CASE CLOSURE SUMMARY
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM

I. AGENCY INFORMATION

Date:

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6876
Responsible Staff Person: Mark Detterman	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: Former Impulse Motors		
Site Facility Address: 1210 Bockman Road, San Lorenzo, CA		
RB Case No.: ---	Local Case No.: STID#	LOP Case No.: RO0002737
URF Filing Date: ---	Geotracker ID:	APN:

Responsible Parties	Addresses	Phone Numbers
The Olson Company		

Tank I.D. No.	Size in Gallons	Contents	Closed In Place/Removed?	Date
Tank 1	8,000	Gasoline	Removed	4/14/2004
Tank 2	6,000	Gasoline	Removed	4/14/2004
Tank 3	6,000	Gasoline	Removed	4/14/2004
Piping			Removed	4/14/2004

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Leaking Dispensers		
Site characterization complete? Yes	Date Approved By Oversight Agency: ------	
Monitoring wells installed? Yes	Number: 3	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 7.65	Lowest Depth: 9.17	Flow Direction: Northwest
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity: According to the East Bay Municipal Utility District there are no municipal, industrial, or agricultural supply wells in the City of San Lorenzo. All water is brought to the area via aqueduct from its source located approximately 60 miles northwest of the Site.	
Are drinking water wells affected? No	Aquifer Name: Santa Clara Valley – East Bay Plain (2-9.04)
Is surface water affected? No	Nearest SW Name: San Francisco Bay (1.75 West of Site)
Off-Site Beneficial Use Impacts (Addresses/Locations): None	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health (and Local CUPA where applicable)

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tanks (3)	20,000 gallons	Disposal/Ecology Control Industries	4/17/2004
Piping	Unknown linear feet	Disposal/Ecology Control Industries	4/17/2004
Free Product	----	----	----
Soil	300 cubic yards	Disposal	12/2006
Groundwater	----	----	----

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments x – x for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	5,900	120	2,100	590
TPH (Diesel)	Not analyzed	23	110,000	230
Oil and Grease	Not analyzed	Not analyzed	Not analyzed	Not analyzed
Benzene	0.003	ND<0.5	ND<0.5	ND<0.5
Toluene	1.6	ND<0.004	ND<0.5	ND<0.5
Ethylbenzene	37	0.15	ND<0.5	ND<0.5
Xylenes	290	ND<0.005	ND<0.5	ND<1.0
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	*	**	†	‡
MTBE	a	b	c	d
Other (8240/8270)				

* ___ ppm Cd, ___ ppm Cr, 11.0 ppm Pb, ___ ppm Ni, ___ ppm Zn

** ___ ppm Cd, ___ ppm Cr, 16.5 ppm Pb, ___ ppm Ni, ___ ppm Zn

† ___ ppb Cd, ___ ppb Cr, ___ ppb Pb, ___ ppb Ni, ___ ppm Zn

‡ ___ ppb Cd, ___ ppb Cr, ___ ppb Pb, ___ ppb Ni, ___ ppm Zn

a 0.11 ppm MTBE, ___ ppm EtOH, <0.005 ppm TAME, <0.005 ppm ETBE, <0.005 ppm DIPE, <0.020 ppm TBA, <0.001 ppm EDB, and <0.005 ppm EDC

b 0.4 ppm MTBE, ___ ppm EtOH, <0.002 ppm TAME, <0.002 ppm ETBE, <0.002 ppm DIPE, 0.057 ppm TBA, <0.002 ppm EDB, and <0.001 ppm EDC

c 9.2 ppb MTBE, <1,000 ppb EtOH, <0.5 ppb TAME, 5.4 ppb ETBE, <0.5 ppb DIPE, <10 ppb TBA, <0.5 ppb EDB, and <0.5 ppb EDC

d <0.5 ppb MTBE, ___ ppb EtOH, <1.0 ppb TAME, <0.5 ppb ETBE, <1.0 ppb DIPE, <5.0 ppb TBA, <0.5 ppb EDB, and <0.5 ppb EDC

Site History and Description of Corrective Actions:
The Case Closure Summary should be clear and concise. Deviation from the recommended format will lengthen the time required for ACEH LOP review and processing. If particular details are not available or not applicable to the site for any reason, do not omit the item. Rather, provide the reasons the details are not available or applicable.

1. INITIATION OF CORRECTIVE ACTION

1.1 BACKGROUND HISTORY

The Site is located on the southwest corner of Bockman Road and Via Chiquita Road within a residential area of the City of San Lorenzo. The Site was developed with a gasoline fuel station from the 1950s until 2004. Based on records provided by Alameda County 2-4,000 gallon and 1-6,000 gallon unleaded fuel tanks, as well as one waste oil tank were removed from the Site in 1987. New double-wall steel fuel tanks were installed in their place in accordance with State regulations. In April 2004, 1-8,000 gallon and 2-6,000 gallon double-wall steel gasoline fuel tanks were removed from the Site. Removal activities are provided in the Underground Storage Tank Closure Report dated June 11, 2004. According to the report, upon removal the three USTs were observed to be in good condition and no field indications of hydrocarbon release were observed. A total of three confirmation soil samples were collected from the northern and southern sidewalls of the UST excavation at depths of 8.5 to 9.0 feet bgs. In addition, four soil samples were collected from beneath the former fuel dispensers and three soil samples were collected from beneath the former piping runs at depths of 1.0 to 2.0 feet bgs. (Figure 2a) The soil samples collected from beneath the fuel dispensers and piping run exhibited concentrations of TPHg ranging from 690 to 5,900 mg/kg. Minimal to non-detectable concentrations of BTEX were exhibited in samples collected from the dispensers and piping runs. According to the report, analytical results of soil samples collected from the UST excavation exhibited non-detectable concentrations; however, specific data is not presented in this version of the report. According to the report, the tanks were removed from the Site by Ecology Control Industries. No information pertaining to the disposal of tank rinsate, piping, or dispensers is presented in the report. The soil overburden generated during tank excavation activities was approved for use as backfill by the Alameda County Health Care Services Agency (ACHCSA).

1.2 SITE CHARACTERIZATION ACTIVITIES

In December 2004 a subsurface investigation was conducted to laterally and vertically delineate the extent of impacted soil beneath the former fuel dispensers. In addition, groundwater samples were collected from up- and down-gradient of the former USTs to confirm that contamination was not significant in the vicinity of the former USTs. The results of the investigation indicated low to non-detectable concentrations of TPHg and VOCs at a depth of 5 feet bgs in the vicinity of the former fuel dispensers. Based on this information the impacted soil was believed to be limited to the upper 5 feet of soil. Groundwater collected from the vicinity of the former UST exhibited non-detectable concentrations of TPHg and VOCs.

