to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials would be **Less than Significant**.

Upon implementation of the various programs noted above, Project impacts regarding reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment would be **Less than Significant**.

#### 4.11.5.3 Impacts Determined to be Potentially Significant

None.

### 4.11.6 Mitigation Measures

None.

### 4.11.7 Level of Significance after Mitigation

No significant impacts are associated with the Project.

### 4.11.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD), is the Certified Unified Program Agency (CUPA) responsible for administering the following programs within Los Angeles County:

- Hazardous Waste Generator Program;
- Hazardous Materials Release Response Plans and Inventory Program;
- California Accidental Release Prevention Program;
- Aboveground Storage Tank Program; and

- Underground Storage Tank Program.

The Project will be subject to CUPA requirements and oversight. The CUPA will provide oversight to the preparation of the required Hazardous Materials Business Plans (HMBPs), SPCC and SWPPP; and such matters as employee training, record keeping, preventive maintenance and implementation of BMPs. The CUPA will also require Project participation in the single fee system requirement that is mandated by the California Environmental Protection Agency (CalEPA) within the County's CUPA and Participating Agencies' (PA) jurisdictions. The implementation of the single fee system requirement maintains both the consolidation of program elements on one permit and also the coordination among the CUPA and PAs with the administration of the unified program.

The Project, which is located a considerable distance from other industrial development, will store, use and dispose of hazardous materials and waste typical of equipment and motor vehicles such as fueling, service and repair. As a result of the Project, the transport, use, storage and disposal of hazardous materials within the Antelope Valley would increase incrementally. Given the limited number of cumulative projects, and implementation of the various programs noted above, operational and long-term Project impacts involving the release of hazardous materials or waste into the environment are **not expected to be cumulatively considerable**.

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## 4.12 WATER SUPPLY/QUANTITY

### 4.12.1 Introduction

This sub-chapter of the EIR provides a description of the water supply/quantity, potential impacts of the Project, recommended mitigation measures, and proposed monitoring programs for the Project. Information for this sub-chapter was obtained from the following study:

- *Water Supply Assessment Big Rock Creek*, prepared by Milner-Villa Consulting. April 2013. (*WSA*) EIR Appendix 18.
- *Drawdown Assessment of Proposed Water Supply Well, Lebata Big Rock Quarry, Pearblossom, CA*, prepared by Strategic Engineering Science, Inc. February 16, 2012. (*Drawdown Assessment*) EIR Appendix 19.

The information disclosed herein was prepared in response to the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), in which the County determined the Project may have a "Potentially Significant Impact" in the following portion of the Initial Study checklist:

***10. Hydrology and Water Quality***

*Would the project:*

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

***18. Utilities and Service Systems***

*Would the project:*

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

### 4.12.2 Regulatory Setting

#### 4.12.2.1 California Water Code

The California Water Code, Section 10910 provides the following:

*"(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any*

*entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.*

*.....*

*(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.*

*(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*

*(A) Written contracts or other proof of entitlement to an identified water supply.*

*(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*

*(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*

*(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*

*.....*

*(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:*

*(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*

*(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*

*(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

*(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on is reasonably available, including, but not limited to, historic use records.*

*(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis."*

#### 4.12.2.2 Senate Bill 610 (Costa 2001)

Senate Bill 610 (SB 610) was passed on January 1, 2002, amending California Law (Public Resources Code Section 21151.9, Water Code Sections 10631, 10656, 10657, 10910-10915). SB 610 placed additional requirements upon the local water agencies and or planning agencies regarding land use planning and water supply availability. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and by ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment (*WSA*) for a project that is subject to CEQA and meets certain requirements.

When a *WSA* is required per SB 610, it must examine the availability of an identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the proposed project in addition to other existing and planned future uses of the identified water supply.

Specifically, SB 610 requires a *WSA* be prepared for several types of proposed projects, including "...a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons or, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area." (Water Code, Section 10912.a.5) Based upon these criteria, the Project does not meet the intent of the law. The Project is an industrial facility, but clearly is not an “industrial plant” with more than 1,000 persons or an “industrial park” planned to house more than 1,000 persons. Additionally, although the Project consists of land having in excess of 40 acres, the processing portion of the Project occupies less than 40 acres.

It is not clear whether the Project is subject to SB 610 and, as such, requires a *WSA*. However, the County (as Lead Agency under CEQA) has recommended the preparation of a *WSA* in order to be conservative, and to provide full disclosure of potential water resources impacts. Therefore, a *WSA* was prepared for the Project (refer to EIR Appendix 18) in compliance with California Water Code, as amended by SB 610.

#### 4.12.2.3 State Water Project and Water Suppliers

Four public water purveyors provide water service in the Antelope Valley area: Los Angeles County Waterworks Districts 37 and 40 (collectively, Waterworks District No. 40), Quartz Hill Water District, and Los Angeles County Sanitation District. Waterworks District No. 40 and Quartz Hill Water District obtain their water supply from both groundwater and the State Water Project (SWP). SWP water from the California Aqueduct is purchased through the Antelope Valley-East Kern Water Agency (AVEK), which is allocated up to approximately 160,000 afy of water (LACDRP 2009). The use of SWP water has helped stabilize groundwater levels in some areas of the Antelope Valley Region (AVIRWMP 2007). The Los Angeles County Sanitation District supplies reclaimed water for non-drinking purposes (LACDRP 2009). Quartz Hill Water District currently provides water service to or in the near vicinity of the Project site.

***AVEK Urban Water Management Plan***

SB 610 provides that if the projected water demand associated with the proposed project was accounted for in the Urban Water Management Plan (UWMP), or if the UWMP includes information applicable to the proposed project, then relevant information from that document may be incorporated into the *WSA*.

AVEK adopted its current UWMP in June 2011. Relevant information in the AVEK UWMP includes, but is not limited to, the following:

- AVEK currently supplies imported SWP water to portions of northern Los Angeles County and southeastern Kern County.
- AVEK's SWP allocation provides for it to receive a maximum of 141,400 afy.
- AVEK does not currently receive or distribute groundwater or recycled water supplies.
- AVEK water supplies include SWP water and groundwater recharge, which is "banked" for future extraction.
- AVEK water demand in 2010 was 60,675 afy, including sales for municipal, commercial, industrial, agriculture, and system losses.
- AVEK forecasts a normal year water demand of 96,558 afy for the year 2030.

##### 4.12.2.3.1 *Public Water Purveyors - Los Angeles County Waterworks District No. 40*

Four public water purveyors provide water service in the Antelope Valley area:

- Los Angeles County Waterworks District No. 37,
- Los Angeles County Waterworks District No. 40,
- Quartz Hill Water District (QHWD), and
- Los Angeles County Sanitation District (LACSD) provides reclaimed water.

Waterworks District Nos. 37 and 40, and the QHWD obtain their water supply from both groundwater and SWP water from the California Aqueduct is purchased through AVEK.

Although the Project is not current within the boundaries of LACWWD40, it does lie within the LACWWD40's Sphere of Influence. As such, the Project is required to make application for annexation to LACWWD40 for the purposes of water supply. Whether it will be annexed, or not, has not yet been determined and two conditions are of note:

1. If the water provided by LACWWD40 to the Project were to come from its central facilities, it would include a blend of SWP water, provided by AVEK, and groundwater drawn from LACWWD40's wells. Where this to be the case, the Project may be precluded from obtaining such water by the determinations of the Basin adjudication process.
2. If the water provided by LACWWD40 to the Project were to directly come from a connection to the AVEK pipeline that is on 116th Street East, the Project would not be receiving groundwater. This is because the AVEK water supply is comprised solely of water imported from the SWP via the California Aqueduct.

The LACWWD40 and QHWD adopted an Integrated Regional UWMP (IRUWMP) in June 2011. Relevant information in the IRUWMP includes, but is not limited to, the following:

- LACWW40/QHWD currently supply treated imported SWP water and groundwater to customers.
- LACWW40/QHWD do not currently receive or distribute recycled water.
- LACWW40/QHWD future water supplies include SWP water, groundwater, recycled water, and groundwater recharge and extraction.
- LACWW40/QHWD water demand in 2009 was 54,631 afy with over 75 percent committed to residential customers.
- LACWW40/QHWD forecast a normal year water demand of 141,020 afy for the year 2035.

#### 4.12.2.4 Water Rights Adjudication

The State of California does not have a comprehensive groundwater permit process to regulate the withdrawal of groundwater resources. Landowners may use groundwater underlying their property on an "equal and correlative basis," which means that all property owners above a common aquifer possess a shared right to reasonable use of the groundwater aquifer. A user cannot take unlimited quantities without regard to the needs of other users, and surplus groundwater may only be appropriated for use on non-overlying lands when such use will not create overdraft conditions (CalEPA, 2011).

Groundwater basins may be adjudicated by court decision, wherein a court determines the quantity of groundwater allotted to each landowner with respective rights to the underlying resource. Most groundwater basins in California are not adjudicated, which means that landowners may extract groundwater underlying their property without a permit process for regulation of groundwater use (CalEPA, 2011). Groundwater basins that have been adjudicated by a court decision, of which there are 22 such basins in California, are subject to management by a court-designated Watermaster.

The Antelope Valley Groundwater Basin (the Basin) is currently non-adjudicated, although a legal adjudication process has been underway since the late-1990s. It is anticipated that water rights will be quantified and assigned as part of the Basin adjudication process.

Beginning in 1999, Diamond Farming Company and Bolthouse Farms, Inc. filed lawsuits against various Antelope Valley water districts and government agencies seeking priority water rights to water beneath their farmland. In 2004-2005, several property owners and public water suppliers, including LACWWD40, also initiated legal proceedings, including a cross complaint, to determine the respective rights of existing and potential users of groundwater in the Basin. The lawsuits were filed separately in Riverside, Kern, and Los Angeles County Superior Courts and were transferred and consolidated into one coordinated proceeding currently before the Honorable Jack Komar who is presiding by special assignment.

The underlying dispute revolves around the priority/superior right to pump groundwater and the protection of the Basin. The parties have asserted multiple claims to be adjudicated, including claims for declaratory relief, prescriptive rights, quiet title to water rights, and claims that portions of the Basin should be treated as a separate area for management purposes if a physical solution for the Basin is established, among other claims. The resolution of many of these claims is likely to be affected by the nature and extent of the hydrologic connectivity of water within various portions of the aquifer. The dispute involves hundreds of Parties and may take many more years to resolve.

The following timeline describes key aspect of the adjudication, as of this writing:

- For over 10 years, a number of actions have been pending in the Los Angeles County Superior Court and other, California courts seeking an adjudication of the various parties' respective rights to the groundwater underlying the Basin. The Applicant is a named defendant in the Basin litigation.
- A number of cases raising such issues were coordinated by a July 11, 2005 order of Judicial Council and assigned to the Honorable Jack Komar of the Superior Court for the County of Santa Clara (the Court).
- On or about October 10, 2006, the Court held an initial phase of trial with respect to the boundaries of the Basin and issued an Order on November 3, 2006, defining the Basin for purposes of this litigation. The Project is within the Court-defined boundaries of the Basin.
- The Willis Class Action was filed on or about January 11, 2007 to contest certain public entities' claims that those entities had obtained prescriptive rights to a portion of the Basin's groundwater. The Willis case was subsequently coordinated with the Coordinated Cases.
- By Order, dated September 11, 2007 (as amended by Orders dated May 22, 2008 and September 2, 2008), the Court certified Willis as the representative of a Class of certain Overlying Owners pursuant to Section 382 of the California Code of Civil Procedure and Division 7, Chapter 6 of the Rules of Court.
- In early January 2009, Notice of the Pendency of the Willis Action was sent by first class mail to all Willis Class Members who could be identified with reasonable effort and a summary notice was published. The deadline for putative Willis Class Members to exclude themselves (as extended) expired on August 30, 2009. The Court has made various orders allowing certain

parties to rejoin the Willis Class. The Applicant has filed its answer in the Willis Class Action litigation and, thus, is excluded as a Willis Class member.

- Counsel for the Willis Class engaged in settlement discussions with Defendants' counsel during mid-2009. On September 2, 2009, counsel participated in mediation session before the Honorable Ronald Robie. That mediation resulted in an agreement in principle among counsel for the Settling Parties to settle the litigation between and among their respective clients, subject to appropriate approvals.
- By Order dated October 28, 2009, the Court stated its intent to consolidate the various Actions that were coordinated as part of JCCP No. 4408, including the Willis action.
- On February 19, 2010, the Court entered an Order Transferring and Consolidating [the Coordinated] Actions for All Purposes.
- By Order dated November 18, 2010, this Court granted preliminary approval to the proposed settlement of this action and directed that Notice of the Proposed Settlement be sent to the Class.
- On September 22, 2011, the Court entered judgment in accordance with the proposed settlement. The Court awarded the Willis Class attorneys fees in the amount of $1,839,494, an incentive award for Ms. Rebecca Willis in the amount of $10,000, costs in the amount of $65,057.68, and supplemental attorneys' fees in the amount of $160,622.50. Judgment in the amount of $2,075,174.18 was entered for the Willis Class against LACWWD40, City of Palmdale, Palmdale Water District, Littlerock Creek Irrigation District, Palm Ranch Irrigation District, Quartz Hill Water District, California Water Service Company, Rosamond Community Service District, Phelan Pinon Hills Community Services District, Desert Lake Community Services District, and North Edwards Water District.
- On March 1, 2011, the Court ordered final approval of the proposed settlement and found the settlement is fair and reasonable to all affected parties.
- On July 13, 2011, the Court found that current extraction of water from the Basin by all pumping ranges from 130,000 to 150,000 acre feet a year, and determined the Basin is in an "overdraft" condition.
- On July 13, 2011, the Court determined the "safe yield" for the Basin is 110,000 acre feet annually.
- On June 29, 2013, in Phase 4 of the trial, the Court determined current pumping amounts.

  Source: http://www.scefiling.org/filingdocs/194/64853/102081_49053.pdf
- The Court has set Phase 5 for February 2014 and will determine rights to pump the supplemental yield from return flows of imported water and the Federal Reserved Right.
- The Court has set Phase 6 for August 2014 and will will determine all remaining rights to pump groundwater, including prescriptive rights.
- Subsequent phases are expected to result in a court directed groundwater management plan usually referred to as a "Physical Solution." Because of the overdraft, the Court will implement reductions in in groundwater pumping to bring pumping amounts down to the safe yield. The

Court will likely order parties who pump more than their allocated right to pay a replacement assessment to finance the purchase of imported water to offset the overpumping. The Court will retain equitable jurisdiction over the Basin and will likely appoint a water master to assist in implementing and enforcing the final judgment.

### 4.12.3 Environmental Setting

Big Rock Creek is a seasonal stream originating from the San Gabriel Mountains to the south, and is fed by precipitation runoff and spring flows. The result is a mean annual runoff of approximately 11,500 acre-feet. Much of this water infiltrates the permeable surface and recharges the groundwater sub-basins. The Big Rock Creek main channel flows south-north approximately one (1) mile to the east of the Project site. Data indicate an overall average groundwater depth of approximately 170 feet bgs with a gradient to the north and laterally away from the Creek bottom. Basin recharge generally occurs at the foot of the mountains and hills by percolation through the head of alluvial fan systems. The Big Rock and Little Rock Creeks, in the southern part of the Basin, contribute about 80 percent of runoff into the Basin (Durbin 1978). Other minor recharge is attributed to the return of irrigation water and septic system effluent.

Water in the Antelope Valley is supplied from two primary sources: 1) naturally occurring water accumulated as surface water or groundwater from rain and snow; and 2) imported surface water collected in northern California and delivered via the SWP (LACDRP 2009). The total storage capacity of the Basin has been reported at 68 million acre feet (MAF) to 70 MAF (AVIRWMP, 2007). Estimates of Basin natural recharge rates range from approximately 31,200 to 80,400 afy.

#### 4.12.3.1 Groundwater Extraction

The majority of the water used in the Antelope Valley is supplied by groundwater wells. The demand for water within the Basin has historically exceeded available groundwater supply. As a result, substantial pumping of groundwater in the Antelope Valley began in the early 1900s, resulting in a decline in groundwater levels as the extraction rate exceeded the recharge rate.

Groundwater extractions between 1926 and 1972 resulted in the overdraft of the aquifer that caused groundwater levels to drop significantly. Ground water extractions are reported to have increased from approximately 29,000 afy in 1919 to 400,000 afy in the 1950's when ground water use in the Region was at its highest.

Implementation of the SWP in the 1970s resulted in stabilization of groundwater levels in some areas of the Antelope Valley, although groundwater levels in general have continued to fall to the present. From the 1990s to the present, agricultural uses have significantly increased groundwater extraction. The rapid increase in urban growth in the 1980s resulted in an increase in the demand for municipal, industrial water, and agricultural water, and an increase in groundwater use, which exacerbated the drop in groundwater levels across the Basin. Strategies to address this issue include groundwater recharge and groundwater banking, use of recycled water, demand management through conservation and water use efficiency, and efficiency upgrades through infrastructure improvements (RWMG, 2007).

### 4.12.3.2 Safe Yield

An aquifer is considered to be in an "overdraft" condition if groundwater extractions are in excess of the "safe yield" of water from an aquifer, which over time will lead to a depletion of the water supply within a groundwater basin as well as other detrimental effects, if the imbalance between pumping and extraction continues.

In its July 13, 2011 Statement of Decision, the Court found that current extraction of water from the Basin by all pumping ranges from 130,000 to 150,000 acre feet a year, and determined the Basin is in an "overdraft" condition, as follows:

> *Thus, the Antelope Valley adjudication area has been in a state of overdraft based on estimates of extraction and recharge, corroborated by physical evidence of conditions in the basin, and while the annual amount of overdraft has lessened in recent years with increased precipitation and recharge, the effects of overdraft remain and are in danger of being exacerbated with increased pumping and the prospective cyclical precipitation fluctuations shown by the historical record. The physical evidence establishes that there was significant subsidence occurring in parts of the adjudication area ranging from two to six feet or more in certain areas of the valley caused by such pumping and that measurable water levels fell in a substantial part of the valley. While some of the ongoing subsidence may be attributable to residual subsidence (from earlier periods of shortfall) that would not seem to be an explanation for the extent of continued subsidence. The evidence establishes that ground water extractions in excess of recharge area cause as well.*

In its July 13, 2011 Statement of Decision, the Court defined "safe yield" as follow:

> *The law defines overdraft as extractions in excess of the "safe yield" of water from an aquifer, which over time will lead to a depletion of the water supply within a groundwater basin as well as other detrimental effects, if the imbalance between pumping and extraction continues. (City of Los Angeles v. City of San Fernando (1975) 14 Cal. 3d 199; City of Pasadena v. City of Alhambra (1949) 33 Cal. 2d 908, 929; Orange County Water District v. City of Riverside (1959) 173 Cal. App. 2d 137.) "Safe yield" is the amount of annual water extraction from the aquifer over time equal to the amount of water needed to recharge the groundwater aquifer and maintain it in equilibrium, plus any temporary surplus. Temporary surplus is defined as that amount of water that may be pumped from an aquifer to make room to store future water that would otherwise be wasted and unavailable for use.*

Regarding its determination of safe yield for the Basin, the Court decided the following:

> *Weighing the various opinions of the experts, however, the Court finds by a preponderance of the evidence that conservatively setting a safe yield at 110,000 acre feet a year will permit management of the valley in such a way as to preserve the rights of all parties in accordance with the Constitution and laws of the State of California. Some portions of the aquifer receive more recharge than others and pumping requirements vary. These differences require management decisions that respect the differences in both the geology and the cultural needs of the diverse parts of the valley.*

> *It should not be assumed that the safe yield management number may not change as climate circumstances and pumping may change, or as the empirical evidence based on experience in managing the basin suggests it is either too high or too low.*

Source: *Statement of Decision Phase Three Trial, Antelope Valley Groundwater Cases, Los Angeles County Superior Court Case No. BC 325 201* (Judicial Council Coordination Proceeding No. 4408) (July 13, 2011) at pp. 9-10.

#### 4.12.3.3 Local Hydrogeology

The Project site is located in the South Lahonton Hydrologic Region, a relatively arid environment encompassing approximately 21 million acres (DWR, 2003). The Project site is located in the Antelope Valley sub-region, which occupies 1,390 square miles in the southwest portion of the hydrologic region. The Antelope Valley is a closed groundwater basin, and all water flows stay within the Basin and drain to central lakes, which, due to the area's aridity, are usually dry. Average rainfall in the Antelope Valley is approximately 10-inches (Beeby et. al, 2010).

The Basin is divided into twelve subunits. These subunits include the following: Finger Buttes, West Antelope, Neenach, Willow Springs, Gloster, Chaffee, Oak Creek, Pearland, Buttes, Lancaster, North Muroc, and Peerless. A report by Duell (1987) indicated that the Project site is located within the Pearland groundwater subunit of the Basin. This subunit is bounded on the north, west and south by unnamed faults that are postulated from an analysis of water-level data. Substantial recharge to this subunit comes from Littlerock and Big Rock Creeks. Groundwater generally moves from southeast to northwest, with outflow to the Lancaster subunit.

Groundwater in the Antelope Valley occurs primarily in the confined and unconfined aquifers of the alluvial deposits. The shallowest, unconfined aquifer is called the “Principal Aquifer” and is typically first encountered less than 100 feet bgs. Deeper aquifers are confined in many areas by Pleistocene clayey lake deposits. The deeper aquifers range in depth and thickness, but are all constrained vertically by the underlying bedrock, and generally provide a poor water source. Based on the currently available information, these deeper aquifers do not occur at the Site.

#### 4.12.3.4 Groundwater Elevation

The Project site is located within the South East Groundwater Area of Antelope Valley. Portions of which (especially to the south) are natural groundwater recharge areas for the Antelope Valley. The Project site is located at the northern end of one of those recharge areas (Leighton and Phillips, 2003). Shallow groundwater is usually encountered at depths shallower than 100 feet bgs. Groundwater generally flows to the north and northwest. It has been suggested that well capacities are within a 200 to 800 gpm range (Beeby et. al, 2010).

Locally, groundwater well data available from the DWR website indicates groundwater elevation is variable both spatially and temporally, occurring between 60 to 120 feet bgs at different locations over the past 50 years. Hydrographs for three wells located near the Project site are illustrated in Figure 6 of EIR Appendix 19 (*Drawdown Assessment*). Soil borings at the Site, drilled in 2005 discovered moist to wet conditions at 80 feet bgs.

Groundwater in the vicinity of the Project has varied widely both from year to year and seasonally due to varying amounts of basin-wide groundwater usage. This would indicate that local groundwater supply wells would typically have been designed to accommodate wide fluctuations in groundwater level.

The Project has been specifically designed as a dry surface mining operation with a maximum depth of 80 feet bgs. Although EIR Table 12 (Local Water Wells) indicates groundwater levels in a nearby well at 55.4 feet below surface, Fugro prepared a *Pit Slope Stability Evaluation* (EIR Appendix 4), which indicated otherwise. During this evaluation, Fugro drilled two sampling holes on August 15, 2006. The first of these wells (DH-1) encountered perched groundwater at a depth of 70 feet bgs, while the second well (DH-2) did not encounter groundwater to the explored depth at its termination depth of 80 feet bgs.

According to the DWR database, there are five water wells located within a one mile radius from the Project's proposed onsite supply well. Of these five wells, none are within 2,000 feet of the Project well. It is unclear which, if any of these wells are currently operational. Prior to the mid-1980s, and without the influence of the potential Project well, these wells have experienced total water level fluctuations of up to 140 feet. Therefore, it is believed that groundwater is considerably deeper than the 55.4 feet reported in 1985 for Well Name 05N10W12M002S.

Notes: To ensure groundwater is protected, surface mining operations would be curtailed at a final mining depth of 80 feet bgs, or at a depth that is 5 feet above static groundwater levels for all pits, should groundwater be encountered. If groundwater is encountered and the final excavation depth reduced, the volume of material excavated and processed, and the life of the Project would be reduced accordingly. Within the first few years of Project operations, the static groundwater level would have been determined for the North Pit and the final mining depth defined accordingly at 5 feet above that level. The same precaution and determination of static groundwater level would be made for the South Pit.

It is understood that previous owners used a groundwater well within the Project site to meet water demands. However, no data regarding well construction or extractions were available.

#### 4.12.3.5 Groundwater Quality

Groundwater quality is excellent within the principal aquifer, but degrades toward the northern portion of the dry lake areas (AVIRWMP, 2007). Water in the principal aquifer is considered to be generally suitable for domestic, agricultural, and industrial uses, with a total dissolved solids (TDS) concentration ranging from 200 to 800 milligrams per liter (mg/l). The deep aquifer typically has higher TDS levels and hardness levels range from 50 to 200 mg/l. Portions of the Basin have experienced high arsenic, boron, fluoride, and nitrate levels.

#### 4.12.3.6 Local Surface Water

The Vicinity Map (EIR Figure 2) provides a USGS quad sheet illustrating an ephemeral river course (i.e., a dashed blue line) transecting the Project from the southeast toward the northwest. The *Drainage Concept* prepared for the Project (EIR Appendix 3) addresses concerns regarding Capital Flood events along this historic relict of an ephemeral river course. There is no flow in any of the channels on the inactive alluvial fan surface except for during and shortly following individual rainfall-runoff generating

events. Short-duration shallow overland flow (sheetflow) is generated when rainfall intensity is greater than infiltration capacity. The resulting sheetflow is collected and conveyed downstream primarily by numerous shallow low-capacity relict braids in a nearly random distributary pattern. Surface flow occurs less than approximately 0.1 percent of the time (Stetson Engineers, 2004).

The *Jurisdictional Drainage* (EIR Appendix 6) also concludes the onsite drainages are a historic relict of an ephemeral river course. As such, permanent surface water is not present in the Project area. The *Jurisdictional Delineation* notes:

> *The Lebata site has very limited potential for flooding due to hydrological changes in the watershed and improvements such as the State Route 138 Widening Project. There is no riparian vegetation recorded on the Lebata site and no chance for aquatic species, since no permanent water exists on site. Periodic subsurface flows (at depth) may occur rarely in one or more of the drainage features due to very localized sheetflows, but the area exhibits a very high rate of percolation and has been effectively cut off from its historic sources in Big Rock Wash. Surface flows are not expected to occur, even during a Capital Flood event.*

### 4.12.4 Threshold Criteria

The County of Los Angeles Environmental Document Reporting Procedures and Guidelines, adopted by the Board of Supervisors, 1987, notes that a "*project will normally have a significant effect on the environment if it will:"*

- Substantially degrade or deplete groundwater resources.
- Interfere substantially with groundwater recharge.

Expanding upon this threshold criterion more definitively, the following criteria were derived from the revised format Initial Study Checklist (EIR Appendix 1). Based upon these criteria, the Project may result in significant impacts if it will:

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Not have sufficient reliable water supplies available to serve the project demands from existing entitlements and resources, considering existing and projected water demands from other land uses.

### 4.12.5 Impact Analysis

#### 4.12.5.1 Relevant Project Characteristics - Proposed Water Source

Lebata proposes to drill an onsite water well and annually extract approximately 312 acre-feet of water to meet Project needs, if so allocated through the Basin adjudication process. However, in light of the Basin adjudication process described in EIR sub-chapter 4.12.2.4, the need for an alternative source of water became evident. It is likely the Basin adjudication will result in future limitations being placed

upon existing groundwater users, and those proposing new or increased levels of groundwater extraction. The details of such an allocation process are as yet unknown and the process may take years to resolve.

#### 4.12.5.2 Relevant Project Characteristics – Alternative Water Sources

Based on the results of the Basin adjudication, Lebata could pursue groundwater via one or more processes including, but not limited to, the following: direct use of groundwater rights, purchase of available local groundwater, and lease available local groundwater. Once the Project receives approval for construction, Lebata will evaluate the potential to legally pump groundwater via one or more processes noted above. This evaluation will include an analysis of, but not limited to, the following: applicable source of groundwater, potential location(s) of wells, annual volume of groundwater to be pumped, short-term and long-term costs, and an estimate of the sustainability of the groundwater to meet future Project water demands. If groundwater is determined to be a viable water supply for the Project, Lebata will pursue construction of a new well(s) within the Project site and/or purchase/lease groundwater from a local source.

In the likely event the Basin adjudication process does not allocate sufficient groundwater to meet Project needs, Lebata has pursued alternative water sources, the preferred source being the purchase of permanent entitlement of surface water from outside the Antelope Valley basin. In addition, Lebata has obtained an alternative or backup water source via agreement with AVEK to supply supplemental water for the Project. These potential water sources are summarized below and include:

- Permanent Entitlement - Imported Surface Water via State Water Project
- Supplemental Water - Antelope Valley-East Kern Water Agency
- Banked Water - Antelope Valley-East Kern Water Agency
- Banked Water - Tejon Valley Water Bank
- Banked Water - Central Valley Water Bank
- Banked Water - AquaHelio Resources Water Bank
- Lebata Purchase from another Water Bank
- Recycled Water
- Hauled Water - Railroad or Truck

##### 4.12.5.2.1 *Permanent Entitlement - Imported Surface Water via State Water Project*

The State Water Project (SWP) is owned by the State of California and operated by the Department of Water Resources (DWR). The primary purpose of the SWP is to deliver surface, water diverted from the Sacramento River-San Joaquin River-San Francisco Bay-Delta (Bay-Delta), to 29 urban and agricultural water suppliers in Northern California, San Francisco Bay Area, Central Valley, Central Coast, and Southern California, including approximately 20 million urban users and 750,000 acres of farmland. Of the contracted water supply, approximately 70 percent goes to urban users and 30 percent goes to agricultural users.

SWP facilities originate in Northern California at Lake Oroville on the Feather River. Water released from Lake Oroville flows into the Feather River, goes downstream to its confluence with the Sacramento River, and then travels into the Bay-Delta. Water is pumped from the Bay-Delta region to contractors in areas in San Francisco bay area and areas south of the Bay-Delta. SWP deliveries consist solely of untreated water. The SWP system currently consists of 701 miles of aqueduct, 34 storage facilities totaling 5.8 million acre

feet (MAF) of storage, 5 hydro-electric power plants, 4 pumping-generating plants, 17 pumping plants, and 3 pump stations. Refer to Figure 2-1 of the *WSA* (EIR Appendix 18), which illustrate the location of major SWP facilities.

In addition to delivering water to its contractors, the SWP is operated to improve water quality in the Bay-Delta region, control flood waters, and provide recreation, power generation, and environmental enhancement.

**a) SWP Contract Allocations**

Contract allocations, also known as entitlements, for SWP contractors are summarized by DWR in a table commonly referred to as 'Table A'. Entitlements are based on the original projected SWP maximum yield of 4.173 million acre feet (MAF). Table A is a tool used by DWR to allocate fixed and variable SWP costs and yearly water entitlements to the contractors. Table A contract amounts do not reflect actual deliveries a contractor should expect to receive, as DWR adjusts the amounts downward during below normal years. Such adjustments are based upon the amount of SWP water available in any given year and the amount recently used by each Table A entitled users.

DWR annually approves the amount of SWP entitlement that contractors will receive based on several variables. The entitlement amount received by contractors varies based on contractor demands and projected available water supplies. Variables impacting projected available water supplies include snowpack in the Sierra Nevada, capacity available in reservoirs, operational constraints, and demands of other water users. Operational constraints include pumping restrictions related to fish species listed as either threatened or endangered under the federal or state Endangered Species Acts (ESA). Contractors' requests for portions of their entitlements cannot always be met and in some years there are shortages and in other years surpluses.

In 2012, SWP contractors received only 65 percent of their SWP contract entitlements. Deliveries in 2007 to 2011 ranged within 35 to 80 percent of contract entitlements.

**b) SWP Water Quantity Challenges**

The original SWP facilities, completed in the early 1970s, were designed to meet the needs of the SWP contractors established at that time. It was anticipated that additional SWP facilities would be constructed over time to meet increases in contractor delivery needs. However, these additional facilities were repeatedly deferred and public attitudes and environmental regulations have changed. SWP facilities are not fully constructed and until full built-out, SWP facilities are only able to deliver about 62 percent of the Swap's 4.1 MAF of entitlements in a normal water year. As a result, the SWP is not capable of delivering full contractor entitlements every year.

The focal point of SWP supplies is the Bay-Delta, which includes the largest estuary on the west coast through which 60 percent of the freshwater used in the State must pass. Years of environmental neglect to this area and political gridlock has resulted in significant environmental damage. In recent years, the Delta smelt, winter-run Chinook salmon, spring-run Chinook salmon, and split tail were added as threatened or endangered species under the federal ESA. The resulting actions taken to protect the ecosystem of the Bay-Delta have placed additional restrictions on SWP operations.

**c) SWP Water Quality Challenges**

SWP water is generally of high quality with total dissolved solids (TDS) concentrations ranging between 250 and 350 milligrams per liter (mg/l). The quality of SWP water as a drinking water source is affected by a number of factors, most notably seawater intrusion and agricultural drainage from peat soil islands in the Bay-Delta.

The water quality parameters of most concern are total organic carbon (TOC), bromide, and salinity. Levels of TOC and bromide in the water increase significantly as it moves through the Bay-Delta. These constituents can combine with chemicals used in the water treatment process to form disinfection byproducts that are carcinogenic. Treated wastewater discharged from cities and towns surrounding the Bay-Delta also add salts and pathogens to the water, which affect its suitability for drinking and recycling. Moreover, actions to protect Bay-Delta fisheries have exacerbated existing water quality problems by forcing SWP diversions to shift from the spring to the fall, when salinity and bromide levels are highest. Closure of the Bay-Delta Cross Channel gates to protect migrating fish has also degraded the quality of SWP supplies by reducing the flow of higher quality Sacramento River water.

**d) SWP Reliability**

It was thought at the time that the SWP was constructed that the system could deliver about 50 percent of its entitlement in a very dry year. DWR bi-annually prepares the SWP Delivery Reliability Report to provide contractors with current and projected water supply availability for SWP. The 2012 Reliability Report forecasts SWP deliveries at 60 percent for a normal water year for all Table A entitlements (DWR, 2012). However, in a single dry year (worst case scenario) the DWR estimated delivery of an average of only 11 percent of Table A entitlements (DWR, 2012). In a multiple dry year (4-year) sequence, the DWR estimated delivery of an average of 34 percent of Table A entitlements (DWR, 2012). Factors impacting deliveries include environmental constraints and hydrologic changes as a result of climate change.

For 2012, DWR delivered 65 percent of requested SWP water, or 2,711,967 AF. In 2011, DWR delivered 80 percent of requested SWP water. In 2010, the SWP delivered 50 percent of requested SWP water, up from a record-low initial projection of 5 percent due to lingering effects of the 2007 to 2009 drought. Deliveries were 60 percent of requests in 2007, 35 percent in 2008, and 40 percent in 2009. The last time DWR delivered 100 percent of entitlements, difficult to achieve even in wet years due to pumping restrictions to protect threatened and endangered fish, was in 2006.

**e) Purchasing a Permanent SWP Entitlement**

To obtain a permanent SWP entitlement, it would be necessary to purchase an entitlement from a supplier/agency outside the Antelope Valley basin, via contractors or agencies with entitlements for sale. Lebata may also consider short-term or long-term purchase options of SWP entitlements. If Lebata obtains SWP Table A water, the entitlement would be transferred to AVEK, which would then be contracted to transport water to the Project. Refer to the section immediately below for additional details regarding AVEK. A water service connection for the Project would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project at the southeast corner of Avenue T and 116th Street. This pipeline would be constructed within the County's right-of-way under an encroachment permit administered by the DPW. In addition, LACWWD40 may be involved in the water transfer since the Project site lies within the LACWWD40 Sphere of Influence and may be annexed.

Presently, Lebata does not own entitlements to SWP water, but is interested in purchasing SWP Table A water. Although, Lebata is aware of one or more agencies interested in selling SWP Table A entitlements, the purchase price may be $10,000 per acre-foot of water (Memorandum of Understanding, dated August 13, 2013, between AVEK and LACWWD40.). In addition, Lebata would be required to pay DWR for delivery of the SWP water via the California Aqueduct to the AVEK turnout in the range of approximately $300 per acre-foot, and approximately $120 per acre-foot to AVEK for treatment and distribution. Lebata would also be required to pay a capacity fee to AVEK for connection to the AVEK distribution system. Lebata will evaluate this alternative and costs before pursuing a contract. Cost estimates are in 2013 US$. If permanent water supplies are not acquired for the Project, the water service to the Project is considered to be temporary and interruptible.

#### 4.12.5.2.2 *Supplemental Water - Antelope Valley-East Kern Water Agency*

AVEK is a regional water agency supplying SWP water to a service area of approximately 2,400 square miles including portions of northern Los Angeles and southeastern Kern counties. The AVEK service area includes a population of nearly 300,000. AVEK's function is to supplement local groundwater and surface water supplies with water from the SWP.

AVEK has a system of pipelines and water treatment facilities that allow it to deliver both raw water and treated water to many areas in the Antelope Valley Region. AVEK has played a major role in the Valley's water system since it was granted a charter by the State Legislature in 1959. It succeeded the Antelope Valley-Feather River Association, which was formed in 1953 to encourage importation of water from the Feather River in northern California. Refer to Figure 2-2 of the *WSA* (EIR Appendix 18) for AVEK Boundary Location Map. In 1962, the AVEK Board of Directors signed a water supply contract with the DWR to assure delivery of imported water to supplement Antelope Valley groundwater supplies.

AVEK's SWP entitlement provides for it to receive 141,400 acre-feet of Table A water in any given year. AVEK has the third largest entitlement of the 29 SWP water agencies in California, following the Metropolitan Water District and the Kern County Water Agency. During below normal years, AVEK may obtain water supplies via entitlements of Table A SWP water and groundwater extracted from the AVEK Groundwater Bank (see EIR sub-chapter 4.12.5.2.3). AVEK may also receive additional supplies such as Article 21 water, carryover water, turnback pool water, etc. during normal, wet, and dry water years.

**a) AVEK Facilities**

Financed by a $71 million bond issue, AVEK constructed the Domestic Agricultural Water Network (DAWN), which consists of four water treatment plants with clear water storage and more than 100 miles of pipelines. Four 8-million gallon water storage reservoirs near Mojave and one 3-million gallon reservoir at Vincent Hill Summit complete the DAWN network. The bulk of the AVEK imported water is treated and distributed to customers throughout its service area. The DAWN network also provides delivery of untreated water from the Aqueduct to local farmers and ranchers.

