Appendix A Western Aggregates LLC Amended Reclamation Plan (May 2012)

Amended Reclamation Plan

for

WESTERN AGGREGATES LLC
Yuba County Operations

Submitted To:

STATE MINING AND GEOLOGY BOARD
801 K STREET, SUITE 2015
SACRAMENTO, CA 95814

Prepared For:

WESTERN AGGREGATES LLC
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MARYSVILLE, CA 95901

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May 2012

Western Aggregates LLC

Amended Reclamation Plan

Project Application

Submitted To:

State Mining and Geology Board
801 K Street, Suite 2015
Sacramento, CA 95814

Prepared For:

Western Aggregates LLC
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Marysville, CA 95901

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MAY 2012

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LIST OF ACRONYMS

ACOE	U.S. Army Corps of Engineers
AMSL	Above Mean Sea Level
bgs	below ground surface
BACT	Best Available Control Technology
BMPs	Best Management Practices
BMSL	Below Mean Sea Level
CCR	California Code of Regulations (Title 14)
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CUP	Conditional Use Permit
DOC	California Department of Conservation
MRZ-2	Mineral Resource Zone (Containing Significant Mineral Deposits)
MSHA	Mine Safety and Health Administration
MSL	Mean Sea Level
NGVD	National Geodetic Vertical Datum
OHSA	Occupational Safety and Health Administration
OMR	Office of Mine Reclamation
PRC	California Public Resources Code
RWQCB	Regional Water Quality Control Board
AQMD	Air Quality Management District
SEA	Significant Ecological Area
SMARA	Surface Mining and Reclamation Act, 1975 (PRC § 2710, et seq.)
SMGB	State Mining and Geology Board
SPCCP	Spill Prevention Control and Countermeasure Plan
SWPPP	Stormwater Pollution Prevention Plan
USGS	United States Geological Survey

1.0 GENERAL INFORMATION

1.1 INTRODUCTION

Western Aggregates LLC ("Western"[1]) operates an active aggregate mining operation pursuant to vested rights, which recently were confirmed by the State Mining and Geology Board ("SMGB") to cover an approximately 3,900-acre area situated in the historic Yuba Goldfields, located twelve miles northeast of Marysville, California (see Figure 1), including both lands that have and have not been previously dredged or otherwise mined (the "Vested Rights Area"). The Yuba Goldfields have historically been mined for gold and aggregates using various mining techniques. This historic mining produced a ten thousand acre area of dredge tailings consisting of sand, gravel and other aggregates adjacent to the Yuba River.

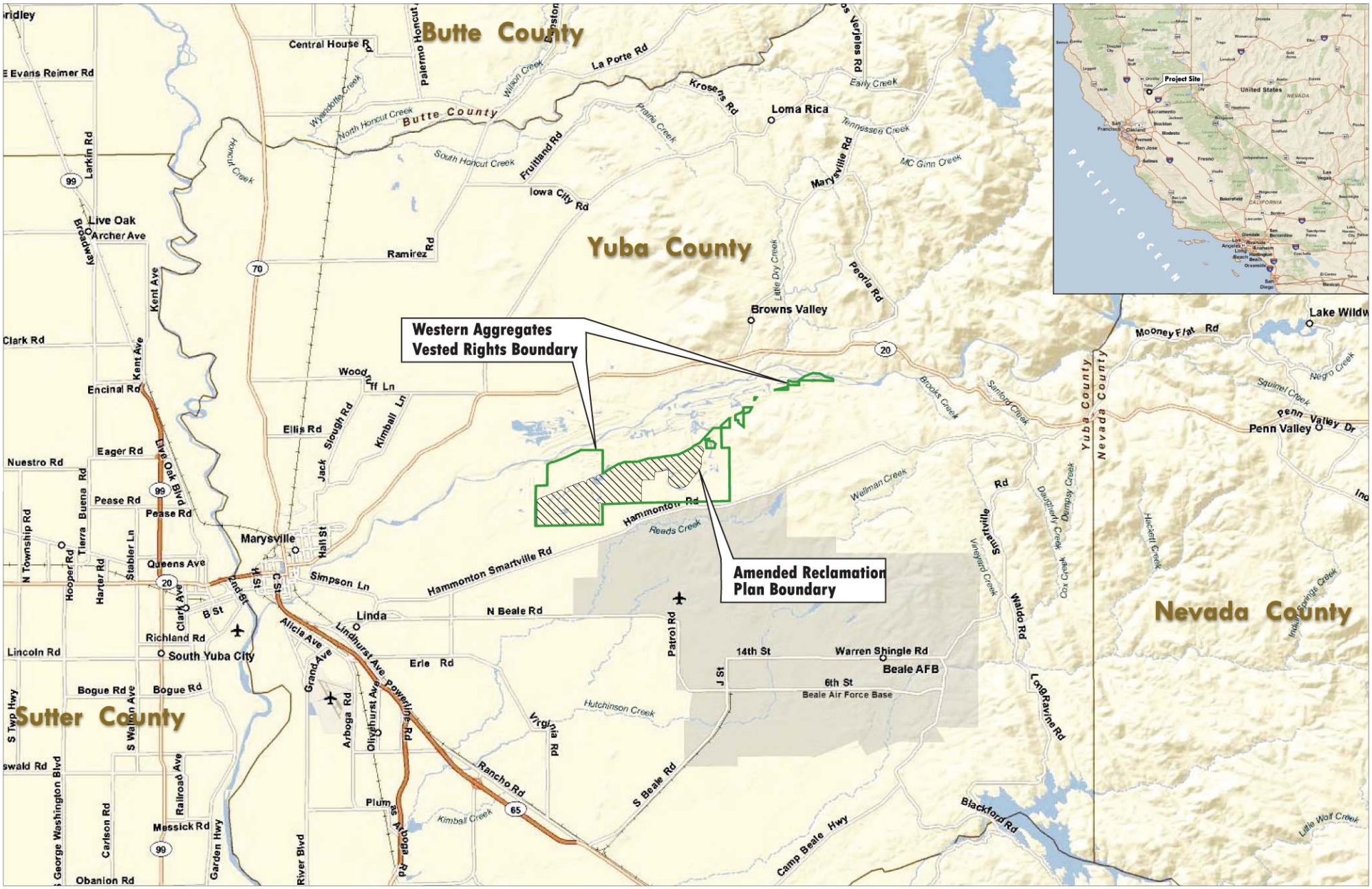
Gold mining operations, conducted by a separate company called Cal Sierra Development, Inc. ("Cal Sierra"), occur concurrently with operations of Western, on the same Yuba Goldfields property. The operations and assets of Western and Cal Sierra were, through 1987, owned and controlled by a common entity, Yuba Goldfields, Inc. (together, with its predecessors, "Yuba Consolidated"). While Cal Sierra owns gold, precious metals estate, and other related assets in the Yuba Goldfields, Western owns the surface estate and the rights to sand, gravel, rock, stone, cobbles, hardrock, decorative rock, silica, riprap and asphalt rock and other aggregates (collectively referred to herein as either "aggregates" or "sand and gravel") in the Yuba Goldfields (and, certain limited gold, precious metals and other related assets in a small portion of the Goldfields). Cal Sierra's administrative offices are located in the approximate center of Section 5 (Figures 2a and 2b).

Western's operation is currently subject to Reclamation Plan 80-01 ("RP 80-01"), which was approved by the County of Yuba in 1980, originally for Yuba Consolidated's gold and aggregate operations. Thus RP 80-01 now applies to both Western's aggregate operations, and Cal Sierra's gold operations. RP 80-01 covers approximately 2,000 acres, all of which apply to Cal Sierra's gold operations. Of the total 2,000 acres, approximately 1,420 acres apply to Western's aggregate operations, and are located in Sections 1 and 12, Township 15 North, Range 4 East, and Sections 5 and 6, Township 15 North, Range 5 East, as shown in Figures 2a and 2b. Western's aggregate plant operations are currently located in Section 6.

This proposed Amended Reclamation Plan covers approximately 1,960 acres of Western Aggregates' 3,900 acre Vested Rights Area. The approximately 1,900 acre area addressed by this plan is located within Section 1, T15N, R4E; Section 2, T15N, R4E; Section 11, T15N, R4E; Section 12, T15N, R4E, Section 4, T15N, R5E; Section 5, T15N, R5E; Section 6, T15N, R5E; and Section 32, T16N, R5E. When approved, this Amended Reclamation Plan will supersede the 1,420-acre portion of RP 80-01 that applies to aggregate operations. However, the entire 2,000-acre area of RP 80-01 that applies to gold operations will remain valid and still intact.

The surface mining operations that will be reclaimed in accordance with this Amended Reclamation Plan are within the Vested Rights Area. Nothing in this Amended Reclamation Plan is intended by Western to constitute any abandonment, extinguishment, diminishment or

[1] "Western" as used herein refers to Western Aggregates LLC and its predecessor companies.



Area Map

Western Aggregates LLC
Yuba County, California

Figure 1

LEGEND

Vested Rights Boundary

Amended Reclamation Plan Boundary and Operating Area for Aggregates

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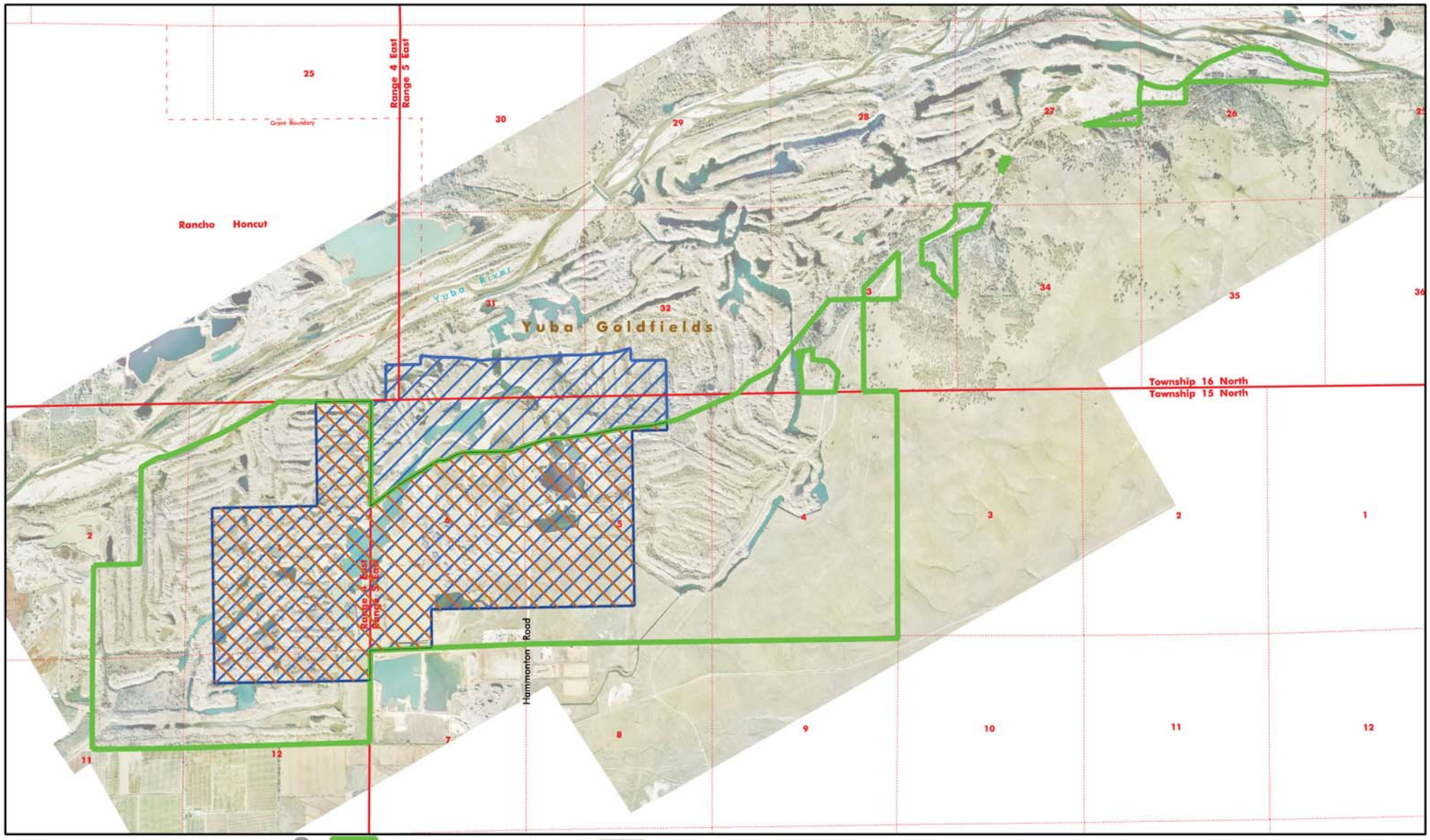
0 3
Miles

Source: Lilburn Corp., 03/2011 (TAG)

LILBURN CORPORATION



LILBURN CORPORATION

1250 0 1250 2500

Scale: 1 inch = 2500 feet

Map Prepared By: Lilburn Corporation 05/2010
Aerial: Stewart, 12-22-10
Boundary: Mackay & Somps: 2010

LEGEND

Western Aggregates Confirmed 2010 Vested Rights Boundary

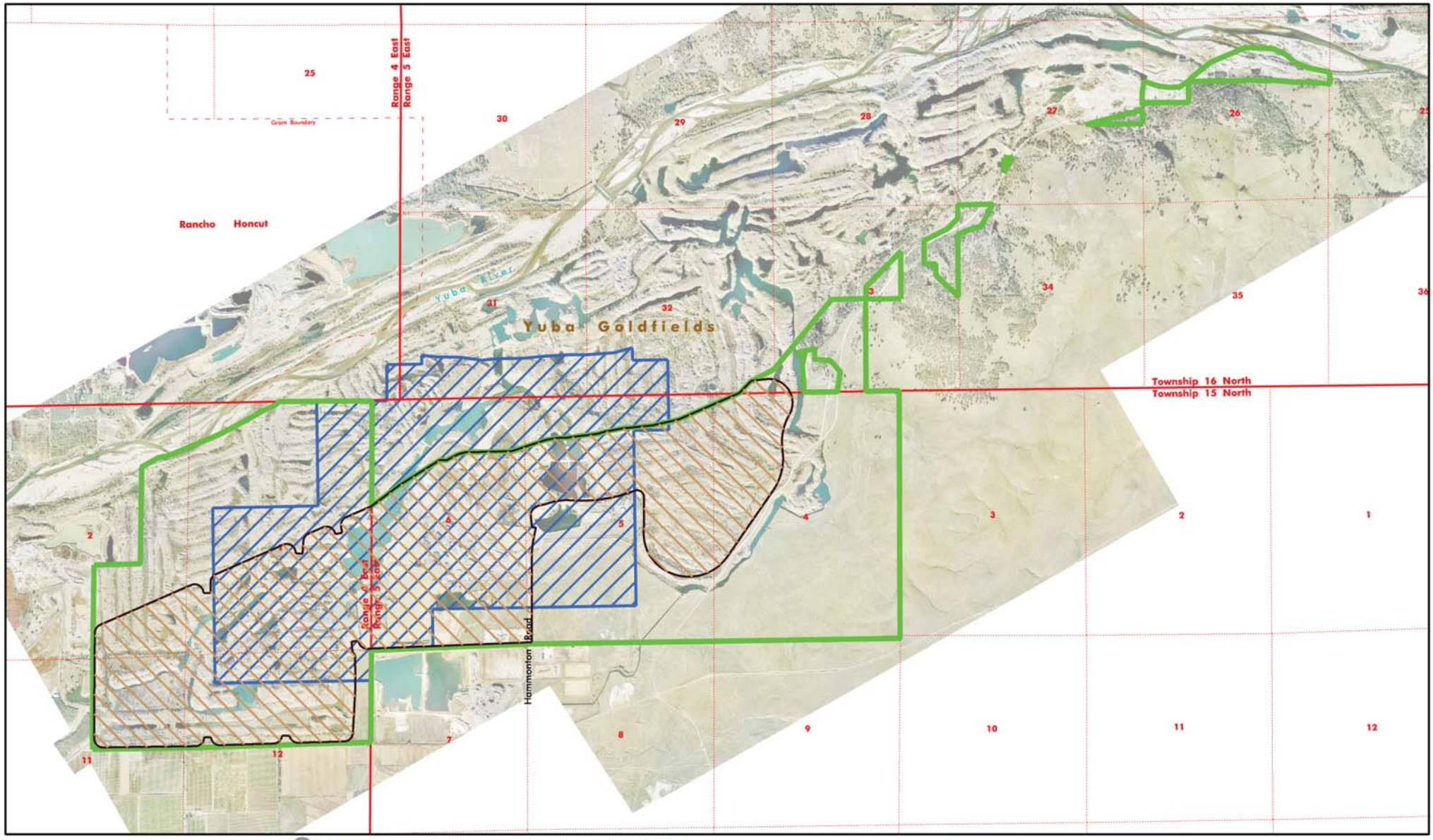
Reclamation Plan #80-01 Gold Boundary

Reclamation Plan #80-01 Aggregates Boundary and Current Operating Area

Current Reclamation Plan Area

Western Aggregates LLC
Yuba County, California

Figure 2A



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1250 0 1250 2500

Scale: 1 inch = 2500 feet

Map Prepared By: Lilburn Corporation 03/2011 (TAG)
Aerial: Stewart, 12-22-10
Boundary: Mackay & Somps: 2010

LEGEND

Western Aggregates Confirmed 2010 Vested Rights Boundary

Reclamation Plan #80-01 Gold Boundary

Amended Reclamation Plan Boundary and Operating Area for Aggregates

Proposed Reclamation Plan Area

Western Aggregates LLC
Yuba County, California

Figure 2B

reduction in scope or geography, or any partial or complete waiver of such confirmed vested rights or any other vested right or non-conforming use of land to which Western may be entitled whether or not such land has been previously dredged or otherwise mined. In particular, Western reserves the right in the future to mine and conduct other surface mining operations within the Vested Rights Area outside of the area covered by this Amended Reclamation Plan. Further, Western's right to mine arises out of vested rights that entitle Western to conduct surface mining operations and to modify from time to time the scope, magnitude, timing, and methodology of such operations in response to changes in market factors, such as supply and demand, and changes in technology. Western therefore reserves the right to make adjustments to or changes in this Amended Reclamation Plan as may be required by such operational modifications.

The surface mining operations to be reclaimed in accordance with this Amended Reclamation Plan will take place within the Vested Rights Area in 3 fifteen-year phases (for a total of 45 years) affecting approximately 1,960 acres, commencing upon final approval of this Amended Reclamation Plan, and, assuming such approval is obtained in calendar 2011, terminating at the end of 2056. These phases will be carried out in accordance with an aggregate phasing plan developed by Western; details of the surface mining operations and the phasing plan, including mining locations, depths and other factors are more particularly described below in Section 4.2. Because surface mining operations will in part depend upon market factors, such as supply and demand, and the then-current state of mining technology, mining and related reclamation may take place in the area covered by this Amended Reclamation Plan after the 45-year period.

1.2 OPERATION OVERVIEW

1.2.1 Historical Operations by Western and Cal Sierra

Following the acquisition of Yuba Consolidated's assets by Cal Sierra and Western, mining operations on site have typically consisted of gold dredging conducted by Cal Sierra by means of one or more bucket line dredges and gold jigs (or recovery circuits) by which aggregate material is mined and the gold is processed from the aggregate material dredged. Western’s operations have at times previously included following the Cal Sierra dredge and excavating from the dredge tailings, as well as excavating material from in front of the gold dredges using various equipment.

1.2.2 Current Operations

Western’s existing operations consist primarily of sand and gravel removal and processing (refer to Figure 3, Plant Operations). Current mining operations by Western involve excavation using a clamshell dredge, excavators, draglines and other equipment. Material is removed, transported or conveyed to a processing plant, and then sorted, and, for certain materials, crushed and/or washed and stockpiled for use in the manufacturing and/or sale of construction aggregates and road base and other aggregate material. Wash water and silts are pumped into a settling pond.

Over the past five (5) years, production by Western has approached, and at times exceeded, 3.5 million tons per year. It is expected that production over the next few years could equal or exceed this level of yearly production in order to meet market demand. It is further expected that in the longer term, Western's production will increase substantially to meet market demand,

Current Plant Operations - May 2012

Western Aggregates LLC
Yuba County, California

Figure 3

0 600
Feet
Source: Lilburn Corp., 03/2011 (TAG)
Aerial: Late 2009

LILBURN CORPORATION

changes in market dynamics, and/or technological improvements occurring in the due course of business.

1.3 APPLICATION AND APPLICANT/OPERATOR INFORMATION

This document has been prepared pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA, PRC § 2710 et seq.), and the State Mining and Geology Board (SMGB) Reclamation Regulations (California Code of Regulations (CCR), Title 14, Division 2, Chapter 8, Subchapter 1, §§ 3500-3800).

Chapter 3, the Mining Plan, herein, provides a description of the surface mining operations in the area addressed by this Amended Reclamation Plan, SMARA compliance, and performance standards. Chapter 4, the Amended Reclamation Plan, presents the plans and methods proposed to minimize any adverse environmental effects and residual hazards to the public health and safety from reclamation, and to reclaim the site to a usable condition. Chapter 5 concerns the applicant's certification that the stipulated site reclamation will be followed, and that all components of SMARA are addressed.

This application includes two large sheets with existing mine and reclamation plan details and cross-sections. The reclamation plan is shown on Sheet 1 and Sheet 2 including cross sections of the basins and other details.

Operator:	Western Aggregates LLC 4711 Hammonton Road Marysville, CA 95901 Tel: 530-749-6525 Fax: 530-741-8313 Contact: Lloyd Burns, President
Owner of Surface Rights:	Western Aggregates LLC 4711 Hammonton Road Marysville, CA 95901 Tel: 530-749-6525 Fax: 530-741-8313 Contact: Lloyd Burns, President
Owner of Aggregate Mineral Estate: and Lessee	Western Aggregates LLC 4711 Hammonton Road Marysville, CA 95901 Tel: 530-749-6525 Fax: 530-741-8313 Contact: Lloyd Burns, President
Owner of Precious Metal and Other Subsurface Mineral Interests:	Cal Sierra Development, Inc. 4738 Hammonton Road Marysville, CA 95901

Applicant's Counsel:	Jeffer, Mangels, Butler & Mitchell LLP Two Embarcadero Center Fifth Floor San Francisco, CA 94111-3824 Tel: (415) 398-8080 Fax: (415) 398-5584 Contact: Kerry Shapiro
Applicant's Agent:	Lilburn Corporation 1905 Business Center Drive San Bernardino, CA 92408 Ph: (909) 890-1818 Fax: (909) 890-1809 Contact: Stephen T. Lilburn / Martin R. Derus

1.4 LEAD AGENCY INFORMATION

Lead Agency/Contact:	State Mining and Geology Board 801 K Street, Suite 2015 Sacramento, CA 95814 Phone: (916) 322-1082 Fax: (916) 445-0738 Contact: Stephen Testa, Executive Officer
State Mine ID Number:	CA 91-58-0001
Reclamation Plan No.:	Reclamation Plan RP _____ (Amending Reclamation Plan RP 80-01 for aggregates)

2.0 OPERATION LOCATION & SETTING

2.1 OPERATION LOCATION

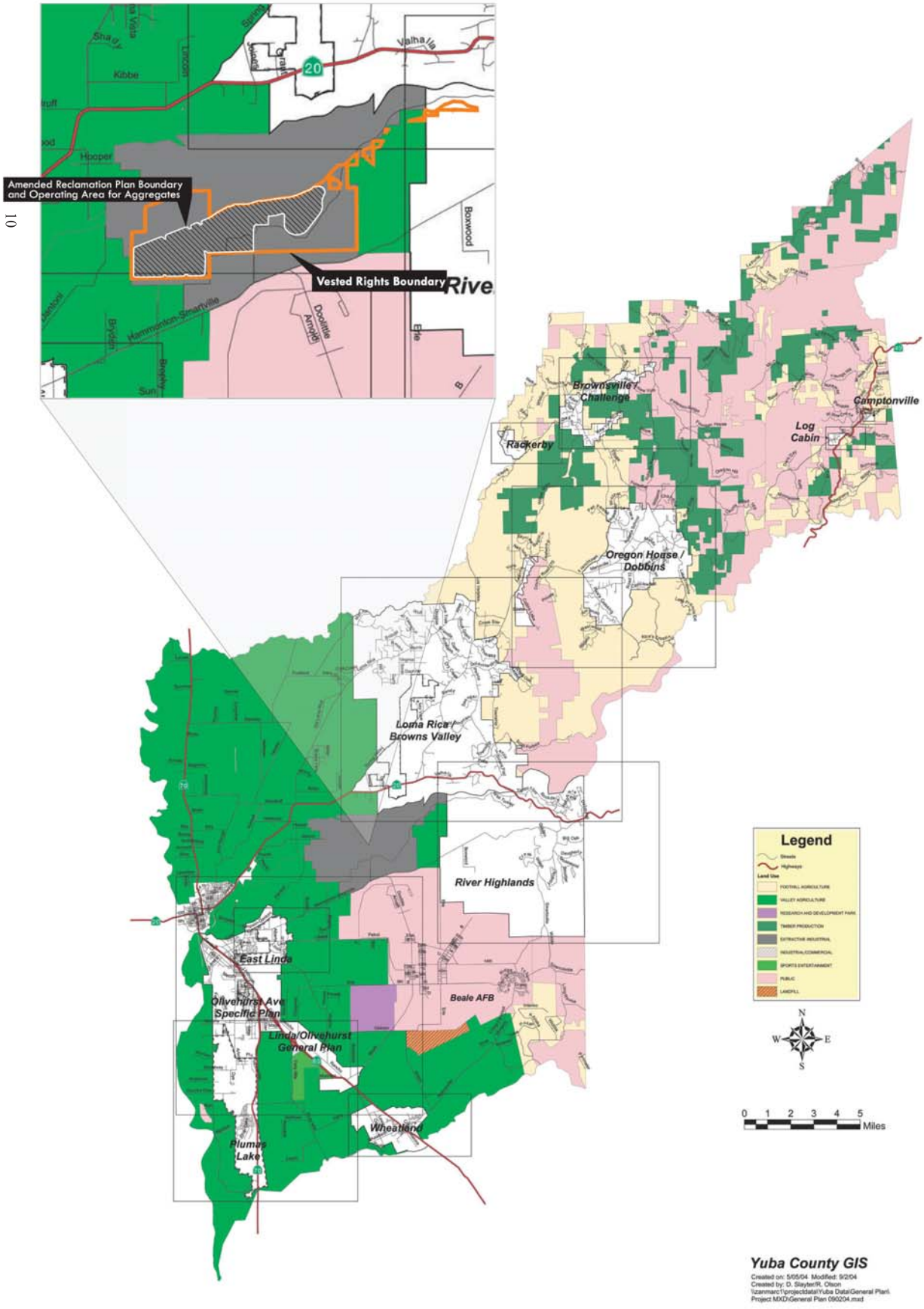
The operations site is located approximately 45 miles north and slightly east of Sacramento, California in the County of Yuba. It lies south of the Yuba River, north of the Hammonton-Smartville Road approximately equal distance between Marysville and Smartville (approximately 20 miles). It is north of Beale Air Force Base. The Western Aggregates' Vested Rights Area is 3,900 acres located in: Section 1, T15N, R4E; Section 2, T15N, R4E; Section 11, T15N, R4E; Section 12, T15N, R4E; Section 4, T15 N, R5E; Section 5, T15 N, R5E; Section 6, T15 N, R5E; Section 26, T15 N, R5E; Section 27, T15 N, R5E; Section 32, T15 N, R5E; Section 33, T15 N, R5E; and a portion of the NW ¼ of Section 34, T15 N, R5E. The area considered in the Amended Reclamation Plan is approximately 1,960 acres located in Sections 1, 2, 11 and 12, T15N, R4E; Sections 4, 5, and 6, T15N, R5E; and Section 32 T16N, R5E (see Figure 2B); the fact that this Amended Reclamation Plan addresses operations in some, but not all, of the Vested Rights Area is not intended as a waiver, abandonment, or relinquishment of any rights in other portions of the Vested Rights Area. See discussion of waiver and related matters above at pages 1 - 2.

2.2 SURROUNDING LAND USES

Western operates an existing mining operation located in the Yuba Goldfields, which is a historic mining area. The site has previously been greatly disturbed by gold and aggregate mining activities of predecessor companies that dramatically altered the landscape. The Yuba Goldfields is zoned M-2 (Yuba County General Plan Designation, Extractive Industrial) and is characterized by numerous dredge tailings with interspersed waterways and small ponds created by mining activities. The M-2 Zone was established primarily for the extraction, processing and distribution of minerals occurring naturally such as sand and gravel. The southern portion of the Yuba Goldfields contains a small tract of undisturbed land that has historically been used for limited agricultural production and cattle grazing.

The mining site is located within the Yuba City-Marysville Production-Consumption (PC) Region, as defined in DOC-Division of Mines and Geology (DMG) Special Report 132: *Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the Yuba City Marysville Production Consumption Region* (1988) ("Special Report 132"). The current Western mining site is classified under the SMARA mineral resource classification scheme as a Mineral Resource Zone 2 (MRZ-2), containing significant mineral deposits. (Special Report 132, pages 8-10.)

The lands surrounding the Yuba Goldfields are zoned RR (Rural Residential) which provides for mixed agricultural, ranching and low density residential uses. To the north of Western's operations is the Yuba River which is used primarily for recreational activities such as fishing and rafting. The lands to the east of the Goldfields are vacant and are utilized for cattle grazing. The lands to the south and west of the Goldfields, and north of Hammonton-Smartville Road, support aggregate mining (by other mining companies), agricultural production and cattle grazing. Beale Air Force Base is located to the south of the Goldfields and south of Hammonton-Smartville Road (Figure 4).



Yuba County General Plan Land Uses

Western Aggregates LLC
Yuba County, California

Figure 4

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2.3 EXISTING CONDITIONS

Figure 5 is a 2010 aerial photo depicting a typical dredge field after dredge mining and prior to aggregate operations. The bucketline dredge floats on a pond created in the wake of its own dredge bucket line. The dredge leaves a series of tailings piles (sand and gravel stockpiles) behind it (labeled: dredge piles in Figure 5) that vary in height, width, and depth. These piles are deposited behind the dredge into the previous dredge path. Dredge tailings therefore are deposited behind the dredges for a vertical distance from the depth of the dredge bucket line to the height of the tailings conveyor approximately 150 to 200 feet. Approximately three-fourths of the sand and gravel lies below the water line.

Existing slope angles vary from 1 horizontal:1 vertical (1:1) to 3:1 based on the type of material in place and the previous method of excavation. Typical underwater angle of natural repose for the dredged cobble is approximately 2:1. A slope stability analysis is included as Appendix D of this Plan.

Western's operations separate fines from coarser aggregates and sand as a result of the washing and screening process. The percentage of fines separated depends on the location of mining and the quality of material. Process fines are collected in a pond where they are deposited until the pond is full. The fines are then either removed to restore the pond's capacity, or a new pond is created. The fines may be occasionally removed from the pond(s) or from process equipment as necessary to be applied as soils in revegetation or as a saleable product.

Another source of fines are isolated deposits within the old dredged materials. These are large accumulations of fines and clays randomly encountered during operations. At times, these may be excavated and stockpiled for later use in reclamation. A third source of fines is insitu soils in previously unmined areas.

2.4 WILDLIFE SPECIES AND HABITAT POTENTIAL

The area consists essentially of what originally was river bottom land. River bottom lands generally are areas where rivers at one time flowed or regularly flooded before carving out new channels as climatic conditions changed or earth movement altered the topography. Some bottom lands are quite sandy while others consist of deposits of rocks or mixtures of rocks, sand or various soils that may have accumulated over thousands of years.

Different wildlife species typically are found in different vegetation communities. The following are Characteristics of Specific Vegetation Communities potentially found in the area:

Dredge Fields

Dredge fields, consist of barren sand and gravel piles to sand and gravel covered with a layer of silt and naturally revegetated with grasses. Some of the sand and gravel piles have been broadcast seeded with grasses. In the valleys created at the mound interface between these piles, silts and sediments have collected at various elevations above the water table. These areas have developed into ponds and woodlands supporting vegetation and wildlife. These islands of habitat are separated by the cobble tailings piles. These may vary in area from less than an acre to many

Typical Existing Conditions

Western Aggregates LLC
Yuba County, California

Figure 5

Existing conditions typical of the Goldfields operations

Existing conditions typically consist of sand and gravel stockpiles as a product of earlier gold dredging. Dredge piles consist of sand, and gravel with varying degrees of natural vegetation by grasses. Some pile areas have been seeded by Cal Sierra. The dredge piles border small valleys that have varying degrees of silts.

N
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Feet
Source: Lilburn Corp., 05/2010 (TAG)
Aerial: Late 2009
LILBURN CORPORATION

acres. Most are linear in orientation. These features occur throughout the dredge field existing in various states of vegetative growth and habitat development.

Annual Grasslands

Annual grassland is an herbaceous community dominated by non-native annual grasses and forbs. Annual grasses provide foraging areas and cover for many common wildlife species.

Ponds

Ponds provide potential habitat for amphibians, warmwater fish, and waterfowl. A perimeter band of riparian vegetation provides potential habitat for birds and mammals, including song sparrows, morning doves, Virginia opossums, raccoons, and striped skunks.

Valley Oaks

Valley oaks provide shade, shelter, nesting opportunities, and forage for many wildlife species.

Agricultural Lands

Irrigated rice fields in the Central Valley provided habitat for a wide variety of wildlife species, with the greatest benefit to bird species, including waterfowl, wading birds, and shorebirds. The rice fields provide forage to grain-eating birds such as ring-necked pheasant, California quail, morning dove, and migrating waterfowl.

Harvested rice fields are the primary agricultural land used by migrating waterfowl in the Central Valley (U.S. Bureau of Reclamation 1993). Use of the rice fields by waterfowl is highest beginning in late August when Ross's geese, Canada geese, tundra swans, and greater white-fronted geese begin wintering in Sacramento Valley. In the winter after the rice is harvested, many species of waterfowl remain to feed on the abundant waste grain in the fields.

Orchards

Orchards provide limited opportunities for wildlife because they lack plant species diversity. The trees in an orchard provide some nesting and roosting opportunities for common bird species, and the annual grassland understory provides additional cover and foraging opportunities.

Of the wildlife habitats present in the valley, the Yuba Goldfields are dominated by dredge fields, annual grasslands and ponds.

2.5 SURFACE DRAINAGE AND GROUNDWATER CHARACTERISTICS

Groundwater level at the site has fluctuated an average of 8.6 feet between 1998 and 2002 (Appendix A). The average water elevation during that period was 88.7 feet above mean sea level **("**msl**")**. Surface elevations have been recorded as low as 81 feet above msl. For purposes of this report the average lake surface level was set at 80 feet above msl. The reference elevation for the site is located at latitude N39° 13' 07", longitude W121° 27' 19" at 1,864.6 feet National Geodetic Vertical Datum (NGVD). This elevation will be used to establish elevations for

constructing shorelines and to correctly situate the enhanced shoreline habitat (emergent marsh) areas at the average water elevation.

On-site wells and historic dredging records are included as Appendix A to this report. Shoreline depictions in this current amended reclamation plan are based on average predicted lake elevations of 80 feet above msl.

2.6 REGIONAL AND SITE GEOLOGY

The primary soils on undisturbed lands surrounding the Goldfields are of the Wyman, Yokohl and Valdez series (Herbert and Begg, 1969). They have permeable, well-drained sandy and loamy surface horizons and occasional subsurface horizons of clay loam. The soils average 36 percent sand, 37 percent silt, and 27 percent clay and contain nutrients of calcium and magnesium.

The site includes a dredge field that has been mined extensively throughout the prior century. The surface is predominantly covered by sand and gravel dredge tailings. Geologically, gravel tailings consist of unconsolidated, well sorted, rounded pebble and cobble gravels, composed predominantly of Cretaceous granodiorite, preCretaceous diorite, and metamorphosed basalts. The tailings are generally layered, with coarser gravels at the surface and finer tailings at depth.

Tailings average about 90 feet in width. Adjacent sectors consist of fluvial deposits consisting of layers of moderately sorted, rounded, pebble and cobble gravel, of the same lithologies as gravel tailings, and sand, silt, and clay, with the sand commonly containing heavy minerals (including “black sands”), and some gold. Underlying the fluvial deposits are fine-grained lake or marine sediments of the Ione Formation, and underlying these is bedrock which, where exposed, is predominantly metabasalt and granodiorite ranging from weathered (decomposed) to hard.

3.0 MINE PLAN

3.1 SCOPE OF OPERATION

Since the early 20th Century, gold and aggregate mining, production and related operations have been continuously active on Western's 3,900-acre Vested Rights Area, as described in Section 1.0 above, as well as adjacent lands to the north subject to property interests of Western and/or Cal Sierra. Pursuant to its vested rights, Western has the right to conduct surface mining operations within the area covered by this Amended Reclamation Plan. Although production is expected to increase in response to market dynamics, total anticipated production over the next few years is estimated to be consistent with production over the previous five (5) years, which has approached, and at times exceeded, 3.5 million tons per year of sand and gravel. It is expected that in the longer term, production rates will increase substantially to meet market demand, changes in market dynamics, and/or technological improvements occurring in the due course of business. Production within this approximately 1,960-acre Amended Reclamation Plan area (*i.e.*, the area of the five lakes) is projected to take place for approximately 45 years from the date the SMGB approves this Amended Reclamation Plan. This Amended Reclamation Plan is based on mining depth anticipated to be approximately -20 below msl (100 feet below the average lake surface level). However, mining depths may vary in certain areas, and may reach -85 feet below msl (165 feet below the average lake surface level) based on local ground conditons, geology, changes in market conditions, and changes in mining technology, where such changes may be implemented without materially disrupting the shorelines, marshes, or other habitats contemplated by this Amended Reclamation Plan. (See discussion regarding changes in Section 1.1). Based on mining to a depth of -20 feet below msl (100 feet below the average lake surface level), the reserves within the area covered by this Amended Reclamation Plan are estimated at 414 million tons. However, slope stability to maximum mining depth (-85 feet below msl or 165 feet below the average lake surface level) is demonstrated by the Slope Stability Analysis attached as Appendix D.

Western's operation is currently subject to RP 80-01, which was approved by the County of Yuba in 1980, originally for Yuba Consolidated's gold and aggregate operations. Thus RP 80-01 now applies to both Western's aggregate operations, and Cal Sierra's gold operations. RP 80-01 covers approximately 2,000 acres, all of which apply to Cal Sierra's gold operations. Of the total 2,000 acres, approximately 1,420 acres apply to Western's aggregate operations, and are located in Sections 1 and 12, Township 15 North, Range 4 East, and Sections 5 and 6, Township 15 North, Range 5 East, as shown in Figure 2. Western's aggregate plant operations are currently located in Section 6. This 1,420 acre area is oriented northeast-southwest; and is within an irregularly shaped area. Much of the perimeter of the active mining area site is characterized by old dredged tailings which exist as narrow ridges separated by intervening topographic lows. Historically, most of the area has been mined with bucket-line dredges, with these areas having been dredged at least twice and in some parts of the property three to four times, each time to a greater depth with more efficient recovery equipment.

This proposed Amended Reclamation Plan covers approximately 1,960 acres of the 3,900-acre Vested Rights Area, including such portion of the 1,420 acre area within RP 80-01 as applies to aggregate operations. When approved, this Amended Reclamation Plan will supersede the 1,420-acre portion of RP 80-01 that applies to aggregate operations. However, the entire

1,960-acre area of RP 80-01 that applies to gold operations will remain valid and still intact. (See Figures 2A and 2B.)

In the southern portion of the RP 80-01 site is the Processing Plant area where Western maintains processing equipment (*i.e.*, crushers, screens, and conveyors, maintenance structures, fuel storage area, product stockpiles, etc.), a scalehouse, shop building, fuel island, administrative offices, and equipment storage. A large settling pondsituated in the central portion of the site north of the processing area (referred to in Western's Waste Discharge Requirements as a "Designated Disposal Area" or "DDA") serves as the sediment settling pond. Product stockpiles are situated adjacent to the processing area (see Figure 3).

3.2 MINERAL COMMODITY MINED

Western operates an aggregate production operation and processing plant in the Yuba Goldfields near Marysville, California (refer to Figures 2a, 2b and 3). The Yuba Goldfields have been previously mined for gold and aggregates using various mining techniques. This effort has produced a large field of dredge tails consisting of sand and gravel deposited over a ten thousand acre area adjacent to the Yuba River. Western uses dredges, draglines, excavators, and other extraction equipment in conducting its operations. Materials are crushed and sorted on site for processing into aggregate products.

3.3 ESTIMATED QUANTITIES

The reserves within the Amended Reclamation Plan area, assuming mining to a depth of approximately -20 below msl (100 feet below the average lake surface level), are estimated to be 414 million tons of aggregates. Area and volumes by individual quarries are presented in Table 1. The estimated termination date of the surface mining operations to which this Amended Reclamation Plan applies is projected to be 45 years following approval of this Amended Reclamation Plan, now estimated to be on or about December 31, 2056.

Table 1
Area and Volume by Quarry

Quarry/Lake	Area in Acres	Perimeter in Feet	Volume @ 100 Feet mcy	Reserves MT
1	494.0	21,355'	104.6	156.9
2	292.8	18,735'	45.7	68.5
3	224.1	14,962'	35.6	53.4
4	290.5	15,211'	43.4	65.1
5	300.8	14,378'	46.8	70.2
Operations Areas (Plants, Stockpiles, Settling Ponds, etc.)	238.5			
Open Area	119.4			
Total	**1960.1 ac**	**84,641'**	**276.1 mcy**	**414.1 mt**

3.4 METHOD OF EXTRACTION

Range of Excavation Methodologies

Western has employed or currently employs several methods in its production of aggregates in the Yuba Goldfields. The methods of excavation include the use of dredges, draglines, scrapers, excavators, and any other appropriate techniques to remove the resource. The following is a brief description of each.

Dredges

Dredge designs include (refer to Figures 6 and 7).

- Hydraulic – suction with or without a cutter head
- Bucket line
- Clam shell

Each of these dredge types removes, dewaters or processes the material, then places it on a conveyor or truck and/or deposits it in a process area to be collected by a scraper and/or a frontend loader. The material is then transported to the processing plant or stockpile.

Dredges require an assortment of support equipment used to level ground, move overburden, position the dredge and maintain dust control. These include dozers, loaders, scrapers, haul trucks, water trucks, graders, conveyors and work boats.

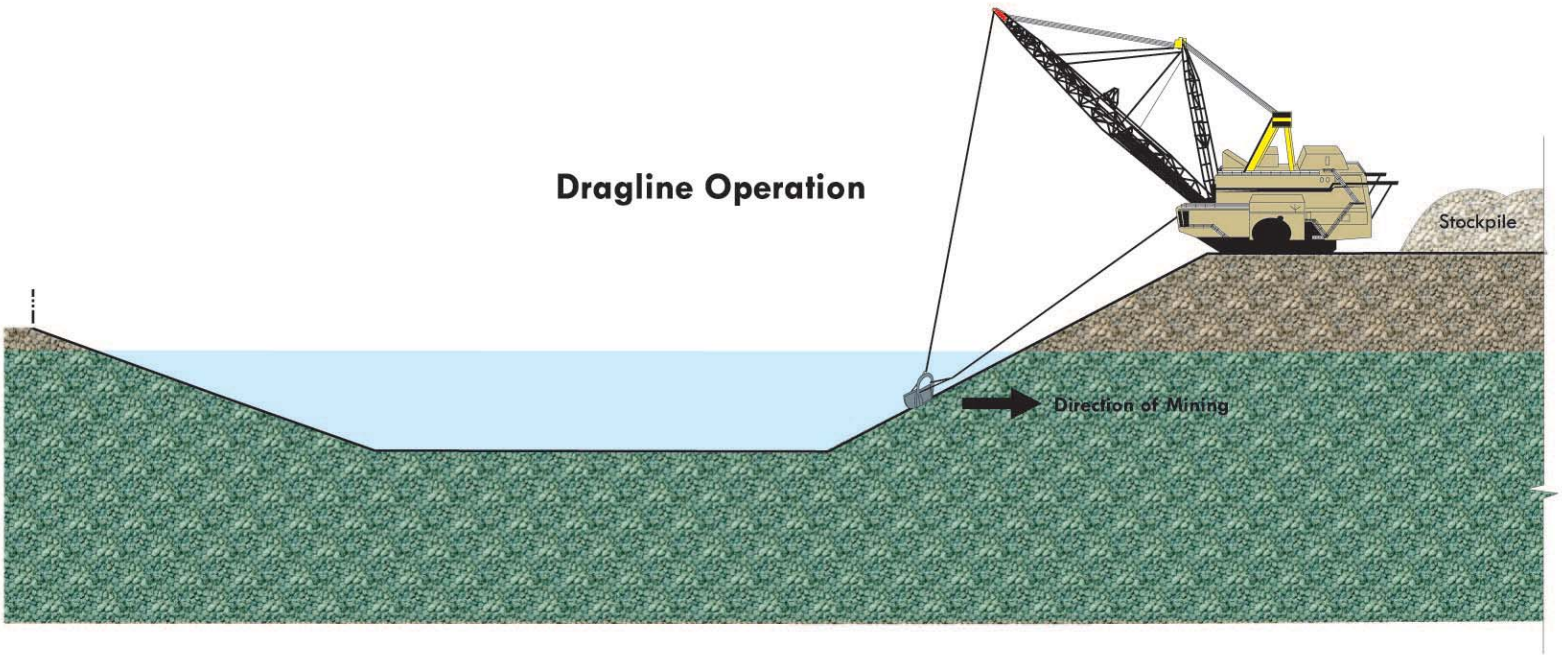
Historically, Cal Sierra has utilized bucketline dredges that harvested materials from a depth of well over 120 feet below water elevation, separated the fines and precious metals from the ore and deposited the cobble tailings in its wake via a stacker or monitor. Western retrieved those tailings from the conveyor stockpile with a backhoe or front-end loader and transported them via truck to their aggregate plant for processing (Figure 6).

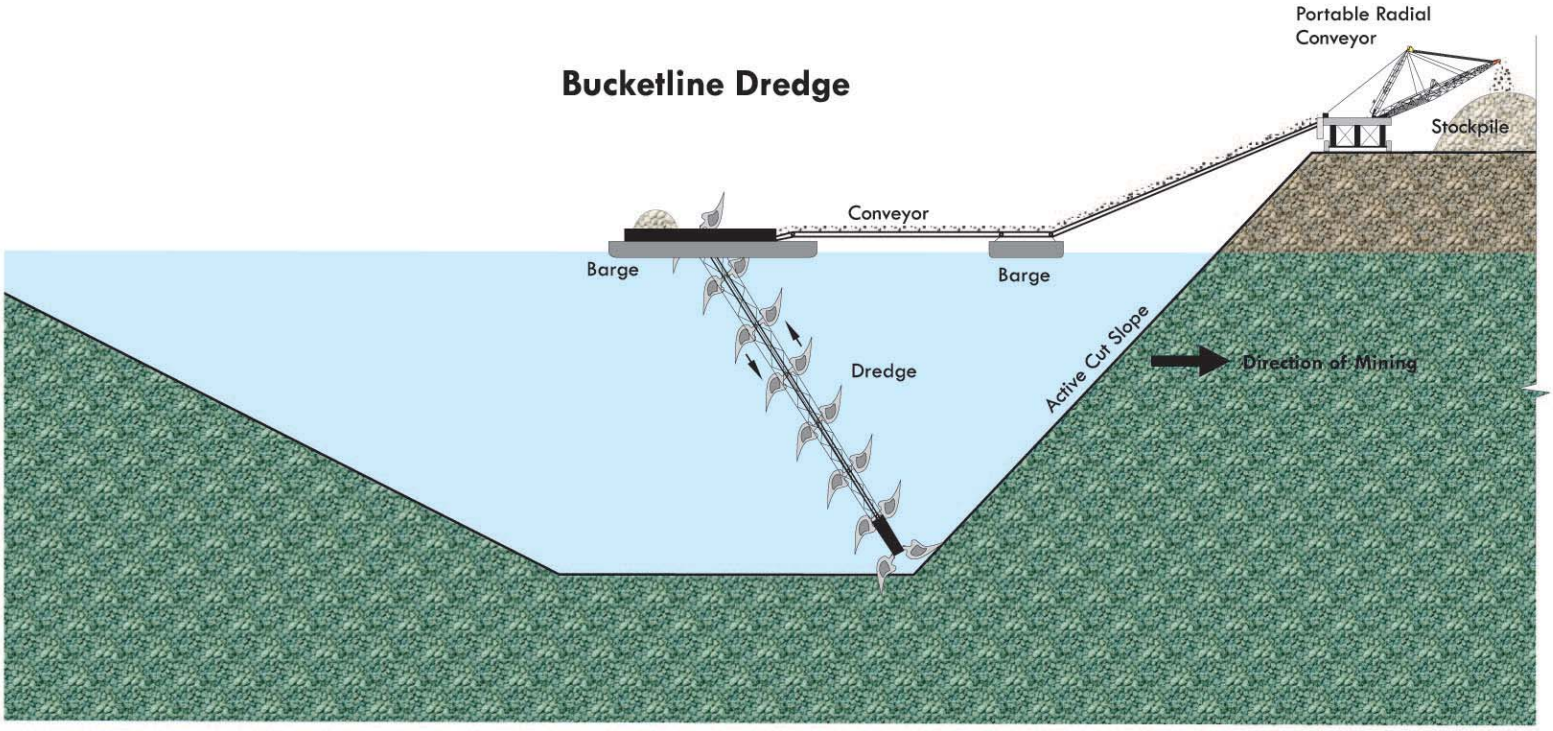
Dragline

A dragline drags a bucket across a mined surface harvesting aggregates in the process and depositing the material in a stockpile or hopper. The material is then picked up by appropriate loading equipment and placed on a conveyor or truck for transport to the processing plant. Support equipment includes dozers, loaders, scrapers, haul trucks, water trucks, graders, and conveyors (Figure 6).

Excavator

An excavator is positioned on dry land and used to excavate above and below the water level. Collateral equipment is the same as a drag scraper.





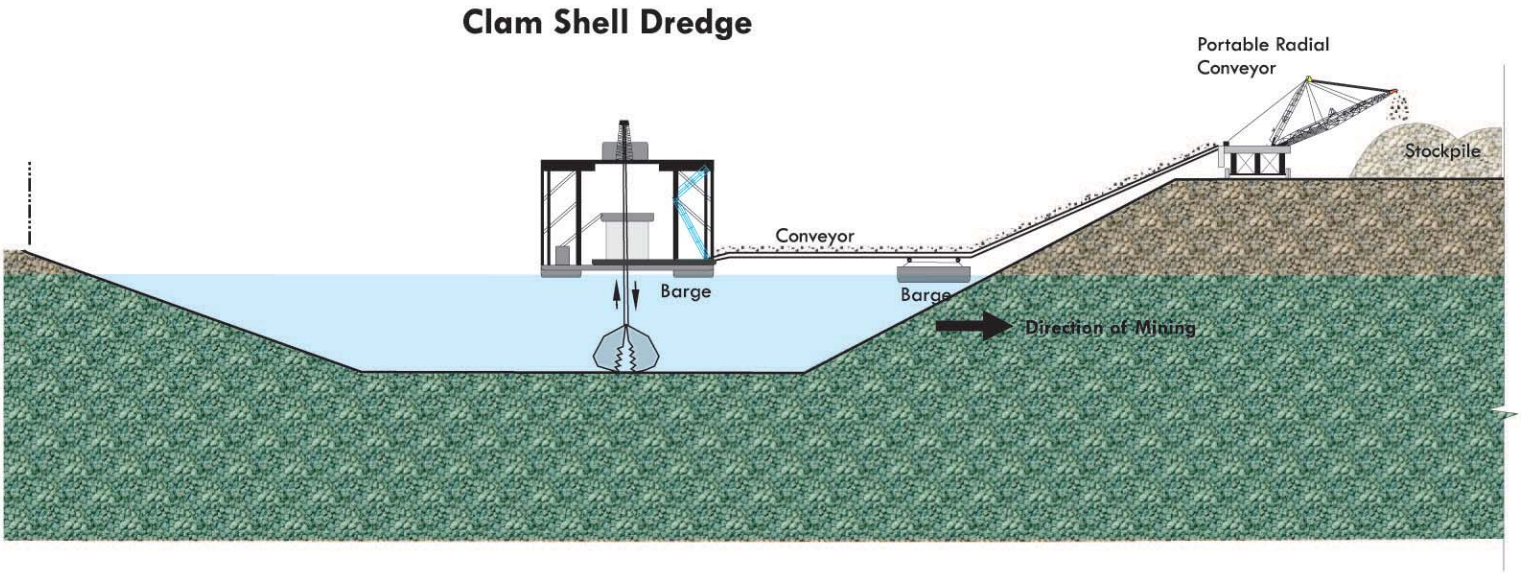
Typical Extraction Methods

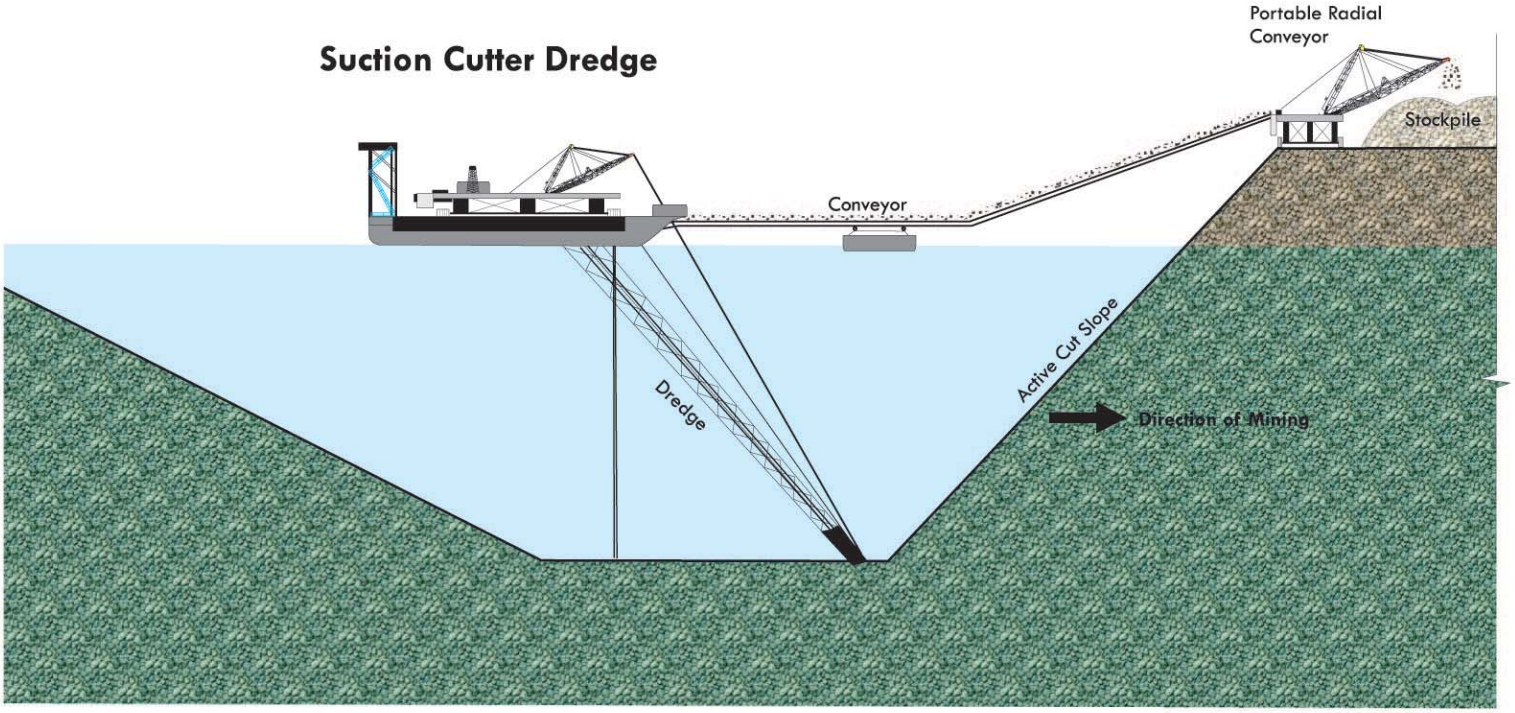
Source: Lilburn Corp., 05/2010 (TAG)

LILBURN CORPORATION

Western Aggregates LLC
Yuba County, California

Figure 6





Typical Extraction Methods

Source: Lilburn Corp., 05/2010 (TAG)

LILBURN CORPORATION

Western Aggregates LLC
Yuba County, California

Figure 7

Current Western Excavation Methodology

Western's current mining operation employs dry mining as well as a clamshell dredge to mine to the depth of existing dredged material which is typically around 85 feet below water level in its current mining area. Although the depth of mining may vary from place to place (for a discussion of mining depth, see Section 3.1), -20 feet below msl (100 feet below the average lake surface level) has been used as the approximate mining depth for purposes of this Amended Reclamation Plan due to current economic and technological conditions. Current mining employs a Rohr Clamshell dredge type RS 12.5/450B with a 16 cubic yard bucket. Excavated sand and gravel is discharged from the clamshell into a hopper that has a grizzly to prevent oversize materials and miscellaneous debris from getting into the system and damaging equipment. The sand and gravel is dewatered on the dredge by means of dewatering screen and cyclones before being conveyed by the on-board belt conveyor to a series of floating belt conveyors. These conveyors transport the material to a land conveyor and stacker that stockpiles the material over a 14' diameter tunnel with four belt feeders. These belt feeders are used to supply the existing processing plant. All equipment on board the dredge is powered and supplied by electrical cable which are supported on the floating conveyors (refer to Figure 7).

3.5 METHOD OF PROCESSING

Once the removed material reaches the plant, it is processed through a primary screen. Certain sizes of material are washed through a series of screens. Larger rock is conveyed to the crushing plant. The aggregate products are stockpiled by size for shipment.

The amount of material processed is dictated by the capacity of the crushers, screens and conveying equipment and the daily hours of operation. Site facilities also include administrative offices, scalehouse, shop, fuel island and equipment storage area. A plot plan aerial of the existing plant appears as Figure 3.

Settling Pond

The pond activities are located within the processing area and are moved as needed to accommodate operations. The processing activities separate clay or fine silt (fines) which are deposited into a settling pond (described in Western's Waste Discharge Requirements as a "DDA"). The fines settle out and the water is allowed to evaporate or recirculate into Western's plant process. The fines may be used for resoiling the site for revegetation purposes, and possibly other uses. Other uses of the fines may include sale or processing into salable products. The current settling pond is located north of the plant (see Figure 3).

3.6 TOTAL NUMBER OF ACRES TO BE DISTURBED BY SURFACE MINING

It is projected that approximately 1,960 acres of the 3,900 acre Vested Rights Area will be affected by Western's surface mining operations during the 45 year period.

3.7 PROPOSED MINE PHASING

Mine phasing will take place in a manner consistent with reclamation phasing as described in detail in Section 4.2.

3.8 DEPTH OF EXCAVATIONS

The depth of mining for the 1,960-acre area addressed by this Amended_Reclamation Plan will be approximately -20 feet below msl (100 feet below the average lake surface level) (Section 2.5) with deviations as described in Section 3.1 (Scope of Operations).

3.9 DRAINAGE EROSION CONTROL MEASURES

The Yuba Goldfields generally exhibit excessively well drained soils which prevent the development of erosional features. This is particularly true of the historic gold dredge fields. However, disturbed or altered features, graded areas, stored materials and reclaimed lake perimeters may be subject to erosion. Erosion control measures shall be implemented where erosion rills exceed five square inches in cross-section and five feet in length in areas where mining and reclamation has been completed. Erosion of these features will be treated by placing straw bales, straw rolls, or erosion control blankets as appropriate and necessary to intercept water in the features beginning at the upslope extent of the erosion feature.

When sheet erosion is present in excess of one-half inch over an area of 50 feet straw mulch will be spread at a rate of 2,000 lbs per acre.

Erosion control seed mixes will include quick sprouting commercially available non-invasive annual grasses and legumes. The performance control standard for erosion control plant mix will be 80 percent cover with no bare areas greater than five feet by five feet.

The following species are appropriate for erosion control plant mix with a minimum of four species:

Oat or wild oats	*Avena sativa, Avena fatua*	20 lbs/acre
Soft chess	*Bromus hordeaceus*	20 lbs/acre
Lana wooly pod vetch	*Vicia dasycarpa*	20 lbs/acre
Crimson clover	*Trifolium incarnatum*	20 lbs/acre
Sweetclover	*Melilotus* sp.	20 lbs/acre
Blue wild-rye	*Elymus glaucus*	5 lbs/acre
California brome	*Bromus californica*	5 lbs/acre
Lupine	*Lupinus nanus*	2 lbs/acre
Coyote brush	*Baccharis pilularis*	1 lbs/acre
Toyon	*Heteromeles arbutifolia*	2 lbs/acre

All surface drainage will be directed onto the project site.

3.10 GROUNDWATER PROTECTION MEASURES

Water used for production onsite is pumped from water supply ponds on the site. Water for dust control on the haul roads is supplied in the same manner.

The entire operation takes place in a dredged lake environment or on porous dredged tailings eliminating the need for many of the standard industry precautions for erosion. Dredge mounds consisting of sand and gravel are barren to partially vegetated where fines or silts are present. Sediment drainage is controlled onsite at all times through the placement of berms and channels. These berms and channels will be in place prior to the rainy season. Erosion control measures shall be implemented as required. The site will also be maintained in conformance with the Waste Discharge Requirements imposed by the Regional Water Quality Control Board.

The excavation and restoration methods do not require the use of toxic or hazardous substances with the sole exception of diesel fuel, oil, and lubricants required for the operation of excavators, loaders, dozers, and haul trucks, and other equipment, as well as transformer oil. The electrically-powered dredge uses only bio-degradable oils. Refueling will be performed either at the processing facility fuel island or by mobile fuel trucks. Equipment and machinery repairs requiring the use of lubricants, solvents, solutions, grease or compounds will be performed at the maintenance shops. Protection of groundwater will be assured through the following performance standards:

Performance Standards:

1. Western shall maintain the site and operations free of environmental hazards and the operator shall enforce good housekeeping standards and Best Management Practices (BMPs).
2. Western shall provide to the SMGB a copy of its Business Emergency Plan.
3. Western shall provide to the SMGB a copy of the RWQCB-issued General Activity Certificate and/or its Spill Prevention Control and Countermeasure Plan (SPCCP).

3.11 STREETS & HIGHWAYS TO BE USED BY VEHICLES ACCESSING THE SITE

Access to the site is from Hammonton Road starting at the plant entrance and extending approximately 1 mile south toward Hammonton-Smartville Road. Additional access to the Goldfields is available via Hammonton-Smartville Road to Private Road 1034 (Western access only) and Hammonton Road where it connects to Highway 20 via Timbucktoo Road to the east of the property (see Figures 2a and 2b).

3.12 ON-SITE ACCESS ROADS

Refer to Figures 2a and 2b for locations of on-site access roads associated with plant operations.

4.0 RECLAMATION PLAN

The intent of the California Surface Mining and Reclamation Act (SMARA) is to "maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that: (a) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative uses; (b) the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment; and (c) residual hazards to the public health and safety are eliminated" (Section 2712).

Article 9, Section 3700 of SMGB Reclamation Regulations states the following: "Reclamation of mined lands shall be implemented in conformance with standards in this Article (Reclamation Standards). The standards shall apply to each surface mining operation to the extent that:

(1) they are consistent with required mitigation identified in conformance with CEQA; and

(2) they are consistent with the planned or actual subsequent use or uses of the mining site."

Western proposes to reclaim the mine site to create a series of lakes varying in size. The objectives of this Reclamation Plan are to:

- Eliminate or reduce environmental impacts from mining operations;
- Reclaim to a usable condition for post-mining end uses;
- Contour mining features and revegetate disturbed areas to minimize aesthetic, biological, and hydrological impacts; and
- Reclaim the site as necessary to eliminate hazards to public health and safety.

This document employs the standards of SMARA (PRC § 2773) for both content and performance standards, including specifically Article 9 – Reclamation Standards, as contained in CCR § 3700 through 3711. Standards applicable to this application include 3702, 3704 (§§c-g), 3705, 3706, 3709, 3710 (§a), and 3711. Those standards defined as inapplicable include 3703, 3704 (§§a-b), 3704.1, 3707, 3708, 3710 (§§b-d), 3712, 3713.

Pursuant to SMARA, the SMGB, as the lead agency, has the responsibility to inspect the site annually and provide a written report to the operator and the DOC. As the site is mined and reclaimed, reports covering implementation, maintenance and monitoring of these areas will be prepared and submitted annually by Western to the SMGB and other responsible agencies.

Please refer to the Reclamation Plot Plan included on Sheets 1 and 2 with cross sections and details while reviewing this section.

4.1 PROPOSED RECLAMATION END USE

This Amended Reclamation Plan will utilize existing mining methods (described in Section 3.5) to remove dredge piles or excavate previously undredged lands in a manner supportive of aquatic and terrestrial wildlife habitat. Western has created this plan consistent with the existing vegetation and habitat characteristics and in a manner compatible with ongoing aggregate operations.

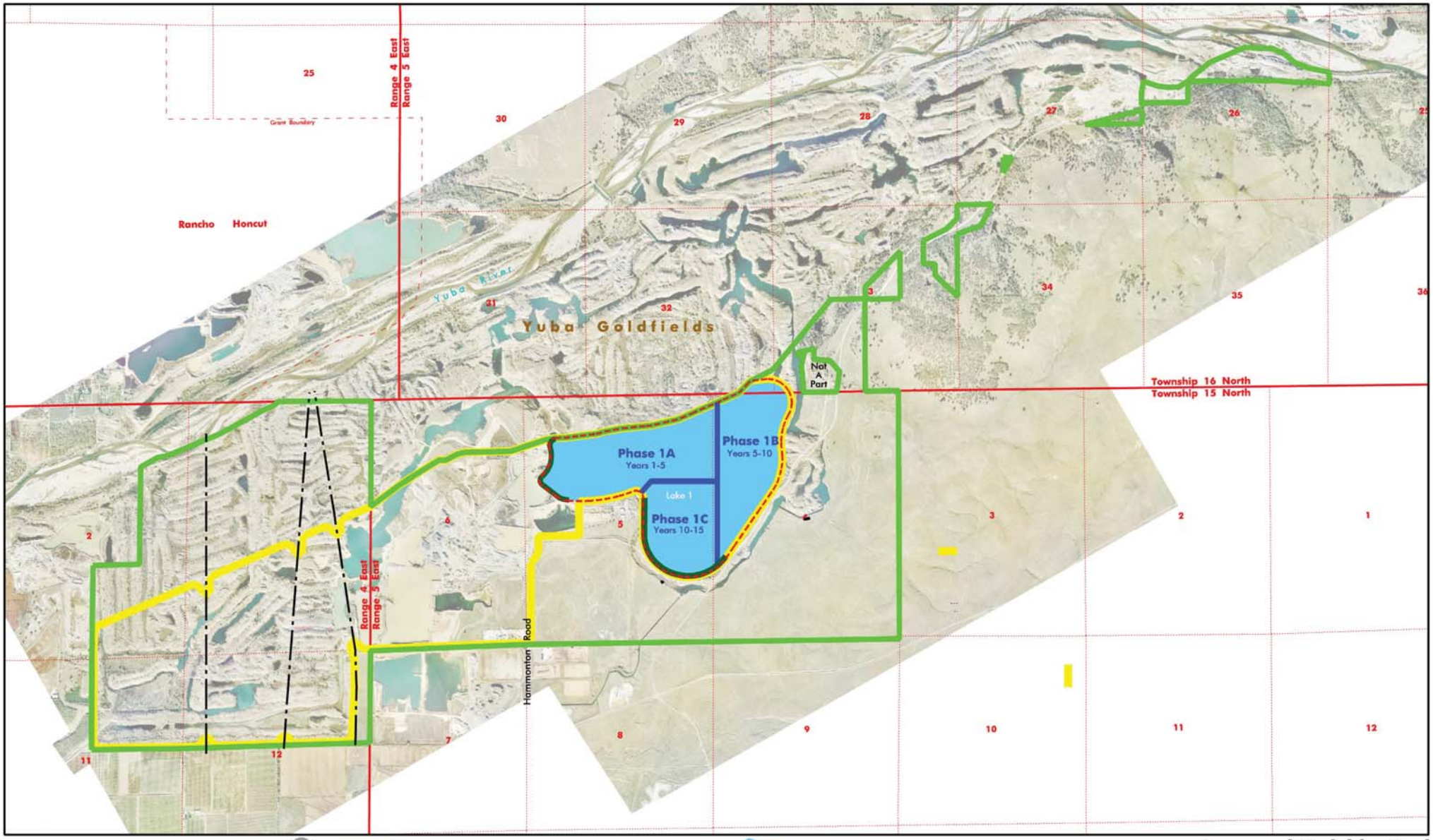
Western plans to remove aggregates to a depth of approximately -20 feet below msl (100 feet below the average lake surface level) over an approximately 1,960-acre area , during a phased 45 year surface mining operation, creating a series of 5 discrete lakes bordered by vegetated woodlands and dikes or berms. These lakes will establish permanent shoreline. The area covered by the Amended Reclamation Plan is described in Figures 8a-8c. Figures 8a-8c depict utility easements, natural and manmade lake boundaries and individual lakes, numbered 1 through 5 for reference.