In December 2006 a remedial excavation was performed to remove the hydrocarbon impacted soil from the areas of the former fuel dispensers. Approximately 500 cubic yards of soil was removed from two excavation areas and stockpiled on-site. Clean and impacted soil was segregated based on PID readings, olfactory observations, and visual signs of staining. The depths of the excavations were limited to 10 feet bgs, due to the presence of groundwater. Verification soil samples were collected from the bottoms and sidewalls of each excavation. Analytical results of the soil samples collected from the sidewalls exhibited low to non-detectable concentrations of TPHg, TPHd, and VOCs. Analytical results of the soil samples collected from the bottoms of the excavations exhibited concentrations of TPHg ranging from 2.7 to 120 ppm and low to non-detectable concentrations of TPHd and VOCs. Composite soil samples collected from the impacted soil stockpile exhibited TPHg concentrations ranging from 1.4 to 47 ppm, as well as low to non-detectable concentrations of TPHd and VOCs. Concentrations of Lead was exhibited in all soil samples ranging from 3.47 to 16.5 ppm. The clean soil stockpile was authorized to be used as backfill material by the ACHCSA.

In April 2007 a confirmation soil, soil vapor, and groundwater investigation was conducted in order to determine remaining impacts to the Site. Soil, soil vapor, and groundwater samples were collected from down-gradient of the former fuel dispensers and in the vicinity of the former USTs. Soil vapor and groundwater collected from immediately down-gradient of the former dispensers exhibited concentrations of TPHg and TPHd above the RWQCB ESLs. However, these samples did not contain any detectable concentrations of BTEX and very low concentrations of MTBE and ETBE. TPHg and VOCs were detected at low to non-detectable levels in soil samples collected from the vicinity of the former fuel dispensers and former USTs.

In November 2007, at the request of the ACHCSA, three groundwater monitoring wells were installed down-gradient from the former fuel dispensers. A fourth well (MW-04) was installed, developed, sampled, and abandoned due to conflicts with Site development activities. Soil samples collected during the investigation exhibited low to non-detectable concentrations of TPHg and VOCs. Groundwater collected from MW-01, MW-

03, and MW-04 exhibited non-detectable concentrations of TPHg and VOCs. However, well MW-02 exhibited a TPHg concentration of 710 ug/L and low to non-detectable concentrations of VOCs. The result of this investigation determined that the plume is confined to a limited area immediately down-gradient of the former fuel dispensers. The ACHCSA requested on year of quarterly groundwater monitoring to evaluate the stability of the plume.

Quarterly groundwater monitoring was conducted in March 2008, June 2008, September 2008, and December 2008. During the course of these investigations, depth to water ranged between 7.65 and 9.14 feet bgs and flows in general northwest direction. Concentrations of TPHg and TPHd in well MW-02 ranged from 300 to 590 ug/L and non-detectable to 230 ug/L, respectively. MW-02 also exhibited low to non-detectable concentrations of VOCs. The remaining wells (MW-01 and MW-03) exhibited non-detectable concentrations of TPHg and VOCs. As a result, the plume appears to be stable and limited to an area immediately down-gradient of the former fuel dispensers.

1.3 INVESTIGATION METHODS

Grab Soil Sampling Method

Soil samples collected during the underground storage tank removal and remedial excavation activities were placed in pre-cleaned brass liners or laboratory provided 4-oz glass jars with Teflon-lined lids. Soil samples were secured with tape, labeled with the appropriate identification, and placed in ice-filled coolers.

Direct Push Soil Sampling Method

Soil samples were collected by driving a 24 inch stainless steel sampling sleeve with a plastic inner tube into undisturbed soil. Once the desired depth has been achieved, the sampling sleeve was extracted from the borehole. The inner plastic tube containing the soil sample was removed from the sampling sleeve. The desired soil sample interval was then cut from the rest of the plastic tube. The ends of the soil sample were affixed with Teflon sheets, tight fitting caps, and self-adhering tape. The samples were labeled with the appropriate identification and placed in an ice filled cooler. The stainless steel sleeve was cleaned in an alconox solution and triple rinsed with distilled water between each sample interval.

Direct Push Groundwater Sampling Method

Groundwater samples were collected using a 48 inch hydropunch sampling tool. The hydropunch was driven approximately two feet into undisturbed saturated soil. The outer portion of the hydropunch was withdrawn approximately 4 feet to allow the inner slotted stainless steel screen to come into contact with groundwater. Suring and bailing was achieved using a 3/8inch diameter poly-tubing and 2.5 foot long stainless steel bailer. A groundwater sample was collected following the purging of approximately 500 mL of water from the casing. Groundwater samples were collected in laboratory provided preserved 40 mL glass vials and 1 L glass bottles. The sample vessels were labeled with the appropriate identification and placed in an ice filled cooler. The hydropunch sampling tool was cleaned in an alconox solution and triple rinsed with distilled water between each sample location.

Groundwater Monitoring Well Construction and Development

Groundwater well casings consist of 4inch diameter, Schedule 40, 0.01 inch slotted screen and blank casing. Screen intervals were modified based on depth to groundwater; which ranged from 7.5 to 10 feet bgs. The screen interval was set so that approximately 5 feet of screen was below static groundwater and two feet of screen was above static groundwater. A sand filter pack consisting of #3 Monterey Sand was placed in the annuals around the slotted screen to 0.5 feet above the screen interval. A 0.5 foot seal of hydrated bentonite chips was placed immediately above the filter pack. Cement/bentonite grout was placed in the remaining annulus of the borehole. The surface was completed with a traffic-rated well box set in concrete. Each well was developed by surging for a period of 10 minutes following by bailing approximately 30-35 gallons of water from each well.

Groundwater Elevations

A measuring point was made on the top of each well casing for consistency. The elevation of each well was then surveyed to the nearest 0.01 feet by a state licensed surveyor. Depth to water was measured to the nearest 0.01 foot using a Water Level Indicator. Using this information groundwater elevations and gradient are determined using simple calculations. Free product was never present in any well.