The Quartz Hill water treatment plant is capable of producing 90 MG per day (mgd) of treated aqueduct water and includes 9.2 million gallon storage reservoir. The Eastside water treatment plant is capable of producing 10 mgd of treated water. The Rosamond water treatment plant can produce 14 mgd, while the most recently added treatment plant in Acton can produce 4 mgd of treated water. Additional

surface water allotments from the SWP exist in the Antelope Valley for Palmdale Water District and Littlerock Creek Irrigation District.

**b) AVEK Water Supply and Demand (Current and Future)**

The AVEK 2010 water demand was 60,675 acre-feet including sales for municipal, commercial, industrial, agriculture, and system losses. Estimated Project water demands will be approximately 312 afy, which would be in addition to the stated 2010 demand. Additional details regarding current AVEK water demand are available in the AVEK 2010 UWMP.

AVEK future water demand for municipal, commercial, industrial, agriculture, and system losses are based on population projections for growth in the Antelope Valley and purveyor commitment to conservation programs, conjunctive use programs, groundwater management, and use of recycled water. Future AVEK normal-year water demand is estimated to be approximately 96,558 by 2030. It is understood that Project future water demands were not included in the AVEK estimated future water demands.

**c) AVEK Water Supply Reliability**

The Water Code Section 10910 requires an assessment of water supply reliability and vulnerability to seasonal or climatic shortage. Reliability is a measure of a water service system's anticipated success in managing water shortages. This assessment must include a comparison of the total projected water demand with the supply available for the following conditions, each of which is discussed below:

- Normal Year;
- Single Dry-Year; and
- Multiple Dry-Year (three consecutive dry years).

AVEK's future water supply projections assume normal inflows from the Bay-Delta for the SWP and does not consider use of banked water to supplement supplies. AVEK utilized DWR delivery estimates for future SWP water supply reliability. For Normal Year conditions, AVEK projected a long-term average delivery of 62 percent of maximum SWP entitlement. For Single Dry-Year conditions, AVEK used the projected delivery of 12 percent of the maximum SWP entitlement. For Multiple Dry-Year conditions, AVEK used the projected delivery of 46 to 51 percent of the maximum SWP entitlement. Multiple-year drought periods correspond with the lowest water deliveries that were available from DWR.

***Normal Year Supply and Demand Comparison***

A summary of the AVEK projected 20-year water supplies and demands for normal conditions is provided in EIR Table 89. As noted, AVEK will meet its normal year demands from 2015 to 2030 via use of existing imported water supplies. AVEK anticipates a surplus of nearly 11,000 to 16,000 afy for the period 2015 to 2030. In addition, local water purveyors will continue to implement additional water supply strategies to increase availability and reliability of water supplies.

**Table 89 Normal Year Supply and Demand Comparison**

| | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|
| Projected Supplies afy [1,2] | 107,688 | 107,688 | 107,688 | 107,688 |
| Projected Demands afy | 91,075 | 92,828 | 94,530 | 96,558 |
| Net Difference afy [1] | 16,593 | 14,840 | 13,138 | 11,110 |
| Difference as a % of Supply [1] | 15.4 | 13.8 | 12.2 | 10.3 |
| Difference as a % of Demand [1] | 18.2 | 16.0 | 13.9 | 11.5 |

Source: AVEK 2010 UWMP

[1] Does not include additional AVEK supply sources, including supplemental SWP water, and groundwater extracted via the Groundwater Recharge Project.

[2] Does not include other water resources utilized by water purveyors, such as their use of groundwater, future groundwater banking programs, conservation and water rationing efforts, and use of recycled water.

***Single Dry-Year Supply and Demand Comparison***

A summary of the District's projected 20-year water supplies for a single dry-year condition is provided in EIR Table 90, which indicates that AVEK may have a potential supply deficit of approximately 55,000 to 60,000 afy during a single dry-year for the years 2015 to 2030. Current AVEK supplies identified in EIR Table 90 only include SWP water available via DWR Table A. These supplies do not include AVEK additional water resources such as supplemental SWP water and groundwater extracted via the Groundwater Recharge Project. In addition, local water purveyors will have sufficient supply to meet future demands through 2035 (Los Angeles County, 2011) with implementation of one or more of the future water supply strategies described following future water supply strategies:

- Maximize use of available groundwater within Basin limits.
- Expand conservation efforts.
- Acquire and/or develop new imported supplies via the New Water Supply (Developer Fee).
- Create a combination of local surface spreading facilities to percolate untreated SWP water.
- Expand use of Aquifer Storage and Recovery wells to inject/recover potable water.
- Add additional groundwater extraction capacity in order to recover stored water.
- Expand use of recycled water within existing service areas.
- Pursue an exchange program with agriculture interests to replace their groundwater use with recycled water thereby providing additional potable groundwater for municipal use.
- Evaluate use of recycled water to replenish the Basin.

**Table 90 Single Dry-Year Supply and Demand Comparison**

| | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|
| Projected Supplies afy [1,2] | 37,000 | 37,000 | 37,000 | 37,000 |
| Projected Demands afy [3] | 91,075 | 92,828 | 94,530 | 96,558 |
| Net Difference afy [1,2,3] | -54,075 | -55,828 | -57,530 | -59,558 |
| Difference as a % of Supply [1,2] | -146.1 | -150.9 | -155.5 | -161.0 |
| Difference as a % of Demand [1,2] | -59.4 | -60.1 | -60.9 | -61.7 |

Source: AVEK 2010 UWMP

[1] Does not include additional AVEK supply sources, including supplemental SWP water, and groundwater extracted via the Groundwater Recharge Project.

[2] Does not include other water resources utilized by water purveyors, such as their use of groundwater, future groundwater banking programs, conservation and water rationing efforts, and use of recycled water.

[3] Assumes demand unchanged compared to Normal Year.

According to Antelope Valley Regional Water Management Group, local water purveyors will have a single dry-year deficit of approximately 152,000 afy to 294,000 afy for the period 2015 to 2035 (AVIRWMP, 2007). However, the AVIRWMP indicates that local purveyors could meet anticipated water demands via implementation of one or more of the future water supply strategies described following future water supply strategies:

- Expand local groundwater recharge areas, water banking programs, and Aquifer Storage and Recovery programs.
- Add aggressive conservation program.
- Add storm water capture and recharge.
- Add recycled water for groundwater recharge.
- Add groundwater treatment and recharge.
- Expand use of recycled water for urban and agriculture demands.
- Participate in groundwater banking programs outside of Antelope Valley.
- Add desalination exchange program.

***Multiple Dry-Year Supply and Demand Comparison***

A summary of the District's projected 20-year water supplies for multiple dry-year conditions is provided in EIR Table 91, which indicates that AVEK may have a potential supply deficit of approximately 18,000 to 31,000 afy during a multiple dry-year period for the years 2015 to 2030. Current AVEK supplies identified in EIR Table 91 only include SWP water available via DWR Table A. These supplies do not include AVEK additional water resources such as supplemental SWP water and groundwater extracted via the Groundwater Recharge Project. In addition, local water purveyors will have sufficient supply to meet future demands through 2035 (Los Angeles County, 2011) with implementation of one or more of the future water supply strategies described immediately above under ***Single Dry-Year Supply and Demand Comparison***.

According to Antelope Valley Regional Water Management Group, local water purveyors will have a single dry-year deficit of approximately 90,000 afy to 260,000 afy for the period 2015 to 2035 (AVIRWMP, 2007). However, the AVIRWMP indicates that local purveyors could meet anticipated water demands via implementation of one or more of the future water supply strategies described immediately above under ***Single Dry-Year Supply and Demand Comparison***.

**Table 91 Multiple Dry-Year Supply and Demand Comparison**

| | | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|
| **Year 1** | Supplies afy [1,2] | 65,587 | 65,587 | 65,587 | 65,587 |
| | Demands afy [3] | 91,075 | 92,828 | 94,530 | 96,558 |
| | Difference afy [1,2,3] | -25,488 | -27,240 | -28,943 | -30,970 |
| | Difference as a % of Supply [1,2] | -38.9 | -41.5 | -44.4 | -47.2 |
| | Difference as a % of Demand [1,2] | -28.0 | -29.3 | -30.6 | -32.1 |
| **Year 2** | Supplies afy [1,2] | 70,847 | 70,847 | 70,847 | 70,847 |
| | Demands afy [3] | 91,075 | 92,828 | 94,530 | 96,558 |
| | Difference afy [1,2,3] | -20,228 | -21,980 | -23,683 | -25,710 |
| | Difference as a % of Supply [1,2] | -28.6 | -31.0 | -33.4 | -36.3 |
| | Difference as a % of Demand [1,2] | -22.2 | -23.7 | -25.1 | -26.6 |
| **Year 2** | Supplies afy [1,2] | 72,601 | 72,601 | 72,601 | 72,601 |
| | Demands afy [3] | 91,075 | 92,828 | 94,530 | 96,558 |
| | Difference afy [1,2,3] | -18,474 | -20,227 | -21,929 | -23,957 |
| | Difference as a % of Supply [1,2] | -25.4 | -27.9 | -30.2 | -33.0 |
| | Difference as a % of Demand [1,2] | -20.3 | -21.8 | -23.2 | -24.8 |

Source: AVEK 2010 UWMP

[1] Does not include additional AVEK supply sources, including supplemental SWP water, and groundwater extracted via the Groundwater Recharge Project.

[2] Does not include other water resources utilized by water purveyors, such as their use of groundwater, future groundwater banking programs, conservation and water rationing efforts, and use of recycled water.

[3] Assumes demand unchanged compared to Normal Year.

### d) AVEK Management of Water Supply Shortages

AVEK will attempt to meet local purveyor water demands. However, during a supply shortage AVEK may only be able to provide the minimum health and safety water needs of the service area. Because the AVEK water supply is not considered a primary source of water, Lebata will pursue a permanent entitlement of SWP water as the Project's primary source of water, and will consider participating in one or more banking programs. The AVEK "Water Shortage Contingency Plan" (Ordinance O-07-2) was designed under the assumption that, during a long-term drought, DWR will have a reduction in water deliveries. Refer to Appendix D of the *WSA* (EIR Appendix 18). Additional details regarding the AVEK water supply shortage program are provided in the AVEK UWMP.

Rationing stages may be triggered by a shortage in the DWR water source. Although an actual shortage may occur at any time during the year, a shortage (when one occurs) is usually forecast annually by the DWR on, or about, April 1 each year. If it appears that it may be a dry year and the water supplies will

be reduced, AVEK contacts its agricultural customers in March, with a confirmation follow up in April, so that the customers can minimize potential financial impacts. Currently, the sole water source for AVEK is imported surface water, but extraction from the AVEK water banking facilities is planned for the future. Rationing stages may be triggered by a supply shortage or by contamination.

**e) Lebata Agreement with AVEK**

AVEK has agreed to provide supplemental water for the Project on an interruptible basis. A copy of the AVEK Board approval of the Lebata Inc. application for water service is provided in Appendix B of the *WSA* (EIR Appendix 18). As previously noted, AVEK's SWP entitlement provides for it to receive 141,400 acre-feet of Table A water in any given year. AVEK will provide water to the Project during normal and wet water years from water that is surplus to the needs of the existing Table A entitled users within the Antelope Valley. The AVEK water will be supplied directly to the Project and/or purchased by the Project for banking. Water so banked would later be extracted and delivered to the Project during below normal years (see EIR sub-chapter 4.12.5.2.3 for additional details). AVEK may also receive additional water supplies, such as Article 21 water (SWP), carryover water (SWP), turnback pool water (SWP), groundwater (local), during normal, wet, and dry water years.

An underground water service connection would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project at the southeast corner of Avenue T and 116th Street. This pipeline would be constructed within the County's right-of-way under an encroachment permit administered by the DPW. In addition, the LACWWD40 may be involved in the water transfer since the Project site lies within the LACWWD40 service area (refer to EIR sub-chapter 4.12.2.3.1). Because the Project's water supply requirements are not for health and safety, it is considered secondary priority after health and safety demands are met. If annexed to the LACWWD40, the Project's water supply would be considered a secondary priority after health and safety demands are met. This means the Project would be subject to drought management practices per the Rules and Regulations of the Los Angeles County Waterworks Districts.

Lebata would be required to pay the DWR fees, in the range of approximately $300 per acre-feet, to deliver the water via the California Aqueduct to the AVEK turnout. In addition, Lebata would pay AVEK for treatment and distribution costs in the range of approximately $120 per acre-foot. Lebata will also be required to pay a capacity fee to AVEK for connection to the AVEK distribution system. Lebata will carefully evaluate this alternative and costs before pursuing a contract. Cost estimates are in 2013 US$.

#### 4.12.5.2.3 *Banked Water - Antelope Valley-East Kern Water Agency*

AVEK is currently implementing groundwater banking upon spreading fields adjacent to its facility on 116th Street East. AVEK proposes to construct and operate the Groundwater Recharge Project that will include a groundwater recharge and recovery program, with recharge facilities located on approximately 1,500 acres of land it owns in the County, northwest of Lancaster, California. The proposed Groundwater Recharge Project will consist of groundwater recharge areas and wells and pipelines to recover water. AVEK's SWP water supplies will be delivered from the California Aqueduct to the site via gravity flow using AVEK's existing West Feeder pipeline. Delivered supplies will be spread across the surface of the land, will percolate into the soil, and be stored. When needed, the stored water will be extracted using pumps, delivered to the West Feeder via internal buried pipelines, and then delivered to

AVEK customers north and east of the recharge area via the West Feeder pipeline. Recovered raw water could also be delivered to a new storage, treatment, and pumping facility.

AVEK does not have substantial water storage facilities in the region that it serves. Based on extensive analyses, AVEK determined there are potential needs for storage of water within the Antelope Valley Region to stabilize water supplies. AVEK concluded that there is a critical and immediate need for groundwater storage in the Antelope Valley Region. This need may be further increased as a result of the pending adjudication of the Basin. Failure to provide needed storage in a timely manner could result in substantial rationing during a critical drought or during either emergency or regulatory reductions in DWR's ability to deliver supplies to AVEK and other State Water Contractors. Earthquakes, floods, and power outages may result in inability to import supplies, even if they are available, and thus out-of-Basin storage is not a viable option for ensuring reliable water supplies in the AVEK service area during periods of drought-related or regulatory supply interruptions. AVEK has concluded that it is necessary to develop a recharge project that can be implemented immediately to improve the reliability of the Antelope Valley Region's water supplies. This involves the construction of the necessary infrastructure to store excess water available from the SWP during wet periods, and recover such water to serve customers during dry and high demand periods, or during a disruption in deliveries from the SWP.

Recharge would generally be accomplished from November through February, when AVEK has the greatest capacity in the California Aqueduct and its other facilities to convey water to recharge. The calculated storage volume available would be approximately 155,000 to 165,000 acre-feet. Delivery of the water to the recharge areas will be by permanent below ground pipelines. Recharge would be accomplished using two methods. First, water may be spread out over the property by flooding, similar to agricultural operations where contour flooding operations are used with shallow low berms that are three feet or less generally following contours, with water being supplied upslope from the berms. Some areas of the farming operation are currently served by center pivot water application facilities and during recharge these would also be used to apply water for recharge. The typical spray-type irrigation equipment would be modified so that water would be applied without spraying, thus minimizing evaporation losses. The preferred method for applying water to the soil for recharge is the "pivot" method, because it does not require small berms to be constructed to contain water. Rather, the application rate can be programmed to ensure that the pivot discharges water at a rate that will maintain wetted area so that the soil remains wet but not wet enough to cause runoff.

AVEK will utilize only untreated SWP supplies for recharge. In a typical above-normal-to-wet year, AVEK may have capacity in the California Aqueduct for about 10 of 12 months. Available capacity in AVEK facilities, combined with high temperatures and low humidity that cause high evaporation and evapotranspiration rates in the spring, summer, and fall, effectively focuses recharge during the period from the beginning of November through February. AVEK operations would concentrate on this time period, although there is potential for minor recharge operations during any month.

During the primary recharge period (November through February), AVEK's projected maximum recharge capability would be about 300 acre-feet per day. At a relatively conservative recharge rate of 0.50 inches per acre per hour or 12 inches per day (one half the rate for the test pit), AVEK could recharge the maximum volume available using about 300 acres. Using four pivots with a radius of 0.25 miles, at least 480 acres would be required to recharge the maximum volume. A larger number of smaller radius pivots may also be used if needed to ensure adequate delivery rates. Thus, the project allows for the

maximum delivery rate to be accomplished within the constraints of using only 35 to 50 percent of the land in any given year. This assumes that a steady delivery rate is feasible which may not occur.

AVEK will meter the volume of water delivered for recharge and would subsequently not recover more than the 90 percent of the gross recharge water. This will account for evapotranspiration and other losses during recharge and conveyance, and for typical metering accuracy. The effect will be that groundwater levels will not, in the aggregate, be reduced, and are likely to rise slightly over the long term.

It is anticipated that five to eight new wells will be constructed and connected to recovery pipe systems for recovery of recharged banked water. Water may be pumped from the wells into the West Feeder for delivery and treatment at the AVEK's Rosamond Treatment Plant and subsequently delivered to AVEK's distribution system for use by the AVEK water users.

Banked supplies would be recovered to meet supply deficits in drought and other emergency circumstances, both short and long duration. Supplies would be pumped from the well field, which may be located within or adjacent to the primary recharge area generally down gradient from the recharge sites. Wells would pump water into small pipelines which may discharge to the AVEK West Feeder or to the pipeline connecting with the new Storage, Treatment, and Pumping facility.

This Groundwater Recharge Project will allow AVEK to deliver water during emergencies and during drought conditions (i.e., when SWP deliveries are less than Agency water users' demands). In an emergency, such as the shutdown of the California Aqueduct due to water supply problems in the Delta or failure of the SWP and its pump stations along the Aqueduct, recovery would be by the use of the existing five wells on the property plus an additional five to eight wells designed strictly for recovery of stored water.

The Groundwater Recharge Project would allow AVEK customers, including Lebata, to purchase and store water in the Basin for future extraction and use. Banking water in the AVEK Groundwater Recharge Project would provide Lebata with a reliable local backup water supply during emergencies and drought conditions.

#### 4.12.5.2.4 *Banked Water - Tejon Valley*

In 2006, Tejon Ranch constructed and is operating a groundwater bank on its property. The water bank is located in Kern County in the western end of the Antelope Valley and less than a mile north of the East Branch of the California Aqueduct. The recharge area of the water bank currently includes nine basins and covers 120 acres with a storage capacity of approximately 60,000 acre-feet. Thus far, Tejon Ranch has banked over 6,700 acre-feet of SWP water imported into the Antelope Valley.

Tejon Ranch is willing to negotiate cooperative arrangements with public agencies and private parties who want to store and/or withdraw water from this water bank.

#### 4.12.5.2.5 *Banked Water - Central Valley*

Several water banking options exist within the southern Central Valley of California, including, but not limited to the: Kern Water Bank, Kern County Water Agency, Semitropic Water Storage District, Rosedale Rio Bravo Water Storage District/IRWD, among others. In general, these water banking programs involve diversion and storage of excess water supplies that are available, when rainfall or

runoff is plentiful, by recharging that water through shallow ponds into the local groundwater basins. The stored water is then recovered in times of need by pumping it from the groundwater basins via local wells. The recovered water can be discharged to the California Aqueduct for delivery to agencies downstream. One of the primary benefits of these water banking programs is that water agencies can recover the water to augment dry-year water supplies.

Many of these water banking programs are willing to negotiate new cooperative arrangements with public agencies and private parties who want to store and/or withdraw water from their water banks. Lebata could contract with one or more of the alternative water banking operations noted above to store and supply water for the Project. The banked water could be extracted and discharged to the SWP California Aqueduct, then extracted by AVEK in the Antelope Valley. AVEK would be contracted to transport water to the Project.

#### 4.12.5.2.6 *Banked Water - AquaHelio Resources Project*

Kern County is currently processing an application for the Fremont Valley Preservation Project, proposed by AquaHelio Resources, LLC. This solar power project is located about eight miles north of California City and 17 miles northeast of the unincorporated town of Mojave. One aspect of this project includes a water recharge, recovery and transport facility that would develop infrastructure for recharge of up to 200,000 afy of surface water from the City of Los Angeles Department of Water and Power (LADWP) Aqueduct System. Water from the LADWP would be banked in the aquifers beneath the project sites for recovery at a later date. Surface water supplies recharged into the project sites would be delivered as they are available. Banking of surface water would be achieved through both injection wells and percolation. The proposed water recharge, recovery, and transport facility would also include above ground reservoirs and booster pump stations to transfer surface water to the project sites, basins, and spreading areas.

As a potential recipient of this water, AVEK would be able to enhance its ability to provide water from outside the Antelope Valley basin to its customers inside the outside the Antelope Valley basin. The project would also include interconnections between AVEK and LADWP water transmission facilities to make allowance for LADWP banked groundwater distribution into the AVEK finished-water transmission pipelines. Additionally, interconnection facilities to transfer SWP water to LADWP are also proposed at the crossing with the California Aqueduct.

#### 4.12.5.2.7 *Lebata Purchase from another Water Bank*

Lebata could contract with one or more of the alternative water banking operations described above to store and supply water for the Project. The banked water could be extracted and discharged to the SWP California Aqueduct, if stored in the Central Valley water banks. Or the water could be pumped from the California Aqueduct and stored in the Antelope Valley. If Lebata obtains water from one or more water bank(s), AVEK would be contracted to transport water to the Project. A water service connection for the Project would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project site at the southeast corner of Avenue T and 116th Street. This pipeline would be constructed within the County's right-of-way under an encroachment permit administered by the DPW. In addition, LACWWD40 may be involved in the water transfer since the Project site lies within the LACWWD40 Sphere of Influence and may be annexed.

Lebata could be required to pay significant additional fees for access to the banked water. Lebata would be required to pay DWR for delivery of the SWP water via the California Aqueduct to the AVEK turnout in the range of approximately $300 per acre-foot. In addition, if Lebata banked water in the AVEK Water Bank, Lebata would pay AVEK in the range of approximately $260 per acre-foot for banking the water. Lebata would also pay AVEK approximately $160 per acre-foot for extracting from the water bank, treatment, and distribution to the Project. Lebata will also be required to pay a capacity fee to AVEK for connection to the AVEK distribution system. Lebata will evaluate the details of this alternative and costs before pursuing a contract for water banking. Cost estimates are in 2013 US$.

#### 4.12.5.2.8 *Recycled Water*

The Antelope Valley is faced with significant challenges with respect to management of water resources in the region. Recycled water helps address the Antelope Valley's need for increased water supplies by offsetting existing potable demands and promoting beneficial reuse of treated wastewater, such as using recycled water for groundwater replenishment. Efforts are currently underway to develop a regional recycled water distribution system in the Antelope Valley, also known as the AV Backbone. However, this system is currently located more than 11 miles away from the Project. The Palmdale Water Reclamation Plant (PWRP), owned and operated by the Sanitation Districts of Los Angeles County (SDLAC), is the wastewater treatment plant serving the Project area. PWRP has a secondary treatment capacity of 15 mgd and tertiary treatment capacity of 12 mgd. In fiscal year 2010-2011, the PWRP produced 7,993 acre-feet of treated recycled water (SDLAC, 2011). The County projects the volumes of recycled water available locally will increase from 24,000 afy to 32,000 afy, for the period 2015 to 2030.

Actual use of recycled water would be limited by progress of tertiary treatment upgrades, customer demand, and implementation of the AV Backbone and associated pipelines. Projections of recycled water demand for an average water year include 5,000 afy to 16,000 afy for the period 2015 to 2030 (Los Angeles County, 2011). These projections are based on a recycled water market assessment and are generally for municipal and industrial recycled water uses. Additional potential recycled water demands include agriculture and future urban development.

Lebata could utilize recycled water for all non-potable demands of approximately 306 afy (312 afy total future project demand minus 6 afy for potable demands). These demands include, but not limited to, operational water uses, truck wash, dust control, and landscape irrigation. If recycled water is to be used by Lebata, the State of California Department of Health and the County Department of Public Health, Environmental Health will be responsible for permits and regulatory approvals for constructing the necessary future improvements to deliver recycled water to the Project.

However, the process for allocating recycled water is expected to favor large users in more densely populated areas that are closest to the source. These users would likely include golf courses, municipalities, large landscaped commercial and industrial centers, among others. Given it would be a distant industrial user, Lebata likely would be accorded a lower priority when compared to these other users.

As previously noted, the recycled water system is currently located more than 11 miles from the Project site, which presents a significant logistical issue. Lebata would pay approximately $380 per acre-foot for recycled water, which is approximately 90 percent of the cost of AVEK potable water ($420 per acre-

foot). In addition, Lebata would also be required to pay a connection fee to the SDLAC to deliver recycled water to the Project. As such, Lebata determined that use of recycled water by the Project was not currently viable. However, Lebata will consider purchase and use of recycled water for the Project in the future should a recycled water pipeline be installed closer to the site. Cost estimates are in 2013 US$.

#### 4.12.5.2.9 *Hauled Water- Railroad or Truck*

Lebata considered the purchase and hauling the water (potable and or non-potable) to the Project via railroad or truck. It is understood that hauling by railroad would require several steps, including, but not limited to, the following:

- Agreement with Union Pacific Railroad to provide access from its rail system to newly constructed rail spurs with the Project;
- Agreement with a water supplier/agency, with a water connection located adjacent to the Union Pacific Railroad tracks, to purchase water that is not derived from Antelope Valley basin groundwater;
- If not already in place, construction of one or more rail spurs adjacent to the Union Pacific Railroad tracks to accommodate receipt of tank cars filled with water and the delivery of empty tank cars for filling;
- Delivery and departure of an average of 12 water tank cars per day (29,000 gallon capacity each);
- Construction of multiple rail spurs on the Project site to accommodate the delivery and departure of raw cement rail cars, as well as the delivery and departure of water tank cars; and
- Construction and operation of water off-loading equipment and storage on the Project site.

The Project Description includes a Raw Cement and Aggregate Transfer and Distribution Facility, which would be located in an area alongside the existing railroad track (EIR Figure 6 – Facilities Site Plan) and make use of a yet to be constructed rail spur. However, receiver stations or commitments needed from the Rail authorities to make this economically viable are not available at the present time. As such, it is possible the proposed rail spur may not be constructed to receive raw cement deliveries. Lebata determined the construction of a rail spur solely for the purpose of receiving Project water on railroad tank cars would require a significant expenditure of money, serious logistical issues with regard to a suitable off-site spur location (for filling) and possible construction, railroad operational issues in that frequent water delivery is considered a low priority cargo by the railroad operator, and may result in additional environmental issues (e.g., emissions, among others). Therefore, Lebata determined that hauling water to the Project site by railroad is not currently viable, nor economically feasible.

Similarly, hauling water by truck would require several steps, but not limited to, the following:

- Agreement with a water supplier/agency located near the Project site to sell water whose source does not include Antelope Valley groundwater basin;
- Delivery of an average of 37 water trucks per day (74 one-way trips, 9,000 gallon capacity each);
- Construction and operation of water off-loading equipment ; and
- Installation of substantial additional water storage on the Project site.

Hauling water by truck may be considered as a short-term alternative during periods when water is not available from other sources. If this is done, such hauls will be accomplished without increasing the overall number of truck trips described in EIR Table 68 However, on a long-term basis, Lebata determined that hauling water to the project site by truck required a significant expenditure of money, and would result in additional environmental issues (e.g., truck traffic, noise and emissions). Therefore, Lebata determined that hauling water to the Project site by truck was not currently viable on a long-term basis.

#### 4.12.5.2.10 *WSA Conclusion*

**a) Permanent Entitlement**

The proposed source of water for the Project is groundwater from a new onsite well. If the Project is allocated groundwater through the Basin adjudication process, the groundwater would be used within the Project site for all potable and non-potable demands. However, it is likely the Basin adjudication process will not allocate a sufficient supply of groundwater to the Project. Accordingly, the preferred source of water for Lebata is the purchase of a permanent entitlement to SWP water that it currently does not own from a supplier/agency outside the Antelope Valley basin. Lebata is aware of one or more agencies interested in selling entitlement to SWP Table A water.

Lebata may also consider short-term and/or long-term purchase options of SWP entitlements. As previously noted, SWP Table A entitlements do not reflect actual deliveries a contractor should expect to receive as the amounts are adjusted downward during below normal years. During below normal years, such adjustments are based upon the amount of SWP water available in any given year and the amount recently used by each Table A entitled users. SWP entitlements may not meet 100 percent of Project water demand in any one given year, thus Lebata may need to rely upon water supplies previously purchased and banked and or alternative water sources.

If Lebata obtains SWP Table A water, the entitlement would be transferred to AVEK, then AVEK would be contracted to transport water to the Project site. A water service connection for the Project will be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project site at the southeast corner of Avenue T and 116th Street. This pipeline would be constructed within the County's right-of-way under an encroachment permit administered by the DPW. In addition, the LACWWD40 may be involved in the water transfer since the Project site lies within the LACWWD40 service area. Lebata will evaluate the details of this alternative and costs before pursuing a contract for permanent entitlement of SWP water.

**b) Supplemental Water via AVEK**

AVEK has agreed to provide supplemental water for the Project on an interruptible basis. A copy of the AVEK Board approval of the Lebata application for water service is provided in Appendix B of the *WSA* (EIR Appendix 18). As previously noted, AVEK's SWP entitlement provides for it to receive 141,400 acre-feet of Table A water in any given year. AVEK would provide water to the Project during normal and wet water years from water that is surplus to the needs of the existing Table A entitled users within the Antelope Valley. The AVEK water would be supplied directly to the Project and/or purchased by Lebata for banking. Water so banked would later be extracted and delivered to the Project during below normal years of SWP delivery. AVEK may also receive additional supplies such as Article 21 water (SWP),

carryover water (SWP), turnback pool water (SWP), groundwater (local), etc. during normal, wet, and dry water years. A water service connection would be constructed to the AVEK Eastern Feeder pipeline in the same manner as described immediately above for a permanent entitlement.

**c) Other Sources of Water**

As previously noted, during below normal years, SWP water may not be available to the Project. Other alternative sources of water considered, include banked water, recycled water, groundwater, surplus supplies from local agencies, and hauled water via railroad and or truck delivery. Some of these water supply sources are not expected to be viable for Project startup. Lebata may evaluate the details and costs of one or more of these other sources of water before purchasing water for the Project.

### 4.12.5.3 Impacts Determined to be Less than Significant/No Impact

#### 4.12.5.3.1 *Depletion of Groundwater Supplies or Substantial Interference with Groundwater Recharge*

In considering potential impacts of the Project, the County of Los Angeles completed a revised format Initial Study Checklist (EIR Appendix 1) which determined the Project may have a "Potentially Significant Impact" in that it might:

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

To evaluate this impact properly, it is necessary to provide two separate evaluations as to whether, or not, the Project will result in: a) a net deficit in aquifer volume, and 2) lowering of the local groundwater table level.

**a) Net Deficit in Aquifer Volume**

The Basin adjudication process, when completed, will provide added clarity as to whether Lebata will receive an entitlement to extract groundwater, or not. In the event Basin adjudication results in the Project receiving an allocation for groundwater, said allocation will, by definition, fall within the Court's definition of "safe yield" and, if used by the Project, **would result in Less than Significant impacts**.

All other potential Project water sources described above would either not involve the use of Basin groundwater, or involve the purchase or lease of available local groundwater from a landowner entitled to extract groundwater through the Basin adjudication process. Project use of water provided from sources not using Basin groundwater **would result in Less than Significant impacts**.

Project use of water derived from Basin groundwater purchased or leased from a landowner entitled to extract such groundwater through the Basin adjudication process would fall within the Court's definition of "safe yield" and, as such, **would result in Less than Significant impacts**.

**b) Lowering of the Local Groundwater Table Level**

The following impacts discussion assumes Basin adjudication results in the Project receiving an allocation of 312 afy and that the Project would drill an onsite well and extract that amount of water

annually. As such, it presents the "worst case" condition. If Basin allocation results in the Project receiving a lesser groundwater allocation, or no allocation, Project impacts would be less than those described below. To evaluate the Project's potential to impact local groundwater table levels, the *Drawdown Assessment* was prepared (EIR Appendix 19).

A proposed well at the Project would be utilized for the sand and gravel operations and would deliver approximately 312 afy, if Basin adjudication results in such an allocation to the Project. The proposed well would be located in the northwestern corner of the Project site as illustrated in EIR Figure 6 – Facilities Site Plan. It is assumed that a 500-foot well would be installed with a screen interval ranging from 100 feet below the surface to the total depth of the well. This would result in a 400 foot long screened interval. To supply 312 afy, the well would be pumped 5 days per week for 12.4 hours per day, at an approximate flow rate of 545 gpm. The planned intermittent pumping will have the same affect on groundwater as continuous pumping at a lower flow rate. Thus, to simplify the calculations, a continuous flow rate of 193 gpm was used in the analysis, which also corresponds to 312 afy.

To verify the minimal drawdown difference between the two flow rates, the drawdown in a 12 hour period for 545 gpm was compared to that for 193 gpm. At a 100 foot distance, the difference was 0.5 feet and at 200 foot there was no measurable difference. (Refer to Appendix A of EIR Appendix 19)

The *Drawdown Assessment* made use of existing data from regional studies (Beeby et. al, 2010), previously conducted groundwater modeling (Leighton and Phillips, 2003 and earlier) and local site data to model the drawdown of the Project's proposed well, outward to an approximate radius of one mile. Drawdown calculations were performed using the Cooper-Jacob Approximation of the Theis Solution for groundwater flow (Theis, 1935, Cooper and Jacob, 1946).

An equation was solved for various distances from the source well starting at 100 feet to a maximum of 5,000 feet, and for different total pumping times ranging from one year to 100 years. (Refer to page 7 of EIR Appendix 19 for the details of the equation used.) Recognizing potential uncertainties in the hydraulic conductivity value used, the average conductivity value was increased and decreased by 50 percent respectively, to provide “minimum” and “maximum” drawdown estimates respectively.

EIR Table 92 notes the average drawdown. Refer to EIR Appendix 19, Figure 7, which plots the average drawdown contours. Refer to EIR Appendix 19, Appendix A, which provides the drawdown calculation tables.

**Table 92 Average Drawdown at Select Distances from Pumping Well**

| Time (years) | Distance from Pumping Well (ft) | | | | |
|---|---|---|---|---|---|
| | 100 | 200 | 500 | 2000 | 5000 |
| 1 | 6.0 | 5.0 | 3.6 | 1.6 | 0.2 |
| 2 | 6.5 | 5.5 | 4.1 | 2.1 | 0.7 |
| 5 | 7.2 | 6.2 | 4.8 | 2.8 | 1.4 |
| 10 | 7.7 | 6.7 | 5.3 | 3.3 | 1.9 |
| 30 | 8.5 | 7.5 | 6.1 | 4.1 | 2.7 |
| 100 | 9.4 | 8.4 | 7.0 | 5.0 | 3.6 |

According to the DWR database, there are five water wells located within a one mile radius from the Project's proposed well (refer to Figure 2 of EIR Appendix 19). Of these five wells, none are within 2,000 feet of the project well. At the 2,000 foot radius, the drawdown is less than three feet after five years and approximately four feet at 30 years for the "average" case. It is unclear which, if any of these wells are currently operational. Prior to the mid-1980s, and without the influence of the potential Project well, these wells have experienced total water level fluctuations of up to 140 feet[8].

By comparison, for the minimum scenario yields a drawdown of three feet at 2,000 feet after 30 years. The maximum scenario results in a drawdown of seven feet after 30 years.

In considering the results, there are several assumptions implicit in the Theis equation which should be considered. Firstly, the equation assumes there is no recharge from any source. For that reason, all results are higher than the true probable drawdown value, as the Project is located within a groundwater recharge zone. Furthermore, the amount of drawdown would stabilize long before the 100 years conservatively used in the calculations.

Another assumption is that the formation is uniform in character (i.e., there is no hydraulic gradient and hydraulic conductivity is equal in all directions). This produces the perfectly circular Region of Interest Contours in EIR Appendix 19, Figure 7. In reality, drawdown will be higher in areas with lower conductivity, or other features that preclude groundwater movement, and the shape of the drawdown curves could be skewed by the horizontal movement of groundwater.

The *Drawdown Assessment* (EIR Appendix 19) describes how groundwater depth in the vicinity of the Project site has varied widely both from year to year and seasonally due to varying amounts of Basin-wide groundwater usage. This would indicate that local groundwater supply wells would typically have been designed to accommodate wide fluctuations in groundwater level, and would therefore not be affected by the relatively small drawdown predicted for the potential Project well onsite.

Its effect on the Antelope Valley's water balance would therefore be negligible, not considering the cumulative effects of other potential future water supply needs. In addition, the well would be located close to a major recharge area, thus potentially mitigating the wells local effect on water levels.

The *Drawdown Assessment* (EIR Appendix 19) concludes the impact of a potential 312 afy water supply well located at the Project site would be relatively minor. Only a handful of nearby wells would see a measurable impact in water level, and the drawdown is not considered to be sufficient to effect capacity of these wells to supply water. When taking into consideration the background water level fluctuations (several tens of feet), it is unlikely that the impact on nearby wells would be discernible from background variations. In addition to establishing legal rights to pump groundwater, the Project will need to comply with Physical Solution, as determined by the Basin adjudication process. Therefore, Project related drawdown is considered to result in **Less than Significant impacts**.

[8] DWR, Well 05NO9W20KODS.

#### 4.12.5.3.2 *Sufficient Reliable Water Supplies Available to Serve Project Demands*

In considering potential impacts of the Project, the County of Los Angeles completed a revised format Initial Study Checklist (EIR Appendix 1), which determined the Project may have a "Potentially Significant Impact" in that it might:

> *Not have sufficient reliable water supplies available to serve the project demands from existing entitlements and resources, considering existing and projected water demands from other land uses.*

As noted in EIR sub-chapter 4.12.5.1, the Project's water needs will be met through a Basin adjudication result that allocates 0-312 afy of Basin groundwater to the Project, through the purchase of a permanent water entitlement, and/or purchases from an alternative or backup water source via agreement with AVEK to supply supplemental water for the Project. Most of these potential water sources would delivery water from sources outside the Antelope Valley groundwater basin. Other of these water sources would deliver water drawn from Basin groundwater, in accordance with the allocations decided under the Basin adjudication process. As previously noted, Project use of such water would result in impacts considered to be **Less than Significant**.