Lake depth will vary with location due to aggregate quality and demand, but would range between approximately 85 to 100 feet. The angle of repose or shoreline would also vary from 2:1 to 4:1 to create diverse habitats including beaches and shallows for wildlife and vegetation enhancement. The contouring of the shoreline will be completed concurrent with operations in a manner to provide the optimum habitat value. A slope stability report prepared in support of operation and reclamation angle appears in Appendix D of this Plan. In the event that field observations indicate that strength parameters used in the design of the mined slopes are not adequate, the slopes will be inspected and reanalyzed by a registered professional engineer or geologist and modified as necessary to provide a factor of safety suitable for the proposed end use and the reclamation plan amended as may be required prior to implementing any such modifications.

Western will create lakes with irregular, meandering shorelines to support wildlife habitat and vegetation. In the event that large deposits of silts are encountered in the mining process, they may be retained and used in reclamation efforts. Three types of vegetative communities are proposed. These are described in Section 4.4.2.

The final result within the Amended Reclamation Plan boundary will be a series of 5 lakes varying in size. A simulation of the lake configuration appears in Figures 8a through 8c, graphic simulations of a reclaimed lakeshore environment appears in Figures 9 (before) and 10 (after). Figure 9 depicts the actual existing conditions of an inplace dredge pile naturally revegetated with grasses. The process will ultimately result in a series of lakes similar to the configuration depicted in Figures 8a-8c. The boundary lines shown on the reclamation plan's aerial photograph exhibits representing Section lines were compiled from record information and USGS Quadrangle Maps, and thus are approximate. An in-field survey may result in slightly differing boundary locations from those depicted on the exhibits.

The final anticipated end use following reclamation is open space and wildlife habitat consisting of aquatic lake, marsh , woodland and upland habitat.



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1250 0 1250 2500

Scale: 1 inch = 2500 feet

Map Prepared By: Lilburn Corporation 03/2011
Aerial: Stewart, 12-22-2009
Boundary: Mackay & Somps: 2010

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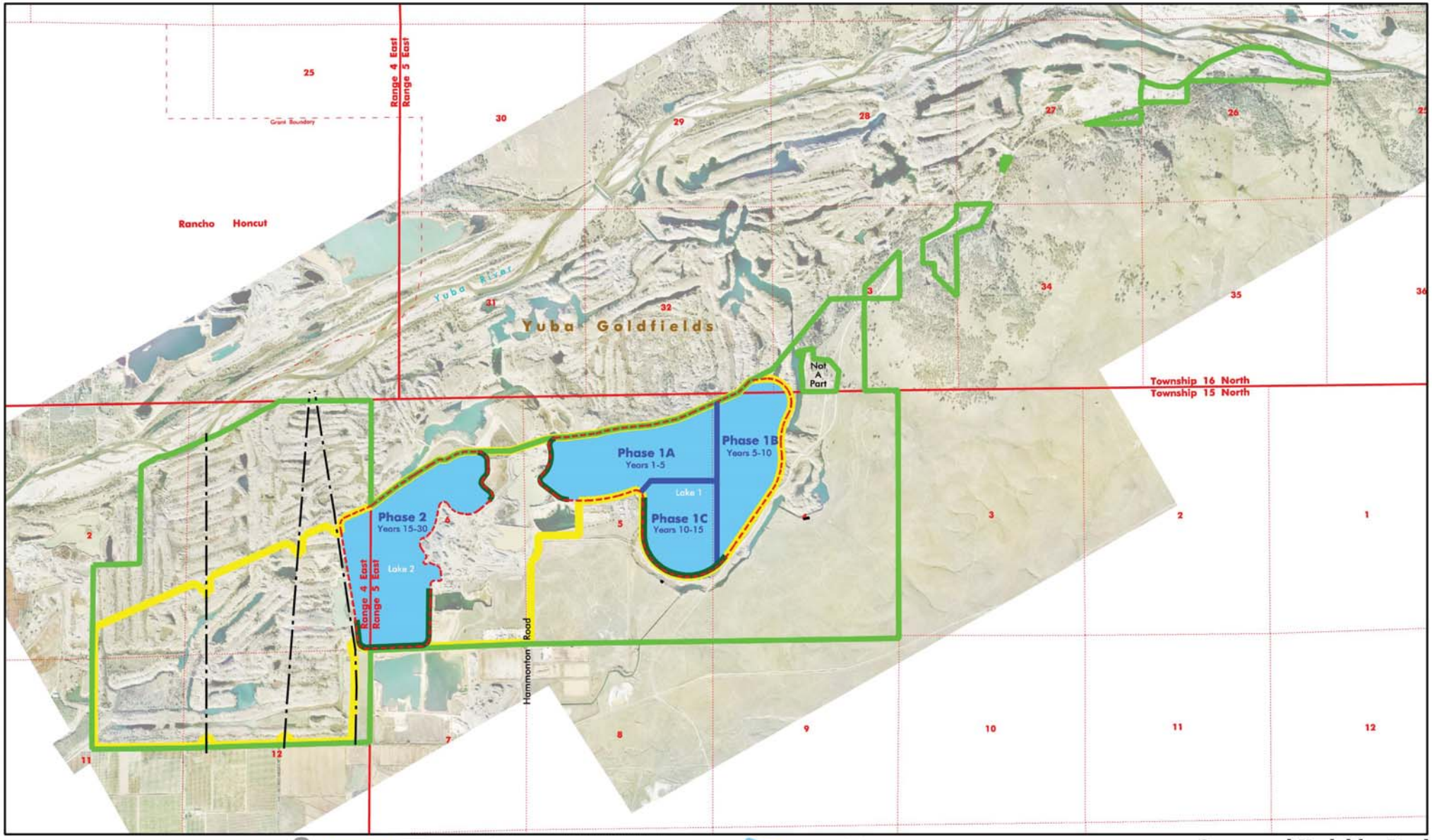
LEGEND

- Vested Rights Boundary
- Amended Reclamation Plan Boundary and Operating Area for Aggregates
- Amended Reclamation Phase Boundary
- USGS Section Lines
- Proposed Lakes
- Extent of 4:1 Slope for Emergent Marsh Habitat
- Utility Easement with Towers

Conceptual Model for Final Reclaimed Configuration after 15 Years

Western Aggregates LLC
Yuba County, California

Figure 8A



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Scale: 1 inch = 2500 feet

Map Prepared By: Lilburn Corporation 03/2011
Aerial: Stewart, 12-22-2009
Boundary: Mackay & Somps: 2010

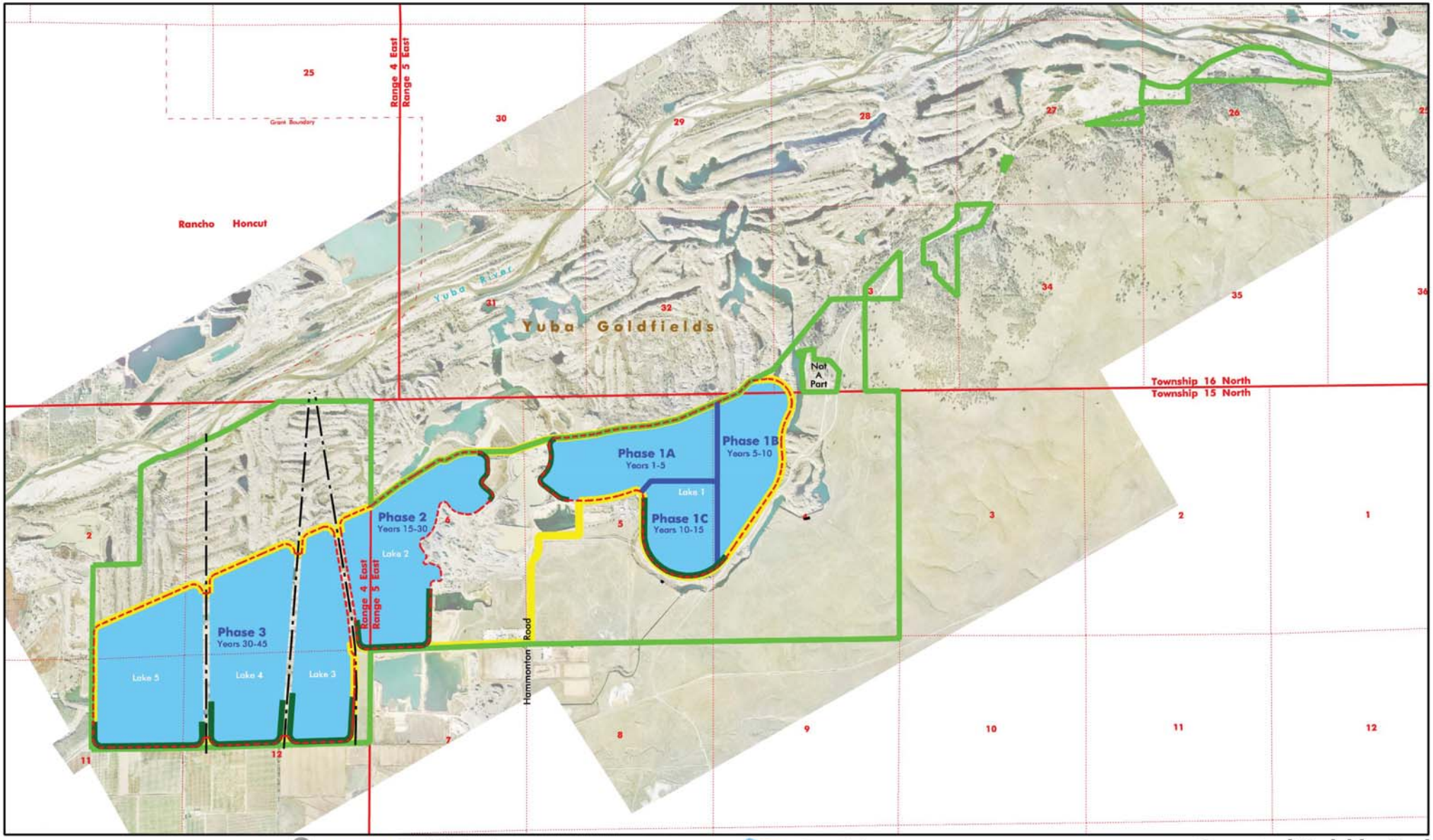
LEGEND

- Vested Rights Boundary
- Amended Reclamation Plan Boundary and Operating Area for Aggregates
- Amended Reclamation Phase Boundary
- USGS Section Lines
- Proposed Lakes
- Extent of 4:1 Slope for Emergent Marsh Habitat
- Utility Easement with Towers

Conceptual Model for Final Reclaimed Configuration after 30 Years

Western Aggregates LLC
Yuba County, California

Figure 8B



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Scale: 1 inch = 2500 feet

Map Prepared By: Lilburn Corporation 03/2011
Aerial: Stewart, 12-22-2009
Boundary: Mackay & Somps: 2010

LILBURN CORPORATION

LEGEND

- Vested Rights Boundary
- Amended Reclamation Plan Boundary and Operating Area for Aggregates
- Amended Reclamation Phase Boundary
- USGS Section Lines
- Proposed Lakes
- Extent of 4:1 Slope for Emergent Marsh Habitat
- Utility Easement with Towers

Conceptual Model for Final Reclaimed Configuration after 45 Years

Western Aggregates LLC
Yuba County, California

Figure 8C

Existing Cobble Berm

Western Aggregates LLC
Yuba County, California

Figure 9

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Lake Boundary Simulation

Western Aggregates LLC
Yuba County, California

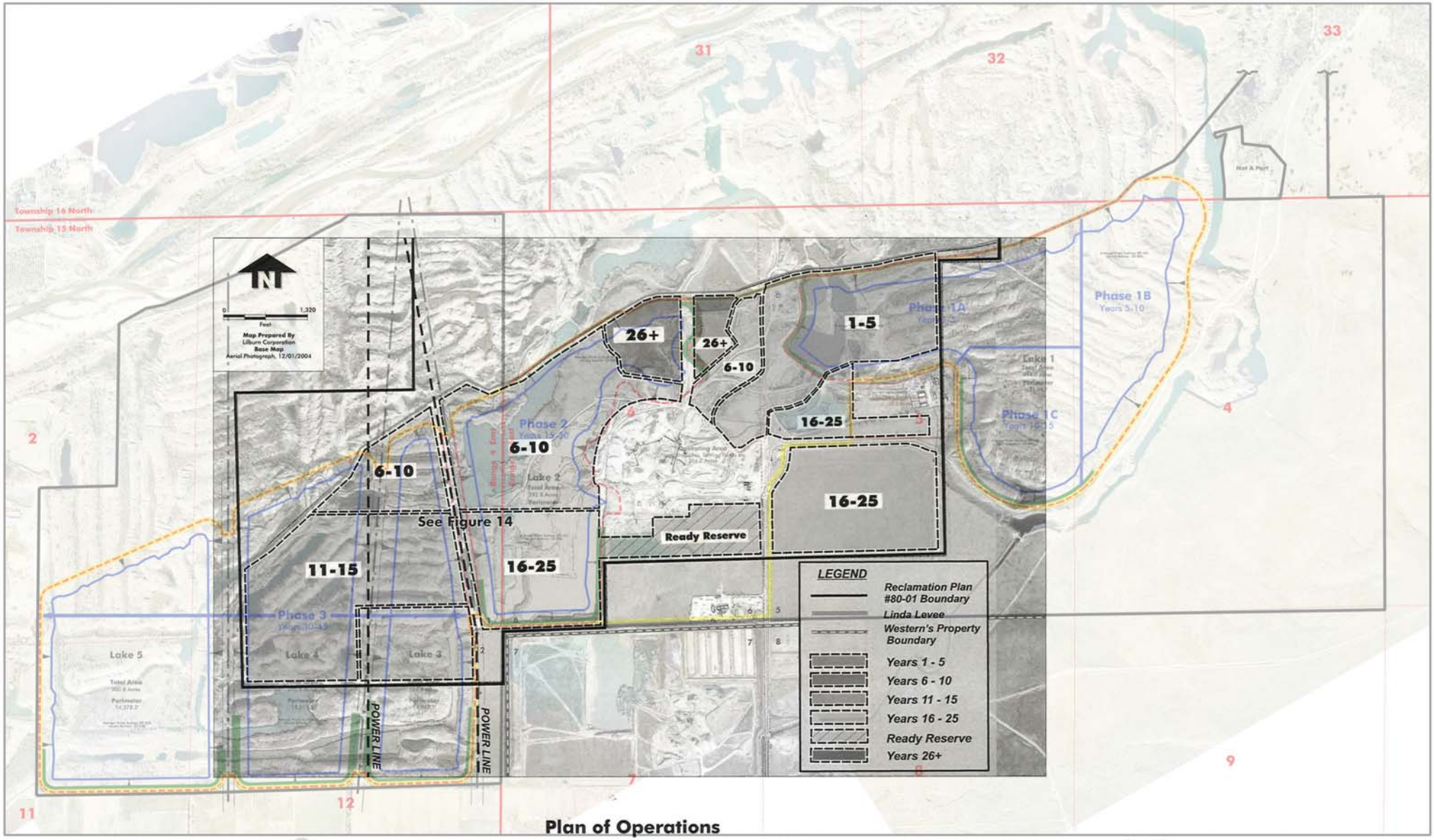
Figure 10

4.2 RECLAMATION PHASING

Aggregate operations will occur in 3 fifteen-year phases according to an aggregate phasing plan developed by Western as described below. Western currently estimates that the average number of acres on which it will conduct surface mining operations in any one year during the life of this Amended Reclamation Plan will be approximately 35 acres and that it will mine to an anticipated depth of -20 below msl (100 feet below the average lake surface level). However, as noted above, and due to the long life of the operations, the number of acres affected and the depth of mining could change as a consequence of changed market conditions, or changes in mining technology. (See discussion of mining depth in Section 3.1.) A projected plan for aggregate removal advancement developed for planning purposes is depicted in Figure 11 outlining operations for the next fifteen (15) years. For planning purposes, approximate potential future phases are also identified for years 16-30 and 31-45 (Figures 8a-8c). A total of approximately 1,960 acres of the Yuba Goldfields would be affected within the 45 year period of surface mining operations. These operations would involve removing sand and gravel to an initial depth of -20 feet below msl (100 feet below the average lake surface level) within the 5 planned lakes. The projected reserves are based on existing plant processing limitations and the wide variations in the aggregate layers re-deposited by the gold mining. Changes to any of these factors could decrease or accelerate the projected annual operations, as could changes in demand.

Figure 11 provides a plot plan for excavation phasing with a corresponding cross-section in Figure 12. The shoreline will be revegetated using the seed and plant mixes outlined in Section 4.4 of the Amended Reclamation Plan. Subject to the other provisions of this Section once established, it is contemplated that during the life of this Amended Reclamation Plan this shoreline will be unaltered by future Western operations (excluding access roads) which will gradually move away from the permanent shore. Figure 13 provides an oblique simulation of the final lake configuration. Figures 6 and 7 illustrate the methods of extraction and equipment types. Phases may vary in size, depth and location. At a time specified by the SMARA Lead Agency, but not less than two years prior to completion of a 15 year phase, Western will submit to the Lead Agency, an updated 15 year phasing map reflecting any reclaimed areas and a detailed anticipated phasing scenario for the next 15 years at the same level of detail as the current phasing information. Such phasing map may reconfigure the size and location of the mining during the phases, but shall be consistent with the reclamation standards and phasing concepts set forth in this Amended Reclamation Plan. In addition, to the extent warranted by market conditions, site geology or other factors, Western in its discretion may complete, or otherwise discontinue mining in, a particular phase in a time period of less than five years. Under such circumstances, prior to the completion of the abbreviated phase Western shall submit to the SMARA lead agency an updated 15-year phasing map reflecting reclaimed areas and a detailed map of the next 15 years at the same level of detail as the current phasing information.

Western would begin final reclamation activities necessary to establish the surface features proposed in the plan concurrent with final aggregate removal by phase, including any areas subject to phases of less than fifteen years. Newly created slopes will not exceed 2:1 horizontal to vertical. Approximately 25 percent of the reclaimed lake perimeter will be mined at a 4:1 slope extending approximately 25 feet landward from the average low-water mark of 80-feet above msl. These slopes will be subject to partial inundation by water, one foot at the lowest level and no more than 6 feet of water at the highest lake level. These slopes will be reclaimed into emergent marsh (see Section 4.4.2 Revegetation). Following slope creation, revegetation associated with lake perimeters will be initiated. All temporary roads utilized only for mining



Plan of Operations

Western Aggregates LLC
Yuba County, California

Figure 14

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750 0 750

Scale: 1 inch = 1500 feet

Map Prepared By: Lilburn Corporation 03/2011
Aerial: Stewart, 12-22-2009
Boundary: Mecker & Sampo: 2010

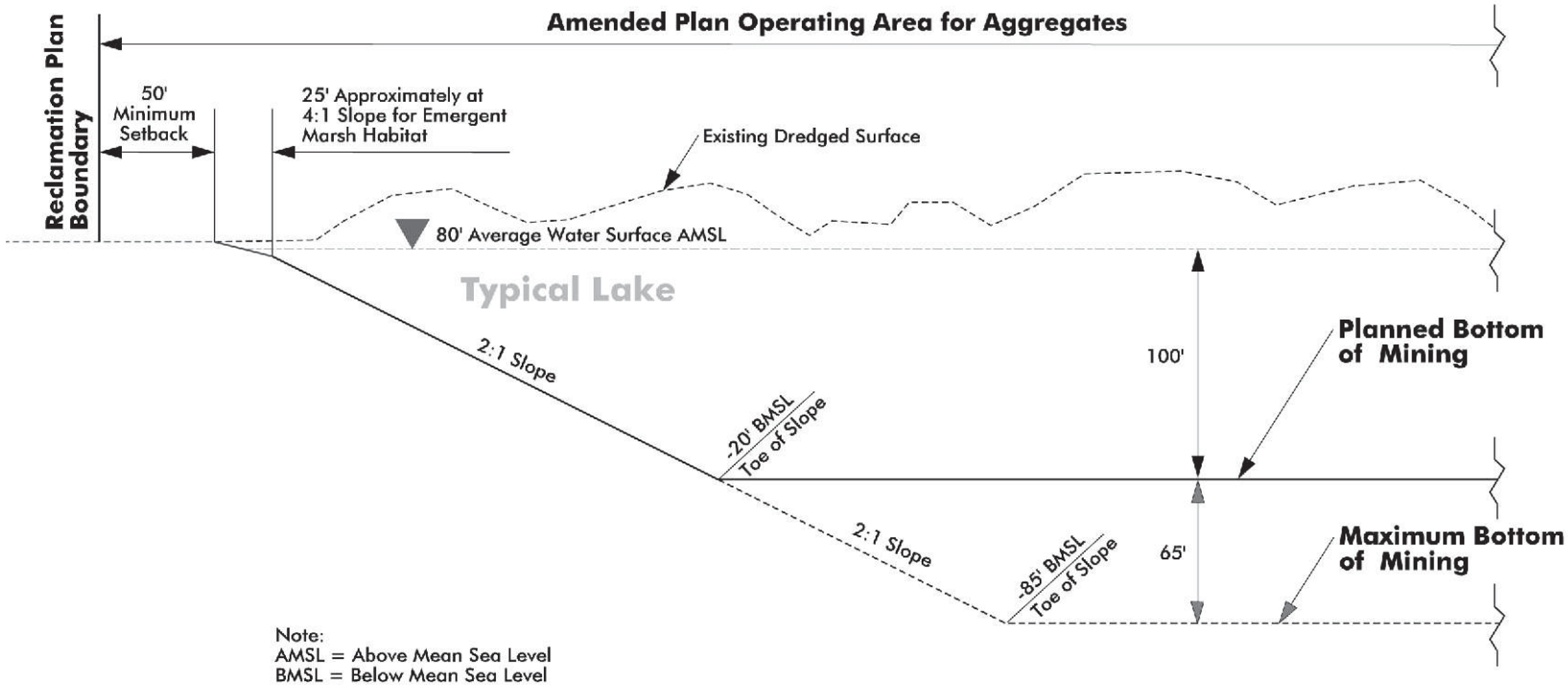
LEGEND

- Vested Rights Boundary
- Amended Reclamation Plan Boundary and Operating Area for Aggregates
- Amended Reclamation Area and Phase Boundary
- USGS Section Lines
- Extent of 4:1 Slope for Emergent Marsh Habitat
- Utility Easement with Towers
- Toe of Slope for Amended Proposed Reclamation Plan Operating Area for Aggregates
- Slope Indicator Top of slope
- Toe of slope
- Power Line Easement

Phasing Plan

Western Aggregates LLC
Yuba County, California

Figure 11



Typical Mining Cross Section

Western Aggregates LLC
Yuba County, California

Figure 12

Source: Lilburn Corp., 12/2011 (TAG)

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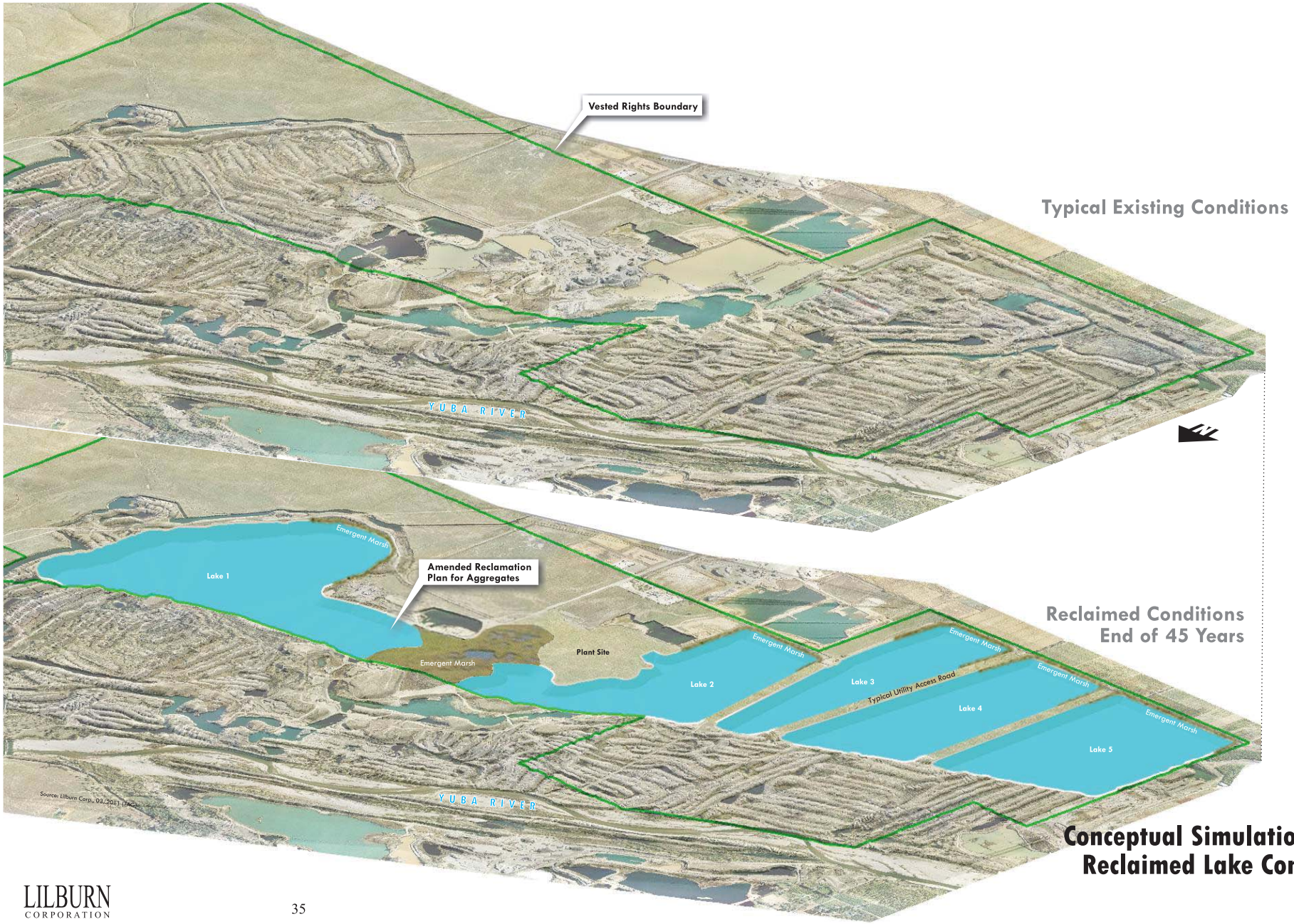


Conceptual Simulation for Final Reclaimed Lake Configuration

Western Aggregates LLC
Yuba County, California

Figure 13

LILBURN CORPORATION

operations will be decompacted and revegetated or mined through and reclaimed as part of a lake. Roads to be retained for access or revegetation efforts shall be identified on the 15-year phase maps. A typical cross-section of lake perimeters is shown in Figure 14.

Western shall utilize fines available from mining operations, including residual dredge fines, fines from the settling pond(s), and overburden, to meet the revegetation requirements of Section 4.4. In addition, Western shall also utilize said fines to meet the following revegetation requirement: spreading a layer of fines to cover cobbles and provide an adequate rooting zone for revegetation.

Commercially available broadcast seeding would be applied to these areas for erosion control purposes (see Section 3.9) and to enhance natural revegetation. No off-site import of fines will occur. In areas where topsoils will be disturbed, the soil will be salvaged and stockpiled for use in revegetation to the extent necessary. Western may re-enter an area covered by a prior mining phase and subsequently mine to a greater depth in the lake portion of the phased area. However, to the extent possible given operational constraints, such mining in prior mining phases will not adversely affect any revegetation areas created pursuant to the Amended Reclamation Plan. To the extent it is necessary for Western to impact any such revegetation areas, Western shall restore any such impacted areas to the condition prior to being impacted. This may include breaching lake perimeters in order to relocate dredging equipment. These perimeter breaches will be restored upon reclamation.

Western anticipates that mining will continue in the Vested Rights Area beyond the 45 year phased plan proposed herein due to the extensive amount of aggregate within the Vested Rights Area and the anticipated and projected market for aggregate resources, and may include continued mining in areas addressed by this Amended Reclamation Plan. Western anticipates the plant site will retain its usefulness and viability beyond the fifteen-year phases. Upon final completion of mining the plant will be razed and all equipment will be dismantled and removed. Foundations will be broken, crushed and recycled into aggregates or deposited on the site as infill. Roads and utilities exclusive to the plant operations will be removed. Surfaces will be cleared and scarified prior to revegetation. Appropriate revegetation per Section 4.2.2 will then be applied to the plant footprint.

4.3 DISPOSAL OF MINE WASTE

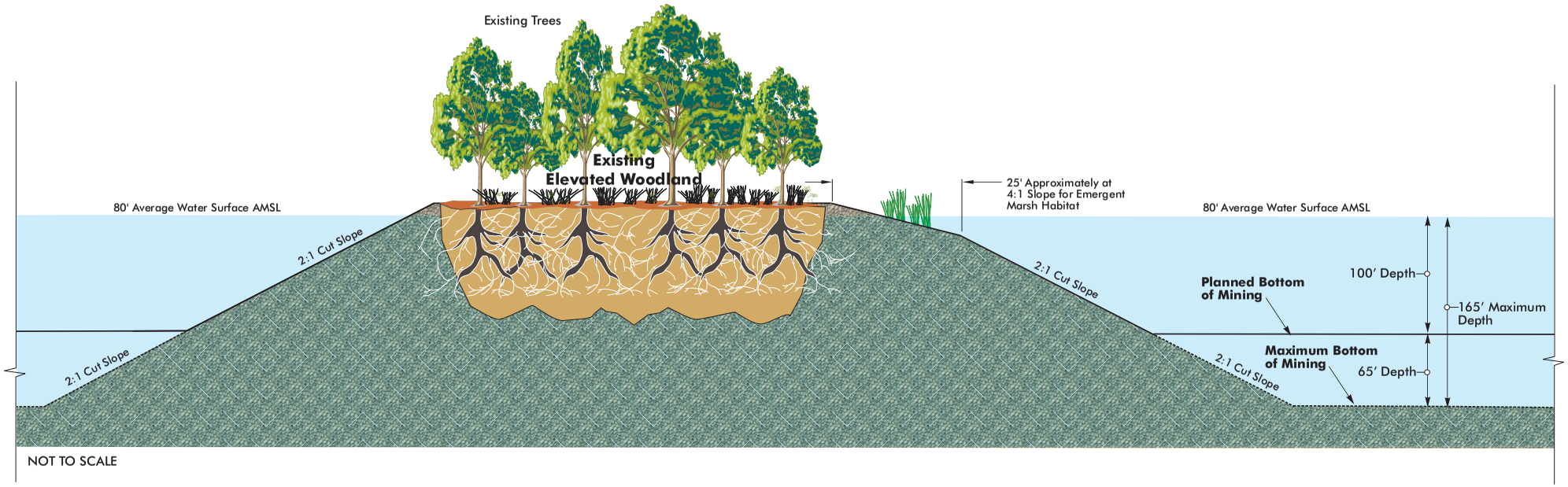
Mine waste, consisting of earthen fines material, will be retained on-site to the extent necessary for final reclamation.

4.4 RECLAMATION STANDARDS

Details of the planned revegetation of the site are included in the “Revegetation Plan” in Appendix B and are summarized below.

4.4.1 Handling of Salvaged Surface Material/Disposition of Equipment

Upon final reclamation in any phase, all structures and equipment specific to aggregate mining and under the control of Western Aggregates will be dismantled and removed from the site covered by that phase (subject to re-entering the site covered by a phase to mine to a greater



Typical Post Mining Cross Section

Western Aggregates LLC
Yuba County, California

Figure 14

Source: Lilburn Corp., 12/2011 (TAG)

LILBURN
CORPORATION

depth, as described in Section 4.2). Any concrete foundations will be broken up and recycled or properly disposed of. Processing areas, stockpiles areas, and areas where structures were located will be decompacted and revegetated.

Monitoring wells and water wells will be abandoned in accordance with applicable local ordinances and standards.

4.4.2 Revegetation

Western will conduct revegetation with commercially available species concentrating on three vegetation types.

Emergent Marsh

Emergent marsh will consist of approximately 4 miles of shoreline over 25 feet in width of 4:1 sloped bench resulting in approximately 12 acres of emergent marsh. The settling pond area (DDA), see Figure 8a-8c, reclaimed to a vegetative state may also contribute to the total planned revegetration. Vegetation in this community is present where surface water persists and is at least occasionally inundated. Water depths typically range from 0 to 4 feet. Approximately 6 inches of process fines will be deposited on these 4:1 slopes.

Planting will occur to establish revegetation and habitat diversity. Planting specifications for the emergent marsh community are:

EMERGENT MARSH			
Species	**Common Name**	**Propagule Type**	**Quantity[1]**
Carex nebrascensis	Nebraska sedge	Plug	200
Cyperus eragrostis	Nut sedge	Plug	150
Eleocharis macrostachya	Pale Spikerush	Plug	150
Juncus balticus	Baltic rush	Plug	200
Juncus effusuf	Soft rush	Plug	200
Sciurpus actus var. *occidentalis*	Hard-stemmed rush	Plug	300

[1]Amount or number per acre

Riparian Woodland

The riparian woodland represents the transition area between the emergent marsh and riparian upland. The development of this area would be accomplished by spreading fines to a minimum depth of four inches. Plants tolerant of saturated soils and occasional inundation are characteristic in this community.

Planting specifications for riparian woodland are:

RIPARIAN WOODLAND			
Species	**Common Name**	**Propagule Type**	**Quantity[1]**
Acer negundo var. *californica*	California box elder	Seedling	20
Alnus rhobifolia	White alder	Seedling	20
Cephalanthus occidentalis	California button bush	Seedling	30
Fraxinus latifolia	Oregon ash	Seedling	20
Platnus racemosa	California sycamore	Seedling	20
Populus fremontii	Fremont cottonwood	Cuttings	30
Rosa californica	California wild rose	Seedling	30
Salix laevigata	Red willow	Cuttings	30
Salix lasiolepis	Arroyo willow	Cuttings	30
Muhlembergia rigens	Deer grass	Plug	100
Leymus triticoides	Creeping wildrye	Seed[2]	10

[1]Amount or number per acre
[2]Pound per acre pure live seed (PLS)

Riparian Upland

The riparian upland habitat consists of the constructed slopes, roadways and lake boundaries that form the perimeters of the portions of the revegetated shoreline. The total area is unknown due to the phased nature of the lake designs. Elevations will range from 5 to 20 feet above the average lake level. Vegetation in this area is typically represented by relatively drought-tolerant riparian species.

Planting specifications for riparian upland are:

RIPARIAN UPLAND			
Species	**Common Name**	**Propagule Type**	**Quantity[1]**
Aesculus californica	California buckeye	Seedling	15
Baccharis pilularis	Coyote brush	Seedling	20
Ceanothus cuneatus	Buckbrush	Seedling	25
Heteromeles arbutifolia	Toyon	Seedling	20
Pinus sabiniana	Gray pine	Seedling	15
Quercus douglasii	Blue oak	Seedling/acorns[2]	25
Quercus lobata	Valley oak	Seedling/acorns[2]	20
Quercus wisllizenii	Interior live oak	Seedling/acorns[2]	20
Rhamnus tomentella	Hoary coffeeberry	Seedling	25
Achillea millefolium	Yarrow	Seed[3]	2
Poa secunda	Blue grass	Seed[3]	3
Elymus glaucus	Blue wildrye	Seed[3]	5
Eriogonum nudum	Naked buckwheat	Seed[3]	2
Leymus triticoides	Creeping wildrye	Seed[3]	3
Lupinus microcarpus	Chick lupine	Seed[3]	3
Nasella pulchra	Purple needlegrass	Seed[3]	3

[1]Amount or number per acre
[2]Three acorns per planting hole (e.g. *Q. douglasii*; 3 x 25 = 75 acorns/acre)
[3]Pound per acre pure live seed (PLS)

Planting Methods

Planting of commercially available species will be conducted in the fall following the first soaking rain of the season. Planting may include broadcast seeding followed by hand racking or a harrow in upland areas. Typical soil surface will consist of a minimum of four inches of fines. Willow and cottonwood cuttings will consist of live dormant stems placed in contact with saturated soils. Upon placement these will be hand irrigated to remove air pockets in the stem section. Trees will be placed in 3 x 3 x 3 foot excavated holes backfilled with fines and surrounded by an irrigation berm. Supplemental irrigation of upland seeding species will be provided by hand as needed for up to two years.

In areas that are compacted from previous use like roadways stockpiles or production areas and subsequently abandoned the surface will be scarified to a depth of at least 18 inches prior to soiling with fines and planting.

4.4.3 Revegetation Goals and Performance Standards

Performance goals for final revegetation are as follows:

Emergent Marsh:	80 percent cover	
	Species Richness:	5-native emergent species/200m^2
Riparian Woodland:	70 percent cover	
	Species Richness:	8-native species/acre
	Density:	150 native trees and shrubs/acre
		60 Deer grass/acre
Riparian Upland:	60 percent Absolute Cover (native woody species, grasses and forbes).	
	Species Richness:	4 native species of trees/acre
		4 native species of shrubs/acre
		3 native herbaceous perennial species/100m^2
	Density:	60 native trees/acre
		55 native shrubs/acre

Revegetation Monitoring will be conducted annually for a minimum of 5-years with at least 2-years without human intervention. Failure to achieve the performance standards at the end of the monitoring period will require remedial measures and further monitoring until the revegetation performance standards have been achieved.

Plant Protection

In order to prevent destruction of seedlings and cuttings revegetation crews will utilize various methods of protection including paper or plastic sleeves, wire guards and wire cages. Size, material and mesh will vary based on plant type, type of herbivore being targeted and proven effectiveness.

Weed Management

Weed control will be conducted by Western using a variety of methods as required including hand removal, mechanical removal, herbicides and biological predation. Annual spring monitoring will be conducted on the active mine area and the reclaimed areas. If weeds exceed 10 percent of vegetative cover in the reclaimed area weed control measures will be initiated. Weeds in operations area will be controlled if weed levels exceed non mining areas on adjacent property. Potential terrestrial species that will be monitored include:

Terrestrial	
Giant reed (*Arundo donax*)	Perennial pepperweed (*Lepidium latifolium*)
Italian thistle (*Cardus pycnocephalus*)	Purple loosestrife (*Lythrum salicaria*)
Klamath weed (*Hypericum perforatum*)	Star thistle (*Centaurea solistitialis*)
Medusahead (*Taeniantherum caput-medusae*)	Tree of heaven (*Ailanthus altissima*)
Pampas grass (*Cortaderia selloana*)	Tree tobacco (*Nicotiana glauca*)
White top (*Cardaria draba*)	

Potential Aquatic species include:

Aquatic	
Hydrilla (*Hydrilla verticillata*)	Water hyacinth (*Eichornia crassipes*)

Hydrilla is a CDFA A-rated noxious weed. If detected the County Agricultural commissioner will be notified. Controls will be conducted in accordance with CDFA integrated pest control branch policies and procedures.

4.5 ESTIMATE OF RECLAMATION COSTS

Refer to Appendix C, Financial Assurance.

4.6 FINANCIAL ASSURANCE

Refer to Appendix C, Financial Assurance.

5.0 CERTIFICATION

5.1 LEAD AGENCY CERTIFICATION

I, the undersigned, hereby certify that this reclamation plan complies with the applicable requirements of Articles 1 and 9 (commencing with Sections 3500 et seq. and 3700 et seq., respectively) of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations, and with the requirements of the Surface Mining and Reclamation Act, Sections 2710 et seq.

Sign this _____ day of _____, 2011

5.2 STATEMENT OF RESPONSIBILITIES

I, the undersigned, hereby agree to accept full responsibility for reclamation of all mined lands as described and submitted herein and in conformance with the applicable requirements of Articles 1 and 9 (commencing with Sections 3500 et. seq. and 3700 et. seq., respectively) of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations, the Surface Mining and Reclamation Act commencing with Section 2710 et. seq., and with any modifications requested by the administering agency as conditions of approval.

Signed this_____ day of_____, 2011

_____
Western LLC.

_____ _____
Approved
Lead Agency Representative(s) Date

6.0 LIST OF PREPARERS AND REFERENCES

Planning, Environmental, and SMARA Consultant:

Lilburn Corporation:
- Stephen T. Lilburn, Chairman, Board of Directors
- Martin R. Derus, President
- Cheryl A. Tubbs, Vice President
- Frank Amendola, Environmental Analyst
- Troy Goodwalt, Senior CADD Designer
- Mary Jones, Word Processor

CHJ Incorporated:
- Jay J. Martin, E.G. Vice President

Joseph S. Bonadiman Engineers:
- Joseph S. Bonadiman, P.E.

Jeffer, Mangels, Butler & Mitchell LLP:
- Kerry Shapiro, Partner

Western Aggregates:
- Lloyd Burns, President
- Thomas Hamp, Plant Manager

REFERENCES

Herbert, F.W. and Begg, E.L., 1969, Soils of the Yuba Area, California: U.C. Davis and County of Yuba California.

Reclamation Plan 80-01

SR 132, Mineral Land Classification, Portland Cement Concrete, Grade Aggregate in the Yuba City, Marysville Production, Consumption Region, 1988.

Surface Mining and Reclamation Act (SMARA) of 1975 and Related Statute.

Teichert Yuba Aggregate Mining Environmental Impact Report SCH 2005052136 FEIR, October, 2007.

Yuba County General Plan – Land Use, Circulation, Open Space and Conservation Elements, December, 1996.

APPENDIX A
CAL SIERRA DEVELOPMENT, INC. LETTER

CAL SIERRA DEVELOPMENT, INC.
4738 Hammonton Road•Marysville•CA•95901-9203
(530) 742-7164
fax (530) 743-6370

Western Aggregates LLC
320 First Street
Marysville, CA 95901

Attention: **Jim Liddiard**
President

Gentlemen:

The purpose of this letter is to respond to your request for documentation regarding pond water levels in the Western Aggregates' mining areas on the Yuba Goldfields property. Cal Sierra Development, Inc. has monitored the daily pond water levels in Sections 5 and 6, T15N, R5E, in connection with bucket line dredging operations between 1992 and January 2003.

Based upon our daily dredge operation reports, the average annual water level fluctuation has been approximately 6 feet, varying from about 84 feet MSL[1] to 90 feet MSL.

The following is a summary of the annual water level fluctuations from 1998 to 2002:

YEAR	WATER LEVEL FLUCTUATION (MSL)
2002	90 feet to 81 feet
2001	90 feet to 82 feet
2000	93 feet to 85 feet
1999	96 feet to 86 feet
1998	96 feet to 88 feet

Please advise if you require copies of sample dredge operating reports documenting the water level fluctuations.

Very truly yours,

CAL SIERRA DEVELOPMENT, INC.

By: Tony Massey
Tony Massey
Vice President

[1] Mean Sea Level.

APPENDIX B
REVEGETATION GUIDELINES

Revegetation

Western will conduct revegetation with commercially available species concentrating on three vegetation types.

Emergent Marsh

Emergent marsh will consist of approximately 4 miles of shoreline over 25 feet in width of 4:1 sloped bench resulting in approximately 12 acres of emergent marsh. The settling pond area (DDA), see Figure 8a-8c, reclaimed to a vegetative state may also contribute to the total planned revegetration. Vegetation in this community is present where surface water persists and is at least occasionally inundated. Water depths typically range from 0 to 4 feet. Approximately 6 inches of process fines will be deposited on these 4:1 slopes.

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[1]Amount or number per acre
[2]Pound per acre pure live seed (PLS)

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[1]Amount or number per acre
[2]Three acorns per planting hole (e.g. *Q. douglasii*; 3 x 25 = 75 acorns/acre)
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surrounded by an irrigation berm. Supplemental irrigation of upland seeding species will be provided by hand as needed for up to two years.

In areas that are compacted from previous use like roadways stockpiles or production areas and subsequently abandoned the surface will be scarified to a depth of at least 18 inches prior to soiling with fines and planting.

Revegetation Goals and Performance Standards

Performance goals for final revegetation are as follows:

Emergent Marsh:	80 percent cover	
	Species Richness:	5-native emergent species/200m^2
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Riparian Upland:	60 percent Absolute Cover (native woody species, grasses and forbes).	
	Species Richness:	4 native species of trees/acre
		4 native species of shrubs/acre
		3 native herbaceous perennial species/100m^2
	Density:	60 native trees/acre
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Revegetation Monitoring will be conducted annually for a minimum of 5-years with at least 2-years without human intervention. Failure to achieve the performance standards at the end of the monitoring period will require remedial measures and further monitoring until the revegetation performance standards have been achieved.

Plant Protection

In order to prevent destruction of seedlings and cuttings revegetation crews will utilize various methods of protection including paper or plastic sleeves, wire guards and wire cages. Size, material and mesh will vary based on plant type, type of herbivore being targeted and proven effectiveness.

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Weed control will be conducted by Western using a variety of methods as required including hand removal, mechanical removal, herbicides and biological predation. Annual spring monitoring will be conducted on the active mine area and the reclaimed areas. If weeds exceed 10 percent of vegetative cover in the reclaimed area weed control measures will be initiated.

Weeds in operations area will be controlled if weed levels exceed non mining areas on adjacent property. Potential terrestrial species that will be monitored include:

Terrestrial	
Giant reed (*Arundo donax*)	Perennial pepperweed (*Lepidium latifolium*)
Italian thistle (*Cardus pycnocephalus*)	Purple loosestrife (*Lythrum salicaria*)
Klamath weed (*Hypericum perforatum*)	Star thistle (*Centaurea solistitialis*)
Medusahead (*Taeniantherum caput-medusae*)	Tree of heaven (*Ailanthus altissima*)
Pampas grass (*Cortaderia selloana*)	Tree tobacco (*Nicotiana glauca*)
White top (*Cardaria draba*)	

Potential Aquatic species include:

Aquatic	
Hydrilla (*Hydrilla verticillata*)	Water hyacinth (*Eichornia crassipes*)

Hydrilla is a CDFA A-rated noxious weed. If detected the County Agricultural commissioner will be notified. Controls will be conducted in accordance with CDFA integrated pest control branch policies and procedures.

APPENDIX C
FINANCIAL ASSURANCES

WESTERN AGGREGATES LLC

CA MINE ID#91-58-0001

REVISED FINANCIAL ASSURANCE COST ESTIMATE

August 2010

PREPARED BY:

WESTERN AGGREGATES LLC
P.O. BOX 829
320 1st STREET
MARYSVILLE, CA. 95901

FILE: EXH10127.WAI; Rev. 2

INTRODUCTION

The Western Aggregates LLC ("Western") mining operation is located in the Yuba Goldfields in Yuba County, California. Mining operations are conducted under a vested right to mine, which was confirmed by the State Mines and Geology Board on March 11, 2010.

This Financial Assurance Cost Estimate ("FACE") is a revision of Western's 2008 FACE approved by the State Mining and Geology Board on February 5, 2010. This revised FACE has been updated to reflect changes in equipment rental rates and prevailing labor rates, as well as documenting mining and operations sites.

I. PRIMARY RECLAMATION ACTIVITIES

Description of Task:

MINING/OPERATIONS AREAS ABOVE WATER LEVEL (see Enclosure No. 1 for an aerial photograph exhibit of mining locations) : The listed locations are areas mined or disturbed independently by Western. Areas in which Cal Sierra Development, Inc. ("Cal Sierra") is currently mining or previously mined, and from which Western obtained material in conjunction with Cal Sierra's mining activities are to be reclaimed by Cal Sierra. If Western ever remines areas that have been reclaimed by Cal Sierra, Western will reclaim these areas. Surfaces of mined and disturbed areas above water level will be graded to gentle slopes of less than 2:1 with bulldozers. It is anticipated that resoiling will not be necessary due to the presence of fine sand and clay materials in the areas to be reclaimed. In the event the mined areas consist of only coarse rock and are devoid of finer materials, sand and mud tailings will be hauled from active mining areas by off road heavy haul vehicles and will be distributed over the surface to a depth of approximately four (4) inches by bulldozer or motor grader. A variety of annual grass and forbs seed will be broadcast over the areas to be reclaimed. Planting will take place in Autumn, allowing the winter rainfall to produce growth without any additional irrigation.

MINED AREAS BELOW WATER LEVEL: Areas which have been mined below water level will not be subject to any reclamation, since in similar areas previously mined, riparian vegetation as well as willow and cottonwood trees have self-vegetated along the shorelines as a natural process.

OPERATIONS LOCATIONS AND ACREAGE TO BE RECLAIMED:

OPERATIONS AREA (see Enclosure No. 1)	*ACREAGE*
#1	8.0± acres
#2	0.5± acres
#3	1.0± acres
#4	20.0± acres
#5	5.5± acres
#6	6.0± acres
#7	20.0± acres
#8	1.9+ acres
#9	23.0+ acres
#10	5.0+ acres
#11	75.0± acres
#12	20.0± acres
#13	12.5± acres
#14	7.7± acres
#15	3.1± acres
Main haul roads	4.3+ acres

TOTAL OPERATIONS AREA TO BE RECLAIMED ..... 213.5± acres

NOTE: AREA #4 consists of a large stockpile of fine materials to be used in resoiling other mining areas. AREA #9 was not previously mined and appears to have adequate fines to support revegetation without additional soil amendments, however, the cost to haul and spread fines for resoiling, if required, is included herein. AREA #11 consists of approximately 75 acres, which includes a 30± acre sediment settling pond. The settling pond contains substantial quantities of fine materials, but the remaining 45± acres of AREA #11 will require importation of 24,200 cubic yards of fine materials from AREA #4. AREA #14 consists of a temporary stockpile area of 7.7± acres that is located in the southern portion of the property extending south and east of the approved Reclamation Plan (RP 80-01) boundary. The stockpiles have been removed from this area.

RESOILING (SAND AND MUD TAILINGS):

At this time it is not known whether or not all of the mined or disturbed areas will require resoiling, due to the large amount of fine materials present. However, in the event that the entire mined and disturbed areas require resoiling (worst case scenario), as detailed below, a total of approximately 98,867 cubic yards of sand and mud tailings will be required to provide 4 inches of soil, which would be hauled to each of the sites from storage areas located at the approximate distances as noted below.

A. EQUIPMENT: A hydraulic backhoe will load off-road haul trucks with a capacity of 35 cu. yds./truckload from sediment stockpile areas to be delivered to the following locations based upon 1/2 hour round trip per truck[1] for a haul distance of 6,000 feet:

AREA #1 requires	4,305 cu. yds. to be hauled	4,000 feet =	41 hours haul truck time.
AREA #2 requires	270 cu. yds. to be hauled	1,000 feet =	2 hours haul truck time.
AREA #3 requires	540 cu. yds. to be hauled	2,000 feet =	3 hours haul truck time.
AREA #4 requires	10,755 cu. yds. to be hauled	0 feet =	0 hours haul truck time.
AREA #5 requires	2,960 cu. yds. to be hauled	1,500 feet =	11 hours haul truck time.
AREA #6 requires	3,230 cu. yds. to be hauled	2,500 feet =	20 hours haul truck time.
AREA #7 requires	10,755 cu. yds. to be hauled	4,500 feet =	116 hours haul truck time.
AREA #8 requires	1,025 cu. yds. to be hauled	6,000 feet =	15 hours haul truck time.
AREA #9 requires	9,670 cu. yds. to be hauled	8,000 feet =	185 hours haul truck time.
	2,687 cu. yds. to be hauled	3,600 feet =	22 hours haul truck time.
AREA #10 requires	2,690 cu. yds. to be hauled	2,500 feet =	17 hours haul truck time.
AREA #11 requires	24,200 cu. yds. to be hauled	1,000 feet =	58 hours haul truck time.
AREA #12 requires	10,755 cu. yds. to be hauled	3,500 feet =	116 hours haul truck time.
AREA #13 requires	6,725 cu. yds. to be hauled	6,300 feet =	103 hours haul truck time.
AREA #14 requires	4,320 cu. yds. to be hauled	0 feet =	0 hours haul truck time.
AREA #15 requires	1,665 cu. yds. to be hauled	3,500 feet =	14 hours haul truck time.
Haul Roads require	2,315 cu. yds. to be hauled	4,000 feet =	22 hours haul truck time.
TOTALS	98,867 cu. yds.		745 hours haul truck time.

1 Includes loading and unloading.

One (1) Caterpillar Model 245 hydraulic backhoe for loading of trucks with soils for revegetation.
373 hours @ $277.46[2] per hour ..... $ 103,493.00

Two (2) International Model B Payhauler heavy haul end dump trucks for hauling soils for revegetation.
745 hours total time @ $273.22[3] per hour ..... $ 203,549.00

SURFACE CONTOURING/SOIL SPREADING: A D-9 Bulldozer[4] will move about 480 cubic yards of material per hour for a 300 foot excavation distance. This volume is increased by a factor of 1.2 for loose, unconsolidated materials for a total of 576 cubic yards per hour. Applying an efficiency factor of 0.83 and an Operator Average Rating of 0.75 yields a total about 360 cubic yards per hour. The D-9R Bulldozer time required would be;

AREA #1	8.0± acres @	4,305 cu yds	12.0 hours of bulldozer time.
AREA #2	0.5± acres @	270 cu yds	1.0 hours of bulldozer time.
AREA #3	1.0± acres @	540 cu yds	2.0 hours of bulldozer time.
AREA #4	20.0± acres @	10,755 cu yds	30.0 hours of bulldozer time.
AREA #5	5.5± acres @	2,960 cu yds	8.5 hours of bulldozer time.
AREA #6	6.0± acres @	3,230 cu yds	9.0 hours of bulldozer time.
AREA #7	20.0± acres @	10,755 cu yds	30.0 hours of bulldozer time.
AREA #8	1.9± acres @	1,025 cu yds	3.0 hours of bulldozer time.
AREA #9	23.0± acres @	12,357 cu yds	35.0 hours of bulldozer time.
AREA #10	5.0± acres @	2,690 cu yds	7.5 hours of bulldozer time.
AREA #11	45.0± acres @	24,200 cu yds	67.5 hours of bulldozer time.
AREA #12	20.0± acres @	10,755 cu yds	30.0 hours of bulldozer time.
AREA #13	12.5± acres @	6,725 cu yds	19.0 hours of bulldozer time.
AREA #14	7.7± acres @	4,320 cu yds	12.0 hours of bulldozer time.
AREA #15	3.1± acres @	1,665 cu yds	5.0 hours of bulldozer time.
Haul Roads,	4.3± acres @	2,315 cu yds	6.5 hours of bulldozer time.

TOTAL BULLDOZER TIME ..... 278.0 hours

TOTAL EQUIPMENT COST FOR THIS TASK:

Excavator time of 373 hours @ $277.46[2] per hour	$103,493.00
Haul trucks time of 745 hours @ $273.22[3] per hour	$203,549.00
D-9R bulldozer time of 278 hours @ $280.38[5] per hour	$ 77,946.00
Water truck time of 373 hours @ $85.00[6] per hour	$ 31,705.00
TOTAL EQUIPMENT COST	$416,693.00

2 Cat 245 B Excavator rental rate of $219.20/hour per 2010-2011 CalTrans Labor Surcharge & Equipment Rental Rates; Operator rate of $58.26/hour per February 2010 Director of Industrial Relations General Prevailing Wage Determination. Total Cat 245 B Excavator and operator rate is $277.46/hour.

3 International Model B Payhauler rate of $221.55/hour with operator at $51.67/hour for a total of $273.22/hour.

4 Volumes of material which can be moved by a D-9R Bulldozer taken from Caterpillar Tractor Company performance manual, Edition 28.

5 Cat D9R rental Rate of $224.98/hour with operator at $55.40/hour for a total of $280.38/hour.

6 Water truck (4,500 gallon) contract rental rate of $85.00/hour.

B. LABOR:

MARKING/STAKING OF 15 MINING/OPERATIONS LOCATIONS TO BE RECLAIMED:

One laborer @ $30.00/hour for 48 hours ..... $ 1,440.00

C. MATERIALS:

Surveyor's 1/2" wooden lathing; 20 bundles @ $40.00/bundle ..... $ 800.00
Surveyor's marking paint for lathing; 1 can/bundle @ $5.00/can .... $ 100.00

DIRECT COSTS FOR EQUIPMENT, ...*(ITEM "A")*..... $419,033.00
+ LABOR + MATERIALS

II. MINING/OPERATIONS AREA REVEGETATION

Description of Task: **Mining/Operations areas above water level.**

Description of Task:

A commercially available annual grass and forbs seed mix will be broadcast seeded on the identified areas above water level. The seed mix will consist of at least four species of the following Department of Conservation seed and plant mix recommended for this area:

Introduced grasses and forbs;

at 50 lbs per acre:

Oats or Wild Oats	*Avena sativa, Avena fatua*
Orchard Grass	*Dactylis glomeratus*
Solt Chess	*Bromus Hordeacea*
Lana Wooly Pod Vetch	*Vicia dasycarpa*
Crimson Clover	*Trifolium incarnatum*
Sweet Clover	*Melilotus sp.*

at 15 lbs per acre:

Blue Wild-Rye	*Elymus glaucus*
Squirreltail	*Elymus elymoides*
Coyote brush	*Baccharis pilularis*
Toyon	*Heteromeles Arbutifolia*

Enclosure No. 2 present a current price listing for the grasses and forbs above.

A total of approximately 13,881 lbs of assorted grasses and forbs will be broadcast on the site in the fall just prior to the rainy season.

A. SEED COST:

OPERATIONS LOCATION	*AREA*	*SEED (LBS)*
#1	8.0± acres	520.0
#2	0.5± acres	33.0
#3	1.0± acres	65.0
#4	20.0± acres	1,300.0
#5	5.5± acres	358.0
#6	6.0± acres	390.0
#7	20.0± acres	1,300.0
#8	1.9± acres	124.0
#9	23.0± acres	1,495.0
#10	5.0± acres	325.0
#11	75.0± acres	4,875.0
#12	20.0± acres	1,300.0
#13	12.5± acres	813.0
#14	7.7± acres	501.0
#15	3.1± acres	202.0
Main Haul Roads	4.3± acres	280.0
TOTALS	213.5± acres	13,881.0 lbs

The average price per pound of the preferred grass seed and plant mix is $21.38.
Total cost of the grass seed and plant mix is 13,881 lbs. @ $21.38/lb. = $ 296,776.00.

B. LABOR

Manual broadcast of seed using hand held seeders would be utilized. Costs are based on manual labor of $45.00 per hour plus $10.00 per hour for equipment costs. A laborer using the manual broadcast method can cover 1 acre in 1 hour.

213.5 acres x $55/acre = $11,743.00

TOTAL COST FOR MATERIALS AND LABOR .....*(ITEM "B")*..... $308,519.00

III. PROCESSING PLANT SITE RESTORATION

A) PLANT STRUCTURES AND EQUIPMENT REMOVAL (see Enclosure No. 3)

Description of Task:

BUILDINGS: Demolish the following buildings:

1] Scale House (20 foot x 20 foot stick frame construction).
2] Laboratory facility (15 foot x 30 foot stick frame construction).

PORTABLE BUILDINGS: Disconnect and remove the following buildings:

1] Main office trailer (12 foot x 60 foot).
2] Staff office trailer (12 foot x 60 foot).
3] Storage trailer (12 foot x 30 foot).

CONCRETE FOUNDATIONS: Remove the following foundations:

SCALE HOUSE

1] 20 foot x 20 foot, 4 inch thick slab w/ wiring and plumbing.

LABORATORY FACILITY

1] 15 foot x 30 foot, 4 inch thick slab w/ wiring and plumbing.
2] 60 foot x 12 foot, 6 inch thick slab.
3] 20 foot x 12 foot, 6 inch thick slab.
4] 40 foot x 12 foot, 6 inch thick slab.

WEIGH SCALES FOUNDATIONS

1] 2 each; 70 foot x 8 foot w/ 2 foot deep footings at each end and center.
2] 1 each; 60 foot x 16 foot new approach concrete apron.
2] 1 each; new 70 foot x 10 foot w/ 2 foot deep footings at each end and center.

PRIMARY FEEDER/HOPPER FOUNDATION

1] 15 foot x 30 foot x 8 inch thick slab.

WET SCREENING PLANT

1] Primary Screening tower - 30 foot x 30 foot, 18 inch thick slab w/ 4 foot deep footings.
2] Secondary Screening tower - 20 foot x 30 foot, 18 inch thick slab w/ 4 foot deep footings.
3] Sand Screen Concrete Slab - 22 foot x 15 foot x 12 inch thick slab and 2 Pillow Blocks.

DRY SCREENING PLANT

1] Primary Classifying Screen - 30 foot x 30 foot, 18 inch thick slab w/ 4 foot deep footings.
2] Primary and Secondary Crushers - 50 foot x 20 foot, 18 inch thick slab w/ 4 foot deep footings.
3] New Crusher foundation - 20 foot x 25 foot x 12 inch thick slab.
4] Cemco Screen Foundation - 20 foot x 20 foot x 12 inch thick slab.
5] Concrete Footing - 20 foot x 40 foot x 12 inch thick slab.
6] Concrete Footing - 4 foot x 4 foot x 12 inch thick slab.

CONVEYOR SUPPORT FOUNDATIONS

1] 20 each; 8 foot x 2 foot x 12 inch thick pad.

REPAIR SHOP FACILITIES

1] 40 foot x 60 foot, 8 inch thick concrete slab w/ aprons.
2] 18 foot x 16 foot, 6 inch thick new concrete slab.
3] 15 foot x 15 foot, 6 inch thick new concrete slab.

REFUELING FACILITY
1] 40 foot x 36 foot, 8 inch thick pad.
2] 2 slabs; 15 foot x 40 foot, 8 inch thick pad.
3] Remove concrete aprons around fuel island.
4] Remove roof and support beams.

TAIL PULLEY CONCRETE SLABS
1] 6 slabs; 15 foot x10 foot, 6 inch thick slab.

DREDGER GFI FOUNDATIONS
1] 2 each; 21 foot x 2 foot x 2 foot slabs.

DREDGER PILLOW BLOCK/CONVEYOR SUPPORTS
1] 1-- 10 foot x 20 foot x 16 inch thick slab.
2] 16 - 4 foot x 8 foot x 12 inch thick slab.
3] 1 - concrete slab at end of conveyor.

TOP-OFF HOPPER FOUNDATIONS
1] Remove 10 foot x 40 foot, 8 inch thick concrete foundation & misc. conduit.

LOG WASHERS 1 & 2 FOUNDATIONS
1] Remove 4 each 6 inch thick slabs; 24 foot x 20 foot, 15 foot x 15 foot, 15 foot x 15 foot and 12 foot x 10 foot.

MISCELLANEOUS SYSTEMS REMOVAL:

SEPTIC TANKS/SYSTEMS
1] 2 - 1000 gallon concrete septic tanks (Offices/Scale and Laboratory).

DREDGE FEED SUPPLY TUNNEL
1] 1 - 277 foot x 14 foot diameter corrugated tunnel with concrete bottom and outside slab.

DRAINAGE CULVERTS
1] 7 - 8 inch diameter x 40 foot long corrugated culverts.
2] 1 - 6 inch diameter x 40 foot long corrugated culvert.

MAIN WATER SUPPLY LINE (PARTIALLY BURIED)
1] 1 - 30 inch diameter steel piping x 1,500 foot long.

WASTE WATER DISCHARGE PIPING (PARTIALLY BURIED)
1] 1 - 18 inch diameter steel piping x 1,000 foot long.

OLD HOT PLANT TANKS AND FOUNDATIONS
1] Remove two vertical tanks and conveyor.
2] Remove the following concrete foundations:
   a) 8 foot x 8 foot x 6 inch thick transformer foundation.
   b) 10 foot x 20 foot x 2 foot thick tanks' foundation.
   c) 4 foot x 6 foot x 6 inch thick conveyor foundation.
3] Remove buried electrical conduit.

MAIN OFFICE TRAILER
1] Remove underground electrical conduit and plumbing lines.

MCC CONTAINERS
1] Remove 3 each, 20 foot x 10 foot MCC containers.
OTHER CONTAINERS
1] Remove 40 foot x 10 foot storage trailer.
2] Remove box storage container.
MISCELLANEOUS ELECTRICAL
1[Remove and dispose of 20 electrical power poles

Removal of all scrap iron, belting, other rubber and miscellaneous debris from the 'boneyard' area is included in this task.

TOTAL COST TO RECLAIM PLANT SITE (demolition & clean-up).... $ 718,411.00[7]
NET SALVAGE VALUE OF FOUNDATIONS & SYSTEMS ..... <4,500.00>[7]

B) FINAL RECLAMATION OF 90± ACRE PROCESSING PLANT SITE AFTER DISASSEMBLY AND REMOVAL OF PLANT EQUIPMENT:

Description of Task:

Surfaces of the plant site will be graded to a generally flat contour by bulldozers. Since the plant facilities were erected on native virgin soils, resoiling will not be required.

a) LABOR:

A Caterpillar D-9 Bulldozer will be required to:
1] level/contour foundation depressions;
2] fill in trenches from removal of water piping and electrical conduit;
3] level/contour any remaining stockpiles.

40 hours of D-9R Bulldozer time @ $280.38/hour .....***(ITEM "C")***..... $ 11,216.00

b) REVEGETATION:

Description of Task:

Commercially available annual grasses and forbs seed mix as described in Section II above will be manually broadcast seeded over the entire 90+ acre plant site at the application rate of 65 lbs. per acre for a total of 5,850 lbs. at a seed mix cost of $21.38 per lb. for a total materials cost of $125,073.00 Manual labor broadcast/equipment cost of $55.00 per hour per acre for a total of $4,950.00 for the plant site area.