Groundwater Sampling Methodology

Purging is conducted prior to sampling wells, a dedicated 3.5 inch by 36 inch disposable bailer was used to purge the wells. To assure that the collected samples were representative of fresh formation water, the conductivity, temperature, and pH of the delivered effluent are monitored and recorded using a Hanna Hydac meter during purge operations. In addition, the turbidity of the removed water is visually monitored and recorded. Purge operations are determined to be sufficient once successive measurements of pH, conductivity, and temperature stabilize to within +/- 10 percent. During purging a minimum of three (3) well volumes, measured as the annular space of the well

casing below the groundwater surface, are removed from each well. Field data sheets are attached indicating the volume of water removed from each casing. Wells were allowed to recharge to within in 90 percent of pre-purge groundwater elevation prior to conducting sampling. Following purging operations, groundwater samples were collected from each of the three wells at the air-water interface, using new, single-sample polyethylene disposable bailers. The groundwater sample was discharged from the bailer to the sample container through a bottom emptying flow control valve to minimize volatilization. Collected water samples were discharged directly into laboratory provided, precleaned, 40 milliliter (ml) glass vials or one liter amber bottles and sealed with Teflon-lined septum, screw-on lids. Labels documenting sample number, well identification, collection date and time, type of sample and type of preservative (if applicable) were affixed to each sample. The samples were then placed into an ice-filled cooler for delivery under chain-of-custody to a laboratory certified to perform the specified tests by the State of California Department of Health Services Environmental Laboratory Accreditation Program.

Laboratory
Soil and groundwater samples were delivered under chain-of-custody to Test America Labs in Pleasanton, CA and Microbac (formerly Centrum) Labs in Riverside, CA. Both labs are certified to perform the specified tests by the State of California Department of Health Services Environmental Laboratory Accreditation Program. Samples were analyzed for TPH gas, diesel, and oil by Method 8015m, VOCs by Method 8260b, and Lead by Method 6010B.

2. EXTENT OF SOIL AND GROUNDWATER POLLUTION

This section should address whether site characterization is complete. The vertical and lateral extent of soil and groundwater contamination should be defined. Graphic presentations of this data should be included and supported. An assessment should be made as to whether the location and number of soil and groundwater samples are adequate to define vertical and lateral extent of impact.

Soil
Results of the verification samples collected during the UST removal in April 2004 and the subsurface investigation completed in December 2004 indicated that impacted soil was limited to the upper 5 feet of soil in the area beneath the former fuel dispensers. Soil samples collected following the remedial excavation and subsequent sampling events indicates that impacted soil was laterally characterized and removed. Soil collected from the bottoms (at the water table) of the remedial excavation pits indicated low detections of TPHg. Additionally, concentrations of TPHg were low to non-detectable in soil samples collected during the confirmation sampling event and groundwater monitoring well installation. Tables and Figures

Groundwater
Laterally, groundwater contamination is characterized by non-detectable concentrations of TPH and VOCs in cross-gradient samples (BA-05 and BA-06) collected during the May 2007 investigation. Contamination is characterized down-gradient by monitoring wells MW-03 and MW-04.

Groundwater Occurrence
Depth to groundwater beneath the Site has ranged from 7.65 to 9.14 feet bgs.

Hydraulic Gradient
Groundwater beneath the Site flows in a general Northwest direction towards the San Francisco Bay located approximately 1.5 miles NW.

3. BENEFICIAL USES

An evaluation should be made of all existing and potential impacts on beneficial uses of groundwater and surface water. The following information should be included.

a. According to the San Francisco Bay, Region 2, Regional Water Quality Control Board (RWQCB) Basin Plan for the San Francisco Bay (2006), the Site is located within the Santa Clara Valley – East Bay Plain (2-9.04), which is currently used as a municipal and industrial water supply. This aquifer is also a potential use for agricultural purposes.

b. Contacted the East Bay Municipal Utility District: according to their engineering department there are no industrial or municipal supply wells located within San Lorenzo. All water comes from the mountains, located approximately 65 miles northeast of the Site, via aqueducts.

c. Factors Affecting Long-term Fate of Contaminants: The sources of the contamination (ie: fuel dispensers and impacted soil) have been removed from the Site. The remaining groundwater contamination will naturally attenuate over time due to biodegradation. Due to the clayey soil lithology, migration of impacted groundwater is likely to be limited.

4. REMEDIAL ACTIVITIES

Remedial activities performed at the site should be presented, including the following.

Impacted soil was excavated and removed from the Site. Based on previous assessments the impacted soil appeared to be limited to the area immediately beneath the former fuel dispensers. Two excavation pits were dug to remove impacted soil from beneath each dispenser. Clean soil was separated from impacted soil based on visual, olfactory, and field equipment observations. The excavations were extended to a depth of 10 feet bgs, where groundwater was encountered. Soil beneath the groundwater table was not removed. Approximately 300 cubic yards of impacted soil was removed from the two excavations and removed from the Site. Verification samples collected from the bottoms and sidewalls of each excavation pit determined that all impacted soil above the groundwater table had been removed. An estimate of 3 cubic yards of soil impacted at concentrations below 150 mg/kg TPH-gasoline remain in place at a depth of 10 feet, located beneath a proposed parking area of the Site.

5. REMEDIATION EFFECTIVENESS

An evaluation should be made as to the effectiveness of all remedial activities undertaken, including the following.

Following remedial excavation activities, verification soil samples were collected from the bottom and sidewalls of the excavation pits. Sample analysis revealed low to non-detectable concentrations of TPHg, VOCs, and Lead in all sidewall samples. The bottom samples collected from the northern and southern excavation pits exhibited TPHg concentrations of 120 and 2.7 mg/kg, respectively. One year of quarterly groundwater monitoring was conducted from December 2007 through December 2008. Quarterly monitoring revealed that the plume is stable and not migrating. The plume is currently located underneath an asphalt paved parking area and street. As a result, the remedial excavation conducted at the Site has effectively removed the TPHg impacted soil from the Site.

a. Are final cleanup levels consistent with SWRCB Resolution 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California"?