In those instances where water would be supplied to the Project on an interruptible basis, Project operations would be reduced to a level commensurate with the amount of available water. If water banking is to supply the Project when the water supply is reduced during dry periods, and Lebata has not yet banked water in an amount sufficient to make up the difference, Project operations would be reduced to a level commensurate with the amount of available water. As such, Project use of such water would result in impacts considered to be **Less than Significant**.

Under most water supply scenarios, a water service connection for the Project would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project at the southeast corner of Avenue T and 116th Street. This pipeline would be constructed under an encroachment permit administered by the DPW within the County's right-of-way, a highly disturbed area. As such, pipeline construction impacts would be limited to short-term construction related emissions and the need for traffic control, both of which are considered to be **Less than Significant**.

### 4.12.5.4 Impacts Determined to be Potentially Significant

None.

## 4.12.6 Mitigation Measures

None.

## 4.12.7 Level of Significance after Mitigation

No significant impacts are associated with the Project.

## 4.12.8 Cumulative Impacts

Cumulative impacts require the analysis of projects located within the vicinity of the proposed project. The geographic context for this cumulative analysis is circumscribed by the locations of the cumulative

projects. Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Cumulative impacts are concluded to be considerable if the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Antelope Valley Groundwater Basin (the Basin) is currently non-adjudicated, although a legal adjudication process has been underway since the late-1990s. It is anticipated that water rights will be quantified and assigned as part of the adjudication process. Lawsuits were filed against various Antelope Valley water districts and government agencies seeking priority water rights to water beneath their farmland. Several property owners and public water suppliers, including Los Angeles County Waterworks District No. 40 (LACWW40), also initiated legal proceedings, including a cross complaint, to determine the respective rights of existing and potential users of groundwater in the Basin. The lawsuits were filed separately in Riverside, Kern, and Los Angeles County Superior Courts and were transferred and consolidated into one coordinated proceeding currently before the Honorable Jack Komar who is presiding by special assignment.

The underlying dispute revolves around the priority/superior right to pump groundwater and the protection of the Basin. The parties have asserted multiple claims to be adjudicated, including claims for declaratory relief, prescriptive rights, quiet title to water rights, and claims that portions of the Basin should be treated as a separate area for management purposes if a physical solution for the Basin is established, among other claims. The resolution of many of these claims is likely to be affected by the nature and extent of the hydrologic connectivity of water within various portions of the aquifer. The Basin adjudication process is described in detail in EIR sub-chapter 4.12.2.4.

As a result of the Basin adjudication process, Lebata will either receive an entitlement to extract groundwater, or not. If Lebata receives an allocation, Project use of said allocation will, by definition, fall within the Court's definition of "safe yield" and Project impacts are **not expected to be cumulatively considerable**.

All other potential Project water sources described above would either not involve the use of Basin groundwater, or the purchase or lease of available local groundwater from a landowner entitled to extract groundwater through the Basin adjudication process. The cumulative impact of the Project using water provided from sources not using Basin groundwater is **not expected to be cumulatively considerable**.

Project use of water derived from Basin groundwater purchased or leased from a landowner entitled to extract such groundwater through the Basin adjudication process would fall within the Court's definition of "safe yield" and, as such, Project impacts are **not expected to be cumulatively considerable**.

The *Drawdown Assessment* (EIR Appendix 19) concludes the impact of a potential 312 afy water supply well located at the Project site would be relatively minor. Only a handful of nearby wells would see a measurable impact in water level, and the drawdown is not considered to be sufficient to effect capacity

of these wells to supply water. When taking into consideration the background water level fluctuations (several tens of feet), it is unlikely that the impact on nearby wells would be discernible from background variations. In addition to establishing legal rights to pump groundwater, the Project will need to comply with Physical Solution, as determined by the Basin adjudication process. Project related drawdown is **not expected to be cumulatively considerable**.

Under most water supply scenarios, a water service connection for the Project would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project at the southeast corner of Avenue T and 116th Street. This pipeline would be sized and constructed specifically to meet the needs of the Project. As such, its construction is **not considered to be growth-inducing**.

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# 5.0 OTHER CEQA REQUIRED IMPACT ANALYSIS

This chapter discusses several topics that must be addressed in an EIR prepared in conformance with CEQA:

- Growth inducing Impacts (CEQA Guidelines Section 15126.2(d))
- Significant irreversible environmental changes (CEQA Guidelines, Section 15126.2(c))
- Significant and unavoidable impacts (CEQA Guidelines, Section 15126.2(b))
- Impacts of mitigation measures (CEQA Guidelines, Section 15126.4 (a)(1)(D))

## 5.1 GROWTH-INDUCING IMPACTS

CEQA Guidelines Section 15126.2(d) requires an evaluation of growth-inducing impacts that may result from a proposed project. Growth-inducing impacts can occur when a proposed project places additional stress on a community by directly inducing economic or population growth that would lead to construction of new development projects in the same area as the project. A project would also be considered growth-inducing if it removes obstacles to growth such as building a road to an undeveloped area, constructing a wastewater treatment plant or extending a sewer line that would provide additional capacity and thus allow new development in the area.

### 5.1.1 Growth Inducement – Threshold Criteria

The *County Initial Study Assessment Guidelines* provides the following threshold criteria:

> *Whether the growth inducing impacts of a project are significant should be decided on a case-by-case basis and depends on:*
>
> 1. *how much added growth would be accommodated by removing the impediment and setting a precedent for similar actions in the future,*
> 2. *whether that growth is consistent with the planned land use of an area (see guidelines regarding Community Character), and the physical impacts of said growth (secondary impacts).*

In the County of Los Angeles revised format Initial Study Checklist (EIR Appendix 1 – Initial Study), the County determined the Project would have "No Impact" in the following portion of the Initial Study checklist:

> ***14. Population and Housing***
>
> *Would the project:*
>
> *a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*
>
> *b. Displace substantial numbers of existing housing, especially affordable housing, necessitating the construction of replacement housing elsewhere?*

*c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

*d. Cumulatively exceed official regional or local population projections?*

***16. Recreation***

*a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

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

*c. Would the project interfere with regional open space connectivity?*

### 5.1.2 Impact Analysis

If new development were not occurring, the demand for high quality construction-grade aggregate products would decrease accordingly, whether or not the aggregate is available close by and at a reasonable cost. In other words, growth will occur whether or not local aggregate sites are available. However, if local sources of aggregate products were not available; the aggregate would have to be brought in from sources outside the area adding traffic and air quality impacts. Thus, the Project is **not considered growth-inducing**, but rather growth dependent and will respond to the needs of the construction industry.

Under most water supply scenarios, a water service connection for the Project would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project at the southeast corner of Avenue T and 116th Street. This pipeline would be sized and constructed specifically to meet the needs of the Project. As such, its construction is **not considered to be growth-inducing**.

## 5.2 CUMULATIVE IMPACTS

Under Section 15130 of the CEQA Guidelines, an EIR must discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." This occurs when the incremental effects of an individual project are considerable when viewed in connection with the effects of past, other current projects, and probable future projects (Section 15065). Section 15355 of the CEQA Guidelines defines cumulative impacts as:

*"`Cumulative impacts' refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*

*(a) The individual effects may be changes resulting from a single project or a number of separate projects.*

*(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result*

*from individually minor but collectively significant projects taking place over a period of time."*

To assess cumulative impacts, it is necessary to define the Environmental Setting, which Section 15125(a) of the CEQA Guidelines describes as follows:

*"An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."*

This EIR sub-chapter discusses the potential cumulative impacts to the environment that may result from the implementation of the Project when considered with other planned or reasonably foreseeable projects. CEQA Guidelines Section 15355 defines cumulative impacts as "*two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*" The Guidelines further state:

a. *The individual effects may be changes resulting from a single project or a number of separate projects.*
b. *The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

When discussing cumulative impacts CEQA Guidelines, Section 15130, provides the following guidance:

*(b) The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness. The following elements are necessary to an adequate discussion of cumulative impacts:*

*(1) Either:*

*A. A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or*

*B. A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified which described or evaluated regional or area-wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.*

Cumulative projects consisting of approved, pending, and recorded projects in the vicinity of the Project were obtained from the Los Angeles County Department of Regional Planning. In EIR sub-chapter 4.10.8, EIR Table 84 summarizes the cumulative projects included in this analysis, and EIR Figure 55 illustrates the locations of the cumulative projects. Such development is limited to a few residential developments.

Due to the relatively remote location of the site, there are few active projects within the vicinity of the Project. As such, project applications most pertinent to the analysis of cumulative traffic impacts included more than 10 dwelling units within approximately five miles of the Project site (refer to EIR sub-chapter 5.2.8 below). No other proposed projects or large development projects in the vicinity were identified that would contribute to impacts similar to the Project.

### 5.2.1 Geotechnical Hazards

The Project exceeds County factor of safety threshold criteria under all conditions. As such, it was determined the Project would be stable and safe as designed. In addition, the relatively massive alluvial deposits have a low susceptibility to landsliding or lateral spreading due to the lack of geologic structures such as joints, contacts, and bedding, which may present preferred shear surfaces. The Project is expected to result in **Less than Significant Impacts** related to the slope stability during mining operations and post-reclamation.

The Project will be required to comply with UBC requirements for the construction/installation of new facilities and standard operational regulations will result in **Less than Significant Impacts**. Given the lack of cumulative projects, and the fact no geological impacts are anticipated offsite, impacts to geology and soils **are not expected to be cumulatively considerable**.

### 5.2.2 Flood Hazards

Project mine pits would intercept the entire Capital Flood discharge via a system of interceptor-drains and convey the water into the pits via a system of down-drains and terrace drains. The total captured Capital Flood Volume, inundation depth and pit emptying time in each phase are summarized in EIR Table 25.

All flood water entering the mine pits, inclusive of that from a Capital Flood, would be emptied by three potential pathways: 1) evaporation, 2) vertical infiltration through the mine pit bottom, and 3) horizontal infiltration through the mine slope.Given the limited number of cumulative projects, and the fact that none of the captured Capital Flood would overflow from the pits and escape as surface flow, Project impacts **would not be cumulatively considerable.**

### 5.2.3 Noise

Potential construction and operational noise impacts from the Project take into account the combined effects from multiple noise sources and from existing ambient conditions. Potential noise impacts from the Project were determined either to be **Less than Significant** or **Significant, but Mitigable to Less than Siginificant** upon implementation of the **Mitigation Measure NO-1** described in EIR sub-chapter 4.5.6. The limited number of cumulative projects, and the distance between the Project and other noise generators precludes any cumulative impacts from onsite activities. Further

reducting noise potential, other various berms would be installed upon the original grade level, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot berm on the eastern boundary (i.e., those segments not included in **Mitigation Measure NO-1**), and a 5-foot berm on the northern boundary.

Single-event haul truck pass-by noise would be similar to the existing conditions. The traffic noise model added Project traffic to existing levels, which provided a cumulative result, indicating the combined traffic related noise impacts would be **Less than Significant**.

Given the limited number of cumulative projects, and the implementation of Project **Mitigation Measure NO-1**, the Project **would not result in noise levels that are cumulatively considerable**.

### 5.2.4 Water Quality

The Project would require the use and onsite storage of the chemicals, which would be stored atop the Fueling and Maintenance Pad, or within secondary containment elsewhere within the Processing Facilities Site. Refer to EIR sub-chapter 4.11.5 where Hazardous Materials are discussed and where EIR Table 88 provides a list of the types and quantities of chemicals that would be stored and used onsite.

Impacts to groundwater quality could occur if fuel, other hydrocarbons, or other onsite hazardous materials were to spill. To minimize potential impacts, all vehicle fueling and maintenance would take place atop the Fueling and Maintenance Pad within the Processing Facilities Site (EIR Figure 6 – Facilities Site Plan). The concrete pad includes a curbed containment berm and is adjacent to the fuel storage tank, which would be placed within a concrete secondary containment area. These precautionary measures are designed to ensure fueling and maintenance activities do not adversely affect surface water or groundwater. The only exceptions to this would be repairs elsewhere on the Project site due to onsite equipment breakdowns.

The Project incorporates the following material control programs: Hazardous Materials Business Plan; hazardous materials inventory; SPCC; employee training; record keeping; preventive maintenance; BMP; and SWPPP. (Refer also to EIR sub-chapter 4.11.8.) In addition, the implementation of the *Drainage Concept* (EIR Appendix 3) and use of the Fueling and Maintenance Pad serve to further reduce Project impacts. Given these programs and the limited number of cumulative projects, operational and long-term Project impacts regarding hazards and hazardous materials are **not expected to be cumulatively considerable**.

### 5.2.5 Air Quality, Health Risks and Climate Change

#### 5.2.5.1 Air Quality and Climate Change

CEQA addresses cumulative significance in the following rule text:

> *"A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." (14 CCR 15130).*

By their nature, air quality significance thresholds assess cumulative effects. Impacts of the Project on regional ozone and particulate matter concentrations would be less than cumulatively considerable because Project-related emissions do not exceed the tons per year significance thresholds. The Project's contribution remains less than cumulatively considerable when the effects are combined with the effects of all other mining projects in the region because the tons per year thresholds (i.e. amount that is cumulatively considerable) are not exceeded. No other mines exist in the immediate vicinity of the Project that would contribute to local concentrations of pollutants. The nearest mining operations are located 1.2 miles to the east and more than 5 miles to the west (refer to EIR Figure 7). In addition, there are a very limited number of cumulative projects in the Project's vicinity. Mobile source activity produces the majority of ozone precursor emissions and will be minimized by addition of a new mine as well as controlled by implementation of CARB regulations. Thus, the Project will be expected to implement its fair share of measures designed to alleviate the cumulative impacts that occur on regional ozone and particulate matter concentrations. The Project's impacts **would not be cumulatively considerable.**

#### 5.2.5.2 Health Risk

It is concluded that the Project could result in:

- Cancer risk impacts greater than the significance threshold of 10 in 1 million at Receptor **R4**, a **Significant Impact**.
- Chronic hazard impacts less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.
- Acute hazard impacts less than the significance threshold of 1.0 HI at all Receptors, a **Less than Significant Impact**.

Regarding cancer risk impacts, **Mitigation Measures AQ-4 and AQ-5** (EIR sub-chapter 4.7.6) were developed. Upon implementation of **Mitigation Measures AQ-4 and AQ-5**, the Project's cancer risk would result in **Significant, but Mitigable to Less than Significant Impacts** at all Receptors. As such, and given the limited number of cumulative projects in the Project's vicinity, Project impacts **would not be cumulatively considerable.**

### 5.2.6 Biological Resources

With regard to the indirect and direct take of desert tortoise, it is concluded that the Project could result in indirect and direct take of the desert tortoise, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-1** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-1**, impacts to desert tortoise are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of Mohave ground squirrel, it is concluded that the Project could result in indirect and direct take of the Mohave ground squirrel, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-2** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-2**, the Project would result in **Significant, but Mitigable**

**to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-2**, impacts to Mohave ground squirrel are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of native and sensitive nesting birds, it is concluded that the Project could result in indirect and direct take of native and sensitive nesting birds, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-3** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-3**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-3**, impacts to native and sensitive nesting birds are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of sensitive native plants, it is concluded that the Project could result in indirect and direct take of sensitive plant species, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-4** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-4**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-4**, impacts to sensitive native plants are **not expected to be cumulatively considerable**.

With regard to the an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife, It is concluded that the Project could result in an increase of exotic and invasive plant species which would cause an adverse effect on sensitive native plants and wildlife, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-5** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-5**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of **Mitigation Measure BIO-5**, these impacts are **not expected to be cumulatively considerable**.

With regard to Project trucks could result in nighttime truck traffic related wildlife mortality, it is concluded that the Project could result in adverse effects at night to wildlife along the haul routes, resulting in a **Significant Impact**. In response, **Mitigation Measure BIO-6** (EIR sub-chapter 4.8.6) was developed. Upon implementation of **Mitigation Measure BIO-6**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**. With regard to such nighttime impacts onsite, there are several **Mitigation Measures** that serve to reduce **Significant, but Mitigable Impact**. These Mitigation Measures include, **Mitigation Measure AQ-2** (15 mph speed limit on unpaved roads), and **Mitigation Measures BIO-1 through BIO-3**. Given cumulative projects are limited to a few residential developments at some distance, upon Project implementation of these mitigation measures, these impacts are **not expected to be cumulatively considerable**.

With regard to the indirect and direct take of special-status native wildlife (i.e., specifically Blainville's horned lizard, loggerhead shrike, LeConte's thrasher, American badger, and southern grasshopper mice) it was concluded the Project would result in **Less than Significant Impacts** because abundant habitat for these species would remain adjacent to the Project area and these species have no formal federal or state protection.

### 5.2.7 Visual Quality

The Project is not anticipated to significantly impact visual quality due to the long intervening distances between the Project and nearest residential communities with a vantage point of the area. In addition, the Project would install berms along portions of its periphery would further lessen the Project's already **Less than Significant Impacts** and by painting tanks and taller equipment to lessen their visibility from Avenue T. This, when considering the limited number of cumulative projects, none of which contribute the visual impacts in the vicinity, Project impacts are **not expected to be cumulatively considerable**.

The Project would use nighttime lighting, both for safety and operations. The County's *Dark Sky Ordinance*, specifically Sections 22.44.590, exempts the Project from the provisions of this ordinance where such lighting is needed for safety reasons. To promote and maintain dark skies at night for the residents and wildlife in the district , all Project lighting would be installed and operated in accordance with the requirements of the County' *Dark Sky Ordinance*, specifically Sections 22.44.141 and 22.44.150. Lighting would be shielded/hooded and/or directional to minimize Project visual impacts and would be designed to incorporate the lighting needed for operations, repair and maintenance, and security. Lebata would ensure these lights are shielded/hooded and downward-directional to light only the area requiring illumination.

A *Photometric Study* (EIR Appendix 16) was prepared by Nate Mullen Visual Concepts, LLC to provide the basis for demonstrating light trespass levels beyond property line setbacks and Project related nighttime light impacts to surrounding property owners. On each sheet of the *Photometric Study*, the lumenaire schedule illustrates that the Project would not create light pollution that results in unacceptable levels of light trespass. As such, the Project would result in **Less than Significant Impacts**. This, when considering the limited number of cumulative projects, none of which contribute the nighttime light impacts in the vicinity, Project impacts are **not expected to be cumulatively considerable**.

### 5.2.8 Traffic and Circulation

A capacity analysis for the seven critical intersections within the vicinity of the Project for existing, background conditions and cumulative conditions was conducted and reveals that the Project has no significant impact on the seven study intersections or the six State highway sections. The *TIA* has concluded the Project would result in **Less than Significant Impacts**.

Cumulative projects have been determined to have S**ignificant Impacts** under short-range cumulative conditions at the intersections of 82nd Street and Pearblossom Highway, and of 106th Street and Pearblossom Highway. Improvements have been identified for those cumulative projects to mitigate cumulative impacts to result in **Less than Significant Impacts**. However, because the Project does not add any PM peak hour trips to the intersection of 82nd Street and Pearblossom Highway and a 19.3 percent share at 106th Street and Pearblossom Highway, the Project would result in **Less than Significant Impacts** at this intersection. The Project adds trips to the AM peak hour, which result in cumulative traffic impacts at the 106th Street East and Pearblossom Highway intersection. Restriping the westbound right-turn lane as a shared through/right-turn will mitigate this cumulative impact to **Less than Significant** Impacts. The project has a 19.3 percent share of this cumulative mitigation.

The *TIA* recommends that the Project contribute a fair-share contribution to the proposed roadway improvements for the SR-138, SR-14 and I-5 Freeways based upon the fact it does add additional traffic, albeit minimally so (404 ADT and 14 peak hour trips). The Project will coordinate with Caltrans to ensure that any cumulative impacts to the subject facilities are addressed and mitigated to Caltrans' satisfaction. Contributing in this manner will ensure Project impacts **are not considered cumulatively considerable.**

Note: If the East-West HDC is approved, funded and constructed, Project impacts could be reduced by rerouting Project truck traffic so as to proceed 2 miles east from the Project along Avenue T to 165th Street East. Trucks would then turn north onto 165th Street East, which immediately curves onto 170th Street East and proceeds north to the East-West HDC onramp. At the onramp, trucks would either turn west or east, thereby avoiding the more congested areas of Palmdale.

### 5.2.9 Hazards and Hazardous Materials

The Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD), is the Certified Unified Program Agency (CUPA) responsible for administering the following programs within Los Angeles County:

- Hazardous Waste Generator Program;
- Hazardous Materials Release Response Plans and Inventory Program;
- California Accidental Release Prevention Program;
- Aboveground Storage Tank Program; and
- Underground Storage Tank Program.

The Project will be subject to CUPA requirements and oversight. The CUPA will provide oversight to the preparation of the required Hazardous Materials Business Plans (HMBPs), SPCC and SWPPP; and such matters as employee training, record keeping, preventive maintenance and implementation of BMPs. The CUPA will also require Project participation in the single fee system requirement that is mandated by the California Environmental Protection Agency (CalEPA) within the County's CUPA and Participating Agencies' (PA) jurisdictions. The implementation of the single fee system requirement maintains both the consolidation of program elements on one permit and also the coordination among the CUPA and PAs with the administration of the unified program.

The Project, which is located a considerable distance from other industrial development, will store, use and dispose of hazardous materials and waste typical of equipment and motor vehicles such as fueling, service and repair. As a result of the Project, the transport, use, storage and disposal of hazardous materials within the Antelope Valley would increase incrementally. Given the limited number of cumulative projects, and implementation of the various programs noted above, operational and long-term Project impacts involving the release of hazardous materials or waste into the environment are **not expected to be cumulatively considerable**.

### 5.2.10 Water Supply/Quantity

The Antelope Valley Groundwater Basin (the Basin) is currently non-adjudicated, although a legal adjudication process has been underway since the late-1990s. It is anticipated that water rights will be quantified and assigned as part of the adjudication process. Lawsuits were filed against various Antelope Valley water districts and government agencies seeking priority water rights to water beneath their farmland. Several property owners and public water suppliers, including LACWW40, also initiated legal proceedings, including a cross complaint, to determine the respective rights of existing and potential users of groundwater in the Basin. The lawsuits were filed separately in Riverside, Kern, and Los Angeles County Superior Courts and were transferred and consolidated into one coordinated proceeding currently before the Honorable Jack Komar who is presiding by special assignment.

The underlying dispute revolves around the priority/superior right to pump groundwater and the protection of the Basin. The parties have asserted multiple claims to be adjudicated, including claims for declaratory relief, prescriptive rights, quiet title to water rights, and claims that portions of the Basin should be treated as a separate area for management purposes if a physical solution for the Basin is established, among other claims. The resolution of many of these claims is likely to be affected by the nature and extent of the hydrologic connectivity of water within various portions of the aquifer. The Basin adjudication process is described in detail in EIR sub-chapter 4.12.2.4.

As a result of the Basin adjudication process, Lebata will either receive an entitlement to extract groundwater, or not. If Lebata receives an allocation, Project use of said allocation will, by definition, fall within the Court's definition of "safe yield" and Project impacts are **not expected to be cumulatively considerable**.

All other potential Project water sources described above would either not involve the use of Basin groundwater, or the purchase or lease of available local groundwater from a landowner entitled to extract groundwater through the Basin adjudication process. The cumulative impact of the Project using water provided from sources not using Basin groundwater is **not expected to be cumulatively considerable**.

Project use of water derived from Basin groundwater purchased or leased from a landowner entitled to extract such groundwater through the Basin adjudication process would fall within the Court's definition of "safe yield" and, as such, Project impacts are **not expected to be cumulatively considerable**.

The *Drawdown Assessment* (EIR Appendix 19) concludes the impact of a potential 312 afy water supply well located at the Project site would be relatively minor. Only a handful of nearby wells would see a measurable impact in water level, and the drawdown is not considered to be sufficient to effect capacity of these wells to supply water. When taking into consideration the background water level fluctuations (several tens of feet), it is unlikely that the impact on nearby wells would be discernible from background variations. In addition to establishing legal rights to pump groundwater, the Project will need to comply with Physical Solution, as determined by the Basin adjudication process. Project related drawdown is **not expected to be cumulatively considerable**.

Under most water supply scenarios, a water service connection for the Project would be constructed to the AVEK Eastern Feeder pipeline located approximately 8,000 feet to the west of the Project at the southeast corner of Avenue T and 116th Street. This pipeline would be sized and constructed specifically to meet the needs of the Project. As such, its construction is **not considered to be growth-inducing**.

## 5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines Section 15126.2(c) states that significant irreversible environmental changes must be discussed when the project includes future commitments to non-renewable resources either during construction or operation. Irretrievable commitments of non-renewable resources must be evaluated to assure that consumption of the resource(s) can be justified. Irreversible changes may also result from environmental accidents associated with project operations.

The Project site is located in an area identified by the State of California and the Los Angeles County General Plan as MRZ-2. This site is also designated by the State as having aggregate deposits of regional significance. The Project would serve to provide a new source of aggregate materials, which is considered to be a non-renewable resource, to meet the needs of the Palmdale P-C Region as is described above in EIR sub-chapter 4.2.8 (Aggregate Sustainability in California), which notes:

> *One of the largest changes in the State of California involves the Palmdale P-C Region, where permitted reserves dropped from 216 to 152 million tons while demand increased from 172 to 557 million tons. Given the projected demand, the Palmdale P-C Region can currently provide only 27 percent of the 50-year demand and would be exhausted in approximately 13.6 years.*

EIR sub-chapter 4.2.9 (Price Inelasticity) notes that:

> *In his paper, Dr. Berck notes:*
>
> "*The opening of a new quarry for aggregates will change the pattern of transportation of aggregates in the area served by the quarry. In this note, we will show that, so long as aggregate producers are cost minimizing, the new pattern of transportation requires less truck transport than the pattern of transportation that existed before the opening of the new quarry. Since the costs of providing aggregates falls, it is reasonable to assume that the price of delivered aggregates also will fall. This note also shows that the demand expansion effect is of very small magnitude. Since the demand increase from a new quarry is quite small, the dominant effect is that the quarries are on average closer to the users of aggregates and, as a result, the truck mileage for aggregate hauling decreases. To summarize the effects of a new quarry project:*
>
> *a) The project in itself will not significantly increase the demand for construction materials in the region through market forces, which include the downward pressure on pricing.*
>
> *b) Truck traffic (i.e., vehicle miles traveled) in the region will not increase and may decrease as a result of the project.*"
>
> *As a result, the effect of a new or expanded aggregate production should be to reduce the*

*overall air emissions from aggregate trucking. This potential reduction in regional emissions should be considered a positive impact of a Project.*

Therefore, the Project **would not result in significant irreversible environmental changes**.

# 6.0 ALTERNATIVES TO THE PROJECT

This chapter of the EIR contains an evaluation of alternatives to the Project.

## 6.1 OVERVIEW OF CEQA REQUIREMENTS AND GUIDELINES FOR ALTERNATIVES ANALYSIS

CEQA Guidelines Section 15126.6 provides a framework for the formulation and analysis of alternatives in an EIR. This Section states, "*An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*" Key concepts pertaining to the discussion of alternatives are further specified in the Guidelines as follows.

CEQA Guidelines Section 15126.6(a) specifies that:

> *"An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible."*

Furthermore, CEQA Guidelines Section 15126.6(c) notes that:

> *"The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination."*

When evaluating the alternatives, CEQA Guidelines Section 15126.6(d) states that:

> *"The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."*

## 6.2 SUMMARY OF PROJECT DESCRIPTION AND OBJECTIVES

The Project's primary objective is to produce marketable PCC-grade aggregate and related construction material products and supply these products where they are in demand. Lebata's overall Project objectives are to:

- Conduct aggregate surface mining and processing operations to produce marketable PCC-grade aggregate and related products;
- Install and operate a Ready-Mixed Concrete Plant;
- Install and operate a Vac-Lite Plant;

- Install and operate an Asphalt Mixing Plant;
- Install and operate a Raw Cement and Aggregate Transfer and Distribution Facility;
- Supply primarily the greater Los Angeles, the Saugus/Palmdale and the San Bernardino/Riverside market areas with PCC-grade aggregate (e.g., rock, sand and gravel), specialty sand, ready-mixed concrete, mortar, road base, asphalt and raw cement; and
- Provide for the environmentally sound and economically viable operation and closure of the site.

## 6.3 SIGNIFICANT ENVIRONMENTAL IMPACTS IDENTIFIED IN THIS EIR

EIR chapter 4.0 discloses that all Project impacts are either **Less than Significant** or **Significant, but Mitigable**.

## 6.4 ALTERNATIVES NOT CONSIDERED FOR EVALUATION

### 6.4.1 Alternative Location

The start-up of a new surface mining operation and its related processing facilities and industrial plants is a complex undertaking with a variety of technical and environmental issues. An alternative site would not only require a high quality aggregate resource but would also need to support the various activities being proposed.

Site-specific studies would be required to evaluate a new site and its adequacy to support mining and processing operations. Issues to be addressed for a new site are dominated by its land availability and suitability. The site must be available for purchase or long-term lease with abundant aggregate resources to justify the investment. Overall feasibility studies would have to be prepared similar to the Project to evaluate the following environmental and logistical concerns:

- Quality and quantity of aggregate resource and its suitability to meet construction specifications for concrete and asphalt for up to 50 years;
- Geotechnical hazards, flood hazards, and hazards and hazardous materials;
- Water and electric service availability;
- Distance to markets possibly increasing haul truck mileage and air emissions;
- Available truck routes and impacts to roads and traffic;
- Existing and future surrounding land uses;
- Effects of the mining and processing plants on these surrounding land uses including visual aesthetics, dust, nighttime lighting, and noise;
- Potential impacts to groundwater, surface water, biological resources, and cultural resources; and
- Reclamation and use of site after mining.

Having undertaken this process to identify the Big Rock Creek site, Lebata made the determination that the site best met the environmental and logistical concerns noted above. In making this determination,

seven (7) other sites were considered for a mining operation, each of which was found to be infeasible for the stated reasons:

1. Indio — Site was near threatened and endangered species.
2. Hemet — Site had high royalty rates and the reserves were too small for the investment.
3. San Diego — High royalty rates and opposition by the neighbors.
4. Lucerne Valley — Site was too far from the market.
5. Victorville — Cost to facilitate was too high along with property ownership issues.
6. Barstow — Too far from the market.
7. Gorman — Reserves were too small, consisted of sand and no rock, and the royalty was too high along.

Therefore, an alternative location was not further considered.

## 6.5 ALTERNATIVES CONSIDERED FOR EVALUATION

The following alternatives were selected for analysis in this EIR and are described in more detail below:

- No Project Alternative
- 750-Foot Turn Radius Project Alternative
- Project (and Lowered Facilities) without Longview Road Extension Alternative
- Reduced Project Alternative, 1,500-Foot Turn Radius
- Reduced Project Alternative, 750-Foot Turn Radius
- Lowered Facilities Alternative

All but the No Project Alternative would be subject to the Mitigation Measures described in the EIR.

It is likely that wash fines and a good portion of the processed sand will not be sold, resulting in their placement back into the excavated area. A portion of this material will be blended with the other material needed to backfill excavated slopes to the required 2:1 (h:v) final slope. This is true for all alternatives, except for the No Project Alternative.

### 6.5.1 Longview Road Extension and its Relationship to the Development of Alternatives

The County General Plan, specifically Figure 4.5: LA County Highway Plan, illustrates the adopted alignment of the future Longview Road Extension, which would bisect the Project area from its northeast corner to the southwest corner. The Project and its alternatives reflect various realignments of the Longview Road Extension, or its deletion. These include:

1. The 1,500-foot turn radius alignment, which was reconfigured to lessen the operational impacts upon the Project, by moving it further to the west and northwest and away from the center of the North Parcel, and to minimize its use of the South Pit. For the purposes of this EIR, the revised 1,500-foot turn radius has been incorporated within the Project Description.

2. A tighter 750-foot turn radius alignment was designed within the Project boundaries to move the right-of-way even further to the west and northwest. This 750-foot turn radius is associated with a lesser road standard than is planned for the Longview Road Extension.
3. Deletion of the Longview Road Extension.
4. Realign Longview Road Extension to coincide with the entire western boundary of the Project. This would entail a further reduction in its design standard, since travel would be subject stop signs at its two intersections with Avenue T. It would also involve the shared use of Avenue T for approximately 0.4 miles between the north and south portions of Longview Road. For these reasons, this option was discarded.

On December 15, 2008, Lebata has made application to the County's Interdepartmental Engineering Committee (IEC) requesting consideration of the the 1,500-foot turn radius alignment and 750-foot turn radius alignment. Since that time, it was learned the only option that can be decided without a General Plan Amendment is the 1,500-foot turn radius, upon which the Project has been designed. Because this alignment utilizes the same design standards as the existing alignment and falls entirely within the same properties, it can be approved by the County a General Plan Amendment. For this reason, Lebata has made application to the County's DPW Traffic and Lighting Division for the 1,500-foot turn radius realigment.

All other options would require a General Plan Amenedment to revise Figure 4.5: LA County Highway Plan. Lebata is not proposing a General Plan Amendment because the County's General Plan is currently undergoing a formal Update. In anticipation of the possible results of the General Plan Update, this EIR has been drafted to disclose the effects of the 1,500-foot turn radius alignment, 750-turmn radius alignment, and deletion of the Longview Road Extension. The General Plan Update process has been underway for many years and will likely be completed before the Longview Road Extension constrains the Project operationally.

During the EIR and Project decision-making processes, Lebata will work with Regional Planning staff to ensure that Project Conditions of Approval are written in a manner permitting the Project to conform to any realignment or the deletion of the Longview Road Extension resulting from the General Plan Update. In the event the tighter 750-foot turn radius alignment is adopted by the County, the Project and all alternatives have been designed to place facilities within this alignment.

Discussions with LACDPW staff indicate a 750-turn radius alignment or the deletion of the Longview Road Extension must be supported by traffic modeling results. As the County has no traffic model for the Antelope Valley area, it was suggested the traffic model being developed by the City of Palmdale be used and the model results subjected to LACDPW review and acceptance. Lebata had intended using the City's traffic model to assess the 750-foot turn radius alignment and the deletion of Longview Road Extension. However, after waiting several years for the City of Palmdale to develop its new traffic model, and because there is as of yet no schedule for its development, a study was prepared to determine whether the Longview Road Extension was needed at all.

To this end, the *Deletion of Longview Road from Los Angeles County Master Plan of Highways Traffic Study* was prepared (EIR Appendix 9, Second Addendum), which concluded the following:

*The projected 2035 future traffic volumes in the study area can easily be accommodated by the existing roadway system without the extension of Longview Road, and Longview Road should be deleted from the Master Plan of Highways. The cost of constructing the extension, which would include a substantial curvature in alignment, would not be offset by any significant improvement in the resulting level of service. The levels of service on existing roadways will not be significantly impacted by the deletion of Longview Road from the Master Plan of Highways.*

### 6.5.2 Mitigation Measures Common to all Alternatives

All of the Mitigation Measures identified in this EIR and presented in EIR Chapter 8.0 apply to the alternatives presented below. None have been identified that are unique to an individual alternative.

## 6.6 ANALYSIS OF THE ALTERNATIVES

### 6.6.1 No Project Alternative

Under the No Project Alternative, the site would remain in its relatively undisturbed condition. The No Project Alternative would be considered environmentally superior because it would have no site impacts to Geotechnical Hazards; Flood Hazards; Noise; Water Quality; Air Quality, Health Risks and Climate Change; Biological Resources; Visual Quality; Traffic and Circulation; Hazards and Hazardous Materials; and Water Supply/Quantity.

However, the No Project Alternative would result in the need for aggregate materials to be supplied from other surface mining operations in order to meet the demand within the Palmdale P-C Region. EIR sub-chapter 4.2.8 (*Aggregate Sustainability in California*) notes that:

*One of the largest changes in the State of California involves the Palmdale P-C Region, where permitted reserves dropped from 216 to 152 million tons while demand increased from 172 to 557 million tons. Given the projected demand, the Palmdale P-C Region can currently provide only 27 percent of the 50-year demand and would be exhausted in approximately 13.6 years.*

Because there is currently an inadequate supply of permitted reserves within the Palmdale P-C Region and the surrounding P-C Regions, aggregate materials will need to be transported from surface mining operations located in other areas of the County, or from outside the County. The resulting supply pressure would likely result in increased material costs as well as the need to transport materials over greater distances. Traffic impacts would depend on where aggregate material would be supplied from to make up the loss of aggregate materials that would otherwise be produced at the Project site. If aggregate material were to be transported from another aggregate source further away from markets, additional impacts to traffic and air quality could occur. Any increase in travel distances would result in increased air quality impacts and additional traffic upon other roadways. Such increases in impacts, depending upon the area affected, could result in significant impacts, including those considered cumulatively considerable.

The No Project Alternative eliminates the future mineral development of the site in conflict with the existing state MRZ-2 classification, the State's designation of the site as having aggregate deposits of regional significance, and County General Plan and Zoning Designation. The loss of this aggregate resource could cause future shortages of construction material in the Palmdale P-C Region.

The No Project Alternative would not meet Lebata's project objectives to provide a long-term aggregate resource to meet the infrastructure needs of the County. In addition, without the Project, Lebata and/or other aggregate suppliers will need to search for another aggregate source to produce the aggregate supply the County needs. Expanding an existing surface mining operation, or permitting a new surface mining operation elsewhere in the County could potentially have similar or additional environmental impacts as discussed in EIR Chapter 4.0.

### 6.6.2 750-Foot Turn Radius Project Alternative

Under the 750-Foot Turn Radius Project Alternative, the site would be developed in the same manner as the Project with one notable change: the right-of-way for the Longview Road Extension would conform to a tighter 750-foot turn radius. In all other regards, the 750-Foot Turn Radius Project Alternative would result in essentially the same impacts as those described for the Project in EIR Chapter 4.0, with some additional clarification of impacts described below.