Cost of revegetation of plant site .....***(ITEM "D")***.... $130,023.00

7 Refer to Enclosure No. 3; Dave Amarel Enterprises (formerly AAA Salvage, Inc.) demolition estimate.

No other plant site restoration costs are anticipated. In the event of liquidation of the plant facilities/equipment, an onsite auction is the only feasible manner by which to sell the facilities/equipment to maximize salvage value. It is not anticipated that any temporary off-site storage or transportation would be required.

1. TOTAL COST TO RECLAIM PLANT SITE (demolition & clean-up)... $ 718,411.00[7]
2. NET SALVAGE VALUE OF FOUNDATIONS & SYSTEMS ..... <4,500.00>[7]
3. NET SALVAGE VALUE OF PLANT STRUCTURES/EQUIPMENT... <4,568,160.00>[8]
4. NET SAVAGE VALUE OF ROHR CLAMSHELL DREDGE ..... <2,848,500.00>[9]
5. SUBTRACT LINES 2, 3 & 4 FROM LINE 1 .....$<6,702,749.00>

Therefore, the cost of removal of plant structures and equipment would be off-set by the salvage value.

IV. MISCELLANEOUS COSTS

No miscellaneous costs.

V. MONITORING

After completion of reclamation activities, a relatively flat land contour with ponds will remain. Historically, volunteer riparian growth usually establishes within 6 to 8 months of inactivity around the circumference of the ponds in the Goldfields. Areas above the water table which are revegetated should not require follow-up monitoring based upon the demonstrated success of revegetation completed on the subject property by Cal Sierra Development, Inc. Despite this, monitoring is proposed for five (5) years after reclamation at $2,000.00 per year for a total of $10,000.00. After initial seeding/revegetation, no irrigation is required.

VI. SUPERVISION/PROFIT & OVERHEAD/CONTINGENCIES/MOBILIZATION

Supervisory time has been included in this estimate at 4.3%, profit/overhead at 8.6%, contingencies at 7% and mobilization costs at 3%.

VII. SUMMARY OF COSTS

Total of all Primary Reclamation Activities Costs .....*(ITEMS A & C)*.....	$430,249.00
Total of all Revegetation Costs .....*(ITEMS B & D)*.....	$438,542.00
Total of all Plant Structures & Equipment Removal Costs	$ -0-
Total of all Miscellaneous	$ -0-
Total of Monitoring	$ 10,000.00
Total of Direct Costs	**$878,791.00**

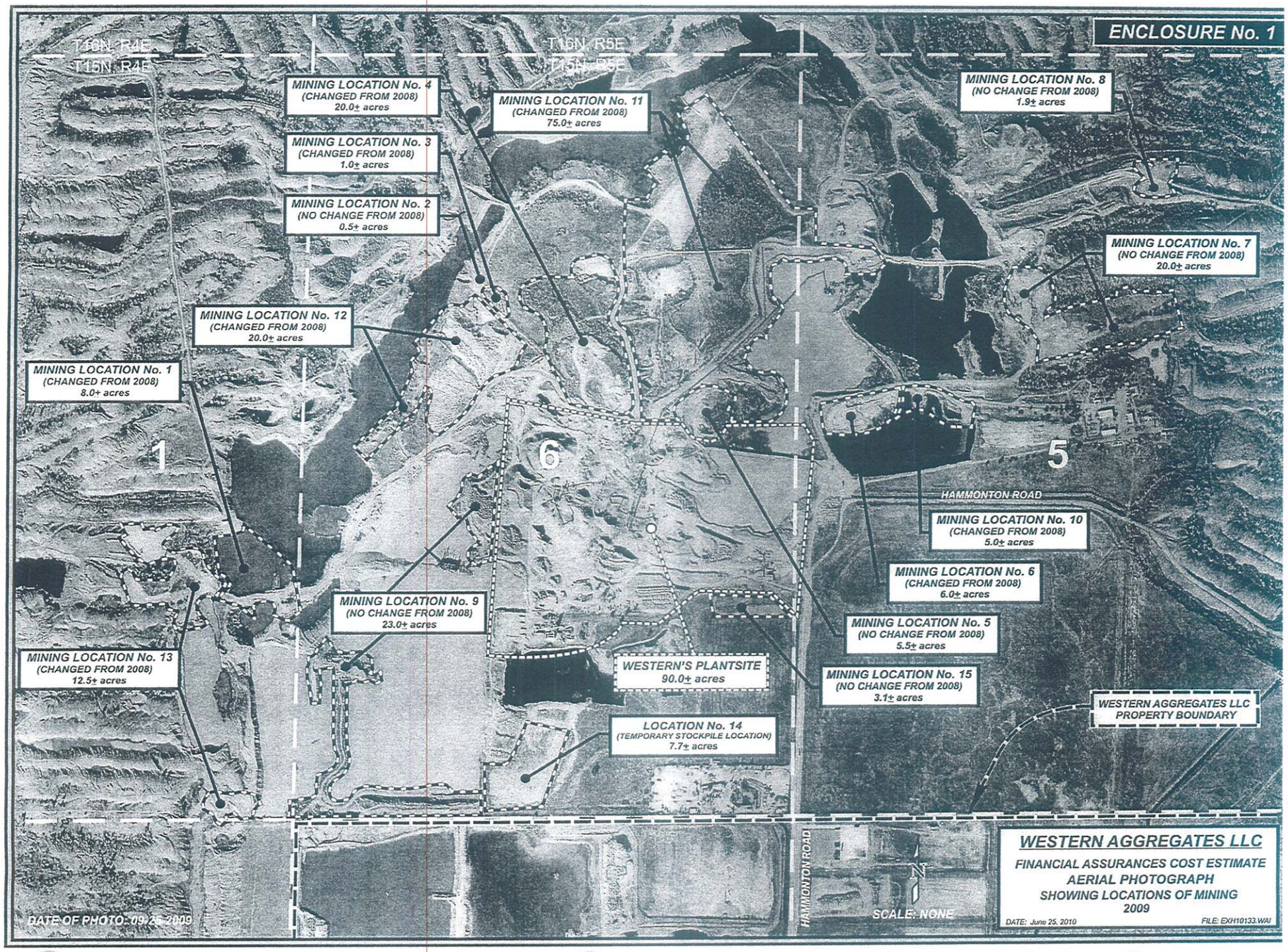
8 Refer to Enclosure No. 4; Compass Equipment, Inc. plant/equipment salvage value estimate.

9 Refer to Enclosure No. 5; Rohr Corporation clamshell dredge salvage value estimate.

Total of Direct Costs	**$878,791.00**
Supervision (4.5%)	$ 39,546.00
Profit/Overhead (9.2%)	$ 80,849.00
Contingencies (7%)	$ 61,516.00
Mobilization (3%)	$ 26,364.00
Total of Indirect Costs	**$208,275.00**
Total of Direct and Indirect Costs	$1,087,066.00
Lead Agency Administrative cost (@15%)	163,060.00
Total Estimated Cost of Reclamation	**$1,250,126.00**

ENCLOSURE No. 1

2009 Aerial Photograph of Mining Locations


ENCLOSURE No. 1
T16N, R4E
T15N, R4E
T16N, R5E
T15N, R5E
MINING LOCATION No. 4
(CHANGED FROM 2008)
20.0± acres
MINING LOCATION No. 3
(CHANGED FROM 2008)
1.0± acres
MINING LOCATION No. 2
(NO CHANGE FROM 2008)
0.5± acres
MINING LOCATION No. 11
(CHANGED FROM 2008)
75.0± acres
MINING LOCATION No. 8
(NO CHANGE FROM 2008)
1.9± acres
MINING LOCATION No. 7
(NO CHANGE FROM 2008)
20.0± acres
MINING LOCATION No. 12
(CHANGED FROM 2008)
20.0± acres
MINING LOCATION No. 1
(CHANGED FROM 2008)
8.0+ acres
1
6
5
HAMMONTON ROAD
MINING LOCATION No. 10
(CHANGED FROM 2008)
5.0± acres
MINING LOCATION No. 6
(CHANGED FROM 2008)
6.0± acres
MINING LOCATION No. 9
(NO CHANGE FROM 2008)
23.0± acres
MINING LOCATION No. 5
(NO CHANGE FROM 2008)
5.5± acres
MINING LOCATION No. 13
(CHANGED FROM 2008)
12.5± acres
WESTERN'S PLANTSITE
90.0± acres
MINING LOCATION No. 15
(NO CHANGE FROM 2008)
3.1± acres
WESTERN AGGREGATES LLC
PROPERTY BOUNDARY
LOCATION No. 14
(TEMPORARY STOCKPILE LOCATION)
7.7± acres
HAMMONTON ROAD
N
SCALE: NONE
DATE OF PHOTO: 09-25-2009
WESTERN AGGREGATES LLC
FINANCIAL ASSURANCES COST ESTIMATE
AERIAL PHOTOGRAPH
SHOWING LOCATIONS OF MINING
2009
DATE: June 25, 2010
FILE: EXH10133.WAI

ENCLOSURE No. 2

S & S Seeds, Inc.
Seeds/Forbs pricing
Dated July 15, 2010

S&S SEEDS

July 15, 2010

TO:	FAX NUMBER:
Phillip	
COMPANY:	PHONE NUMBER:
Philip C Sutherling Consultants	
RE:	EMAIL ADDRESS:
Pricing	

Dear,

Following please find the seed mix for the above referenced project:

Species	$/lb
Avena Sative	0.50
Dactylic glomeratus	3.75
Bromus hordeaceus	5.00
Vicia dasycarpa, Lana	2.50
Trifolium incarnatum, Crimson	2.50
Melilotus indicus	6.50
Elymus glaucus	12.50
Elymus elymoides	45.00
Baccharis pilularis	19.00
Heteromeles arbutifolia	15.00

Please contact us for further assistance.

Sincerely,

Gilbert Barajas
S&S Seeds
6155 Carpinteria Ave
Carpinteria, CA 93013

ENCLOSURE No. 3

David Amarel Enterprises Demolition Proposal
Dated August 5, 2010

August 5, 2010

DAVE AMAREL, ENTERPRISES
1120 Meadow Avenue
Yuba City, CA 95991
Cell Phone: 530-674-3434

Western Aggregrates LLC
4711 Hammonton Road
Marysville, CA 95901

Attn: Phil Sutherling

Dave Amarel, Enterprises hereby proposes labor and equipment services for the demolition and removal of the following items from Western Aggregates LLC Yuba Goldfields aggregate plant facility based upon the condition of the plant facilities during my inspection tour on July 27, 2010.

PLANT STRUCTURES AND EQUIPMENT REMOVAL

Description of Task:

BUILDINGS DEMOLITION $49,575.00

Demolish and remove the following buildings and miscellaneous buried conduit:

1) Scale House (20ft. x 20 ft. stick frame construction)
2) Laboratory Facility (15 ft. x 30 ft. stick frame construction)

PORTABLE BUILDINGS - Disconnect, remove, and dispose
Of the following portable buildings:

1) Main Office trailer (12 ft. x 60 ft.)
2) Staff Office trailer (12 ft. x 60 ft.)
3) Storage trailer (12x30 ft.)

SCALE HOUSE FOUNDATION $ 9 ,450.00

1) 20 ft. x 20 ft., 4 inch thick slab w/wiring and plumbing.

LABORATORY FACILITY FOUNDATION $ 8,925.00

1) 15 ft. x 30 ft., 4 inch thick slab w/wiring and plumbing

WEIGH SCALES FOUNDATION $21,000.00

1) 2 each, 70 ft. x 8 ft. foundations with 2 ft. deep footings at each end and center.
2) Remove new approach concrete apron 16 ft. x 60 ft.

NEW WEIGH SCALES FOUNDATIONS $ 4,725.00

1) 1 each, 70 ft. x 10 ft. foundations with 2 ft. deep footings at each end and center.

PRIMARY FEEDER/HOPPER FOUNDATION $ 10,185.00

1) 15 ft. x 30 ft. x 8 inch thick slab

WET SCREENING PLANT FOUNDATION $ 38,036.00

1) Primary Screening Tower - 30 ft. x 30 ft. x 18 inch thick slab w/4 ft. deep footings.
2) Secondary Screening Tower - 20 ft. x 30 ft. x 15 inch thick slab w/ 4 ft. deep footings.

DRY SCREENING PLANT FOUNDATIONS $ 27,615.00

1) Primary Classifying Screen - 30 ft. x 30 ft., 18 inch thick slab w/4 ft. deep footings.
2) Primary and Secondary Crushers - 50 ft. x 20 ft. , 18 inch thick slab w/4 ft. deep footings.

CONVEYOR SUPPORT FOUNDATIONS $ 22,050.00

1) 20 each; 8 ft. x 2 ft.; 12 inch thick slab.

REPAIR SHOP FACILITIES FOUNDATION $ 15,050.00

1) 40 ft. x 60 ft.; 8 inch thick slab w/aprons.

REFUELING FACILITY FOUNDATIONS $ 21,000.00

1) 40 ft. x 36 ft.; 8 inch thick pad.
2) 2 slabs; 15 ft. x 40 ft.; 8 inch thick pad.
3) Remove concrete aprons around fuel island.
4) Roof and Support Beams.

MISCELLANEOUS ITEMS

TOP-OFF HOPPER FOUNDATIONS	$ 3,675.00

1) Remove 10 ft. x 40 ft. concrete foundation.
2) Remove miscellaneous electrical conduit.

SEPTIC TANK/SYSTEMS	$ 23,100.00

1) 2 - 1000 gallon concrete septic tanks (Offices/Scales and Laboratory)

OLD HOT PLANT TANKS AND FOUNDATIONS	$ 8,925.00

1) Remove two vertical tanks and conveyor.
2) Remove the following concrete foundations.
   a) 8 ft. x 8 ft. Transformer foundations.
   b) 10 ft. x 20 ft. vertical tanks foundations.
   c) 4 ft. x 6 ft. conveyor foundation.
3) Remove buried electrical conduit.

DRAINING CULVERTS	$ 5,197.00

1) 6 inch x 40 ft. long corrugated culvert.
2) 8 inch x 40 ft. long corrugated culvert.

MAIN WATER SUPPLY LINE (PARTIALLY BURIED)	$ 7,297.00

1) 1- 30 inch diameter steel piping x 1,500 ft. long

WASTE WATER DISCHARGE PIPING (PARTIALLY BURIED)	$ 6,248.00

1) 1 - 18 inch diameter steel piping x 1,000 ft. long.

MAIN OFFICE TRAILER	$ 6,500.00

NEW SLAB@MAINTENANCE SHOP 15 ft. x 15 ft. x 6 inches, 18 ft. x 16 ft. x 6 inches.	$ 18,000.00

TAIL PULLEY CONCRETE SLABS (6 each)15 ft. x 10 ft. x 6 inches $3,500=$ 21,000.00

NEW 10 ft. x 20 ft. MCC CONTAINER (3 each).	$1,900.00=$ 5,700.00
10 ft. x 40 ft. TRAILER	$ 800.00
C - 104 TUNNEL 277 ft. x 14 ft. METAL PIPE WITH CONCRETE BOTTOM INSIDE W/OUTSIDE SLAB	$45,000.00
LW1 AND LW2 20 ft. x 24 ft. x 6 inches, 10 ft. x 12 ft. x 6 inches , 15 ft. x 15 ft. x 6 inches, 15 ft. x 15 ft. x 6 inches, CONCRETE SLABS	$42,000.00
BOX CONTAINER	$ 900.00
DREDGER GFI FOUNDATION 2 ft. x 2 ft. x 21 ft. (2 each)	$ 3,500,00
Other installed items to be removed:	$14,553.00

20 Power Poles to be removed.
60 ft. x 6 inch thick concrete foundation by laboratory.
20 ft. x 6 inch thick concrete foundation by laboratory.
40 ft. x 6 inch thick concrete foundation bins.

This quote includes the removal of all scrap iron, belting and rubber and miscellaneous debris from Western Aggregates LLC 'bone yard', based upon the quantity for such scrap, etc. at the time of the July 27, 2010.

Fire Hazard of the weeds and grass may create a problem at the time of removal of some items on said listing above.

This proposal does not include the removal of any processing plant equipment; only demolishing of said product.

All work will be as specified and performed in a substantial workman-like manner. Equipment cost estimates are based upon 2010-2011 Cal Trans Labor Surcharge and Equipment Rental Rates; and labor cost estimates are based upon the 2010 General Prevailing Wage Determinations made by the California Division of Labor Statistics and Research.

CAMCO SCREENING FOUNDATION	$ 11,500.00
20 ft. x 20 ft. x 12 inches thick concrete slab	
SAND SCREEN CONCRETE SLAB	$ 12,000.00
22 ft. x 15 ft. x 12 inches thick concrete slab (2) Pillow Blocks	
CONCRETE FOOTINGS	$ 20,500.00
20 ft. x 40 ft. x 12 inches thick 4 ft. x 4 ft. x 12 inches thick	
CRUSHER FOUNDATION	$ 12,500.00
20 ft. x 25 ft. x 12 inches thick	
17 PILLOW BLOCKS	$ 22,500.00
4 ft. x 8 ft. x 12 inches 10 ft. x 20 ft. x 16 inches concrete slab holds up conveyor from dredger.	
CONCRETE SLAB AT END OF DREDGER CONVEYOR	$ 13,500.00

EXCLUSIONS: OWNERS and/or AGENTS of the subject property in this proposal will be responsible for the following:

1. Closure and or capping of any and all utilities to the structures and floors and foundations.

2. Marking out the locations of the septic tanks and leach lines; if applicable.

3. Any and all permits pertaining to the demolition services quoted herein.

4. OWNERS and/or AGENTS shall be responsible to notify Dave Amarel, Ent. Of any and all toxic, contaminated or HAZARDOUS materials; including asbestos; located on said property PRIOR to the commencement of the demolition or cleanup of said property.

5. If any HAZARDOUS materials are found to exist, OWNERS and/or AGENTS will be responsible for the removal and cleanup for such materials at OWNERS and/or AGENTS expense.

Dave Amarel, Ent. has all salvage rights to any and all materials from said property.

All agreements are contingent upon weather, accidents, strikes, or delays beyond the control of Dave Amarel, Ent.

This proposal is goof for one (1) one year from August 5, 2010.

There is very little salvage in this proposal. It mostly consists of wood and concrete; with some metal pipes.

This project will take an estimated 8 months to complete, conditioned upon all plant processing equipment being removed from the property at the time the project is commenced. This project scheduled is also conditioned upon no interference from other contractors or OWNERS/AGENTS.

The salvage value of said project is estimated per market prices as of August 5, 2010.

Total Price of demolition/cleanup services----------$634,411.00

Disposal Fee for Concrete, Wood, and Rubber----------$ 84,000.00

Total $718,411.00

Minus Estimated Metal Salvage Deductible----------$ 4,500.00

Total $713,911.00

By: Dave Amarel, Sr., President

Agreed & Accepted By:

Date:

ENCLOSURE No. 4

Compass Equipment, Inc. Salvage Value Estimate
Dated July 15, 2010

COMPASS EQUIPMENT INC.
For the Aggregate Processing and Recycling Industries

July 15, 2010

WESTERN AGGREGATES, INC.
P.O. Box 829
Marysville, CA 95901

Attn: Mr. Lloyd Burns - President

Dear Mr. Burns

At the request of Phil Sutherling, I have reviewed the 2008 appraisal regarding the liquidation value of the crushing and screening equipment located at your sand and gravel plant on Hammonton Rd.

Tom Hamp and Phil Sutherling provided me an updated equipment list and advise me that there are no additions or deletions of equipment other than those included in my revised list that is included. The equipment continues to be maintained in good operating condition. Therefore, my estimation of the liquidation value of the equipment currently located and operating at the site is $4,568,160.00. This figure represents my opinion only and should not be interpreted as an offer to purchase or a guaranteed sales value. Changing market and economic conditions can greatly affect the value of this type of equipment.

If you have any questions, please feel free to call me.

Sincerely,

Ron Moras, Vice President - Secretary
Compass Equipment Inc.

WESTERN AGGREGATES LLC
AGGREGATE PLANT EQUIPMENT

WA-item #	Description	As-Is Value
C-1	42" x 525' Conveyor	$ 31,000.00
C-2	30" x 155' Conveyor	10,000.00
C-3	30" x 595' Conveyor	26,000.00
C-4	30" x 250' Conveyor	12,500.00
C-5	30" x 218' Conveyor	10,900.00
C-6	24" x 160' Conveyor	9,000.00
C-7	30" x 255' Conveyor	13,500.00
C-8	30" x 200' Conveyor	12,000.00
C-9	36" x 150' TeleStacker	165,000.00
C-10	36" x 512' Conveyor	28,160.00
C-11	36" x 290' Conveyor	18,000.00
C-12	36" x 300' Conveyor	18,000.00
C-13	42" x 130' Conveyor	9,100.00
C-14	42" x 320' Conveyor	20,000.00
C-15	42" x 50' Conveyor	8,000.00
C-16	42" X 72' Conveyor	9,000.00
C-17	30" x 470' Conveyor	23,000.00
C-18	36" x 245' Conveyor	7,000.00
C-19	36" x 102' Conveyor	9,000.00
C-20	36" x 233' Conveyor	6,000.00
C-2!	36" x 75' Conveyor	7,500.00
C-22	30" x 252' Conveyor	13,500.00
C-23	30" x 47' Conveyor	4,500.00
C-24	30"x 250' Conveyor	13,500.00
C-25	24" x 55' Conveyor	5,000.00
FD-1	Feeder	2,000.00
FD-2	Feeder	2,000.00
FD-3	Feeder	2,000.00
FD-4	Feeder	2,000.00
FD-5	Feeder	2,000.00
FD-6	Feeder	2,000.00
2-C-07	42" x 150' Conveyor	250,000.00
2-C-08	42" x 400' Conveyor	135,000.00
2-C-09	42" x 355' Conveyor	170,000.00
2-C-10	42" x 655' Conveyor	245,000.00
2-C-11	42" x 800' Conveyor	275,000.00
2-C-12	42" x 750' Conveyor	255,000.00
2-C-13	42" x 2,500' Conveyor	495,000.00
2-FD-01	36" x 12' Belt Feeder	60,000.00
2-FD-02	36" x 12' Belt Feeder	60,000.00
2-FD-03	36" x 12' Belt Feeder	60,000.00
2-FD-04	36" x 12' Belt Feeder	60,000.00

C-104	42" x 268' Tunnel Conveyor	400,000.00
C-26	36" x 106' Dust Hopper Conveyor	50,000.00
R1999A	36" x 18' Reclaim Hopper Conveyor	4,000.00
C-27	36" x 60' Conveyor	6,500.00
C-18A-B	36" x 150' Stacker w/ 36" x 65' telescope section	120,000.00
C-18C-D	36" x 150' Stacker w/ 36" x 65' telescope section	120,000.00
C-23A	30" x 20' Conveyor	3,000.00
C-23B	30" x 14' Conveyor	3,000.00
C-2B	30" x 51' LW 2 Feed Conveyor	27,000.00
CR-1	Nordberg GP300S G Cone complete with motor and support structure	225,000.00
CR-2	Nordberg HP300 Cone Crusher complete w/ 300 hp motor and support structure	115,000.00
CR-3	Nordberg HP500 Cone Crusher complete w/ 500 hp motor and support structure	235,000.00
1 Each S-1	8' x 24' Simplicity 3 Deck Screen & Structure	60,000.00
1 Each S-2	7' x 16' Allis Chalmers 2 Deck Screen & Structure	20,000.00
1 Each S-3	8' x 20' Metso 3 Deck Screen & Structure	100,000.00
1 Each S-4	8' x 20' Metso 3 Deck Screen & Structure	100,000.00
1 Each LW-1	44" x 35' Twin Shaft log Washer	40,000.00
1 Each LW-2	44" x 35' Twin Shaft log Washer	200,000.00
1 Each SS-1	44" x 32' Twin Shaft Fine material Washer w/ Eagle Classifying tank and Mark V Controls	50,000.00
4 each	10 x 8 Rubber lined pumps w/ 200 hp Motor (P-1, P-2, P-7, P-8)	7,500.00
2 Each	6 x 4 Rubber Lined pump w/20 hp Motor (P-3, P-10)	1,500.00
2 Each	Turbine Pump w/ 200hp motor and plant piping	10,000.00
1 Each P-6	10 x 8 125 hp pump	3,000.00
1 Each P-9	Sump pump	2,000.00
1 Each P-11	Tunnel Washdown Pump	2,000.00
12 Each	Belt Scales	6,000.00
1 Each	Metal detector	3,000.00
3 Each	Belt Magnets	30,000.00
2 Each	Top off Conveyors - 1 and 1A	15,000.00
1 Each	Top off Conveyor – 2	7,500.00
1 Each	Top off Conveyor – 3	10,000.00
3 Each	10 x 70 Drive over truck scales @ 12,000.00 each (Scale-1, Scale-2, Scale-3)	36,000.00

TOTAL AS-IS VALUE: **$4,568,160.00**

ENCLOSURE No. 5

Rohr Corporation
GT 1000 Clamshell Dredge Salvage Value Estimate
Dated July 20, 2010

ROHR CORPORATION

July 20, 2010

Tom Hamp
Plant Manager
Western Aggregates
4711 Hammonton Road
Marysville, CA 95901

Dear Tom,

Please see the below depreciated value of your ROHR underwater mining equipment:

Pos.	Qty.	Unit	Description	Resale Value	TotalResale Value
1	1	Ea.	ROHR GT1000 Clamshell Dredge	$2,100,000.00	$2,100,000.00
2	2	Ea.	ROHR RS 12.5 Clamshell Bucket	$150,000.00	$300,000.00
3	690	Ft.	ROHR Series II Floating Conveyor	$650.00	$448,500.00

Total Resale Value of ROHR Equipment: $2,848,500.00

Please let me know if you have any questions.

Sincerely,

6295 Dry Fork Road, Cleves, OH 45002 **phone** 513.202.0800 **fax** 513.202.0888 www.rohrcorp.com

APPENDIX D
SLOPE STABILITY ANALYSIS REPORT

SLOPE STABILITY INVESTIGATION
PROPOSED WESTERN AGGREGATES LLC
QUARRY RECLAMATION
MARYSVILLE AREA
YUBA COUNTY, CALIFORNIA
PREPARED FOR
WESTERN AGGREGATES LLC
JOB NO. 11137-8

C.H.J. Incorporated
1355 E. Cooley Drive, Colton, CA 92324 • Phone (909) 824-7210 • Fax (909) 824-7209
15345 Anacapa Road, Suite D, Victorville, CA 92392 • Phone (760) 243-0506 • Fax (760) 243-1225
77-564A Country Club Drive, Suite 122, Palm Desert, CA 92211 • Phone (760) 772-8234 • Fax (909) 824-7209

April 19, 2011

Western Aggregates LLC
4711 Hammonton Road
Marysville, California 95901
Attention: Mr. Lloyd Burns

Job No. 11137-8

Dear Mr. Burns:

Attached herewith is the Slope Stability Investigation report, prepared for the proposed reclamation of Western Aggregates LLC Quarry, located in the City of Marysville, Yuba County, California.

This report was based upon a scope of services outlined in our proposal, dated January 14, 2011, and other written and verbal communications.

We appreciate this opportunity to provide geotechnical services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
C.H.J., INCORPORATED

Jay J. Martin, E.G.
Vice President

JJM/FY/:jm/ndt

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SLOPE STABILITY INVESTIGATION
PROPOSED WESTERN AGGREGATES
QUARRY RECLAMATION
MARYSVILLE AREA
YUBA COUNTY, CALIFORNIA
PREPARED FOR
WESTERN AGGREGATES LLC
JOB NO. 11137-8

INTRODUCTION

A slope stability investigation has been performed by this firm for the proposed reclamation of the Western Aggregates LLC Yuba County quarry in the Marysville area, Yuba County, California. The purpose of this investigation was to explore and evaluate the geotechnical conditions at the subject site, analyze the stability of the proposed reclamation slopes, and provide appropriate geotechnical recommendations for design and construction of the proposed reclamation slopes. This report includes data collected and analyzed in 2006 and 2007.

To orient our investigation at the site, a draft Reclamation Plan (one sheet), dated March 2011, prepared by Lilburn Corporation, was furnished for our use. The approximate location of the site is shown on the attached Index Map (Enclosure "A-1").

A draft copy of a Sand and Gravel Geologic Review of the site, conducted by Beck and Associates GeoConsultants, Inc. (2003), was furnished for our use. We also reviewed a geologic report (Ford, 1992) and a slope stability analysis (Kleinfelder, 2003), both prepared for the Hallwood site located on the northerly side of the Yuba River, north of the site.

The results of our investigation and slope stability analysis, together with our conclusions and recommendations, are presented in this report.

SCOPE OF SERVICES

The scope of services provided during this slope stability investigation included the following:

- Review of published and unpublished literature and maps
- Review and analysis of stereoscopic aerial photographs flown in 2004
- A geologic field reconnaissance of the site and surrounding area, and geologic mapping of the site
- Placement of five exploratory borings within the proposed quarry area
- Logging and sampling of exploratory borings for testing and evaluation
- Laboratory testing on selected samples
- Slope stability analysis for the proposed reclamation slopes
- Evaluation of the geotechnical data to develop site-specific recommendations for construction of reclamation slopes

PROJECT CONSIDERATIONS

The reclamation plan indicates that, upon reclamation, the project site will include of five quarries mined to an average depth of approximately 100 feet below average lake surface level (-20 feet msl). This results in a maximum slope height of approximately 200 feet. Groundwater is at approximately +80 feet msl, yielding a below-water slope height of approximately 100 feet.

The quarries will form a series of lakes with some land bridges (access roads). End use of most of the site is planned as open space with riparian habitat. Two areas of the site are reserved for non-habitat use (aggregate processing and Cal-Sierra facilities).

Mining to a depth of approximately 85 feet will be conducted with a clamshell dredge. Mining below the 85-foot depth may involve a suction cutter, dragline, drag scraper, or slackline cableway excavator. The reclamation plan shows proposed slopes at an inclination of 2 horizontal to 1 vertical [2(h):1(v)]. Some portions of slopes along the southerly sides of the quarry areas (green highlight on the reclamation plan used as a base for Enclosure "A-2") will be mined to approximately 4(h):1(v) to create emergent marsh habitat. The 4(h):1(v) slopes are considered stable by inspection and are not further analyzed.

The final reclamation plan should be reviewed by the geotechnical engineer.

SITE DESCRIPTION

The site includes the existing Western Aggregates, LLC Marysville quarry and is located at 4711 Hammonton Road, Marysville, Yuba County, California. The site is bordered on the north, east, west, and southeast by undeveloped land, and on the southwest by another operating aggregate plant. The mine was operating during the course of this investigation.

The site is divided into three areas as follows: relatively undisturbed areas, mine tailings disposal areas associated with dredging activities, aggregate mining and processing areas, and Cal Sierra's plant. Natural ponds and siltation ponds occur across much of the site.

The relatively undisturbed areas are present in the southeast portion of the site and consist of fields with slightly undulating topography. The vegetation at the time of our investigation was dense grasses and weeds to 4 feet high.

The mine tailings disposal areas associated with dredging activities are typified by sinuous windrows between 20 and 50 feet high and side slopes between 1(h):1(v) and 3(h):1(v) with lakes in some of the lower valleys. It is our understanding that the dredging began in the early 1900s. Vegetation in these areas is mostly moderately sparse to moderately dense grasses and weeds to 4 feet. Several

stands of mature trees and undergrowth existed mostly in the western portion of the site. Riparian vegetation, including mature trees, brush, and bamboo, was present along some of the existing ponds.

Aggregate mining and processing areas have been stripped of vegetation and have relatively flat bottoms with stockpiles of processed aggregates and near-vertical slopes at the active mining faces. Development is limited to the aggregate processing area in the south central portion of the site and Cal Sierra's plant on the central east side of the site. Ponds present throughout this area have been increased in size and number by recent mining activities.

As part of this investigation, stereoscopic aerial photographs of the site and surrounding area, dated March 9, 2004, were reviewed. These aerial photographs show the site as similar in condition to the above description.

No other surface features pertinent to this investigation were noted.

FIELD INVESTIGATION

Drilling was initially attempted utilizing a truck-mounted hollow stem auger drill rig. Due to the preponderance of gravel and cobbles, adequate penetration of the on-site soils could not be achieved with the hollow-stem auger.

The soil conditions underlying the subject site were then explored by means of five exploratory borings drilled to a maximum depth of 200 feet below the existing ground surface with a truck-mounted dual-tube reverse air rig equipped for soil sampling. The rig utilized a Becker Hammer drill bit. The approximate locations of our exploratory borings are indicated on the attached Geologic Map (Enclosure "A-2").

Continuous logs of the subsurface conditions, as encountered within the exploratory borings, were recorded at the time of drilling by a staff geologist from this firm. Relatively undisturbed samples

were obtained by driving a split-spoon ring sampler ahead of the borings at selected levels. After the required seating of the sampler, the number of hammer blows required to advance the sampler a total of 12 inches was converted to equivalent standard penetration test (SPT) data and recorded on the boring logs. The number is the equivalent SPT N-value and has been corrected for hammer type (automatic vs. manual cathead) and sampler size (California sampler vs. SPT sampler). Relatively undisturbed as well as bulk samples of typical soil types obtained were returned to the laboratory in sealed containers for testing and evaluation.

The subsurface soils included relatively coarse materials (gravel and cobbles), as well as relatively unconsolidated lenses/layers of sand and silt. The relatively unconsolidated lithologies below the groundwater surface were subject to flowing and/or heaving during the drilling and sampling process. As a result of the coarse lithologies and flowing/heaving layers, relatively few undisturbed samples could be obtained.

Our exploratory boring logs, together with our equivalent SPT data, are presented in Appendix "B". The stratification lines presented on the borings logs represent approximate boundaries between soil types, which may include gradual transitions.

Geological field reconnaissance of the site and surrounding area and geologic mapping were also performed at the time of our field exploration.

LABORATORY INVESTIGATION

Included in our laboratory testing program were field moisture content tests on selected samples returned to the laboratory and field dry density tests on all undisturbed samples. The results are included on the boring logs. Sieve analysis, hydrometer tests, and Atterberg limit tests were performed on selected samples to aid in classifications. Direct shear tests were performed on selected relatively undisturbed samples in order to provide shear strength parameters for slope stability

evaluation. Consolidated undrained triaxial shear tests (CU tests) were also performed on two selected clayey/silty soils intended to obtain strength parameters for weaker layers. Due to the availability of undisturbed samples, triaxial shear tests were performed on remolded samples. Therefore, the triaxial strengths obtained were used for reference purposes only.

Summaries of the laboratory test results appear in Appendix "C".

SITE GEOLOGY AND SUBSURFACE SOIL CONDITIONS

The site is located in the northern portion Great Valley geomorphic province of Central California near its eastern border with the Sierra Nevada geomorphic province. The Great Valley province is characterized by a large northwest-trending, asymmetrical valley, bounded by the Sierra Nevada province on the east, and the Coast Ranges province on the west. The valley floor ranges from about sea level to about 400 feet above sea level.

The Great Valley province is filled with up to 10 vertical miles of sediment in the Sacramento Valley. These sediments range in age from Jurassic to Holocene. The sediments are derived from the weathering and transport of the surrounding granitic, metamorphic, and marine sedimentary rocks of pre-Tertiary age. The basin sediments are resting unconformably atop the Sierran Crystalline and metamorphic basement complex (Page, 1986).

The site is situated on a relatively flat, alluvial plain and fan complex, formed from terrestrial fan sediments shed from the Sierra Nevada range and transported via the Yuba River. The surficial materials exposed in the southeast portion of the site have been mapped as Quaternary - age alluvial fan deposits. The rest of the site has been mapped as tailings associated with historic mining activities (Burnett and Jennings, 1965). A Geologic Index Map is included as Enclosure "A-3".

As a part of this investigation, geologic mapping of the site was conducted on a 700-scale Draft Reclamation Plan prepared by Lilburn Corporation from aerial photography flown on December 22, 2010. Surficial units delineated in our mapping include older fan deposits (Qof) and fill differentiated into two units (f_1 and f_2). The units are briefly discussed below and are indicated on the Geologic Map (Enclosure "A-2")

FILL (f_2):

Fill (f_2) associated with aggregate mining activities was observed in the central portion of the site. The fill is comprised of large gravel to cobble-sized clasts in a silty, fine- to coarse-grained sand matrix. It should be anticipated that other areas of fill and/or disturbed soils and localized areas of deeper fill may exist.

FILL (f_1):

Fill (f_1) comprised of mine tailings associated with historic dredging activities was mapped on larege portions of the site. The tailings are comprised of layers of silty to clean, fine- to coarse-grained sand matrix with some beds containing large gravel to boulder-sized clasts.

YOUNGER ALLUVIAL DEPOSITS (Qya):

Younger alluvium on the site is comprised of bedded silty to clean, fine- to coarse-grained sand with some beds containing large gravel to cobble-sized clasts. The younger alluvium was not observed in outcrop at the site but was observed in subsurface samples collected during our exploration.

OLDER ALLUVIAL FAN DEPOSITS (Qof):

Older alluvium of probable Pleistocene age (Burnett and Jennings, 1965), comprised of bedded layers of silty to clean, fine- to coarse-grained sand matrix with some beds containing large gravel to cobble-sized clasts, was observed in the southeastern portion of the site. The upper portion of the older alluvium includes moderately- to weakly-developed argillic (clayey) and cemented soil horizons, as observed in the bank of a drainage channel near the eastern site boundary. These upper portions have a reddish-brown hue. Below the upper soils the color range is olive gray, dark gray,

blue gray, and greenish gray. The development of the reddish-brown argillic soil horizons such as those observed in the older alluvium support the interpretation that the older alluvium is Pleistocene age.

MISCELLANEOUS:

Fills associated with aggregate mining activities are relatively shallow (up to approximately 10 feet deep) except in the two silt ponds where the fill could be significantly deeper. Fills associated with mine tailings were encountered in our exploratory borings to a maximum depth of 97 feet.

Groundwater was encountered within all of our exploratory borings.

No bedrock was encountered within any of our exploratory borings to the maximum depth attained.

All of our exploratory borings were grouted with a mixture of cement and bentonite to within 5 feet of the ground surface as the drill pipe was removed. This procedure precluded observation as to the degree of caving in the borings.

A more detailed description of the subsurface soil conditions encountered within our exploratory borings is presented on the attached boring logs (Appendix "B").

FAULTING

The site is not located in an Alquist-Priolo Earthquake Fault Zone designated by the State of California to include traces of suspected active faulting. No evidence for active faulting on the site was observed during the geologic field reconnaissance, on the aerial photographs reviewed or on published geologic mapping.

The tectonics of Northern California are dominated by the interaction of the North American plate and the Pacific plate, which are apparently sliding past each other in a translational manner. In the San Francisco region the translational motion between the Pacific plate and the North American plate is partitioned out across a wide zone encompassing most of the Coast Ranges Geomorphic Provence. Less than half the slip in this zone is accommodated by the San Andreas system. The rest is distributed among the other northwest-trending strike-slip faults including the Hayward, San Gregorio, Calaveras, and Greenville (Page, 1992).

FOOTHILLS FAULT SYSTEM:

The Foothills fault system is a roughly north-northwest trending arcuate zone of mapped fault strands 5 to 35 miles wide that extends from Red Bluff south to Mariposa along the western Sierra Nevada Mountain Range. These faults mark a suture where island arcs were welded to the continent in the late Jurassic (Wong and Savage 1983) and in part reactivated as high angle normal faults by late Tertiary to Holocene-age regional extension with apparent down to the west displacements (Bryant, 1983). In the regional area of the site the Foothills fault system extends from the Prairie Creek fault zone on the west located approximately 3-1/4 miles east of the site to the Melones fault zone located approximately 38 miles east of the site. Earthquakes in the magnitude range of 5 to 6 occurred within the Foothills fault system in 1888 about 15 km northeast of Nevada City, and 10 km south of Oroville, in 1909 and 1975 (Cramer et al 1978). Trenching studies have indicated extremely low slip rates and long recurrence intervals of the potentially-active segments of this fault system (Bryant, 1983).

HAYWARD FAULT:

The Hayward fault is located approximately 91 miles west-southwest of the alignment. This is another right-lateral strike slip fault displaying historic seismic creep (Lienkaemper and Borchardt, 1992). Large historical earthquakes have occurred on this fault.

SAN ANDREAS FAULT:

The San Francisco Peninsula segment of the San Andreas fault is located approximately 101 miles west-southwest of the site. This fault is the largest and best known of the right-lateral faults comprising the surface expression of interaction between the Pacific Plate and the North American Plate.

HISTORICAL EARTHQUAKES

A map of recorded earthquake epicenters accessible online from the Northern California Seismic Network is included as Enclosure "A-4". This map includes the Northern California Seismic Network database for earthquakes with magnitudes of 4.0 or greater from 1968 through 2011. In general, the site is located within an area of California that has a relatively low seismic risk.

On August 1, 1975, an M_L 5.7 earthquake with surface rupture occurred on a segment of the Foothills fault system near Oroville, California (Bryant, 1983).

Between 1982 and 1985, a sequence of earthquakes occurred along a fold belt coincident with the Coast Ranges - Sierran Block boundary zone. The largest of these earthquakes were the moment magnitude (M_W) 5.5 New Idra earthquake in 1982, the M_W 6.5 Coalinga earthquake in 1983 and the M_W 6.1 Kettleman Hills earthquake in 1985 (Stein and Ekstrom, 1992). The Coast Ranges - Sierran Block boundary zone may have been the source of six additional Richter magnitude (M_L) 6+ earthquakes since 1850, including the approximate M_W 6.8 Vacaville-Winters earthquake of 1892 (Volpe and others, 1992) and the approximate M_W 6.3 Antioch Earthquake of 1889 (Wakabayashi and Smith, 1994).

In January of 1980, two earthquakes of M_L 5.5 and M_L 5.6 occurred on the Marsh Creek segment of the Greenville fault system. Surface rupture was reported associated with these events (Patten and Wigginton, 1992; Hart, 1981).

On July 3, 1861, an earthquake with accompanying surface rupture occurred on the Calaveras fault in the San Ramon Valley Area. Magnitude estimates for this earthquake range from M_L 5.6 to M_L 6.4 (Simpson and others, 1992). Several other mid-nineteenth century earthquakes in the general region could also have occurred on the Calaveras fault. Additionally, the August 6, 1979 M_L 5.9 Coyote Lake earthquake, the April 24, 1984 M_L 6.2 Morgan Hill earthquake and the June 13, 1988 M_L 5.1 Alum Rock earthquakes occurred on the Central Calaveras fault (Du and Aydin, 1992).

Two events of approximately M_W 7 have been ascribed to the Hayward fault (Oppenheimer and others, 1992). An event on October 21, 1868 resulted in approximately 30 miles of surface rupture. A less well known but apparently similar event on June 10, 1836 could also have occurred on the Hayward fault (Toppozada and others, 1986).

The San Francisco peninsula segment of the San Andreas fault includes the epicentral area of the great April 18, 1906 earthquake. It is likely a similar earthquake in June 1838 also occurred on this segment (Working Group on California Earthquake Probabilities, 1988). The October 12, 1989 M_W 7.1 Loma Prieta earthquake was centered on the Santa Cruz Mountains segment of the San Andreas fault, south of the San Francisco Peninsula segment.

GROUND SHAKING HAZARD

Since the Surface Mining and Reclamation Act (SMARA) does not specify a ground motion for design of reclaimed slopes, we cite the ground motion specified by the 2010 California Building Code (CBC) for new construction projects. The CBC ground motion is conservative in that it applies to human occupancy structures. It is logical that end usage for reclamation (open space), where life safety (as well as fixed improvements) is not an issue, should be subject to a lower design ground motion.

Based on our laboratory data, observation of surface exposures at the site, and the geologic setting, the site is considered to be a Type "D" soil profile according to the 2010 CBC. The anticipated

exposure period (project lifetime) for the reclaimed slopes cannot be specified at this time. The 2010 CBC establishes a design earthquake hazard level of 2 percent probability of exceedance in 50 years scaled by two-thirds for most new construction. The return period corresponding to a 2 percent probability of exceedance in a 50-year exposure period is 2,475 years. A design peak ground acceleration (PGA) value of 0.26g was calculated according to the 2010 CBC using U.S. Geological Survey Java Ground Motion Parameter Calculator - version 5.0.9 (2010). This is a design value for use in the design of CBC structures. The design value for reclaimed slopes should logically be lower.

GROUNDWATER AND LIQUEFACTION

Groundwater was encountered within all of our exploratory borings at depths between 15 and 45 feet. These depths approximately corresponded to the surface elevations of the existing bodies of water nearest each of the borings as shown on the Reclamation Plan and as observed in the field.

Available groundwater data was reviewed in order to determine estimated historic groundwater levels for the general site area. Historic groundwater elevations at wells near the site are available from Yuba County Water Agency (2006). The site is located in the South Yuba Groundwater Basin. Groundwater elevations in this basin vary as a function of water demand versus the amount of surface water deliveries. Until 1980 the basin was in an overdraft condition causing the groundwater elevations to fall. Since 1980, the basin has been in a rebound condition. The basin is approaching an equilibrium condition and is close to historic high elevations (Yuba County Water Agency, 2006).

The elevation of the groundwater beneath the site is approximately equivalent to the surface levels of the bodies of water at the site, currently between 80 and 90 feet above mean sea level. Future groundwater elevations could be highly variable based on basin management but they are not anticipated to rise significantly above current levels.

Liquefaction is a process in which strong ground shaking causes saturated soils to lose their strength and behave as a fluid (Matti and Carson, 1991). Ground failure associated with liquefaction can

result in severe damage to structures. The geologic conditions for increased susceptibility to liquefaction are: 1) shallow groundwater (less than 50 feet in depth; 2) presence of unconsolidated sandy alluvium, typically Holocene in age; and 3) strong ground shaking. All three of these conditions must be present for liquefaction to occur. The general threshold for liquefaction is a peak horizontal ground acceleration (PGA) of approximately 0.15g.

The 2010 design PGA is 0.26g. This PGA is just over the threshold for liquefaction and is relatively low when compared to more seismically active areas of the state. The predominant lithology that is less than 50 feet deep is the coarse-grained mine tailings, which are considered to have a low susceptibility to liquefaction. Further, exposure of remaining native soil profiles observed on the site are reddened, suggesting an age of late Pleistocene or older. Blowcounts obtained in the borings are high and suggestive of antiquity in the soils. Based on the relatively low anticipated seismic shaking, the coarse lithology of the materials within 50 feet of the surface, the suspected late Pleistocene age of the native soils, and the intended use of the site as open space, liquefaction is not considered to be a potential hazard to the site.

FLOODING AND EROSION

The site is in the Yuba River Valley at an approximate distance of 3,500 feet from the river channel. Upstream on the Yuba River are three dams: the Daguerre Point Dam, the Englebright Dam, and the Bullards Bar Dam. A potential for flooding of the site exists should any of these dams fail. The northern portion of the site appears to be located within an area designated by the Federal Emergency Management Agency (FEMA) as a 100-year flood zone. An evaluation of the flood potential of the site and design of drainage fall under the purview of others.

The on-site materials (sands and gravels) above the water table are moderately susceptible to wind and water erosion. Wave erosion is not anticipated to be a significant hazard, as the materials expected to be exposed at the shoreline are coarse-grained mine tailings.

SLOPE STABILITY

No evidence for landsliding on the site or in the general area was observed during the geologic field reconnaissance or on the aerial photographs reviewed. Existing slopes in the dredge tailings, up to approximately 70 feet high and inclined as steep as approximately 38 degrees, and slopes up to approximately 40 feet high and inclined as steep as approximately 45 degrees, exhibit no evidence of any deep-seated failure. These slopes are within coarse-grained tailings (fill) with a very low susceptibility to deep-seated or shallow slope failure.

The proposed quarry slopes are within fill and alluvial deposits. These materials have a low susceptibility to significant slope failure (landsliding), except when slopes have been significantly over steepened.

SLOPE STABILITY ANALYSIS

ANALYSIS METHOD:

The gross stability of slopes was analyzed under both static and seismic conditions for rotational failures using the Slide (version 6.0) computer software program (Rocscience, 2010). This program provides nine different slope stability analysis methods including Simplified Bishop Method, Simplified Janbu Method, Spencer Method, and other methods. Spencer's method was utilized for slope stability analysis as recommended by the Implementation Committee of DMG Special Publication 117 (Blake and others, 2002).

STRENGTH PARAMETERS:

Due to the non-k_0 stress conditions redistributed during the shearing process, the best laboratory test method to obtain the shear strengths for slope stability analyses is the triaxial test method using relatively undisturbed samples. For the subject project, a truck-mounted dual-tube reverse air rig with a Becker Hammer was utilized to explore the subject site. Although this rig is equipped for soil sampling, it is not capable of obtaining relatively undisturbed samples for triaxial testing. Therefore,

direct shear testing was performed on relatively undisturbed ring samples. CU tests were performed on selected remolded samples for confirming the direct shear test results.

Based on the direct shear test and CU test results, the following strength parameters were utilized in our calculations. The direct shear results were corrected by referencing CU test results and our experience. The strength parameters utilized for static slope stability analyses correspond to residual strength, while the parameters utilized for seismic stability analyses correspond to peak strength. The strength parameters of sands (SP) and gravels (GP and GM) were assumed by referencing the test results for silty sands obtained from this investigation and results of unpublished work (discussed below). Apparent cohesive strength was assumed to model the interlocking effects of the gravel, cobbles and boulders. The detailed parameters for each material type are tabulated in the following table for both static and seismic conditions.

Soil Type*	**γ (pcf)**	**Seismic c (psf)**	**Seismic Φ (°)**	**Static c (psf)**	**Static Φ (°)**
GM (AW)	135	700	38	500	36
GM (BW)	135	500	38	300	36
GP (BW)	135	500	38	300	36
SP (BW)	115	100	36	25	33
SM (AW)	112	200	36	150	32
SM (BW)	116	150	36	125	33
ML (BW)	130	1,150	22	480	27
CL (BW)	124	720	24	720	24

AW = above groundwater BW = below groundwater

Assessment of strength parameters of coarse-grained soils for use in slope stability analyses is problematic due to the large grain size relative to the size of the shear box. Therefore, alternatives to direct measurement of shear strength are required. During this investigation, we utilized back-calculation of the existing subaerial slopes to estimate the strength of the coarse-grained materials

(Enclosures "D-7" and "D-8"). The results of back-calculation for the dredge tailings (approximately 40 and 70 feet in height, respectively) indicate that the strength parameters for gravels as listed above are reasonable.

We also reviewed the report prepared by Geomatrix (June 2004), in which large-scale field strength tests (load tests) were conducted on coarse-grained soils (generally well-graded gravels with sand) that are similar to the dredge tailings comprising the upper approximately 90 feet of soils at the site. The Geomatrix data pertain to various aggregate quarries in Irwindale, California with coarse-grained soils that are similar to the dredge tailings at the site.

SLOPE STABILITY ANALYSES:

A total of three cross sections were selected to evaluate the slope stability. The details of the cross sections, including the stratification lines representing approximate boundaries between soil types, are included in Enclosure "A-5". The slope stability analyses were performed on the proposed reclaimed 2(h):1(v) cut slopes.

A horizontal seismic coefficient of 0.10 was utilized based on the relatively low design PGA obtained for the site. This area is one of the areas of California with very low ground shaking potential. Dr. Nicholas Sitar, Professor of Civil and Environmental Engineering at U.C. Berkeley, recommends a seismic coefficient of 1/3 to 1/2 of PGA for seismic earth pressure analyses (personal communication, A.S.C.E. Seminar, Long Beach, April 23, 2008). Our K_h of 0.10 falls within this recommendation.

Acceptable factors of safety were calculated in all sections. The detailed results of slope stability analyses are included as Enclosures "D-1" through "D-6". Results are summarized below.

Cross Section	Cut Slope	Static FS	Seismic FS
X-X'	2(h):1(v)	1.49	1.27
Y-Y'	2(h):1(v)	1.43	1.23
Z-Z'	2(h):1(v)	1.44	1.15

It should be noted that the surficial stability of cut slopes may be controlled by the variation of the groundwater surface. Local failures near the water surface are anticipated.

To confirm the apparent strength parameters, back calculations were performed on existing onsite slopes in the dredge tailings. These slopes were shown to have a static factor of safety of 1.78 and 1.69 (Enclosures "D-7" and "D-8", respectively), agreeing with the stability analysis methods and parameters used above.

CONCLUSIONS

Based upon the findings of our geologic field observations and evaluations, as well as the results of our slope stability calculations, it is the opinion of this firm that the reclaimed final slopes as recommended in this report are stable, provided the recommendations contained in this report are implemented.

Based upon our analyses, the proposed 2(h):1(v) reclamation slopes up to approximately 200 feet in height are suitably stable against gross failure for the anticipated long-term conditions, including the effects of seismic shaking. Reclaimed slopes no steeper than 2(h):1(v) up to a maximum height of 200 feet are recommended to provide adequate stability against gross failure under the anticipated conditions of shallow groundwater and seismic shaking.

No evidence for active faulting was observed on the site during this investigation. No groundwater barriers are known to exist on the site.

The historic high groundwater elevation is considered to be approximately equal to the current elevation as expressed by the surface of the existing bodies of water at the site. Ponding exists across the site and is anticipated in all proposed quarries.

RECOMMENDATIONS

SEISMIC SHAKING HAZARDS:

Low seismic shaking of the site can be expected to occur during the lifetime of the proposed mining and reclamation. This potential has been considered in our analyses and evaluation of slope stability.

RECLAIMED (FINAL) CUT SLOPE CONSTRUCTION:

Reclaimed slopes are expected to be within and cut into dredge tailings and native alluvial materials.

The reclamation plan shows all proposed cut slopes at an inclination of 2(h):1(v) or flatter and is in accordance with our recommendations.

Any large, unstable boulders on mine slopes should be removed or stabilized prior to the end of reclamation.

SLOPE PROTECTION:

Slopes should be protected with berms and/or levees as necessary to prevent slope erosion in the areas where natural slopes drain onto the reclaimed slopes.

Surface water should be prevented from ponding above the slope and from flowing over the slope faces.

EROSION AND DRAINAGE:

Runoff should not be allowed to flow over natural, cut, or fill areas in such a way as to cause erosion. Finished soil slopes should be planted with drought resistant native vegetation to protect from wind and rain. Watering to maintain slopes is not recommended.

ALTERNATE END USES OF THE SITE:

This report and the investigation performed in order to prepare this report are intended to be suitable for mine reclamation only. Future uses of the site for anything other than reclamation of the mine as open space are beyond the scope of this investigation and report. If other uses of the site are planned or considered, then an additional investigation to address other end uses should be conducted.

LIMITATIONS

C.H.J., Incorporated has striven to perform our services within the limits prescribed by our client, and in a manner consistent with the usual thoroughness and competence of reputable geotechnical engineers and engineering geologists practicing under similar circumstances. No other representation, express or implied, and no warranty or guarantee is included or intended by virtue of the services performed or reports, opinion, documents, or otherwise supplied.

This report reflects the testing conducted on the site as the site existed during the investigation, which is the subject of this report. However, changes in the conditions of a property can occur with the passage of time, due to natural processes or the works of man on this or adjacent properties. Changes in applicable or appropriate standards may also occur whether as a result of legislation, application, or the broadening of knowledge. Therefore, this report is indicative of only those conditions tested at the time of the subject investigation, and the findings of this report may be invalidated in part or in full by changes outside of the control of C.H.J., Incorporated.

The conclusions and recommendations in this report are based upon observations performed and data collected at separate locations, and interpolation between these locations, carried out for the project

and the scope of services described. It is assumed and expected that the conditions between locations observed and/or sampled are similar to those encountered at the individual locations where observation and sampling was performed. However, conditions between these locations may vary significantly. Should conditions be encountered in the field, by the client or any firm performing services for the client or the client's assign, that appear different than those described herein, this firm should be contacted immediately in order that we might evaluate their effect.

If this report or portions thereof are provided to contractors or included in specifications, it should be understood by all parties that they are provided for information only and should be used as such.

The report and its contents resulting from this investigation are not intended or represented to be suitable for reuse on extensions or modifications of the project, or for use on any other project.

CLOSURE

We appreciate this opportunity to be of service and trust this report provides the information desired at this time. Should questions arise, please do not hesitate to contact this office.

Respectfully submitted,
C.H.J., INCORPORATED

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FY/JJM/:jm/ndt

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AERIAL PHOTOGRAPHS REVIEWED

Aerial Data Inc., March 9, 2004, Black and White Aerial Photograph Numbers 1-1, 1-2 and 1-3. Scale: 1"=3,000'±.

APPENDIX "A"

GEOTECHNICAL MAPS AND CROSS SECTIONS

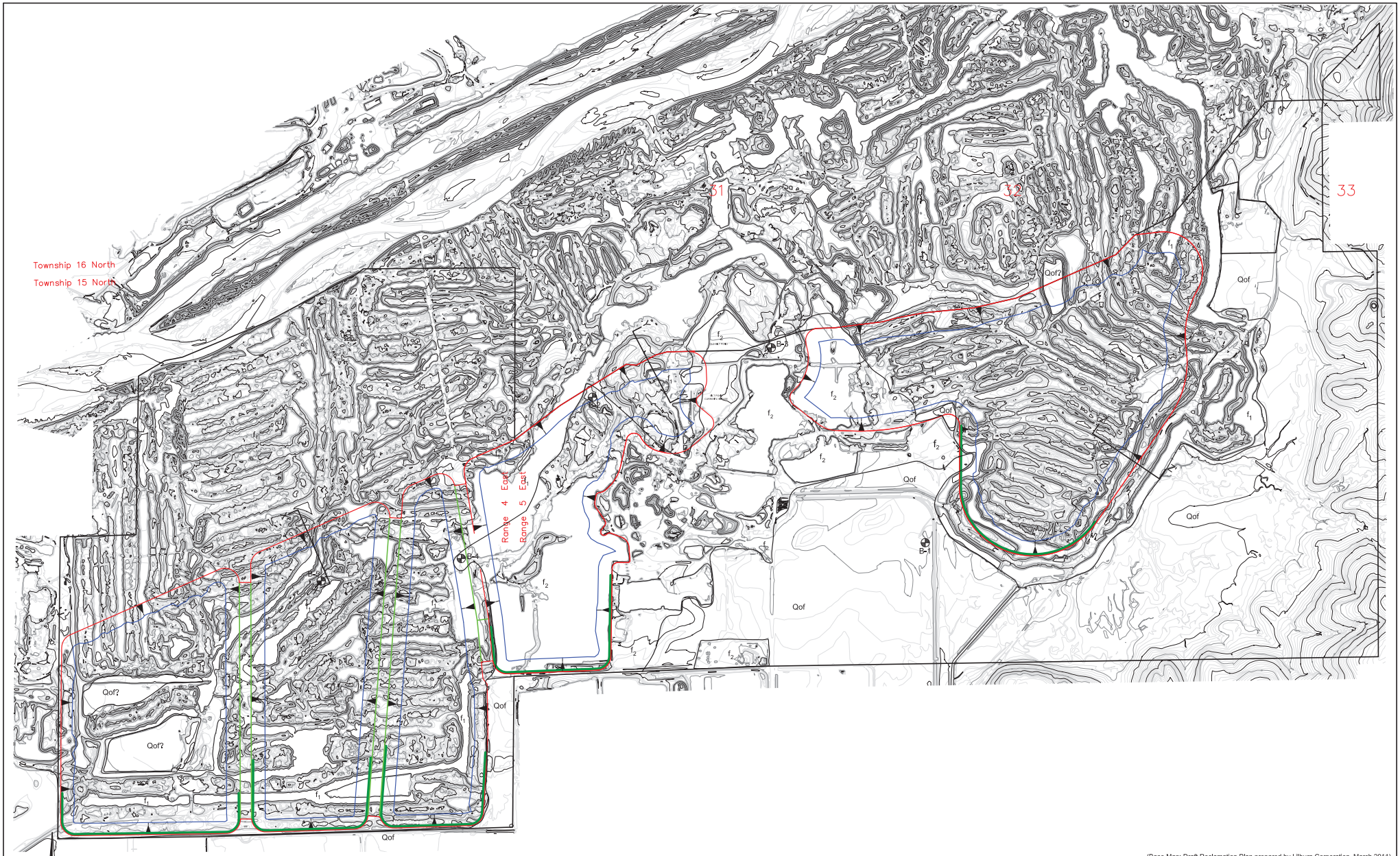
-N-

SCALE: 1"= 3,000'

INDEX MAP

FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-1"
DATE: APRIL 2011		JOB NUMBER 11137-8

C.H.J. Incorporated



NOTE: Aerial photograph background is not visible on the PDF version of this map.