Concentrations of TPHg and TPHd were exhibited in monitoring well MW-02 at concentrations ranging from 300 to 710 and non-detectable to 230 ug/L, respectively, throughout the quarterly sampling events. Cross gradient well MW-01 and down-gradient well MW-03 exhibited non-detectable concentrations of TPHg and VOCs and low to non-detectable concentrations of TPHd.

b. Verification monitoring program and criteria, rationale, sampling number, frequency, and duration

One year of quarterly groundwater monitoring was performed from December 2007 until December 2008. One well was placed immediately down-gradient of the source area(MW-02), one well was placed cross-gradient (MW-01) and two wells were placed further down-gradient (MW-03 and MW-04). MW-04 had to be removed due to conflict with underground utilities being installed. MW-04 was sampled prior to abandonment and exhibited non-detectable concentrations of TPH and VOCs.

c. Impact (potential and existing) of residual contamination on beneficial uses

Residual contamination is not considered likely to have an impact on beneficial uses. According to the local water purveyor (East Bay Municipal Utility District) there are no water supply wells located within the city of San Lorenzo. Additionally, there nearest surface water body is the San Francisco Bay located approximately 1.75 miles down-gradient of the site.

6. CONCLUSIONS

Conclusions should qualify the site as "low risk" as described in the RWQCB "Supplemental Instructions to State Water Board December 18, 1995 Interim Guidance on Required Cleanup at Low-Risk Fuel Sites". The criteria that must be qualified are as follows.

1. The leak and ongoing sources, including free product, have been removed or remediated.

All TPHg sources have been removed from the Site. A majority of the hydrocarbon impacted soils have been removed from the Site. Free floating product has historically not been detected on Site.

2. The site has been adequately characterized.

Confirmation soil samples collected from within and around the remedial excavations found that impacted soil has been removed from the Site. Well placed approximately 80 feet down gradient of the former fuel dispensers indicate non-detectable concentrations of TPHg and VOCs.

3. The dissolved hydrocarbon plume is not migrating (stable or decreasing).

One year of groundwater monitoring has proved that the plume is stable and not migrating.

4. No water wells, deeper drinking-water aquifers, surface water, or other sensitive receptors are likely to be impacted.

According to the East Bay Municipal Utility District there are no municipal or industrial water supply wells located within the City of San Lorenzo. The nearest surface water is located greater than 1.5 miles down-gradient of the Site.

5. The site presents no significant risk to human health (see Table 1)
   The plume is currently beneath an asphalt paved parking area and street.

6. The site presents no significant risk to the environment (see Table 2).
   The plume is currently not at risk of impacting surface water, wetlands, or sensitive receptors.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements:		
Should corrective action be reviewed if land use changes? Yes No		
Was a deed restriction or deed notification filed? Yes No		Date Recorded: --
Monitoring Wells Decommissioned:	Number Decommissioned:	Number Retained:
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: --		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

Conclusion:

Alameda County Environmental Health staff believes that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment based upon the information available in our files to date. No further investigation or cleanup is necessary. ACEH staff recommends case closure for this site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Mark Detterman	Title: Hazardous Materials Specialist
Signature:	Date:
Approved by: Donna L. Drogos, P.E.	Title: Supervising Hazardous Materials Specialist
Signature:	Date:

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name:	**Title:**
RB Response:	**Date Submitted to RB:**
Signature:	**Date:**

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH:	**Date of Well Decommissioning Report:**	
All Monitoring Wells Decommissioned: Yes No	**Number Decommissioned:**	**Number Retained:**
Reason Wells Retained:		
Additional requirements for submittal of groundwater data from retained wells:		
ACEH Concurrence - Signature:		**Date:**

Attachments:

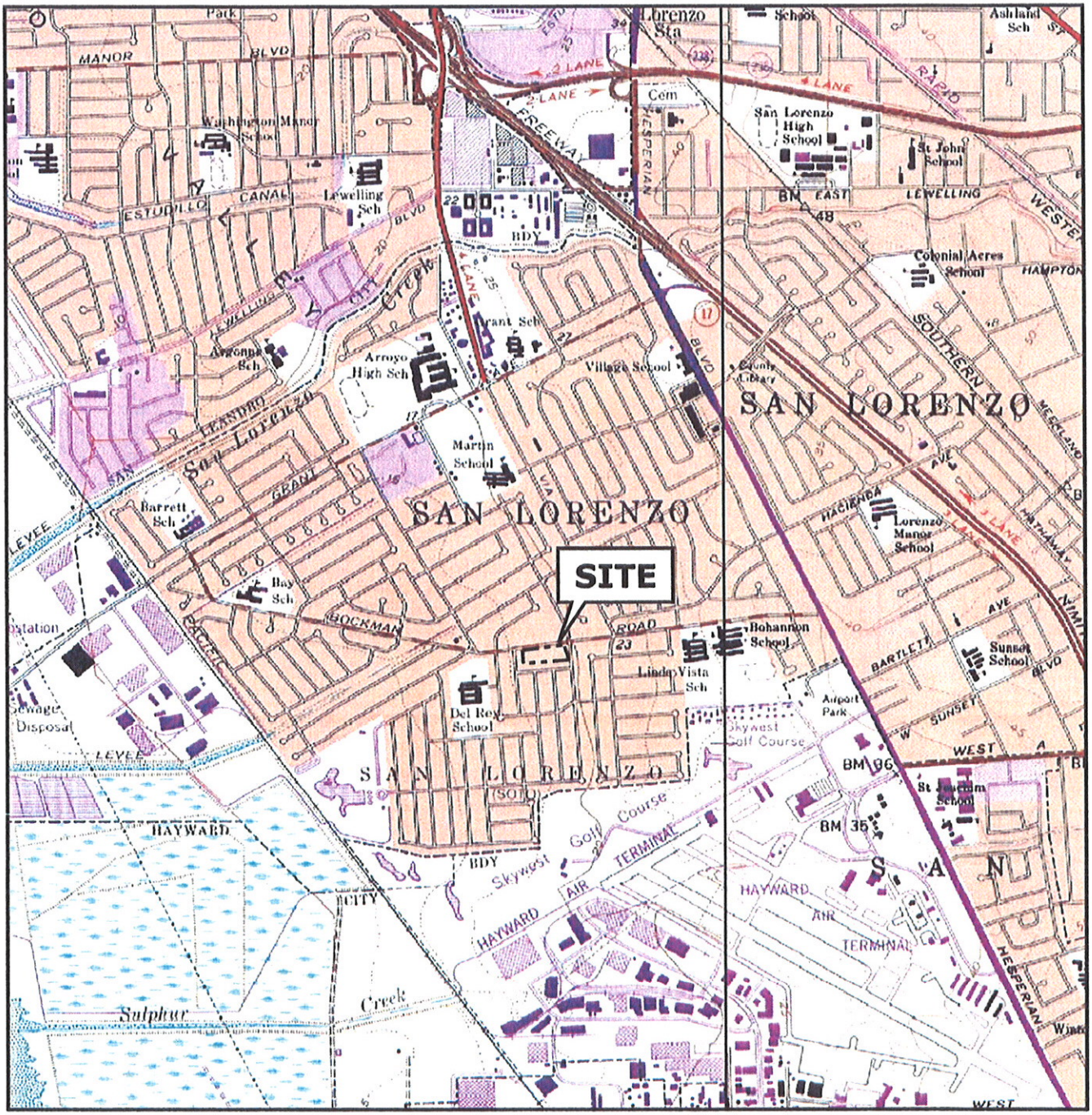
Figures

Figure 1 – Site Location Map
Figure 2 – Current Site Plan with Well Locations
Figure 3 – UST Removal Sampling Locations
Figure 4 – Phase II ESA Sampling Locations
Figure 5 – Soil Excavation and Removal Sampling Locations
Figure 6 – Soil Excavation and Removal Sampling Locations with Posted Analytical Data
Figure 7 – Confirmation Soil, Vapor, and Groundwater Assessment with Posted Analytical Data
Figure 8 – Groundwater Gradient Map (First Quarter 2008)
Figure 9 – Groundwater Gradient Map (Second Quarter 2008)
Figure 10 – Groundwater Gradient Map (Third Quarter 2008)
Figure 11 – Groundwater Gradient Map (Fourth Quarter 2008)

Tables

Table 1A and 1B – Soil and Groundwater Analytical Data (Phase II ESA)
Table 2A through 2C – Soil Analytical Data (Remedial Excavation)
Table 3A through 3G – Soil, Groundwater, and Vapor Analytical Data (Confirmation Borings)
Table 4A through 4D – Soil and Groundwater Analytical Data (Well Installation)
Table 5 – Historical Groundwater Analytical Data (Quarterly Groundwater Sampling)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.



Reference: U.S.G.S., 1959, San Leandro Quadrangle California – Alameda County, 7.5' Series (Topographic). Photorevised 1980.

N

0 2000 4000

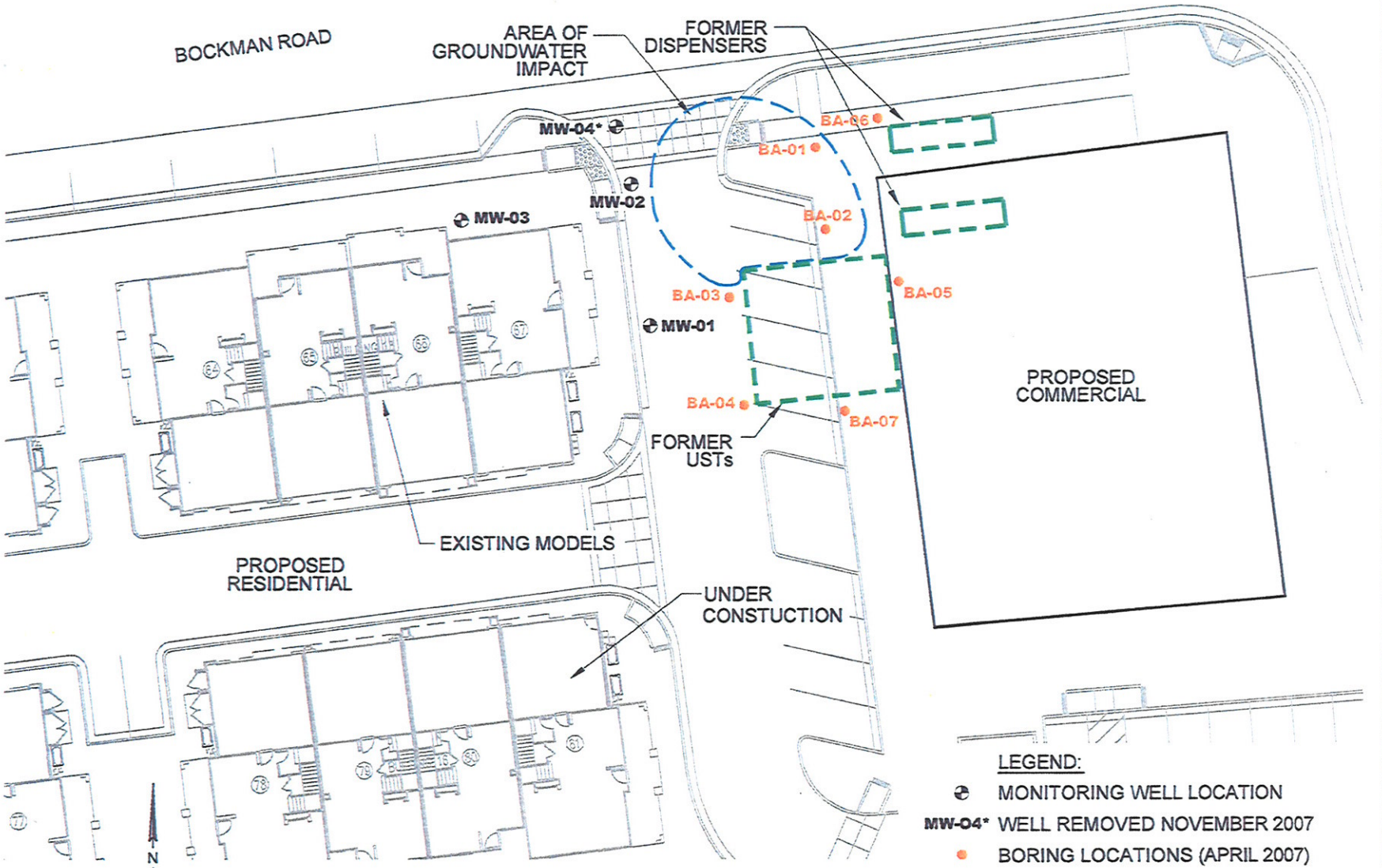
APPROXIMATE SCALE (FEET)

QUADRANGLE LOCATION

SECOR
25864-F BUSINESS CENTER DRIVE
REDLANDS, CALIFORNIA 92374
PH: (909) 335-6116 / FAX: (909) 335-6120

PREPARED FOR: THE OLSON COMPANY 1210-1366 BOCKMAN ROAD SAN LORENZO, CALIFORNIA		**SITE LOCATION MAP**		FIGURE: **1**
JOB NUMBER: 04OT.29215.62	DRAWN BY: JMH	CHECKED BY: JH	APPROVED BY: JH	DATE: 12/2004