#### 6.6.2.1 Mining Phases

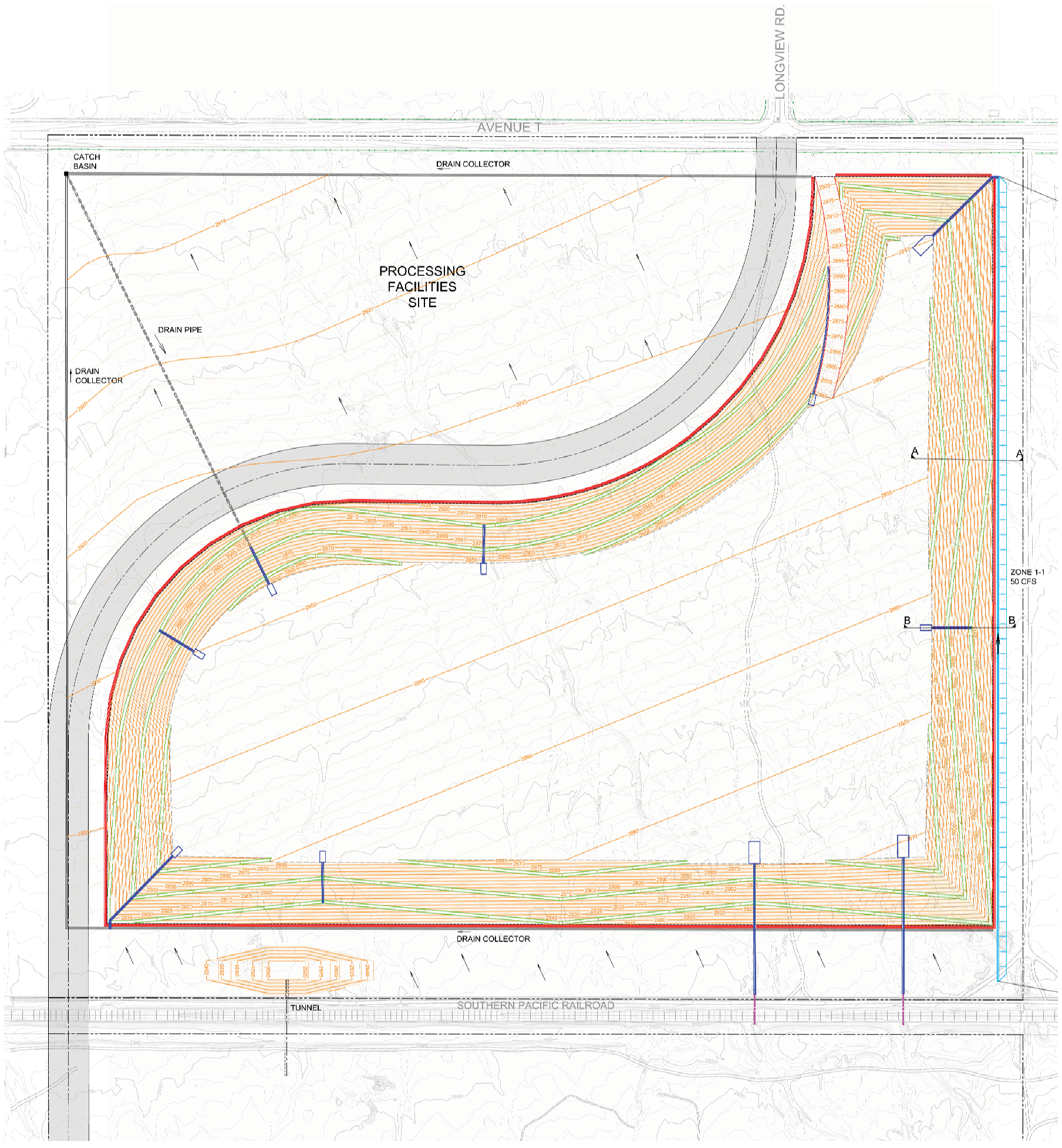
The Mining Phases and Final Reclamation of this alternative are illustrated below in EIR Figure 59 through EIR Figure 64. EIR Table 90 summarizes the Mining Phases under this alternative.

**Table 93 Mining Phase Summary – 750-Foot Turn Radius Project Alternative**

| Mining Phase | Tonnage (gross) | Tonnage (net) | Fines/Silt (tons) | Area (acres) | Duration [1] (years) |
|---|---|---|---|---|---|
| Phase 1 | 11,007,150 | 8,723,166 | 2,283,984 | 74.2 | 11 |
| Phase 2 | 25,148,250 | 19,929,988 | 5,218,262 | 150.8 | 25 |
| Phase 3a | 7,823,850 | 6,200,401 | 1,623,449 | 48.2 | 8 |
| Phase 3b | 2,503,500 | 1,984,024 | 519,476 | 9.2 | 3 |
| **Total** | **46,482,750** | **36,837,579** | **9,645,171** | **282.4** | **47** |

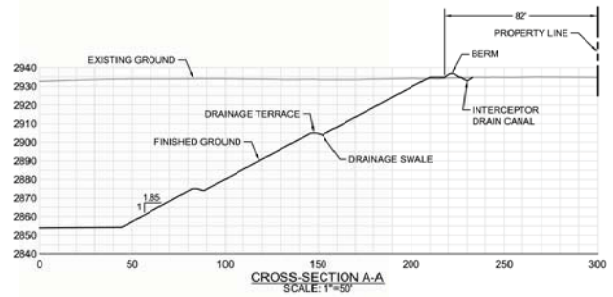
[1] Duration is based upon an annual extraction rate of 1.0 million tons per year.

It is likely that wash fines and a good portion of the processed sand will not be sold, resulting in their placement back into the excavated area. A portion of this material will be blended with the other material needed to reconstruct the road prism underlying the Longview Road Extension to DPW standards, if not abandoned by the County. This is true for all alternatives, except for the No Project Alternative.




**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
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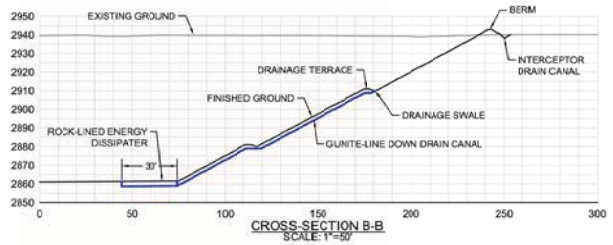
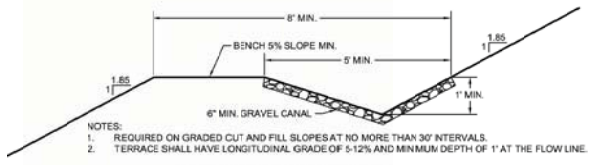
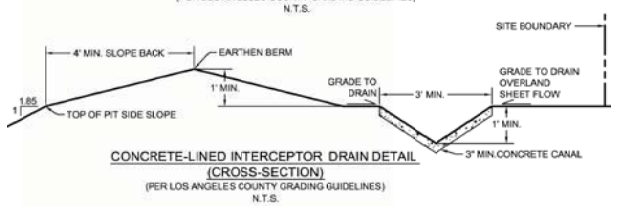



CROSS-SECTION B-B
SCALE: 1"=50'

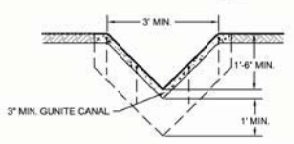



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

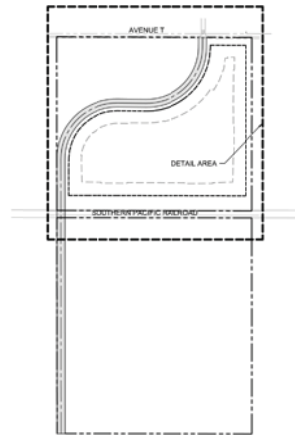



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 15' OF VERTICAL HEIGHT
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LNGITUDINAL 6' WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 1

Cut Volume: 7,338,000 CY
Date: December 5, 2008
Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006
Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reily
Approved By:

JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET 8

STETSON ENGINEERS INC.

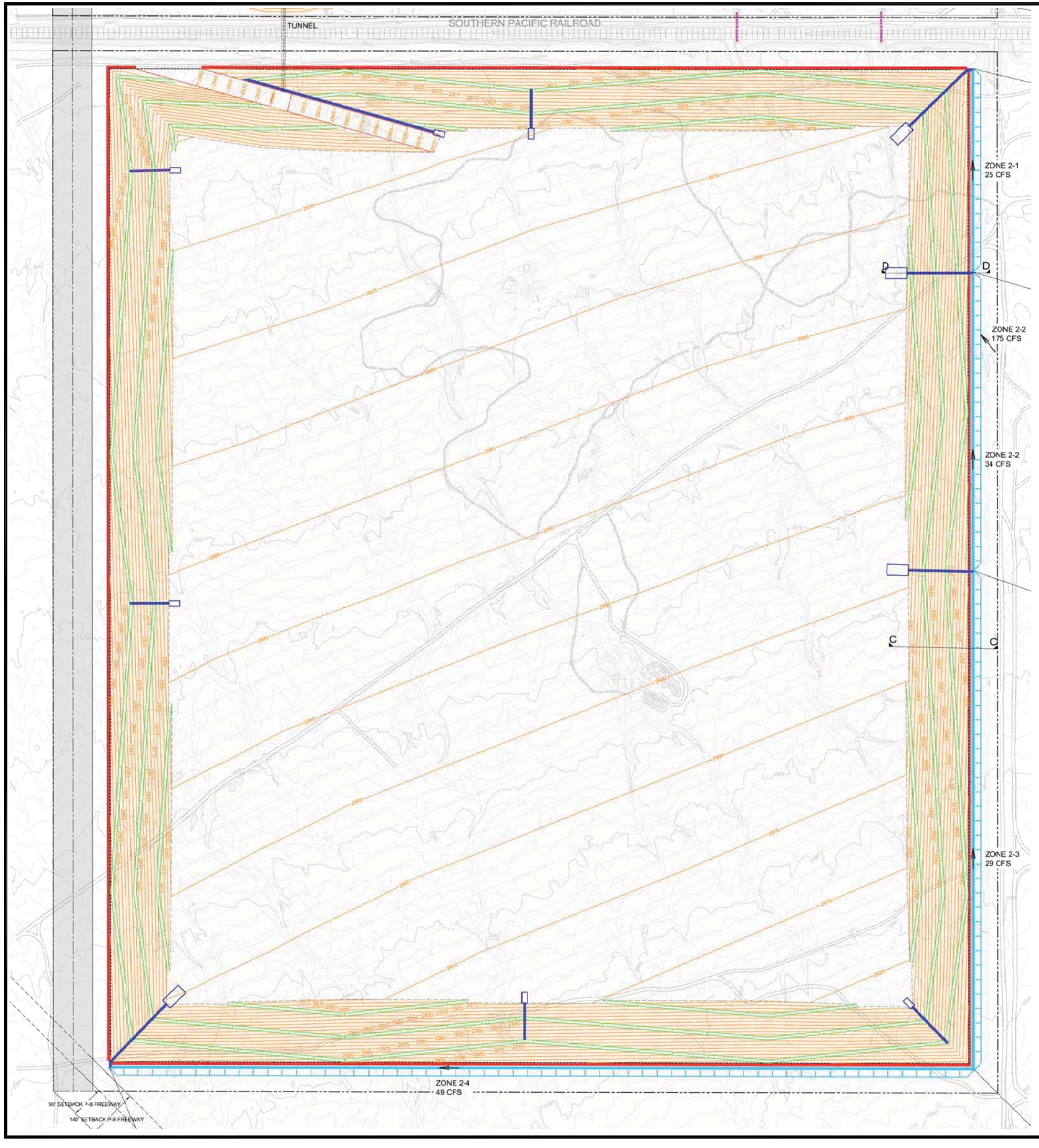
Source: West Coast Environmental, 01-20-09

Mining Phase 1
North Pit
750-Foot Radius Project Alternative
Big Rock Creek Site
Antelope Valley, California

FIGURE 59

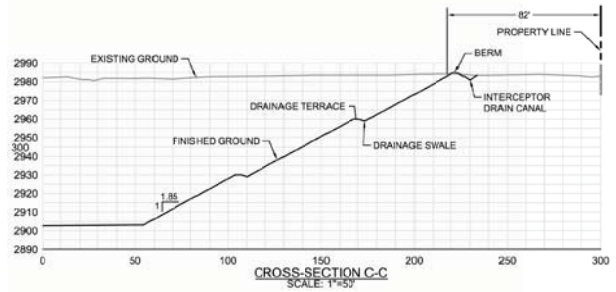
Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/MCG.dwg_New Figures_59-64.dwg

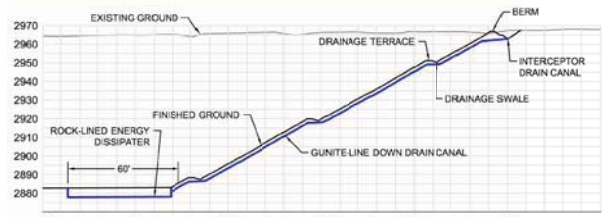



**LEGEND**

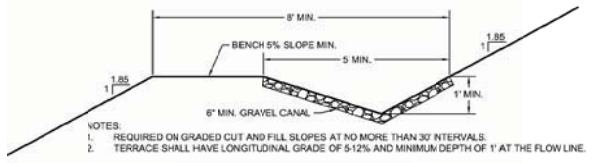
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C
SCALE: 1"=50'

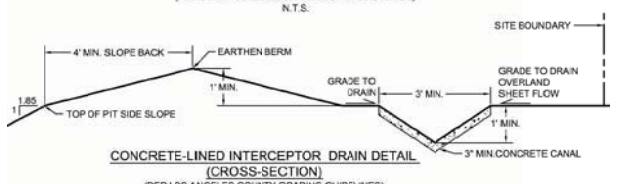



CROSS-SECTION D-D
SCALE: 1"=50'

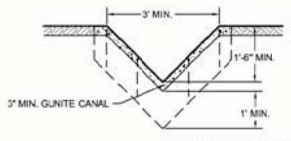



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

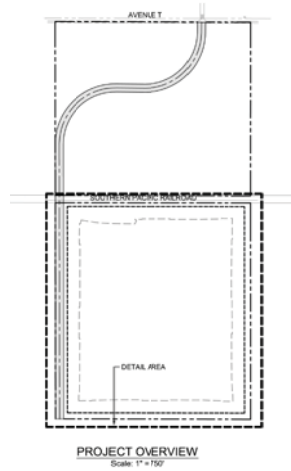



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4" O.C. ANCHOR DOWEL TO BE TIED TO LNGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

**CONCEPTUAL GRADING AND DRAINAGE PLAN**
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 2

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 16,766,000 CY
Date: December 5, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

STETSON ENGINEERS INC.

SHEET
9

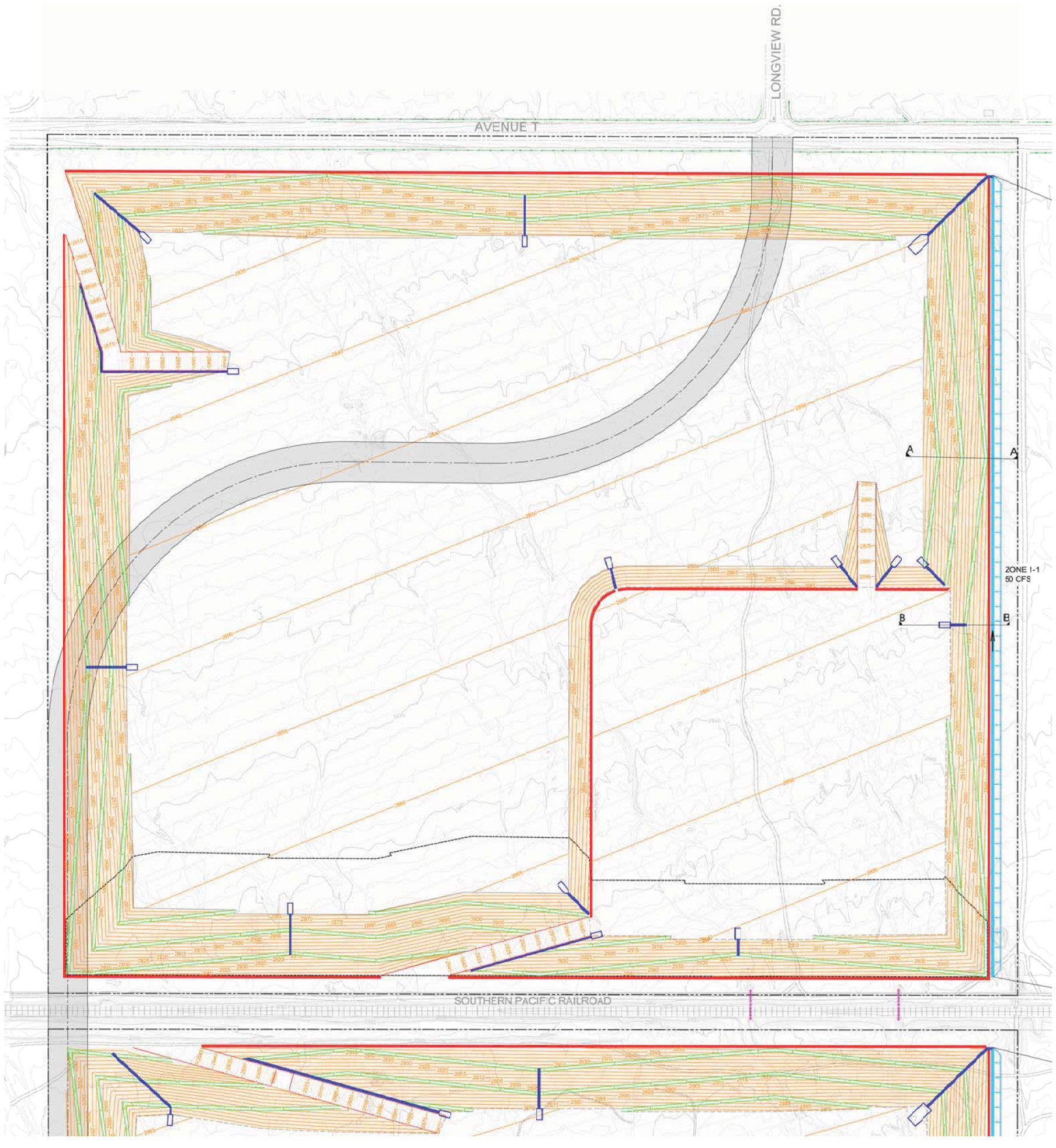
Source: West Coast Environmental, 01-20-09

Mining Phase 2
South Pit
750-Foot Radius Project Alternative
Big Rock Creek Site
Antelope Valley, California

FIGURE
60

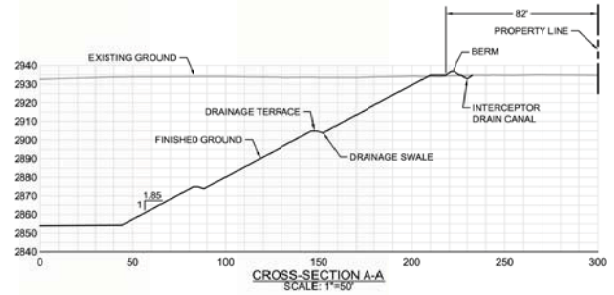
Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/MCG.dwg_New Figures_59-64.dwg

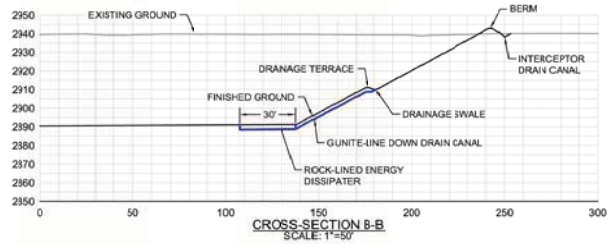



**LEGEND**

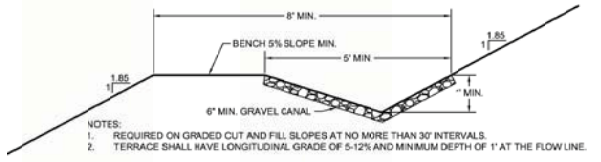
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

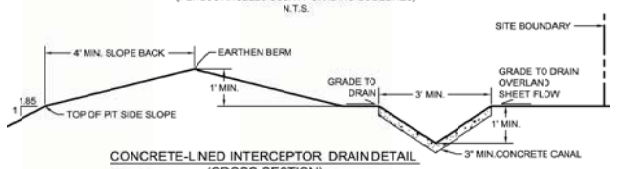



CROSS-SECTION B-B
SCALE: 1"=50'

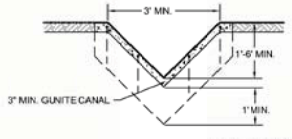



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

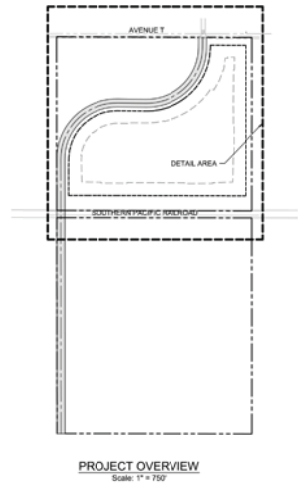



CONCRETE-LNED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

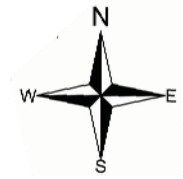



NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADINGGUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'




SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

**CONCEPTUAL GRADING AND DRAINAGE PLAN**
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 3B

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 840,000 CY
Date: December 5, 2008

Topo Source: Inland Aerial Survey Inc
Date of Flight: 05/02/2006

SHEET 12

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

STETSON ENGINEERS

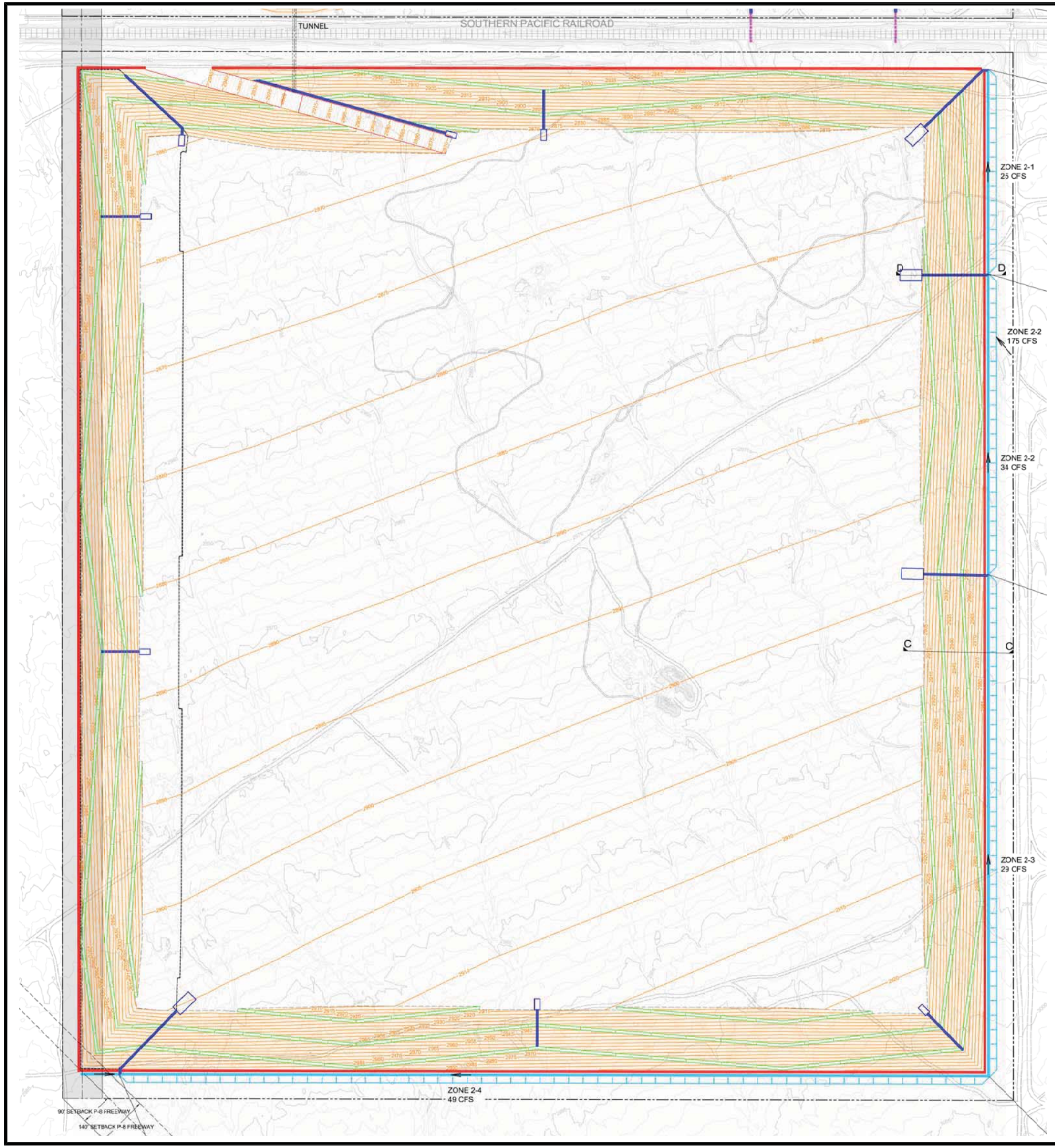
Source: West Coast Environmental, 01-20-09

Mining Phase 3a and b
North Pit
750-Foot Radius Project Alternative
Big Rock Creek Site
Antelope Valley, California

FIGURE 61

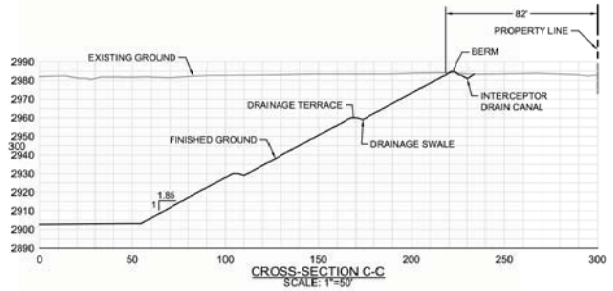
Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/MCG.dwg_New Figures_59-64.dwg

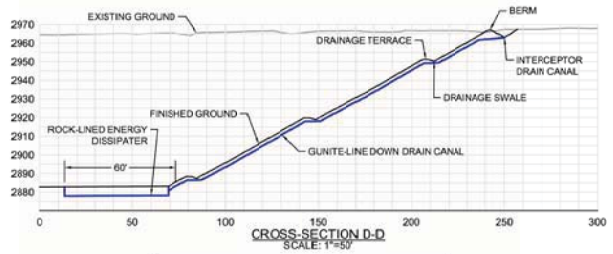



**LEGEND**

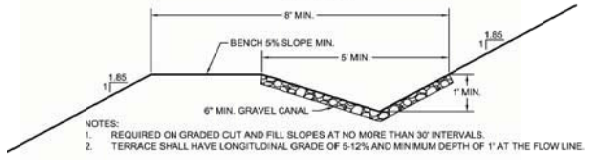
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C
SCALE: 1"=50'

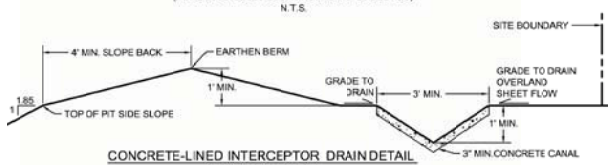



CROSS-SECTION D-D
SCALE: 1"=50'

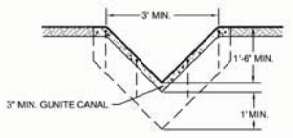



NOTES:
1. REQUIRED ON GRADED CUT AND FILL; SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

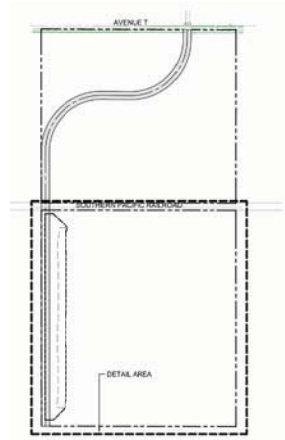



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

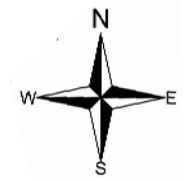



NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'




SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 3A - SOUTH PIT

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 829,000 CY
Date: December 5, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

SHEET 11

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

STETSON ENGINEERS INC.

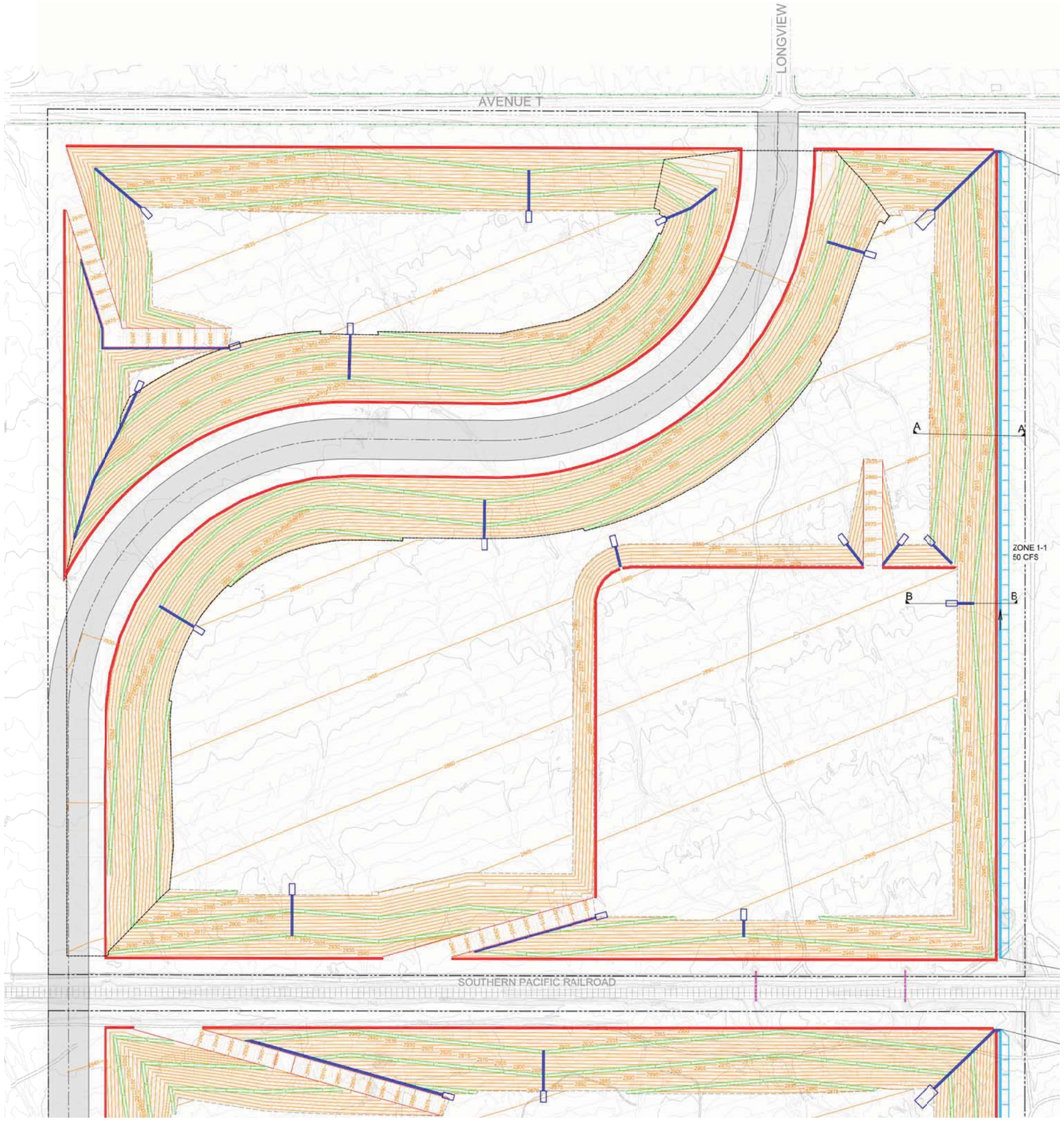
Source: West Coast Environmental, 01-20-09

Mining Phase 3a
South Pit
750-Foot Radius Project Alternative
Big Rock Creek Site
Antelope Valley, California

FIGURE 62

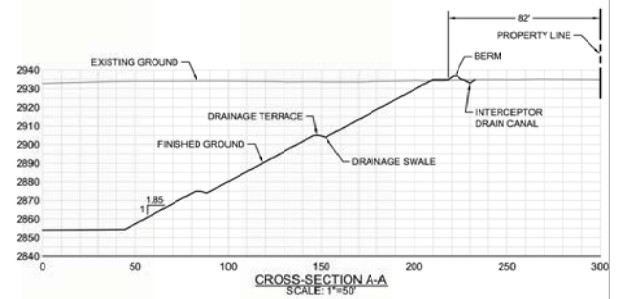
Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/MCG.dwg_New Figures_59-64.dwg

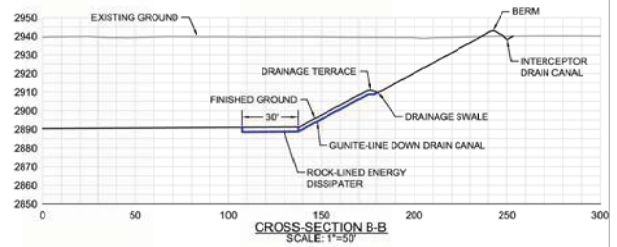



**LEGEND**

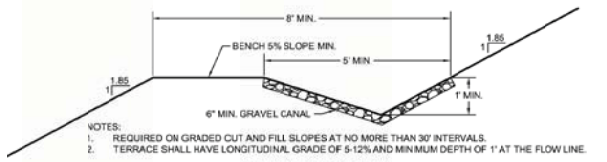
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

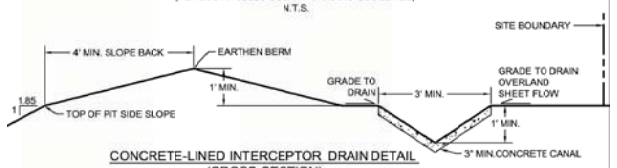



CROSS-SECTION B-B
SCALE: 1"=50'

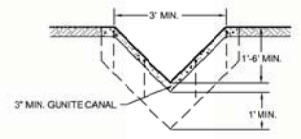



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

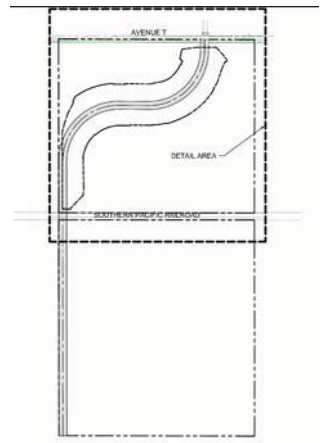



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

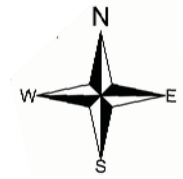



NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'




NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

ALTERNATIVE 1 (RADIUS = 750 FT)
FINAL RECLAMATION - NORTH PIT

Engineering Fill Volume: 2,896,000 CY | Date: December 5, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/22/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

STETSON ENGINEERS INC.