(Base Map: Draft Reclamation Plan prepared by Lilburn Corporation, March 2011)

-N-

SCALE: 1"=700'

0 700 1400

GEOLOGIC UNITS:

f_2 - Recent fill

f_1 - fill associated with historic dredging activities; Includes some undifferentiated dredge tailings of more recent age

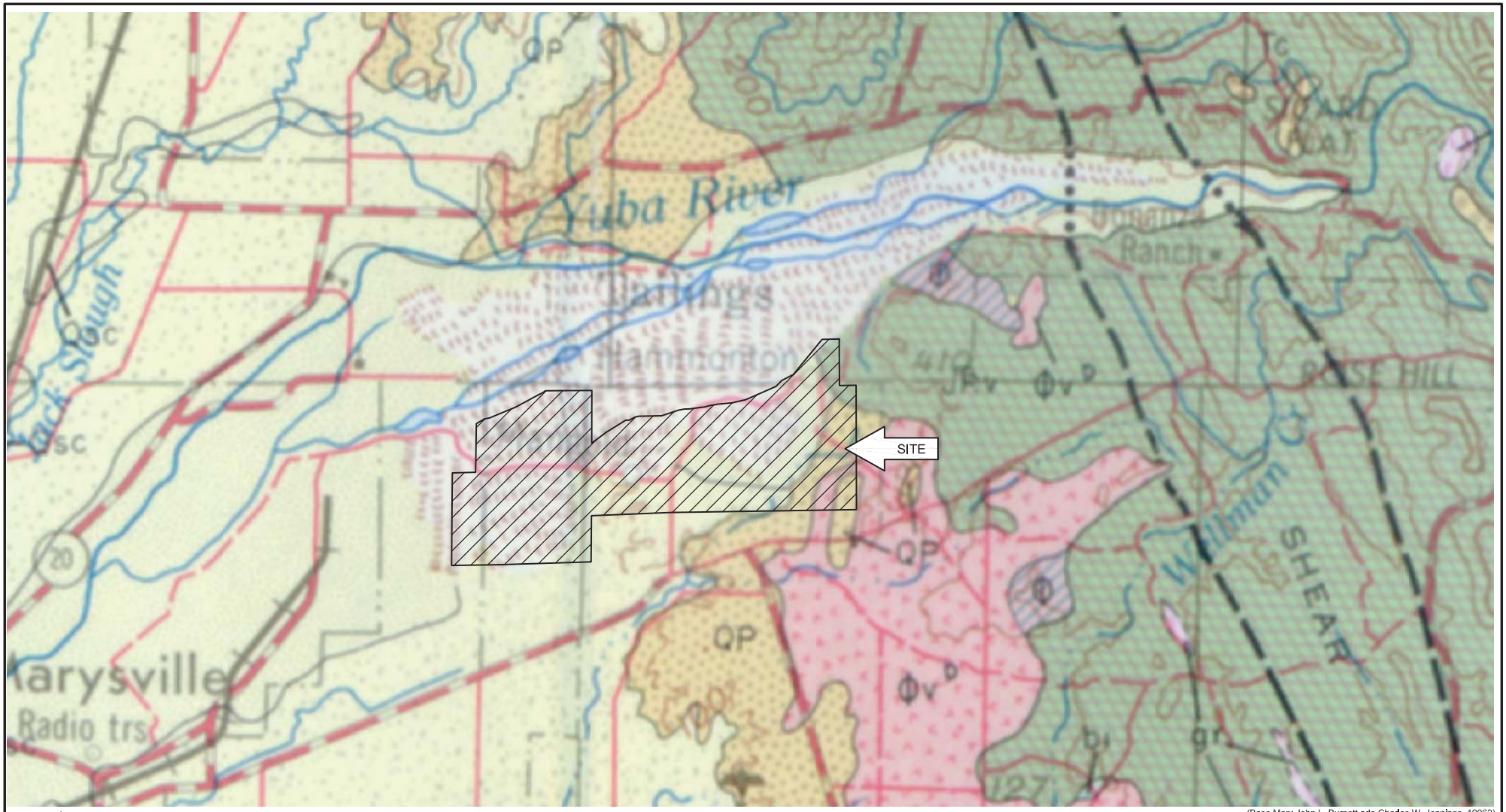
Qoa - old fan deposits

B-5 Location of Geotechnical Boring (2006)

Approximate geologic contact

Z Z' Geologic Cross Section

GEOLOGIC MAP		
FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-2"
DATE: APRIL 2011		JOB NUMBER 11137-8



(Base Map: John L. Burnett adn Charles W. Jennings, 19962)

N

SCALE: 1"= 1mile

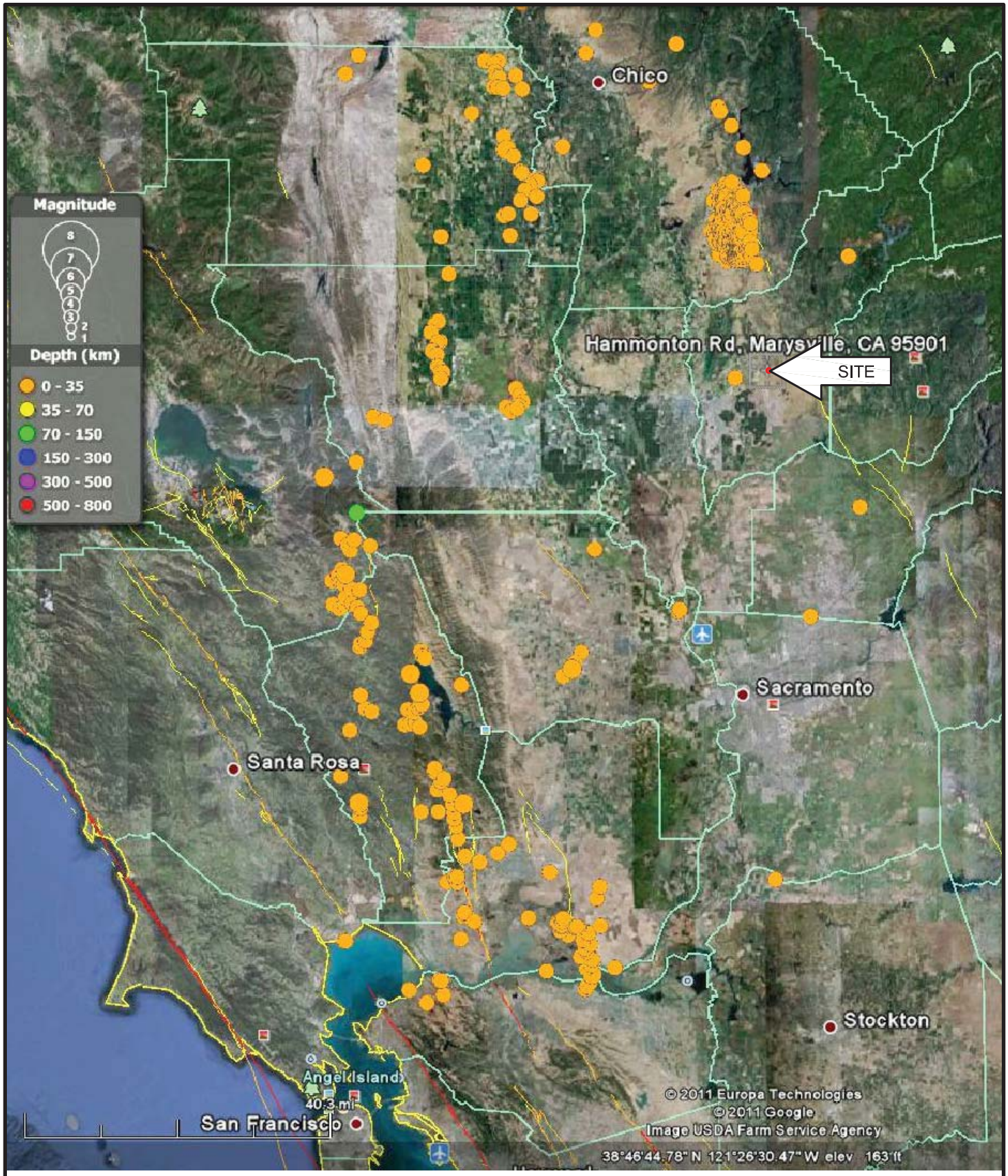
GEOLOGIC UNITS:

Qf - Quarternery fan deposits
Qp - Plio-Pleistocene nonmarine
Φ - Oligocene marine
Φv - Oligocene volcanic
JTRv - Jura-Trias metavolcanic rocks

Contact, separates mapped geologic units

Fault, dashed where approximate, dotted where concealed

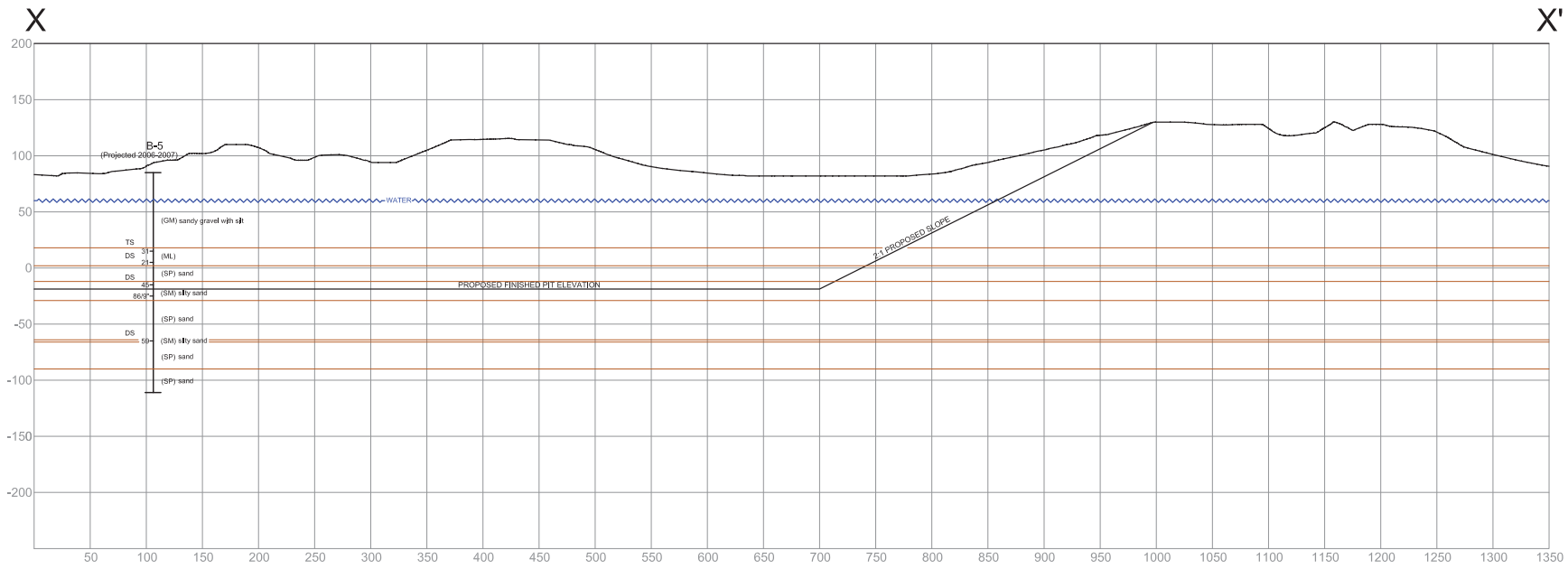
GEOLOGIC INDEX MAP		
FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-3"
DATE: APRIL 2011		JOB NUMBER 11137-8
		C.H.J. Incorporated



EARTHQUAKE EPICENTER MAP

FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-4"
DATE: APRIL 2011		JOB NUMBER 11137-8

C.H.J. Incorporated



DS - Direct shear test
TS - Triaxial shear test

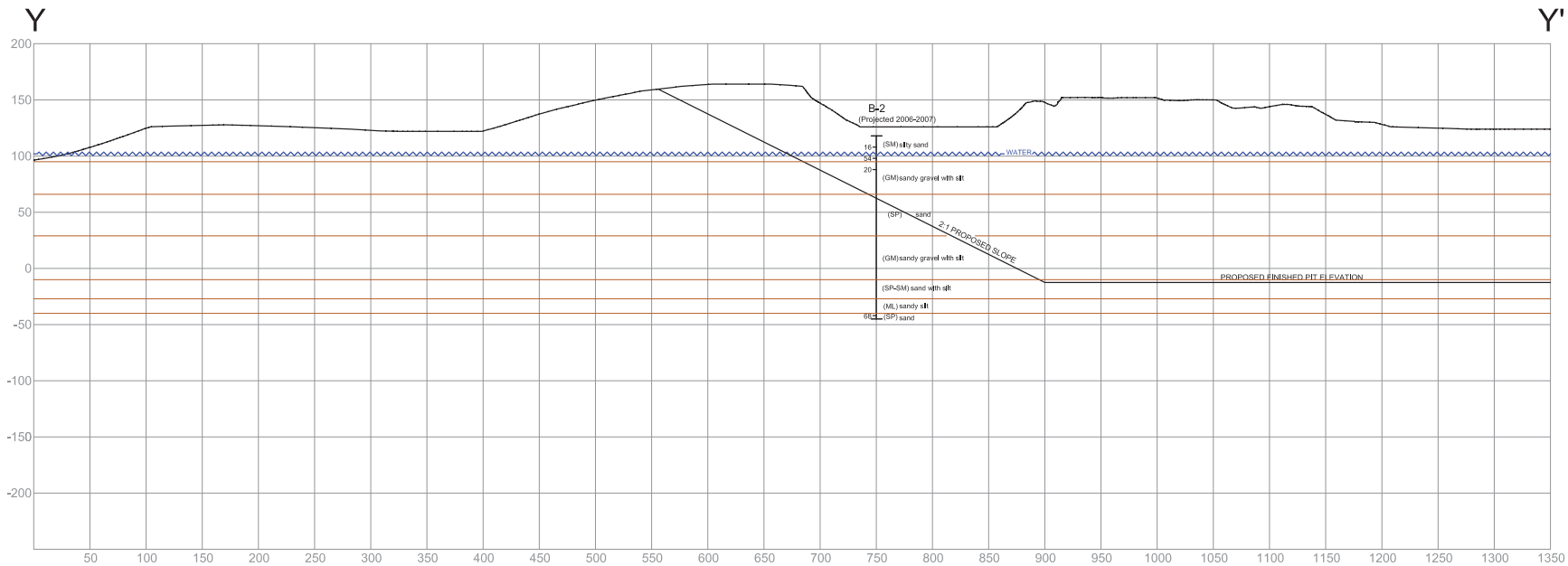
contact, separates lithologic units

SCALE 1"= 100'

GEOLOGIC CROSS SECTION X-X'

FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-5"
DATE: APRIL 2011		JOB NUMBER 11137-8

C.H.J. Incorporated



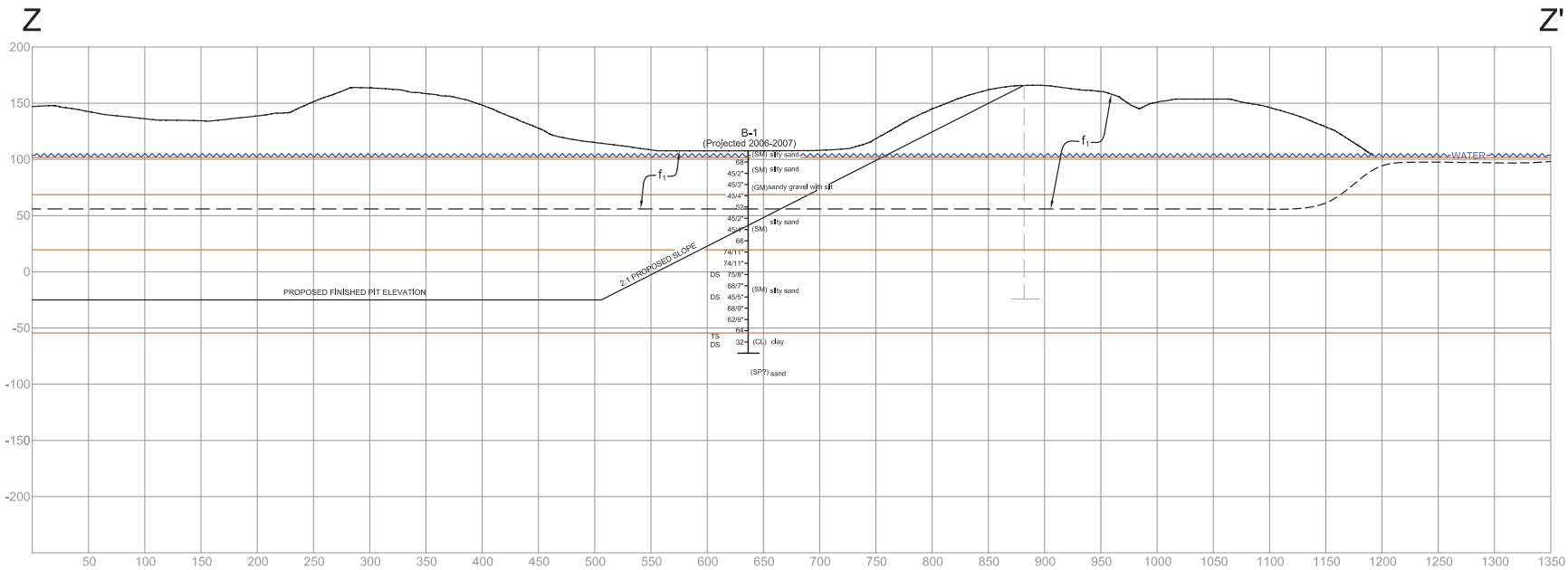
PG. 2 OF 3

DS - Direct shear test
TS - Triaxial shear test

contact, separates lithologic units

SCALE 1"= 100'

GEOLOGIC CROSS SECTION Y-Y'		
FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-5"
DATE: APRIL 2011		JOB NUMBER 11137-8
		C.H.J. Incorporated



DS - Direct shear test
TS - Triaxial shear test

contact, separates lithologic units

SCALE 1"= 100'

GEOLOGIC CROSS SECTION Z-Z'

FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-5"
DATE: APRIL 2011		JOB NUMBER 11137-8

C.H.J. Incorporated

APPENDIX "B"

EXPLORATORY LOGS

KEY TO LOGS

SAMPLE TYPE:

Bulk Indicates Disturbed or Bulk Sample

Dist. Indicates Disturbed Sample

DS Direct Shear Test (ASTM D 3080)

MDC Maximum Density Optimum Moisture Determination (ASTM D 1557)

N.R. Indicates No Recovery of Sample

Ring Indicates Relatively Undisturbed Ring Sample. Relatively Undisturbed Ring Samples are obtained with a "California Sampler" (3.25" O.D. and 2.42" I.D.) driven with a 140-pound weight falling 30 inches. The blows per foot are converted to equivalent SPT values.

SA Sieve Analysis (ASTM C 136)

SPT Indicates Standard Penetration Test. The SPT value is the number of blows required to drive an SPT sampler 12 inches using a 140-pound weight falling 30 inches. The SPT sampler is 2" O.D. and 1-3/8" I.D.

ENGINEERING PROPERTIES FROM SPT BLOWS

Relationship of Penetration Resistance to Relative Density for Cohesionless Soils*
(After Mitchell and Katti, 1981)

Number of SPT Blows (N_{60})	Descriptive Relative Density	Approximate Relative Density (%)
<4	Very Loose	0-15
4-10	Loose	15-35
10-30	Medium Dense	35-65
30-50	Dense	65-85
>50	Very Dense	85-100

*At an effective overburden pressure of 1 ton per square foot (100 kPa)

Approximate Values of Undrained Shear Strength for Cohesive Soils
(Terzaghi and Peck, 1967)

Number of SPT Blows (N_{60})	Soil Consistency	Approximate Undrained Shear Strength (psf)
<2	Very Soft	Less than 250
2-4	Soft	250-500
4-8	Medium Stiff	500-1000
8-15	Stiff	1000-2000
15-30	Very Stiff	2000-4000
>30	Hard	More than 4000

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS 50% OR MORE OF COARSE FRACTION PASSING NO. 4 SEIVE	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRANED SOILS 50% OR MORE OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTY, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

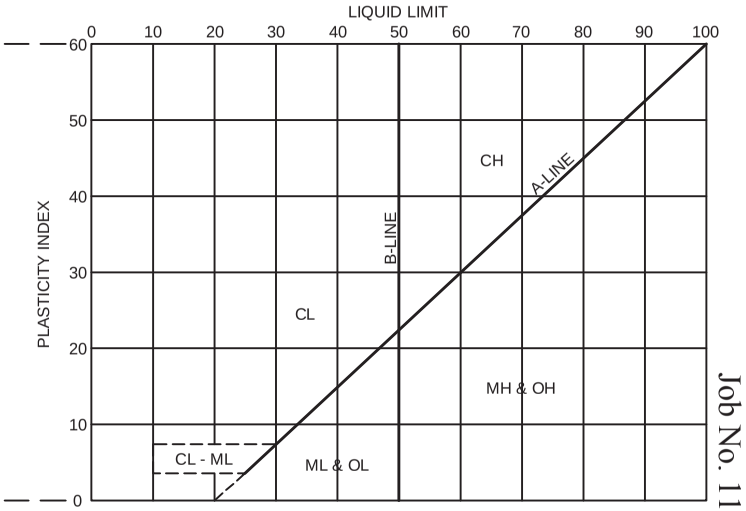
FOR LABROATORY CLASSIFICATION OF FIN-GRAINED SOILS

GRADATION CHART

MATERIAL SIZE	PARTICLE SIZE			
	LOWER LIMIT		UPPER LIMIT	
	MILLIMETERS	SIEVE SIZE	MILLIMETERS	SIEVE SIZE
SAND				
FINE	.075	#200x	0.425	#40 x
MEDIUM	0425	#40 x	2.00	#10 x
COARSE	200	#10 x	4.75	# 4 x
GRAVEL				
FINE	4.75	# 4 X	19	3/4"●
COARSE	19	3/4"●	75	3" ●
COBBLES	75	3"	300	12"
BOULDERS	200	12	N/A	N/A

x US STANDARD ● CLEAR SQUARE OPENINGS

PLASTICITY CHART



UNIFIED SOIL CLASSIFICATION SYSTEM

C.H.J. Incorporated

Enclosure "B" (2of2)
Job No. 11137-8

EXPLORATORY BORING NO. 1

Date Drilled: 8/30/06 | Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer | Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 110± | Logged by: J.R. | Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to medium with coarse, red brown	Native		▨				
5									
		(SM) Silty Sand, fine to medium with coarse, gravel and cobbles to 6", olive gray			▨				
10				☒		68	9.0	120	Ring
15									
20				▬		45/2"			Ring
		(GM) Sandy Gravel, fine to coarse with silt, clay, gravel and cobbles to 5", olive gray	▼ Groundwater		▨				
25									
30				▬		45/3"			Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8 | Enclosure B-1a

EXPLORATORY BORING NO. 1

Date Drilled: 8/30/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 110±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to medium with coarse, clay, gravel and cobbles to 4", blue gray							
40						45/4"			Ring
45									
50						52			Ring
55									
60						45/2"			Ring
65									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1b

EXPLORATORY BORING NO. 1

Date Drilled: 8/30/06 | Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer | Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 110± | Logged by: J.R. | Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		45/4"			Ring
75		(SM) Silty Sand, fine to medium with coarse, clay, gravel and cobbles to 4", blue gray							
80				X		66			Ring
85									
		(SM) Silty Sand, fine to medium with coarse, clay and gravel to 2", green gray			X				
90				X		74/11"			Ring
95									
100				X		74/11"	40.4	81	Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8 | Enclosure B-1c

EXPLORATORY BORING NO. 1

Date Drilled: 8/30/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 110±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
110				X		75/8"	33.2	94	Ring, DS
115					X				
120				X		88/7"	41.2	76	Ring
125									
130				X		45/5"	16.1	113	Ring, DS
135									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1d

EXPLORATORY BORING NO. 1

Date Drilled: 8/30/06 | Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer | Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 110± | Logged by: J.R. | Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		68/9"	13.0	116	Ring
145									
150		(SM) Silty Sand, fine to medium with coarse, clay and gravel to 2", green gray		X		62/9"	23.6	97	Ring
155									
160				X		64	7.2	132	Ring, PI, SA, TS
		(CL) Sandy Clay, fine to medium with silt and gravel to 2", blue gray			X				
165									
170				X		32	22.9	101	Ring, Hydro, DS

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8 | Enclosure B-1e

EXPLORATORY BORING NO. 1

Date Drilled: 8/30/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 110±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
180		END OF BORING							
		NO BEDROCK NO REFUSAL NO FILL SLIGHT CAVING GROUNDWATER AT 23.0'							
185									
190									
195									
200									
205									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1f

EXPLORATORY BORING NO. 2

Date Drilled: 9/1/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 15.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to medium with coarse and gravel to 2 1/2", brown	Fill		▨				
5									
10				☒		16	35.1	75	Ring
15			▼ Groundwater						
20				☒		54			Ring
		(GM) Sandy Gravel, fine to coarse with silt, gravel and cobbles to 4 1/2", gray			▨				
25									
30				☒		20			Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2a

EXPLORATORY BORING NO. 2

Date Drilled: 9/1/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 15.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40									
45									
50									
		(SP) Sand, fine to medium with coarse and silt, gray	Native						
55									
60									
65									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2b

EXPLORATORY BORING NO. 2

Date Drilled: 9/1/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 15.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
75		(SP) Sand, fine to medium with coarse and silt, gray							
80									
85									
90		(GM) Sandy Gravel, fine with silt, gravel and cobbles to 6", gray							
95									
100									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2c

EXPLORATORY BORING NO. 2

Date Drilled: 9/1/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 15.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
110									
115									
120									
125									
		(SP-SM) Sand, fine to coarse with silt and gravel to 2", gray			▨				
130									
135									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2d

EXPLORATORY BORING NO. 2

Date Drilled: 9/1/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 15.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
145		(ML) Sandy Silt, fine to medium with coarse and clay, brown			▨				PI, SA
150		(ML) Sandy Silt, fine to medium with coarse and clay, brown							
155									
		(SP) Sand, fine to coarse with gravel to 2", gray			▨				
160				☒		68			Ring
		END OF BORING	Refusal						
165		NO BEDROCK PRACTICAL REFUSAL AT 163.0' FILL TO 52.0' SLIGHT TO HEAVY CAVING GROUNDWATER AT 15.0'							
170									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2e

EXPLORATORY BORING NO. 3

Date Drilled: 9/2/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(GM) Sandy Gravel, fine to coarse with silt and cobbles to 6", brown	Fill		▨				
5									
10				☒		63			Ring
15									
20									
25									
30									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-3a

EXPLORATORY BORING NO. 3

Date Drilled: 9/2/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40									
45			Groundwater						
50									
55									
60		(SP) Sand, fine to medium with coarse and gravel to 1/2", gray	Native						
65									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-3b

EXPLORATORY BORING NO. 3

Date Drilled: 9/2/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
75		(SP) Sand, fine to medium with coarse and gravel to 1/2", gray							
80									
85									
90									
		(SP) Sand, fine to medium with coarse, gravel and cobbles to 5", gray			▨				
95									
100									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-3c

EXPLORATORY BORING NO. 3

Date Drilled: 9/2/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
110									
115									
120									
125									
130									
		(ML) Sandy Silt, fine to medium with coarse and gravel to 2", brown			▨				PI, SA
135									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-3d

EXPLORATORY BORING NO. 3

Date Drilled: 9/2/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
145									
150		(ML) Sandy Silt, fine to medium with coarse and gravel to 2", brown		X		89/8"			Ring
155									
		(SP) Sand, fine to medium, gray			X				
160				X		54			Ring
165									
		(SM) Silty Sand, fine to medium with coarse, gravel and cobbles to 6", brown			X				
170				X		84/9"	39.8	80	Ring, DS

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-3e

EXPLORATORY BORING NO. 3

Date Drilled: 9/2/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 118±

Logged by: J.R.

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SP) Sand, fine to coarse with gravel and cobbles to 5", dark blue gray							
180									
185									
190									
195									
200		END OF BORING NO BEDROCK NO REFUSAL FILL TO 59.0' SLIGHT TO HEAVY CAVING GROUNDWATER AT 45.0'							
205									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-3f

EXPLORATORY BORING NO. 4

Date Drilled: 9/3/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 88±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(GM) Sandy Gravel, fine to coarse with silt and cobbles to 6", brown	Fill						
5									
10									
15									
20		(SP) Sand, fine to medium with coarse and gravel to 2", gray	Groundwater						
25									
30									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-4a

EXPLORATORY BORING NO. 4

Date Drilled: 9/3/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 88±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40									
45		(GP) Sandy Gravel, fine to coarse with gravel to 1", gray							
50						25			Ring
55									
60		(GM) Sandy Gravel, fine to medium with coarse and cobbles to 6", gray							
65									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-4b

EXPLORATORY BORING NO. 4

Date Drilled: 9/3/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 88±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(ML) Sandy Silt, fine, gray	Native	X	X	67/10"	31.1	92	Ring, DS
		(SP) Sand, fine to medium with coarse and gravel to 2 1/2", gray			X				
75		(SP) Sand, fine to medium with coarse and gravel to 2 1/2", gray							
80									
		(SM) Silty Sand, fine to medium, brown							
85									
		(GP) Sandy Gravel, fine to medium with coarse and cobbles to 5", gray			X				
90				X		89/8"	10.2	122	Ring
95									
100									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-4c

EXPLORATORY BORING NO. 4

Date Drilled: 9/3/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 88±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
110									
115									
		(SP) Sand, fine to medium with coarse, gray							
120									
125									
130									
135									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-4d

EXPLORATORY BORING NO. 4

Date Drilled: 9/3/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 88±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
145		(GP) Sandy Gravel, fine to medium with coarse and cobbles to 5", gray			▨				
150		(GP) Sandy Gravel, fine to medium with coarse and cobbles to 5", gray							
155									
160									
165									
170									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-4e

EXPLORATORY BORING NO. 4

Date Drilled: 9/3/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 88±

Logged by: J.R.

Measured Depth to Water(ft): 23.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
180		END OF BORING	Refusal						
		NO BEDROCK PRACTICAL REFUSAL AT 180' FILL TO 70.2' SLIGHT TO HEAVY CAVING GROUNDWATER AT 23.0'							
185									
190									
195									
200									
205									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-4f

EXPLORATORY BORING NO. 5

Date Drilled: 9/4/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 98±

Logged by: J.R.

Measured Depth to Water(ft): 24.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(GM) Sandy Gravel, fine to coarse with silt and cobbles to 10", gray	Fill						
5									
10									
15									
20									
			Groundwater						
25									
30									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-5a

EXPLORATORY BORING NO. 5

Date Drilled: 9/4/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 98±

Logged by: J.R.

Measured Depth to Water(ft): 24.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
40									
45									
50									
55									
60									
65									
		(CL-ML) Sandy Clay, fine to medium with coarse and gravel to 2", gray	Native						PI, SA, TS

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-5b

EXPLORATORY BORING NO. 5

Date Drilled: 9/4/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 98±

Logged by: J.R.

Measured Depth to Water(ft): 24.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		31			Ring
75		(CL-ML) Sandy Clay, fine to medium with coarse and gravel to 2", gray							
80		(SM) Silty Sand, fine to medium, brown		X		21	22.5	113	Ring, DS, Hydro
		(SP) Sand, fine to coarse with gravel to 2 1/2", gray							
85									
90									
95									
		(SM) Silty Sand, fine to medium with coarse, dark gray							
100				X		45	36.2	87	Ring, DS

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-5c

EXPLORATORY BORING NO. 5

Date Drilled: 9/4/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 98±

Logged by: J.R.

Measured Depth to Water(ft): 24.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
110				X		86/9"	17.4	112	Ring
115		(SP) Sand, fine to medium with coarse, gravel and cobbles to 5", gray			X				
120									
125									
130									
135									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-5d

EXPLORATORY BORING NO. 5

Date Drilled: 9/4/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 98±

Logged by: J.R.

Measured Depth to Water(ft): 24.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
145									
		(SM) Silty Sand, fine, dark gray							
150		(SP) Sand, fine to medium, dark gray		X		59			Ring, DS
155									
160									
165									
170									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-5e

EXPLORATORY BORING NO. 5

Date Drilled: 9/4/06

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker Hammer

Driving Weight / Drop: 140 lbs / 30 in

Surface Elevation(ft): 98±

Logged by: J.R.

Measured Depth to Water(ft): 24.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SP) Sand, fine to medium with coarse, gravel and cobbles to 4 1/2", dark gray							
180									
185									
190									
195									
		END OF BORING	Refusal						
		NO BEDROCK PRACTICAL REFUSAL AT 196.0' FILL TO 67.0' SLIGHT TO HEAVY CAVING GROUNDWATER AT 24.0'							
200									
205									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 4/12/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-5f

APPENDIX "C"

LABORATORY TESTING

Enclosure "C-1"
Job No. 11137-8

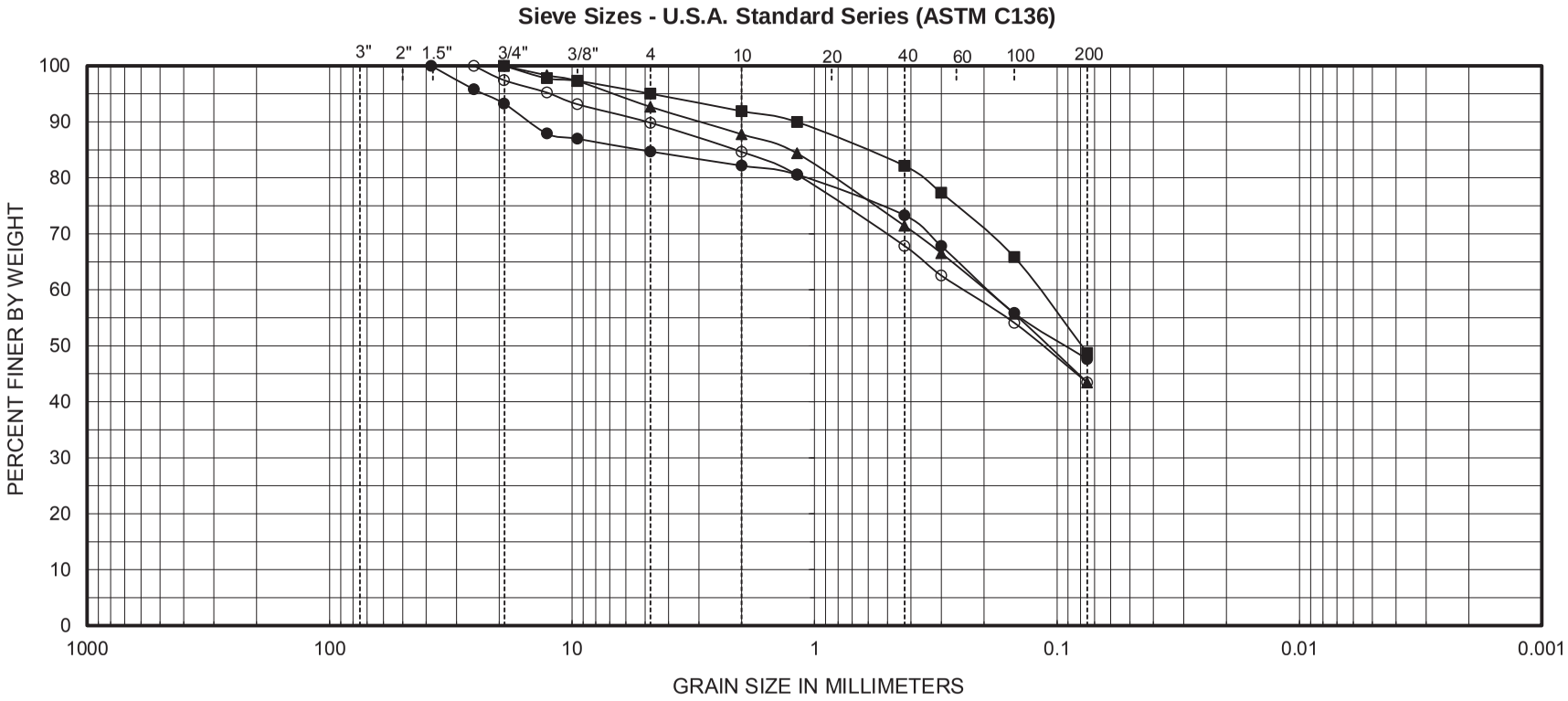
TEST DATA SUMMARY

CONSOLIDATED UNDRAINED TRIAXIAL TEST: (Remolded)
ASTM D 4767

Boring No.	Depth (ft.)	Φ' (º)	C' (psf)
1	162.0	30.8	147.7
5	67.0	34.7	417.9

DIRECT SHEAR TEST: (Relatively Undisturbed)
ASTM D 3080

Boring No.	Depth (ft.)	Φ' (º)	C' (psf)
1	110.0	40.9	0
1	130.0	28.4	156
1	170.0	24.0	720
3	170.0	32.4	258
4	70.0	27.5	480
5	80.0	34.0	0
5	100.0	34.7	150
5	150.0	31.8	96



Cobbles & Boulders	Gravel		Sand			Silt	Clay
	Coarse	Fine	Coarse	Medium	Fine		

Symbol	Boring No.	Depth (ft)	Classification	D_{10} (mm)	D_{30} (mm)	D_{50} (mm)	D_{60} (mm)	C_u	C_c	SE
●	1	162	(CL) Sandy clay, fine to medium with silt and gravel, blue gray			0.092	0.191			
■	2	145	(ML) Sandy silt, fine to medium with coarse and clay, brown			0.079	0.118			
▲	3	132	(ML) Sandy silt, fine to medium with coarse and gravel, brown			0.109	0.198			
○	5	67	(ML) Sandy silt, fine to medium with coarse and gravel, gray			0.115	0.243			

C.H.J. Incorporated

GRAIN SIZE DISTRIBUTION

Project:	Western Aggregates Quarry Reclamation		
Location:	Marysville, Yuba County, California		
Job Number:	11137-8	Enclosure:	C-2

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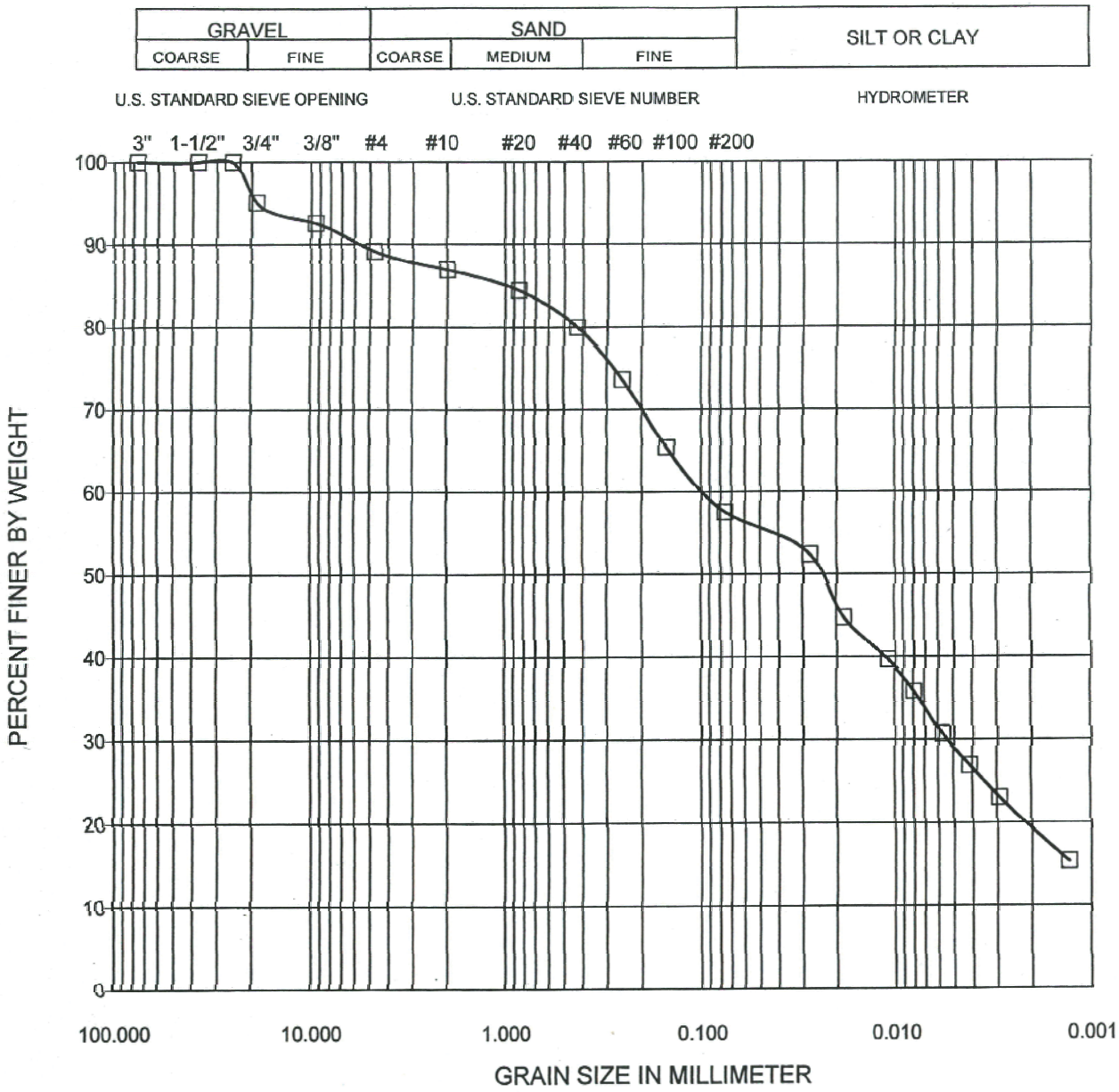
JOB NO.: 11137-8
ENCLOSURE: "C-3"



SYMBOL	BORING NO	SAMPLE ID	DEPTH (ft)	SAMPLE TYPE	SOIL TYPE	LIQUID LIMIT	PLASTICITY INDEX
□	SG1	SG1-17	170	RING	CL	N/A	N/A

ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

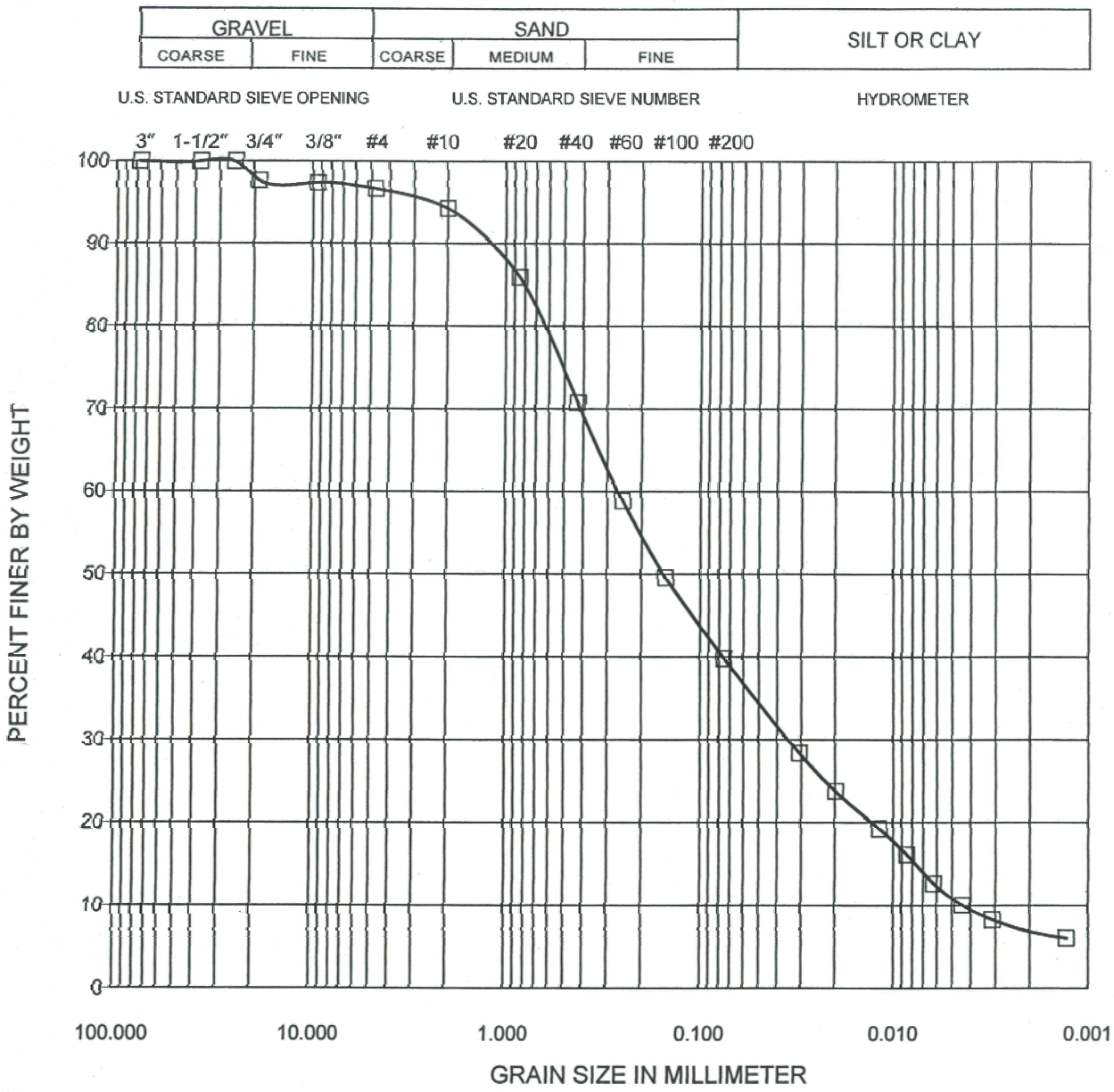
GRAIN SIZE DISTRIBUTION CURVE

(ASTM D422)

10/06

FIGURE

JOB NO.: 11137-8
ENCLOSURE: "C-4"



SYMBOL	BORING NO	SAMPLE ID	DEPTH (ft)	SAMPLE TYPE	SOIL TYPE	LIQUID LIMIT	PLASTICITY INDEX
□	SG5	SG5-8	80	RING	SM	N/A	N/A

ENVIRONMENTAL GEOTECHNOLOGY LABORATORY

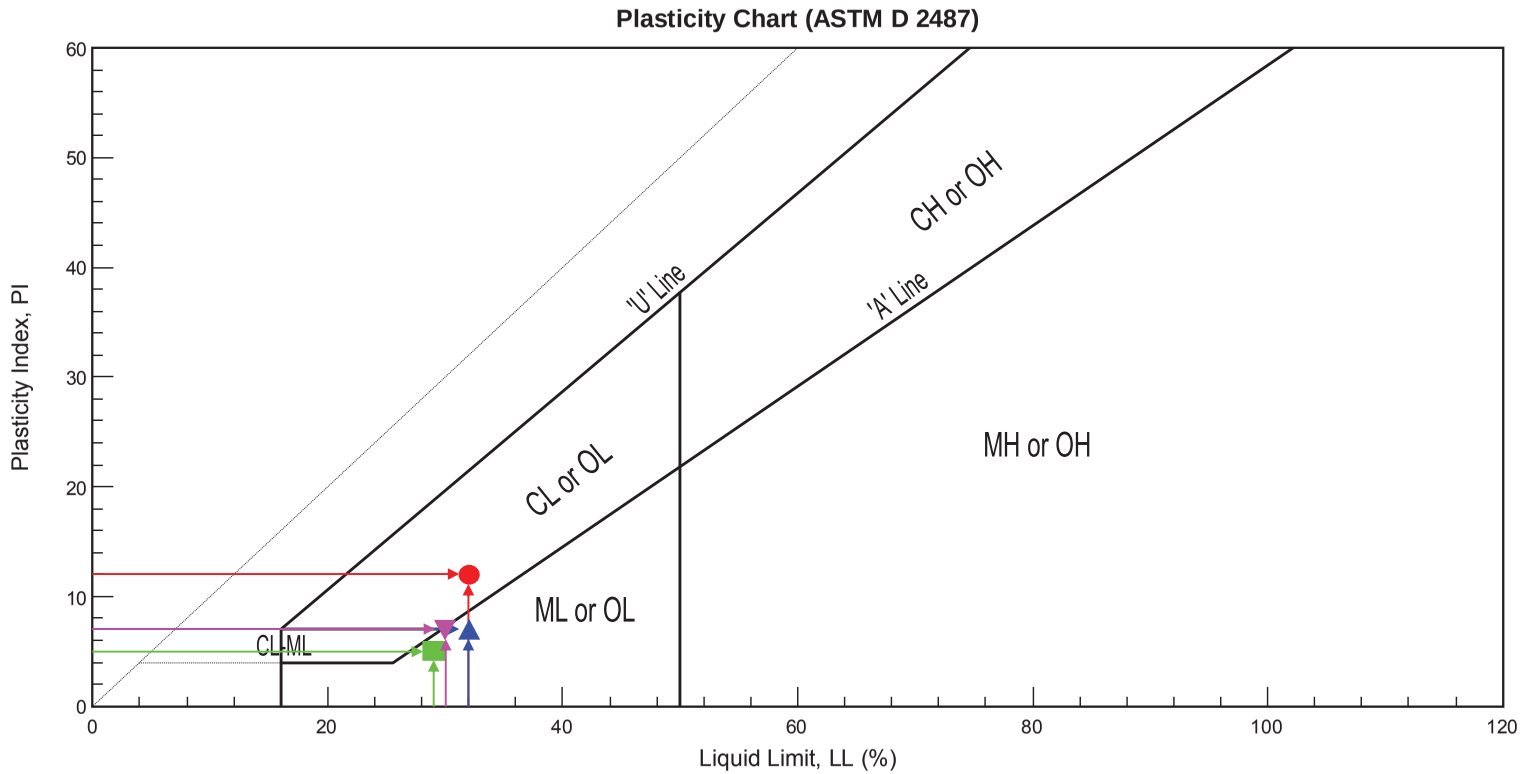
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

GRAIN SIZE DISTRIBUTION CURVE

(ASTM D422)

10/06

FIGURE



Symbol	Boring No.	Depth (ft)	Classification	PL (%)	LL (%)	PI (%)
●	1	162	(CL) Sandy clay, fine to medium with silt and gravel, blue gray	20.0	32.0	12.0
■	2	145	(ML) Sandy silt, fine to medium with coarse and clay, brown	24.0	29.0	5.0
▲	3	132	(ML) Sandy silt, fine to medium with coarse and gravel, brown	25.0	32.0	7.0
▼	5	67	(ML) Sandy silt, fine to medium with coarse and gravel, gray	23.0	30.0	7.0

C.H.J. Incorporated

PLASTICITY TESTS

Project:	Western Aggregates Quarry Reclamation		
Location:	Marysville, Yuba County, California		
Job Number:	11137-8	Enclosure:	C-5

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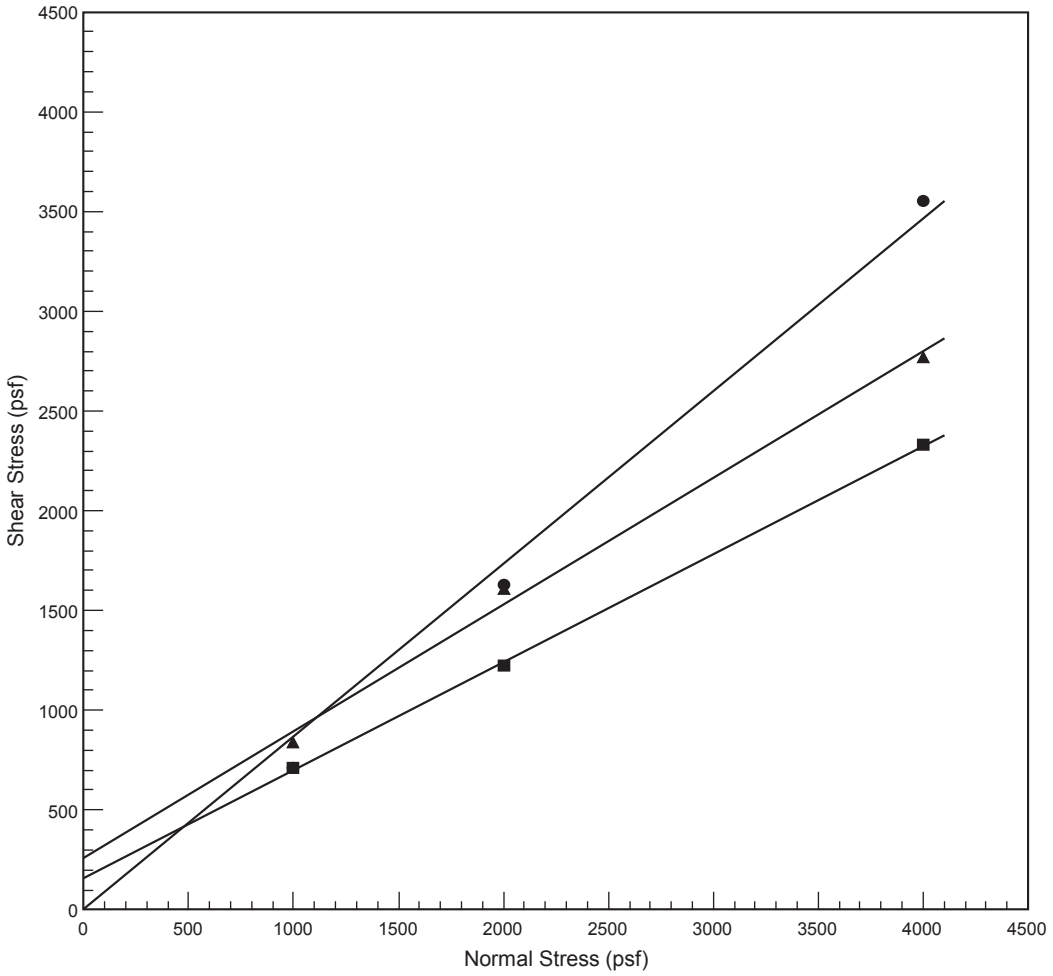
Direct Shear Test (ASTM D 3080)



	Boring #	Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC(%)	C (psf)	φ(°)
●	1	110	(SM) Silty sand, fine to medium with coarse, clay, & gravel to 2", green gray / undisturbed	94	33.2	0	40.9
■	1	130	(SM) Silty sand, fine to medium with coarse, clay, & gravel to 2", green gray / undisturbed	113	16.1	156	28.4
▲	3	170	(SM) Silty sand, fine to medium with coarse & gravel to 2", brown / undisturbed	80	39.8	258	32.4

C.H.J. Incorporated

DIRECT SHEAR TEST			
Project:	Western Aggregates Quarry Reclamation		
Location:	Marysville, Yuba County, California		
Job No.:	11137-8	Enclosure:	C-6

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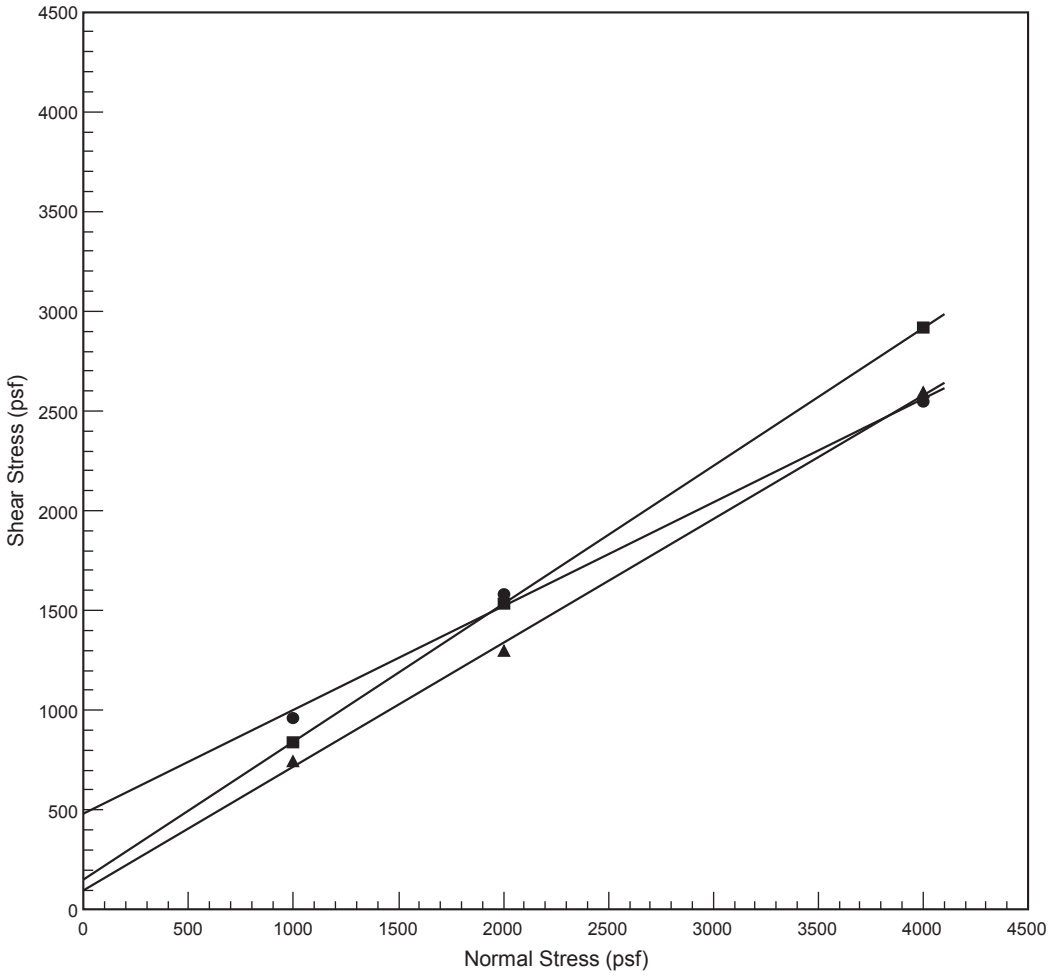
Direct Shear Test (ASTM D 3080)



	Boring #	Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC(%)	C (psf)	φ(º)
●	4	70	(ML) Sandy silt, fine, gray / undisturbed	92	31.1	480	27.5
■	5	100	(SM) Silty sand, fine to medium with coarse, dark gray / undisturbed	87	36.2	150	34.7
▲	5	150	(SM) Silty sand, fine, dark gray / undisturbed	80		96	31.8

C.H.J. Incorporated

DIRECT SHEAR TEST			
Project:	Western Aggregates Quarry Reclamation		
Location:	Marysville, Yuba County, California		
Job No.:	11137-8	Enclosure:	C-7

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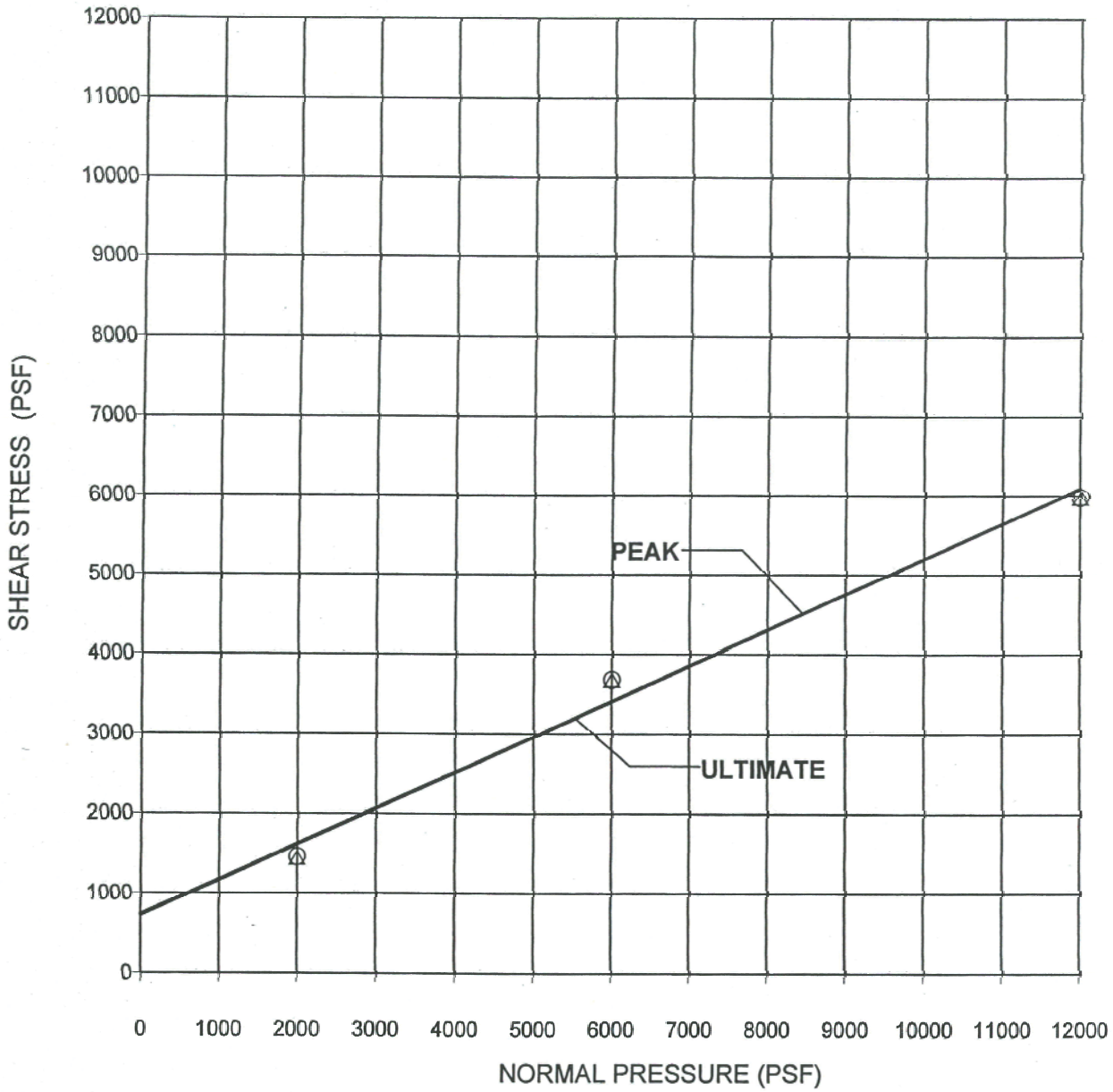


SYMBOL	BOREHOLE NUMBER	SAMPLE NUMBER	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE	COHESION (PSF)	FRICTION ANGLE (DEG)
○ PEAK	SG1	SG1-17	170	RING	CL	732	24
△ ULTIMATE						720	24

Vertical Loads (PSF)	Moisture Content Before Test (%)	Moisture Content After Test (%)
2000	22.9	22.1
6000	22.9	22.2
12000	22.9	22.4

Environmental Geotechnology Laboratory

PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

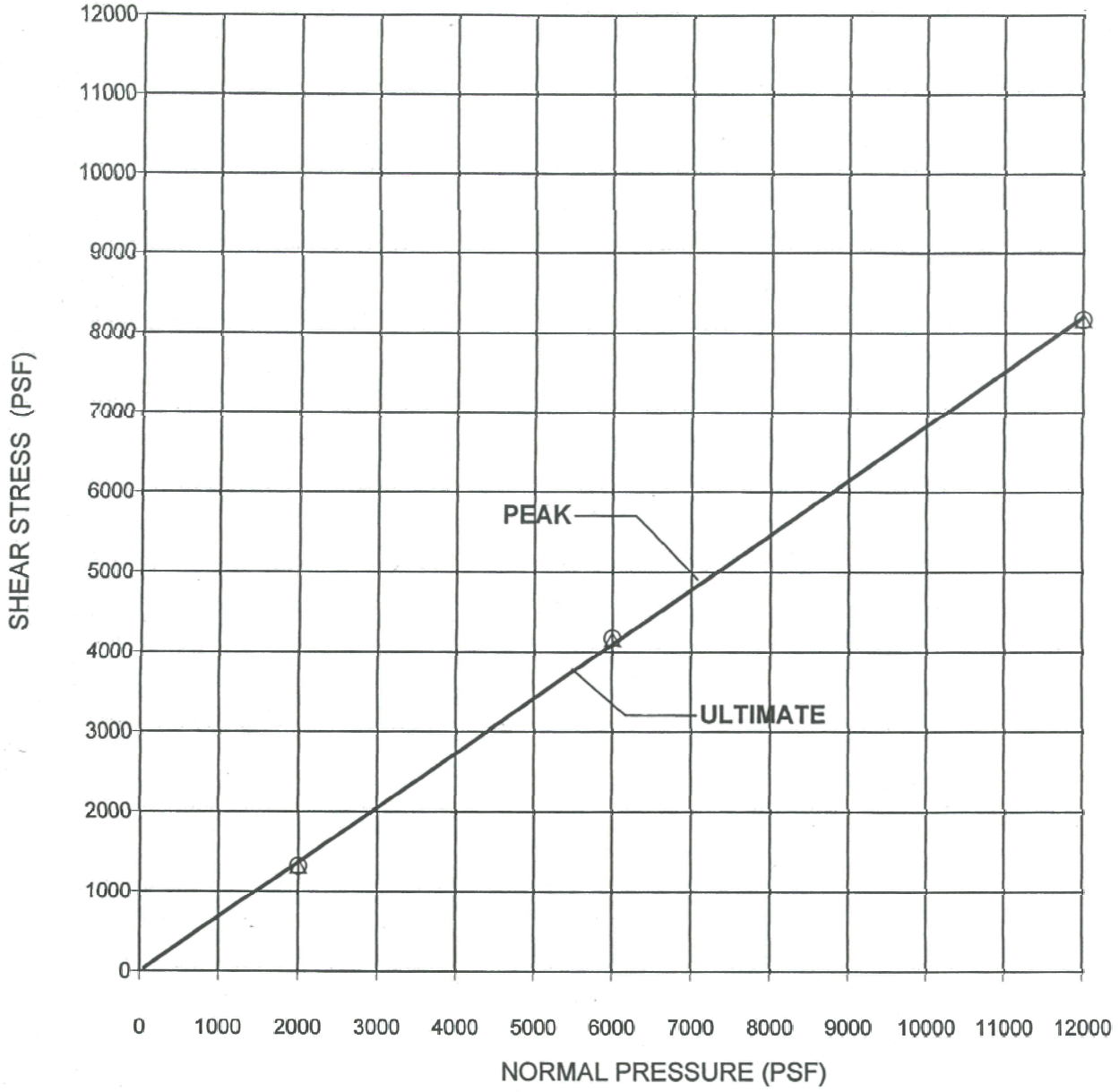
DIRECT SHEAR

(ASTM D3080)

10/06

FIGURE

11819 Goldring Road, Unit A, Arcadia, CA 91006. Tel: (626) 263-3588; Fax: (626) 263-3599



SYMBOL	BOREHOLE NUMBER	SAMPLE NUMBER	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE	COHESION (PSF)	FRICTION ANGLE (DEG)
○ PEAK	SG5	SG5-8	80	RING	SM	0	34
△ ULTIMATE						0	34

Vertical Loads (PSF)	Moisture Content Before Test (%)	Moisture Content After Test (%)
2000	22.5	20.0
6000	22.5	18.0
12000	22.5	17.1

Environmental Geotechnology Laboratory

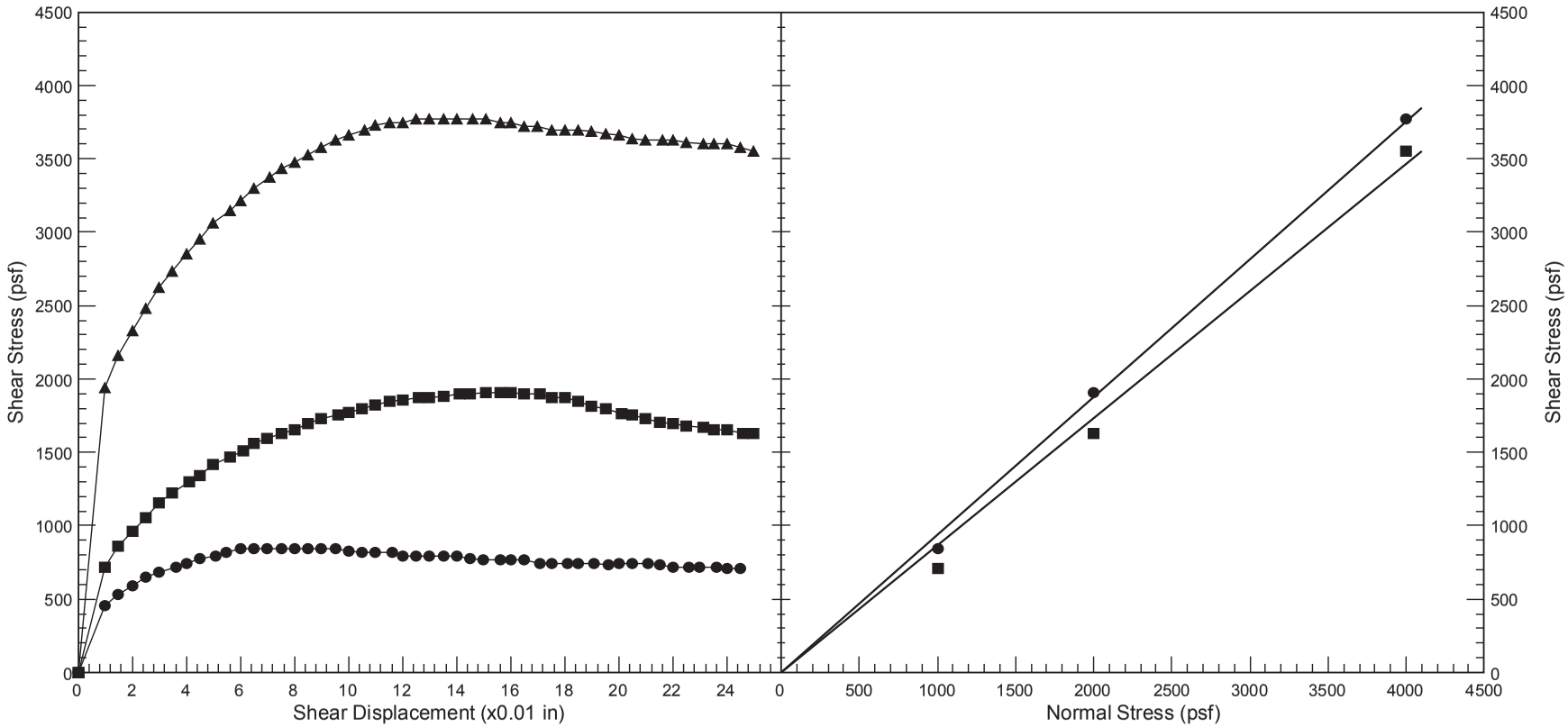
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

DIRECT SHEAR

(ASTM D3080)

10/06

FIGURE



Boring #		Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC (%)	C_{peak} (psf)	φ_{peak} (°)	C_{res} (psf)	φ_{res} (°)
●	1	110	(SM) Silty sand, fine to medium with coarse, clay, & gravel to 2", green gray / undisturbed	93.5	33.2	0	43.2	0	40.9

C.H.J. Incorporated

DIRECT SHEAR TEST

Project:	Western Aggregates Quarry Reclamation		
Location	Marysville, Yuba County, California		
Job Number	11137-8	Enclosure	C-10

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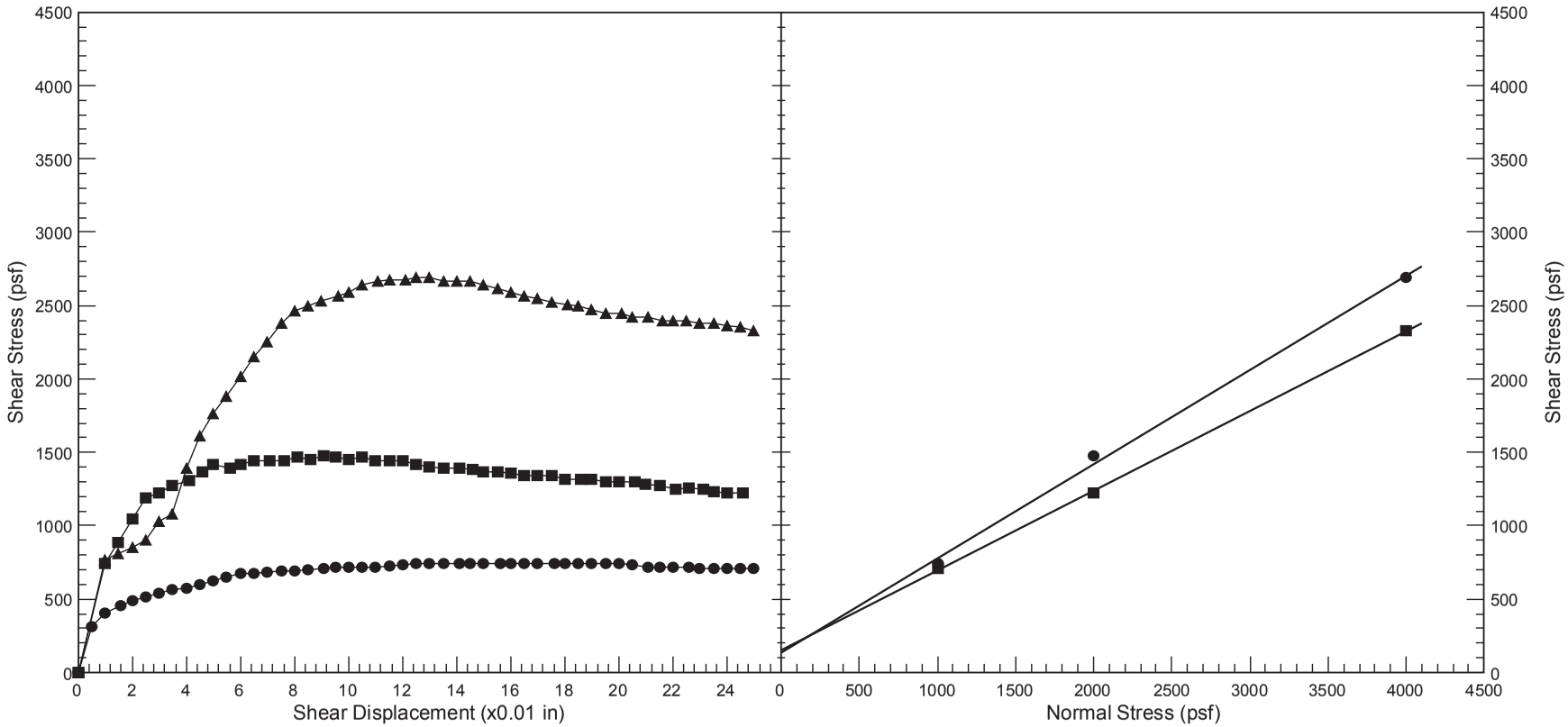