File Path – Q:\CADD-04\CAD Files\Olson-Co\San Lorenzo\OLS-2921561-PH1_south.dwg – Layout: Figure 1

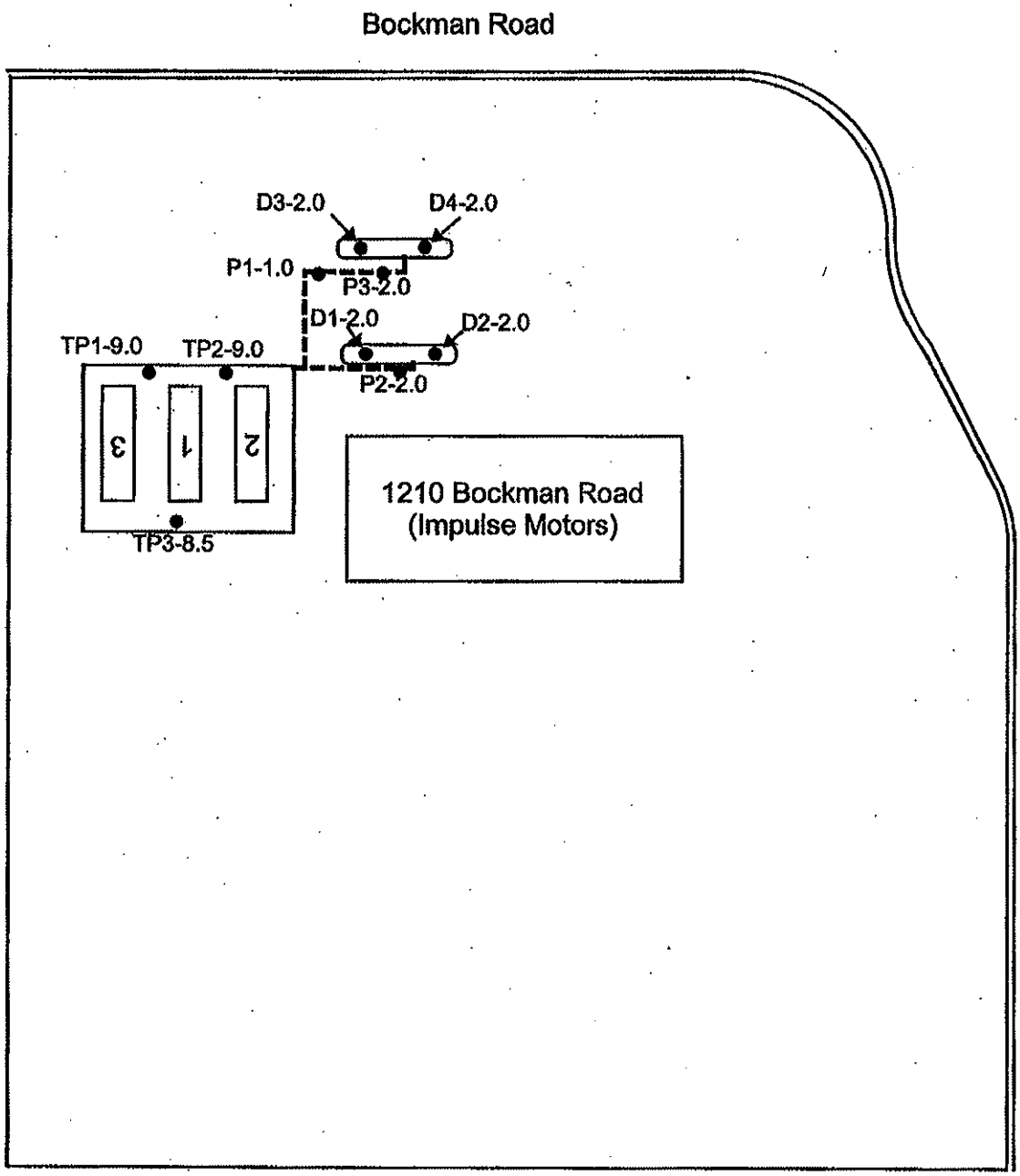


Stantec
25864-F BUISNESS CENTER DRIVE
REDLANDS, CALIFORNIA 92374
PHONE: (909) 335-6116 FAX: (909) 335-6120

FOR:		FIGURE:
VILLAGE WALK 1210 BOCKMAN ROAD SAN LORENZO, CA	SITE PLAN WITH WELL LOCATIONS	2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
04OT.29215.69	GH/JBL	JA		11/01/07

FILEPATH:Q:\CADD-94\00_OTHER OFFICES\Redlands\Village_Walk\dwg\29215 MW LOCATION MAP.dwg|jlieberman|Mar 18, 2008 at 9:52|Layout: SITEMAP



Legend

P1-1.0 ● - Soil Sample Locations

▬▬ - Piping Locations

Title: ***Site Plan*** ***1210 Bockman Road*** ***Hayward, California***	
Figure Number: 3	Scale: 1" = 30'
Project No: 6546-006.00	Drawn By:EJG
	Date:06/11/04