JN: 2192
Scale: 1" = 100'
1 - Inch

SHEET
13

Source: West Coast Environmental, 01-20-09

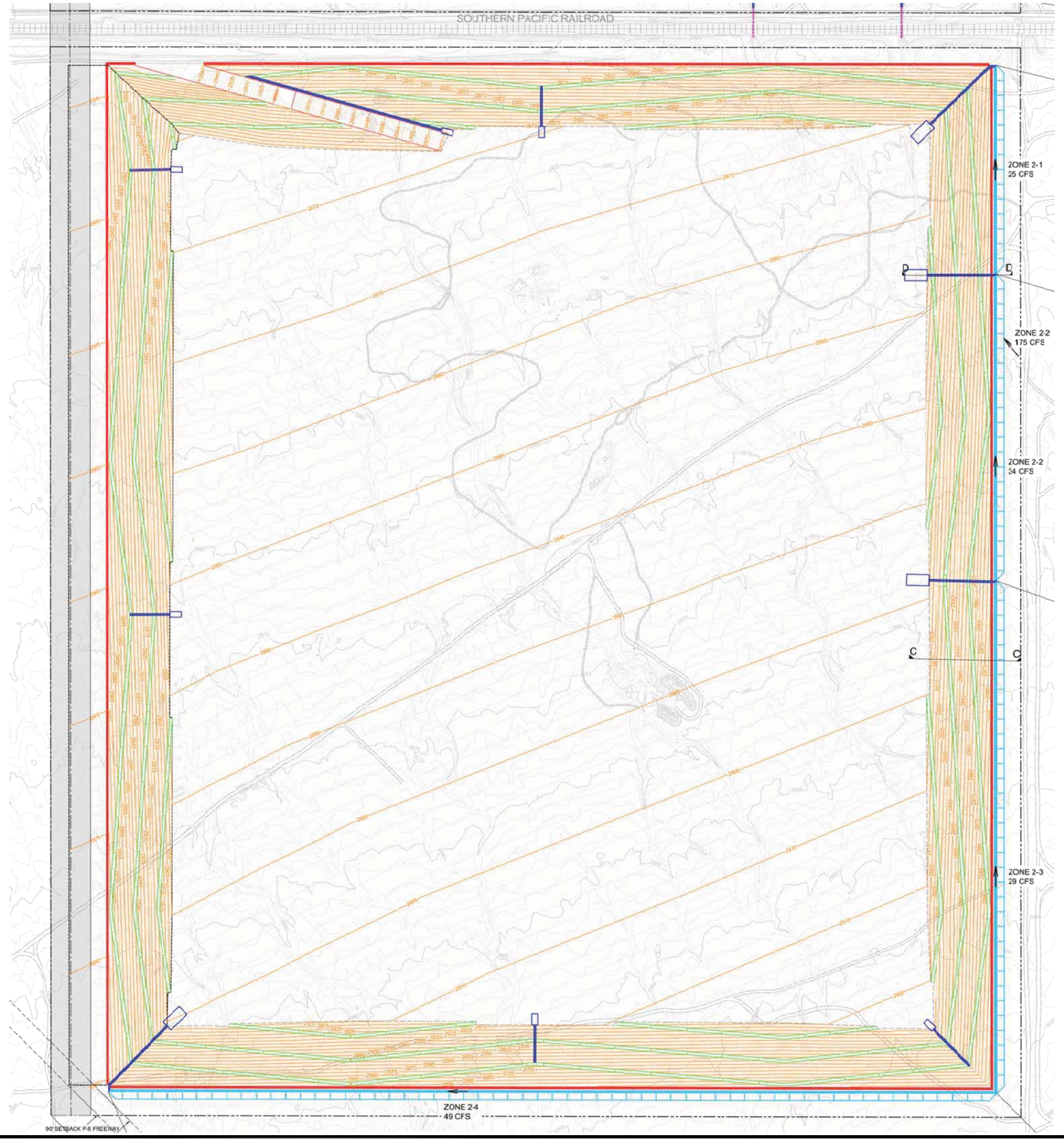
Final Reclamation
North Pit
750-Foot Radius Project Alternative
Big Rock Creek Site
Antelope Valley, California

FIGURE
63

Scale: As Shown

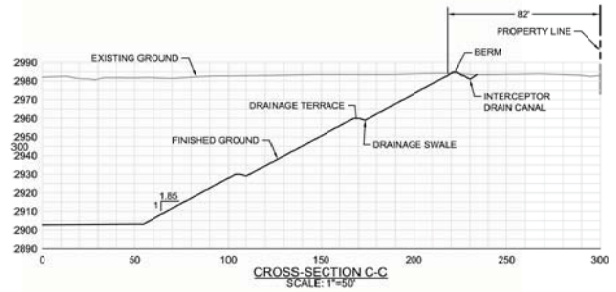
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/MCG.dwg_New Figures_59-64.dwg

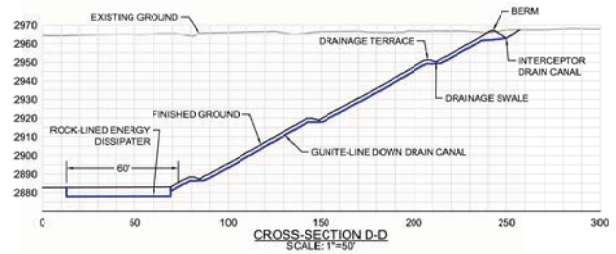



**LEGEND**

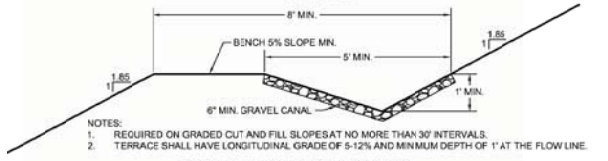
- PROPERTY BOUNDARY
- 2950 EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- 2870 PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C
SCALE: 1"=50'

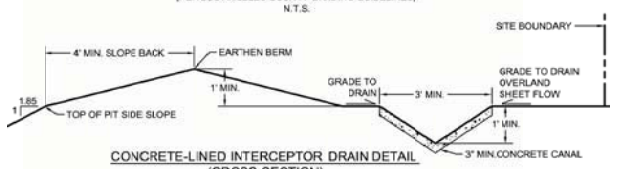



CROSS-SECTION D-D
SCALE: 1"=50'

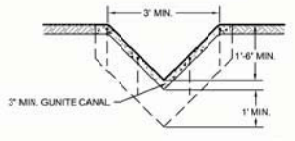



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

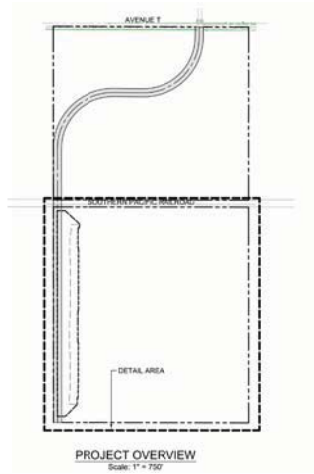



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 12' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4" O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6' WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




PROJECT OVERVIEW
Scale: 1" = 750'

SCALE (FEET)
0 50 100 200

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

CONCEPTUAL GRADING AND DRAINAGE PLAN
BIG ROCK CREEK SITE - ANTELOPE VALLEY - CALIFORNIA

ALTERNATIVE 1 (RADIUS = 750 FT)
FINAL RECLAMATION - SOUTH PIT

JN: 2192
Scale: 1" = 100'
1 - Inch

Engineering Fill Volume: 838,000 CY | Date: December 5, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2005

SHEET
14

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

STETSON ENGINEERS INC.

Source: West Coast Environmental, 01-20-09

Final Reclamation
South Pit
750-Foot Radius Project Alternative
Big Rock Creek Site
Antelope Valley, California

FIGURE
64

Scale: As Shown
Date: 3-13-2012

MCG100 Confidential/Drafting 2008/MCG.dwg_New Figures_59-64.dwg

### 6.6.2.2 Flooding

Note: The information, tables and figures presented in the remainder of EIR sub-chapter 6.6.2 are derived from the *Drainage Concept* (EIR Appendix 3), which was completed in advance of the Caltrans Pearblossom Highway improvements in 2009. As a result, they do not reflect the resulting reduced flood flows within the Lebata watershed. Therefore, the information, tables and figures pertaining to sediment, flooding, inundation depth, and emptying time are overstated and conservative.

EIR Table 94 summarizes the flood volumes entering each mining pit during each Mining Phase and upon Final Reclamation. The inundation depth was obtained from the storage capacity curves generated by the AutoCAD Land Desktop software. EIR Figure 65-1 through EIR Figure 68 illustrate flood volumes for each mining phase and final reclamation.

**Table 94 Flood Volume Received during Project Mining Phases and Final Reclamation (750-Foot Turn Radius Project Alternative)**

| Mining Pit | Upstream Watershed Area (Acre) | Local Watershed Sheetflow Volume (acre-feet) | Lebata Braid Flow Volume (acre-feet) | Onsite Runoff Volume (acre-feet) | Onsite Direct Rainfall Volume (acre-feet) | Total Capital Flood Volume (acre-feet) | Inundation Depth (feet) |
|---|---|---|---|---|---|---|---|
| **Phase 1** | | | | | | | |
| North Pit | 1228 | 66 | 12 | 5 | 32 | 115 | 13 |
| **Phase 2** | | | | | | | |
| North Pit | 554 | 30 | 0 | 5 | 32 | 66 | 11 |
| South Pit | 1525 | 82 | 43 | 0 | 65 | 190 | 16 |
| **Phase 3** | | | | | | | |
| North Pit | 554 | 30 | 0 | 0 | 53 | 83 | 13 |
| South Pit | 1525 | 82 | 43 | 0 | 68 | 193 | 16 |
| **Final Reclamation** | | | | | | | |
| North Pit | 554 | 30 | 0 | 0 | 35 | 65 | 11 |
| South Pit | 1525 | 82 | 43 | 0 | 65 | 190 | 16 |

The inundation depth is well below the proposed 80 ft depth of the mine pits. Thus, the Capital Flood volume inside the pits would not overflow. In addition, minimum two-foot-high MSHA-required safety berms would be installed along the tops of the mine pit slopes around the entire northern, eastern, southern, and western edges and pit entrance/exit ramps. Therefore, flooding impacts are considered **Less than Significant.**

### 6.6.2.3 Emptying of Flood Water

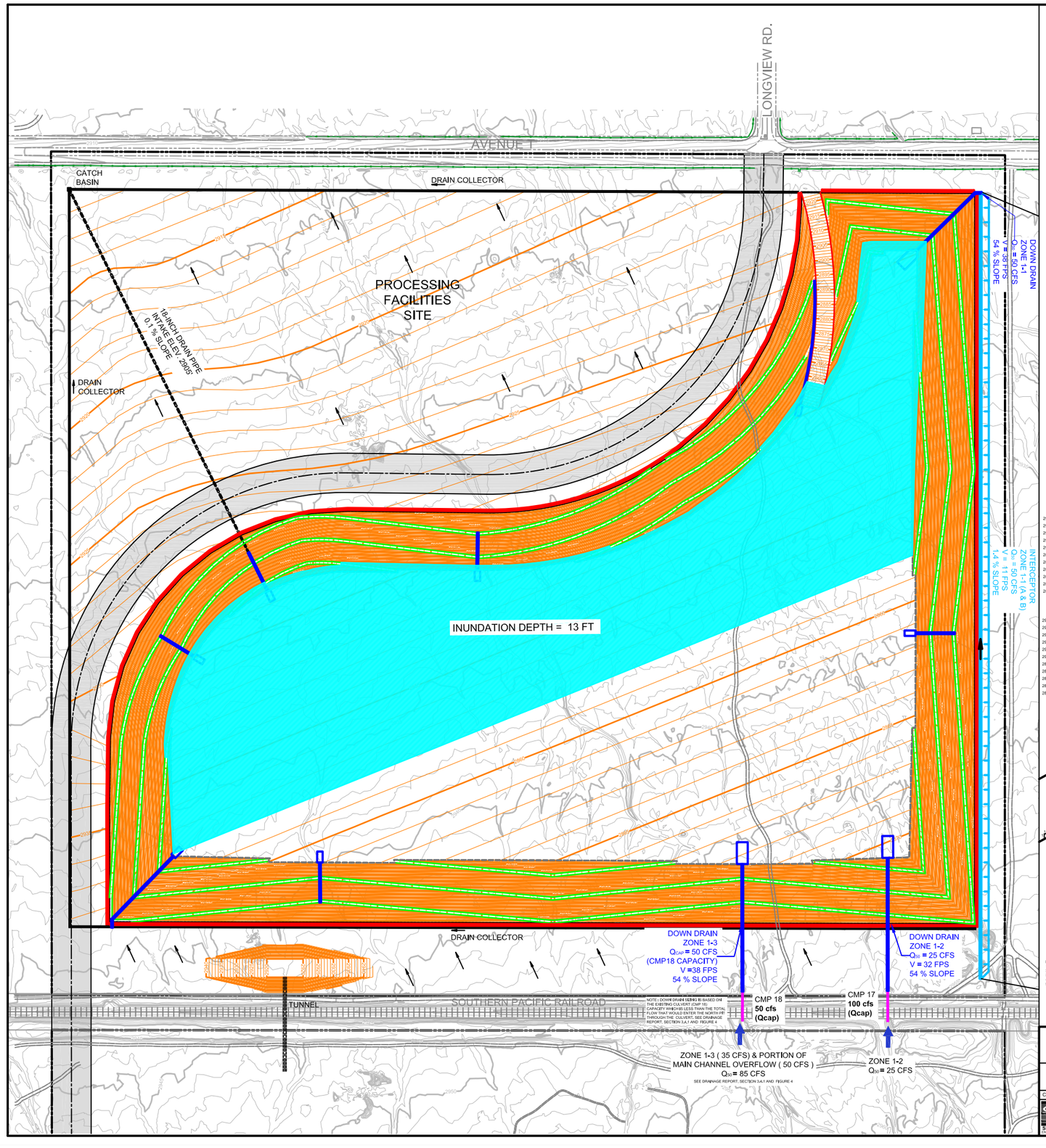
The change in flood volume and its associated water depth due to evaporation and seepage were calculated using daily time steps. The emptying times after the Capital Flood are summarized in EIR Table 95. The estimated emptying time includes two columns, one is the total time required to empty the Capital Flood volume and the other is the emptying time after the Capital Flood event. The two columns have a difference in 4 days. This is because infiltration also occurs over the 4-day Capital Flood event.

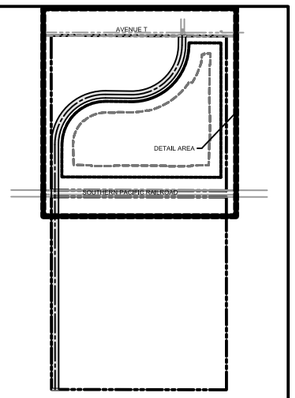
**Table 95 Pit Emptying Time after a Capital Flood Event**

| Mining Pit | Total Capital Flood Volume (acre-feet) | Emptying Time | |
|---|---|---|---|
| | | Total (days) | After Capital Flood Volume (acre-ft) |
| **Phase 1** | | | |
| North Pit | 115 | 6 | 2 |
| **Phase 2** | | | |
| North Pit | 66 | 5 | 1 |
| South Pit | 190 | 9 | 5 |
| **Phase 3** | | | |
| North Pit | 83 | 7 | 3 |
| South Pit | 193 | 9 | 5 |
| **Final Reclamation** | | | |
| North Pit | 65 | 5 | 1 |
| South Pit | 190 | 9 | 5 |

Note: The lateral infiltration is the major factor contributing to the emptying time. If a higher permeability was used, instead of the average permeability, the estimated emptying time would be even shorter.

As shown in the EIR Table 95, all mining phases would be emptied within 5 days after the Capital Flood event and the Project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Therefore, impacts are considered **Less than Significant.**

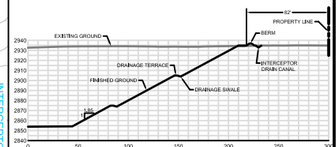


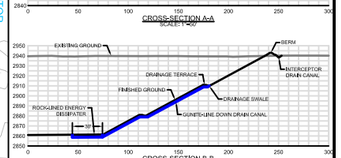



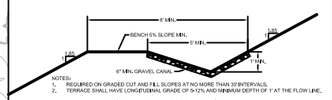

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (1500-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW
- FLOW PASS THROUGH THE EXISTING CULVERT

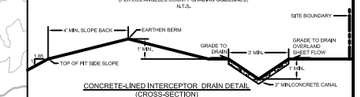


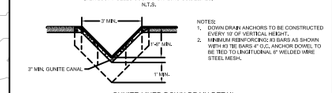




NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

SCALE (FEET)
0 50 100 200

N W E S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 1 - NORTH PIT

Cut Volume: 7,338,000 CY | Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

JN: 2192
Scale: 1" = 100'
1 - Inch

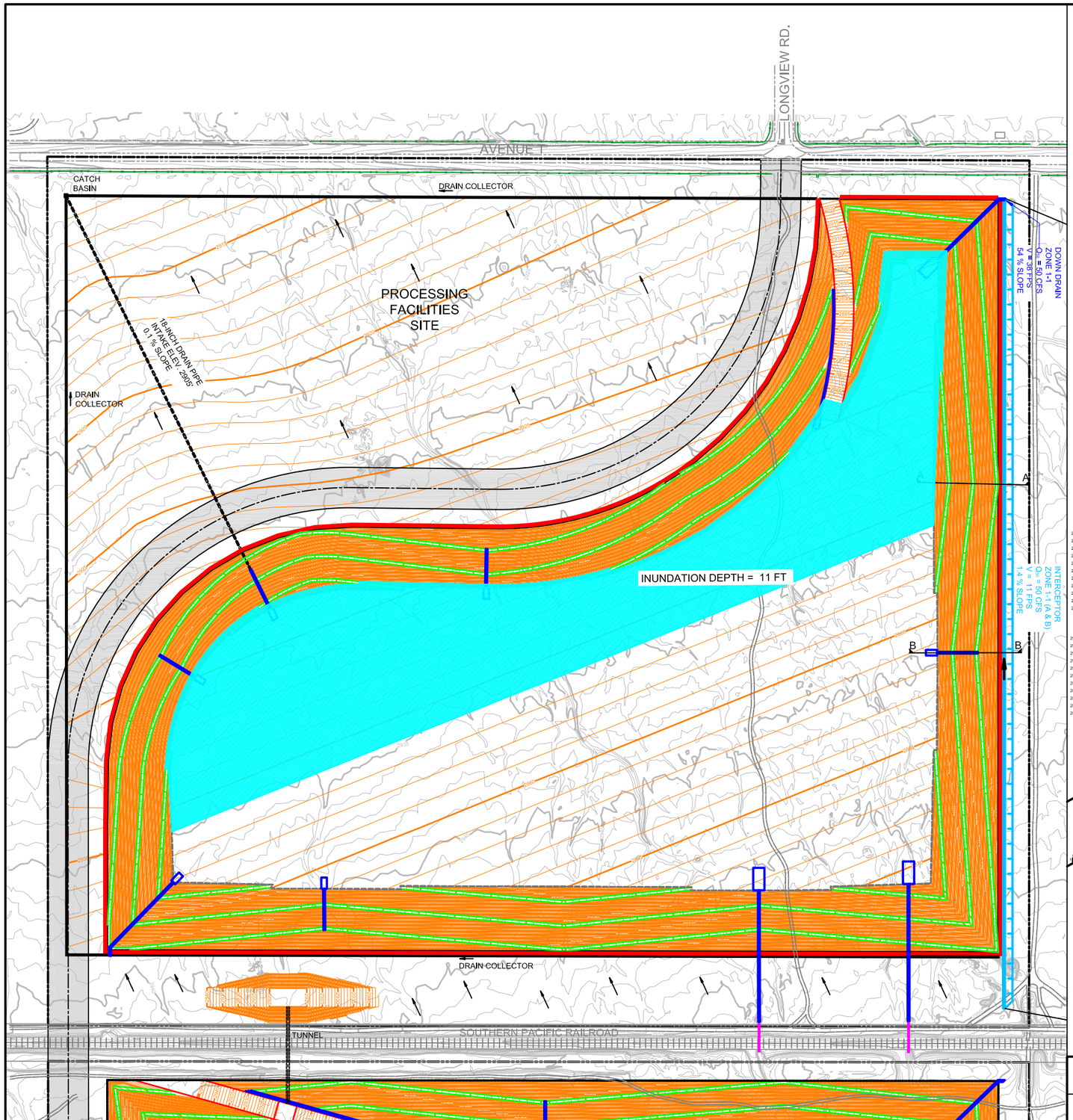
SHEET 8

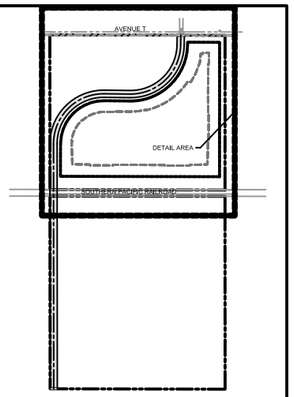
STETSON ENGINEERS

**Capital Flood Inundation Mining Phase 1 North Pit**
**750-Foot Turn Radius Project Alternative**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 65-1**

SCALE: AS SHOWN
DATE: 10-21-2013

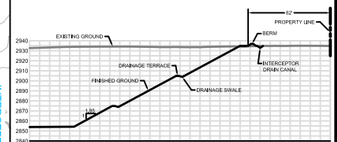


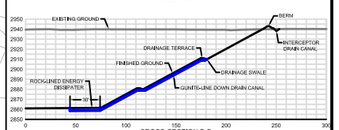

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

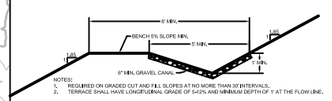
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

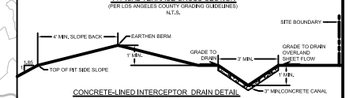



CROSS-SECTION B-B
SCALE: 1"=50'

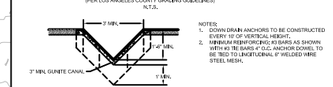



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING IS #3 BARS AS SHOWN. ANCHORS TO BE #4 BAR (1/2" D.O.) ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

N
W
E
S

SCALE (FEET)
0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 2 - NORTH PIT

Cut Volume: 0 CY

Date: December 24, 2008

JN: 2192
Scale: 1" = 100'
1 - Inch

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

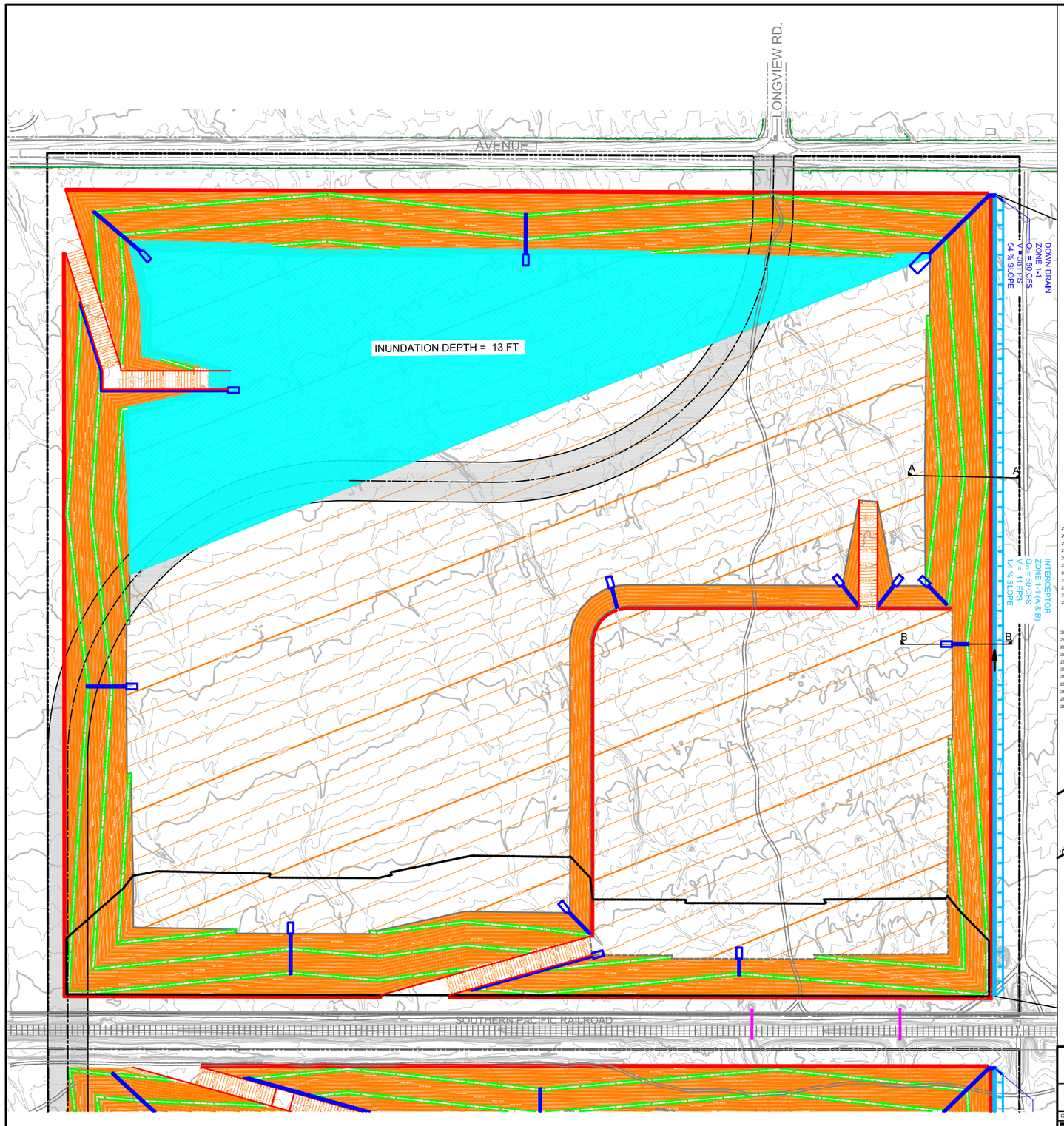
SHEET 9

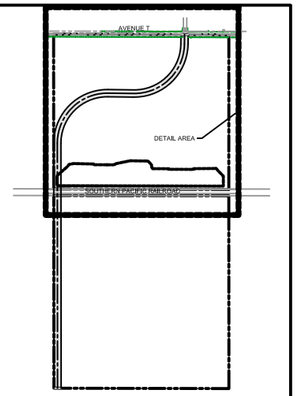
**Capital Flood Inundation Mining Phase 2 North Pit**
**750-Foot Turn Radius Project Alternative**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 65-2**

SCALE: AS SHOWN

DATE: 10-21-2013

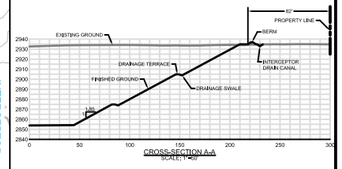


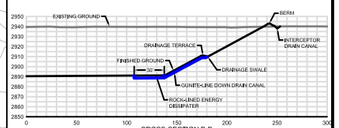

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

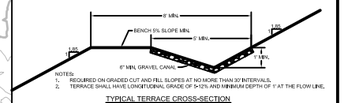
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SCALE: 1"=50'

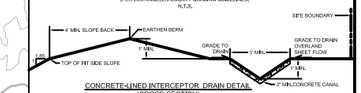



CROSS-SECTION B-B
SCALE: 1"=50'

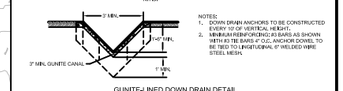



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LINGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUN INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

N
W E
S

SCALE (FEET)
0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 3 - NORTH PIT

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 6,056,000 CY
Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.,
Date of Flight: 05/02/2006

SHEET
11

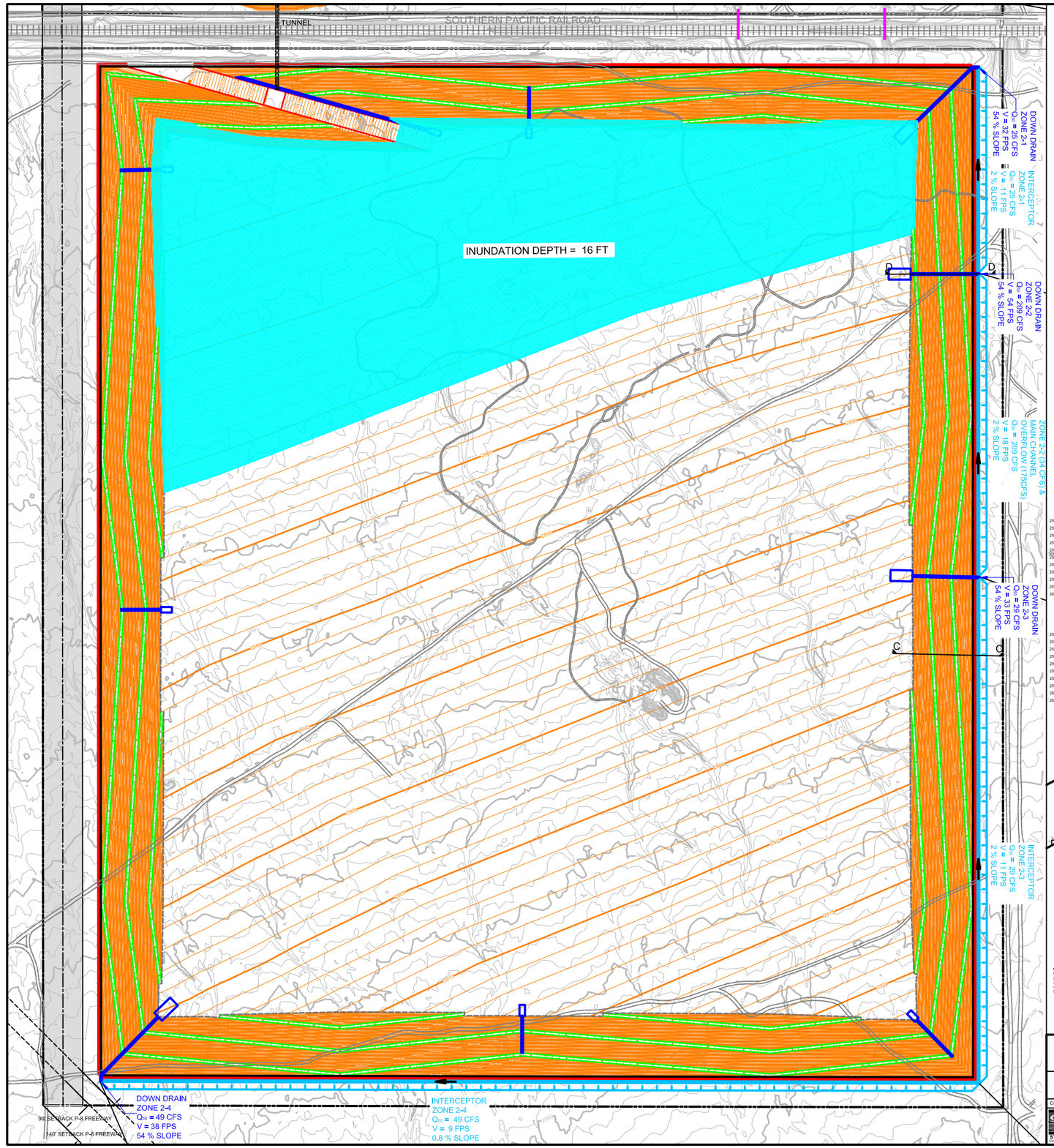
STETSON ENGINEERS INC.

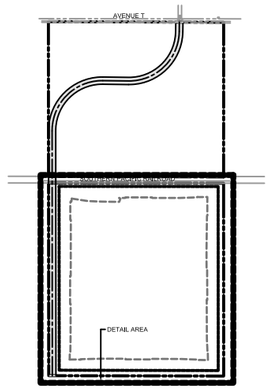
Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

**Capital Flood Inundation**
**Mining Phase 3 North Pit**
**750-Foot Turn Radius Project Alternative**
Big Rock Creek Site
Antelope Valley, California

**FIGURE**
**65-3**

SCALE: AS SHOWN
DATE: 10-21-2013

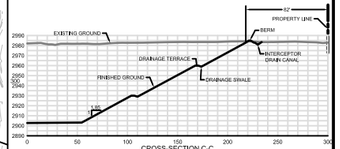


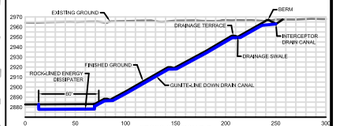

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

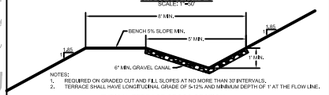
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C'
SCALE: 1"=50'

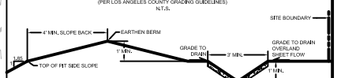



CROSS-SECTION D-D'
SCALE: 1"=50'

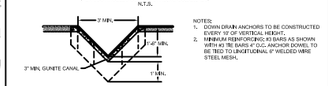



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 5' OF VERTICAL HEIGHT.
2. ANCHORS TO BE SPACED AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

SCALE (FEET)
0 50 100 200

N
W E
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DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 2 - SOUTH PIT

Cut Volume: 16,766,000 CY | Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc. Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad

Revised By: J. Reilly | Approved By:

JN: 2192
Scale: 1" = 100'
1 - Inch

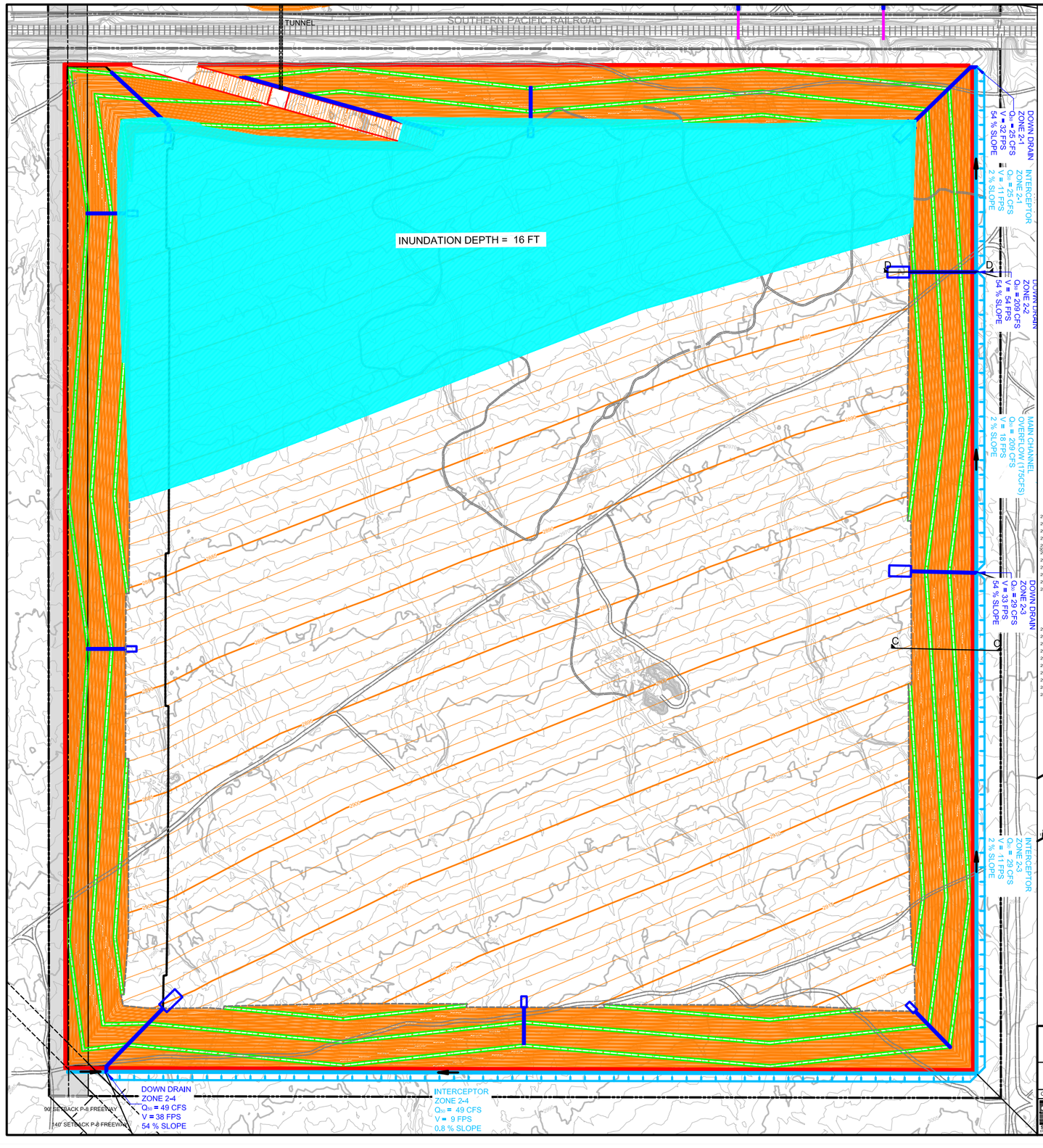
SHEET 10

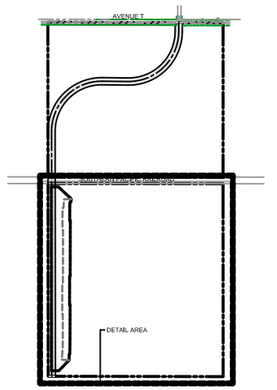
STETSON ENGINEERS INC.