Boring #		Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC (%)	C_{peak} (psf)	φ_{peak} (°)	C_{res} (psf)	φ_{res} (°)
●	1	130	(SM) Silty sand, fine to medium with coarse, clay, & gravel to 2", green gray / undisturbed	113.1	16.1	138	32.7	156	28.4

C.H.J. Incorporated

DIRECT SHEAR TEST

Project:	Western Aggregates Quarry Reclamation		
Location	Marysville, Yuba County, California		
Job Number	11137-8	Enclosure	C-11

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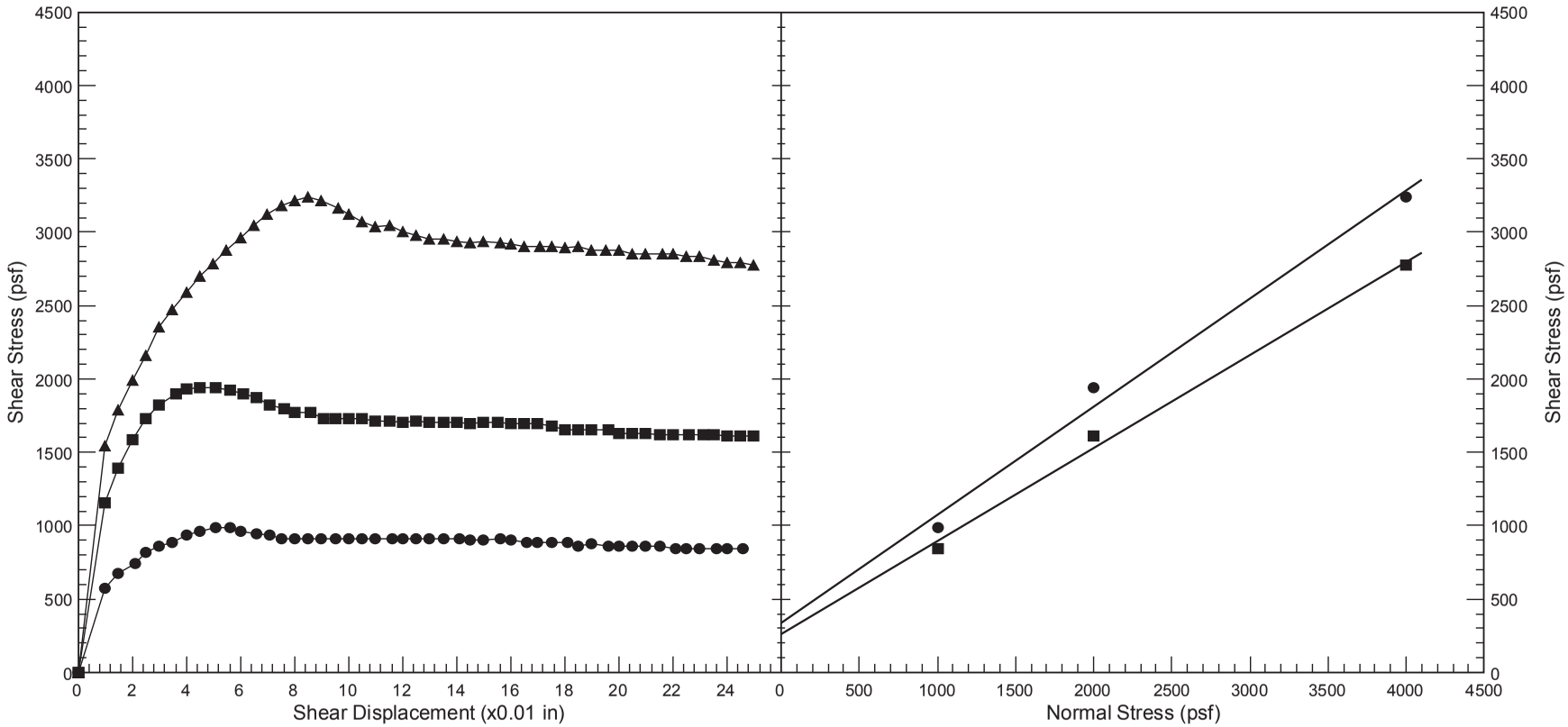

Boring #		Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC (%)	C_{peak} (psf)	φ_{peak} (°)	C_{res} (psf)	φ_{res} (°)
●	3	170	(SM) Silty sand, fine to medium with coarse & gravel to 2", brown / undisturbed	80.4	39.8	336	36.4	258	32.4

C.H.J. Incorporated

DIRECT SHEAR TEST

Project:	Western Aggregates Quarry Reclamation		
Location	Marysville, Yuba County, California		
Job Number	11137-8	Enclosure	C-12

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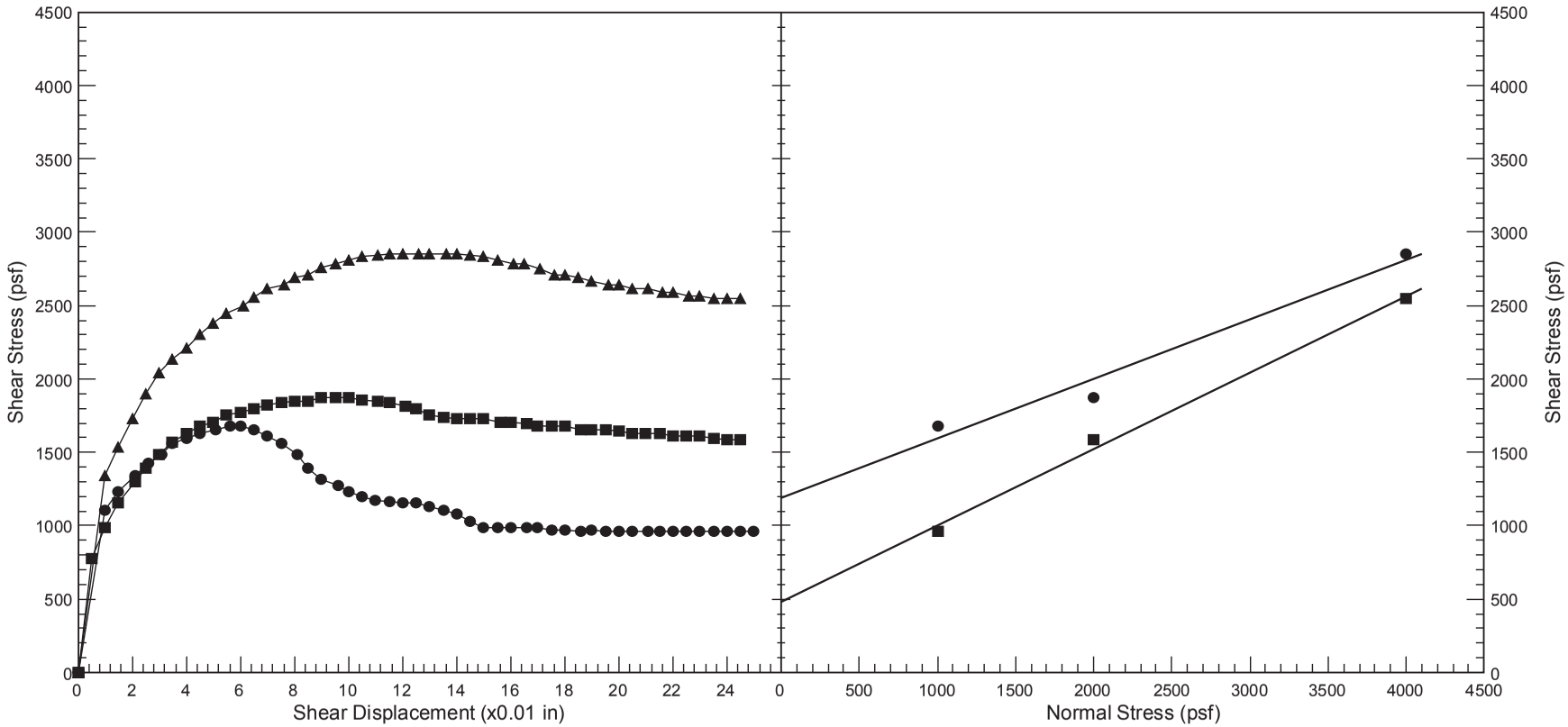

Boring #		Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC (%)	C_{peak} (psf)	φ_{peak} (°)	C_{res} (psf)	φ_{res} (°)
●	4	70	(ML) Sandy silt, fine, gray / undisturbed	92.1	31.1	1188	22.1	480	27.5

C.H.J. Incorporated

DIRECT SHEAR TEST

Project:	Western Aggregates Quarry Reclamation		
Location	Marysville, Yuba County, California		
Job Number	11137-8	Enclosure	C-13

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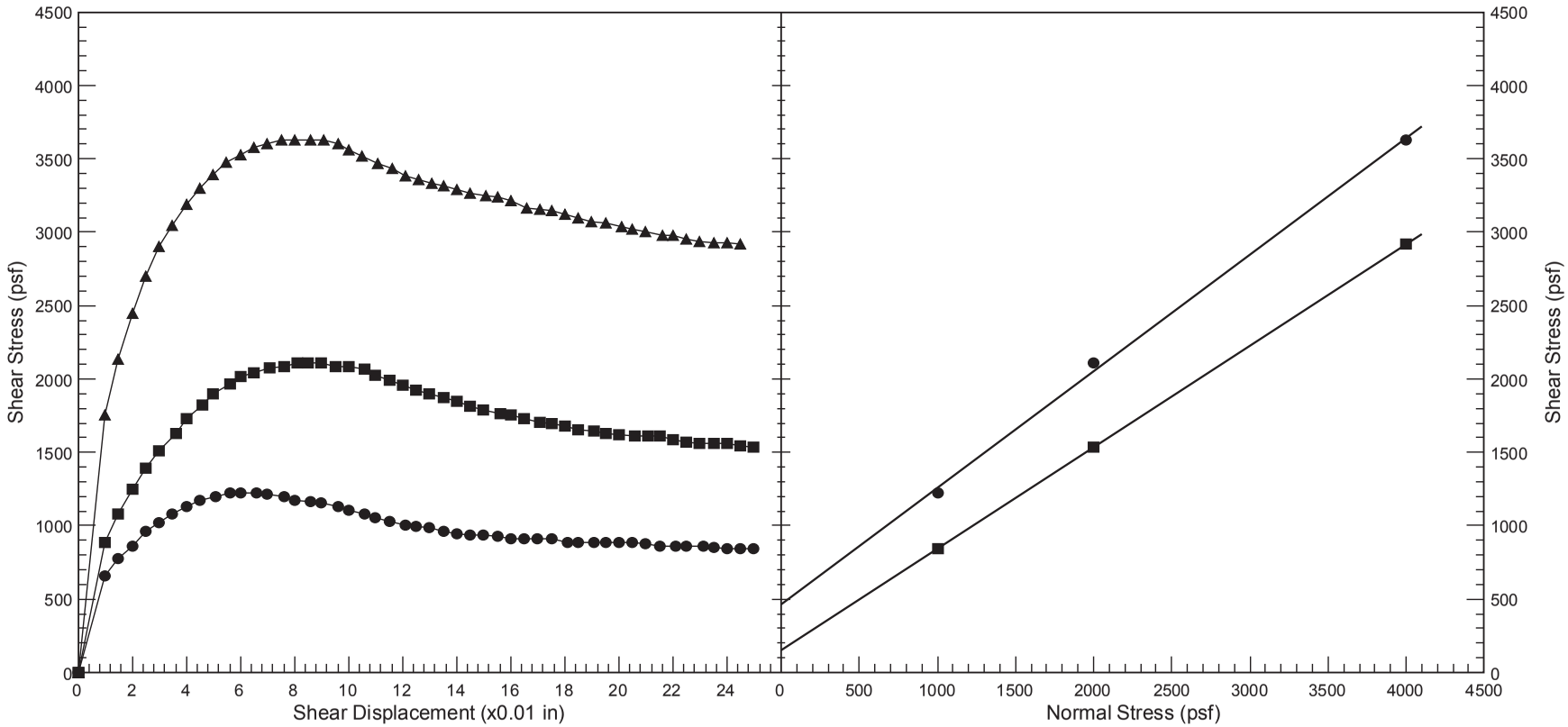

Boring #		Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC (%)	C_{peak} (psf)	φ_{peak} (°)	C_{res} (psf)	φ_{res} (°)
●	5	100	(SM) Silty sand, fine to medium with coarse, dark gray / undisturbed	87.3	36.2	468	38.4	150	34.7

C.H.J. Incorporated

DIRECT SHEAR TEST

Project:	Western Aggregates Quarry Reclamation		
Location	Marysville, Yuba County, California		
Job Number	11137-8	Enclosure	C-14

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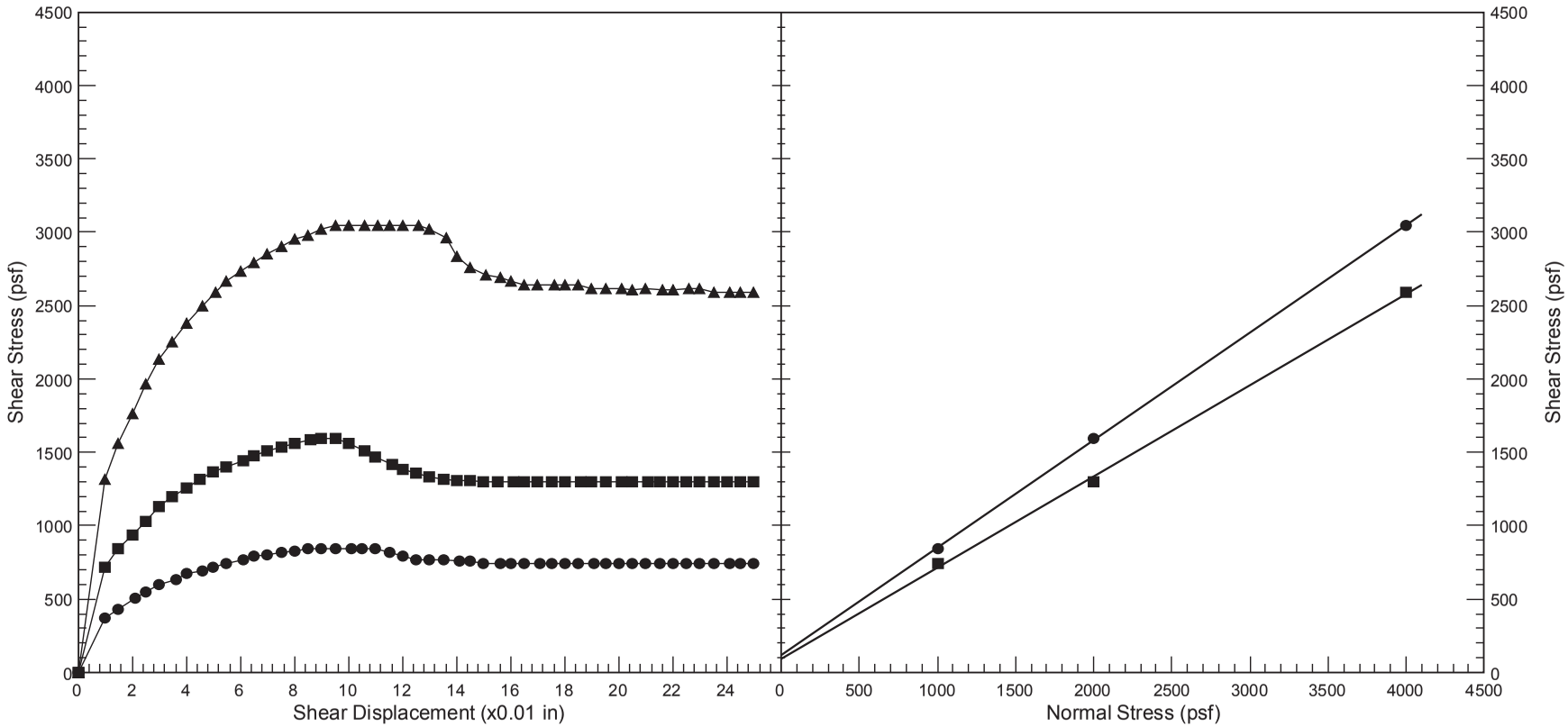

Boring #		Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC (%)	C_{peak} (psf)	φ_{peak} (°)	C_{res} (psf)	φ_{res} (°)
●	5	150	(SM) Silty sand, fine, dark gray / undisturbed	79.6		114	36.3	96	31.8

C.H.J. Incorporated

DIRECT SHEAR TEST

Project:	Western Aggregates Quarry Reclamation		
Location	Marysville, Yuba County, California		
Job Number	11137-8	Enclosure	C-15

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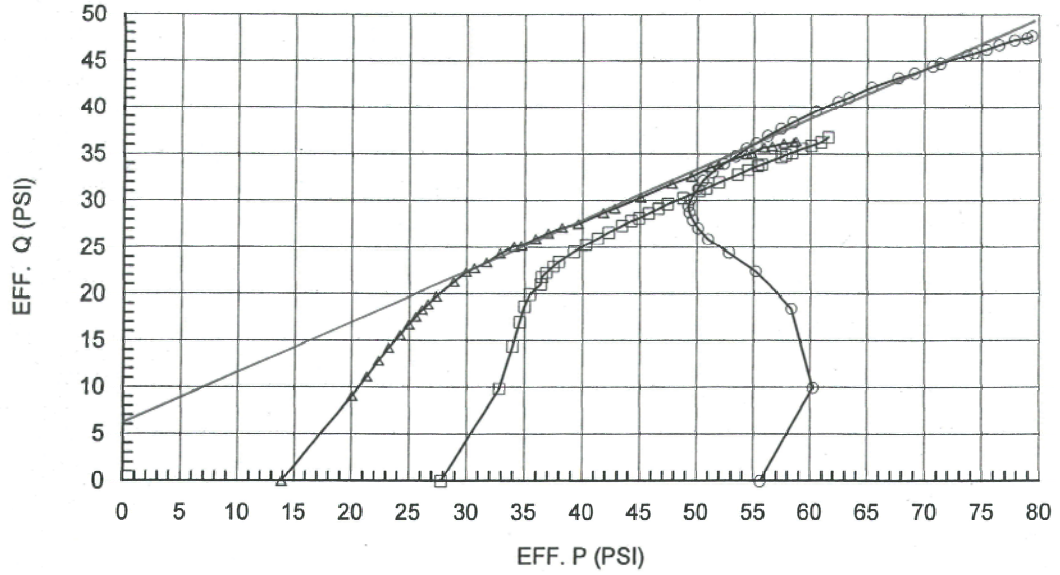
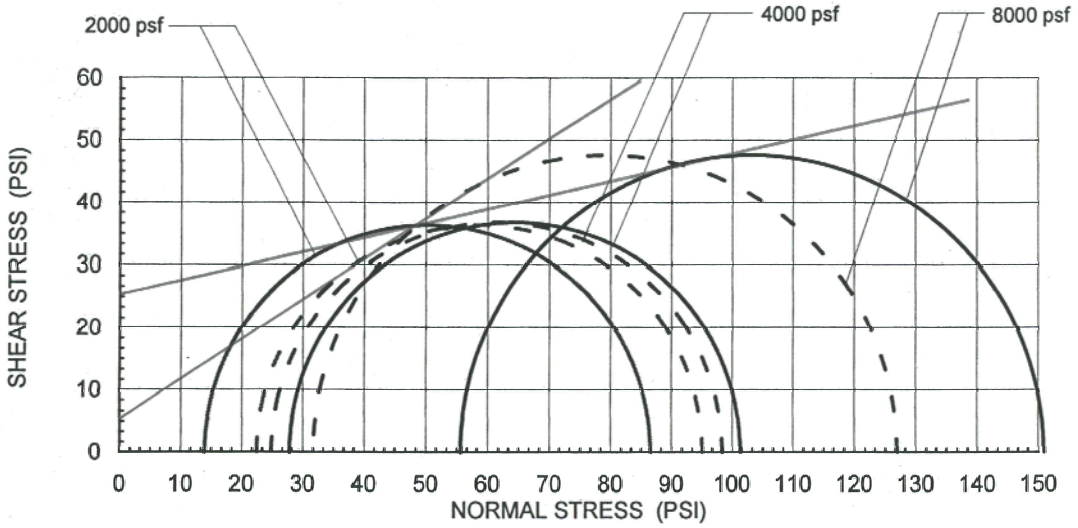




SYMBOL	SAMPLE ID	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
○	5B @ 2000 psf 5B @ 4000 psf 5B @ 8000 psf	N/A	Remolded	CL/SC

Note: Sample was remolded to
Dry Density = 113 pcf
Moisture = 22.5%

Environmental Geotechnology Laboratory

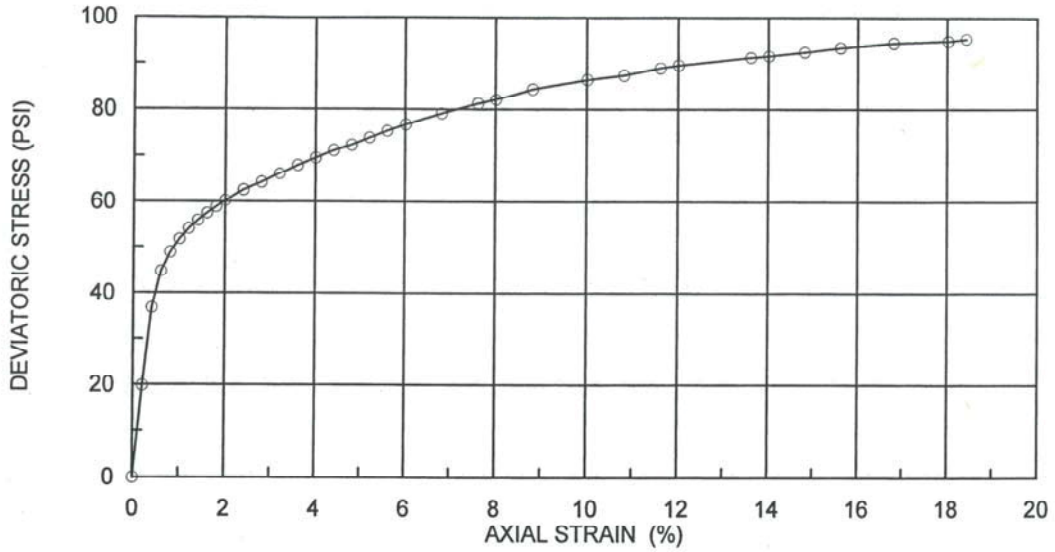
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

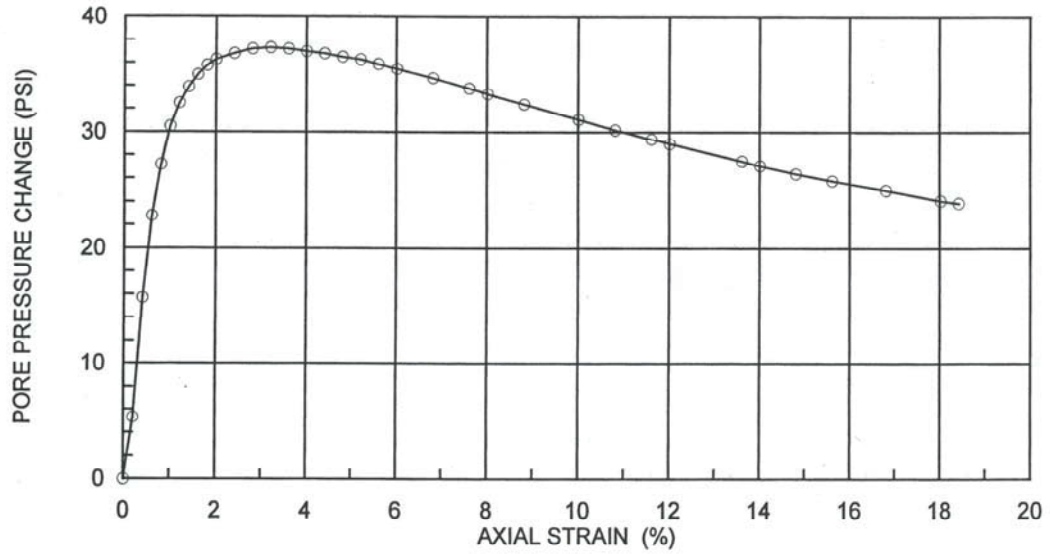
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	INITIAL DRY DENSITY (PCF)	INITIAL MOISTURE CONTENT (%)	EFF. CONF. STRESS (PSI)	MAX. DEV. STRESS (PSI)	STRAIN RATE (IN/MIN)	SOIL TYPE
○	5B-8000 psf	N/A	Remold	113.0	22.5	55.6	95.33	0.01	CL/SC

Note: sample was remolded to dry density = 113 pcf, moisture = 22.5%

Environmental Geotechnology Laboratory

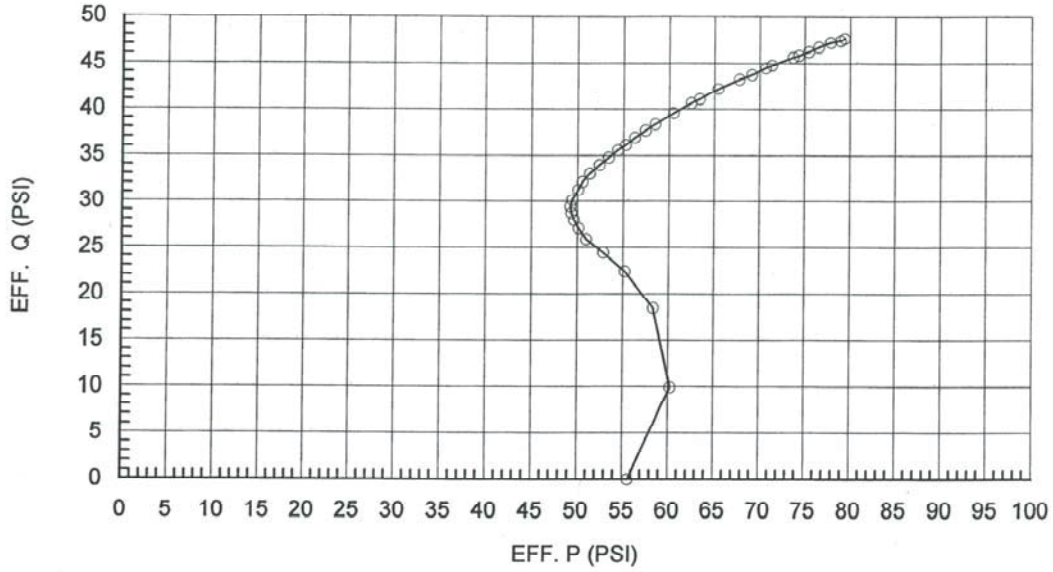
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

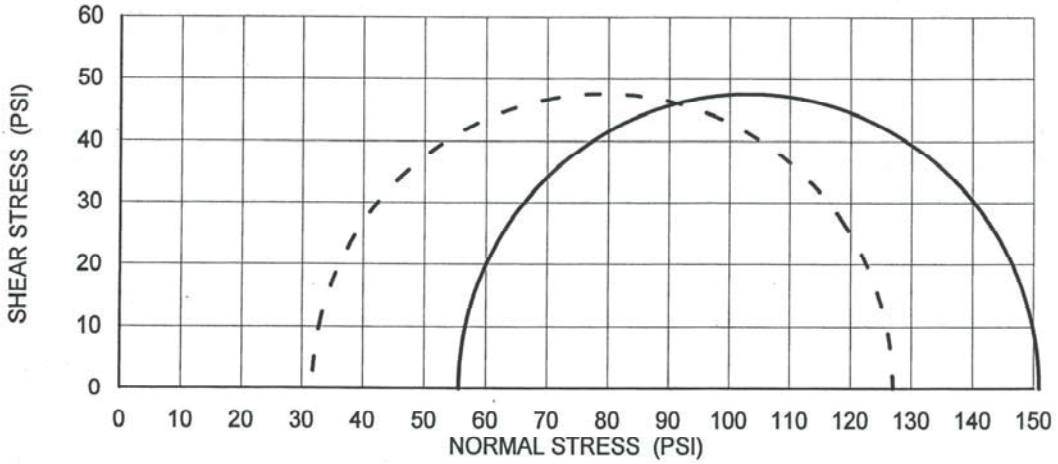
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
O	5B-8000psf	N/A	Remolded	CL/SC

Note: sample was remolded to dry density = 113 pcf, moisture = 22.5%

Environmental Geotechnology Laboratory

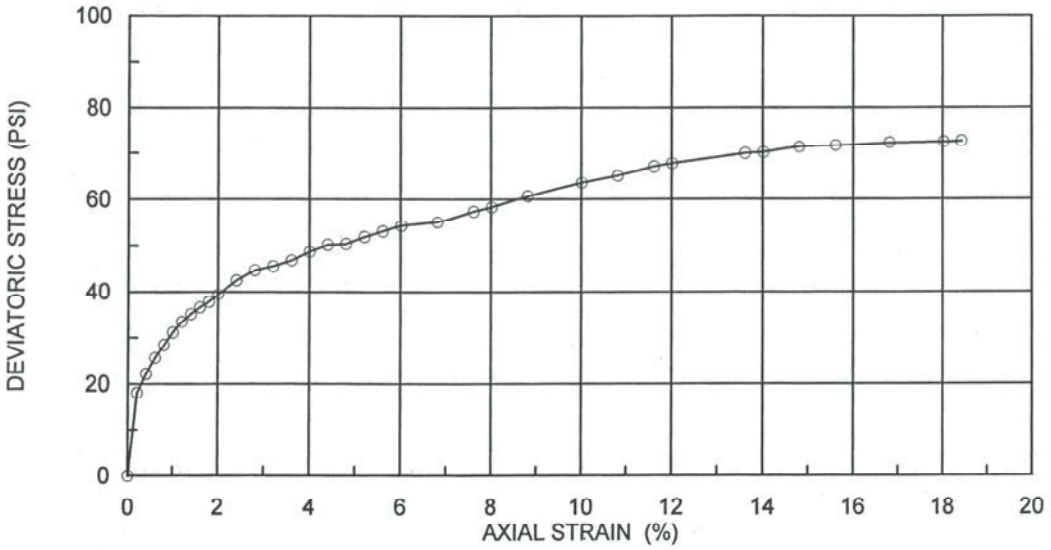
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

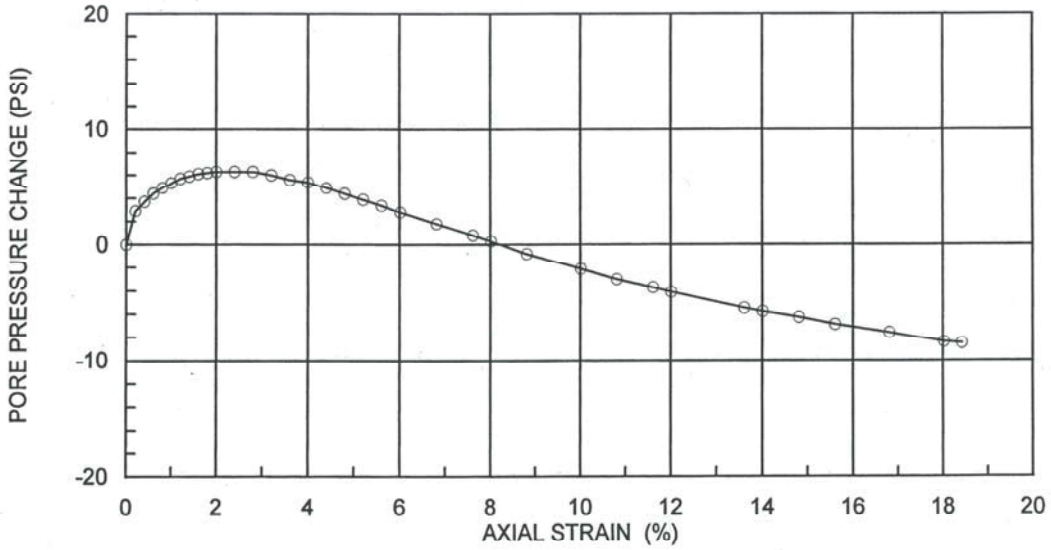
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	INITIAL DRY DENSITY (PCF)	INITIAL MOISTURE CONTENT (%)	EFF. CONF. STRESS (PSI)	MAX. DEV. STRESS (PSI)	STRAIN RATE (IN/MIN)	SOIL TYPE
○	5B-2000 psf	N/A	Remold	113.0	22.5	13.9	72.66	0.01	CL/SC

Note: sample was remolded to
dry density = 113 pcf,
moisture = 22.5%

Environmental Geotechnology Laboratory

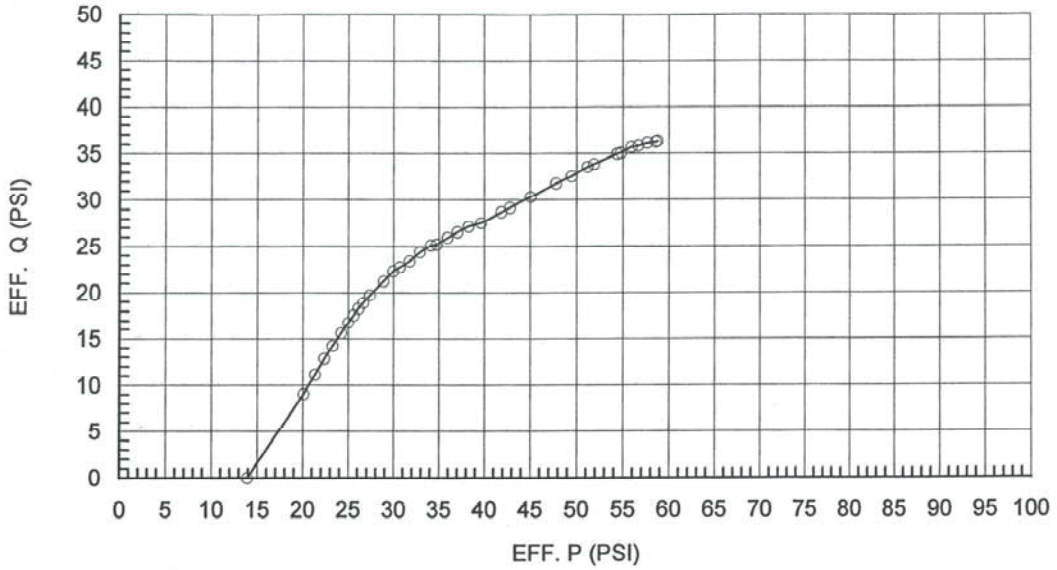
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

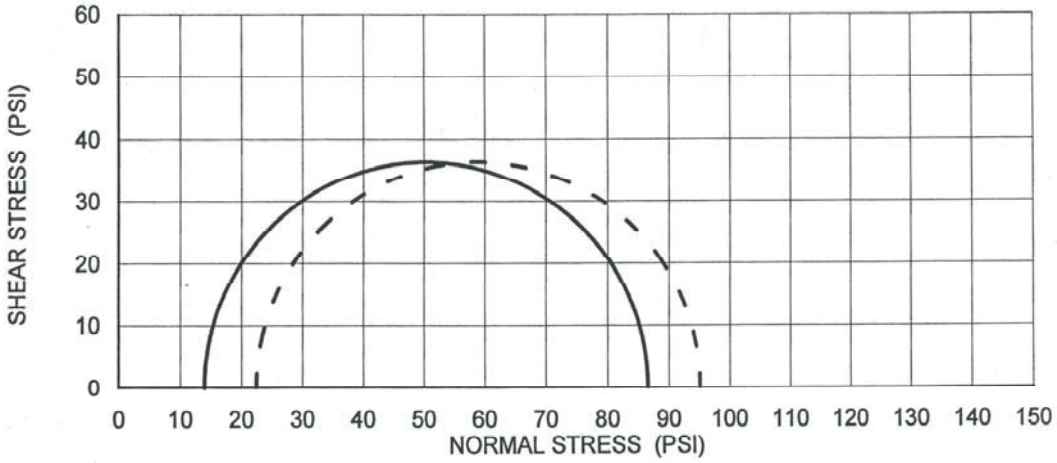
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
○	5B- 2000 psf	N/A	Remolded	CL/SC

Note: sample was remolded to
dry density = 113 pcf,
moisture = 22.5%

Environmental
Geotechnology
Laboratory

PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

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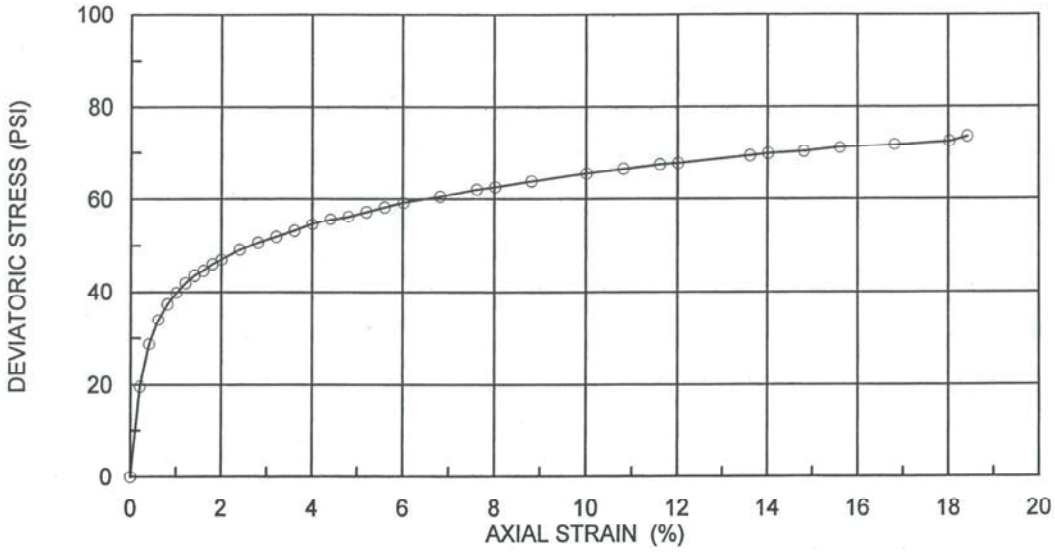
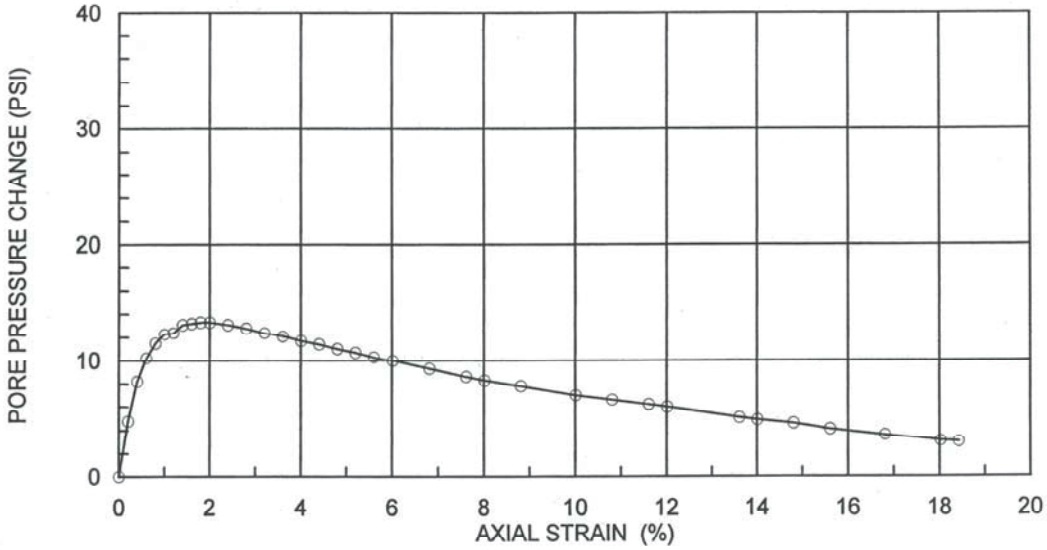
(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	INITIAL DRY DENSITY (PCF)	INITIAL MOISTURE CONTENT (%)	EFF. CONF. STRESS (PSI)	MAX. DEV. STRESS (PSI)	STRAIN RATE (IN/MIN)	SOIL TYPE
○	5B-4000 psf	N/A	Remold	113.0	22.5	27.8	73.55	0.01	CL/SC

Note: sample was remolded to dry density = 113 pcf, moisture = 22.5%

Environmental Geotechnology Laboratory

PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

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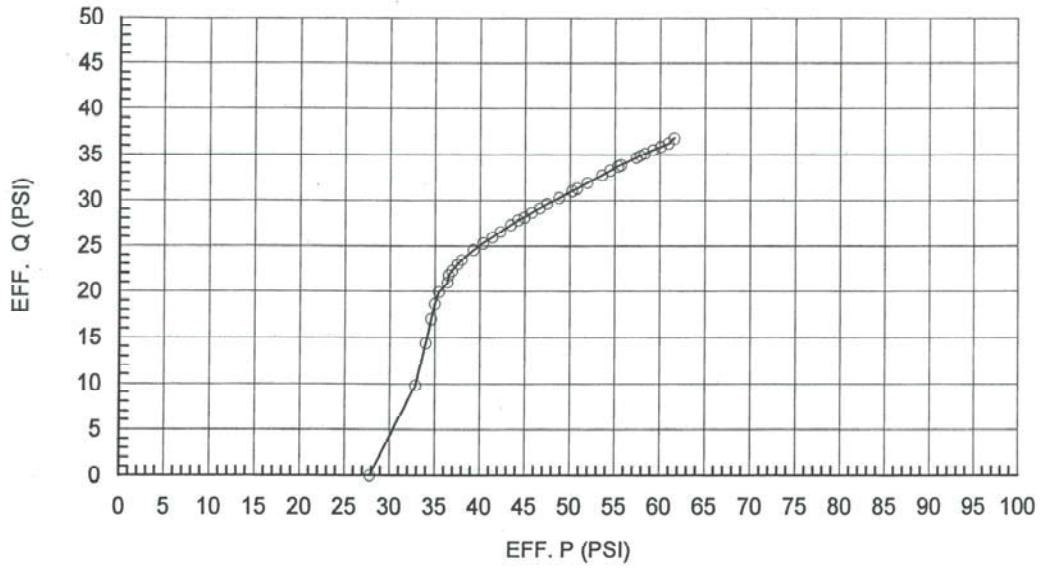
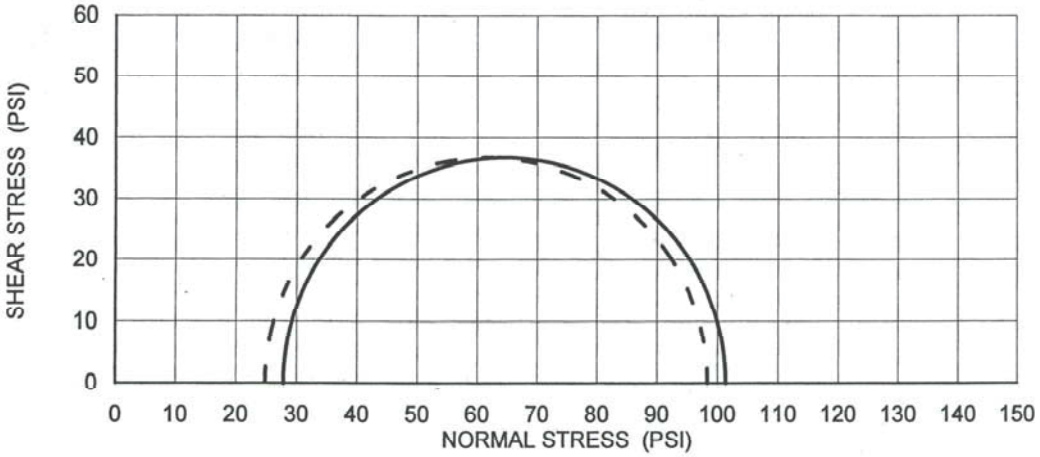
(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
○	5B-4000psf	N/A	Remolded	CL/SC

Note: sample was remolded to dry density = 113 pcf, moisture = 22.5%

Environmental Geotechnology Laboratory

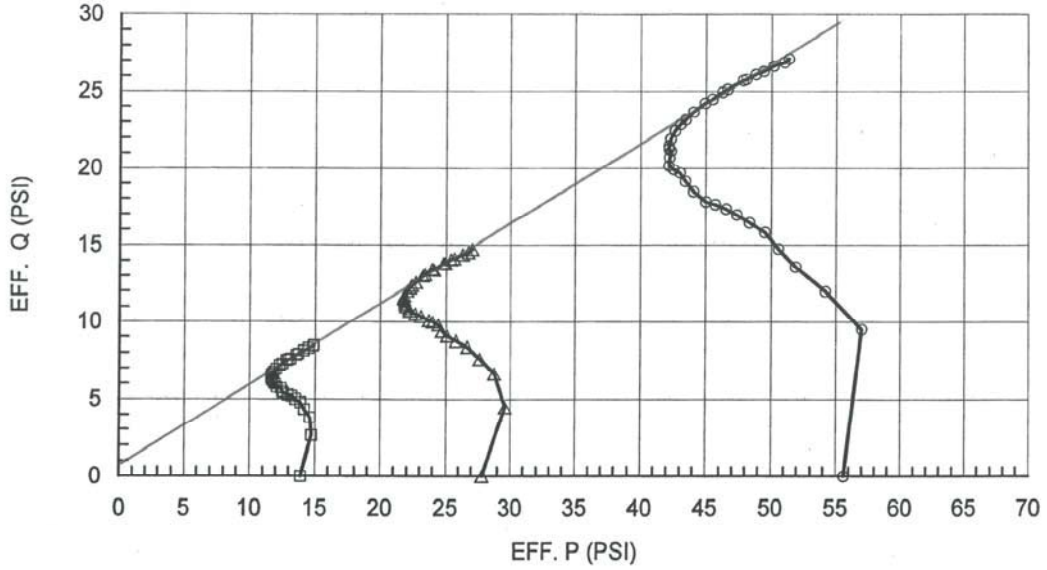
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

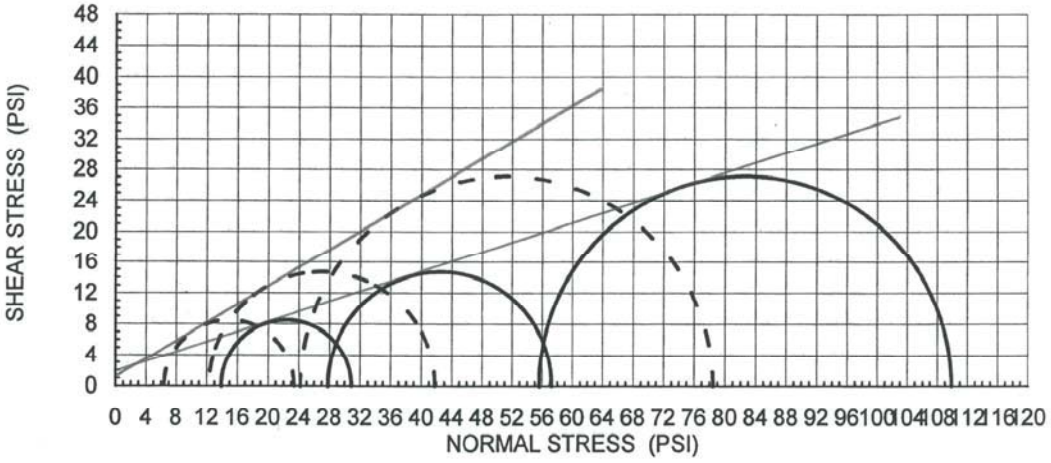
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE ID	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
○	1G @ 2 ksi 1G @ 4 ksi 1G @ 8 ksi	N/A	Remold Sample	CL

Environmental Geotechnology Laboratory

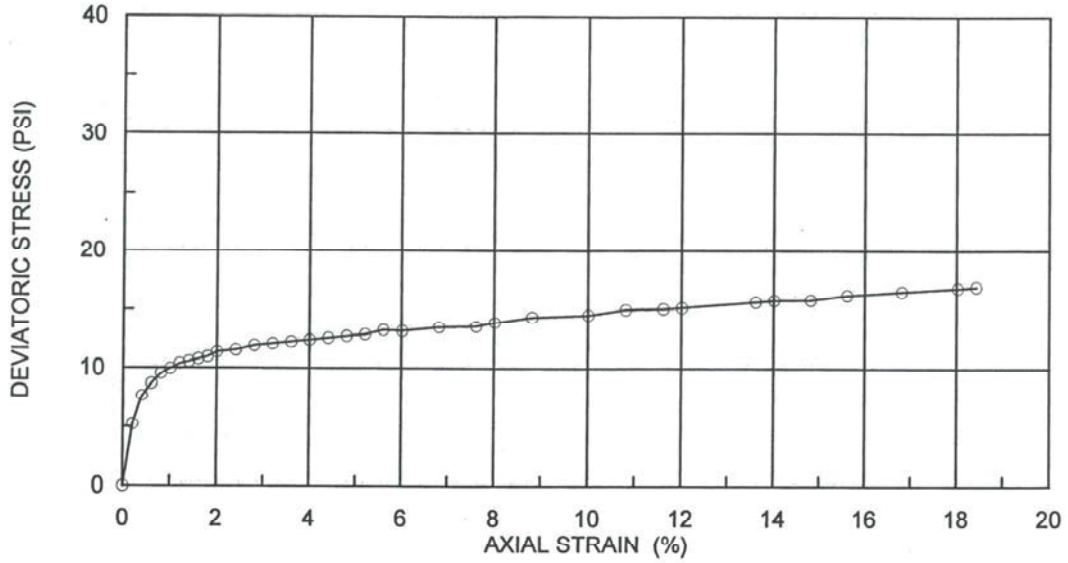
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

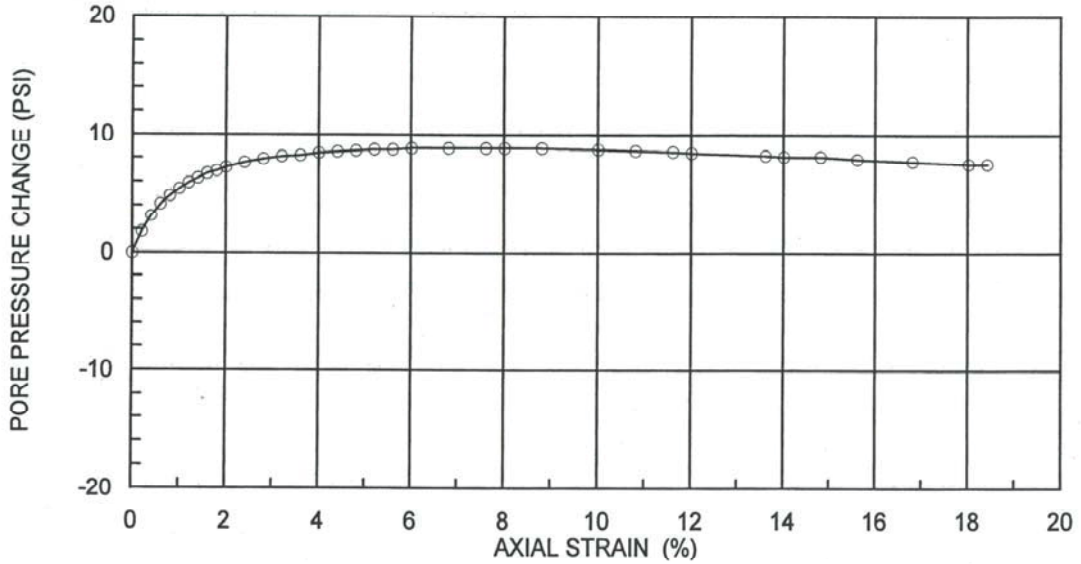
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	INITIAL DRY DENSITY (PCF)	INITIAL MOISTURE CONTENT (%)	EFF. CONF. STRESS (PSI)	MAX. DEV. STRESS (PSI)	STRAIN RATE (IN/MIN)	SOIL TYPE
○	1G-2000 psf	N/A	Remold	101.0	22.9	13.9	16.96	0.01	CL

Note: sample was remolded to
dry density = 101 pcf,
moisture = 22.9%

Environmental Geotechnology Laboratory

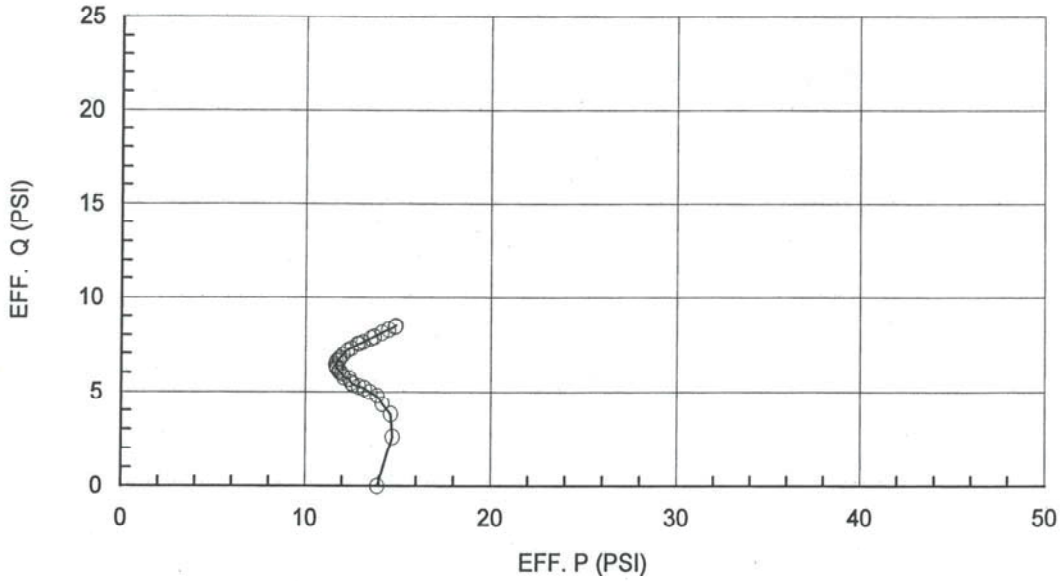
PROJECT NAME:
Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.:06-287-005

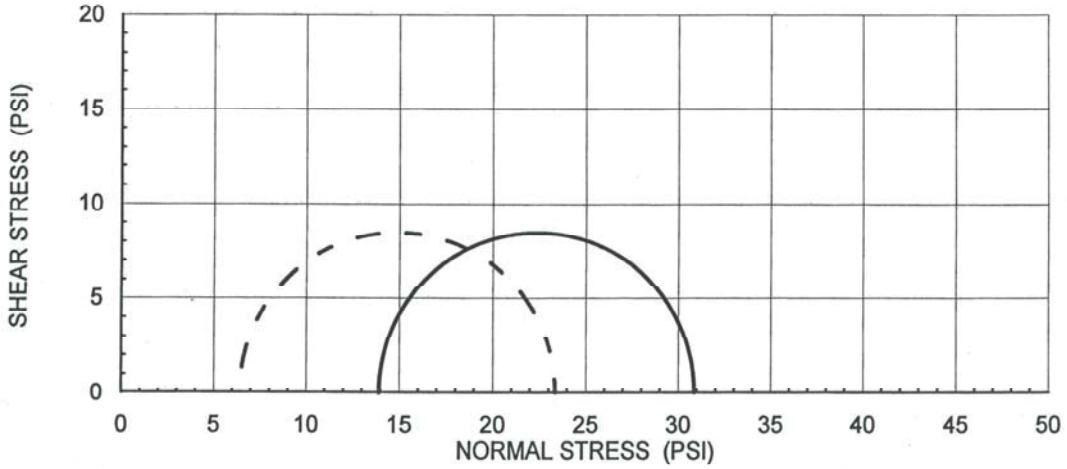
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
○	1G-2000 psf	N/A	Remolded	CL

Note: sample was remolded to dry density = 101 pcf, moisture = 22.9%

Environmental Geotechnology Laboratory

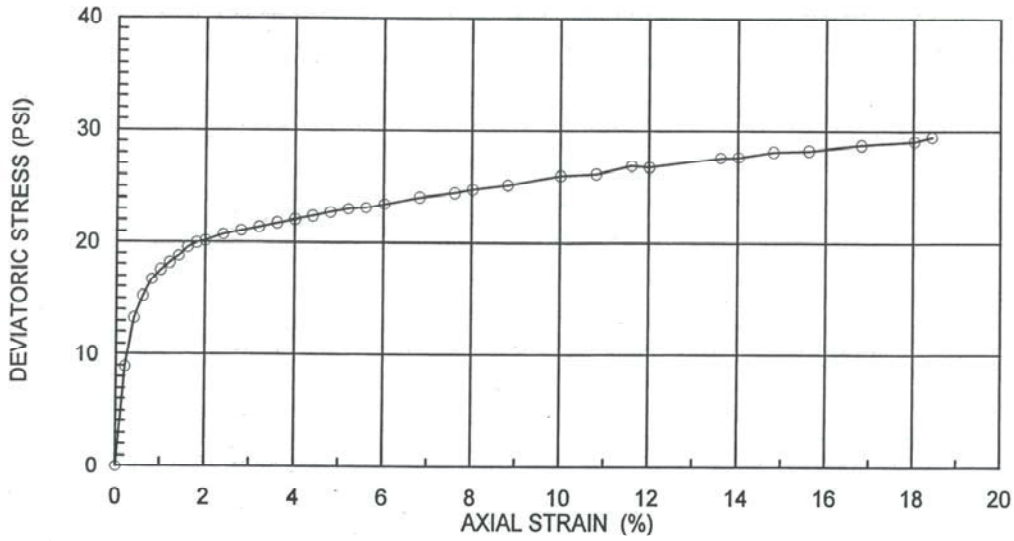
PROJECT NAME: Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

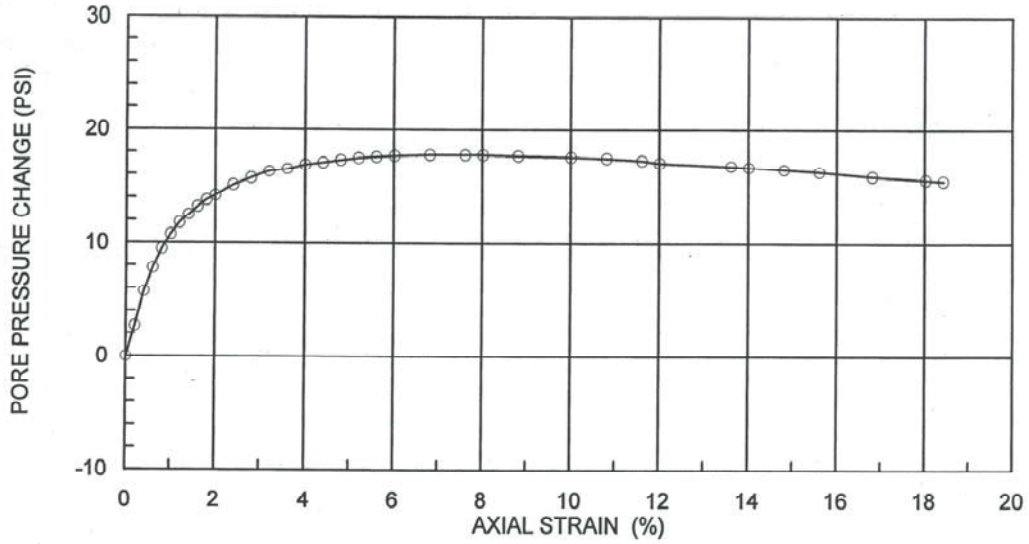
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	INITIAL DRY DENSITY (PCF)	INITIAL MOISTURE CONTENT (%)	EFF. CONF. STRESS (PSI)	MAX. DEV. STRESS (PSI)	STRAIN RATE (IN/MIN)	SOIL TYPE
O	1G-4000 psf	N/A	Remold	101.0	22.9	27.8	29.46	0.01	CL

Note: sample was remolded to dry density = 101 pcf, moisture = 22.9%

Environmental Geotechnology Laboratory

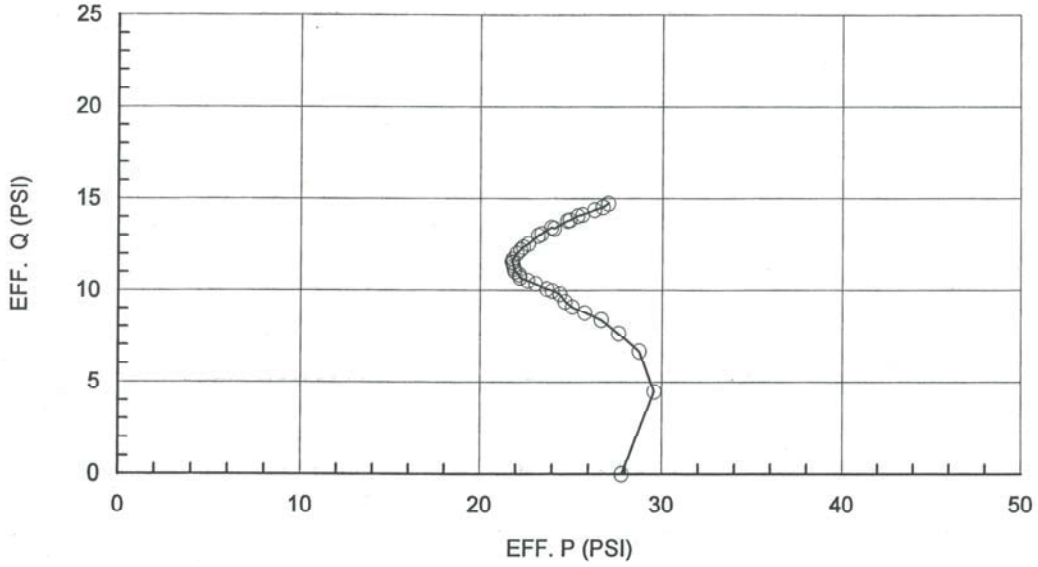
PROJECT NAME:
Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.:06-287-005

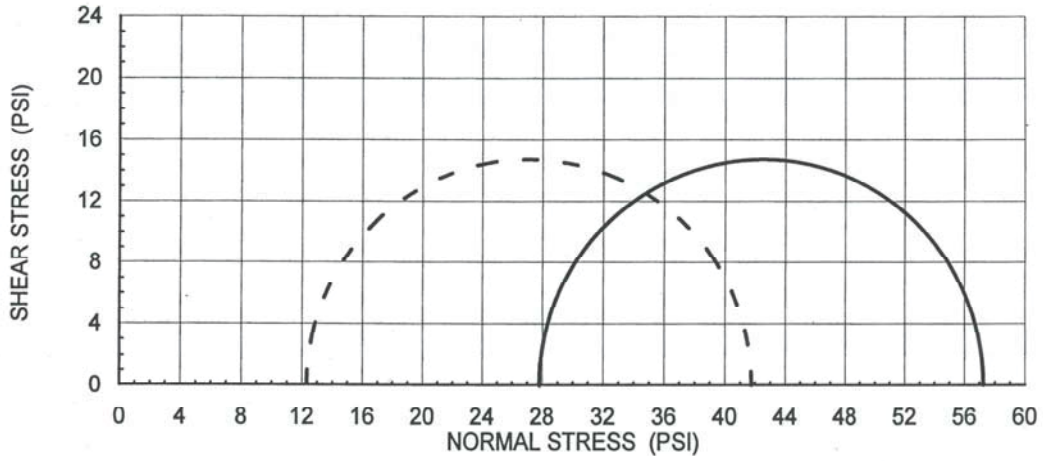
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
○	1G-4000 psf	N/A	Remolded	CL

Note: sample was remolded to dry density = 101 pcf, moisture = 22.9%

Environmental Geotechnology Laboratory

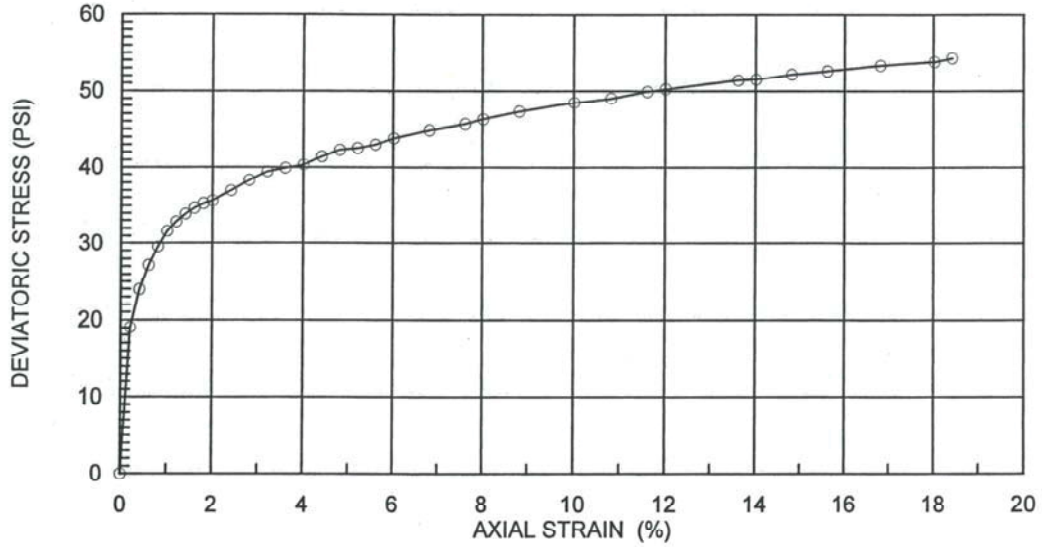
PROJECT NAME:
Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

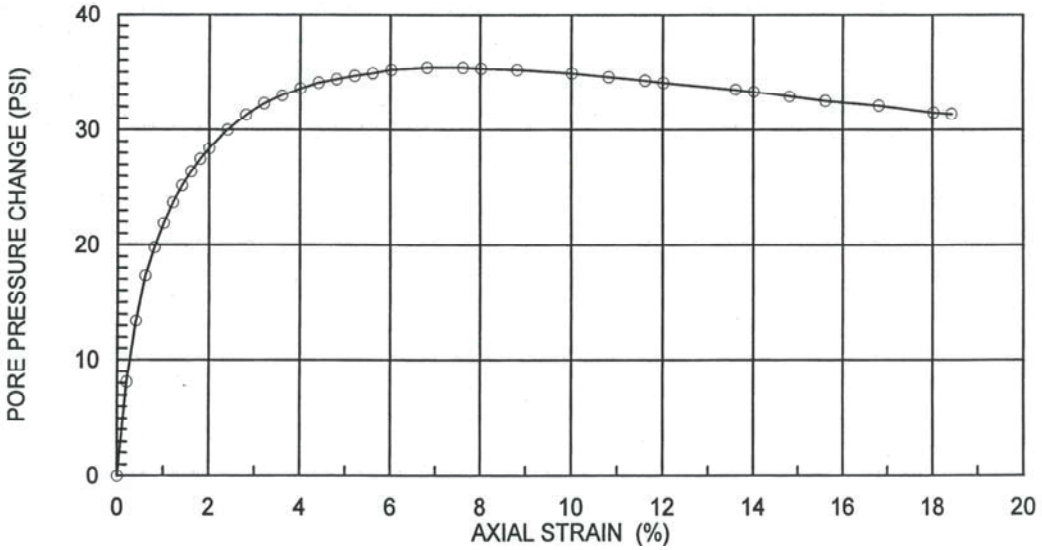
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	INITIAL DRY DENSITY (PCF)	INITIAL MOISTURE CONTENT (%)	EFF. CONF. STRESS (PSI)	MAX. DEV. STRESS (PSI)	STRAIN RATE (IN/MIN)	SOIL TYPE
O	1G-8000 psf	N/A	Remold	101.0	22.9	55.6	54.27	0.01	CL