A·C·C ENVIRONMENTAL CONSULTANTS
7977 Capwell Drive, Suite 100
Oakland, California 94621
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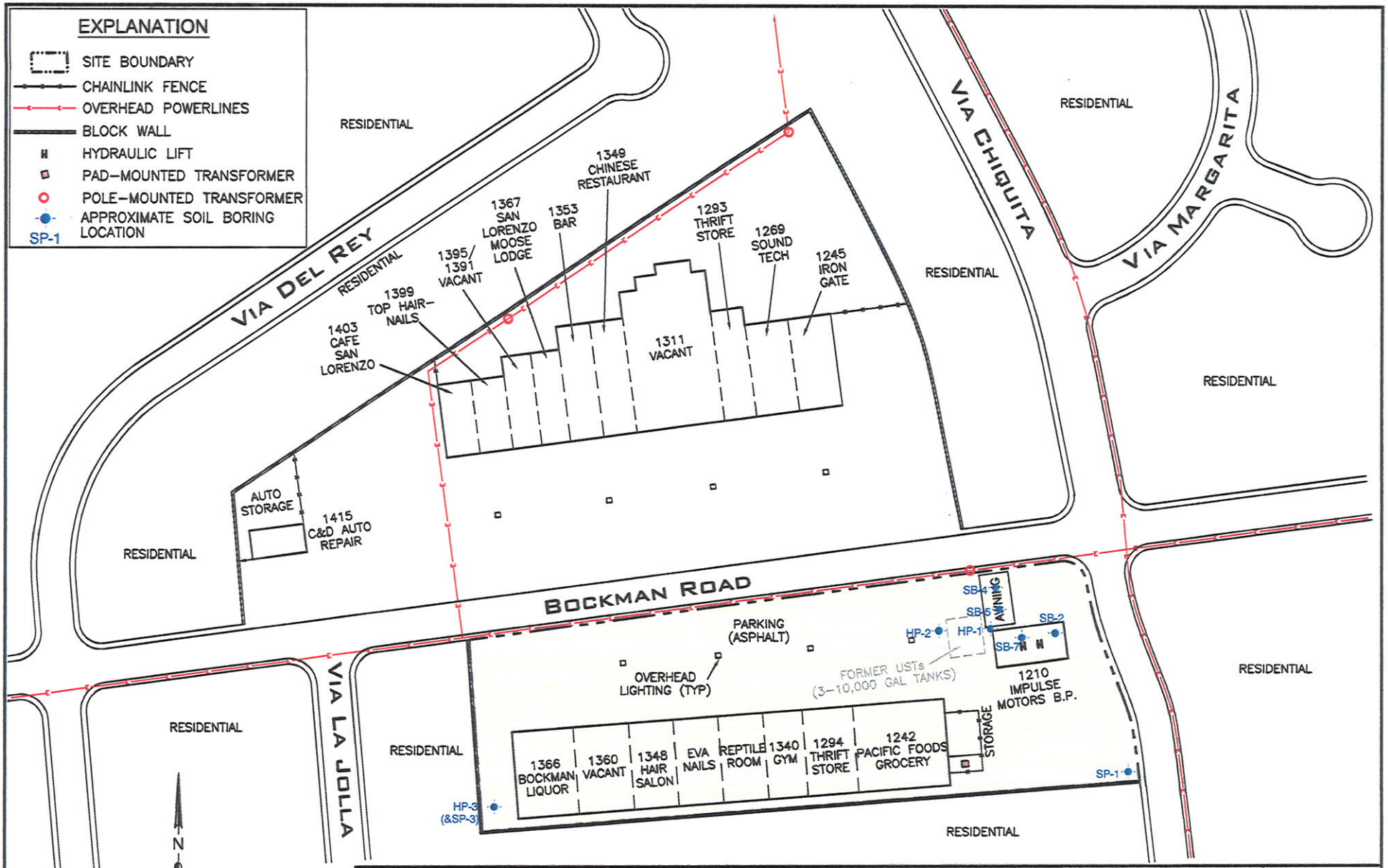

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PREPARED FOR:
THE OLSON COMPANY

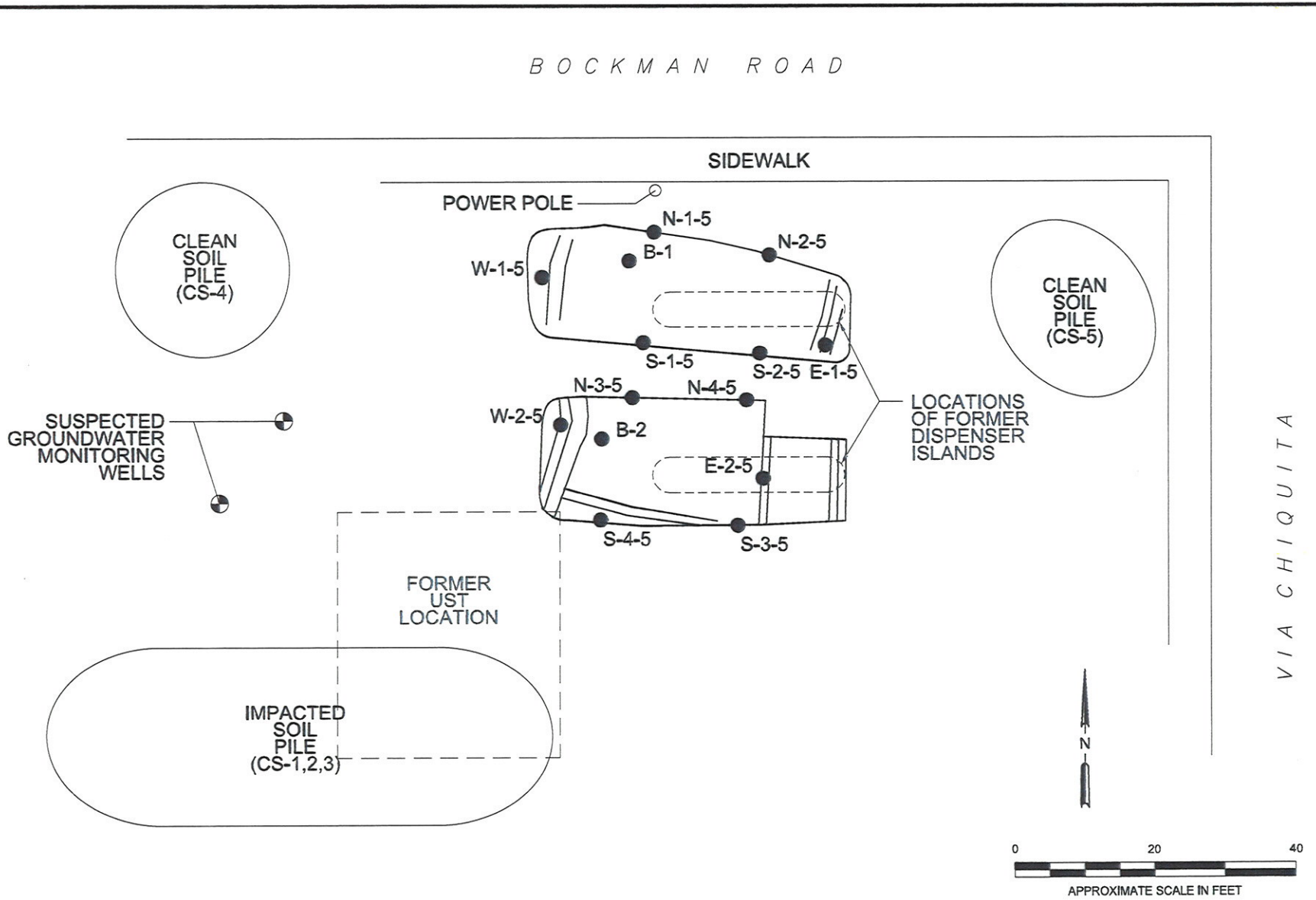
1210-1366 BOCKMAN ROAD
SAN LORENZO, CALIFORNIA