**Capital Flood Inundation Mining Phase 2 South Pit**
**750-Foot Turn Radius Project Alternative**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 66-1**

SCALE: AS SHOWN
DATE: 10-21-2013

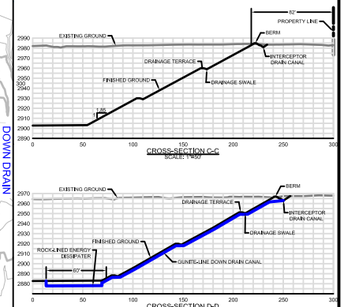


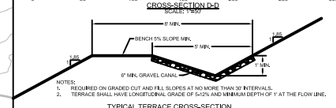




PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

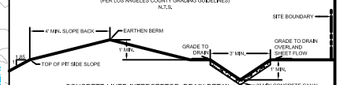
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW



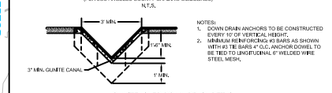




NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5+2% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #5 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

N
W
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SCALE (FEET)
0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

ALTERNATIVE 1 (RADIUS = 750 FT)
PHASE 3 - SOUTH PIT

Cut Volume: 829,000 CY | Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trikilidad | Drawn By: G. Trikilidad
Revised By: J. Reilly | Approved By:

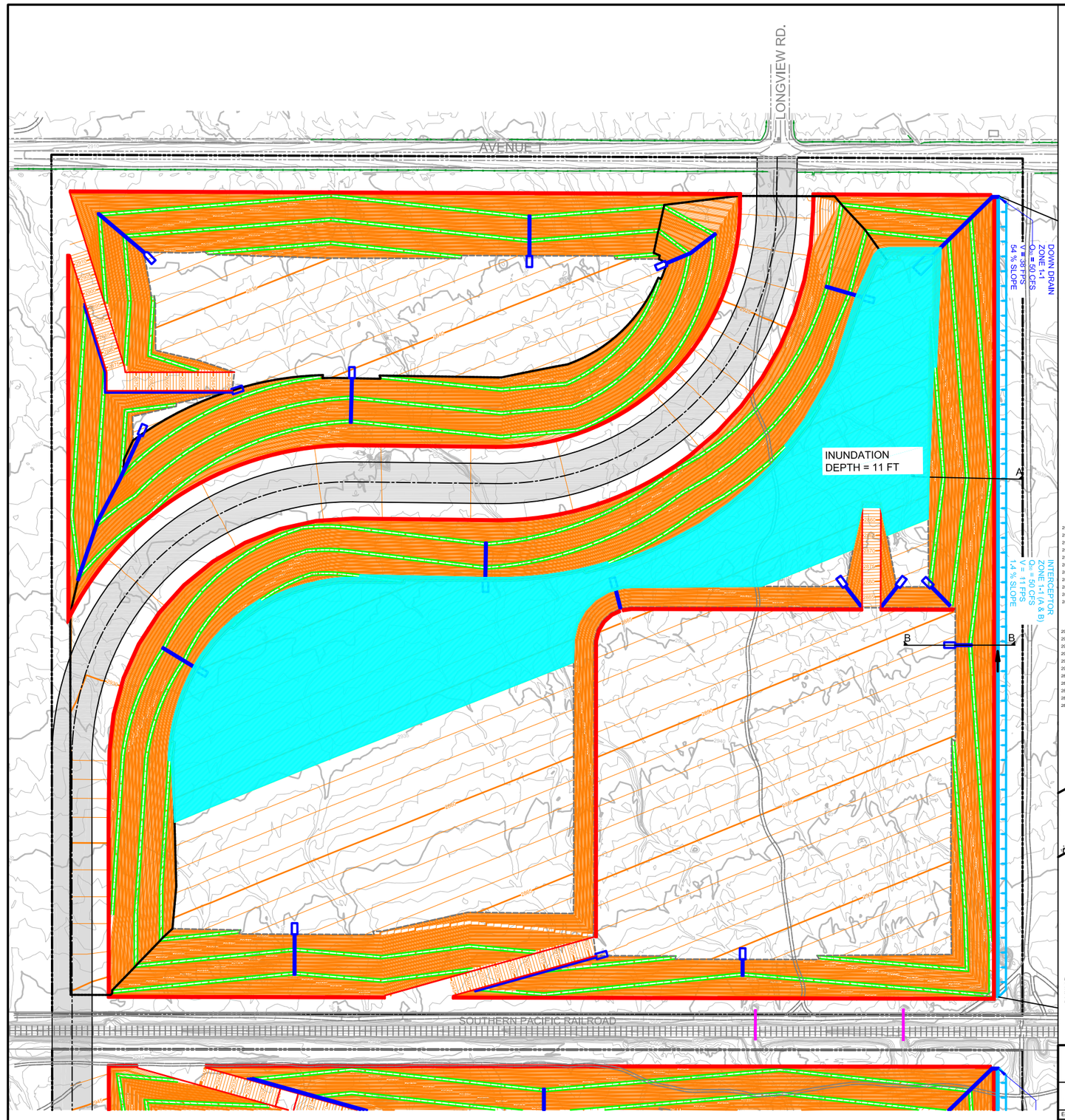
STETSON ENGINEERING

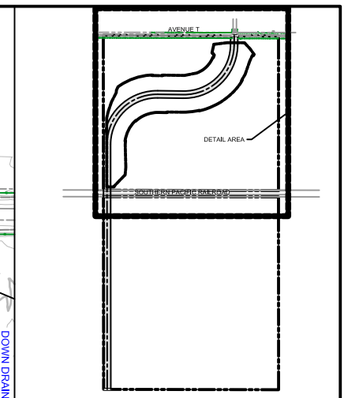
JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET 12

**Capital Flood Inundation Mining Phase 3 South Pit**
**750-Foot Turn Radius Project Alternative**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 66-2**

SCALE: AS SHOWN
DATE: 10-21-2013

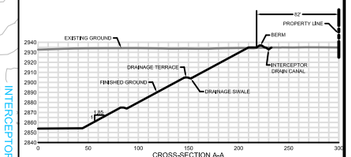


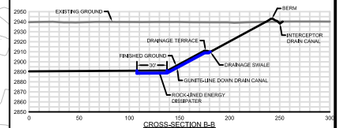

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

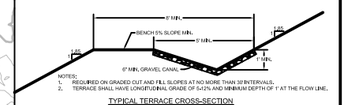
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION A-A
SURFACE FLOW

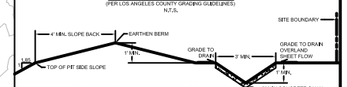



CROSS-SECTION B-B
SURFACE FLOW

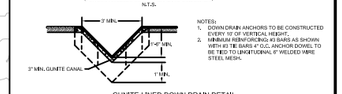



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30 INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN. ANCHOR DOWEL TO BE #4 BAR. #4 DOWEL TO BE TIED TO HORIZONTAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

ALTERNATIVE 1 (RADIUS = 750 FT)
FINAL RECLAMATION - NORTH PIT

Egineering Fill Volume: 2,696,000 CY | Date: December 24, 2008

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

STETSON ENGINEERS

JN: 2192
Scale: 1" = 100'
1 - inch

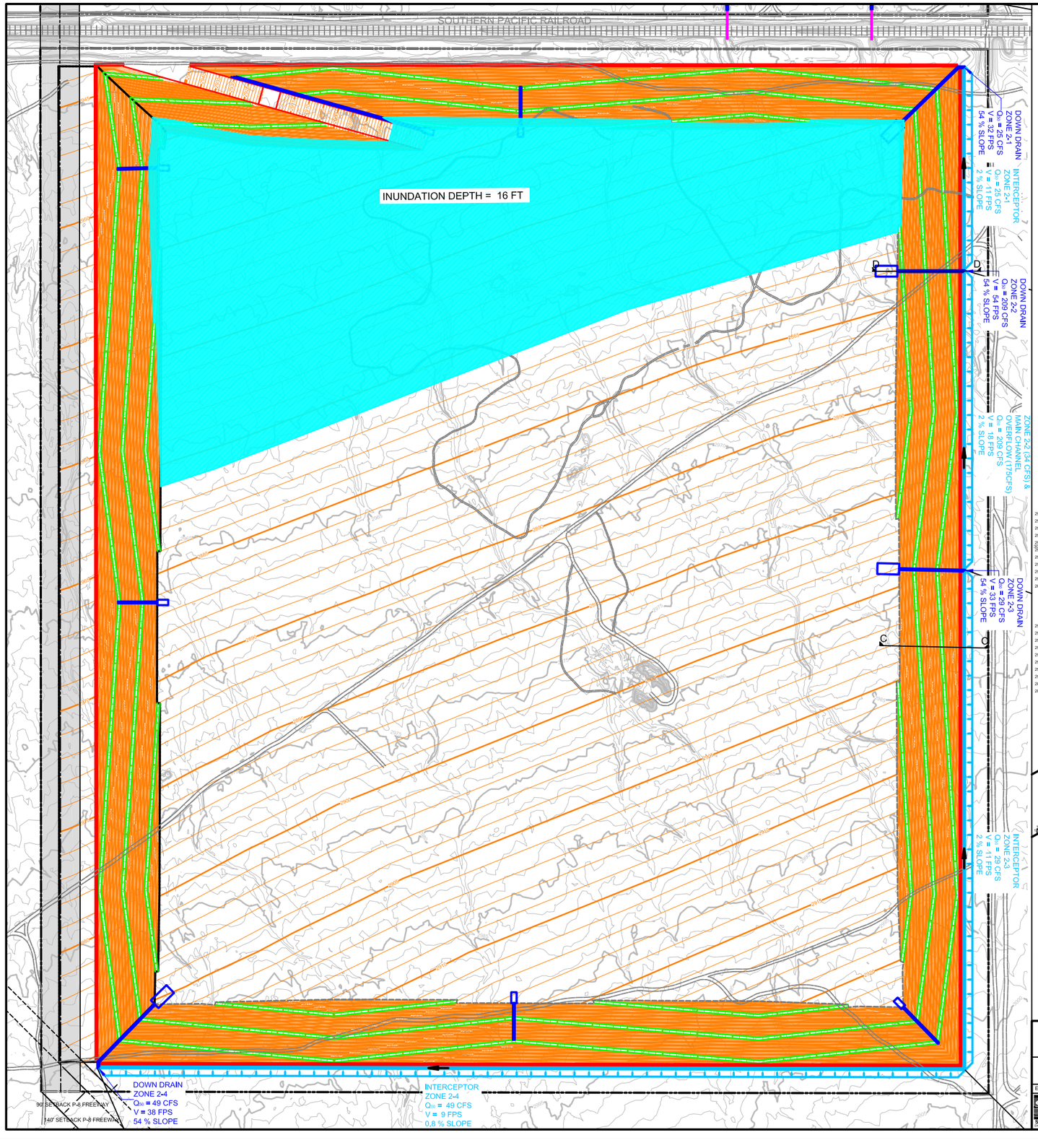
SHEET
13

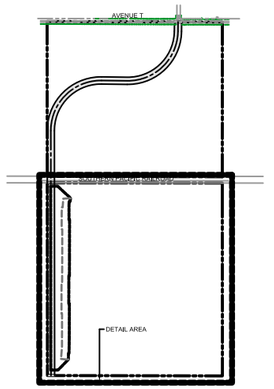
**Capital Flood Inundation**
**Final Reclamation North Pit**
**750-Foot Turn Radius Project Alternative**
Big Rock Creek Site
Antelope Valley, California

**FIGURE**
**67**

SCALE: AS SHOWN

DATE: 10-21-2013

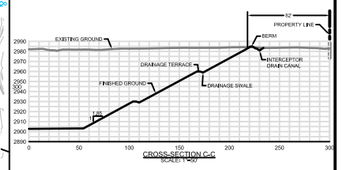


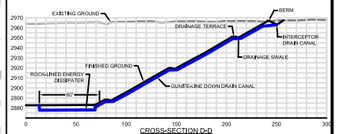

PROJECT OVERVIEW
Scale: 1" = 750'

**LEGEND**

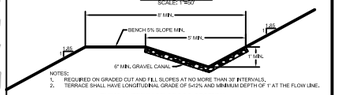
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINE
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINE
- PROPOSED RAMP
- PROPOSED TERRACE
- GUNITE-LINED DOWN DRAIN CANAL
- EARTHEN BERM
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW




CROSS-SECTION C-C'
SCALE: 1"=50'

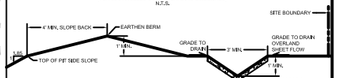



CROSS-SECTION D-D'
SCALE: 1"=50'

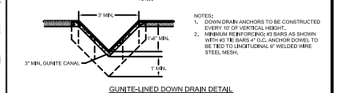



NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5+2% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIDES SHOWN.
2. SIDES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.

SCALE (FEET)
0 50 100 200

N
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DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

ALTERNATIVE 1 (RADIUS = 750 FT)
FINAL RECLAMATION - SOUTH PIT

Engineering Fill Volume: 838,000 CY | Date: December 24, 2008

JN: 2192
Scale: 1" = 100'
1 - Inch

STETSON ENGINEERS INC.

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Tirkildad | Drawn By: G. Tirkildad
Revised By: J. Reilly | Approved By:

SHEET 14

**Capital Flood Inundation**
**Final Reclamation South Pit**
**750-Foot Turn Radius Project Alternative**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 68**

SCALE: AS SHOWN

DATE: 10-21-2013

#### 6.6.2.4 Pit Sedimentation

EIR Table 96 summarizes the estimated depths of sediment deposited in the mine pits during and upon the completion of each Mining Phase and Final Reclamation.

**Table 96 Mine Pit Sedimentation by Mining Phase – 750-Foot Turn Radius Project Alternative**

| Mining Pit | Local Watershed Area (sq mi) | Pond Bottom Area (sq ft) | Sediment Layer Thickness [1] (feet) |
|---|---|---|---|
| **Phase 1** | | | |
| North Pit | 1.9 | 1,023,575 | 0.07 |
| **Phase 2** | | | |
| North Pit | 1.9 | 764,535 | 0.04 |
| South Pit | 3.2 | 1,233,827 | 0.07 |
| **Phase 3** | | | |
| North Pit | 1.9 | 884,109 | 0.03 |
| South Pit | 3.2 | 1,341,764 | 0.05 |
| **Final Reclamation** | | | |
| North Pit | 1.9 | 724,028 | 0.04 |
| South Pit | 3.2 | 1,233,827 | 0.07 |

EIR Table 96 shows that even after the Capital Flood, a sediment layer measuring 0.07 feet or less would be deposited, which is less than that of the Project. As a result, impacts due to sedimentation are considered **Less than Significant.**

### 6.6.3 Project (and Lowered Facilities) without Longview Road Extension Alternative

Under the Project without Longview Road Extension Alternative, the site would be developed in the same manner as the Project with one notable change: the right-of-way for the Longview Road Extension would either be abandoned or realigned to coincide with Project's western-most boundary.

In all other regards, this alternative would result in the same impacts as those described for the Project in EIR Chapter 4.0, except there would be a minor reduction in air emissions due to the fact the road prism underlying the right-of-way would not have to be reconstructed, as would otherwise be the case for the Project. Final reclamation under this alternative would be quite similar to EIR Figure 11 and EIR Figure 12 in EIR sub-chapter 3.6.1.3, minus the need for the Longview Road Extension right-of-way. As a result, Flood Hazards associated with the Project without Longview Road Extension Alternative would be less than those of the Project given the increase in surface area available to capture a Capital Flood.

This alternative is also applicable to the Lowered Facilities Alternative (refer to EIR sub-chapter 6.6.6). In that instance, this alternative would result in the same impacts as those described for the Project in EIR sub-chapter 6.6.6, except there would be a minor reduction in air emissions due to the fact the road prism underlying the right-of-way would not have to be reconstructed, as would otherwise be the case for the Lowered Facilities Alternative. Gross and net tonnage would be similar to that of the Project, as depicted in EIR Table 4. Final reclamation under this alternative would be quite similar to EIR Figure 73 and EIR Figure 74 in EIR sub-chapter 6.6.6.1, minus the need for the Longview Road Extension right-of-

way. As a result, Flood Hazards associated with the Project without Longview Road Extension Alternative would be less than those of the Project given the increase in surface area available to capture a Capital Flood.

Note: As previously noted, the *Deletion of Longview Road from Los Angeles County Master Plan of Highways Traffic Study* was prepared (EIR Appendix 9, Second Addendum) concluded the Longview Road should be deleted from the Master Plan of Highways. If the County decides to remove the Longview Road Extension from the Master Plan of Highways, the Project without Longview Road Extension Alternative will become feasible. If not, this alternative will become infeasible.

### 6.6.4 Reduced Project Alternative, 1,500-Foot Turn Radius (Reduced Footprint/Duration)

Under the Reduced Project Alternative, 1,500-Foot Turn Radius, surface mining activities would cease within the North Pit once the excavation has fully exposed what would become the road prism supporting the 1,500-Foot Turn Radius for Longview Road Extension. This means that Mining Phase 3 in the North Pit would not be undertaken, resulting in a 9.83 gross million ton-reduction (31.7 percent) in the overall material being extracted and processed. As such, this alternative would reduce the Project's footprint and duration.

The following EIR figures serve to illustrate key aspects of this alternative:

- Mining Phases: EIR Figure 9 and EIR Figure 10, which are presented in EIR sub-chapter 3.6.1.3; and
- Capital Flood Inundation: EIR Figure 24 and EIR Figure 25, which are presented in EIR sub-chapter 4.4.5.1.3.

When compared to the impacts described for the Project in EIR Chapter 4.0, the elimination of Mining Phase 3 – North Pit excavation would result in corresponding reductions in the stated impacts. If mining were to proceed at the same pace as that of the Project, most of the impacts would be the same as those described for the Project in EIR Chapter 4.0, but would occur over a fewer number of years. Acre-based impacts, such as those described in EIR sub-chapter 4.8 regarding biological resources, would be lessened because approximately 82.6 fewer acres would be excavated. EIR Table 98 summarizes the Mining Phases under this alternative.

**Table 97 Mining Phase Summary – Reduced Project Alternative, 1,500-Foot Turn Radius**

| Mining Phase | Tonnage (gross) | Tonnage (net) | Fines/Silt (tons) | Area (acres) | Duration [1] (years) |
|---|---|---|---|---|---|
| **Phase 1** | 6,608,200 | 5,237,000 | 1,371,200 | 49.3 | 7 |
| **Phase 2** | 25,131,100 | 19,916,400 | 5,214,700 | 150.5 | 25 |
| **Total** | **31,739,300** | **25,153,400** | **6,585,900** | **199.8** | **32** |

[1] Duration is based upon an annual extraction rate of 1.0 million tons per year.

Under this alternative, it would also be possible to conduct a surface mining operation over the same number of years as would be for the Project, but at a reduced rate of production. Were this to occur, the impacts described for the Project in EIR Chapter 4.0 would be lessened somewhat proportionally by this alternative.

### 6.6.5 Reduced Project Alternative, 750-Foot Turn Radius (Reduced Footprint/Duration)

Under the Reduced Project Alternative, 750-Foot Turn Radius, surface mining activities would cease within the North Pit once the excavation has fully exposed what would become the road prism supporting the 750-Foot Turn Radius for the Longview Road Extension. This means that Mining Phase 3 in the North Pit would not be undertaken, resulting in a 6.88 gross million ton-reduction (22.2 percent) in the overall material being extracted and processed. As such, this alternative would reduce the Project's footprint and duration. The following EIR figures serve to illustrate key aspects of this alternative:

- Mining Phases: EIR Figure 59 and EIR Figure 60, which are presented in EIR sub-chapter 6.6.2.1; and
- Capital Flood Inundation: EIR Figure 65-1 and EIR Figure 68, which are presented in EIR sub-chapter 6.6.2.2.

When compared to the impacts described for the Project in EIR Chapter 4.0, the elimination of Mining Phase 3 – North Pit excavation would result in corresponding reductions in the stated impacts. If mining were to proceed at the same pace as that of the Project, most of the impacts would be the same as those described for the Project in EIR Chapter 4.0, but would occur over a fewer number of years. Acre-based impacts, such as those described in EIR sub-chapter 4.8 regarding biological resources, would be lessened because approximately 57.4 fewer acres would be excavated. EIR Table 98 summarizes the Mining Phases under this alternative.

**Table 98 Mining Phase Summary – Reduced Project Alternative, 750-Foot Turn Radius**

| Mining Phase | Tonnage (gross) | Tonnage (net) | Fines/Silt (tons) | Area (acres) | Duration [1] (years) |
|---|---|---|---|---|---|
| **Phase 1** | 11,007,150 | 8,723,166 | 2,283,984 | 74.2 | 11 |
| **Phase 2** | 25,148,250 | 19,929,988 | 5,218,262 | 150.8 | 25 |
| **Total** | **36,155,400** | **28,653,154** | **7,502,246** | **225** | **36** |

[1] Duration is based upon an annual extraction rate of 1.0 million tons per year.

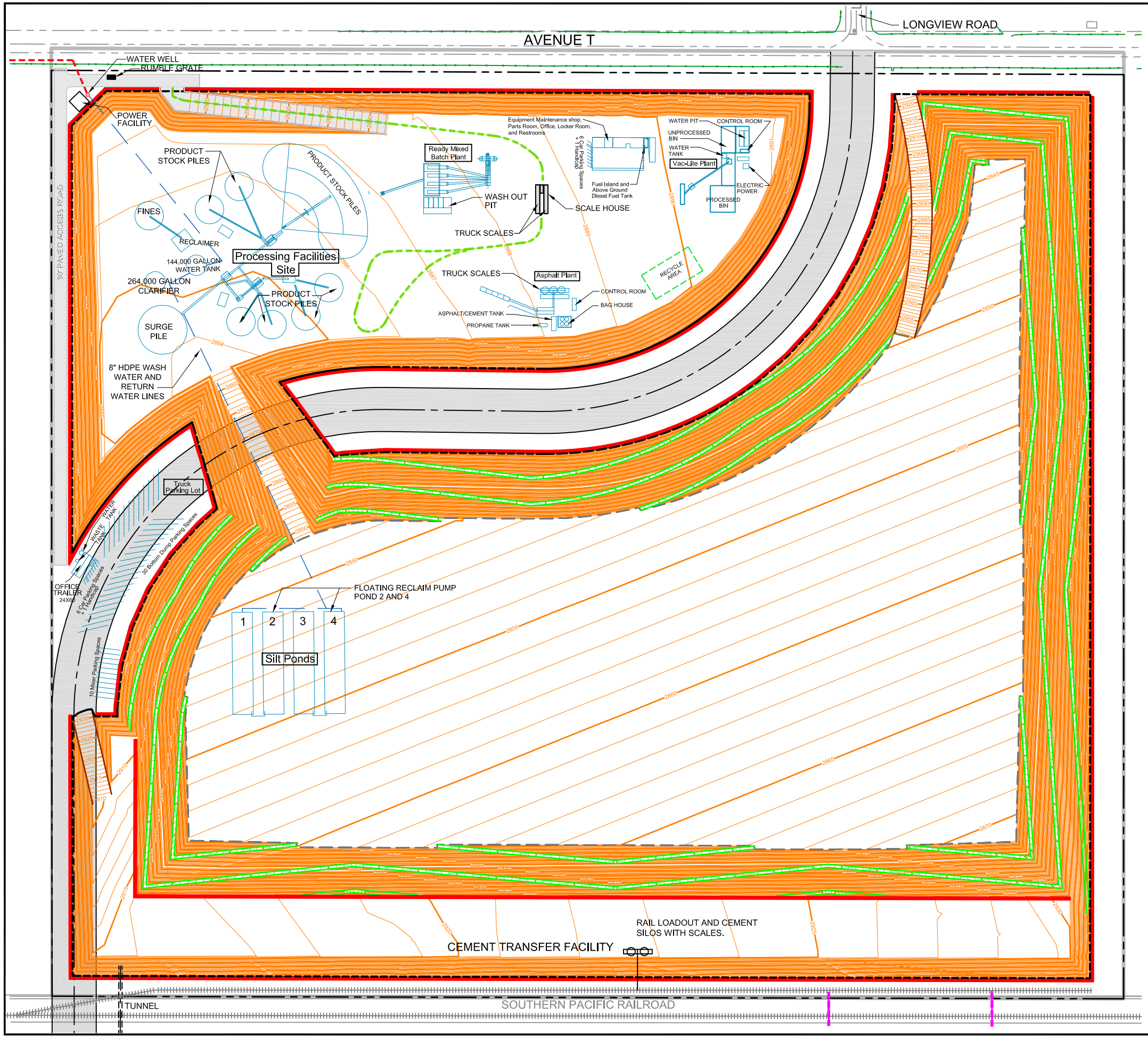
Under this alternative, it would also be possible to conduct the surface mining operation over the same number of years as would be for the Project, but at a reduced rate of extraction. Were this to occur, the impacts described for the Project in EIR Chapter 4.0 would be lessened somewhat proportionally by this alternative.

### 6.6.6 Lowered Facilities Alternative

The Lowered Facilities Alternative differs considerably from the Project in that work would initiate with pre-production mining for a period of up to five (5) years, and would include access road construction, the installation of a portable/temporary aggregate processing plant, excavation of permanent facility areas, and construction of permanent facilities. The portable/temporary plant and supporting utility infrastructure would be installed in the eastern portion of the pre-production mining phase area. Ready-mixed concrete, asphalt, and Vac-Lite concrete would not occur during the pre-production phase of the Project.

At the conclusion of pre-production mining, Project facilities would be placed and operated within an approximately 25- to 35-foot deep depression in the northwestern corner of the North Parcel. Key aspects of this alternative include the following:

- The Lowered Facilities Alternative assumes the 750-Foot Turn Radius for Longview Road Extension, whereas the Project assumes a realignment of the 1500-Foot Turn Radius for Longview Road Extension.
- Pre-production mining would begin with the excavation of an approximately 25- to 35-foot deep depression in the northwestern corner of the North Parcel (northwest of the 750-Foot Turn Radius for Longview Road Extension).
- Various berms would be installed upon the original grade level, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot to 7-foot berms on the eastern boundary, and a 5-foot berm on the northern boundary.
- Facilities would be installed and operated long-term within the excavated area, as depicted on EIR Figure 69 – Lowered Facilities Site Plan – Facilities Site Plan;
- Mining would occur in two phases, essentially the North Parcel and South Parcel;
- Mining slopes would be excavated to a 1:1 (h:v) slope down to an excavation depth of 65 vertical feet;
- Mining slopes would be excavated to a 2:1 (h:v) slope from an excavation depth of 65 vertical feet to the bottom of the mining pit;
- A 15-foot bench would be left at the transition point between the 1:1 (h:v) and 2:1 (h:v) cut slopes;
- Excavation of the rail transfer facility bench, to a depth of 25 feet, would proceed from west to east and would either occur concurrently or after completion of pre-production mining; and
- Reclamation would include the use of blended unsold sand and processing fines to backfill cut slopes to an overall final slope of 2:1 (h:v), with County required 8-foot terraces, one for every 30 feet of vertical depth.




## LEGEND

- ASSESSORS PARCEL BOUNDARIES
- CUP BOUNDARY
- APPROXIMATE MAXIMUM MINING CONTOURS **(see Mining/Grading plans for detail)**
- PROPOSED LONGVIEW ROAD EXTENSION (750' RADIUS)
- AVEK PIPELINE (Alternative water source)
- INTERNAL HAUL ROUTE

0 250 500

APPROXIMATE SCALE IN FEET

*** This figure shows Facility Layout/Design. For contour detail please refer to Mining/Grading plans.**

| | |
|---|---|
| **Lowered Facilities Alternative Facilities Site Plan**<br>Big Rock Creek Site<br>Antelope Valley, California | **FIGURE 69** |
| **SCALE:** AS SHOWN | **DATE:** 3-16-2012 |

The extent of excavation and mining within the North Parcel would depend upon whether, or not, the Longview Road Extension is deleted during the General Plan Update. If deleted, the area occupied by the Longview Road Extension Right-of-Way would be mined and the material processed (refer to EIR sub-chapter 6.6.3).

If mining were to proceed at the same pace as that of the Project, most other impacts would be the same as those described for the Project in EIR Chapter 4.0, but would occur over a fewer number of years. Depending upon what the General Plan Update adopts with regard to the deletion or realignment of the Longview Road Extension Right-of-Way, this alternative could result in:

- Acre-based impacts, such as those described in EIR sub-chapter 4.8 regarding biological resources, would be lessened.
- Possible shortening of the duration of the project, if the area to be mined is reduced in size and mining were to proceed at the same pace as that of the Project.

#### 6.6.6.1 Mining Phases

Pre-production mining for the permanent facility and notch area would begin on the western side of the area to be depressed and generally proceed in an easterly and southerly direction utilizing overland conveyors to transport excavated material either to the mobile/temporary processing plant or to stockpiles for future processing. A notch would be excavated across the 750-foot turn radius right-of-way and the overland conveyors installed within this notch.

Once final contours have been reached in the westerly portion of the facility and notch areas, the Project's long-term Aggregate Processing Facilities would be constructed/installed and the temporary plant and facilities removed. Excavation of the eastern portion of the depressed facilities area would conclude the pre-production phase. Once completed, the remainder of the Project's processing/product manufacturing facilities would be constructed/installed.

Except for pre-production mining, the Lowered Facilities Alternative would be conducted in two phases. Phase 1 would occur on the North Parcel and Phase 2 within the South Parcel. The location and configuration of the Pre-production Phase is depicted on EIR Figure 70. The Mining Phases of this alternative are illustrated below in EIR Figure 71 and EIR Figure 72, with Final Reclamation illustrated in EIR Figure 73 and EIR Figure 74, which also serves to illustrate.

EIR Table 99 summarizes the Mining Phases, assuming the 750-Foot Turn Radius for Longview Road Extension. This represents a nine (9) percent reduction in the overall material being extracted and processed, when compared to the Project (EIR Table 4).

**Table 99 Mining Phase Summary – Lowered Facilities Alternative**

| Mining Phase | Tonnage (gross) | Tonnage (net) | Fines/Silt (tons) | Area (acres) | Duration [1] (years) |
|---|---|---|---|---|---|
| **Pre-Production** | 4,140,900 | 3,281,700 | 859,200 | 55.2 | 5 |
| **Phase 1** | 11,194,950 | 8,872,000 | 2,322,950 | 69.5 | 11 |
| **Phase 2** | 26,955,000 | 21,361,800 | 5,593,200 | 150.3 | 27 |
| **Total** | **42,290,850** | **33,515,500** | **8,775,350** | **275.0** | **43** |

[1] Duration of Phase 1 and 2 mining is based upon an annual extraction rate of 1.0 million tons per year.

#### 6.6.6.2 Slope Stability

To ensure that Project slopes maintain their stability, the *Pit Slope Stability Evaluation* (EIR Appendix 4) was prepared to evaluate static, pseudostatic and surficial conditions at the Project site, and determine the resulting factor of safety, based on the geologic conditions, the proposed slopes during mining excavation, and the proposed final slopes upon reclamation. In evaluating slope stability, the County utilizes the following factor of safety criteria:

- Minimum factor of safety of 1.50 for static conditions.
- Minimum factor of safety of 1.10 for pseudostatic conditions in conjunction with a minimum horizontal acceleration coefficient of 0.15.
- Minimum factor of safety of 1.50 for surficial stability, based on infinite slope type evaluations assuming parallel seepage and minimum vertical depth of 4 feet for the slide mass.
- Minimum factor of safety of 1.50 for temporary cut slopes for static conditions.

The results of this evaluation are summarized in EIR Table 13, which indicate the Project exceeds County factor of safety threshold criteria under all conditions. As such, it was determined the Project would be stable and safe as designed. The Project is expected to result in **Less than Significant Impacts** related to the slope stability during mining operations and post-reclamation.

However, the Lowered Facilities Alternative differs from the Project in proposing that the mining slopes be:

- Excavated to a 1:1 (h:v) slope down to an excavation depth of 65 vertical feet (whereas the Project proposes 1.5:1);
- Excavated to a 2:1 (h:v) slope from an excavation depth of 65 vertical feet to the bottom of the mining pit; and
- Reclamation would include the use of blended unsold sand and processing fines to backfill cut slopes to an overall final slope of 2:1 (h:v), with County required 8-foot terraces, one for every 30 feet of vertical depth.

##### 6.6.6.2.1 *Impact LFA-1: Project activities could result in slope instability.*

The *Pit Slope Stability Evaluation* (EIR Appendix 4) was prepared to evaluate static, pseudostatic and surficial conditions at the Project site, and determine the resulting factor of safety, based on the

geologic conditions, the proposed slopes during mining excavation, and the proposed final slopes upon reclamation. It was determined the Project would be stable and safe as designed. In addition, the relatively massive alluvial deposits have a low susceptibility to landsliding or lateral spreading due to the lack of geologic structures such as joints, contacts, and bedding, which may present preferred shear surfaces. The Lowered Facilities Alternative is expected to result in **Less than Significant Impacts** related to the slope stability during mining operations and post-reclamation.

However, the *Pit Slope Stability Evaluation* noted the proposed 1:1 (h:v) slopes are considered "temporary cut slopes" by the County and, as such, are subject to the factor of safety criteria for static conditions (i.e., factor of safety of 1.5). Although the *Pit Slope Stability Evaluation* determined these slope did exceed the minimum factor of safety, it did offer caution since these 1:1 (h:v) slopes will exist much longer than what is normally considered a "temporary cut slope." Therefore, given their prolonged duration before final reclamation, it is concluded the excavation of temporary 1:1 (h:v) slopes could cause slope instability, resulting in **Significant Impacts**. In response, **Mitigation Measure LFA-1** (EIR sub-chapter 6.6.6.2.2) was developed.

#### 6.6.6.2.2 *Mitigation Measures*

**LFA-1** For cut slopes steeper than 1.5(H):1(V) shear strength parameters for the Upper Alluvium shall be verified, using the following verification method:

- Excavation of a vertical trench at least 30 feet deep within representative cut slope materials at the Project site and observation of the stability conditions of the vertical trench sidewalls after a minimum 24-hour period.
- Shear strength parameters can be back-calculated as demonstrated in the *Pit Slope Stability Evaluation* (EIR Appendix 4).
- Once fill spoils are stockpiled, obtain representative samples to perform gradation and shear strength tests (most likely direct shear tests) to verify shear strength parameters.

If the gradation and shear tests serve to verify the stability of temporary 1:1 (h:v) slopes, the Project may proceed as approved. If these tests determine the temporary 1:1 (h:v) slopes are not stable, a determination is to be made, in consultation with DPW staff, of the maximum slope condition that is considered stable under temporary conditions, and the Mining Plan revised accordingly.

#### 6.6.6.2.3 *Level of Significance after Mitigation*

Upon implementation of **Mitigation Measure LFA-1**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

### 6.6.6.3 Flooding

In most regards, the Lowered Facilities Alternative would result in essentially the same impacts as those described for the Project in EIR sub-chapter 4.4. However, the following addenda were specifically prepared to address Capital Flood conditions, determine the permeability of reclaimed mining pits, determine how slope fill translates into emptying time once flooded, and evaluate slope stability for the Lowered Facilities Alternative:

- *2010 Drainage Concept for Lebata Inc. Surface Mine, Lowered Facilities Alternative, Big Rock Creek, Los Angeles County,* prepared by Stetson Engineers, Inc., July 2010. (*2010 Drainage Concept*), EIR Appendix 3, Addendum.
- *Pit Slope Stability Evaluation, Big Rock Creek Mine, Antelope Valley Near Pearblossom Los Angeles County, California,* prepared by Fugro West, Inc., August 2013. (*Pit Slope Stability Evaluation*), EIR Appendix 4.

EIR Table 100 summarizes the flood volumes entering each mining pit during each Mining Phase and upon Final Reclamation. EIR Figure 70 through Figure 74 illustrate flood volumes for each mining phase and final reclamation.

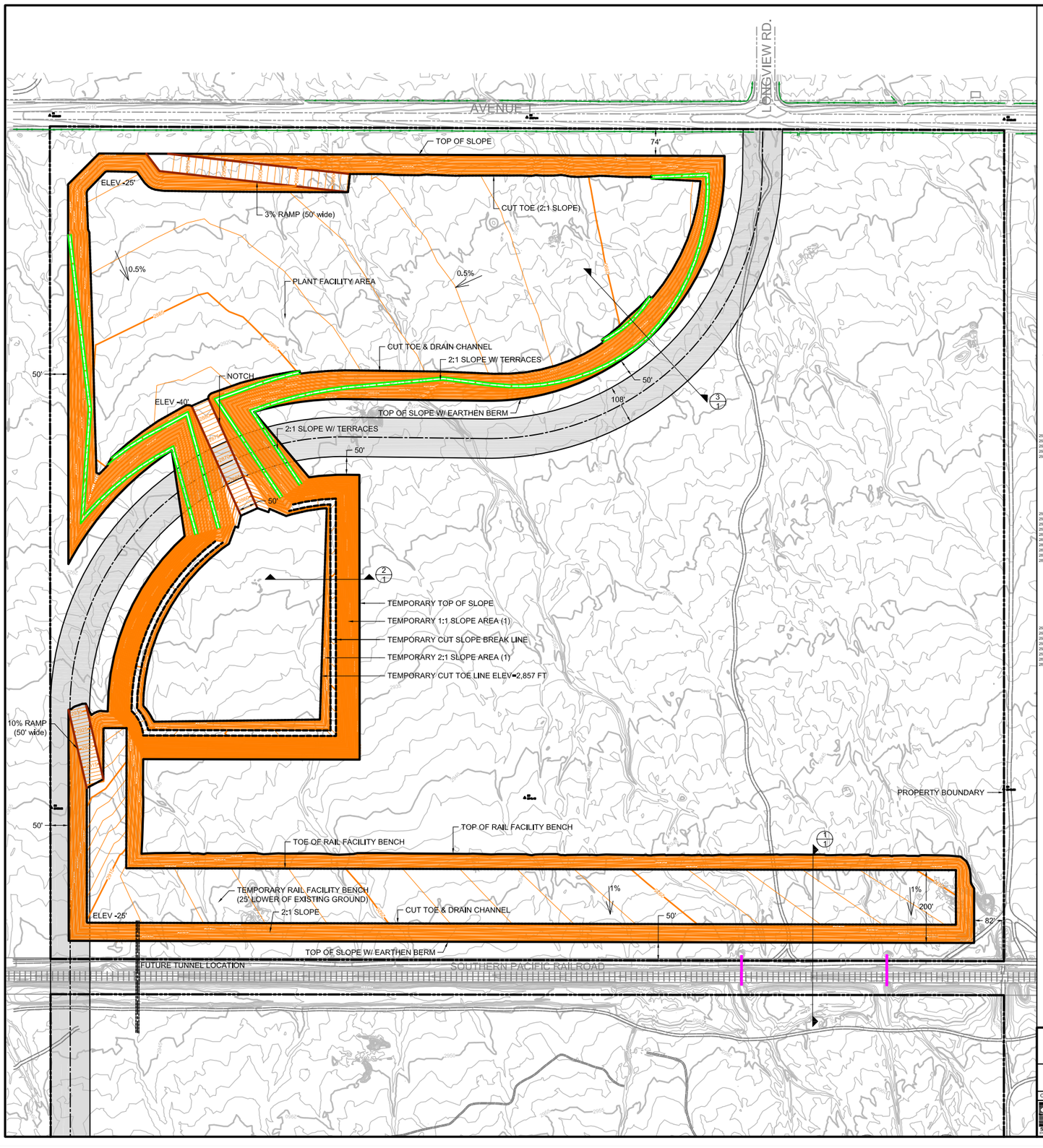
**Table 100 Flood Volume Received during Project Mining Phases and Final Reclamation (Lowered Facilities Alternative)**

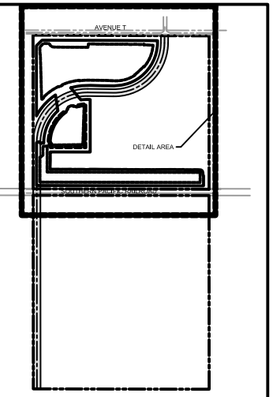
| Mining Pit | Upstream Watershed Area (Acre) | Sheetflow Volume (acre-feet) | Onsite Runoff Volume (acre-feet) | Onsite Direct Rainfall Volume (acre-feet) | Total Capital Flood Volume (acre-feet) | Inundation Depth (feet) |
|---|---|---|---|---|---|---|
| **Mining Phase 1** | | | | | | |
| North Pit | 1,026 | 56 [1] | 8 | 30 | 94 | 12 |
| **Mining Phase 2** | | | | | | |
| North Pit | 411 | 22 | 3 | 30 | 55 | 11 |
| South Pit | 1,135 [2] | 66 [2] | 3 | 65 | 129 | 13 |
| **Final Reclamation** | | | | | | |
| North Pit | 411 | 22 | 3 | 30 | 55 | 11 |
| South Pit | 1,135 [2] | 61 [2] | 3 | 65 | 129 | 13 |

[1] Includes the equivalent area (120 acres) and flood volume (7ac-ft) that contributed the same amount of culvert flow during Phase 1.

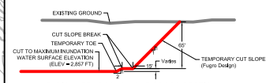
[2] Includes the equivalent area (113 acres) and flood volume (6ac-ft) that contributed the same amount of culvert flow during Phase 2/Final Reclamation.

The inundation depth is well below the proposed 80 ft depth of the mine pits. Thus, the Capital Flood volume inside the pits would not overflow. In addition, minimum two-foot-high MSHA-required safety berms would be installed along the tops of the mine pit slopes around the entire northern, eastern, southern, and western edges and pit entrance/exit ramps. Note that there would be no inundation volume accumulated in the bottom of the Processing Facilities Site, which would be mined to a depth of 25- 35-feet of the gravel layer. This is because direct precipitation is the primary source of water to the Processing Facilities Site and the vertical infiltration rate of gravel materials (1,134 feet per day) is much higher than the maximum rainfall intensity (2.8 inches per day) at the mine site. Any direct rainfall would be infiltrated to the surroundings at the same moment when the rainfall reaches the bottom of the plant facility area. Therefore, Project flooding impacts are considered **Less than Significant.**

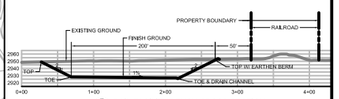


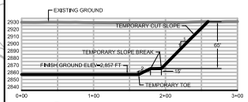

PROJECT OVERVIEW
Scale: 1" = 750'




TYPICAL TEMPORARY CUT CROSS-SECTION
SCALE 1" = 70'




1/1 RAIL FACILITY BENCH CROSS-SECTION
SCALE 1" = 70'




2/1 TEMPORARY CUT AREA CROSS-SECTION
SCALE 1" = 70'




3/1 PLANT FACILITY AREA CROSS-SECTION
SCALE 1" = 70'

**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- CUT SLOPE BREAK LINES

NOTES:

1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. PERMANENT CUT SLOPE FOR RAIL FACILITY BENCH AND PLANT FACILITY AREA ARE BASED ON LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL CUT SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. DRAINAGE PLAN FOR RAIL FACILITY BENCH AND PLANT FACILITY AREA ARE NOT SHOWING IN THIS SHEET, SEE SHEET 2 FOR DRAINAGE PLAN IN THESE AREAS.
4. TERRACE DRAINS SHOWN FOR CONCEPTUAL APPROVAL. FINAL LOCATIONS PER MINING PLAN SOILS REPORT.