Note: sample was remolded to dry density = 101 pcf, moisture = 22.9%

Environmental Geotechnology Laboratory

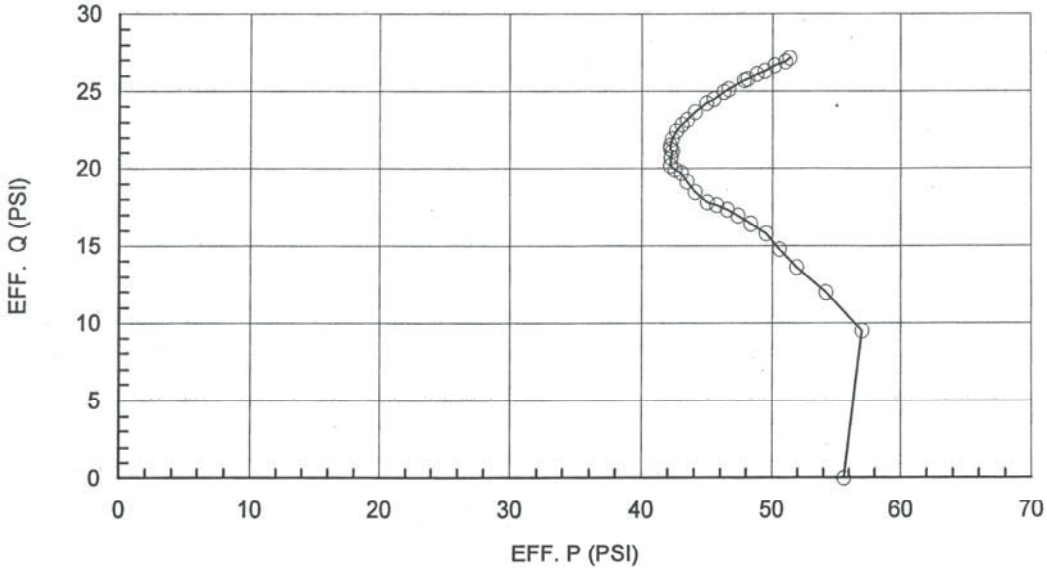
PROJECT NAME:
Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.:06-287-005

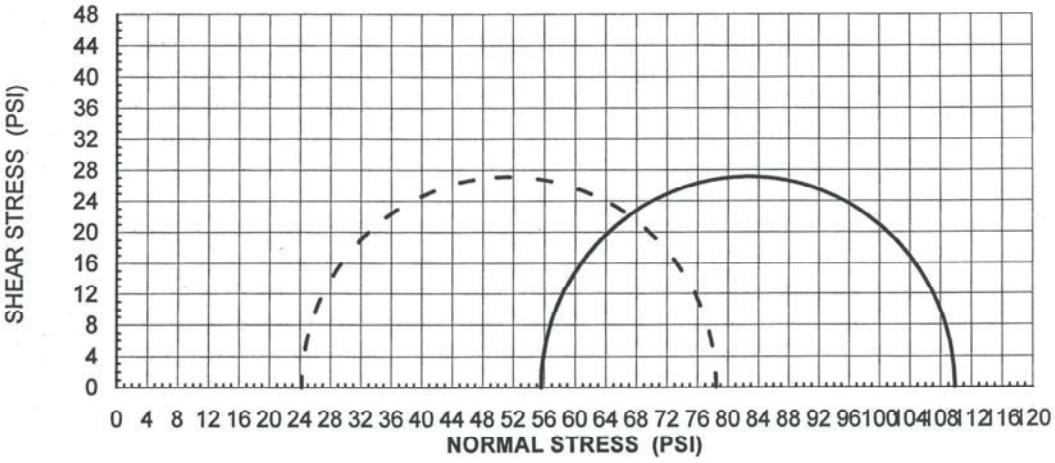
CONSOLIDATED UNDRAINED

(ASTM D4767)

10/06

FIGURE





SYMBOL	SAMPLE NO	DEPTH (FT)	SAMPLE TYPE	SOIL TYPE
O	1G-8000 psf	N/A	Remolded	CL

Note: sample was remolded to dry density = 101 pcf, moisture = 22.9%

Environmental Geotechnology Laboratory

PROJECT NAME:
Marysville
Client: CHJ Inc.
Job No.: 06260-8
EGL Project No.: 06-287-005

CONSOLIDATED UNDRAINED

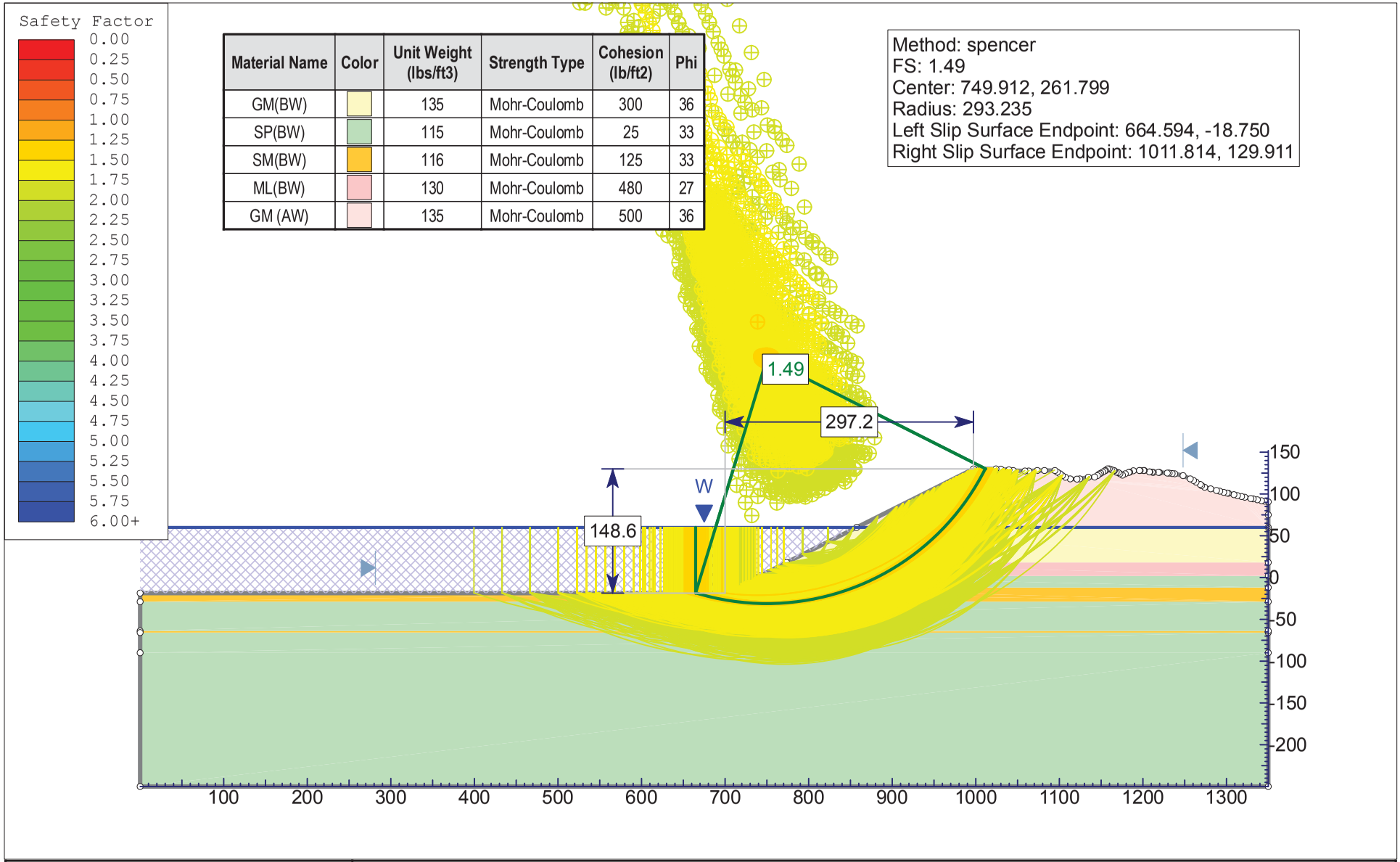
(ASTM D4767)

10/06

FIGURE

APPENDIX "D"

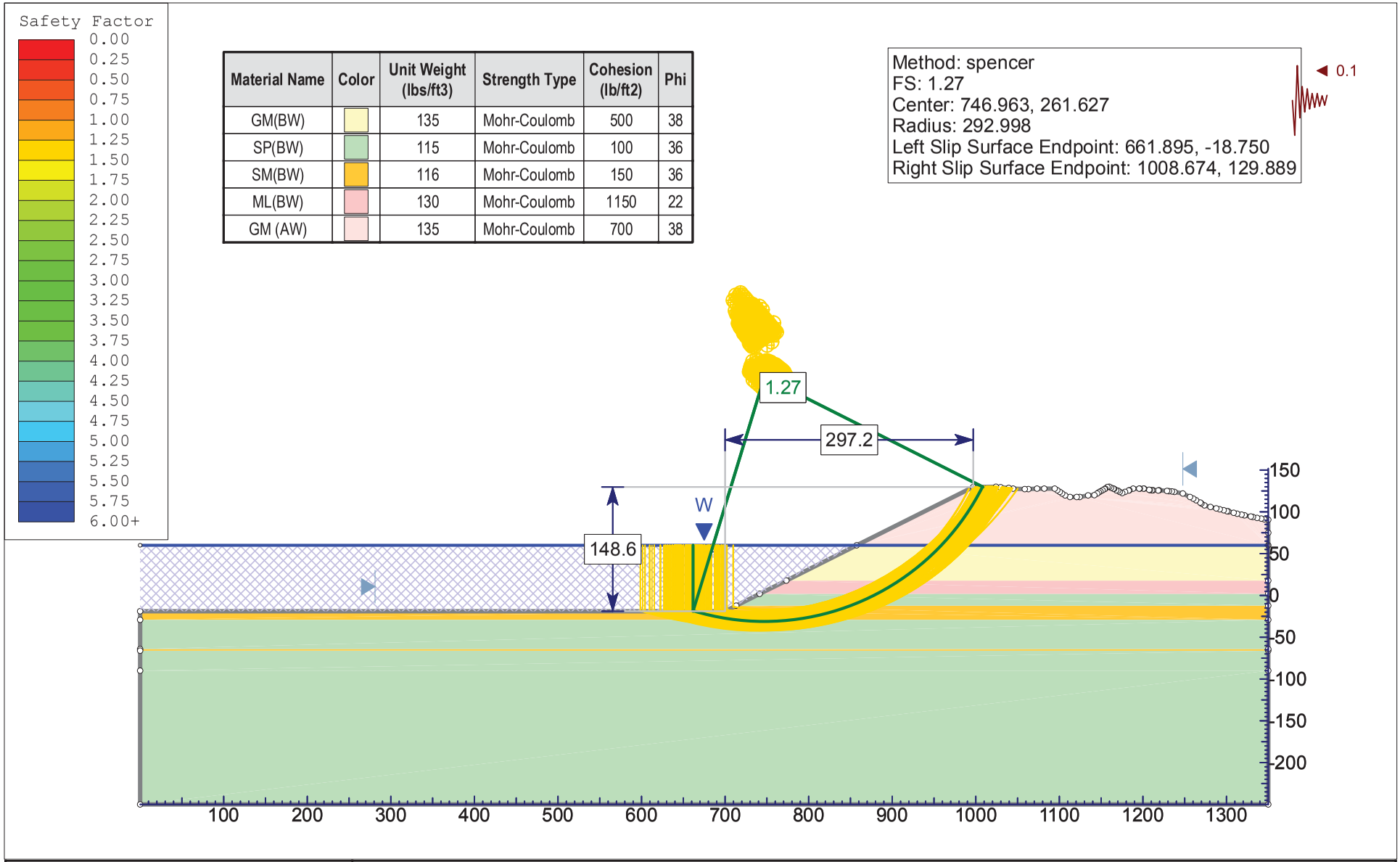
GEOTECHNICAL CALCULATIONS



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.009

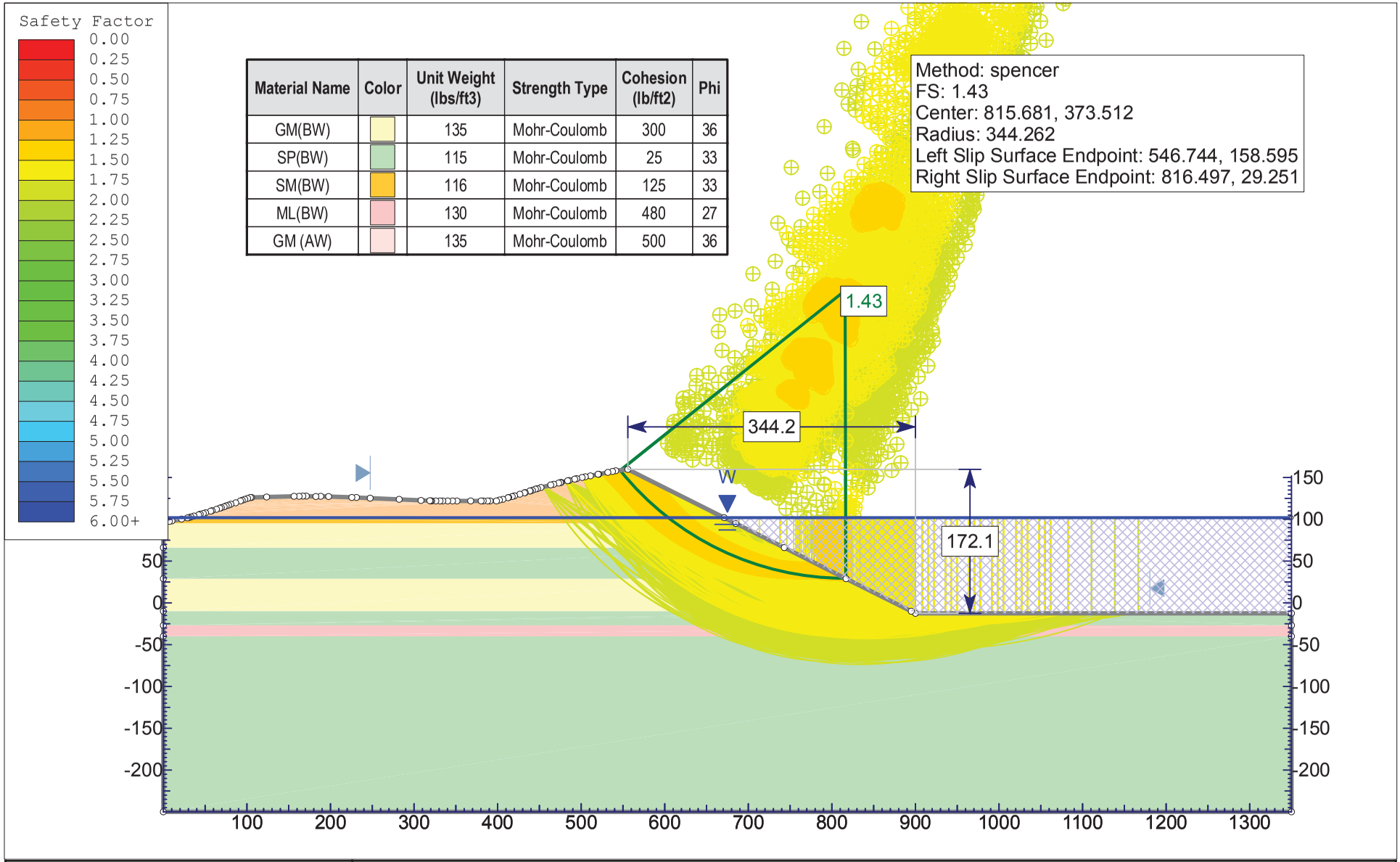
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section X-X'		
Drawn By C.H.J., Incorporated	*Author* Fred Yi, PhD, PE	*Scale* 1:2000	
File Name 11137-8 Section X.slim	*Date* 4/1/2011	*Enclosure* D-1	



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	500	38
SP(BW)		115	Mohr-Coulomb	100	36
SM(BW)		116	Mohr-Coulomb	150	36
ML(BW)		130	Mohr-Coulomb	1150	22
GM (AW)		135	Mohr-Coulomb	700	38

SLIDEINTERPRET 6.009

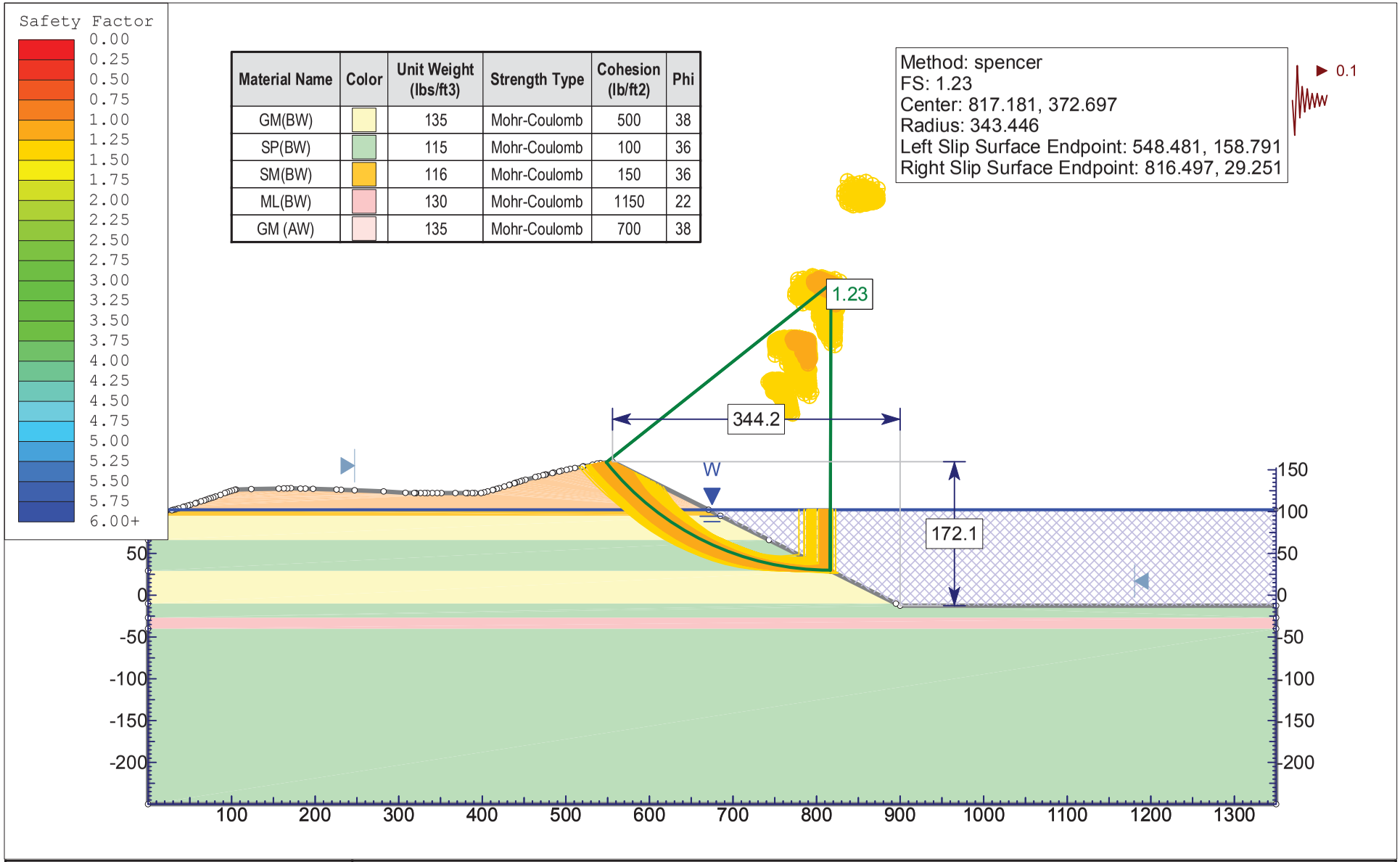
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section X-X'		
Drawn By	C.H.J., Incorporated	*Author* Fred Yi, PhD, PE	*Scale* 1:2000
File Name	11137-8 Section X_kh=0.1.slim	*Date* 4/1/2011	*Enclosure* D-2



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.009

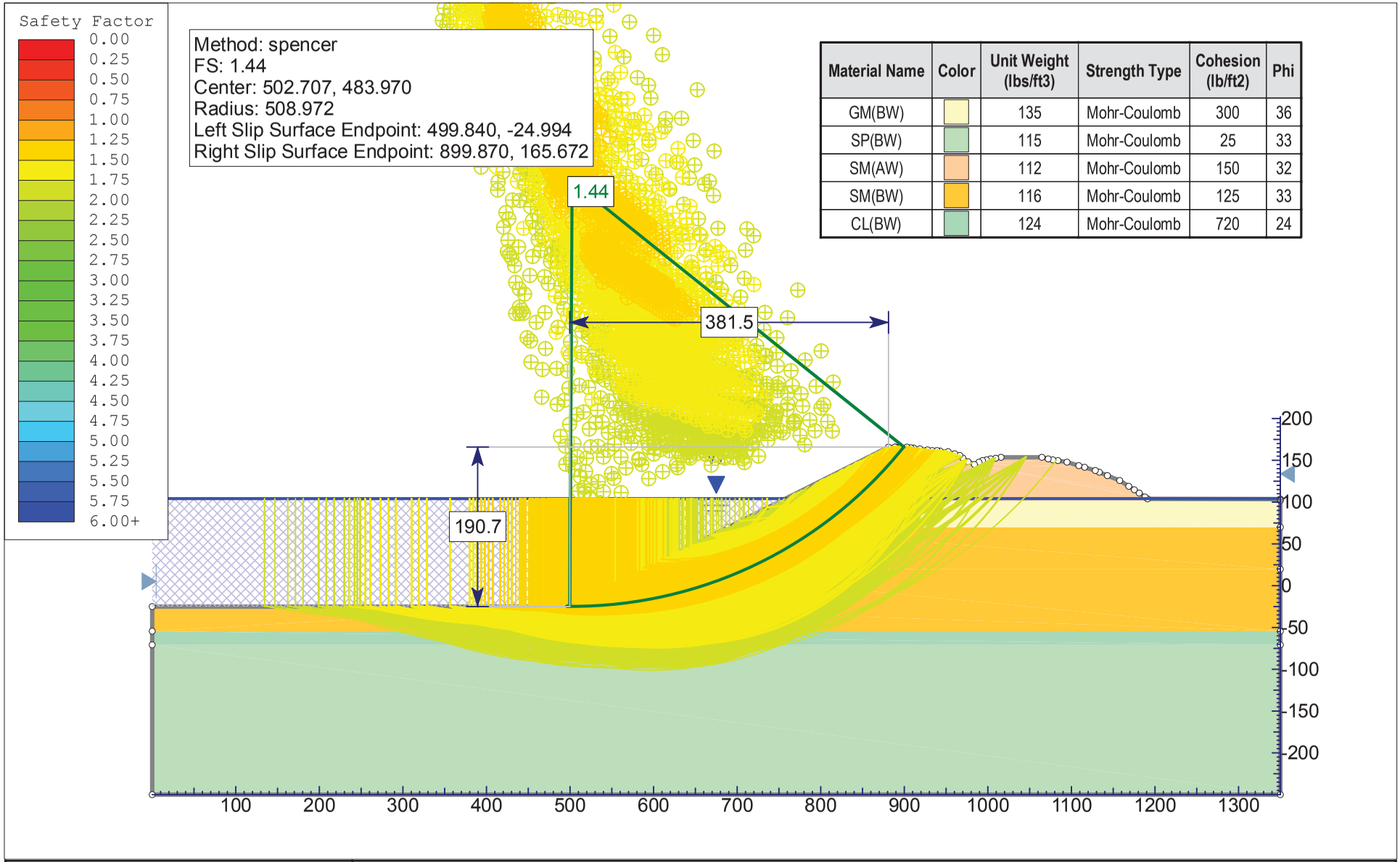
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section Y-Y'		
Drawn By: C.H.J., Incorporated	Author: Fred Yi, PhD, PE	Scale: 1:2000	
File Name: 11137-8 Section Y.slim	Date: 4/1/2011	Enclosure: D-3	



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	500	38
SP(BW)		115	Mohr-Coulomb	100	36
SM(BW)		116	Mohr-Coulomb	150	36
ML(BW)		130	Mohr-Coulomb	1150	22
GM (AW)		135	Mohr-Coulomb	700	38

SLIDEINTERPRET 6.009

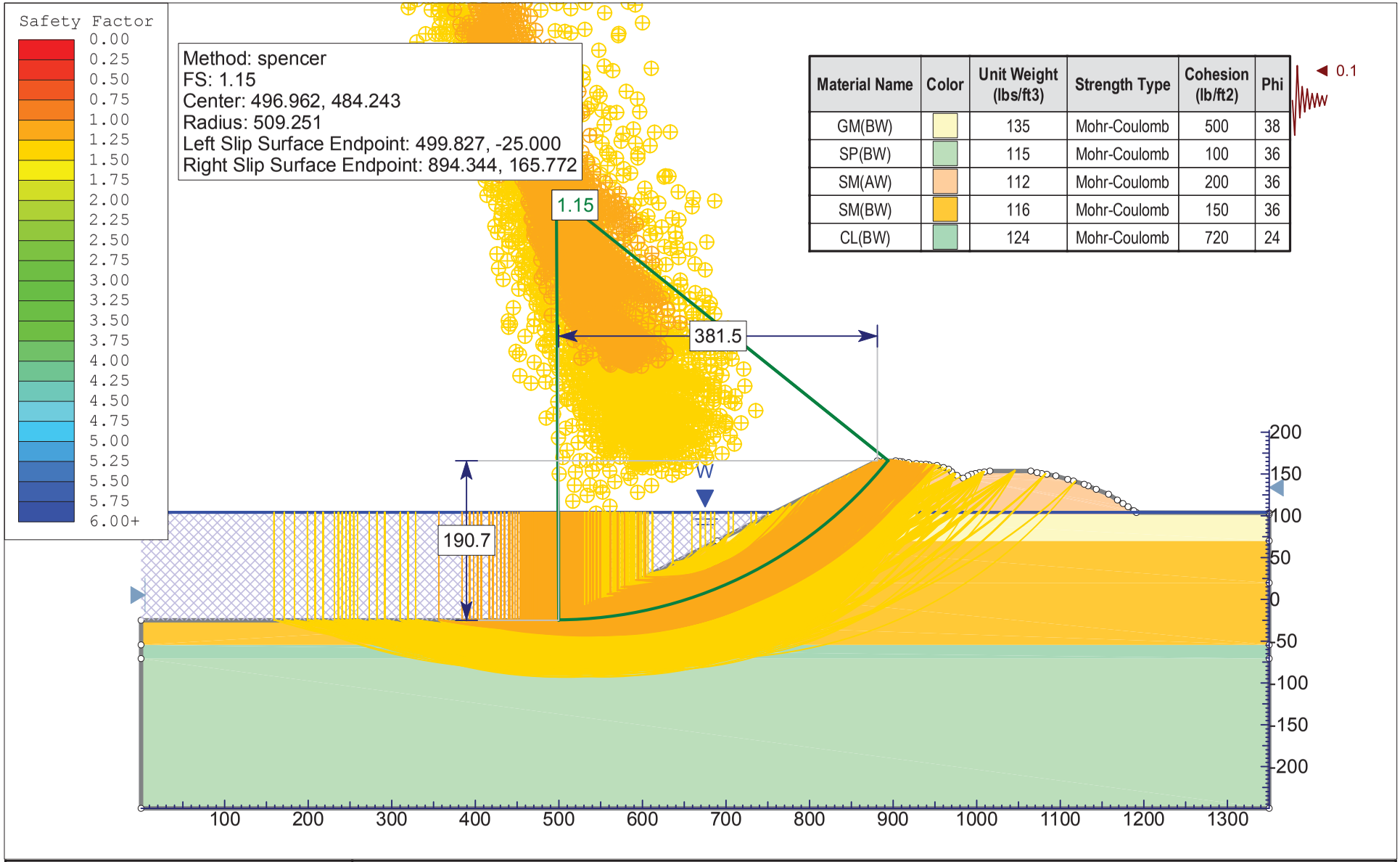
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section Y-Y'		
Drawn By	C.H.J., Incorporated	Author	Fred Yi, PhD, PE	Scale	1:2000
File Name	11137-8 Section Y_kh=0.1.slim	Date	4/1/2011	Enclosure	D-4



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(AW)		112	Mohr-Coulomb	150	32
SM(BW)		116	Mohr-Coulomb	125	33
CL(BW)		124	Mohr-Coulomb	720	24

SLIDEINTERPRET 6.009

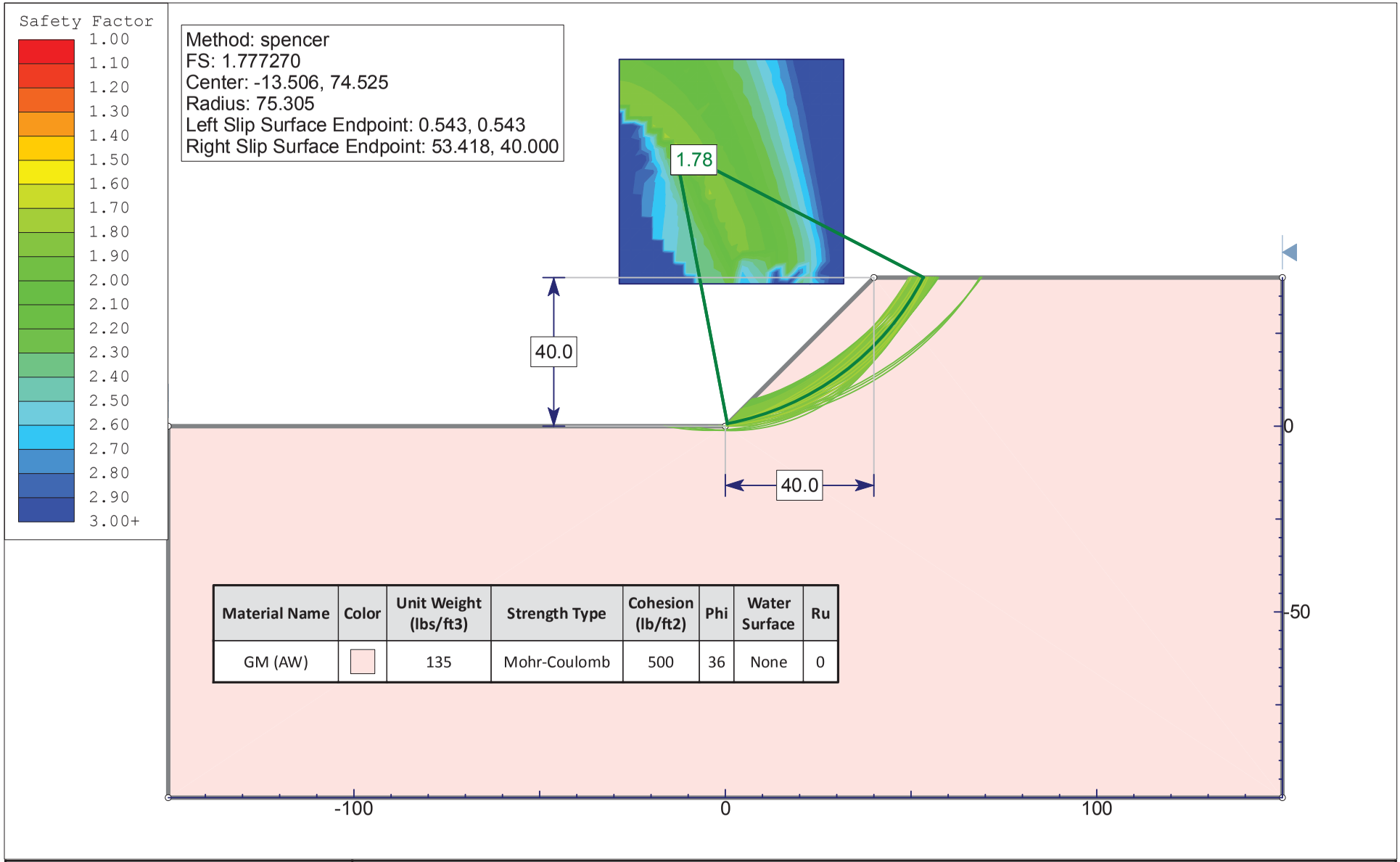
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section Z-Z'		
Drawn By	C.H.J., Incorporated	Author	Fred Yi, PhD, PE	Scale	1:2000
File Name	11137-8 Section Z.slim	Date	4/1/2011	Enclosure	D-5



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	500	38
SP(BW)		115	Mohr-Coulomb	100	36
SM(AW)		112	Mohr-Coulomb	200	36
SM(BW)		116	Mohr-Coulomb	150	36
CL(BW)		124	Mohr-Coulomb	720	24

SLIDEINTERPRET 6.009

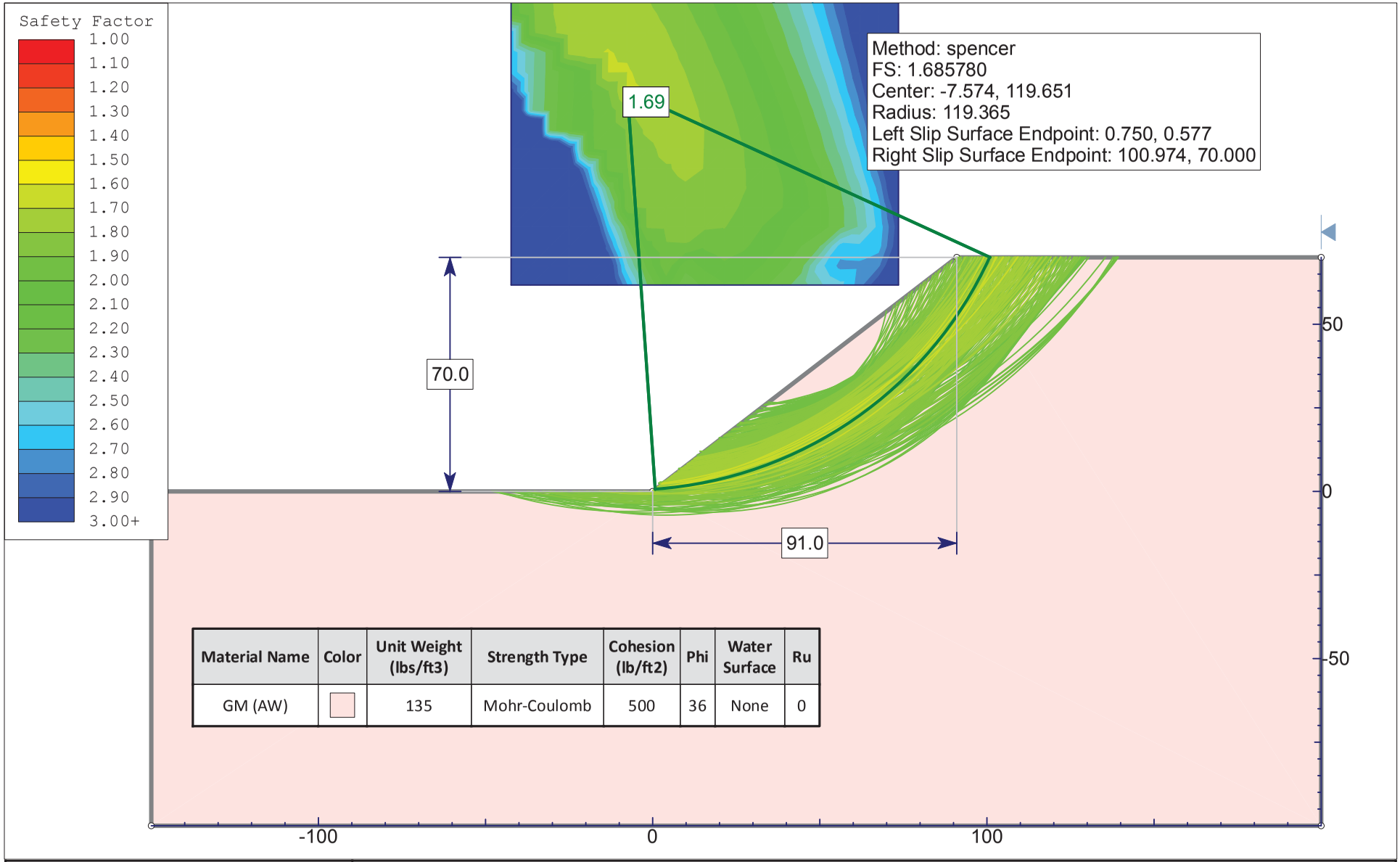
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section Z-Z'		
Drawn By	C.H.J., Incorporated	Author	Fred Yi, PhD, PE	Scale	1:2000
File Name	11137-8 Section Z_kh=0.1.slim	Date	4/1/2011	Enclosure	D-6



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi	Water Surface	Ru
GM (AW)		135	Mohr-Coulomb	500	36	None	0

SLIDEINTERPRET 6.009

Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Back Calculation, 40 ft		
Drawn By	C.H.J.	Author	Fred Yi	Scale	1:450
File Name	1 to 1 H=40ft back cal.sli	Date	4/1/2011	Enclosure	D-7



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi	Water Surface	Ru
GM (AW)		135	Mohr-Coulomb	500	36	None	0

SLIDEINTERPRET 6.009

Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Back Calculation, 70 ft		
Drawn By	C.H.J.	Author	Fred Yi	Scale	1:500
File Name	1.3 to 1 H=70ft back cal.sli	Date	4/1/2011	Enclosure	D-8

ADDENDUM
SLOPE STABILITY ANALYSIS REPORT

ADDENDUM TO
SLOPE STABILITY INVESTIGATION
(APPENDIX "D" OF AMENDED RECLAMATION PLAN
DATED APRIL 2011)
PROPOSED WESTERN AGGREGATES LLC
QUARRY RECLAMATION
MARYSVILLE AREA
YUBA COUNTY, CALIFORNIA
PREPARED FOR
WESTERN AGGREGATES LLC
JOB NO. 11137-8

C.H.J. Incorporated
1355 E. Cooley Drive, Colton, CA 92324 • Phone (909) 824-7210 • Fax (909) 824-7209
15345 Anacapa Road, Suite D, Victorville, CA 92392 • Phone (760) 243-0506 • Fax (760) 243-1225
77-564A Country Club Drive, Suite 122, Palm Desert, CA 92211 • Phone (760) 772-8234 • Fax (909) 824-7209

November 30, 2011

Job No. 11137-8

Western Aggregates LLC
4711 Hammonton Road
Marysville, California 95901
Attention: Mr. Lloyd Burns

Dear Mr. Burns:

Attached herewith is the Addendum to the Slope Stability Investigation Report, prepared for the proposed reclamation of Western Aggregates LLC Quarry, located in the Marysville area, Yuba County, California. This Addendum addresses deeper proposed pit bottoms than the previously proposed bottom at -20 feet above mean sea level (AMSL).

This report was based upon a scope of services outlined in our proposal, dated October 14, 2011, and other written and verbal communications.

We appreciate this opportunity to provide geotechnical services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
C.H.J., INCORPORATED

Jay J. Martin, E.G. 1529
Vice President

JJM/FY/:jm/ndt:jak

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TABLE OF APPENDICES

ENCLOSURE

APPENDIX "A" - GEOTECHNICAL MAPS AND CROSS SECTIONS

Index Map ..... "A-1"
Geologic Map (700-scale) ..... "A-2"
Geologic Cross Sections (3 Sheets) ..... "A-3"

APPENDIX "B" - EXPLORATORY LOGS

Key to Logs, Boring Nos. 6 and 7 ..... "B" (1 of 2)
Soil Classification Chart, Boring Nos. 6 and 7 ..... "B" (2 of 2)
Exploratory Borings by C.H.J., Inc. ..... "B-1"-"B-2"
Exploratory Borings by others (1990-1992). ..... "B-3"-"B-5"

APPENDIX "C" - GEOTECHNICAL CALCULATIONS

Static Slope Stability – Section R-R' ..... "C-1"
Seismic Slope Stability – Section R-R' ..... "C-2"
Static Slope Stability – Section S-S' ..... "C-3"
Seismic Slope Stability – Section S-S' ..... "C-4"
Static Slope Stability – Section T-T' ..... "C-5"
Seismic Slope Stability – Section T-T' ..... "C-6"

ADDENDUM TO
SLOPE STABILITY INVESTIGATION
(APPENDIX "D" OF AMENDED RECLAMATION PLAN DATED APRIL 2011)
PROPOSED WESTERN AGGREGATES LLC
QUARRY RECLAMATION
MARYSVILLE AREA
YUBA COUNTY, CALIFORNIA
PREPARED FOR
WESTERN AGGREGATES LLC
JOB NO. 11137-8

INTRODUCTION

An Addendum to our Slope Stability Investigation , dated April 19, 2011, has been performed by this firm for the proposed reclamation of the Western Aggregates LLC Yuba County Quarry in the Marysville area, Yuba County, California. The purpose of this Addendum was to evaluate the geotechnical conditions at the subject site, analyze the stability of the proposed reclamation slopes, and provide appropriate geotechnical recommendations for design and construction of the proposed reclamation slopes down to an elevation of -120 above mean seal level (AMSL) or to the deepest stable elevation. The previous report, dated April 19, 2011, evaluated slopes for a proposed pit bottom of -20 AMSL

To orient our investigation at the site, a draft Reclamation Plan (one sheet), dated March 2011, prepared by Lilburn Corporation, was furnished for our use. The approximate location of the site is shown on the attached Index Map (Enclosure "A-1").

The results of our investigation and Slope Stability Analysis, together with our conclusions and recommendations, are presented in this report.

SCOPE OF SERVICES

The scope of services provided during this Addendum to the Slope Stability Investigation included the following:

- Review of published and unpublished literature and maps, including 209 logs of previously drilled (deep) borings placed at and near the proposed quarry

- Placement of two exploratory borings within the proposed quarry area
- Logging and sampling of exploratory borings for testing and evaluation
- Laboratory testing on selected samples
- Slope stability analysis for the proposed reclamation slopes
- Evaluation of the geotechnical data to develop site-specific recommendations for construction of reclamation slopes down to elevation -120 feet AMSL or to the deepest stable elevation

Pertinent geologic and geotechnical hazards to this project, including landsliding and flooding, were previously addressed in our April 19, 2011 report.

PROJECT CONSIDERATIONS

Our Slope Stability Investigation, dated April 19, 2011, evaluated slopes associated with a proposed reclaimed pit bottom at an elevation of -20 feet AMSL. We understand that the current reclamation plan may be revised to reflect a deeper proposed reclaimed pit bottom for all three proposed quarries, to an elevation of -120 feet AMSL or to the deepest stable elevation. Revision to -120 feet would result in quarries with a maximum slope height of approximately 240 feet. Groundwater is at approximately +80 feet MSL, which would yield a general below-water slope height of approximately 200 feet.

The final reclamation plan should be reviewed by the geotechnical engineer.

SITE DESCRIPTION

The site includes the existing Western Aggregates LLC Marysville Quarry and is located at 4711 Hammonton Road, Marysville, Yuba County, California. The site is bordered on the north, east, west, and southeast by undeveloped land, and on the southwest by another operating aggregate plant.

FIELD INVESTIGATION

As part of this Addendum, the soil conditions underlying the subject site were explored by means of two exploratory borings drilled to a maximum depth of 175 feet below the existing ground surface with a truck-mounted dual-tube reverse air rig equipped for soil sampling. The rig utilized a Becker Hammer drill bit. The approximate locations of our exploratory borings (Boring Nos. 6 and 7) are indicated on the attached Geologic Map (Enclosure "A-2").

Continuous logs of the subsurface conditions, as encountered within the exploratory borings, were recorded at the time of drilling by a staff geologist from this firm. Relatively undisturbed samples were obtained by driving a split-spoon ring sampler ahead of the borings at selected levels. After the required seating of the sampler, the number of hammer blows required to advance the sampler a total of 12 inches was recorded on the boring logs. Relatively undisturbed, as well as bulk samples of typical soil types obtained, were returned to the laboratory in sealed containers for testing and evaluation.

The subsurface soils included relatively coarse materials (gravel and cobbles), as well as relatively unconsolidated lenses/layers of sand and silt. The relatively unconsolidated lithologies below the groundwater surface were subject to flowing and/or heaving during the drilling and sampling process. As a result of the coarse lithologies and flowing/heaving layers, few relatively undisturbed samples could be obtained.

Our exploratory boring logs, together with our equivalent SPT data, are presented in Appendix "B". The stratification lines presented on the boring logs represent approximate boundaries between soil types, which may include gradual transitions.

Refusal to advancement of the drill bit was obtained at a relatively shallow depth in Boring No. 6, located along the east side of the easterly pit. Hard metavolcanic bedrock was encountered at a depth of 162 feet (-54 feet AMSL) in Boring No. 6. A suitable alternative drill site was found in the central portion of the easterly pit, where Boring No. 7 was commenced.

This boring encountered refusal at a depth of 175 feet (-42 feet AMSL), also on hard metavolcanic bedrock. Both borings bottomed at unexpectedly shallow depths.

Geological field reconnaissance of the site and surrounding area and geologic mapping were also performed at the time of our field exploration.

LOGS OF BORINGS BY OTHERS

Unexpectedly shallow bedrock was encountered in Boring Nos. 6 and 7, and neither of these borings was deep enough to provide meaningful evaluation of slope stability down to the required depth (up to -120 feet AMSL). Options for proceeding to obtain the required data, including a geophysical survey to determine depth to bedrock prior to placement of additional borings, were discussed with the project team. The owner suggested using their existing boring logs in lieu of new borings. The owner provided us with 209 logs of deep borings placed for ore content evaluation purposes. At our request, the logs provided were for borings placed to a minimum depth of 200 feet below original ground surface. These borings were drilled from 1932 through 1992. Most of the logs do not include detailed soil classifications; however, a series of logs drilled in 1990 to 1992 provide sufficient gradation and classification data to utilize for slope stability analysis purposes. The materials described in the 1990-1992 logs are consistent with the results of the borings that we have drilled to date on the site and are considered to be credible as data sources for the purpose of slope stability analyses.

The logs provided are centered around the central pit and vicinity, with few logs in the east and west pits. However, suitable deep logs were found to provide the necessary data for analysis of one cross section in each proposed pit down to the required depth. The logs we utilized, including their designations in Appendix "B", consist of the following:

Boring	Date Drilled	Depth (feet)	Bottom Elev. (feet)	Cross Section	Pit	Enclosure No.
DH-3058	May 14, 1991	266	-111	R-R'	Eastern	"B-3"
DH-2163	May 3, 1990	268	-137	S-S'	Central	"B-4"
DH-2250	March 17, 1992	276	-142	T-T'	Western	"B-5"

These boring logs include a designation of the relative proportion of materials passing/retained on the 1/4-inch (No. 4) sieve. They also include a written description and a soil classification. We classified the materials in the borings according to the Unified Soil Classification using a combination of the No. 4 sieve content (gravel vs. smaller fraction), the log classification and the written description. The USCS classification for each layer is appended to the logs ("B-3" through "B-5"). The materials properties for each soil type were assigned from our previous report and used in the slope stability analyses.

LABORATORY INVESTIGATION

Included in our laboratory testing program were field moisture content tests on selected samples returned to the laboratory and field dry density tests on all relatively undisturbed samples from Boring Nos. 6 and 7. Since these borings were not deep enough to provide meaningful input for slope stability analyses, no strength testing was conducted on samples from these borings.

Dry densities and moisture contents appear on the boring logs in Appendix "B".

SLOPE STABILITY ANALYSIS

ANALYSIS METHOD:

The gross stability of slopes was analyzed under both static and seismic conditions for rotational failures using the Slide (Version 6.0) computer software program (Rocscience, 2011). This program provides nine different slope stability analysis methods including Simplified Bishop Method, Simplified Janbu Method, Spencer Method, and other methods. Spencer's method was utilized for slope stability analysis as recommended by the Implementation Committee of DMG Special Publication 117 (Blake and others, 2002).

STRENGTH PARAMETERS:

Based on the direct shear test and triaxial test results, the following strength parameters from our April 19, 2011 report were utilized in our calculations. The detailed parameters for each material type are tabulated in the following table for both static and seismic conditions.

Soil Type*	γ (pcf)	Seismic c (psf)	Seismic Φ (°)	Static c (psf)	Static Φ (°)
GM (AW)	135	700	38	500	36
GM (BW)	135	500	38	300	36
GP (BW)	135	500	38	300	36
SP (BW)	115	100	36	25	33
SM (AW)	112	200	36	150	32
SM (BW)	116	150	36	125	33
ML (BW)	130	1,150	22	480	27
CL (BW)	124	720	24	720	24

AW = Above Groundwater BW = Below Groundwater

SLOPE STABILITY ANALYSES:

Three cross sections were selected to evaluate the slope stability of the eastern (Section R-R'), the central (Section S-S') and western (Section T-T') pits. The details of the cross sections, including the stratification lines representing approximate boundaries between soil types, are included in Enclosure "A-2". The slope stability analyses were performed on the proposed reclaimed 2 horizontal to 1 vertical [2(h):1(v)] cut slopes.

A horizontal seismic coefficient of 0.10 was utilized based on the relatively low design PGA obtained for the site. This area is one of the areas of California with very low ground shaking potential. Dr. Nicholas Sitar, Professor of Civil and Environmental Engineering at U.C. Berkeley, recommends a seismic coefficient of 1/3 to 1/2 of PGA for seismic earth pressure analyses (personal communication, A.S.C.E. Seminar, Long Beach, April 23, 2008). Our K_h of 0.10 falls within this recommendation.

Static factors of safety were above 1.5 for all three sections analyzed at the -120 feet bottom elevation. Seismic factors of safety were between 1.10 and 1.00 for all sections at the -120 feet depth. As requested, we conducted searches to determine the bottom depths required to obtain a minimum seismic factor of safety of 1.10 for each section.

The detailed results of slope stability analyses are included as Enclosures "C-1" through "C-6".

Results are summarized below:

Cross Section	Cut Slope Height [below water]	Static FS	Seismic FS	Bottom Elevation
R-R'	2(h):1(v) [174']	1.70	1.12	-84 feet
S-S'	2(h):1(v) [189']	1.62	1.11	-105 feet
T-T'	2(h):1(v) [187']	1.68	1.11	-105 feet

These recommended maximum pit depths are slightly shallower than the desired -120 feet below AMSL.

CONCLUSIONS

Based upon the findings of our geologic field observations, evaluations, and review of numerous borings by others, as well as the results of our slope stability calculations, it is the opinion of this firm that the reclaimed final slopes as recommended in this report are stable, provided the recommendations contained in this Addendum Report are implemented.

Based upon our analyses, the following 2(h):1(v) reclamation slopes are suitably stable against gross failure for the anticipated long-term conditions, including the effects of seismic shaking:

Pit Designation	Maximum Slope Height Below Water Table
Pit 1 (Easterly Pit)	174 feet
Pit 2 (Central Pit)	189 feet
Pits 3, 4 and 5 (Westerly Pit)	187 feet

Reclaimed slopes, no steeper than 2(h):1(v) up to these maximum heights, are recommended to provide adequate stability against gross failure under the anticipated conditions of shallow groundwater and seismic shaking.

We understand that the new intended depth of mining has been chosen by the owner as -85 feet AMSL for all pits (Pits 1, 2, 3, 4 and 5). This intended depth of mining conforms to our recommendations.

The historic high groundwater elevation is considered to be approximately equal to the current elevation as expressed by the surface of the existing bodies of water at the site. Ponding exists across the site and is anticipated in all proposed quarries.

Relatively shallow bedrock (bedrock shallower than these recommended maximum depths) was encountered in Boring Nos. 6 and 7 of this investigation, and within some of the logs of borings placed by others. There is neither the desire nor the ability by the owner to mine the bedrock. These recommended maximum quarry depths are considered at maximum depth, with significant quarry areas expected to bottom out shallower than the recommended maxima due to shallow bedrock. The areas of shallow bedrock will result in decreased maximum reclaimed slope heights and consequent increased slope stability.

RECOMMENDATIONS

SEISMIC SHAKING HAZARDS:

Low seismic shaking of the site can be expected to occur during the lifetime of the proposed mining and reclamation. This potential has been considered in our analyses and evaluation of slope stability.

RECLAIMED (FINAL) CUT SLOPE CONSTRUCTION:

Reclaimed slopes are expected to be nearly all within and cut into dredge tailings and native alluvial materials.

The current reclamation plan (April 2011) shows proposed quarry slopes bottoming at -20 feet AMSL and inclined at 2(h):1(v). The proposed quarry slopes may be safely modified to bottom at the maximum depths recommended above provided that the recommendations included in this Addendum are followed. We understand that the new intended depth of mining has been chosen by the owner as -85 feet AMSL for all pits (Pits 1, 2, 3, 4 and 5). This intended depth of mining conforms to our recommendations.

This Addendum should be considered a part of the referenced geotechnical investigation report dated April 19, 2011. All recommendations contained in the referenced report remain applicable and should be adhered to.

Any large, unstable boulders on mine slopes above groundwater level should be removed or stabilized prior to the end of reclamation.

SLOPE PROTECTION:
Slopes should be protected with berms and/or levees as necessary to prevent slope erosion in the areas where slopes drain onto the reclaimed slopes.

EROSION AND DRAINAGE:
Runoff should not be allowed to flow over natural, cut, or fill areas in such a way as to cause erosion. Finished soil slopes should be planted with drought resistant native vegetation to protect from wind and rain. Watering to maintain slopes is not recommended.

ALTERNATE END USES OF THE SITE:
This report and the investigation performed in order to prepare this report, are intended to be suitable for mine reclamation only. Future uses of the site for anything other than reclamation of the mine as open space are beyond the scope of this investigation and report. If other uses of the site are planned or considered, then an additional investigation to address other end uses should be conducted.

LIMITATIONS

C.H.J., Incorporated has striven to perform our services within the limits prescribed by our client, and in a manner consistent with the usual thoroughness and competence of reputable geotechnical engineers and engineering geologists practicing under similar circumstances. No other representation, express or implied, and no warranty or guarantee is included or intended by virtue of the services performed or reports, opinion, documents, or otherwise supplied.

This report reflects the testing conducted on the site as the site existed during the investigation, which is the subject of this report. However, changes in the conditions of a property can occur with the passage of time, due to natural processes or the works of man on this or adjacent properties. Changes in applicable or appropriate standards may also occur whether as a result of legislation, application, or the broadening of knowledge.

Therefore, this report is indicative of only those conditions tested at the time of the subject investigation, and the findings of this report may be invalidated in part or in full by changes outside of the control of C.H.J., Incorporated.

The conclusions and recommendations in this report are based upon observations performed and data collected at separate locations, and interpolation between these locations, carried out for the project and the scope of services described. It is assumed and expected that the conditions between locations observed and/or sampled are similar to those encountered at the individual locations where observation and sampling was performed. However, conditions between these locations may vary significantly. Should conditions be encountered in the field, by the client, or any firm performing services for the client, or the client's assign, that appear different than those described herein, this firm should be contacted immediately in order that we might evaluate their effect.

If this report or portions thereof are provided to contractors or included in specifications, it should be understood by all parties that they are provided for information only and should be used as such.

The report and its contents resulting from this investigation are not intended or represented to be suitable for reuse on extensions or modifications of the project, or for use on any other project.

CLOSURE

We appreciate this opportunity to be of service and trust this report provides the information desired at this time. Should questions arise, please do not hesitate to contact this office.

Respectfully submitted,
C.H.J., INCORPORATED

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FY/JJM/:jm/ndt:jak

REFERENCES

Blake, T.F., Hollingsworth, R.A., and Stewart, J.P., 2002, Recommended procedures for implementation of DMG Special Publication 117: Guidelines for analyzing and mitigating landslide hazards in California: Workshop held by Southern California Earthquake Center, June 20-21, 2002, USC Campus.

California Building Standards Commission, 2010, California Building Code: Sacramento, California.

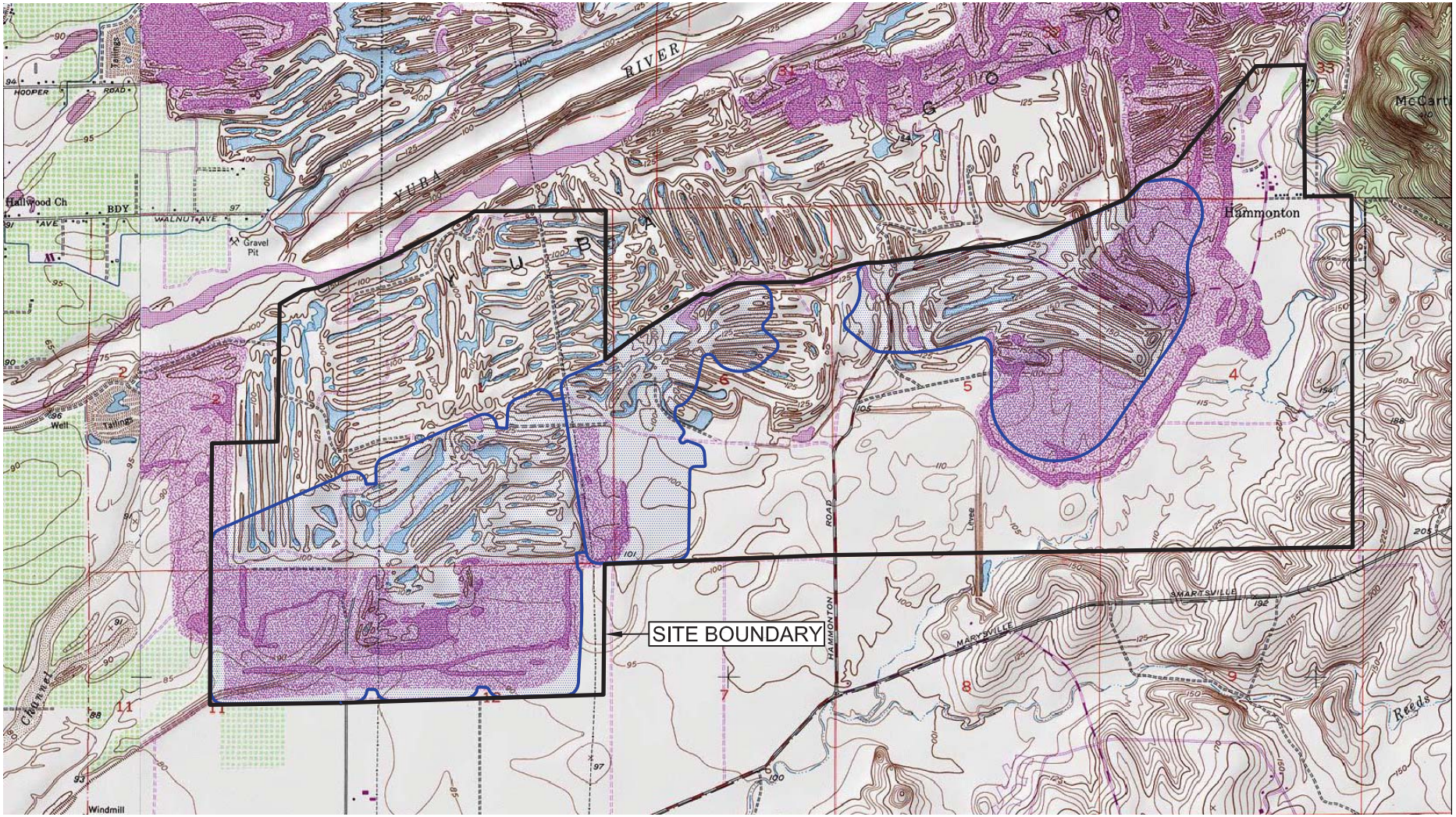
C.H.J., Incorporated, April 19, 2011, Slope Stability Investigation report, Proposed Western Aggregates LLC Quarry Reclamation, Marysville Area, Yuba County, California, Job No. 11137-8.

Jibson, R.W. and Jibson, M.W., 2003, Java programs for using Newmark's method and simplified decoupled analysis to model slope performance during earthquakes: U.S. Geological Survey Open File Report OF-03-0005.

Rocscience, 2011, SLIDE ver 6.0: 2D Limit equilibrium slope stability for soil and rock slopes (computer program).

APPENDIX "A"

GEOTECHNICAL MAPS AND CROSS SECTIONS



PROPOSED QUARRY BOUNDARIES

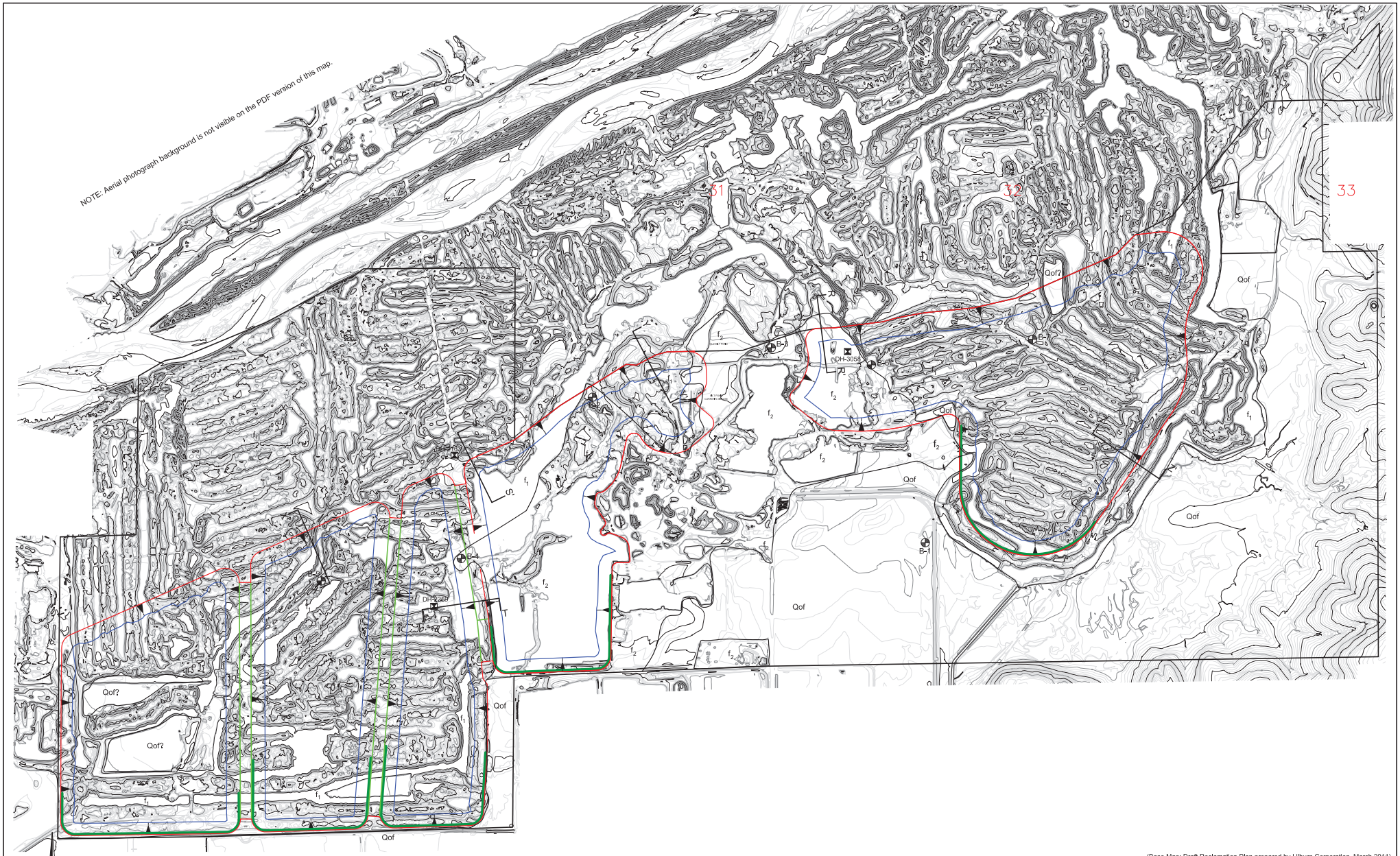
N

SCALE: 1"= 3,000'

INDEX MAP

FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-1"
DATE: NOVEMBER 2011		JOB NUMBER 11137-8

C.H.J. Incorporated



(Base Map: Draft Reclamation Plan prepared by Lilburn Corporation, March 2011)

GEOLOGIC UNITS:

f_2 - Recent fill
f_1 - fill associated with historic dredging activities; includes some undifferentiated dredge tailings of more recent age
Qoa - old fan deposits

Approximate boundary of proposed quarry

Approximate location of -20 amsl contour on pit bottom

Approximate geologic contact

DH-3058 Location of boring by others (1990-1992) used in this addendum

B-7 Location of Geotechnical Boring (2006, 2011)

Z Z' Geologic Cross Section (R, S, & T- this report)

-N-

SCALE: 1"=700'

0 700 1400

GEOLOGIC MAP

FOR: WESTERN AGGREGATES LLC

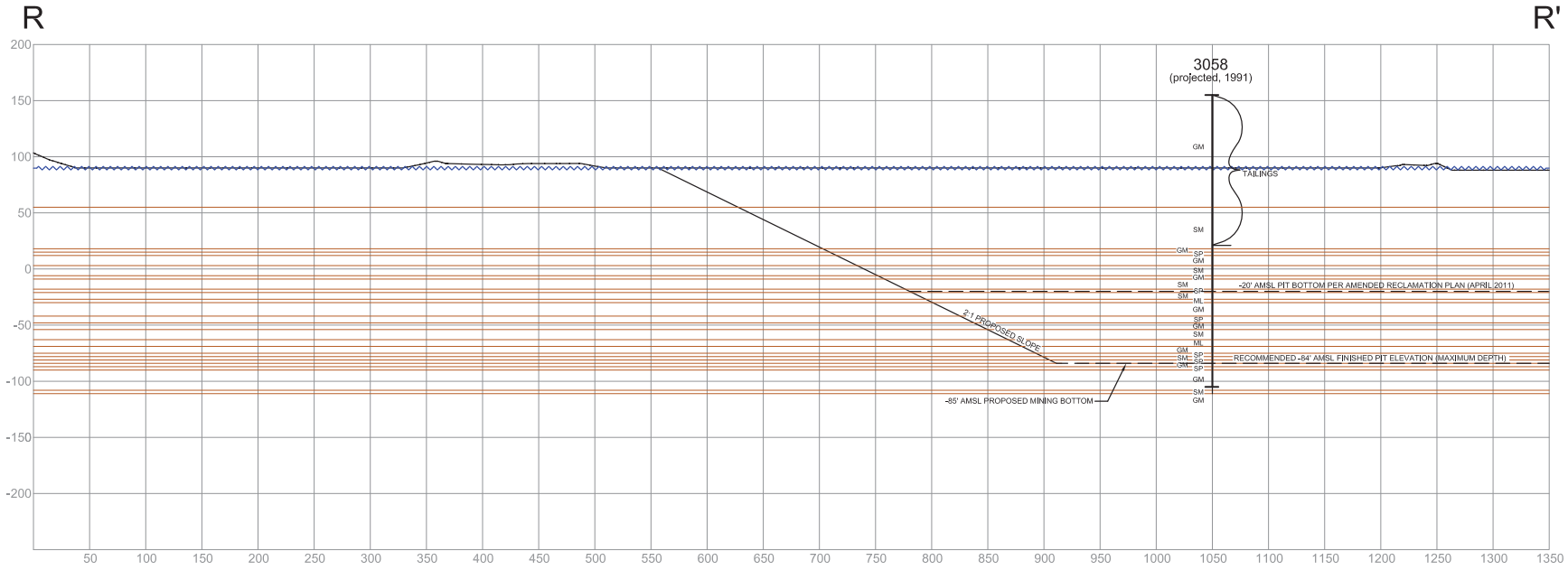
DATE: NOVEMBER 2011

SLOPE STABILITY INVESTIGATION ADDENDUM
WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS
YUBA COUNTY, CALIFORNIA

ENCLOSURE "A-2"

JOB NUMBER 11137-8

C.H.J. Incorporated



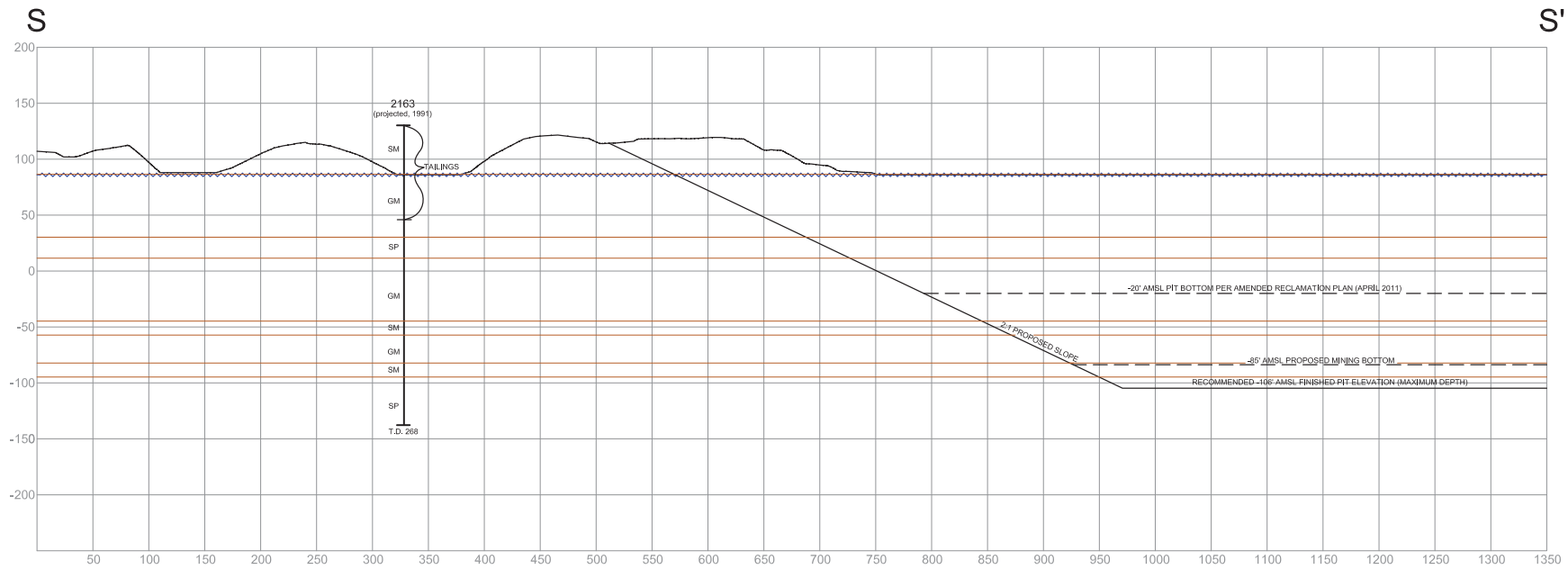
SCALE 1"= 100'

contact, separates lithologic units

GEOLOGIC CROSS SECTION R-R'

FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-3"
DATE: NOVEMBER 2011		JOB NUMBER 11137-8

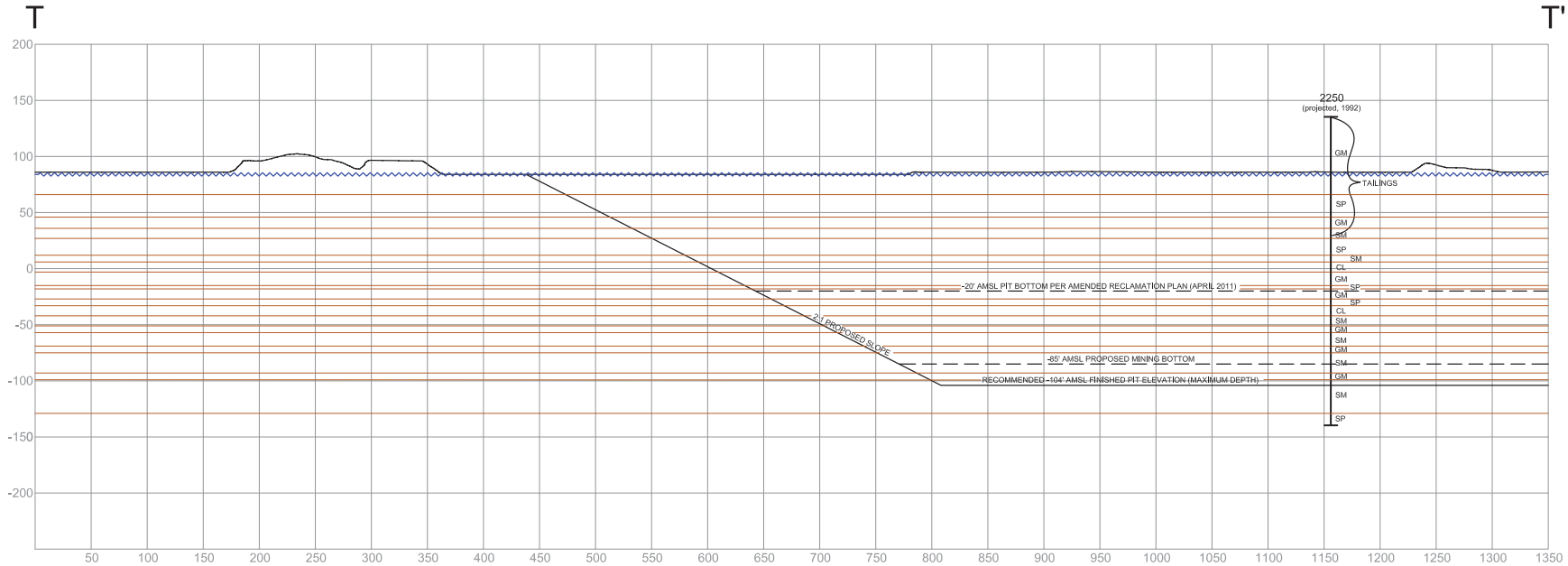
C.H.J. Incorporated



contact, separates lithologic units

SCALE 1"= 100'

GEOLOGIC CROSS SECTION S-S'		
FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-3"
DATE: NOVEMBER 2011		JOB NUMBER 11137-8
		C.H.J. Incorporated



SCALE 1"= 100'

GEOLOGIC CROSS SECTION T-T'		
FOR: WESTERN AGGREGATES LLC	SLOPE STABILITY INVESTIGATION WESTERN AGGREGATES LLC YUBA COUNTY OPERATIONS YUBA COUNTY, CALIFORNIA	ENCLOSURE "A-3"
DATE: NOVEMBER 2011		JOB NUMBER 11137-8
		C.H.J. Incorporated

APPENDIX "B"

EXPLORATORY LOGS

KEY TO LOGS (BORING NOS. 6 AND 7)

SAMPLE TYPE:

Bulk	Indicates Disturbed or Bulk Sample
Dist.	Indicates Disturbed Sample
DS	Direct Shear Test (ASTM D 3080)
MDC	Maximum Density Optimum Moisture Determination (ASTM D 1557)
N.R.	Indicates No Recovery of Sample
Ring	Indicates Relatively Undisturbed Ring Sample. Relatively Undisturbed Ring Samples are obtained with a "California Sampler" (3.25" O.D. and 2.42" I.D.) driven with a 140-pound weight falling 30 inches. The blows per foot are converted to equivalent SPT values.
SA	Sieve Analysis (ASTM C 136)

ENGINEERING PROPERTIES FROM SPT BLOWS

Relationship of Penetration Resistance to Relative Density for Cohesionless Soils*
(After Mitchell and Katti, 1981)

Number of SPT Blows (N_{60})	Descriptive Relative Density	Approximate Relative Density (%)
<4	Very Loose	0-15
4-10	Loose	15-35
10-30	Medium Dense	35-65
30-50	Dense	65-85
>50	Very Dense	85-100

*At an effective overburden pressure of 1 ton per square foot (100 kPa)

Approximate Values of Undrained Shear Strength for Cohesive Soils
(Terzaghi and Peck, 1967)

Number of SPT Blows (N_{60})	Soil Consistency	Approximate Undrained Shear Strength (psf)
<2	Very Soft	Less than 250
2-4	Soft	250-500
4-8	Medium Stiff	500-1000
8-15	Stiff	1000-2000
15-30	Very Stiff	2000-4000
>30	Hard	More than 4000

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UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size)			
GRAVELS More than 50% of coarse fraction larger than No.4 sieve size	Clean Gravels (Less than 5% fines)		
		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)		
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No.4 sieve size	Clean Sands (Less than 5% fines)		
		SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)		
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

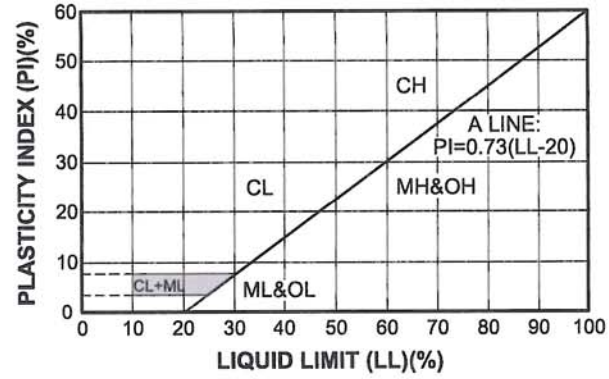
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for SW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size). Coarse-grained soils are classified as follows:

Less than 5 percent.....GW, GP, SW, SP
More than 12 percent.....GM, GC, SM, SC
5 to 12 percent.....Borderline cases requiring dual symbols

PLASTICITY CHART



EXPLORATORY BORING NO. 6

Date Drilled: 8/10/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 108±

Logged by: VJR

Measured Depth to Water(ft): 19.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(CL) Clay with Sand, fine to medium, silt, gravel and cobbles to 6", brown	Tailings				4.5		
5									
10				X		20 24 21	NR	11.4	Ring
15		(GP) Sandy Gravel, fine to coarse, silt, cobbles to 4", returned as Matrix-free gravel, gray							
20			▼ Groundwater	X		27 37 40	NR	NR	Ring
25									
30				X		46 50	NR	NR	Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1a

EXPLORATORY BORING NO. 6

Date Drilled: 8/10/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 108±

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DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SP) Sand, fine to medium with coarse, gravel to 3", silt, dark brown							
40				X		50	19.3	106.1	Ring
45									
50				X		15 18 26	12.7	110.5	Ring
		(CL) Clay with Sand, fine, silt and gravel to 3", brown							
55									
		(SP) Sand, fine to medium with coarse, gravel and cobbles to 5", dark brown							
60				X		13 49 50/5	19.6	105.1	Ring
65		(GP) Sandy Gravel, fine to coarse, silt and cobbles to 5", dark brown							

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1b

EXPLORATORY BORING NO. 6

Date Drilled: 8/10/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 108±

Logged by: VJR

Measured Depth to Water(ft): 19.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(GP) Sandy Gravel, fine to coarse, silt and cobbles to 5", dark brown		X		35 50/3	NR	NR	Ring
75									
80				X		40 46 50	NR	8.5	Ring
85									
		(SP-SM) Sand, fine to medium with coarse, silt and clay, gravel to 3", brown	Native						
90				X		50	13.8	113.9	Ring
95									
100				X		26 31 36	26.5	91.6	Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1c

EXPLORATORY BORING NO. 6

Date Drilled: 8/10/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 108±

Logged by: VJR

Measured Depth to Water(ft): 19.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse with clay, gravel to 3", light brown			▨		21.5		
110				▨		50	NR	NR	Ring
115									
120				▨		39 50/3	18.2	Dist.	Ring
125									
130				▨		13 49 50	30.1	83.3	Ring
135		(SC) Clayey Sand, fine to medium with silt and gravel to 3", brown			▨		15.7		

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1d

EXPLORATORY BORING NO. 6

Date Drilled: 8/10/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 108±

Logged by: VJR

Measured Depth to Water(ft): 19.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				X		14 38 50/3	16.3	114.2	Ring
145		(SM) Silty Sand with clay, fine to medium, gravel to 3", brown							
150				X		50	Dist.	18.8	Ring
155									
		(SC) Clayey Sand, fine to medium with silt and gravel to 3", gray							
160				X		37 50	Dist.	18.4	Ring
		(GP) Gravelly Sand, fine to coarse with silt and clay, cobbles to 8"			X		14.5		
			Refusal						
		END OF BORING							
165		BORING TERMINATED AT 162.0' DUE TO REFUSAL ON METAVOLCANIC BEDROCK TAILINGS TO 88.0' MODERATE CAVING GROUNDWATER AT 19.5'							
170									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-1e

EXPLORATORY BORING NO. 7

Date Drilled: 8/13/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 133±

Logged by: VJR

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to medium with coarse, clay and gravel to 3", brown	Tailings		▨		12.0		
5									
10									
15									
20				▨		32 49 50	5.7	Dist.	Ring
25									
30				▨		40 43 50	10.5	NR	Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2a

EXPLORATORY BORING NO. 7

Date Drilled: 8/13/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 133±

Logged by: VJR

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to medium with coarse, clay and gravel to 3", brown							
40		(GP) Sandy Gravel, fine to coarse with silt, cobbles to 4", brown							
45			Groundwater						
50									
55									
60									
		(SP) Sand, fine to coarse, silt, gravel and cobbles to 4", gray brown			▨		17.0		
65									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2b

EXPLORATORY BORING NO. 7

Date Drilled: 8/13/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 133±

Logged by: VJR

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SP) Sand, fine to coarse, silt, gravel and cobbles to 4", gray brown		X		30 50	15.6	114.2	Ring
75									
80									
85									
90									
95									
100		(GP) Sandy Gravel, fine to coarse with silt, cobbles to 6", gray brown	Native						

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2c

EXPLORATORY BORING NO. 7

Date Drilled: 8/13/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 133±

Logged by: VJR

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
110				X		50/5	NR	NR	Ring
115									
120									
125		(SC) Clayey Sand, fine to medium with coarse, silt, gravel and cobbles to 4", brown							
130				X		50	NR	NR	Ring
135		(SC) Clayey Sand, fine to medium with coarse, silt, gravel and cobbles to 4", brown							

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2d

EXPLORATORY BORING NO. 7

Date Drilled: 8/13/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 133±

Logged by: VJR

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
145		(SM) Silty Sand, fine to medium with clay, gravel to 3", gray							
150				☒		50	NR	NR	Ring
155									
160									
165		(GM) Gravelly Silty Sand, fine to medium with clay, gravel to 3", recovered as gravel with no matrix, gray							
170		(GM) Gravelly Silty Sand, fine to medium with clay, gravel to 3", recovered as gravel with no matrix, gray		☒		50	NR	1.6	Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2e

EXPLORATORY BORING NO. 7

Date Drilled: 8/13/11

Client: WESTERN AGGREGATES, LLC

Equipment: Dual Tube Becker

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): 133±

Logged by: VJR

Measured Depth to Water(ft): 45.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		END OF BORING	Refusal						
		BORING TERMINATED AT 175.0' DUE TO REFUSAL ON METAVOLCANIC BEDROCK TAILINGS TO 100.0' MODERATE CAVING GROUNDWATER AT 45.0'							
180									
185									
190									
195									
200									
205									

BORING LOG - NO EQUIV & BLOW PER 6 IN 11137-8.GPJ CHJ.GDT 11/7/11

C.H.J.

YUBA COUNTY OPERATIONS
MARYSVILLE AREA, CALIFORNIA

Job No. 11137-8

Enclosure B-2f

DH-3058

Date on Site 5/14/91 Time on Site 8:30
Date off Site 5/16/91 Time off Site 10:00

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Drill Hole No.: 3058 Page 1 of 5
Flagging Green Dot No. Buckets 98 0
Elev. 154.59 Sed Slime
Easting 2157,683.03 Northing 554,748.12

TD Drilled 266.30 Tailings Drilled 134' Virgin Sed. Drilled 132.5' Bedrock Drilled —0—
Drill Type Becker Bit Type Four Tooth Bit OD _____ Bit ID 7" Weather _____
Reason for Termination: Crowed IN Driller Ben Coleman Foreman Jesus Robles
NOTES: Amalgamated Gold Numerical Total: 131.8

USCS Time	Drive Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
			5/14 - Start up @ 8:35											
			Tailings - Random Samples											
GM	20	20'	Brn Silt; Unsorted Subrnd - Wellrnd; Fine - coarse sand & Gravel	1	SAG	14.0		10.0	5.0		1 PT	258		1.1
			Stopped @ 9:20 (Break out Wrench broke - Tool run To Get Replacement) Start up @ 13:55											
GM	30	50	Brn. Silt; Unsorted Subrnd - Wellrnd; Fine - coarse sand & Gravel	2	SAG	24.0		18.0	6.0		1 PT	131		0.2
GM	20	70	A/A	1	SAG	13.0		9.0	4.0		1 PT	150		TR
			Shut Down @ 15:12 5/15 Start up @ 7:25											
GM	10	80	Brn. slime; Brn. Silt; Unsorted Subrnd - Wellrnd; Fine - coarse sand + Gravel	2	SAG SLI	32.5		22.0	15.0	K 1.5	1 PT	137		0.9
GM	10	90	A/A	2	SAG SLI	39.5		30.0	12.0	K 1.5	1 PT	202		2.3
SM	10	100	Brn. slime & Silt; Unsorted Subrnd - Wellrnd; Fine - coarse sand; Fine - Med. Gravel	1	SAG SLI	15.5		6.0	9.0		1 PT	293		1.2
SM	10	110	Brn. Sandy clay; Brn. Slime & Silt	2	SAM SLI	40.0		11.0	34.0	K 1.5	3 PT	209		4.2
SM	10	120	Brn. slime + Silt; Unsorted Subrnd - Wellrnd; Fine - coarse sand; Fine - Med. Gravel	2	SAG SLI	44.0		7.5	36.0	K 1.5	3 PT	119		3.6

Primary Sed Code				Modifer Sed Code			
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime

Hvy.Min. Abund.	
None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-3058

YUBA PROJECT
WESTGOLD
PLACER DRILL LOG

Page 2 of 5

Drill Hole No.: 3058

Flagging Green DOT No. Buckets 98 Sed 0 Slime

Easting _____ Northing _____

USCS Drive Time	Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
SM	10	130	BRN. SLIME & SILT; UNSORTED Subrnd - Wellrnd; Fine-Coarse	2	SAG SLI	36.5		7.0	26.0	K 1.5	3 PT	65		2.4
			SAND; Fine-Med. Gravel.	X	X	X	X	X	X	X	X	X	X	X
SM	4	134	BRN. SILT; UNSORTED Subrnd -	1	SAG	18.0		6.0	13.0	K 1.5	2 PT	30		3.1
			Wellrnd; Fine-Coarse sand											
			& Gravel	X	X	X	X	X	X	X	X	X	X	X
			- VIRGIN GROUND -	X	X	X	X	X	X	X	X	X	X	X
GM	3	137	BRN SILT; UNSORTED, Subrnd -	1	SAG	10.0		5.0	3.5		1 PT	299		0.1
			Wellrnd; Fine Coarse SAND											
			& Gravel.	X	X	X	X	X	X	X	X	X	X	X
SP	3	140	A/A	2	SAG	27.5		12.0	18.5	K 1.5	2 PT	315		2.9
GM	3	143	A/A	3	SAG	51.5		33.0	22.5	K 1.5	2 PT	310		0.5
SM	3	146	A/A	1	SAG	11.0		4.0	7.0		2 PT	98		1.0
SM	3	149	A/A	1	SAG	6.5		4.0	2.5		1 PT	245		0.3
SM	3	152	BRN. Friable sandy clay;	1	WAD	15.0		5.5	9.0		1 PT	97		0.5
			BRN SILT; UNSORTED,											
			Subrnd - Wellrnd, Fine -	X	X	X	X	X	X	X	X	X	X	X
			Coarse SAND & Gravel											
SM	3	155	A/A	1	WAD	22.0		9.5	15.0	K 1.5	2 PT	247		0.1
SM	3	158	BRN. Friable SANDY clay;	1	SAM	11.5		1.0	8.0		2 PT	14		0.1
			BRN. SILT; UNSORTED											
			Subrnd - Wellrnd; Fine -	X	X	X	X	X	X	X	X	X	X	X
			Coarse SAND											
GM	3	161	BRN. Friable sandy clay;	1	WAD	9.0		6.0	4.0		1 PT	110		0.3
			BRN SILT; UNSORTED, Subrnd -											
			Wellrnd; Fine - Coarse sand &	X	X	X	X	X	X	X	X	X	X	X
			Gravel.											
SM	3	164	A/A	1	WAD	3.0		1.0	1.5		1 PT	120		0.6
SM	3	167	BRN. Sandy clay; BRN.	1	SAM	3.0		.5	1.0		1 PT	106		1.3
			SILT; UNSORTED Subrnd -											
			Wellrnd; Fine - Coarse sand	X	X	X	X	X	X	X	X	X	X	X
			Pipe plugged - pulled back	X	X	X	X	X	X	X	X	X	X	X
			2 ft. JAR pipe to dislodge	X	X	X	X	X	X	X	X	X	X	X
			rock - water run @ 9:35	X	X	X	X	X	X	X	X	X	X	X
			START up @ 10:00											

Primary Sed Code			
MUD	Silt, Clay	SAG	Sand, gravel
SAM	Sand, Silt, Clay	GRA	Gravel
SAN	Sand	WAD	Sand, Gravel, Silt/Clay
		DIA	Silt/Clay, Sand, Gravel

Modifer Sed Code			
ORG	Organic Pitch	FOS	Fossils
OXI	Oxidized	CEM	Cemented
WOO	Wood	VOL	Volcanic Rock
		SLI	Slime

Hvy.Min. Abund.	
None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-3058

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Page 3 of 5

Drill Hole No.: 3058

Flagging Green Dot No. Buckets 98 Sed 0 Slime

Easting _____ Northing _____

USCS Time	Drive Ft.	Drive Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
SM	3	170	BRN. Slime & Silt; Sandy BRN. clay; Unsorted	1	SAM SLI	19.0		6.0	6.0		1 PT	261		1.1
			Subrnd-Wellrnd; Fine-Coarse Sand	X	X	X	X	X	X	X	X	X	X	X
SP	3	173	BRN. Silt; Unsorted Subrnd-Wellrnd, Fine-Coarse Sand	1	SAG	20.5		9.0	12.0	K 1.5	2 PT	18		0.2
			& Gravel.	X	X	X	X	X	X	X	X	X	X	X
SM	3	176	BRN. Slime & Silt; BRN sandy	1	SAM SLI	17.0		3.5	7.0		1 PT	373		TR
			clay; Unsorted Subrnd-Wellrnd											
			Fine-Coarse Sand	X	X	X	X	X	X	X	X	X	X	X
SM	3	179	A/A	1	SAM SLI	16.0		1.5	13.0	K 1.5	1 PT	265		0.3
ML	3	182	BRN. cohesive clay; Unsorted	2	DIA	29.5		9.0	18.0	K 1.5	2 PT	50		1.5
			Subrnd-Wellrnd; Fine-coarse											
			Sand & Gravel	X	X	X	X	X	X	X	X	X	X	X
GM	3	185	BRN. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand &	2	WAD	33.5		23.0	11.5	K 1.5	2 PT	63		11.0
			Gravel; BRN. Sandy Friable	X	X	X	X	X	X	X	X	X	X	X
			Clay											
GM	3	188	Hammer drilling — BRN. Silt;	2	WAD	27.0		18.0	8.0		2 PT	223		22.8
			Unsorted Subrnd-Wellrnd;											
			Fine-Coarse Sand & Gravel	X	X	X	X	X	X	X	X	X	X	X
			BRN. Friable sandy clay											
GM	3	191	Rusty Unsorted Subrnd-	2	SAG OXI	36.5		25.0	15.0	K 1.5	1 PT	285		6.2
			Wellrnd; Fine-Coarse Sand											
			& Gravel; Lithified Sand	X	X	X	X	X	X	X	X	X	X	X
SM	3	194	Friable sandy chips;	3	SAG CEM	49.0		30.0	25.5	K 1.5	1 PT	124		3.1
			Unsorted Subrnd-Wellrnd											
			Fine-Coarse Sand & Gravel;	X	X	X	X	X	X	X	X	X	X	X
			Lithified Sand.											
SP	3	197	A/A	2	SAG CEM	34.0		7.0	27.0	K 1.5	3 PT	34		TR
SP	3	200	A/A.	3	SAG CEM	55.0		24.5	36.5	K 1.5	3 PT	116		2.2
GM	3	203	Lithified Sand; Unsorted	2	SAG CEM	32.0		18.5	17.0	K 1.5	2 PT 2 Brown Sand	161		0.1
			Subrnd-Wellrnd; Fine-											
			Coarse Sand & Gravel	X	X	X	X	X	X	X	X	X	X	X
GM	3	206	Lithified Sand Unsorted	3	SAN CEM	49.5		4.0	45.0	K 1.5	2 PT	27		TR
			Subrnd-Wellrnd; Fine-											
			Coarse Sand	X	X	X	X	X	X	X	X	X	X	X

Primary Sed Code

MUD	Silt, Clay	SAG	Sand, gravel
SAM	Sand, Silt, Clay	GRA	Gravel
SAN	Sand	WAD	Sand, Gravel, Silt/Clay
		DIA	Silt/Clay, Sand, Gravel

Modifer Sed Code

ORG	Organic Pitch	FOS	Fossils
OXI	Oxidized	CEM	Cemented
WOO	Wood	VOL	Volcanic Rock
		SLI	Slime

Hvy.Min. Abund.

None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-3058

YUBA PROJECT
WESTGOLD
PLACER DRILL LOG

Page 4 of 5

Drill Hole No.: 3058

Flagging Green DOT No. Buckets 98 Sed 0 Slime

Easting _____ Northing _____

USCS Drive			Description			Volume 1 x 10³ CY				Concentration		Wt. Au (mg)		
Time	Ft.	Depth	Written Description/No. Buckets	No Buk.	Sed. Code	Total Sed.	Slm	+ 1/4	- 1/4	Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Jar No.	Cor. Wt.	Amg. Wt.
SM	3	209	BRN. SILT; BRN Friable chips of clay; Friable	2	SAM CEM	27.0		4.0	20.0	K 1.5	1 PT	286		TR
			chips of sand; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand; Lithified sand	X	X	X	X	X	X	X	X	X	X	X
SM	3	212	BRN. Cohesive Sandy clay; BRN. SILT change to Gryll	2	SAM	31.0		2.0	24.0	K 1.5	2 PT	185		TR
			cohesive clay	X	X	X	X	X	X	X	X	X	X	X
SM	3	215	Gry. Friable chips of Sand + clay; Unsorted	2	WAD CEM	29.0		7.5	21.0	K 1.5	2 PT	361		TR
			Subrnd-Wellrnd; Fine-coarse sand + Gravel; Gry. SILT,	X	X	X	X	X	X	X	X	X	X	X
ML	3	218	Gry. Friable cohesive sandy clay; Unsorted Subrnd-U	2	DIA	28.0		15.0	12.5	K 1.5	1 PT 1	350		TR
			Wellrnd; Fine-coarse sand + Gravel	X	X	X	X	X	X	X	X	X	X	X
ML	3	221	Gry. Friable sandy clay; Gry. SILT; Unsorted Subrnd-	2	WAD	34.0		13.0	22.0	K 1.5	1 PT 1	306		TR
			Wellrnd; Fine-coarse sand + Gravel; change To Drk. brn. SILT.	X	X	X	X	X	X	X	X	X	X	X
GM	3	224	Gry. + BRN. SILT; Unsorted Subrnd-Wellrnd; Fine-coarse	2	SAG CEM	29.5		9.0	22.0	K 1.5	1 PT 1	291		TR
			Sand + Gravel; Lithified Sand	X	X	X	X	X	X	X	X	X	X	X
GM	3	227	A/A	2	SAG CEM	27.5		12.0	18.0	K 1.5	1 PT 1	329		TR
SP	3	230	Gry. SILT; Unsorted Subrnd-Wellrnd; Fine-coarse sand	2	SAG	29.5		14.0	18.5	K 1.5	1 PT 1	345		NT
			+ Gravel	X	X	X	X	X	X	X	X	X	X	X
SM	3	233	Gry. Friable sandy clay; Gry. SILT; Unsorted Subrnd-	2	WAD	26.0		11.0	16.0	K 1.5	1 PT 1	353		TR
			Wellrnd; Fine-coarse sand + Gravel	X	X	X	X	X	X	X	X	X	X	X
SP	3	236	Grn. + Drk. Gry. SILT; Unsorted Subrnd-Wellrnd; Fine-coarse	2	SAG	28.5		13.0	16.0	K 1.5	1 PT 1	200		TR
			Sand + Gravel; Sulfieds.	X	X	X	X	X	X	X	X	X	X	X
GM	3	239	A/A	2	SAG	30.5		17.0	16.0	K 1.5	1 PT 1	8		NT
SP	3	242	A/A	2	SAG	40.0		20.0	21.0	K 1.5	1 PT 1	334		TR
GM	3	245	Gry. SILT Cemented Gravel; Unsorted Subrnd-Wellrnd; Fine-coarse sand + Gravel; Sulfieds	2	SAG CEM	33.0		20.0	17.5	K 1.5	1 PT 3	85		TR

Primary Sed Code				Modifer Sed Code			
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime

Hvy.Min. Abund.	
None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-3058

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Page 5 of 5

Drill Hole No.: 3058

Flagging Green DOT No. Buckets 98 Sed 0 Slime

Easting _____ Northing _____

USCS Time	Drive Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
GM	3	248	Gry. Silt; Sulfieds; Cemented Gravel; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Gravel.	2	SAG CEM	34.0		19.0	18.0	K 1.5	1 PT 3	5		TR
				X	X	X	X	X	X	X	X	X	X	X
GM	3	251	A/A	2	SAG CEM	33.0		20.5	16.0	K 1.5	1 PT 1	336		TR
GM	3	254	Gry. Silt; Sulfieds; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Gravel; Hard drilling.	2	SAG	33.5		22.0	15.0	K 1.5	1 PT 1	375		NT
				X	X	X	X	X	X	X	X	X	X	X
GM	3	257	Gry. + Dk. Gry. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Gravel; Sulfieds	2	SAG	34.0		22.0	16.0	K 1.5	1 PT 3	230		TR
				X	X	X	X	X	X	X	X	X	X	X
GM	3	260	A/A	2	SAG	30.0		17.0	17.5	K 1.5	1 PT 3	252		0.2
SM	3	263	Gry. Friable sandy clay; Gry. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Gravel; Sulfieds.	3	WAD	54.0		12.0	42.5	K 1.5	1 PT 3	67		4.6
				X	X	X	X	X	X	X	X	X	X	X
SM	.70	263.70	Gry. Friable Sandy-clay; Gry. Silt; Sulfieds; Cemented Gravel; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Gravel; V. Hard drilling	1	WAD CEM	11.5		9.0	5.0		1 PT 3	A	III	26.8
				X	X	X	X	X	X	X	X	X	X	X
			Due To hard drilling The previous Sample was Shortened To (.70) in order To Examine sediment below for Gold.	X	X	X	X	X	X	X	X	X	X	X
GM	2.30	266	All Sediment is Rock Fragment of Same rock; Angular Unsorted Fractured rock; Sulfieds; Changed To Unsorted Subrnd-Wellrnd; Fine-Coarse Gravel; Sulfieds; Gry. Friable sandy clay; Gry. Silt. (No sand)	2	WAD	26.0		16.0	11.0	K 1.5	1 PT 3	221		23.2
GM	.30	266.30	Rock Fragement; Sulfieds; Tr. of Unsorted Subrnd-Wellrnd; Coarse Gravel w/o sand.	1	GRA	7.0		4.5	2.5		1 PT 1	256		1.8
				X	X	X	X	X	X	X	X	X	X	X

Terminated Hole

Primary Sed Code				Modifer Sed Code				Hvy.Min. Abund.	
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils	None	0
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented	Trace	1
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock	Common	2
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime	Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

MG

DH-2163

Date on Site 5/3/90 Time on Site 7:00
Date off Site 5/3/90 Time off Site 17:30

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Drill Hole No.: 2163 Page 1 of 4
Flagging RNA No. Buckets 141 2
Elev. 131.2' Sed Slime
Easting 2150858.68 Northing 552,983.99

TD Drilled 268' Tailings Drilled 85' Virgin Sed. Drilled 183' Bedrock Drilled
Drill Type Becker Bit Type Four Tooth crowed in Bit OD 7" Bit ID Weather HOT
Reason for Termination: Driller Ruben Foreman Jess

NOTES:

USCS Drive			Description			Volume 1 x 10³ CY				Concentration		Wt. Au (mg)		
Time	Ft.	Depth	Written Description/No. Buckets	No Buk.	Sed. Code	Total Sed.	Slm	+ 1/4	- 1/4	Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Jar No.	Cor. Wt.	Amg. Wt.
9:05		85												
GM	3	88	BRN. SILT; Unsorted Subrnd Well rnd; Fine - Coarse Sand + Grav.	1	SAG	18.5		1.5	7.0		1 PT	165		TR
GM	3	91	A/A	1	SAG	19.0		13.0	9.0	K 1.5	1 MT	81		14.9
GM	3	94	A/A	1	SAG	19.0		12.0	8.0		1 PT	12		0.7
GM	3	97	A/A	2	SAG	27.5		17.0	9.0	K 1.5	1 PT	15		0.5
SP	3	100	Sand; BRN clay + SILT	1	MUD	15.5		6.5	6.0		1 PT	177		2.2
SP	3	103	SAND BRN clay + SILT	2	SAM	31.0		2.0	40.0	K 1.5	2 PT	28		1.2
SP	3	106	BRN. SAT; Unsorted Subrnd Well rnd Fine-Coarse Sand	2	SAN	30.0		4.0	21.5	K 1.5	1 PT	161		0.4
SP	3	109	A/A	3	SAN	46.5		9.0	42.5	K 1.5	2 PT	143		0.2
SP	3	112	BRN. SILT; Unsorted Subrnd-Well rnd; Fine - Coarse Sand + Grav	4	SAG	65.0		17.0	53.5	K 1.5	1 FS	45		TR
SP	3	115	A/A	3	SAG	55.0		28.0	36.5	K 1.5	2 PT	152		0.3
GM	3	118	A/A	3	SAG	55.0		29.0	22.0	K 1.5	2 PT	15		5.5
GM	3	121	A/A	2	SAG	28.0		20.0	11.0	K 1.5	1 PT	154		0.1
GM	3	124	LT. BRN Sand; cohesive clay. Unsorted Subrnd - Well rnd; fine - Coarse Sand + Grav.	2	WAD	31.0		22.0	11.0	K 1.5	1 FS	60		0.9
						X		X	X			X		
GM	3	127	BRN. SILT. Unsorted Subrnd - Well rnd; fine - Coarse Sand + Grav	2	SAG	36.0		25.0	15.0	K 1.5	2 PT	151		5.7
GM	3	130	A/A	2	SAG	33.0		23.5	12.5	K 1.5	1 FS	23		4.3
GM	3	133	A/A	2	SAG	30.0		20.0	12.0	K 1.5	2 PT	28		11.2

Primary Sed Code				Modifer Sed Code				Hvy.Min. Abund.	
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils	None	0
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented	Trace	1
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock	Common	2
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime	Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2163

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Page 2 of 4

Drill Hole No.: 2163

Flagging Orng. No. Buckets 141 Sed 0 Slime

Easting _____ Northing _____

USCS Time	Drive Ft.	Drive Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
GM	3	136	BRN. Sandy Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Grav.	2	SAG	34.0		20.0	6.0	K 1.5	1 PT	148		2.3
GM	3	139	A/A	2	SAG	31.0		20.5	12.0	K 1.5	1 FS	92		2.2
GM	3	142	A/A	2	SAG	31.0		21.5	11.0	K 1.5	2 PT	64		1.1
GM	3	145	BRN. Silt + Clay; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Grav.	2	WAD	28.0		8.5	10.0	K 1.5	1 FS	114		1.5
GM	3	148	A/A	2	WAD	39.0		22.0	19.5	K 1.5	1	[illegible]		3.1
GM	3	151	BRN. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Grav.	2	SAG	41.0		20.0	16.0	K 1.5	1 PT	150		1.4
GM	3	154	A/A	2	SAG	34.0		23.5	12.0	K 1.5	1 PT	31		0.3
GM	3	157	A/A	2	SAG	33.0		21.0	12.0	K 1.5	1 PT	179		1.1
GM	3	160	Yel. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Grav.	2	SAG	29.0		21.0	10.5	K 1.5	1 FS	1		0.8
GM	3	163	BRN. Silt & Clay; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Grav.	2	WAD	36.0		20.5	11.0	K 1.5	1 FS	101		0.1
GM	3	166	A/A	2	WAD	30.0		18.5	7.5		1 FS	84		0.2
GM	3	169	A/A	1	WAD	24.0		19.0	9.0	K 1.5	1 PT	185		0.5
GM	3	172	BRN. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Grav.	2	SAG	33.0		24.0	11.0	K 1.5	1 FS	97		0.4
SM	3	175	Yel. Orng. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Grav.	4	SAG ORG	81.0		35.5	53.5	K 1.5	2 FS	54		0.7
SM	3	178	BRN. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Grav.	3	SAG	56.0		6.0	53.0	K 1.5	1 FS	146		0.2
SM	3	181	A/A	6	SAG	120.0		48.5	82.5	K 1.5	2 FS	38		0.7
GM	3	184	A/A	3	SAG	50.0		25.0	23.5	K 1.5	2 PT	119		7.2
GM	3	187	BRN. Clay & Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Grav.	2	WAD	27.0		11.0	10.5	K 1.5	2	150		15.8
GM	3	190	BRN. Sandy Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Grav.	3	SAG	46.0		14.5	25.5	K 1.5	2 PT	121		16.7
GM	3	193	BRN. Sandy Clay; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand + Grav.	2	WAD	36.0		25.0	11.0	K 1.5	2 PT	79		6.8

Primary Sed Code				Modifer Sed Code				Hvy.Min. Abund.	
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils	None	0
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented	Trace	1
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock	Common	2
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime	Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2163

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Page 3 of 4

Drill Hole No.: 2163

Flagging Orng No. Buckets 141 Sed 2 Slime

Easting _____ Northing _____

USCS Time	Drive Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
GM	3	196	BRN. sandy clay; Unsorted Subrnd Wellrnd; Fine-	2	WAD	36.0		23.0	16.0	K 1.5	2 PT	186		6.0
GM	3	199	BRN. Silt; Unsorted Subrnd - Wellrnd; Fine-coarse Sand + Grav.	2	SAG OXI	42.0		23.5	18.0	K 1.5	2 PT	48		3.6
			Rusty orng. silt also											
GM	3	202	BRN. Silt; Unsorted Subrnd - Wellrnd; Fine-coarse Sand + Grav.	2	SAG	37.0		25.0	17.0	K 1.5	2 K	10		33.8
GM	3	205	BRN. Silt + clay; Unsorted Subrnd - Wellrnd; Fine-coarse Sand + Grav.	2	WAD	33.0		22.5	14.5	K 1.5	2 FS	134		31.8
GM	3	208	Gry. Silt + clay; Unsorted Subrnd - Wellrnd; Fine-coarse Sand	2	WAD	29.0		20.0	9.5	K 1.5	2 FS	78		16.6
			+ Grav.											
GM	3	211	Gry. Silt; Unsorted Subrnd - Wellrnd; Fine-coarse Sand + Blue Grav.	2	SAG	43.0		29.5	24.0	K 1.5	2 K	26		25.4
SM	3	214	A/A	2	SAG	29.0		14.0	18.0	K 1.5	1 FS 1	164		2.6
SM	3	217	Sandy BRN. Silt + Clay	2	SAM	35.0		12.0	22.0	K 1.5	2 FS 2 BR	180		1.3
SM	3	220	Gry. Silt; Unsorted Subrnd - Wellrnd. Fine-coarse Sand +	2	WAD	35.0		8.0	25.0	K 1.5	3 PT BR	58		2.3
			Grav. BRN. cohesive clay											
SM	3	223	Gry. Silt + Sand; Unsorted Subrnd - Wellrnd; Fine-coarse	1	SAM	23.0		3.0	20.0	K 1.5	2 FS 1 BRS	127		2.2
			Sand											
SP	3	226	Gry. Silt; Unsorted Subrnd - Wellrnd; Fine-coarse Sand + Grav.	2	SAG	40.0		14.0	30.5	K 1.5	2 PT 1 S1 F	67		3.5
SP	3	229	A/A	1	SAG.	21.0		10.0	14.5	K 1.5	3 FS	47		0.7
SP	3	232	A/A	2	SAG	44.0		17.0	30.5	K 1.5	2 FS	42		0.2
SP	3	235	A/A	2	SAG	41.0		14.0	31.0	K 1.5	2 PT 1 S1 F	160		0.6
SP	3	238	Sulfer Smell; Gry. Silt; Unsorted Subrnd - Wellrnd; Fine-coarse	3	SAG	52.0		21.5	35.0	K 1.5	2 PT 1 S1 F	120		0.3
			Sand + Blu Grav.											
SP	3	241	Gry. Silt; Unsorted Subrnd - Wellrnd; Fine-coarse Sand	3	SAN	66.0		16.0	48.0	K 1.5	2 PT S1 F	39		1.0
SP	3	244	Gry. Silt; Unsorted Subrnd - Wellrnd; Fine-coarse Sand + Blu	2	SAG	37.0		10.0	29.5	K 1.5	3 FS 1	131		0.5
			Grav.											

Primary Sed Code				Modifer Sed Code				Hvy.Min. Abund.	
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils	None	0
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented	Trace	1
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock	Common	2
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime	Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2163

YUBA PROJECT
WESTGOLD
PLACER DRILL LOG

Page 4 of 4

Drill Hole No.: 2163

Flagging Orng No. Buckets 141 Sed 0 Slime

Easting _____ Northing _____

USCS Drive			Description			Volume 1 x 10³ CY				Concentration		Wt. Au (mg)		
Time	Ft.	Depth	Written Description/No. Buckets	No Buk.	Sed. Code	Total Sed.	Slm	+ 1/4	- 1/4	Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Jar No.	Cor. Wt.	Amg. Wt.
SP	3	247	Unsorted Subrnd-Wellrnd; Fine Coarse Sand + Blue Grav; Gry. Silt	3	SAG	55.0		13.0	44.0	K 1.5	3 PT /	37		1.3
SP	3	250	A/A	3	SAG	61.0		11.0	43.0	K 1.5	3 PT / ISLF	89		0.5
SP	1	251	Gry. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Blue Grav.	1	SAG	11.0		5.0	6.5		2 FS / 1	190		TR
SP	1	252	A/A	1	SAG	18.0		6.5	13.0	K 1.5	2 FS / 1	157		0.2
SP	1	253	A/A	1	SAG	18.0		7.0	12.0	K 1.5	2 FS /	163		NT
SP	1	254	A/A	1	SAG	12.5		4.5	7.0		2 PT /	77		TR
SP	1	255	Gry. Silt Unsorted Subrnd Wellrnd; Fine-Coarse Sand; Fine-Med Grav	1	SAG	12.0		7.0	6.5		2 FS / 1	142		TR
SP	1	256	A/A	1	SAG	14.5		8.0	9.0	K 1.5	2 FS /	182		0.1
SP	1	257	A/A	1	SAG	15.5		5.5	10.0	K 1.5	3 PT /	122		0.1
			Down for Hammer Lift Repair 13:39 / Start up 15:55			X		X	X			X		
SP	1	258	Gry. Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Blue Grav	1	SAG	12.0		6.0	7.0		2 PT /	50		0.4
SP	1	259	A/A	1	SAG	11.0		8.0	5.0		1 PT /	98		TR
SP	1	260	A/A	1	SAG	10.0		7.0	5.0		2 PT / ISLF	170		TR
SP	1	261	A/A	1	SAG	12.5		9.0	5.0		2 PT / ISLF	109		TR
SP	1	262	A/A	1	SAG	11.5		7.0	5.5		2 FS /	91		0.1
SP	1	263	A/A	1	SAG	9.0		5.0	5.0		2 PT / ISLF	30		TR
SP	1	264	Green Grav; Unsorted Subrnd Wellrnd; Fine - Coarse Sand &	3	SAG	36.0		9.5	27.5	K 1.5	1 FS / 1	86		0.1
			Pull back @ 264' (5'6") Grav. Discard Sediment			X		X	X			X		
SP	1	265	Green: Unsorted Subrnd-Wellrnd; Fine & Coarse Sand & Grav.	2	SAG	33.0		13.0	22.0	K 1.5	2 PT / ISLF	3		0.2
SP	1	266	A/A	1	SAG	10.0		4.0	8.0		1 PT / ISLF	4		TR
SP	1	267	A/A	1	SAG	14.0		4.0	12.0	K 1.5	1 FS / 1	144		TR
SP	1	268	A/A	1	SAG	15.5		2.5	13.0	K 1.5	/ FS	95		TR

Primary Sed Code

MUD	Silt, Clay	SAG	Sand, gravel
SAM	Sand, Silt, Clay	GRA	Gravel
SAN	Sand	WAD	Sand, Gravel, Silt/Clay
		DIA	Silt/Clay, Sand, Gravel

Modifer Sed Code

ORG	Organic Pitch	FOS	Fossils
OXI	Oxidized	CEM	Cemented
WOO	Wood	VOL	Volcanic Rock
		SLI	Slime

Hvy.Min. Abund.

None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2163

Random Tailing Samples Startup 5/3/90 8:25

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Page 1 of 1

Drill Hole No.: 2163

Flagging Orange No. Buckets ____ Sed ____ Slime

Easting ____ Northing ____

Drive			Description			Volume 1 x 10³ CY				Concentration		Wt. Au (mg)		
Time	Ft.	Depth	Written Description/No. Buckets	No Buk.	Sed. Code	Total Sed.	Slm	+ 1/4	- 1/4	Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Jar No.	Cor. Wt.	Amg. Wt.
9:21		68'	Orng Silt: Unsorted Subrnd-Wellrnd Fine-Coarse Sand Fine-Med. Grav.	1	SAG	25.0		14.0	17.0	K 1.5	1	112		1.0
						X		X	X			X		
9:26	10	78'	Orng. Silt: Unsorted Subrnd Wellrnd; Fine-Coarse Sand+Grav!	1	SAG	20.5		19.5	4.5		1	—		TR
9:45	7	85'		1	SAG	7.0		2.0	3.0			43		0.3
												X		
												X		
X	X	X	Frank's Tails	X	X	X	X	X	30.5	K 1.5	2	68		1.7
												X		
X	X	X	Pete's Tails	X	X	X	X	X	46.0	K 1.5	2	175		1.7
			Amalgamated Gold Numerical Total: 251.3 mg											

Primary Sed Code				Modifer Sed Code				Hvy.Min. Abund.	
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils	None	0
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented	Trace	1
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock	Common	2
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime	Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2250

Date on Site 3/17/92 Time on Site 9:00
Date off Site _____ Time off Site _____

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Drill Hole No.: 2250 Page 1 of 6
Flagging yell. DOT No. Buckets 128 0
Elev. ~~Blue~~ 133.96' Sed Slime
Easting 2150,460.49 Northing 550,411.66

TD Drilled *276' Tailings Drilled 105' Virgin Sed. Drilled 171' Bedrock Drilled _____
Drill Type Becker Bit Type Four Tooth Crowed in Bit OD 7" Bit ID _____ Weather _____
Reason for Termination: *Unable To penetrate sediment Driller Ben Coleman Foreman Jess Robles

NOTES: _____

USCS Drive Time	Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY Total Sed.	Slm	+ 1/4	- 1/4	Concentration Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg) Jar No.	Cor. Wt.	Amg. Wt.
			Random Samples Through Tailings — 3/17/92 Start up @ 9:09											
SP	69	69	BRN. SILT; Unsorted Subrnd-Wellrnd; Fine-Coarse sand; Fine-Med. Gravel.	2	SAG	40.5		8.0	34.0		2 MR	182		1.7
SP	10	79	A/A	2	SAG	29.0		5.0	22.5		2 MR	211		0.4
GM	10	89	BRN. Slimy; Unsorted Subrnd-Wellrnd; Fine-Coarse sand; Fine-Med. Gravel; BRN. Friable clay.	2	SAG SLI	30.0		24.0	8.0		2 MR	93		0.7
SM	10	99	BRN. Cohesive clay; Unsorted Subrnd-Wellrnd Fine-Coarse sand; Fine-Med. Gravel.	2	WAD SLI	40.5		4.0	36.0		2 MR	368		5.6
SM	6	105	BRN. Friable sandy chips; BRN. SILT. Tr. of Gravel Coarse gravel; BRN. Friable Clay.	2	SAM	32.5		10.0	19.5		2 MR	125		3.4
			- Virgin Ground -											
SP	3	108	BRN. Friable Sandy clay chips; BRN. SILT.	1	SAM	21.5		7.0	11.0		1 MR	155		0.1
SP	3	111	BRN. Friable sandy chips; BRN. SILT; Unsorted Subrnd-Wellrnd; Fine-Coarse sand; Fine-Med. Gravel; Water.	2	SAG	32.5		12.0	20.0		3 MR	249		0.7
SP	3	114	A/A	2	SAG	32.0		10.0	24.5		2 MR	180		0.2
SP	3	117	A/A	2	SAG	43.0		24.0	24.5		2 MR	53		0.3
GM	3	100	Water; Unsorted Subrnd-Wellrnd; Fine-Coarse sand & Gravel.	3	SAG	52.0		36.0	23.0		2 MR	90		0.5

Primary Sed Code			
MUD	Silt, Clay	SAG	Sand, gravel
SAM	Sand, Silt, Clay	GRA	Gravel
SAN	Sand	WAD	Sand, Gravel, Silt/Clay
		DIA	Silt/Clay, Sand, Gravel

Modifer Sed Code			
ORG	Organic Pitch	FOS	Fossils
OXI	Oxidized	CEM	Cemented
WOO	Wood	VOL	Volcanic Rock
		SLI	Slime

Hvy.Min. Abund.	
None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2250

YUBA PROJECT
WESTGOLD
PLACER DRILL LOG

Page 2 of 6

Drill Hole No.: 2250
Yell. DOT +
Flagging Blue No. Buckets 128 Sed 0 Slime
Easting _____ Northing _____

USCS Drive Time	Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY Total Sed.	Slm	+ 1/4	- 1/4	Concentration Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg) Jar No.	Cor. Wt.	Amg. Wt.
			Stop for water run @ 11:27 Start up 12:04											
SM	3	123	BRN. SILT; BRN. Friable sandy clay; Unsorted Subrnd - Wellrnd, Fine - Coarse sand & Gravel.	2	WAD	36.5		20.0	19.5		2 MR	379		1.4
SM	3	126	BRN. Friable clay; BRN. SILT; Unsorted Subrnd - Wellrnd; Fine - coarse sand + Gravel; change to BRN. Friable clay.	2	WAD	25.5		8.0	12.5		2 MR	291		TR
CL	3	129	BRN. Friable clay; BRN. SILT.	2	MUD	30.0		3.5	21.0		2 MR	140		0.2
CL	3	132	BRN. Friable clay chips; BRN. SILT.	2	MUD	26.5		5.5	16.0		1 MR	130		0.2
CL	3	135	N/A	2	MUD	26.0		5.5	18.0		1 MR	135		TR
GM	3	138	BRN. SILT; Unsorted Subrnd - Wellrnd; Fine - Coarse sand & Gravel. Rusty Friable sandy chips; BRN. Friable sandy clay.	2	WAD	27.0		16.0	13.0		2 MR	27		0.9
GM	3	141	BRN. Friable sandy clay; BRN. SILT; Unsorted Subrnd - Wellrnd; Fine - coarse sand & Gravel	2	WAD	26.5		15.0	14.0		2 BC	288		2.6
GM	3	144	Hard drilling; BRN. SILT; Unsorted Subrnd - Wellrnd; Fine - Coarse sand & Gravel.	2	SAG	34.5		21.0	16.5		2 MR	226		17.0
GM	3	147	N/A	2	SAG	29.0		19.5	9.5		3 BC	378		7.9
SM	3	150	BRN. Friable sandy clay; BRN. SILT; Unsorted Subrnd - Wellrnd; Fine - Coarse sand & Gravel.	2	WAD	32.5		4.5	28.0		2 MR	306		8.2
SP	3	153	BRN. SILT; Unsorted Subrnd - Wellrnd; Fine - Coarse sand & Gravel; change to Grey silt.	2	SAG	38.5		17.5	22.5		2 MR	145		5.3
SP	3	156	Grey SILT; Water; Unsorted Subrnd - Wellrnd; Fine - Coarse sand & Gravel; Drk. Grey Friable clay	2	SAG	32.5		17.5	22.5		2 BC	240		4.9

Primary Sed Code				Modifer Sed Code			
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime

Hvy.Min. Abund.	
None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2250

YUBA PROJECT
WESTGOLD
PLACER DRILL LOG

Page 3 of 6

Drill Hole No.: 2250
Flagging Yell. DOT + Blue
No. Buckets 128 Sed / 0 Slime
Easting _____ Northing _____

USCS Time	Drive Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
SP	3	159	Drk. Grey Friable clay; Grey Silt; Drk. Grey Friable sandy clay.	1	SAM	9.0		0.5	6.0		2 / MR	77		1.4
GM	3	162	Drk. Grey Friable sandy clay. Drk. Grey Silt; Unsorted Subrnd-Wellrnd, Fine-Coarse sand & gravel.	1	WAD	8.0		6.0	3.0		2 / BC	123		0.5
SM	3	165	Water; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Grey Silt.	4	SAG	84.0		15.5	72.0		2 / BC 1	32 3.44		2.3
SP	3	168	A/A	3	SAG	48.5		26.0	29.5		3 / OC 1	127		4.4
SM	3	171	Grey Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand; Fine-Gravel; Water	6	SAG	140.0		51.0	102.5		2 / MR 1	80 219	119	3.8
SM	3	174	A/A	5	SAG	30.0		6.0	22.5		2 / BC 1	84		6.1
CL	3	177	Grey Friable clay; Grey Silt; Grey Silt; Wood particles.	1	MUD WOO	17.5		1.0	5.5		2 / MR 1	53		0.5
CL	3	180	Grey Friable clay chips; Grey Silt.	1	MUD	21.0		0.5	8.0		1 / MR 1	353		TR
CL	3	183	A/A	1	MUD	21.0		3.0	13.5		2 / MR 2	362		0.1
SM	3	186	Sandy Friable chips; Grey Silt; Unsorted Subrnd-Wellrnd; Fine Sand	1	SAM	19.0		1.0	17.0		2 / BC 1	157		0.4
SP	3	189	Grey Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Cemented Gravels.	2	SAG FIN	31.0		22.0	22.5		2 / BC 1	101		3.3
GM	3	192	Water; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Cemented Sand; Sulfides.	3	SAG FIN	52.0		31.5	27.5		2 / OC 1	F		2.2
GM	3	195	Grey Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Sulfides; Hard drilling	2	SAG	31.0		18.0	16.0		2 / BC 1	28		11.4
			STOP for water run @ 14:24 SHUT DOWN @ 15:06 3/12/92 START up @ 7:46											

Primary Sed Code
MUD Silt, Clay
SAM Sand, Silt, Clay
SAN Sand
SAG Sand, gravel
GRA Gravel
WAD Sand, Gravel, Silt/Clay
DIA Silt/Clay, Sand, Gravel

Modifer Sed Code
ORG Organic Pitch
OXI Oxidized
WOO Wood
FOS Fossils
CEM Cemented
VOL Volcanic Rock
SLI Slime

Hvy.Min. Abund.
None 0
Trace 1
Common 2
Abundant 3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2250

YUBA PROJECT
WESTGOLD
PLACER DRILL LOG

Page 4 of 6

Drill Hole No.: 2250 Yell. DOT +
Flagging Blue No. Buckets 128 Sed 0 Slime
Easting _____ Northing _____

USCS Drive			Description			Volume 1 x 10³ CY				Concentration		Wt. Au (mg)		
Time	Ft.	Depth	Written Description/No. Buckets	No Buk.	Sed. Code	Total Sed.	Slm	+ 1/4	- 1/4	Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Jar No.	Cor. Wt.	Amg. Wt.
GM	3	198	Water; Grey Silt; Hard drilling; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel.	3	SAG	61.5		41.5	26.0		2 / BC 2	105		7.2
GM	3	201	A/A	3	SAG	62.0		37.0	33.0		2 / BC 2	284		15.3
SM	3	204	Water; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel	4	SAG	68.0		27.0	49.0		3 / BC 2	227 67		13.2
SP	3	207	A/A	4	SAG	82.0		42.5	49.0		3 / BC 1	207		15.3
GM	3	210	Hard drilling; Grey Silt; Unsorted Subrnd-Wellrnd; Fine-coarse sand & gravel; Sulfids.	3	SAG	46.5		30.0	23.5		3 / BC 1	89		19.6
GM	3	213	A/A	2	SAG	35.0		27.0	14.0		2 / BC 1	114		73.7
GM	3	216	A/A	1	SAG	19.0		12.0	9.0		1 / BC 2	127		11.9
GM	3	219	A/A	1	SAG	18.0		13.0	7.5		3 / BC 2	138		0.4
GM	3	222	A/A	2	SAG	26.0		19.0	10.0		3 / BC 2	129		3.8
			rock lodged in drill bit; pull back 2ft, save sediment.											
GM	3	225	Grey Silt; Hard drilling; Unsorted Subrnd-Wellrnd; Fine-Coarse sand & Gravel.	2	SAG	27.0		18.0	11.5		1 / BC	315		3.5
SM	3	228	Grey Cohesive clay; Rich silt; Unsorted Subrnd-Wellrnd; Fine-Coarse sand & Gravel.	2	WAD	44.0		20.0	26.0		2 / BC	167		26.9
SM	3	231	Water; Unsorted Subrnd-Wellrnd; Fine-Coarse sand & Gravel.	3	SAG	58.0		23.0	41.0		2 / BC 1	154		9.2
GM	3	234	Sulfids; Hard drilling; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel.	1	SAG	12.0		7.0	6.0		0 / BC 2	97		3.7
GM	3	237	A/A	1	SAG	9.0		5.0	4.0		1 / BC 2	293		0.8

Primary Sed Code				Modifer Sed Code				Hvy.Min. Abund.	
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils	None	0
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented	Trace	1
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock	Common	2
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime	Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2250

YUBA PROJECT
WESTGOLD
PLACER DRILL LOG

Page 5 of 6

Drill Hole No.: 2250

Flagging yell. DOT + Blue No. Buckets 128 Sed 0 Slime

Easting _____ Northing _____

USCS Drive Time	Ft.	Depth	Description: Written Description/No: Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY Total Sed.	Slm	+ 1/4	- 1/4	Concentration Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg) Jar No.	Cor. Wt.	Amg. Wt.
SM	3	240	Grey Friable sandy clay; Grey Silt; Unsorted Subrnd-Wellrnd Fine-Coarse sand & Gravel; Water.	4	WAD	76.0		20.5	60.0		3 mr / 1	280 292		5.7
SM	3	243	Grey Friable sandy chips; Grey Silt; Fine-sand	2	SAN	40.0		3.0	36.0		3 BC / 1	173		0.7
SM	3	246	Grey Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse sand & Gravel; Grey Friable sandy clay; Sulfides.	3	WAD	48.0		16.0	33.5		3 BC / 2	134		0.9
SM	3	249	N/A	2	WAD	36.0		18.0	22.0		2 BC / 2	376		0.4
SM	3	252	N/A	2	WAD	28.0		9.5	19.0		3 BC / 2	347		1.1
SP	3	255	Lithified Sand; Grey Silt; Unsorted Subrnd-Wellrnd Fine-Coarse sand & Gravel; Sulfides.	2	SAG CEM	26.0		15.0	15.0		2 BC / 2	269		5.5
SM	3	258	Friable sandy chips; Grey Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Sulfides.	1	SAG	20.5		4.5	16.0		2 mr / 2	336		0.5
SM	3	261	Water; Grey Silt; Friable sand chips; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Lithified Sand.	3	SAG CEM	46.5		18.0	33.0		3 BC / 2	187		2.2
SP	3	264	Drk. Grey Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Mud drilling. Stop for water & bucket run @ 11:50 start up @ 11:29	2	SAG	26.5		13.0	15.0		3 BC / 2	369		0.4
GM	3	267	Rock lodged in drill bit pull back 18". Sand sediment; Sulfer Smell; Grey Silt; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Water.	2	SAG	47.0		29.5	24.0		3 BC / 1	229		1.2

Primary Sed Code			
MUD	Silt, Clay	SAG	Sand, gravel
SAM	Sand, Silt, Clay	GRA	Gravel
SAN	Sand	WAD	Sand, Gravel, Silt/Clay
		DIA	Silt/Clay, Sand, Gravel

Modifer Sed Code			
ORG	Organic Pitch	FOS	Fossils
OXI	Oxidized	CEM	Cemented
WOO	Wood	VOL	Volcanic Rock
		SLI	Slime

Hvy.Min. Abund.	
None	0
Trace	1
Common	2
Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

DH-2250

YUBA PROJECT WESTGOLD PLACER DRILL LOG

Page 6 of 6

Drill Hole No.: 2250

Flagging Yell. DOT & Blue No. Buckets 128 Sed 0 Slime

Easting _____ Northing _____

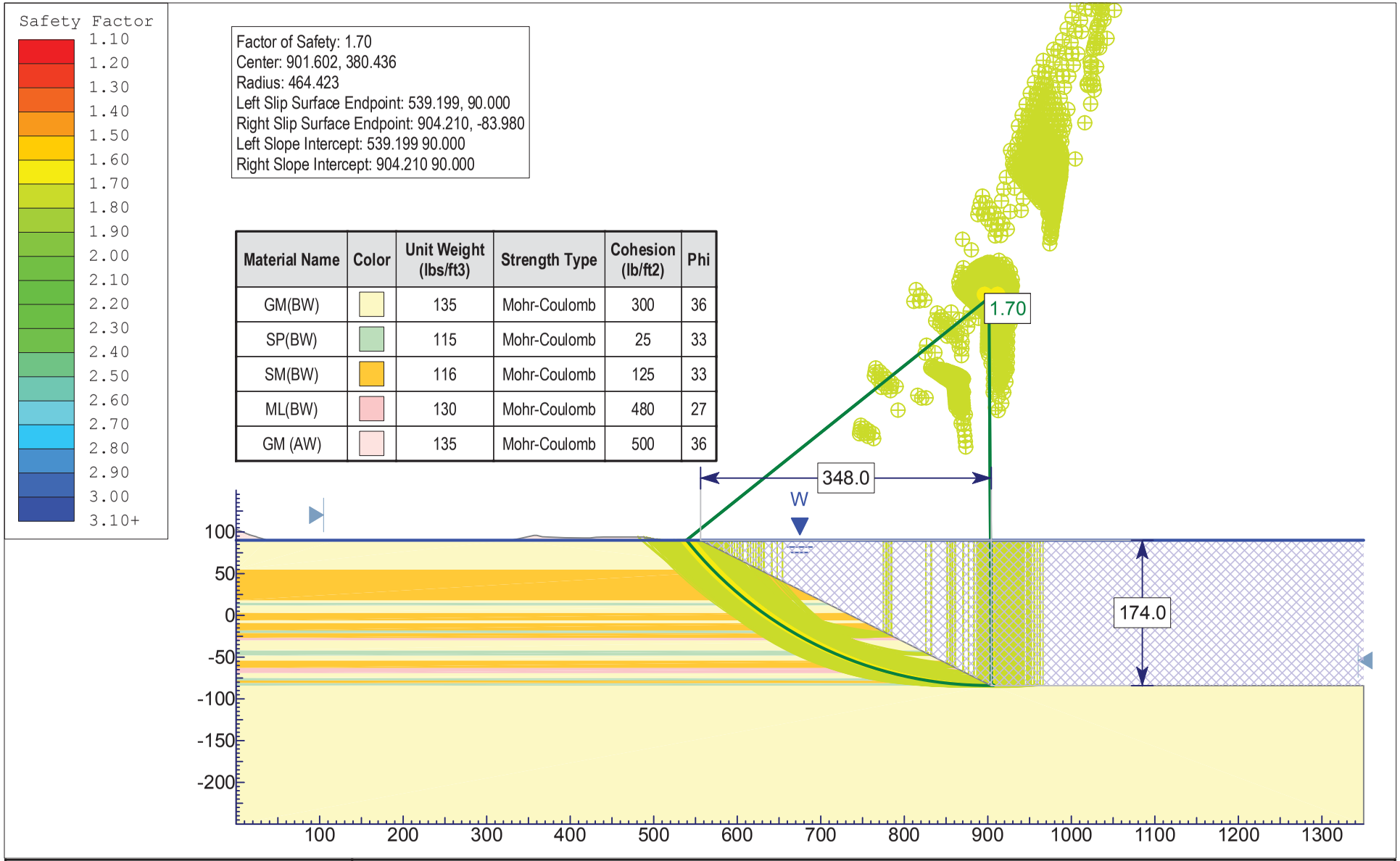
USCS Time	Drive Ft.	Depth	Description: Written Description/No. Buckets	No Buk.	Sed. Code	Volume 1 x 10³ CY: Total Sed.	Slm	+ 1/4	- 1/4	Concentration: Device Vol/Typ	Hvy.Min. Abund BS/Sulf	Wt. Au (mg): Jar No.	Cor. Wt.	Amg. Wt.
SP	3	270	Water; Lithified Sand Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel; Hard drilling.	2	SAG	40.5		17.0	25.0		3 / 1	328		0.3
SP	3	273	A/A	2	SAG	41.5		8.5	34.0		2 / 1 mt	355		0.6
SP	3	276	V. Hard drilling; Unsorted Subrnd-Wellrnd; Fine-Coarse Sand & Gravel;	2	SAG	30.0		17.5	15.5		2 / 1 RC	109		0.9
			Tails						74.0			39		2.0
			Amalgamated Gold NUMERICAL TOTAL: 325.5											

Primary Sed Code				Modifer Sed Code				Hvy.Min. Abund.	
MUD	Silt, Clay	SAG	Sand, gravel	ORG	Organic Pitch	FOS	Fossils	None	0
SAM	Sand, Silt, Clay	GRA	Gravel	OXI	Oxidized	CEM	Cemented	Trace	1
SAN	Sand	WAD	Sand, Gravel, Silt/Clay	WOO	Wood	VOL	Volcanic Rock	Common	2
		DIA	Silt/Clay, Sand, Gravel			SLI	Slime	Abundant	3

Concentration Device: K - Knelson Concentrator P - Panomatic

APPENDIX "C"