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SCALE (FEET)
0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

**LOWERED FACILITIES ALTERNATIVE**
PRE-PRODUCTION GRADING PLAN

| | |
|---|---|
| JN: | 2192 |
| Scale: | 1" = 100' |
| | 1 - Inch |
| Cut Volume: 2,760,100 CY | Date: July 27, 2010 |
| Topo Source: | Inland Aerial Survey Inc. Date of Flight: 05/02/2006 |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |
| SHEET | 1 of 5 |

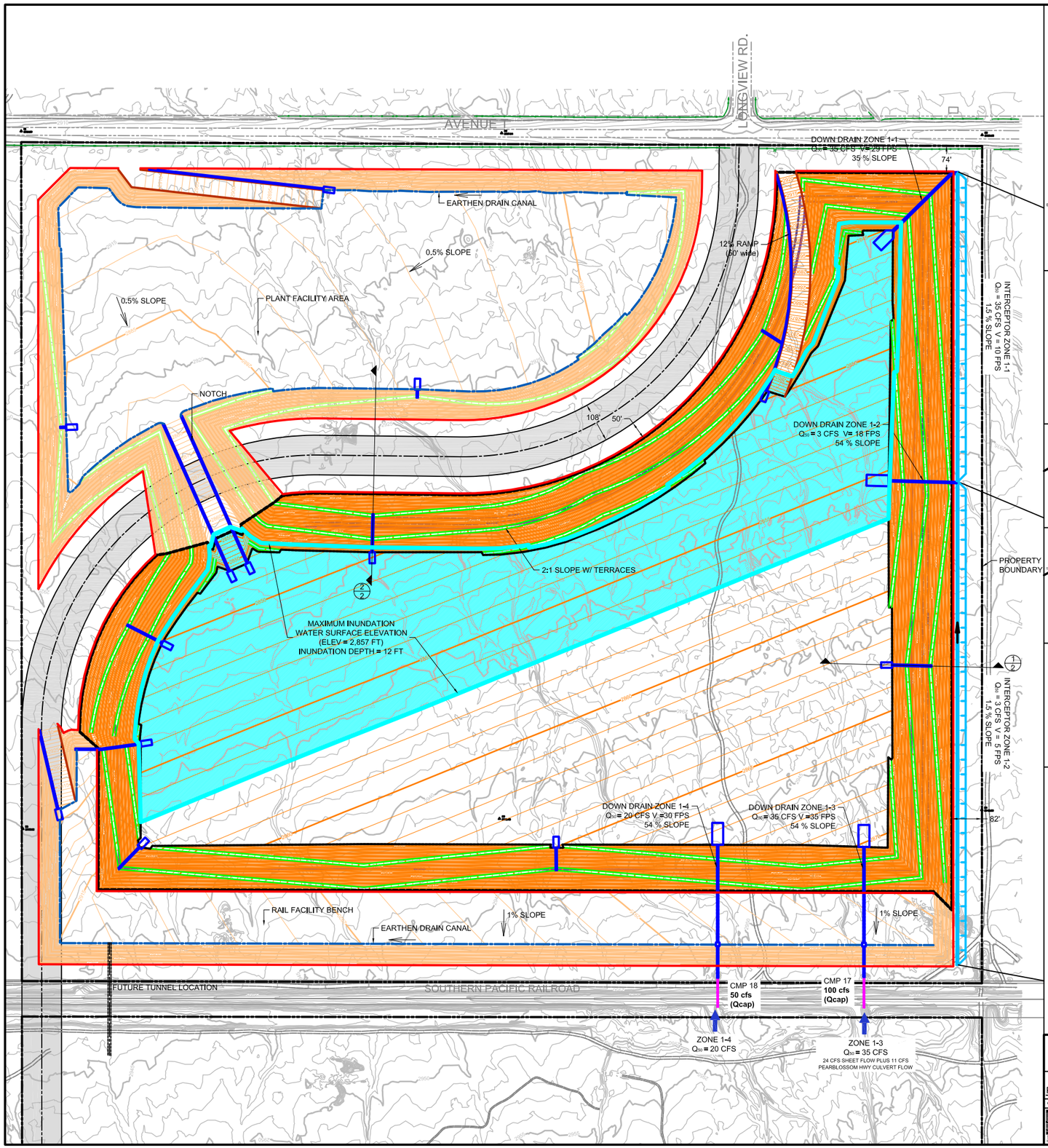
STETSON ENGINEERS INC.

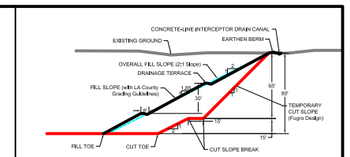
**Lowered Facilities Alternative Pre-Production Grading Plan And Drainage Plan**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 70**

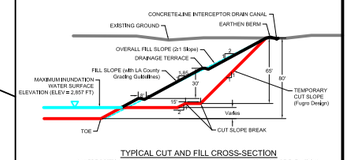
SCALE: AS SHOWN

DATE: 10-21-2013

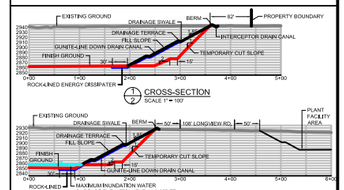


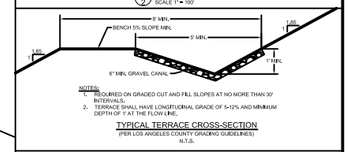




TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS HIGHER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



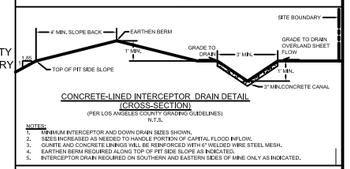

TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS LOWER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



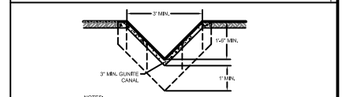

NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CARTAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

LEGEND
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PRE-PRODUCTION CONTOUR LINES
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF CUT SLOPE
- CUT SLOPE BREAK LINES
- PROPOSED CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- TOE OF FILL SLOPE
- EARTHEN BERM
- EARTHEN DRAIN CANAL
- GUNITE-LINED DOWN DRAIN CANAL
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW
- FLOW PASS THROUGH THE EXISTING CULVERT

NOTES:
1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. ALL PERMANENT FILL SLOPE FOR THIS PHASE SHALL BE CONSTRUCTED PER LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL FILL SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. SEE SHEET 1 FOR GRADING PLAN ON RAIL FACILITY BENCH AND PLANT FACILITY AREAS.

SCALE (FEET)
0 50 100 200

N
W E
S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

**LOWERED FACILITIES ALTERNATIVE**
PHASE 1 GRADING AND DRAINAGE PLAN

| | |
|---|---|
| Cut Volume: 7,463,300 CY | Date: July 27, 2010 |
| Topo Source: Inland Aerial Survey Inc. Date of Flight: 05/02/2006 | |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |

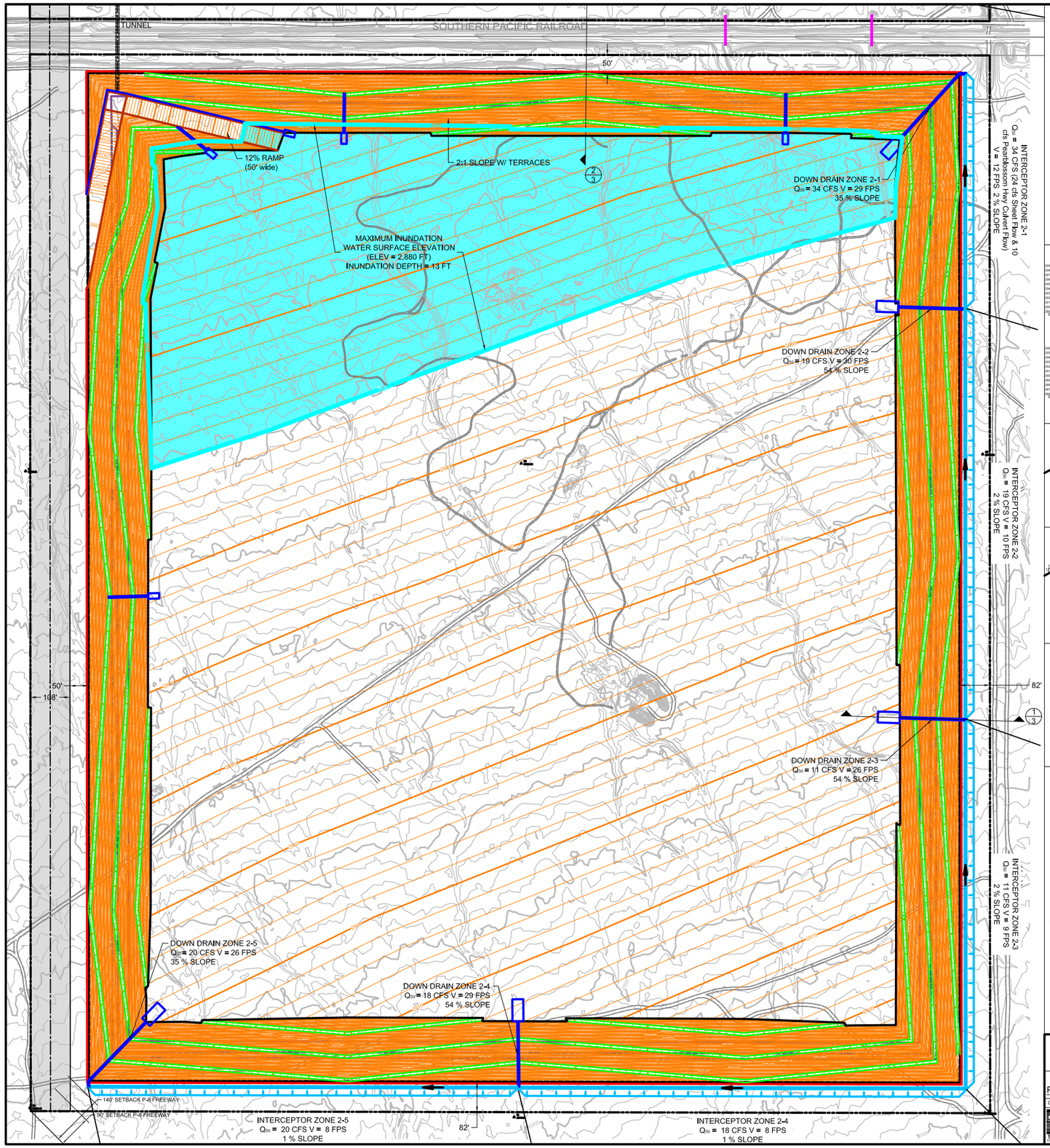
STETSON ENGINEERS

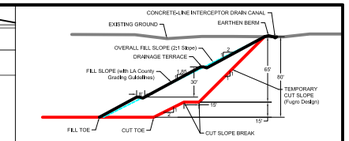
JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET
2 of 5

**Lowered Facilities Alternative Mining Phase 1 North Pit and Drainage Plan**
Big Rock Creek Site
Antelope Valley, California

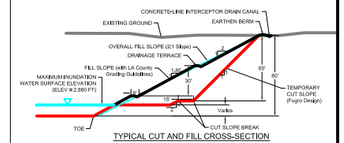
**FIGURE 71**

SCALE: AS SHOWN
DATE: 10-21-2013

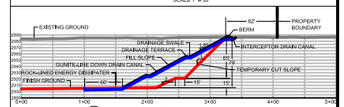


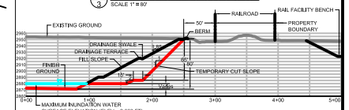

TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS HIGHER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



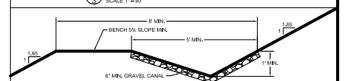

TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS LOWER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'




1 DOWN DRAIN CANAL CROSS-SECTION
SCALE 1" = 50'

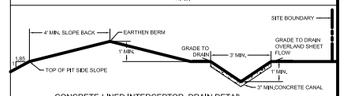



2 CUT AND FILL CROSS-SECTION
SCALE 1" = 50'



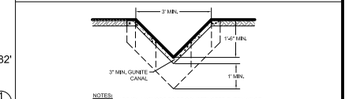

NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LINED CANALS TO BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM RESTRICTED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING 40 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

LEGEND
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PRE-PRODUCTION CONTOUR LINES
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF CUT SLOPE
- CUT SLOPE BREAK LINES
- PROPOSED CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- TOE OF FILL SLOPE
- EARTHEN BERM
- GUNITE-LINED DOWN DRAIN CANAL
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW

NOTES:
1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. ALL PERMANENT FILL SLOPE FOR THIS PHASE SHALL BE CONSTRUCTED PER LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL FILL SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. SEE SHEET 1 FOR GRADING PLAN ON RAIL FACILITY BENCH.

SCALE (FEET)
0 50 100 200

N W E S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

**LOWERED FACILITIES ALTERNATIVE**
PHASE 2 GRADING AND DRAINAGE PLAN

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 17,970,000 CY
Date: July 27, 2010

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

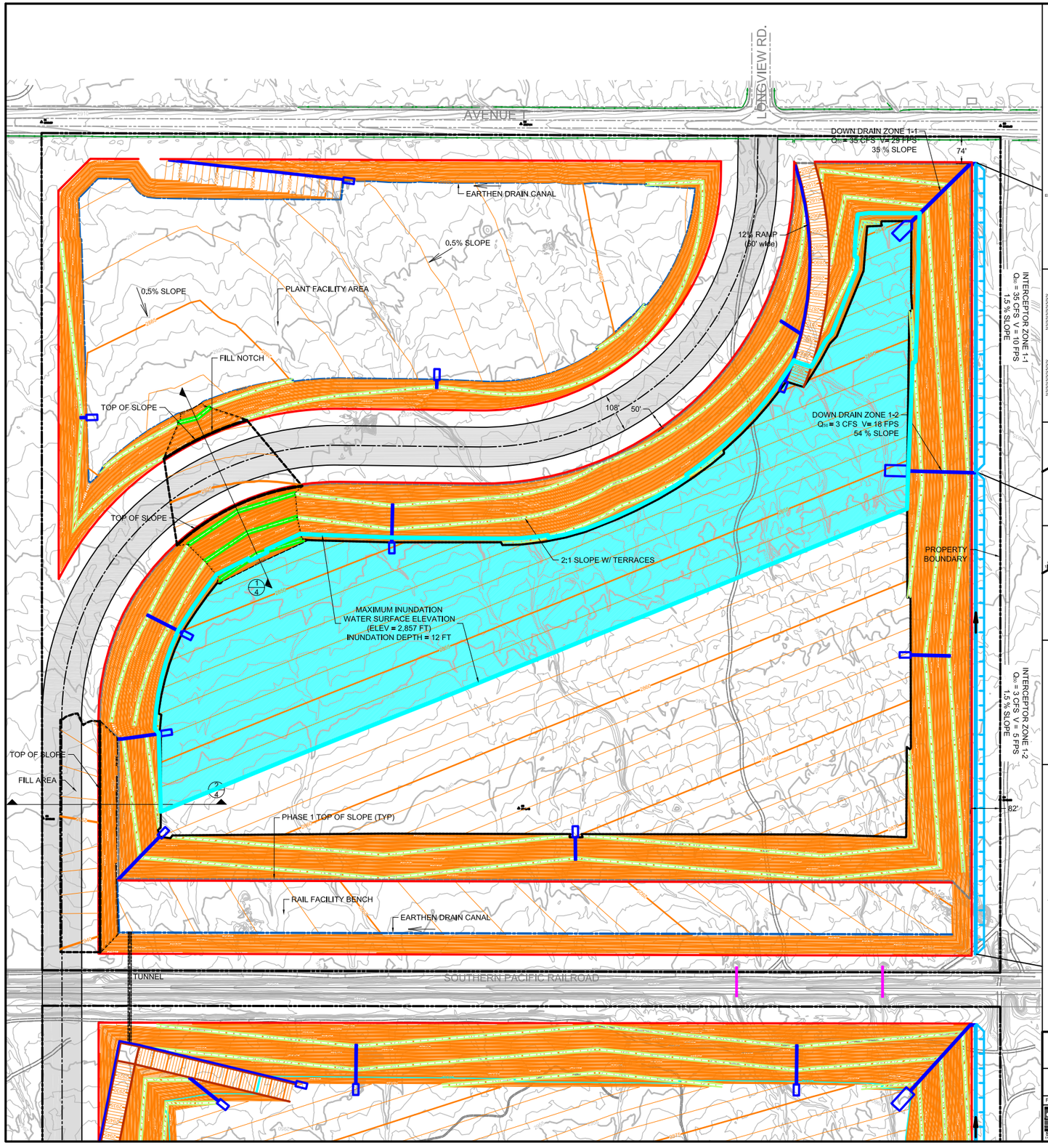
STETSON ENGINEERS

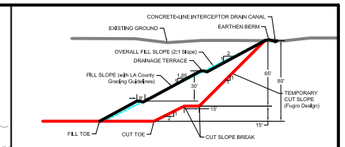
SHEET
3 of 5

**Lowered Facilities Alternative Mining Phase 2 North Pit and Drainage Plan**
Big Rock Creek Site
Antelope Valley, California

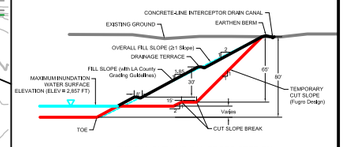
**FIGURE 72**

SCALE: AS SHOWN
DATE: 10-21-2013

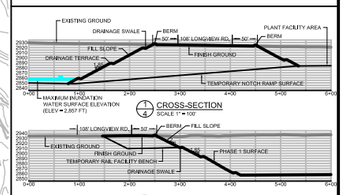



TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS HIGHER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



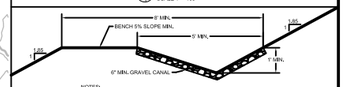

TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS LOWER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'




1/4 CROSS-SECTION
SCALE 1" = 100'

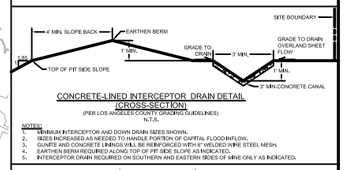



2/4 CROSS-SECTION
SCALE 1" = 100'



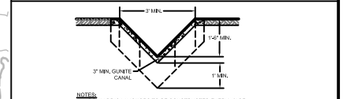

NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4" O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- RECLAMATION FILL BOUNDARY
- FINAL CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- EARTHEN BERM
- EARTHEN DRAIN CANAL
- GUNITE-LINED DOWN DRAIN CANAL
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW

NOTES:

1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. ALL PERMANENT FILL SLOPE FOR THIS PHASE SHALL BE CONSTRUCTED PER LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL FILL SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. SEE SHEET 1 FOR GRADING PLAN ON RAIL FACILITY BENCH AND PLANT FACILITY AREAS.

SCALE (FEET)
0 50 100 200

N
W E
S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

**LOWERED FACILITIES ALTERNATIVE**
FINAL RECLAMATION NORTH PIT GRADING AND DRAINAGE PLAN

Fill Volume: 185,700 CY | Date: July 27, 2010

JN: 2192
Scale: 1" = 100'
1 = Inch

Topo Source: Inland Aerial Survey Inc.,
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

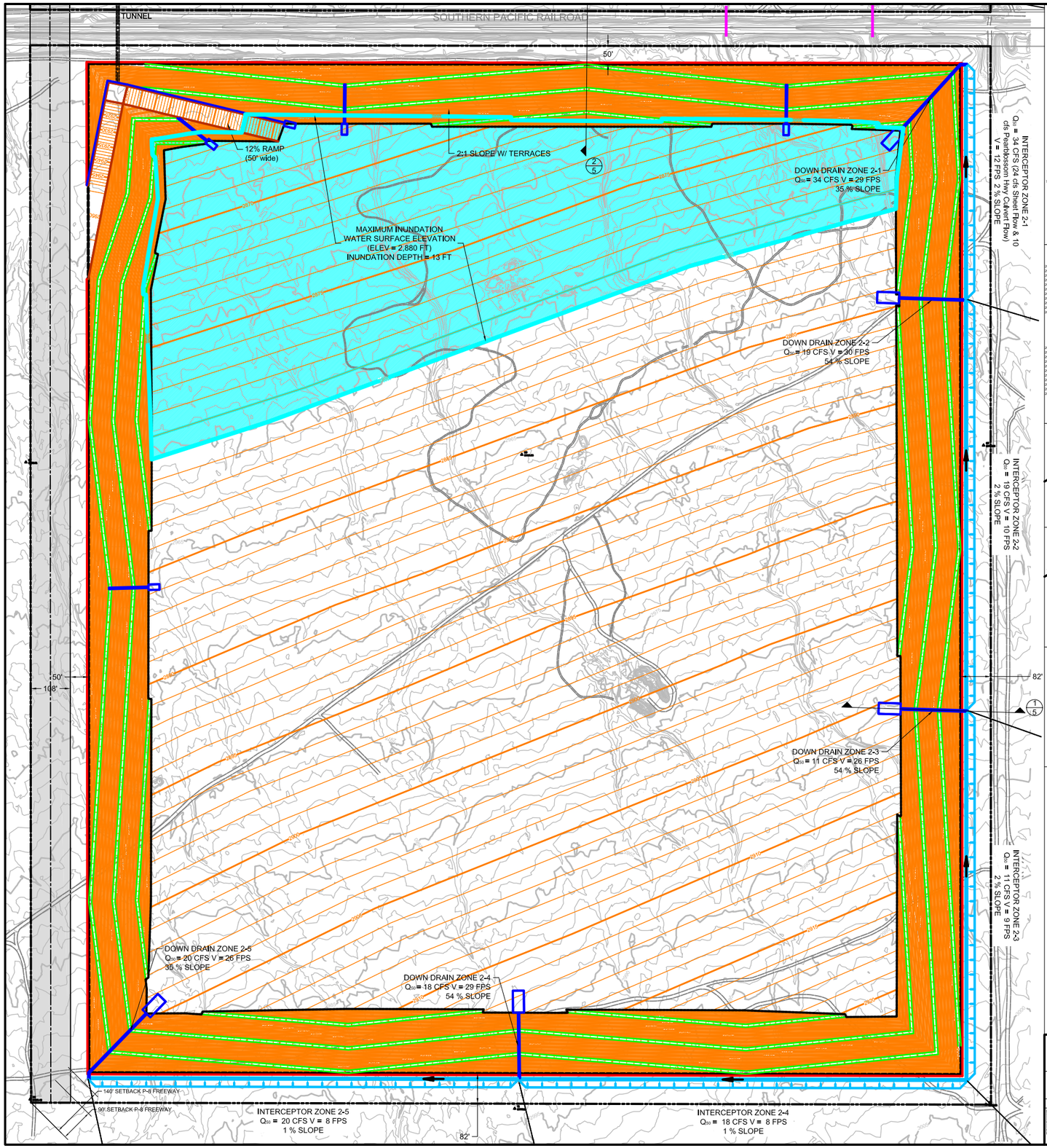
SHEET
4 of 5

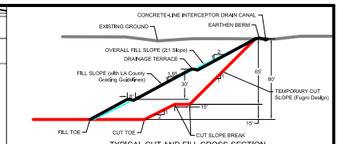
STETSON ENGINEERS

**Lowered Facilities Alternative**
**Final Reclamation**
**And Drainage Plan - North Pit**
Big Rock Creek Site
Antelope Valley, California

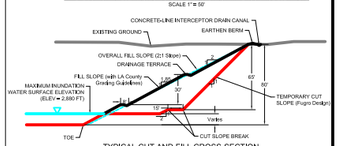
**FIGURE**
**73**

SCALE: **AS SHOWN**
DATE: **10-21-2013**

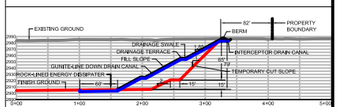


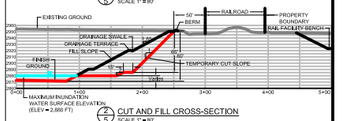

TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS HIGHER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



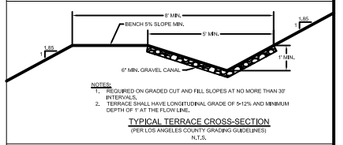

TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS LOWER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'




1/5 DOWN DRAIN CANAL CROSS-SECTION
SCALE 1" = 50'

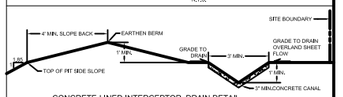



2/5 CUT AND FILL CROSS-SECTION
SCALE 1" = 50'



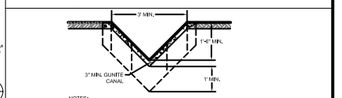

NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.




CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW).
2. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
3. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
4. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.




NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- FINAL CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- TOE OF FILL SLOPE
- EARTHEN BERM
- GUNITE-LINED DOWN DRAIN CANAL
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW

NOTES:

1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. ALL PERMANENT FILL SLOPE FOR THIS PHASE SHALL BE CONSTRUCTED PER LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL FILL SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. SEE SHEET 1 FOR GRADING PLAN ON RAIL FACILITY BENCH.

SCALE (FEET)
0 50 100 200

N
W E
S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

**LOWERED FACILITIES ALTERNATIVE**
FINAL RECLAMATION SOUTH PIT GRADING AND DRAINAGE PLAN

| | |
|---|---|
| Cut Volume: 0 CY | Date: July 27, 2010 |
| Topo Source: Inland Aerial Survey Inc. | Date of Flight: 05/02/2006 |
| Designed By: G. Trinidad | Drawn By: G. Trinidad |
| Revised By: J. Reilly | Approved By: |

STETSON ENGINEERS

JN: 2192
Scale: 1" = 100'
1 - Inch
SHEET
5 of 5

**Lowered Facilities Alternative Final Reclamation and Drainage Plan - South Pit**
Big Rock Creek Site
Antelope Valley, California

**FIGURE 74**

SCALE: AS SHOWN
DATE: 10-21-2013

#### 6.6.6.4 Emptying of Flood Water

The change in flood volume and its associated water depth due to evaporation and seepage were calculated using daily time steps. The emptying times after the Capital Flood are summarized in EIR Table 101. The estimated emptying time includes two columns, one is the total time required to empty the Capital Flood volume and the other is the emptying time after the Capital Flood event. The two columns have a difference in 4 days. This is because infiltration also occurs over the 4-day Capital Flood event.

**Table 101 Pit Emptying Time after a Capital Flood Event**

| Mining Pit | Total Capital Flood Volume (acre-feet) | Emptying Time | |
|---|---|---|---|
| | | Total (days) | After Capital Flood Volume (acre-ft) |
| **Phase 1** | | | |
| North Pit | 94 | 4 | 0 |
| **Phase 2** | | | |
| North Pit | 55 | 3 | 0 |
| South Pit | 129 | 8 | 4 |
| **Final Reclamation** | | | |
| North Pit | 55 | 3 | 0 |
| South Pit | 129 | 8 | 4 |

As shown in the EIR Table 101, all mining phases would be emptied within 4 days after the Capital Flood event and the Project will not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. Therefore, Project impacts are considered **Less than Significant.**

#### 6.6.6.5 Pit Sedimentation

EIR Table 102 describes the sedimentation associated with the Lowered Facilities Alternative. For reference, sedimentation associated with the Project is estimated to be 0.53 feet or less.

**Table 102 Mine Pit Sedimentation by Mining Phase – Lowered Facilities Alternative**

| Mining Phase | Debris Production Volume (cu-yd) | Debris Production Volume (cu-ft) | Pond Bottom Area (sq ft) | Sediment Layer Thickness (feet) |
|---|---|---|---|---|
| **Phase 1** | | | | |
| North Pit | 18,460 | 498,420 | 939,391 | 0.53 |
| **Phase 2** | | | | |
| North Pit | 7,800 | 210,600 | 804,156 | 0.26 |
| South Pit | 16,900 | 456,300 | 1,103,790 | 0.41 |
| **Final Reclamation** | | | | |
| North Pit | 7,800 | 210,600 | 804,156 | 0.26 |
| South Pit | 16,900 | 456,300 | 1,103,790 | 0.41 |

EIR Table 102 shows that even after the Capital Flood, a sediment layer measuring 0.07 feet or less would be deposited, which is less than that of the Project. As a result, impacts due to sedimentation are considered **Less than Significant.**

#### 6.6.6.6 Impact on Adjacent Landowners

The *2010 Drainage Concept* (EIR Appendix 3, Addendum) was prepared for this alternative, which concluded:

> *The mine drainage concept would have no adverse impact on properties adjacent to and downstream of the mine during the Capital Flood. The interceptor drains located on the upstream (southern and eastern) sides of the mine pits are adequately sized to capture and convey any flows arriving at each interceptor drain for delivery to the down drains and subsequent discharge to the mine pits. Hence, there would be no backwater effects or associated increases in flood depths caused by the interceptor drains. Therefore, flooding on adjacent properties would not be impacted.*

As a result, the Lowered Facilities Alternative is expected to result in **Less than Significant Impacts** to adjacent properties.

#### 6.6.6.7 Noise

Under this alternative, the elevation of the Processing Facilities Site, and accessory facilities, would be approximately 25 to 35 feet below existing grade and the orientation of the Aggregate Processing Facilities would be changed. To evaluate the noise impacts of the Lowered Facilities Alternative, the following addendum to the *Noise Impact Assessment (NIA)* was prepared:

- *Noise Impact Assessment Addendum*, prepared by Sespe Consulting, Inc., March 8, 2012 (*NIA Addendum*) (EIR Appendix 8, Addendum)

The *NIA Addendum* presents the following conclusions regarding the Lowered Facilities Alternative.

In the first phase of the Lowered Facilities Project Alternative, noise impacts from industrial sources would be less than those predicted for the Project in the *NIA* (EIR Appendix 8), due to the reduced throughput and limited activities.

Once the Aggregate Processing Facility and accessory industrial plants and facilities have been built at approximately 30 feet below current grade (EIR Figure 69 – Lowered Facilities Site Plan), the operations will commence as discussed for the Project in the *NIA* (EIR Appendix 8). The relative industrial noise source impacts associated with the reduced elevation and modified orientation of the Aggregate Processing Facilities and accessory plants and facilities are discussed below on a source by source basis:

- **Pit area Aggregate Processing Facility** noise impacts will remain identical to those presented for the Project in the *NIA* (EIR Appendix 8), since the pit operations of the aggregate plant will remain unchanged. As such, the Lowered Facilities Alternative would result in a significant daytime and nighttime noise impact at **R4**, **resulting in a significant impact (Class I)**.

- **Plant area Aggregate Processing Facility** noise impacts will be less than those presented for the Project in the *NIA* (EIR Appendix 8) due to the lower elevation. Since the plant will be operating in a pit, the pit slopes will provide shielding from nearby receptors. As such, the Lowered Facilities Alternative would result in **Less than Significant Impacts** at all Receptors.
- **Ready-Mixed Concrete Plant** noise impacts will be less than those presented for the Project in the *NIA* (EIR Appendix 8) due to the lower elevation. Since the plant will be operating in a pit, the pit slopes will provide shielding from nearby receptors. As such, the Lowered Facilities Alternative would result in **Less than Significant Impacts** at all Receptors.
- **Asphalt Mixing Plant** noise impacts will be less than those presented for the Project in the *NIA* (EIR Appendix 8) due to the lower elevation. Since the plant will be operating in a pit, the pit slopes will provide shielding from nearby receptors. As such, the Lowered Facilities Alternative would result in **Less than Significant Impacts** at all Receptors.
- **Vac-Lite Plant** noise impacts will be less than those presented for the Project in the *NIA* (EIR Appendix 8) due to the lower elevation. Since the plant will be operating in a pit, the pit slopes will provide shielding from nearby receptors. As such, the Lowered Facilities Alternative would result in **Less than Significant Impacts** at all Receptors.
- In the first phase of the Lowered Facilities Project Alternative, noise impacts from transportation sources would be less than those predicted for the Project in the *NIA* (EIR Appendix 8), due to the reduced throughput. As such, the Lowered Facilities Alternative would result in **Less than Significant Impacts** at all Receptors.
- Once the Aggregate Processing Facility and accessory industrial plants and facilities have been built at approximately 30 feet below current grade (EIR Figure 69 – Lowered Facilities Site Plan), the peak throughput limit may be achieved. At this point, noise impacts from transportation sources associated with the Lowered Facilities Project Alternative will be similar to, or slightly less than, the Project impacts presented in the *NIA* (EIR Appendix 8) since the same number of trucks will travel the same route as considered in the NIA. The pit slopes would shield a portion of truck noise while trucks are onsite. As such, the Lowered Facilities Alternative would result in **Less than Significant Impacts** at all Receptors.

As noted in EIR sub- chapter 4.5.6, unmitigated industrial noise impacts are **Less than Significant** at **R1, R2, R3, and R5.** However, the Lowered Facilities Alternative would result in a significant daytime and nighttime noise impact at **R4**, **resulting in Significant Impacts**. These impacts are attributable to Aggregate Processing Facilities operations within the Mining Pit within the North Parcel. Upon implementation of **Mitigation Measure NO-1** (EIR sub- chapter 4.5.6), the Lowered Facilities Alternative would result in **Significant, but Mitigable to Less than Significant Impacts** at **R4**.

#### 6.6.6.8 Air Quality

The AQCCIA (EIR Appendix 10) is based upon the Lowered Facilities Alternative. This was done because, when compared to the Project, the Lowered Facilities Alternative results in slightly greater travel distances and emissions. The AQCCIA that the $NO_x$ and $PM_{10}$ emissions generated by the Lowered Facilities Alternative could result in **Significant Impacts**. In response, **Mitigation Measures AQ-1 through AQ-7** (EIR sub-chapter 4.7.6) were developed. Upon implementation of **Mitigation Measures**

**AQ-1 through AQ-7**, the Project would result in **Significant, but Mitigable to Less than Significant Impacts**.

#### 6.6.6.9 Visual Quality

Under this alternative, the elevation of the lowered Processing Facilities Site would be approximately 25 to 35 feet below existing grade and the orientation of the Aggregate Processing Facilities would be changed. To evaluate the visual impacts of the Lowered Facilities Alternative, the following addenda to the *Visual Analysis* and *Photometric Study* were prepared:

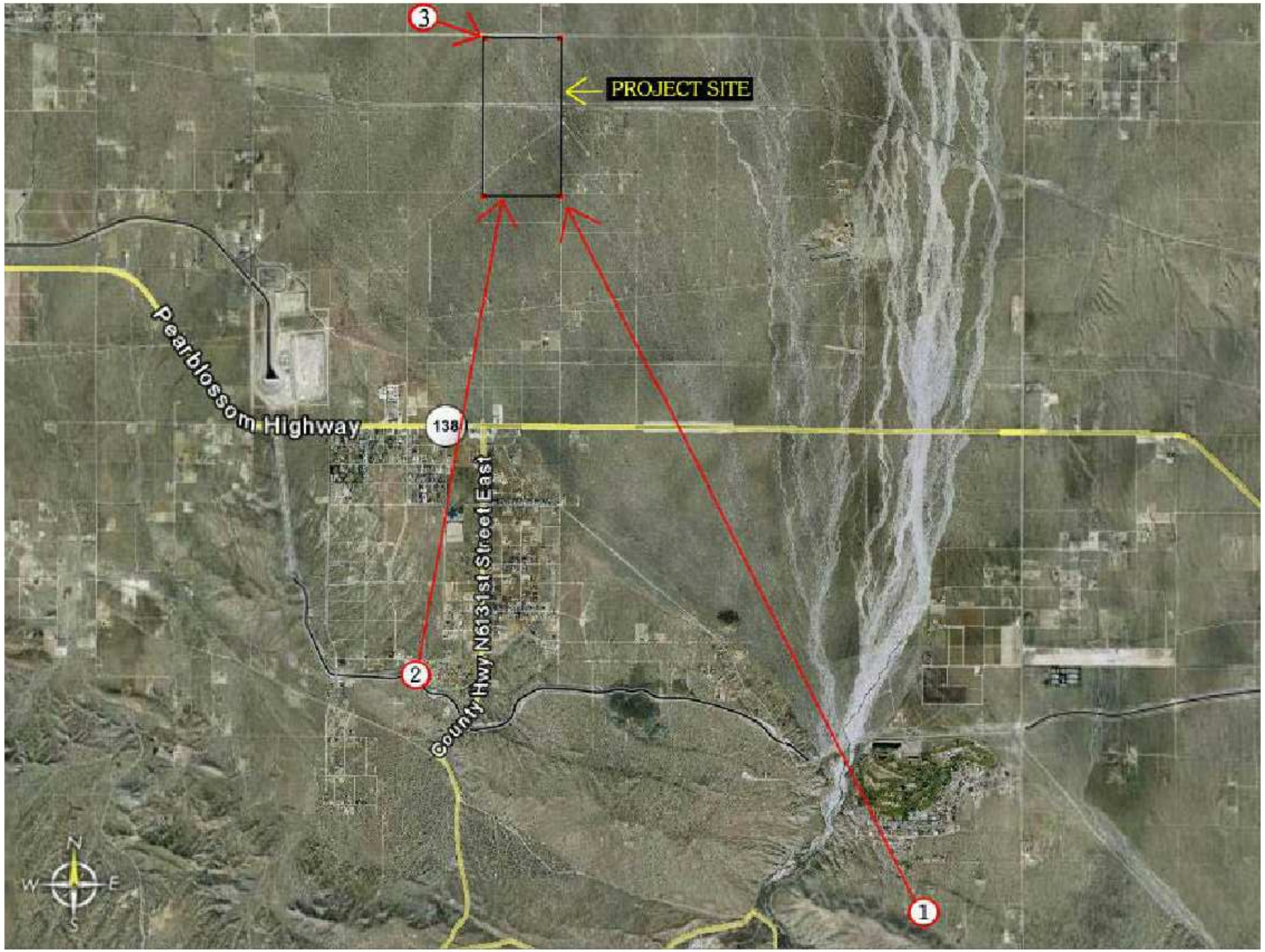
- Jordan, Gilbert & Bain, *Visual Analysis for Big Rock Canyon,* June 28, 2010. (*Visual Analysis Addendum*) (EIR Appendix 15, Addendum); and
- Nate Mullen Visual Concepts, LLC, *Photometric Study, Big Rock Creek Site*, July 2, 2010 (*Photometric Study Addendum*) (EIR Appendix 16, Addendum).

The *Visual Analysis Addendum* and *Photometric Study Addendum* provide analyses of the Lowered Facilities Alternative that are comparable to those prepared for the Project.

Using digitally enhanced photographs, a series of visual simulations were developed to assess the Lowered Facilities Alternative's visual impacts as viewed from three specific vantage points. These areas were identified largely due to their elevations above the project site, and the existence of roads and housing at these vantage points. Due to the generally flat terrain in and around the Project site, a simulation was not made of the site from Pearblossom Highway.

All photographs taken to demonstrate existing conditions, and then altered digitally to simulate the Project at full construction, were shot with a 50mm lens on a digital camera. Site flag markers and a digital terrain model program were used to establish the simulated size and location of the site in the images. EIR Figure 75 (Lowered Facilities Alternative – Visual Analysis Photo Locations) provides the reference points for Views 1 through 3 discussed below.

## Visual analysis photo locations




1. 157TH Street East & East Ave. Y-8, Llano, California (Crystalaire Country Club).

2. East Ave. X & Pearblossom Vista, Pearblossom, California

3. Ave. "T", Northwest corner of site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Landscape Architects, Inc.
phone (805) 642-3641 fax (805) 642-9614


| Lowered Facilities Alternative Visual Analysis Photo Locations<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 75 |
|---|---|
| SCALE: AS SHOWN | DATE: 07-30-2010 |

MC01 AEIR.Fig75.dwg

**View #1 –** The first view location is at an elevation of approximately 990 feet above the Lowered Facilities Alternative project site. The photos were taken from the intersection of 157th Street East and East Avenue Y8, in the town of Llano near the Crystalaire Country Club. The Lowered Facilities Alternative project site is located approximately 6 miles to the Northwest. EIR Figure 76 (Lowered Facilities Alternative – View #1) presents two images. Image "A" represents the existing view from this location. Image "B" represents a simulation of the Lowered Facilities Alternative project site at full build out. The brightness of the simulated exposed earth was estimated, by imitating the color and contrast of the various areas of exposed earth that are visible, in a predominant manner, within the existing view. During pre-production, the only facilities located onsite will be limited to that of aggregate processing, which does not include silos and other tall structures. As such, pre-production facilities will be of minimal visual impact. Due to the extensive distance between the Lowered Facilities Alternative project site, and this viewpoint, all of the proposed structures planned for the site, are so small, they are of minimal visual impact in this simulation. Therefore, it is concluded the Project would result in **Less than Significant Impacts**.

**View #2 –** The second view location is at an elevation of approximately 520 feet above the Lowered Facilities Alternative project site. The photos were taken from the intersection of East Avenue X and Pearblossom Vista, in the town of Pearblossom. The Lowered Facilities Alternative project site is located approximately 3.5 miles to the North. EIR Figure 77 (Lowered Facilities Alternative – View #2) presents the existing view from this location. Image "B" represents a simulation of the Lowered Facilities Alternative project site at full build out. The brightness of the simulated exposed earth was estimated, by imitating the color and contrast of the various areas of exposed earth that are visible, within the existing view, at approximately the same distance. Due to the extensive distance between the Lowered Facilities Alternative project site, and this viewpoint, all of the proposed structures planned for the site, are so small, they are not readily visible in this simulation. Therefore, it is concluded the Project would result in **Less than Significant Impacts**.

**View #3 –** The third view location is from East Avenue T, at the Northwest corner of the Lowered Facilities Alternative project site. This is the location of the future entry road to the site. EIR Figure 78 (Lowered Facilities Alternative – View #3) presents the existing view from this location. Image "A" represents the existing view. Image "B" represents the view of the Lowered Facilities Alternative project site after the addition of a 5-foot high perimeter berm, as well as the establishment of native vegetation, and possible transplantation of Joshua trees from other disturbed areas of the site. With the berm and native plantings, it will be possible to screen most of the lower buildings, roads, equipment and vehicle movement from view along East Avenue T. In the near-term, pre-production related Aggregate Processing Facilities located onsite will be somewhat more visible than the silos depicted in EIR Figure 78, but of comparable size and scale. It is recommended that the tanks and other taller equipment be painted a dark color that would help them blend with the surrounding landscape. Not only will the buildings be less visible from the distant existing housing areas, but the color will help mask staining, and create a visual effect of a smaller size. Therefore, it is concluded the Project would result in **Less than Significant Impacts**.

The *Visual Analysis* recommended that the tanks and other taller equipment be painted a color specified by the Los Angeles County Regional Planning Department that would help them blend with the surrounding landscape.

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**View # 1 –Looking North West from - 157[TH] Street East & East Ave. Y-8, Llano, California (Crystalaire Country Club).**

A - Existing conditions

B - View after facility is installed

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| Lowered Facilities Alternative View #1<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE 76 |
|---|---|
| SCALE: AS SHOWN | DATE: 07-30-2010 |

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# View # 2 – Looking North from - East Ave. X & Pearblossom Vista, Pearblossom, California

A - Existing conditions

B - View after proposed facility is installed.


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| | |
|---|---|
| Lowered Facilities Alternative<br>View #2<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>77 |
| SCALE: AS SHOWN | DATE: 07-30-2010 |

MC01 AEIR.Fig77.dwg

## View # 3 – Looking Southeast from – Ave. T, at Northwest corner of site

A - Existing conditions

B – View after berming, planting, and painting.

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| | |
|---|---|
| Lowered Facilities Alternative<br>View #3<br>Big Rock Creek Site<br>Antelope Valley, California | FIGURE<br>78 |
| SCALE: AS SHOWN | DATE: 07-30-2010 |

MC01 AEIR.Fig78.dwg

#### 6.6.6.9.1 *Nighttime Lighting*

The Lowered Facilities Alternative would use nighttime lighting, both for safety and operations. The Project would use nighttime lighting, both for safety and operations. The County's *Dark Sky Ordinance*, specifically Sections 22.44.590, exempts the Project from the provisions of this ordinance where such lighting is needed for safety reasons. To promote and maintain dark skies at night for the residents and wildlife in the Rural Outdoor Lighting District, all Lowered Facilities Alternative lighting would be installed and operated in accordance with the requirements of the County' *Dark Sky Ordinance*, specifically Sections 22.44.141 and 22.44.150. Lighting would be shielded/hooded and/or directional to minimize Lowered Facilities Alternative visual impacts and would be designed to incorporate the lighting needed for operations, repair and maintenance, and security. Lebata would ensure these lights are shielded/hooded and downward-directional to light only the area requiring illumination. Also proposed are light poles within the stockpile areas to provide the light needed for loader operators to work these piles. Light poles may be as high as 45 to 50 feet and would be shielded/hooded and downward-directional to keep light from affecting passing motorists.

A *Photometric Study Addendum* (EIR Appendix 16, Addendum) was prepared by Nate Mullen Visual Concepts, LLC to provide the basis for demonstrating light trespass levels beyond property line setbacks and Lowered Facilities Alternative related nighttime light impacts to surrounding property owners. The Lowered Facilities Alternative boundaries would be flanked by earthen berms of varying heights, including an 8-foot berm on the western boundary, 5-foot berm on the southern boundary, 3-foot berm on the eastern boundary, and a 5-foot berm on the northern boundary. These berms provide a natural barrier to offsite light trespass. Refer to **Mitigation Measure NO-1** in EIR sub- chapter 4.5.6 which requires a 7-foot-tall berm be installed along the eastern property line. Because of these berms and the lowered facilities, the majority of the site is well below the height of the public road.

The light poles and fixtures used to perform the *Photometric Study Addendum* are identified in terms of height and light intensity. The *Photometric Study Addendum* provides a numerical representation of intensity of Lowered Facilities Alternative light estimated to be experienced offsite. These numbers are an expression of foot-candles (fc) and, as can be seen, the levels of Project light are all 0.00 fc, indicating there would be no light trespass offsite. The photometric calculation points are spaced on a 20-foot x 20-foot grid. The light levels have been estimated to a distance of 140 feet beyond the berms.

On each sheet of the *Photometric Study Addendum*, the lumenaire schedule illustrates that the Lowered Facilities Alternative would not create light pollution that results in unacceptable levels of light trespass. As such, the Lowered Facilities Alternative would result in **Less than Significant Impacts**.

## 6.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(2) specifies that:

> *"If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."*

As noted in EIR sub-chapter 6.6.1, the No Project Alternative is identified as the environmentally superior alternative. It is also necessary to identify an environmentally superior alternative from among

the other alternatives, which is the Lowered Facilities Alternative (refer to EIR sub-chapter 6.6.6) because it would result in the following:

- Substantially reduced impacts to visual quality over the life of the project due to the placement and operation of project facilities within a bermed 25- to 35-foot depression;
- Reduced noise levels due to the placement and operation of project facilities within a bermed 25- to 35-foot depression;
- In the first phase of the Lowered Facilities Project Alternative, health risk impacts from industrial sources would be less than those predicted for the Project, due to the reduced throughput and limited activities;
- Once the Aggregate Processing Facilities and accessory facilities have been placed on the lowered Facilities Processing Site, approximately 25 to 35 feet below current grade, operations would result in a slight reduction of health risk impacts when compared to the Project due to the dispersion characteristics of plumes generated in a pit;
- Lower offsite pollutant concentrations and lower health risk, than the Project; and
- Depending upon the General Plan Update adoption with regard to the Longview Road Extension Right-of-Way (i.e., 750-Foot or deletion), the Lowered Facilities Alternative could result in:
  - Disturbed Acres being reduced from 282.4 acres to as few as 275.0 acres;
  - Tonnage Gross being reduced from 46,482,400 tons to 42,290,850 tons or less;
  - Tonnage Net being reduced from 36,837,300 tons to 33,515,500 tons or less; and
  - Duration being reduced from 47 years to 43 years or less.

# 7.0 REFERENCES

## 7.1 LIST OF PREPARERS

### 7.1.1 County of Los Angeles (CEQA Lead Agency)

### 7.1.2 Sespe Consulting, Inc.

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Jane Farkas, Senior Staff Professional

Garrett Zulegar, Senior Staff Engineer

Molly Graber, Staff Professional

Gerardo Zamano, Graphics

### 7.1.4 Lebata, Inc.

Mr. James F. McGee Esq., McGee & Associates

### 7.1.5 Sub-Consultants

**Geotechnical Analysis:** Hilltop Geotechnical, Inc.

**Slope Stability Evaluation:** FUGRO West, Inc.

**Drainage Concept:** Stetson Engineers, Inc.

**Surface Water and Groundwater Evaluation:** Stetson Engineers, Inc.

**Biological Resources:** Pacific Southwest Biological Services, Inc., and ECORP Consulting, Inc.

**Visual Impact Assessment:** Jordan, Gilbert & Bain (*Visual Analysis*); Nate Mullen Visual Concepts, LLC (*Photometric Study*)

**Traffic Impact Analysis:** Austin-Foust Associates, Inc., and Stantec Consulting Services, Inc.

**Water Supply/Quantity:** Milner-Villa Consulting (*Water Supply Assessment*), and Strategic Engineering & Science, Inc. (*Drawdown Assessment of Proposed Water Supply Well*)

## 7.2 BIBLIOGRAPHY

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### 7.2.2 EIR Sub-Chapter 4.3 – Geotechnical Hazards


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- *Report of Geotechnical/Geologic Study Proposed Aggregate Production Facility Big Rock Creek Site South of Avenue 'T' Between Longview Road and 121st Street, Pearblossom Area of Los Angeles County, CA*, prepared by Hilltop Geotechnical, Inc., September 15, 2006


### 7.2.3 EIR Sub-Chapter 4.4 – Flood Hazards


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### 7.2.4 EIR Sub-Chapter 4.5 – Noise


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- *Noise Element*, City of Palmdale General Plan, January 25, 1993
- *Traffic Noise Analysis Protocol*, California Department of Transportation, Division of Environmental Analysis, August 2006 (http://www.dot.ca.gov/hq/env/noise/)
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### 7.2.5 EIR Sub-Chapter 4.6 – Water Quality

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# 8.0 MITIGATION MONITORING AND REPORTING PROGRAM

## 8.1 INTRODUCTION

The Mitigation Monitoring and Reporting Program (MMRP) is designed to assist in the implementation of the Mitigation Measures identified in this EIR. CEQA Section 21081.6 requires adoption of a monitoring or reporting program when mitigation measures have been identified that would reduce or avoid significant environmental effects. Because some of the measures identified in the EIR would be implemented through monitoring of an activity, such as grading or excavation, and other measures must be implemented through a reporting mechanism, such as obtaining and/or renewing an air quality permit or an Emergency/Contingency Plan, this following has been developed as a Mitigation Monitoring and Reporting Program.

The MMRP is presented below as a matrix containing the following elements:

- Identified impacts.
- Mitigation Measures to reduce **Significant Impacts** to **Less than Significant Impacts**.
- Compliance/Monitoring Procedure, describing action and monitoring responsibilities, and to whom and when compliance will be reported.
- Responsible Agency.

## 8.2 PROGRAM MANAGEMENT

Except for construction phase related Mitigation Measures, the MMRP will remain in place throughout the life of the Project. The Los Angeles County Regional Planning Department will coordinate enforcement of the MMRP and oversee it to ensure that proper action is taken on each Mitigation Measure. Each Responsible County Department or Division will ensure Project compliance of those Mitigation Measures pertinent to that department. Table 103 summarizes the MMRP, which is applicable to the Project and all alternatives presented herein.

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**Table 103 Mitigation Monitoring and Reporting Program**

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| **Noise** | | | | | |
| Los Angeles County Department of Public Health, Environmental Health (PH) | **NO-1:** Berm Construction | Construct a 7-foot-tall berm with sufficient length to break the line-of-sight between **R4** (a nearby sensitive receptor) and all of the plants and areas of excavation shall be constructed along the Project's eastern property line. | Berm construction shall be coincident with the initial excavation of lands adjacent to **R4**. | Permittee, or successor in interest<br><br>PH | PH |
| **Air Quality** | | | | | |
| Antelope Valley Air Quality Management District (AVAQMD) | **AQ-1:** Dust Suppression | Disturbed surface areas and unpaved roads will be watered. | Twice daily | Permittee, or successor in interest<br><br>AVAQMD | AVAQMD |
| AVAQMD | **AQ-2:** Speed Limit | Vehicle speed will be limited to 15 mph on unpaved roads. | Continuous during life of Project | Permittee, or successor in interest<br><br>AVAQMD | AVAQMD |
| AVAQMD | **AQ-3:** Low Sulfur Diesel Fuel | Low sulfur diesel fuel will be used in all equipment. | Continuous during life of Project | Permittee, or successor in interest<br><br>AVAQMD | AVAQMD |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| AVAQMD | **AQ-4:** Equipment Type and the Rate of Excavation | Aggregate material will be excavated using a dragline and portable crusher prior to exceeding 800,000 tons per year of material fed to the Aggregate Processing Facility. The following changes to the off road equipment would be required before the amount mined exceeds 800,000 tons per year:<br>• The D8R dozer is eliminated;<br>• The 980G loader used in the pit is eliminated;<br>• The two 773 trucks used to transport material in the pit are eliminated; and<br>• A crane, equipped with a dragline, is required. | Based upon rate of excavation. | Permittee, or successor in interest<br><br>AVAQMD | AVAQMD |
| AVAQMD | **AQ-5:** Primary Crusher Location and Off-Road Haul Truck Prohibition | The portable primary crusher will be located in the pit and off-road haul trucks will not be used in the pit. | Continuous during life of Project. | Permittee, or successor in interest<br><br>AVAQMD | AVAQMD |
| AVAQMD | **AQ-6:** Dust Palliatives | Fugitive dust on unpaved roads will be controlled by the application of dust palliatives (chemical dust suppressants) and maintained in a controlled state by watering twice daily (AQ-1) or other means. The use of dust palliatives will be subject to the approval of the Regional Board of the EPA (Region 9). | As needed. | Permittee, or successor in interest<br><br>AVAQMD | AVAQMD |
| AVAQMD | **AQ-7:** Blue Smoke Control | Blue Smoke Control equipment will be used to collect vapors from the asphalt plant's mixing drum, drag conveyor, silos, and loading area. | Installed prior to the operation of the Asphalt Mixing Plant.<br><br>Operated thereafter in concert with the Asphalt Mixing Plant operations. | Permittee, or successor in interest<br><br>AVAQMD | AVAQMD |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| **Biological Resources** | | | | | |
| Los Angeles County Department of Regional Planning (DRP) | **BIO-1:** Desert Tortoise Avoidance | The following avoidance and minimization efforts shall be used as methods to avoid accidental take of desert tortoises as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures to minimize impacts to the desert tortoise, plus a measure of protection in the event that a desert tortoise enters within the Project boundary will be implemented:<br><br>1. In order to avoid any disturbance to potential desert tortoise habitat beyond the Project area, as well as the direct take of desert tortoises, undisturbed habitat areas outside the Project area and any unsurveyed construction areas, such as future phase areas, shall be designated as temporary "Environmental Sensitive Areas" (ESAs). All construction activities shall be confined within the Project impact areas only. At no time shall equipment or personnel be allowed within ESAs.<br><br>2. Before installation of the temporary ESA and desert tortoise fencing, and prior to initiation of construction activities, a qualified biologist (referred to below as the Desert Tortoise Biologist), approved by the Department of Regional Planning (DRP), with an appropriate tortoise handling permit issued from USFWS shall perform a pre-construction survey for desert tortoise. If any desert tortoises are present in the Project area, the Desert Tortoise Biologist shall be retained by the Permittee to relocate them. (If a tortoise has to be touched or moved off the Project site, then a Section 7, or a Section 10 Incidental Take Permit will be required from the USFWS, and a 2081 permit from the CDFW will also be required.) Tortoises are to be moved to suitable habitat outside the impact area and placed in a | Surveys, fencing and relocation shall to be completed prior to any ground disturbing activities. This will be completed in phases.<br><br>The timing of other measures is as described. | Permittee, or successor in interest<br><br>Los Angeles County Fire Department, Forestry Division (Forestry)<br><br>DRP and its approved Desert Tortoise Biologist | DRP (responsible for conducting all inspections, including those required under SMARA) |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| | | natural or artificial burrow, or under a shrub, depending on time of day and year. The Desert Tortoise Biologist shall also be available to relocate any tortoises that may wander into the impact area during construction.<br><br>3. Prior to any ground disturbing activities, the Permittee shall install a desert tortoise exclusion fencing (wire mesh) to exclude all tortoises from entering the Project area. This fencing may be used in conjunction with, but not replaced by, orange ESA fencing for protection of desert tortoise habitat in identified ESAs. The Desert Tortoise Biologist shall be present during all fence installation activities to ensure no impacts to sensitive biological resources occur. The exclusion fence shall be maintained by the Permittee and inspected to ensure its integrity on a daily basis.<br><br>4. All personnel involved in Project construction shall receive Project-related environmental protection training, including desert tortoise awareness as approved by USFWS and CDFW, prior to performing onsite work. Training shall include discussion of the:<br><br>• fragility of desert habitat,<br>• importance of listed species likely to be in the area, including the desert tortoise,<br>• protections afforded to these species by the California and National Endangered Species Acts,<br>• locations of temporary Environmental Sensitive Areas (ESAs) and their functions, and<br>• correct protocol to follow should a desert tortoise or other sensitive species be encountered.<br><br>5. At the end of each working day, the Permittee shall inspect the integrity of all temporary ESA and desert tortoise fencing to ensure that they are in good condition and that | | | |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| | | desert tortoises would be prohibited from entry. If the fences are compromised, repairs shall be completed at that time.<br><br>6. Open trenches, auger holes, or other excavations that may act as pit-fall traps shall be inspected by the Desert Tortoise Biologist before back filling. Any desert tortoise or other species found within the holes shall be safely removed and relocated out of harm's way by the Desert Tortoise Biologist. For open trenches, earthen escape ramps shall be maintained at intervals of no greater than 0.25 mile (0.40 kilometers). The open trenches shall be inspected three times per day (four times per day during the summer) by the Desert Tortoise Biologist. Other excavations that remain open overnight shall be covered to prevent them from becoming traps.<br><br>7. Project personnel shall carefully check under parked vehicles and equipment for desert tortoises or other species before operation, especially in the morning during Project startup and anytime after being parked during the day. The Desert Tortoise Biologist shall move desert tortoises found within the parking, staging, construction, or other traffic areas, to a location away from danger, as specified in Item 2 above.<br><br>8. To avoid impacts caused by increased raven populations on desert tortoise, raven control methods will be implemented. Within the Project site, raven-proof trash bins shall be used for construction trash storage and trash shall be placed in a sealed container and emptied at the close of business each day. All personnel will be required to pick up trash and food wrappers from the site each day. To help discourage ravens, construction water sources shall not be | | | |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| | | allowed to pool or to form permanent puddles that may offer suitable water for ravens, and tortoises shall not be able to access construction water.<br><br>9. Construction water sources shall be designed to preclude their being accessed by tortoise.<br><br>10. Culverts and other drains shall be installed in such a way for tortoises to enter and exit safely from each end.<br><br>11. If a desert tortoise or other listed species, whether dead, injured, or entrapped, is found, the Permittee or Desert Tortoise Biologist shall immediately notify USFWS or CDFW directly. Work in the immediate area is to be temporarily halted until approved to resume by CDFW and USFWS. Any entrapped desert tortoise shall be permitted to escape. The disposition of any carcasses or recovery of dead animals shall be coordinated by the Desert Tortoise Biologist through CDFW and USFWS.<br><br>12. If a desert tortoise or other listed species is injured during the course of construction, the Permittee shall be notified and the Desert Tortoise Biologist shall transport the animal to a qualified veterinarian. If a desert tortoise is killed during the course of construction, it must be left in place, as is, and the Permittee and Desert Tortoise Biologist must be notified. The Desert Tortoise Biologist shall document and remove the carcass.<br><br>13. No firearms or pets are permitted in the Project area.<br><br>14. Compliance with the avoidance, minimization, and Mitigation Measures shall be documented by the Permittee and the Desert Tortoise Biologist, and provided to the regulatory agencies on a regular basis as determined by the agreements established for the Project. | | | |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| DRP | **BIO-2:** Mohave Ground Squirrel Avoidance | The following protocol survey, avoidance and minimization efforts shall be used as methods to avoid accidental take of Mohave ground squirrel (MGS) as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures:<br><br>1. In order to avoid any disturbance to MGS habitat beyond the Project area, as well as the direct take of MGS, undisturbed habitat areas outside the Project area and any unsurveyed construction areas, such as future phase areas, shall be designated as temporary "Environmental Sensitive Areas" (ESAs). All construction activities shall be confined within the Project impact areas only. At no time shall equipment or personnel be allowed within temporary ESAs.<br><br>2. Prior to any ground disturbing activities, temporary exclusion fencing (orange construction fencing or sight weave silt fencing) will be installed and maintained along the common boundary of the temporary ESA and Project area, and in drainages leading off of the Project area in order to prevent unauthorized entry into the temporary ESA.<br><br>3. A qualified DRP-approved biologist, working under the authority of a CDFW Memorandum of Understanding (referred to below as the MGS Biologist), will conduct surveys to determine the presence of Mohave ground squirrel (MGS) on the Project site. Mining is expected to proceed incrementally, sequentially affecting 10 to 30 acres of land at a time, over the course of the Project's permitted life (i.e., approximately 50 years). Prior to the grading or clearing of each new area of land, one CDFW protocol MGS survey grid will be established on the parcel in an area determined to be the best potential habitat for MGS. The site will be trapped for three, five consecutive day sessions | Surveys, fencing, trapping and relocation shall to be completed prior to the grading or clearing of each new area of land. This will be completed in phases.<br><br>The timing of trapping as described. | Permittee, or successor in interest<br><br>Forestry<br><br>DRP and its approved MGS Biologist | DRP |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| | | throughout the spring and early summer. An additional day will be necessary for each session to set up the traps the day before trapping and to pick them up when done. As each subsequent undisturbed area is trapped, the first session for each area will be trapped between March 15 and April 30. The second session will be trapped between May 1 and May 31. The third session will be trapped between June 15 and July 15. A technical report will be prepared following the completion each of the field sessions that will describe the survey methods and results, as well as a description of the onsite habitat quality for supporting MGS. Consultation with CDFW will need to occur, in addition to obtaining the appropriate permits if MGS are detected. All technical reports will be submitted to the County.<br><br>4. Grubbing performed post-survey is to be conducted in a manner that directs wildlife away from Project activities and does not result in the creation of an interior island where wildlife could become isolated and trapped. The operating premise is to provide wildlife an opportunity to successfully flee the Project site.<br><br>5. All personnel involved in Project construction shall receive Project related environmental protection training including sensitive species awareness training prior to performing onsite work. Training shall include discussion of the:<br><br>• fragility of desert habitat,<br>• importance of listed species likely to be in the area, including the MGS, the protections afforded to these species by the California and National Endangered Species Acts,<br>• locations of temporary ESAs and their functions, and | | | |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
|---|---|---|---|---|---|
| | | • correct protocol to follow should a MGS or any other sensitive species be encountered.<br><br>6. At the end of each working day, the Permittee shall inspect the integrity of all fencing around temporary ESAs to ensure that they are in good condition. If the fence is compromised, repairs shall be completed at that time.<br><br>7. Open trenches, auger holes, or other excavations that may act as pit-fall traps shall be inspected by the MGS Biologist before back filling. Any MGS or other species found within the holes shall be safely removed and relocated out of harm's way by the MGS Biologist. For open trenches, earthen escape ramps shall be maintained at intervals of no greater than 0.25 mile (0.40 kilometers). The open trenches shall be inspected three times per day (four times per day during the summer) by the MGS Biologist. Other excavations that remain open overnight shall be covered to prevent them from becoming traps.<br><br>8. Project personnel shall carefully check under parked vehicles and equipment for wildlife species before operation. The MGS Biologist shall move sensitive wildlife found within the parking, staging, construction or other traffic areas to a location away from danger.<br><br>9. Culvert extensions shall be installed in such a way for sensitive wildlife to enter and exit safely from each end.<br><br>10. If a MGS, or other listed species, whether dead, injured, or entrapped, are found, the Permittee or MGS Biologist shall immediately notify CDFW directly. Work in the immediate area shall be temporarily halted while the Permittee/MGS Biologist consults with CDFW. Any | | | |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
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| | | entrapped MGS shall be permitted to escape. The disposition of any carcasses or recovery of dead animals shall be coordinated by the MGS Biologist through CDFW.<br><br>11. If a MGS or other listed species is injured during the course of construction, the Permittee must be notified and the MGS Biologist shall transport the animal to a qualified veterinarian. If it was killed during the course of construction, it must be left in place as is and the Permittee and MGS Biologist must be notified. The MGS Biologist would document and remove the carcass.<br><br>12. No firearms or pets are permitted in the Project area.<br><br>13. Compliance with the avoidance, minimization, and Mitigation Measures shall be documented by the Permittee and MGS Biologist, and provided to the regulatory agencies on a regular basis as determined by the agreements established for the Project. | | | |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
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| DRP | **BIO-3:** Sensitive Native Nesting Bird Avoidance | The following avoidance and minimization efforts shall be used as methods to avoid accidental take of all native nesting birds as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures to minimize impacts to all native nesting birds:<br><br>1. Pre-construction biological surveys are to be conducted by qualified wildlife biologist (approved by CDFW and DRP) for sensitive birds and other sensitive species (referred to below as the Sensitive Birds Biologist) prior to any site preparation activities in association with any phase. The surveys shall be conducted no later than three days prior to any site preparation activities (vegetation clearing). Results of surveys, including negative findings, shall be submitted to CDFW within three days of their conclusion. If any sensitive species are present onsite, the Permittee shall develop and implement a plan for the protection of these species, to be approved by CDFW in a timely manner. The results of any protective measures instituted as a part of the protection and monitoring plan shall be provided to CDFW in electronic format within one week of implementation. The Permittee shall be responsible for reporting all observations of threatened/endangered species or of species of special concern to CNDDB within ten (10) days of sighting.<br><br>2. Nesting native birds, including both sensitive and non-sensitive native birds and all migratory birds that may be present in the Project area, shall be protected during the breeding season. If any active nests are present, the Permittee, under the direct supervision of the Sensitive Birds Biologist, shall install a fence and exclude the nest site from all Project related activities. The fence shall be placed at a distance of 300 feet (500 feet for raptors) and no work or | Surveys shall to be completed prior to any site preparation activities in association with any phase. This will be completed in phases.<br><br>Survey timing as described. | Permittee, or successor in interest<br><br>Forestry<br><br>DRP and its approved Sensitive Birds Biologist<br><br>CDFW | DRP |

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| | | Project related activities shall occur within this buffer until the Sensitive Birds Biologist determines that either the nest has failed or the young have fledged. The breeding season extends from February 15th through September 1st.<br><br>3. The Permittee shall not remove or otherwise disturb vegetation, or conduct any other site preparation or Project related activities, within any CDFW jurisdictional areas, or within 150 feet of any CDFW jurisdictional areas. The purpose being to avoid impacts to breeding/nesting birds from February 15th through September 1st, the recognized breeding, nesting, and fledging season for most bird species in the Antelope Valley.<br><br>14. No take may occur to nesting native bird species during nesting season, including, but not limited to: Cooper's hawk, Tricolored blackbird, Western burrowing owl, Swainson's hawk, Mountain plover, or Prairie falcon. The following is required if site preparation or Project related activities in CDFW jurisdictional areas during the breeding/nesting season cannot be avoided:<br><br>• prior to construction or site preparation activities, the Permittee shall have the Sensitive Birds Biologist survey all breeding/nesting habitats within CDFW jurisdictional areas, and within 500 feet of the jurisdictional areas in riparian habitat immediately adjacent to the streambeds, for breeding/nesting birds.<br><br>4. Prior to any site preparation or construction related activities during the raptor nesting season, January 31st to August 1st, the Sensitive Birds Biologist shall conduct a site survey for active nests two weeks prior to any scheduled site development or Project related activities. If an active nest is located, then no Project related activities shall be conducted | | | |

| Monitoring Agency Approval | Mitigation Measure | Action Required | Mitigation Timing | Responsible Agency or Party | Monitoring Agency or Party |
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| | | within a 500-foot radius from the nest until the Sensitive Birds Biologist has determined that the young have fledged and are independent of the adults, or that the nest has failed.<br><br>5. The Permittee shall protect all migratory nongame native bird species, as they are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13), and by Sections 3503, 3503.5 and 3513 of the California Fish and Game Code, which prohibit the take of all native birds and their active nests including raptors and other migratory nongame birds (as listed under the MBTA). This Agreement therefore does not allow the Permittee, any employees, or agents to destroy or disturb any active bird nest (§3503 Fish and Game Code) or any raptor nest (§3503.5) at any time of the year.<br><br>6. If clearing is to be conducted outside of the breeding season or no breeding/ nesting birds are observed during the pre-construction survey, site preparation and Project related activities can begin. If clearing is to be conducted in the breeding season, all protective measures are in place, and concurrence has been received from CDFW, site preparation and Project related activities can begin.<br><br>7. No firearms or pets are permitted in the Project area.<br><br>8. Compliance with the avoidance, minimization, and Mitigation Measures shall be documented by the Permittee and Sensitive Birds Biologist, and provided to the regulatory agencies on a regular basis as determined by the agreements established for the Project. | | | |

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| | | *Burrowing owl*<br><br>9. The Sensitive Birds Biologist shall inspect all burrows that exhibit typical characteristics of owl activity no sooner than three days prior to any site preparation activities. If it is evident that the burrows are actively being used by burrowing owls, the Permittee shall not commence activities until no owl sign is present and that the burrows are not being used by adults or juvenile owls (as determined by the Sensitive Birds Biologist).<br><br>10. (This measure was designed to determine if burrowing owls are present in upcoming phase areas. It allows for the Sensitive Birds Biologist to conduct spring and winter surveys to determine if just wintering or if breeding owls are present.)<br><br>The Sensitive Birds Biologist shall perform a spring and winter burrowing owl survey of any area within one year of clearing any vegetation from that area. If evidence exists that burrowing owls are utilizing the site, the Sensitive Birds Biologist shall directly supervise the installation of Department approved exclusionary devices in order to prevent the owls from entering the burrows and shall implement an artificial burrow program near the site in one of the areas considered for restoration/creation or preservation, as part of the mitigation measures for this agreement. The approved devices shall be placed at least 60 days prior to any site related Project activities and monitored for one year to ensure they are functioning and being used by owls.<br><br>12. (This measure includes the pre-construction survey that needs to occur just prior to clearing the next phase of mining.) | | | |

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| | | The Permittee shall have the Sensitive Birds Biologist perform a burrowing owl survey in accordance with the standard survey protocol guidelines within 30 days prior to clearing any area. The Sensitive Birds Biologist shall inform CDFW (contact to be provided by CDFW) immediately if any birds are present. If birds are present, he Sensitive Birds Biologist shall install approved exclusionary or artificial devices immediately and at least two weeks prior to clearing. | | | |

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| DPW | **BIO-4:** Sensitive Native Plant Avoidance | The following avoidance and minimization efforts shall be used as methods to avoid accidental take of other sensitive native plants as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measure to minimize impacts to all sensitive native plants:<br><br>1. Pre-construction sensitive plant surveys shall be conducted by a qualified Sensitive Plant Species Biologist, approved by CDFW and DRP. Survey results, including negative findings, shall be submitted to CDFW within 90 days of their conclusion. If any sensitive plant species are present onsite, the Permittee shall develop a protection and monitoring plan and submit it to CDFW for approval. The Permittee is responsible for implementing the CDFW-approved protection and monitoring plan.<br><br>2. The results of any protective measures instituted as a part of the protection and monitoring plan shall be provided to CDFW, in electronic format, within 30 days of implementation. Within ten (10) days of sighting(s), the Permittee shall report all observations of threatened/endangered species, or of species of special concern, to CDFW for incorporation within the CDFW Natural Diversity Data Base. | Pre-construction sensitive plant surveys shall be conducted during the appropriate blooming periods in the year prior to clearing of each mining phase. Survey results shall be submitted to CDFW within 90 days of their conclusion.<br><br>Conditional tasks as described. | Permittee, or successor in interest<br><br>Forestry<br><br>DRP and its approved Sensitive Plant Species Biologist<br><br>CDFW | DPW |

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| DRP | **BIO-5:** Exotic and Invasive Plant Species Control | The following avoidance and minimization efforts shall be used to avoid adverse effects on sensitive native plants and wildlife as a result of the Project. During all Project activities, the Permittee shall use the following Mitigation Measures to minimize the occurrence of exotic plant species:<br><br>1. Prior to land disturbing activities onsite, the Permittee shall prepare an Exotic and Invasive Plant Species Control Program and submit it to DRP for review and approval by a DRP-approved Exotic and Invasive Plant Species Biologist. The Permittee is responsible for implementing the approved exotics and invasive plant species control program as part of the operational plan for the Project.<br><br>2. Invasive species control measures may include, but are not limited to, avoidance of streambed disturbance, herbicide application (upland areas only), native species re-vegetation, and washing off construction equipment tires to prevent introduction of invasive species seeds. | Exotic and Invasive Plant Species Control Program must be prepared and approved prior to land disturbing activities<br><br>Continuous during life of Project. | Permittee, or successor in interest<br><br>Forestry<br><br>DRP and the approved Exotic and Invasive Plant Species Biologist | DRP |
| DRP | **BIO-6:** Nighttime Truck Speed Limit | To avoid nighttime impacts to wildlife by haul trucks along the haul routes, the Permittee shall require truck operators to limit truck speed to no more than 25 mph along 116th Street East, and along Avenue T, eastbound of the Project.<br>If required by the Los Angeles County Sheriff's Department, the Permittee shall install nighttime truck speed limit signs for Project trucks entering 116th Street East from East Avenue T or SR 138. | Continuous during life of Project. | Permittee, or successor in interest<br>DRP<br>Los Angeles County Sheriff's Department | DRP |

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| **Traffic and Circulation** | | | | | |
| DPW | **TC-1:** Pavement Maintenance | Prior to the commencement of surface mining activities that result in the transport of processed materials offsite, Lebata shall document and submit all required information and/or material pertaining to the pavement conditions of Avenue T, 106th Street East and 165th Street East, including the formula for calculating the Project's fair share of any repair and/or reconstruction of Avenue T, 106th Street East and 165th Street East, to the satisfaction of the LACDPW. Lebata shall reimburse the County for the cost of any repairs and/or reconstruction of Avenue T, 106th Street East and 165th Street East attributable to the Project, as agreed to by the LACDPW. The timing of any necessary repairs and/or reconstruction of Avenue T, 106th Street East, and 165th Street East, and the required payment by the project proponent, shall be determined by LACDPW. | | Permittee, or successor in interest<br><br>DPW | DPW |

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| **Lowered Facilities Alternative - Slope Stability (Lowered Facilities Alternative)** | | | | | |
| DPW | **LFA-1:** Slope Stabilty Verification | For cut slopes steeper than 1.5(H):1(V) shear strength parameters for the Upper Alluvium shall be verified, using the following verification method:<br>• Excavation of a vertical trench at least 30 feet deep within representative cut slope materials at the Project site and observation of the stability conditions of the vertical trench sidewalls after a minimum 24-hour period.<br>• Shear strength parameters can be back-calculated as demonstrated in the *Pit Slope Stability Evaluation* (EIR Appendix 4).<br>• Once fill spoils are stockpiled, obtain representative samples to perform gradation and shear strength tests (most likely direct shear tests) to verify shear strength parameters.<br>If the gradation and shear tests serve to verify the stability of temporary 1:1 (h:v) slopes, the Project may proceed as approved. If these tests determine the temporary 1:1 (h:v) slopes are not stable, a determination is to be made, in consultation with DPW staff, of the maximum slope condition that is considered stable under temporary conditions, and the Mining Plan revised accordingly. | | Permittee, or successor in interest<br><br>DPW and Registered Professional Engineer (Geotchnical) | DPW |