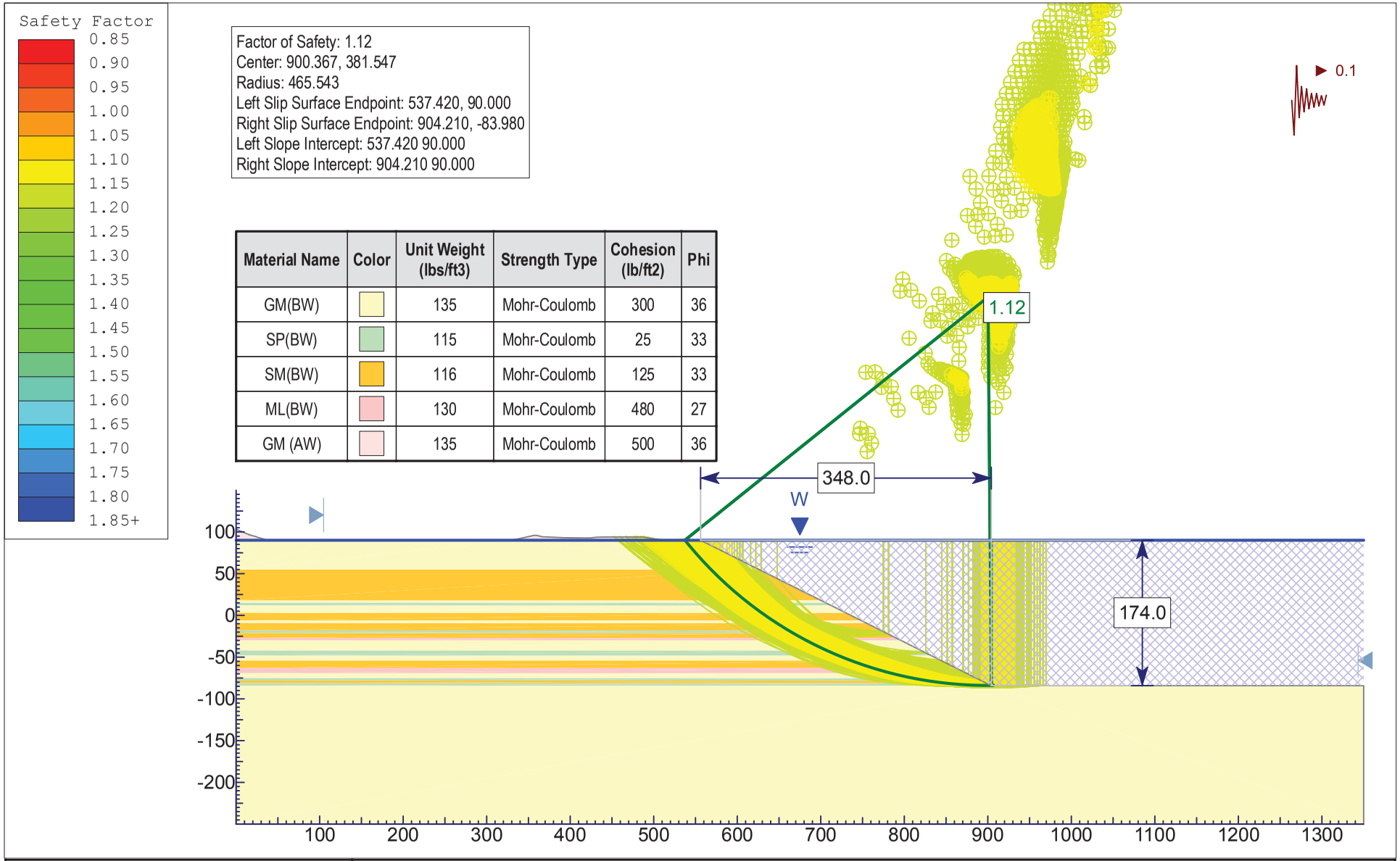
GEOTECHNICAL CALCULATIONS



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.013

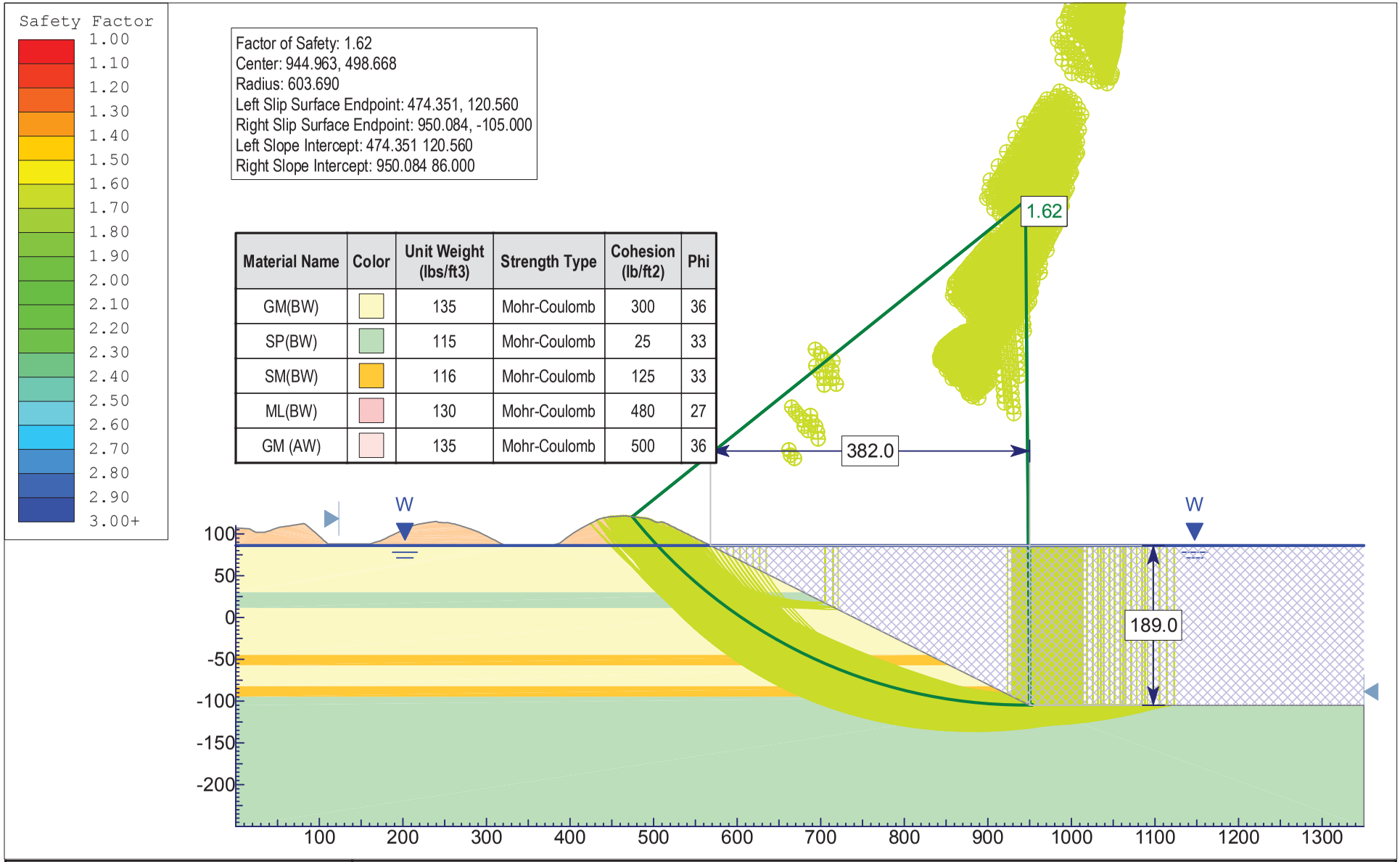
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section R-R'		
Company	C.H.J., Incorporated	*Author* Fred Yi, PhD, PE	*Scale* 1:2000
File Name	11137-8_Section R-R_(DH-3058).slim	*Date* 11/28/2011	*Enclosure* C-1



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.013

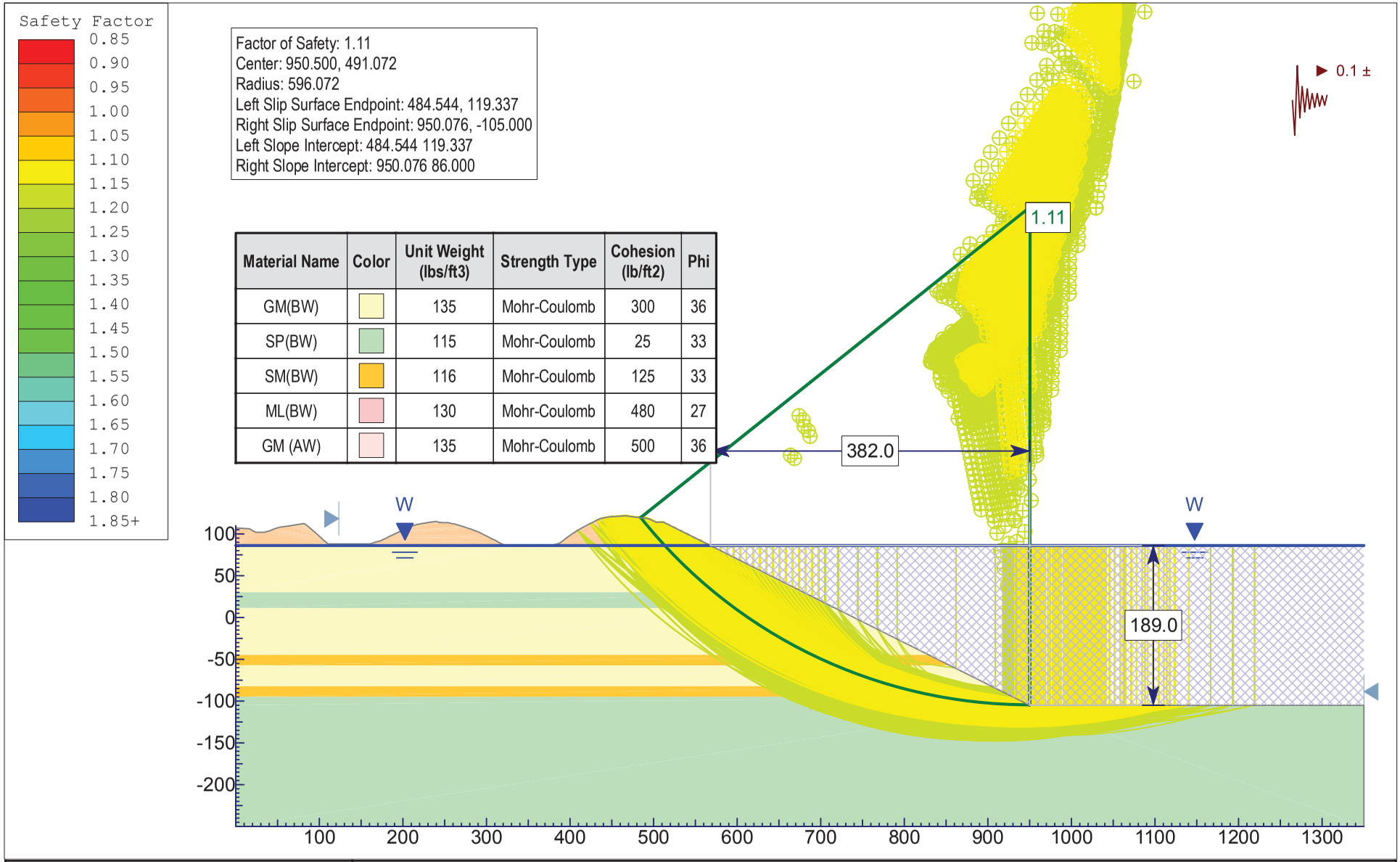
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section R-R'		
Company	C.H.J., Incorporated	Author	Fred Yi, PhD, PE	Scale	1:2000
File Name	11137-8_Section R-R_(DH-3058).slim	Date	11/28/2011	Enclosure	C-2



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.013

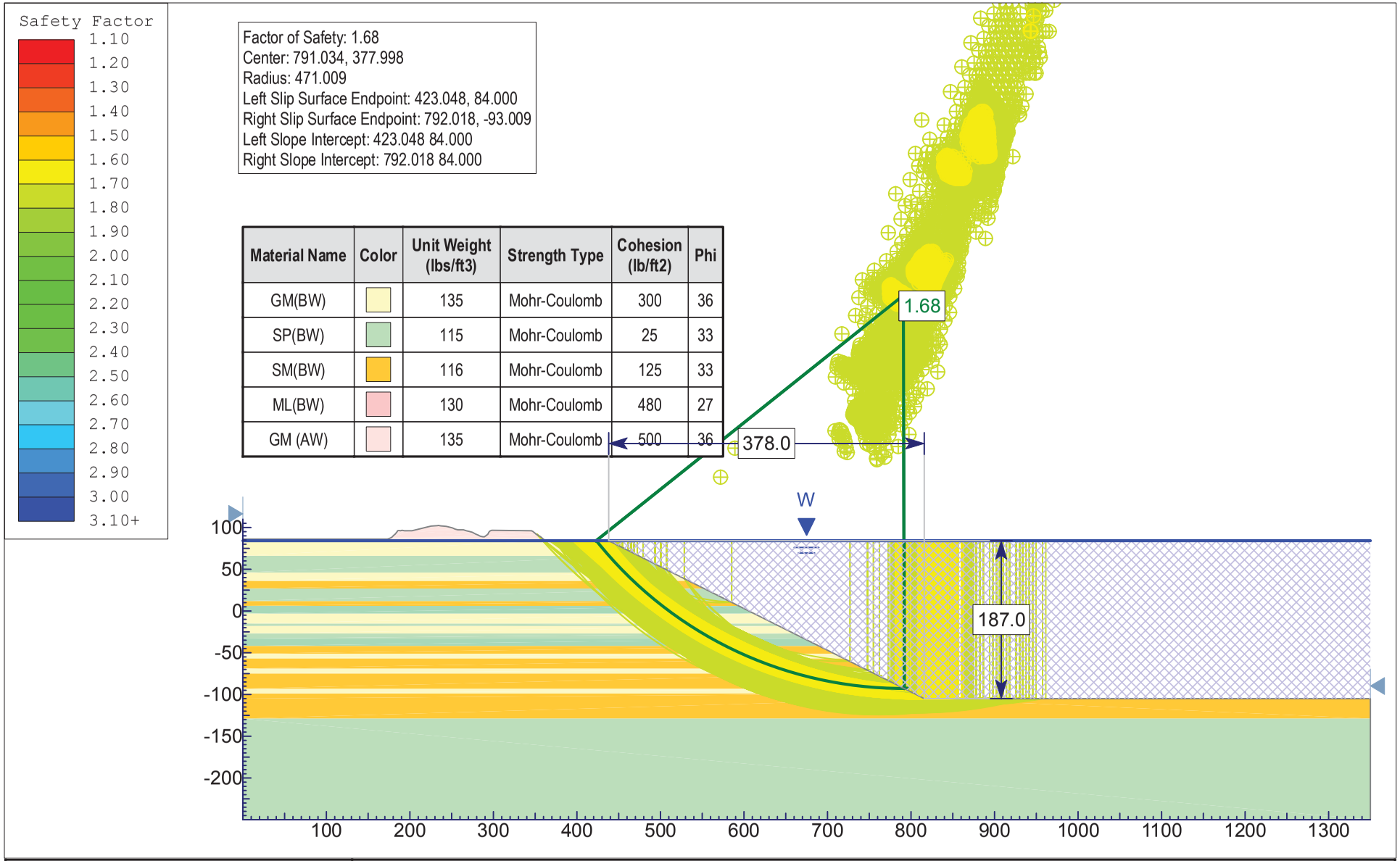
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section S-S'		
Company	C.H.J., Incorporated	*Author* Fred Yi, PhD, PE	*Scale* 1:2000
File Name	11137-8_Section S-S_FS1.1.slim	*Date* 11/28/2011	*Enclosure* C-3



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.013

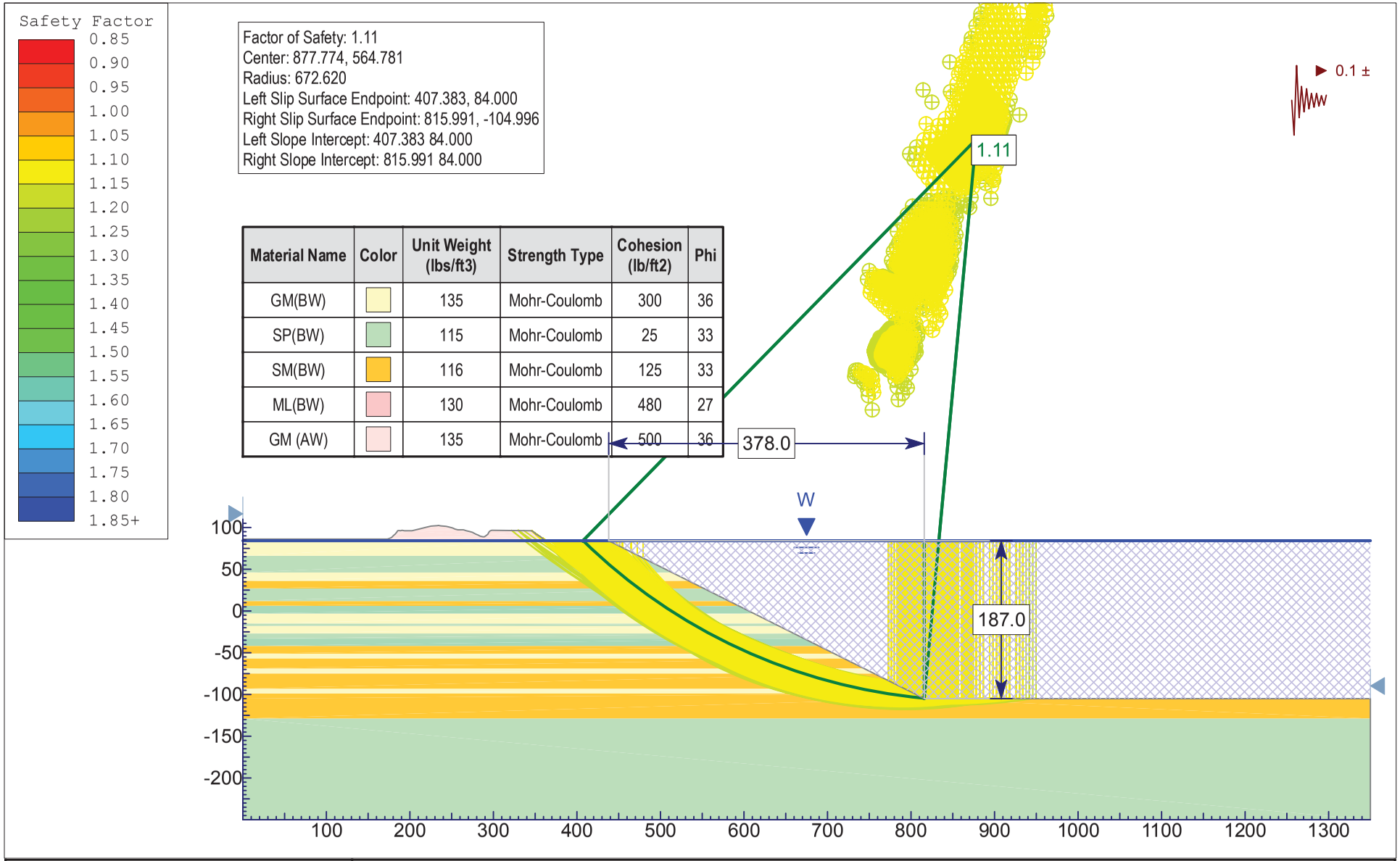
Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section S-S'		
Company	C.H.J., Incorporated	*Author* Fred Yi, PhD, PE	*Scale* 1:2000
File Name	11137-8_Section S-S_FS1.1.slim	*Date* 11/28/2011	*Enclosure* C-4



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.013

Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section T-T'		
Company	C.H.J., Incorporated	*Author* Fred Yi, PhD, PE	*Scale* 1:2000
File Name	11137-8_Section T-T_FS1.1.slim	*Date* 11/28/2011	*Enclosure* C-5



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (lb/ft2)	Phi
GM(BW)		135	Mohr-Coulomb	300	36
SP(BW)		115	Mohr-Coulomb	25	33
SM(BW)		116	Mohr-Coulomb	125	33
ML(BW)		130	Mohr-Coulomb	480	27
GM (AW)		135	Mohr-Coulomb	500	36

SLIDEINTERPRET 6.013

Project	Proposed Reclamation of the Western Aggregates Quarry		
Analysis Description	Slope Stability Investigation - Section T-T'		
Company	C.H.J., Incorporated	*Author* Fred Yi, PhD, PE	*Scale* 1:2000
File Name	11137-8_Section T-T_FS1.1.slim	*Date* 11/28/2011	*Enclosure* C-6

ATTACHMENT 1
LEGAL DESCRIPTION

SECTION 2, T. 15 N., R. 4 E., MDM

All that real property described as a portion of Section 2, Township 15 North, Range 4 East, Mount Diablo Meridian, Yuba County, California being more particularly described as follows:

> All that portion of Lot 8 of said Section 2, lying southeasterly of the left bank of the Yuba River as said left bank is defined on the "Map Of Settlement Agreement Per U.S. District Court. Eastern District California, Case No. Civ. 2-79-788 RAR, Showing The Boundary Of The Lands In And Adjacent To The Present Yuba River, Bank To Bank", on file with the State of California, State Lands Commission: the Southeast Quarter of the Northeast Quarter of said Section 2: the Southeast Quarter of said Section 2.

Excepting therefrom that certain tract of land conveyed to W.T. Ellis by deed dated November 25, 1922 which said deed is of record in the office of the County Recorder of the said County of Yuba, in Book 78 of Deeds, at Page 333, the said excepted tract of land being particularly described as follows:

> Commencing at a point on common boundary line between Section 1 and 2, Township and Range aforesaid, distant North 01 degree 14' East 3254.2 feet from the quarter section corner common to said Section 1 and 2, and running thence along the said common boundary line of the said section, North 01 degree 14' East 147.5 feet; thence South 49 degrees 13' West 673.6 feet: thence North 60 degrees East 585.2 feet to the point of commencement.

SECTION 1, T. 15 N., R. 4 E., MDM

All that real property described as a portion of Section 1, Township 15 North, Range 4 East, Mount Diablo Meridian, Yuba County, California being more particularly described as follows:

> All that portion of said Section 1 lying southerly and easterly of the left bank of the Yuba River as said left bank is defined on the "Map Of Settlement Agreement Per U.S. District Court. Eastern District California. Case No. Civ. 2-79-788 RAR, Showing The Boundary Of The Lands In And Adjacent To The Present Yuba River. Bank To Bank", on file with the State of California, State Lands Commission.

SECTION 11, T. 15 N., R. 4 E., MDM

All that real property described as the Northeast 1/4 of Section 11, Township 15 North, Range 4 East, Mount Diablo Meridian, Yuba County, California.

SECTION 12, T. 15 N., R. 4 E., MDM

All that real property described as the North Half of Section 12, Township 15 North, Range 4 East, Mount Diablo Meridian, Yuba County, California.

SECTION 6, T. 15 N., R. 5 E., MDM

All that real property described as a portion of Section 6, Township 15 North, Range 5 East, Mount Diablo Meridian, Yuba County, California being more particularly described as follows:

> All that portion of said Section 6, lying southerly of the Linda Levee and including all lands lying beneath the Linda Levee, as said levee existed in 1912 and is shown on that certain map entitled "War Department, Corps of Engineers, U.S. Army, Yuba River Survey, 1912" on file in the office of the Yuba County Surveyor as Map Number "J-10", and also shown on that certain map entitled "Plat of Placer Mining Claims of Yuba Industries Inc. Gold Fields, located in: Sections 25 and 30, T.16N., R.6E., Sections 22, 23, 25, 26, 27, 28, 31, 32, 33, T.15N., R.5E., Sections 35 and 36, T.16N., R.4E, Yuba County, CA." dated April 1970, by Edward Von Geldern, R.E. 3366, on file in the office of the Yuba County Surveyor as Map Number 1068.

SECTION 5, T. 15 N., R. 5 E., MDM

All that real property described as a portion of Section 5, Township 15 North, Range 5 East, Mount Diablo Meridian, Yuba County, California being more particularly described as follows:

> All that portion of said Section 5, lying southerly of the Linda Levee and including all lands lying beneath the Linda Levee, as said levee existed in 1912 and is shown on that certain map entitled "War Department, Corps of Engineers, U.S. Army, Yuba River Survey, 1912" on file in the office of the Yuba County Surveyor as Map Number "J-10, and also shown on that certain map entitled "Plat of Placer Mining Claims of Yuba Industries Inc. Gold Fields, located in: Sections 25 and 30 T.16N., R.6E., Sections 22, 23, 25, 26, 27, 28, 31, 32, 33, T.15N., R.5E., Sections 35 and 36, T.16N., R.4E, Yuba County, CA." dated April 1970 by Edward Von Geldern, R.E. 3366, on file in the office of the Yuba County Surveyor as Map Number 1068 and also lying southerly of a line described as commencing at the east end of said Linda Levee in said Section 5, at the center of said levee, and running thence northeasterly, to a point twelve (12) chains east of the northeast corner of said Section 5 and thence; East, along the Third Standard Parallel to the northeast corner of Section 4 of said township and range, as said line is described in that certain deed from the United States of America to Yuba Consolidated Goldfields, dated June 25, 1910 and filed for record in Book 61, Deeds at Page 335.

SECTION 4, T. 15 N., R. 5 E., MDM

All that real property described as a portion of Section 4, Township 15 North, Range 5 East, Mount Diablo Meridian, Yuba County, California lying southerly of the following described line:

> Commencing at the east end of the Linda Levee located in the Northeast Quarter of Section 5, Township 15 North, Range 5 East, M.D.M., at the center of said levee, as said levee existed on June 25, 1910, said levee being shown on that certain map entitled "War

Department. Corps of Engineers, U.S. Army. Yuba River Survey. 1912" on file in the office of the Yuba County Surveyor as Map Number "J-10", and also shown on that certain map entitled "Plat of Placer Mining Claims of Yuba Industries Inc. Gold Fields, located in: Sections 25 and 30, T.16N., R.6E., Sections 22, 23, 25, 26, 27, 28, 31, 32, 33 T.15N., R.5E, Sections 35 and 36, T.16N., R.4E, Yuba County, CA." dated April 1970. by Edward Von Geldern, R.E. 3366, on file in the office of the Yuba County Surveyor as Map Number 1068, and running thence northeasterly, to a point twelve (12) chains east of the northeast corner of said Section 5 and thence: East, along the third standard parallel to the northeast corner of Section 4 of said Township and Range and the end of the described line, as said line is described in that deed from the United States of America to Yuba Consolidated Goldfields, dated June 25, 1910 and filed for record in Book 61, Deeds at Page 335.

SECTION 32, T. 16 N., R. 5 E., MDM

All that real property described as a portion of Parcel One of those lands as described in that certain deed from the United States of America to Yuba Consolidated Goldfields, dated June 25, 1910 and filed for record in Book 61, Deeds at Page 335. being a portion of the Southeast Quarter of Section 32, Township 16 North, Range 5 East, Mount Diablo Meridian, Yuba County, California. lying southerly of the following described line:

> All that portion of said Section 32 lying southeasterly of the following described line: commencing at a point on the 3rd Standard Parallel, 5.00 chains East of the southwest corner of the southeast quarter of the southeast quarter of said Section 32: thence N 45° E, 7.07 chains; thence N 63°26' E. 11.18 chains. to a point on the east line of Section 32 lying 10.00 chains North of the southeast corner of said Section 32. and the end of the described line.

SECTION 33, T. 16 N., R. 5 E., MDM

All that real property described as a portion of Parcel One of those lands as described in that certain deed from the United States of America to Yuba Consolidated Goldfields. dated June 25, 1910 and filed for record in Book 61. Deeds at Page 335. being a portion of the Southwest Quarter of Section 33, Township 16 North, Range 5 East. Mount Diablo Meridian, Yuba County, California. lying southerly of the following described line:

> Commencing at a point on the west line of Section 33. 10.00 chains North of the southwest corner of said Section; thence N 39°45'E. 2590 feet, more or less. to a point on the north line of said southwest quarter: thence easterly. along said north line. 984 feet, more or less, to the northeast corner of said southwest quarter and the end of the described line.

Excepting therefrom all that real property as described in "Exhibit "A" Part One, Hammonton Townsite" in that deed dated August 9, 1990 from Yuba Natural Resources. Inc. to YG Development Company and filed for record in Official Records as Document Number 90-9338. said real property being more particularly described as follows:

> Beginning at a point from which the southwest corner of said Section 33 bears

S 89°11'59" W, 850.00 feet; thence from said point of beginning the following eleven courses:

1) N 89°11'59" E, 950.00 feet, along the south line of Section 33, thence;
2) N 08°56'00" E, 580.55 feet, thence;
3) N 41°03'17" W, 411.10 feet, thence;
4) N 83°47'48" W, 462.71 feet, thence;
5) N 01°54'33" W, 300.17 feet, thence;
6) S 75°57'50" W, 494.77 feet, thence;
7) S 26°33'54" E, 89.44 feet, thence;
8) N 67°37'12" E, 183.85 feet, thence;
9) S 11°53'19" W, 388.33 feet, thence;
10) S 05°42'38" E, 502.49 feet, thence;
11) S 00°00'52" W, 236.78 feet, to the point of beginning, and containing 22.8 acres, more or less.

TOGETHER WITH:

All that real property described as a portion of the Northeast Quarter of Section 33, Township 16 North, Range 5 East, Mount Diablo Meridian, Yuba County, California, lying southerly of the following described line:

Commencing at a point 5.00 chains North of the southwest corner of said Northeast Quarter; thence N 45° E, 21.21 chains; thence N 63° 26' E, 22.36 chains; thence N 45°E, 7.07 chains, to a point on the east line of said Section 33 located 5 chains South of the northeast corner of said section and the end of the described line, said line being the same line as described in that certain deed from E.A. Forbes to the United States of America, dated January 22, 1902 and filed for record in Book 49, Deeds at Page 433.

Excepting therefrom all that real property described as the Fifth Parcel in that certain deed from E.A. Forbes to the United States of America, dated January 22, 1902 and filed for record in Book 49, Deeds at Page 433, said Fifth Parcel being more particularly described as follows:

Commencing at the one-quarter corner on the east line of Section 33; thence West, 25 chains; thence North, 20 chains; thence N 63°26'E, 11.18 chains; thence South, 10 chains; thence East, 5 chains; thence South 5 chains; thence southeasterly to the point of commencement.

SECTION 34, T. 16 N., R. 5 E., MDM

All that real property described as a portion of the Northwest Quarter of Section 34, Township 16 North, Range 5 East, Mount Diablo Meridian, Yuba County, California, described as follows:

Commencing at an iron pipe set at the corner common to Sections 27, 28, 33 and 34 Township 16 North, Range 5 East, M.D.B & M., and running thence North 89°17' East, along the section line between said Sections 27 and 34, one thousand and three (1003.0) feet; thence South 28° 28' West, six hundred ninety-nine (699.0) feet; thence South 71° 39' West, seven hundred six and seven-tenths (706.7) feet to a point in the line between said Sections 33 and 34; thence along said last named line North 0°4' East, eight hundred

twenty-four and six-tenths (824.6) feet to the point of beginning: being a portion of the northwest quarter of the northwest quarter of said Section 34, Township 16 North, Range 5 East, M.D.B. & M., containing 13.37 acres more or less.

SECTION 27, T. 16 N., R. 5 E., MDM

All that real property described as a portion of the Southwest Quarter of Section 27, Township 16 North, Range 5 East, Mount Diablo Meridian, Yuba County, California, described as follows:

> Commencing at the northwest corner of the southeast quarter of the southwest quarter of Section 27, Township 16 North, Range 5 East, M.D.B. & M., and running thence South 0° 6' West along the westerly boundary line of said southeast quarter of the southwest quarter of said Section 27 four hundred fifteen and seven-tenths (415.7) feet; thence North 31° 37' East, four hundred eighty-seven and five-tenths (487.5) feet to the northerly boundary line of the said southeast quarter of the southwest quarter of said Section 27; and thence along said northerly boundary line North 89° 54' West two hundred fifty-four and nine-tenths (254.9) feet to the point of commencement; being a triangular piece of land situated in the northwest corner of the southeast quarter of the southwest quarter of said Section 27, Township 16 North, Range 5 East, M.D.B.& M. containing 1.22 acres, more or less.

TOGETHER WITH:

All that real property described as a portion of the southeast quarter of Section 27, Township 16 North, Range 5 East, Mount Diablo Meridian, Yuba County, California, said property being the same lands described in that certain deed dated October 29, 1903 from Frederick Ayer to W.P. Hammon as filed for record in Book 53, Deeds at Page 412, being more particularly described as follows:

> Beginning at a post marked "Southeast Corner", from whence the Section Corner at the southeast of Section 34, Township 16 North, Range 5 East, M.D.M., bears S 00° 08' E, 7468 feet; thence, South magnetic variation 17°55' East, S 89° 32' W, 2640 feet, along brushed line, to stake marked "Southwest Corner"; thence North, 414.4 feet to the point whence stake marked "Northwest Corner" bears South, 17.7 feet; thence N 89°32' E, 2640 feet, to the point whence the one quarter section corner between Sections 22 and 23 bears N 00°12' E, 5255 feet; thence South, 414.4 feet, to the place of beginning.

Excepting therefrom a portion of the Southeast Quarter of said Section 27, as described in that certain deed dated September 24, 1901 from Frederick Ayer and the Excelsior Water and Mining Company to the United States of America as filed for record in Book 49, Deeds at Page 539, being more particularly described as follows:

> Commencing at the center of Section 27; thence South, seven chains and fifty links (7.50 chains); thence East, ten (10) chains; thence N 75°58" E, thirty chains and ninety-three links (30.93 chains), to the quarter section corner on the east side of said Section 27; thence West, to the point of commencement.

Also excepting therefrom all that portion of the above described parcel lying in the northeast quarter of Section 27, Township 16 North, Range 5 East, M.D.M.

SECTION 26, T. 16 N., R. 5 E., MDM

All that real property described as a portion of Section 26. Township 16 North. Range 5 East. Mount Diablo Meridian, Yuba County. California, said parcel being more particularly described as follows:

Commencing at the West One-Quarter Corner of said Section 26 as shown on that certain map entitled "Record of Survey 94-26" as filed for record in Book 26 Maps. at Page 33. said corner being the True Point of Beginning for the herein described Parcel of land: thence North 00°13'30" West. along the West line of Section 26, 78.00 feet. said point being located in the centerline of a paved road and being the Southwest corner of that Parcel of land described in "Exhibit "A", Silica Plant Parcel" in that certain Quitclaim Deed from Western Water Company to Western Aggregates, Inc. as filed for record in Official Records as Serial Number 95-3554; thence North 00°13'30"West. along the West line of said Section 26, a distance of 386.83 feet more or less to the northeast corner of Lot 1 of Section 27 of said Township and Range: thence North 08°09'49"East. a distance of 337.68 feet more or less to a point on the south line of the Yuba River Historic River Bed as defined in that certain "Agreement and Stipulation for Amendment of Complaint and Order" No. CIV S-79-733 LLK. as filed by the Clerk of the U.S. District Court. for the Eastern District of California on April 22. 1980; thence continue along said Historic River Bed the following courses and distances: South 61°15'37"East 5.29 feet: South 69°46'31"East, 202.48 feet: South 71°33'54" East. 252.98 feet: South 84°17'22"East, 301.50 feet; North 85°54'52"East. 280.71 feet: North 57°22'54"East, 299.41 feet; thence North 45°15'47"East. 195.58 feet; thence North 51°06'23"East. 643.50 feet: thence North 66°42'55"East. 1080.46 feet: thence South 86°47'39"East, 803.12 feet. to a point "A" as defined in said Stipulation: thence South 65°09'02"East, continuing along said line as defined in said Stipulation. 345.72 feet; thence South 50°11'40"East. 390.51 feet; thence South 67°55'56"East. 399.25 feet; thence South 79°00'23"East, 618.36 feet, more or less. to a point on the East line of said Section 26; thence South 00°26'54"East leaving said Stipulated Boundary and along the East line of said Section. 334.22 feet. more or less, to a point on the South Boundary of that certain parcel of land described in Deed from D.W. Wright and Allie M. Wright to Yuba Consolidated Industries. Inc. dated May 12. 1960. as filed for record in Book 301, Official Records, at Page 372: thence North 84°45'West. along said South line being an existing fence per said deed, 472.0 feet: thence South 88°45'West. 405.0 feet: thence North 85°15'West. 332.0 feet; thence North 84°20'West, 360.0 feet: thence South 87°00'West, 200.0 feet; thence South 89°10'West. 82.0 feet: thence West. 172.0 feet: thence North 81°00'West. 99.0 feet; thence South 85°00'West, 70.0 feet; thence North 81°00'West, 106.0 feet; thence South 88°00'West. 84.0 feet: thence South 61°20'West, 41.0 feet; thence South 88°40'West, 290.00 feet. more or less, to the East end of course Number 19 of the Yuba River Tract, Jason Meek Survey of January 8. 1905; thence South 89°50'West, along said course. 65 feet. more or less. to the intersection of courses bearing North 65°28'30"West and North 00°48'30"East as set forth in deed to D.W. Wright, et.ux., recorded January 9, 1958, in Book 251 of Official Records, at Page 357; thence South 00°39'East along the East line of that certain Parcel of Land as described in deed from Eugene Pharis and Delores J. Pharis to Yuba Goldfields, Inc., dated November 25. 1980 and filed for record in Book 741. Official Records. at Page 637, 268.71 feet; thence South 00°53'East. 402.60 feet; thence South 01°21'East. 267.54 feet, to the

SECTION 25, T. 16 N., R. 5 E., MDM

All that real property described as a portion of the North Half of Section 25, Township 16 North, Range 5 East, Mount Diablo Meridian, Yuba County, California, lying Southerly of the herein described Line Number One and Northerly of the herein described Line Number Two, said lines being more particularly described as follows:

LINE NUMBER ONE:
The south boundary of the Historic Bed of the Yuba River as defined in that certain "Agreement and Stipulation for Amendment of Complaint and Order" No. CIV S – 79 –733 LKK, as filed by the Clerk of the U.S. District Court, for the Eastern District of California on April 22, 1980, said line also being a portion of the South Line of Parcel Two, Exhibit "A" of that Deed from Yuba Westgold, Inc. to Cal Sierra Development, Inc., dated January 26, 1994, and filed for Record in Official Records at Serial Number 94-1299.

LINE NUMBER TWO:
A line lying 15.00 feet Southerly of, adjacent to, and parallel with the centerline of that road identified as the "Main Haul Road" as described in deed from Yuba River Properties to Western Aggregates, Inc., dated June 16, 1998, and filed for record in Official Records at Serial Number 98-6773.

SECTION 30, T. 16 N., R. 6 E., MDM

All that real property described as a portion of the North Half of Section 30, Township 16 North, Range 6 East, Mount Diablo Meridian, Yuba County, California, lying Southerly of the herein described Line Number One and Northerly of the herein described Line Number Two, said lines being more particularly described as follows:

LINE NUMBER ONE:
The south boundary of the Historic Bed of the Yuba River as defined in that certain "Agreement and Stipulation for Amendment of Complaint and Order" No. CIV S – 79 –733 LKK, as filed by the Clerk of the U.S. District Court, for the Eastern District of California on April 22, 1980, said line also being a portion of the South Line of Parcel Two, Exhibit "A" of that Deed from Yuba Westgold,

Inc. to Cal Sierra Development, Inc., dated January 26, 1994, and filed for Record in Official Records at Serial Number 94-1299.

LINE NUMBER TWO:

A line lying 15.00 feet Southerly of, adjacent to, and parallel with the centerline of that road identified as the "Main Haul Road" as described in deed from Yuba River Properties to Western Aggregates, Inc., dated June 16, 1998, and filed for record in Official Records at Serial Number 98-6773.

Excepting from the above described Parcel of land that certain parcel of land lying in the Northeast Quarter of said Section 30, as described in Deed from David Peter Huckins and Jean Mitchell Huckins to the State of California, dated Feb. 1, 1994 and filed for record in Official Records at Serial Number 94-10305.

End of Description

David W Kopp, PLS 4533
License Expiration Date: 12-31-08
Date: _____

Southeast Corner of said Wright parcel; thence South 80°24'West, along the Southerly Boundary of said Parcel, 2377.41 feet; thence North 67°56'West, 264.78 feet, more or less to a point on the west line of said Section 26; thence North 00°13'30"West along said West line, 469.74 feet, to the Point of Beginning.

Excepting therefrom a portion of said Section 26, as described in deed from Eugene Pharis and Delores J. Pharis to Yuba Goldfields, Inc., dated November 25, 1980 and filed for record in Book 741, Official Records, at Page 637, being more particularly described as follows:

All that real property situate within the County of Yuba, State of California, being a portion of Lots 3 and 4 in the Northwest one-quarter and a portion of the Southwest one-quarter of Section 26, Township 16 North, Range 5 East, M.D.B.&M., more particularly described as follows:

Beginning at a point where the Southeast corner of said Section 26 bears South 49°09' East, approximately 3,628.8 feet, said Point of Beginning being on the fence line, which approximately marks the westerly boundary of the east half of the Northwest quarter of Section 26, Township 16 North, Range 5 East, M.D.B.&M.; thence from the Point of Beginning: North 1°21' West, 267.54 feet; thence North 0°53' West, 402.60 feet; thence North 0°39' West, 268.71 feet; thence South 89°38' West, 376.80 feet; thence South 89°35' West, 292.01 feet; thence South 89°44' West, 236.78 feet; thence North 89°52' West, 249.22 feet; thence North 88°39' West, 101.83 feet; thence South 0°14' East, 54.99 feet; thence South 0°46' East, 550.27 feet; thence South 89°54' West, 542.39 feet, thence South 89°34' West, 627.49 feet; thence South 65°02' West, 124.44 feet; thence South 83°13' West, 37.93 feet; thence South 0°13' West, 325.02 feet; thence South 0°08' East, 105.44 feet; thence South 2°51' East, 137.35 feet; thence South 67°56' East, 254.78 feet; thence North 80°24' East, 2377.41 feet to the Point of Beginning.

End of Description

Description prepared by:
MACKAY & SOMPS CIVIL ENGINEERS, INC.
1552 Eureka Road, Suite 100, Roseville, CA 95661

David W Kopp, PLS 4533
License Expiration Date: 12-31-10

Date: 6/14/2010

LICENSED LAND SURVEYOR
DAVID W. KOPP
Exp. 12-31-10
No. 4533
STATE OF CALIFORNIA

EXHIBIT "A"

RECLAMATION PLAN BOUNDARY

All that portion of Sections 1, 2, 11 and 12, Township 15 North, Range 4 East, Sections 4, 5 and 6, Township 15 North, Range 5 East, Sections 32 and 33, Township 16 North, Range 5 East, Mount Diablo Meridian, County of Yuba, State of California, more particularly described as follows:

Commencing at the corner common to said Sections 1, 12, 6 and Section 7, Township 15 North, Range 5 East, Mount Diablo Meridian: thence North 66°26'55" West a distance of 114.63 feet to the point of beginning on the exterior boundary of the Reclamation Area herein described: thence from said **TRUE POINT OF BEGINNING** in a northwesterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 48°58'28" West and a chord distance of 343.14, having a central angle of 86°40'18" and an arc length of 378.18'; thence South 84°21'24" West a distance of 200.02 feet; thence South 05°38'36" East a distance of 290.39 feet; thence South 36°49'45" East a distance of 121.14 feet; thence South 00°49'13" East a distance of 888.79 feet; thence South 03°08'17" West a distance of 1337.26 feet; thence in a southwesterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of South 45°40'32" West and a chord distance of 338.04, having a central angle of 85°04'31" and an arc length of 371.21'; thence South 88°12'48" West a distance of 1298.23 feet; thence in a northwesterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 52°27'37" West and a chord distance of 316.87, having a central angle of 78°39'10" and an arc length of 343.19'; thence North 85°49'24" West a distance of 223.24 feet; thence in a southwesterly direction with a non-tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of South 46°11'52" West and a chord distance of 334.67, having a central angle of 84°01'53" and an arc length of 366.66'; thence South 88°12'48" West a distance of 1527.71 feet; thence in a northwesterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 48°43'15" West and a chord distance of 341.42, having a central angle of 86°07'54" and an arc length of 375.82'; thence South 89°44'07" West a distance of 193.50 feet; thence in a southwesterly direction with a non-tangent curve turning to the right with a radius of 250.00 feet, having a

chord bearing of South 44°27'12" West and a chord distance of 351.84, having a central angle of 89°26'45" and an arc length of 390.28'; thence South 89°10'35" West a distance of 2626.85 feet; thence in a northwesterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 45°18'28" West and a chord distance of 356.72, having a central angle of 91°01'56" and an arc length of 397.20'; thence North 00°12'30" East a distance of 2273.14 feet; thence North 00°43'36" East a distance of 745.46 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 33°31'09" East and a chord distance of 270.80, having a central angle of 65°35'07" and an arc length of 286.17'; thence North 66°18'42" East a distance of 2828.16 feet; thence in a southeasterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of South 56°58'22" East and a chord distance of 417.98, having a central angle of 113°25'52" and an arc length of 494.94'; thence North 89°44'07" East a distance of 200.02 feet; thence North 00°15'53" West a distance of 303.30 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 33°01'25" East and a chord distance of 274.43, having a central angle of 66°34'35" and an arc length of 290.49'; thence North 66°18'42" East a distance of 2096.99 feet; thence in a southeasterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of South 54°53'03" East and a chord distance of 427.70, having a central angle of 117°36'30" and an arc length of 513.16'; thence South 85°47'25" East a distance of 200.02 feet; thence North 03°54'45" East a distance of 367.04 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 35°06'44" East and a chord distance of 259.01, having a central angle of 62°23'57" and an arc length of 272.27'; thence North 66°18'42" East a distance of 444.21 feet; thence in a southeasterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of South 61°36'14" East and a chord distance of 394.46, having a central angle of 104°10'08" and an arc length of 454.52'; thence North 80°28'28" East a distance of 200.02 feet; thence North 09°31'32" West a distance of 176.67 feet; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 250.00 feet, having a chord bearing of North 28°23'35" East and a chord distance of 307.27, having a central angle of 75°50'14" and an arc length of 330.90'; thence North 66°52'59" East a distance of 757.33 feet; thence North 70°10'48" East a distance of 324.70 feet; thence North 52°29'48" East a distance of 633.90

feet; thence North 57°41'48" East a distance of 1341.95 feet; thence South 85°38'34" East a distance of 138.28 feet; thence North 61°55'26" East a distance of 384.20 feet; thence North 74°27'26" East a distance of 199.80 feet; thence North 88°28'26" East a distance of 1319.60 feet; thence North 83°45'26" East a distance of 204.30 feet; thence North 76°58'26" East a distance of 214.90 feet; thence North 71°18'26" East a distance of 1040.90 feet; thence North 79°33'26" East a distance of 301.91 feet; thence North 88°04'26" East a distance of 293.81 feet; thence North 82°20'26" East a distance of 736.40 feet; thence North 83°38'26" East a distance of 128.90 feet; thence North 73°54'26" East a distance of 248.00 feet; thence North 78°59'48" East a distance of 479.90 feet; thence North 84°00'26" East a distance of 869.90 feet; thence North 76°48'26" East a distance of 766.70 feet; thence North 61°28'26" East a distance of 1572.60 feet; thence North 43°57'44" East a distance of 498.45 feet; thence North 83°31'23" East a distance of 423.74 feet; thence in a southeasterly direction with a tangent curve turning to the right with a radius of 676.00 feet, having a chord bearing of South 33°16'40" East and a chord distance of 1206.77, having a central angle of 126°23'54" and an arc length of 1491.30'; thence in a southerly direction with a reverse tangent curve turning to the left with a radius of 1597.00 feet, having a chord bearing of South 10°53'04" West and a chord distance of 1041.80, having a central angle of 38°04'24" and an arc length of 1061.22'; thence in a southerly direction with a reverse tangent curve turning to the right with a radius of 1626.00 feet, having a chord bearing of South 13°14'06" West and a chord distance of 1185.90, having a central angle of 42°46'27" and an arc length of 1213.89'; thence South 34°37'19" West a distance of 2272.19 feet; thence in a westerly direction with a tangent curve turning to the right with a radius of 1335.00 feet, having a chord bearing of South 83°27'41" West and a chord distance of 2010.16, having a central angle of 97°40'44" and an arc length of 2275.93'; thence in a northwesterly direction with a compound tangent curve turning to the right with a radius of 1175.00 feet, having a chord bearing of North 23°40'09" West and a chord distance of 956.96, having a central angle of 48°03'37" and an arc length of 985.60'; thence North 00°21'40" East a distance of 1039.68 feet; thence in a northwesterly direction with a tangent curve turning to the left with a radius of 200.00 feet, having a chord bearing of North 55°35'59" West and a chord distance of 331.46, having a central angle of 111°55'17" and an arc length of 390.68'; thence in a westerly direction with a reverse tangent curve turning to the right with a radius of 4020.00 feet, having a chord bearing of South 79°46'11" West and a chord distance of 1579.56, having a central angle of 22°39'37" and an arc length of

1589.90'; thence South 00°30'54" East a distance of 989.47 feet; thence South 89°29'06" West a distance of 1156.83 feet; thence South 00°30'15" West a distance of 188.05 feet; thence South 00°30'15" West a distance of 188.05 feet; thence South 07°51'12" West a distance of 94.64 feet; thence South 23°25'43" West a distance of 105.69 feet; thence South 34°30'31" West a distance of 62.77 feet; thence South 45°00'00" West a distance of 180.50 feet; thence South 00°00'00" East a distance of 2288.78 feet; thence South 87°41'24" West a distance of 3114.51 feet; thence South 87°41'22" West a distance of 1556.12 feet; to the point of beginning.

Containing 1938 acres, more or less.

Excepting therefrom:

That certain property described as "Description of Yuba Placer Gold Company Offices and Shop Facilities Area" in the "Memorandum of Agreement Regarding Mutual Operations on the Yuba Goldfields" as filed for record in Instrument No. 92 15644 Official Records Yuba County, more particularly described as follows:

All that portion of Section 5, Township 15 North, Range 5 East, Mount Diablo Base and Meridian, beginning at a point from which the corner common to Sections 4, 5, 8, and 9, T15N, R5E, M. D. B. & M. bears South 36°51'19" East, 3785.93 feet, thence the following eight (8) courses:

1. N 0°29'13" E, 332.32 feet;
2. S 89°45'21" E, 221.76 feet;
3. N 0°53'16" W, 894.45 feet;
4. S 88°15'42" W, 223.79 feet;
5. S 68°58'00" W, 816.27 feet;
6. N 89°39'51" W, 782.12 feet;
7. S 0°30'55" E, 934.36 feet;
8. N 89°51'34" East, 1548.57 feet to the point of beginning; containing approximately 40 acres, more or less

End of Description

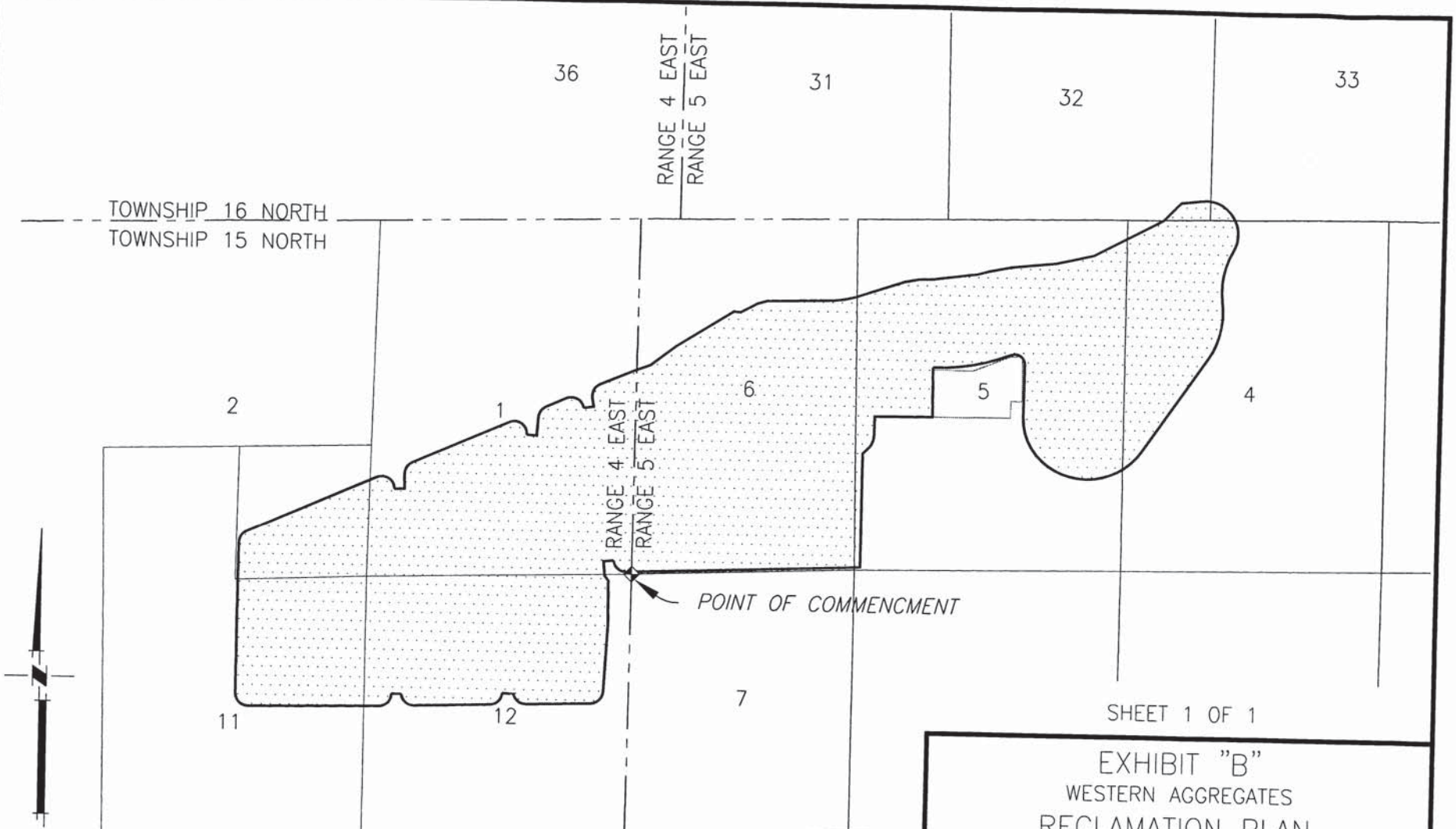
Description prepared by:
MACKAY & SOMPS CIVIL ENGINEERS, INC.

1552 Eureka Road, Suite 100, Roseville, CA 95661

David W Kopp, PLS 4533
License Expiration Date: 12-31-12

Date: 4/2/11

LICENSED LAND SURVEYOR
DAVID W. KOPP
Exp. 12-31-12
No. 4533
STATE OF CALIFORNIA



SHEET 1 OF 1

EXHIBIT "B"

WESTERN AGGREGATES

RECLAMATION PLAN

PLAT TO ACCOMPANY DESCRIPTION

YUBA GOLDFIELDS

YUBA COUNTY CALIFORNIA

MACKAY & SOMPS

ENGINEERS PLANNERS SURVEYORS

1552 Eureka Road, Suite 100, Roseville, CA 95661 (916) 773-1189

DWK	1"= 3000'	04/01/2011	18296.00
DRAWN BY	SCALE	DATE	JOB NO.

4-01-2011 07:14:31 dkopp P:\18296\REC PLAN DESC 3-25-11\LILLBURN LINE WORK-revised 3-31-11.dwg

There are no xreferences in this drawing.

ATTACHMENT 2
SMARA & CCR (TITLE 14) REQUIREMENTS FOR MINING & RECLAMATION PLAN SUBMITTALS CROSS-REFERENCE MATRIX

CROSS REFERENCE MATRIX
Between the Western Aggregates Reclamation Plan &
Surface Mining and Reclamation Act of 1975 (SMARA) & California Code of Regulations (CCR Title 14)
With Specific Emphasis on:

ARTICLE 1. GENERAL PROVISIONS. SECTION 2710 et seq.
ARTICLE 2. DEFINITIONS. SECTION 2725 et seq.
ARTICLE 3. DISTRICT COMMITTEES. SECTION 2740 – 2741
ARTICLE 4. STATE POLICY FOR THE RECLAMATION OF MINED LANDS. SECTION 2755 et seq.
ARTICLE 5. RECLAMATION PLANS AND THE CONDUCT OF SURFACE MINING OPERATIONS. SECTION 2770 et seq., as amended
CCR TITLE 14 (REGISTER 85, No. 18-5-4-83)
CHAPTER 8. MINING AND GEOLOGY
SUBCHAPTER 1. STATE MINING AND GEOLOGY BOARD
ARTICLE 1. SURFACE MINING AND RECLAMATION PRACTIVE. SECTION 3500 et seq.
ARTICLE 9. RECLAMATION STANDARDS. SECTION 3700 et seq.

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE	SECTION
MINING OPERATION AND CLOSURE				
SMARA 2770.5	100-year flood, Caltrans contact	N/A	N/A	N/A
SMARA 2772 (c) (1)	Name and Address of operator/agent.		7-8	Section 1.3
SMARA 2772 (c) (2)	Quantity & type of minerals to be mined.		5, 16	Section 1.2.2, 3.2, 3.3
SMARA 2772 (c) (3)	Initiation and termination date.		5	Section 1.1
SMARA 2772 (c) (4)	Maximum anticipated depth of mining.		21, 24, 30	Section 3.8, 4.1, 4.2
SMARA 2772 (c) (5)	Description, including map with boundaries, topographic details, geology, streams, roads, utilities.		9, 15, Sheets 1 & 2	Section 2, 3
SMARA 2772 (c) (6)	Mining plan and time schedule for reclamation (concurrent or phased reclamation).		24	Section 4.2
SMARA 2772 (c) (7)	Proposed subsequent use.		24	Section 4.1
SMARA 2772 (c) (8)	Description of reclamation measures adequate for proposed end use.		23	Section 4.0
SMARA 2772 (c) (8) (a)	Description of containment control and mine waste disposal.		21, 35	Section 3.10, 4.3
SMARAS 2772 (c) (8) (b)	Rehabilitation of stream banks/beds to minimize erosion	N/A	N/A	N/A
SMARA 2772 (c) (9)	Impact of reclamation on future mining.		24, 35	Section 4.1, 4.2

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE	SECTION
MINING OPERATION AND CLOSURE				
SMARA 2772 (c) (10)	Applicant statement accepting responsibility for reclamation per the reclamation plan.		40	Section 5.2
SMARA 2773 (a)	Water quality monitoring plan specific to property.		21	Section 3.10
SMARA 2773 (a)	Sediment and erosion control monitoring plan specific to property.		21	Section 3.9
SMARA 2773 (a)	Revegetation plan specific to property. Monitoring Plan.		36, 38	Section 4.4.2, 4.4.3
SMARA 2773.1	Performance (financial) assurances.		-	Appendix C
SMARA 2777	Amended reclamation plans required prior to substanatial deviations to approved plans.	N/A	N/A	N/A
CCR 3502 (b) (1)	Environmental setting and impact of reclamation on surrounding land uses. (identify sensitive species, wildlife habitat, sensitive natural communities, e.g., wetlands, riparian zones, etc.).		9-14	Section 2.0
CCR 3502 (b) (2)	Public health and safety (exposure).		22	Section 3.10
CCR 3502 (b) (3)	Slopes: critical gradient, consider physical properties and landscaping.		11, 30	Section 2.3, 4.2
CCR 3502 (b) (4)	Fill materials in conformance with current engineering practice.	N/A	N/A	N/A
CCR 3502 (b) (5)	Disposition of old equipment		35	Section 4.4.1
CCR 3502 (b) (6)	Temporary stream and water diversions shown.	N/A	N/A	N/A
CCR 3503 (a) (1)	Removal of vegetation and overburden preceding mining kept to a minimum.		24	Section 4.1
CCR 3503 (a) (2)	Overburden stockpiles managed to minimize water and wind erosion.		21	Section 3.9
CCR 3503 (a) (3)	Erosion control facilities (dikes, ditches, etc.) as necessary.	N/A	N/A	N/A
CCR 3503 (b) (1)	Settling ponds (sedimentation and water quality).		20, 35	Section 3.5, 4.2
CCR 3503 (b) (2)	Prevent siltation of groundwater recharge areas.		21	Section 3.10
CCR 3503 (c)	Protection of fish and wildlife habitat (all reasonable measures).	N/A	N/A	N/A

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE	SECTION
MINING OPERATION AND CLOSURE				
CCR 3503 (d)	Disposal of mine waste and overburden (stable-no natural drainage restrictions without suitable provisions for diversion).		35	Section 4.3
CCR 3503 (e)	Erosion and drainage (grading to drain to natural courses or interior basins).		21	Section 3.9
CCR 3503 (f)	Resoiling (fine material on top plus mulches).		20, 35	Section 3.5, 4.2
CCR 3503 (g)	Revegetation and plant survival (use available research).		38	Section 4.4.3
CCR 3703 (a)	Sensitive species conserved or mitigated	N/A	N/A	N/A
CCR 3703 (b)	Wildlife habitat at least as good as pre-project, if approved end use is habitat.	N/A	N/A	N/A
CCR 3703 (c)	Wetlands avoided or mitigated at 1:1 minimum	N/A	N/A	N/A
CCR 3704 (a)	For urban use, fill compacted in accordance with UBC or local grading ordinance.	N/A	N/A	N/A
CCR 3704 (b)	For resource conservation, compare to standard for that end use	N/A	N/A	N/A
CCR 3704 (c)	Mine waste stockpiled to facilitate phased reclamation and separate from growth media.		22, 35	Section 3.5, 4.3
CCR 3704 (d)	Final reclamation fill slopes not exceed 2:1, except when engineering and revegetation analysis allow.		11, 36	Section 2.3, 4.4.2
CCR 3704 (e)	Final landforms or fills conform with surrounding topography or end use.		24	Section 4.1, Sheets 1 & 2
CCR 3704 (f)	Cut slopes have minimum factor of safety for end use and conform with surrounding topography.		11, 30	Section 2.3, 4.2
CCR 3704 (g)	Piles or dumps not placed in wetlands without mitigation.	N/A	N/A	N/A
CCR 3705 (a)	Vegetative cover, suitable to end use, self-sustaining. Baseline studies documenting cover, density and species richness.		36	Section 4.4.2
CCR 3705 (b)	Test plots if success has not been proven previously	N/A	N/A	N/A
CCR 3705 (c)	Decompaction of site.	N/A	N/A	N/A

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE	SECTION
MINING OPERATION AND CLOSURE				
CCR 3705 (d)	Roads stripped of roadbase materials, resoiled and revegetated, unless exempted.	N/A	N/A	N/A
CCR 3705 (e)	Soil altered or other than native topsoil, required soil analysis. Amend if necessary.	N/A	N/A	N/A
CCR 3705 (f)	Temporary access not bladed. Barriers installed.	N/A	N/A	N/A
CCR 3705 (g)	Use native plant species, unless exotic species meet end use.		33, 37	Section 4.4.2
CCR 3705 (h)	Plant during correct season.		37	Section 4.4.2
CCR 3705 (i)	Erosion control and irrigation, when necessary.		21	Section 3.9
CCR 3705 (j)	If irrigated, demonstrate self-sustaining without for two-year minimum.	N/A	N/A	N/A
CCR 3705 (k)	Weeds managed.		38	Section 4.4.3
CCR 3705 (l)	Plant protection measures, fencing, caging.		38	Section 4.4.3
CCR 3705 (m)	Success quantified by cover, density and species-richness. Standards proposed in plan. Sample method set forth in plan and sample size provide 80 percent confidence level, as minimum.		38	Section 4.4.3
CCR 3706 (a)	Mining and reclamation to protect downstream beneficial uses.		21	Section 3.9
CCR 3706 (b)	Water quality, recharge, and groundwater storage shall not be diminished, except as allowed by plan.		21	Section 3.10
CCR 3706 (c)	Erosion and sedimentation controlled during all phases as per RWQCB/SWRCB.		22	Section 3.10
CCR 3706 (d)	Surface runoff and drainage controlled and methods designed for not less than 20 year/1 hour intensity storm event.		21	Section 3.9
CCR 3706 (e)	Altered drainages shall not cause increased erosion or sedimentation.		21, 22	Section 3.9, 3.10
CCR 3706 (f)	Stream diversions constructed in accordance with DFG 1603, EPA 404, Sec. 10 Rivers and Harbors.	N/A	N/A	N/A
CCR 3706 (g)	All temporary diversions eventually removed.	N/A	N/A	N/A

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE	SECTION
MINING OPERATION AND CLOSURE				
CCR 3707 (a)	Return prime ag to prime ag, unless exempted.	N/A	N/A	N/A
CCR 3707 (b)	Segregate and replace topsoil by horizon.	N/A	N/A	N/A
CCR 3707 (c)	Productivity rates equal pre-project or similar site for two consecutive years. Rates set forth in plan.	N/A	N/A	N/A
CCR 3707 (d)	Fertilizers and amendments not contaminate water.		21	Section 3.9
CCR 3708	Other ag capable of sustaining crops of area.	N/A	N/A	N/A
CCR 3709 (a)	Equipment stored in designated area and waste disposed of according to ordinance.		35	Section 4.3, 4.4.1
CCR 3709 (b)	Structures and equipment dismantled and removed.		35	Section 4.4.1
CCR 3710 (a)	Surface and groundwater protected.		21	Section 3.9, 3.10
CCR 3710 (a)	Surface and groundwater projected in accordance with Porter Cologne and Clean Water Acts (RWQCB/SWRCB).		22	Section 3.10
CCR 3710 (b)	In-stream in accordance with CFG 1600, EPA 404, and Sec. 10 Rivers and Harbors.	N/A	N/A	N/A
CCR 3710 (c)	In-stream channel elevations and bank erosion evaluated annually using extraction quantities, cross-sections, and aerial photos.	N/A	N/A	N/A
CCR 3710 (d)	In-stream mining activities shall not cause fish to become entrapped in pools or in off-channel pits. California Fish and Game Code section 1600.	N/A	N/A	N/A
CCR 3711(a)	All salvageable topsoil removed. Topsoil and vegetation removal not process mining by more than one year.	N/A	N/A	N/A
CCR 3711 (b)	Topsoil resources mapped prior to stripping, location of stockpiles on map. Topsoil and growth media in separate stockpiles.	N/A	N/A	N/A
CCR 3711 (c)	Soil salvage and phases set forth in plan, minimize disturbance, designed to achieve revegetation success.	N/A	N/A	N/A
CCR 3711 (d)	Topsoiling phased ASAP. Stockpiles not be disturbed until needed. Stockpiles clearly identified and planted with vegetation or otherwise protected.	N/A	N/A	N/A

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE	SECTION
MINING OPERATION AND CLOSURE				
CCR 3711 (e)	Topsoil redistributed in stable site and consistent thickness.		20, 24	Section 3.5, 4.2
CCR 3712	Waste and tallings, and waste disposal governed by SWRCB (Article 7, Chapter 15, Title 23, CCR).		22	Section 3.10
CCR 3713 (a)	Drill holes, water wells, monitoring wells abandoned in accordance with laws.	N/A	N/A	N/A
CCR 3713 (b)	All portals, shafts, tunnels, or openings, gated or protected from public entry, but preserve access for wildlife.	N/A	N/A	N/A