SITE VICINITY MAP

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
04OT.29215.62	JMH	JH	JH	12/2004

File Path – G:\CADD-04\CAD Files\Olson-Co\San Lorenzo\GLS-2921561-PH1_south.dwg – Layout: Figure 2



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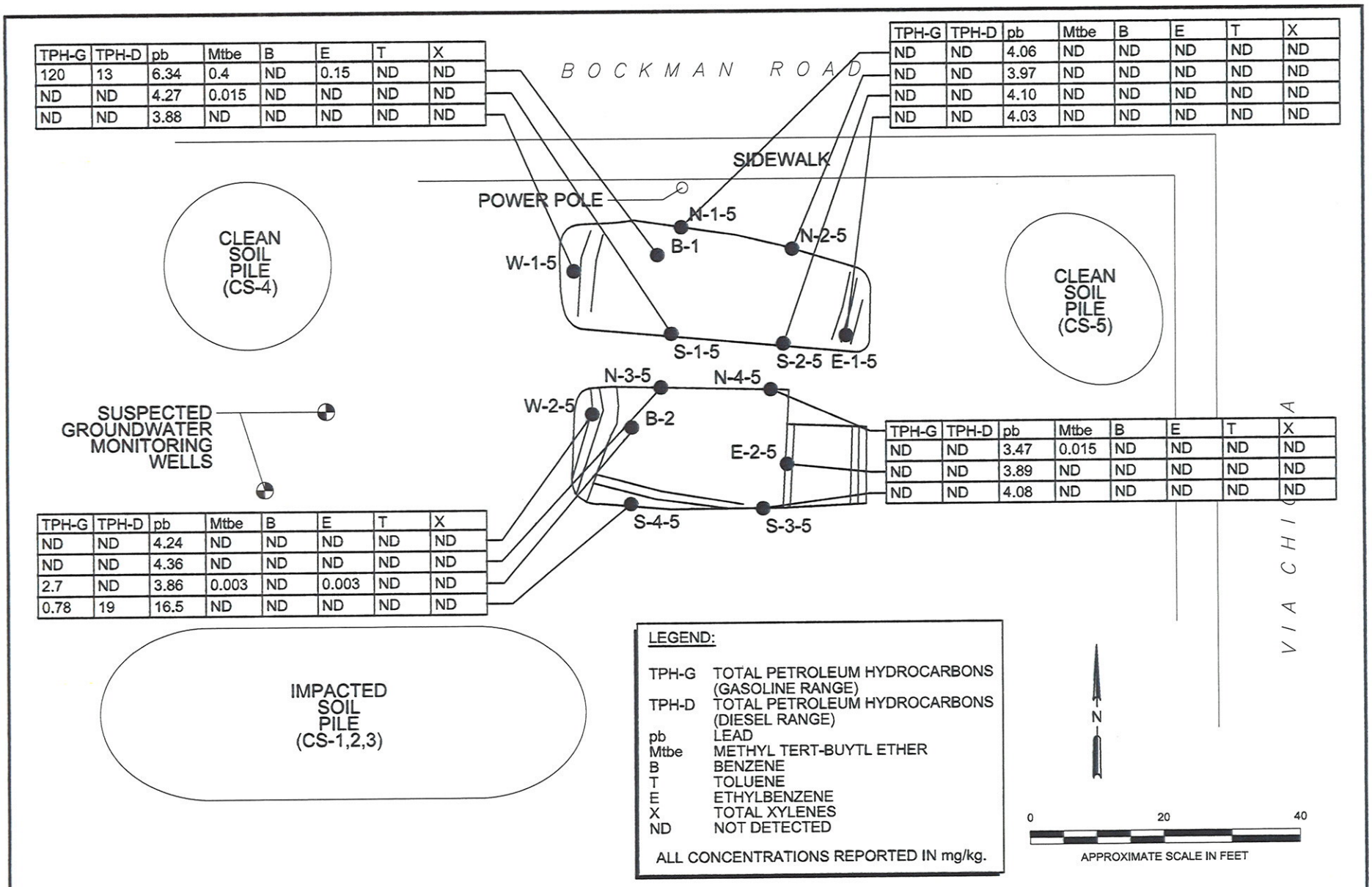
OLSON - SAN LORENZO
1210-1366 BOCKMAN ROAD
SAN LORENZO, CA

SITE PLAN SHOWING
FORMER UST & DISPENSER ISLANDS

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
04OT.29215.54	GH	JA		2/22/07

FILEPATH:Q:\CADD-61\004 Redlands\OLSON CO\04OT.29215.54\29215 SAMPLE LOCALS.dwg|ghinkle|Feb 22, 2007 at 8:51|Layout: UST & DISPENSER LOCALS



TPH-G	TPH-D	pb	Mtbe	B	E	T	X
120	13	6.34	0.4	ND	0.15	ND	ND
ND	ND	4.27	0.015	ND	ND	ND	ND
ND	ND	3.88	ND	ND	ND	ND	ND

TPH-G	TPH-D	pb	Mtbe	B	E	T	X
ND	ND	4.06	ND	ND	ND	ND	ND
ND	ND	3.97	ND	ND	ND	ND	ND
ND	ND	4.10	ND	ND	ND	ND	ND
ND	ND	4.03	ND	ND	ND	ND	ND

TPH-G	TPH-D	pb	Mtbe	B	E	T	X
ND	ND	3.47	0.015	ND	ND	ND	ND
ND	ND	3.89	ND	ND	ND	ND	ND
ND	ND	4.08	ND	ND	ND	ND	ND

TPH-G	TPH-D	pb	Mtbe	B	E	T	X
ND	ND	4.24	ND	ND	ND	ND	ND
ND	ND	4.36	ND	ND	ND	ND	ND
2.7	ND	3.86	0.003	ND	0.003	ND	ND
0.78	19	16.5	ND	ND	ND	ND	ND

LEGEND:

TPH-G	TOTAL PETROLEUM HYDROCARBONS (GASOLINE RANGE)
TPH-D	TOTAL PETROLEUM HYDROCARBONS (DIESEL RANGE)
pb	LEAD
Mtbe	METHYL TERT-BUYTL ETHER
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
ND	NOT DETECTED

ALL CONCENTRATIONS REPORTED IN mg/kg.

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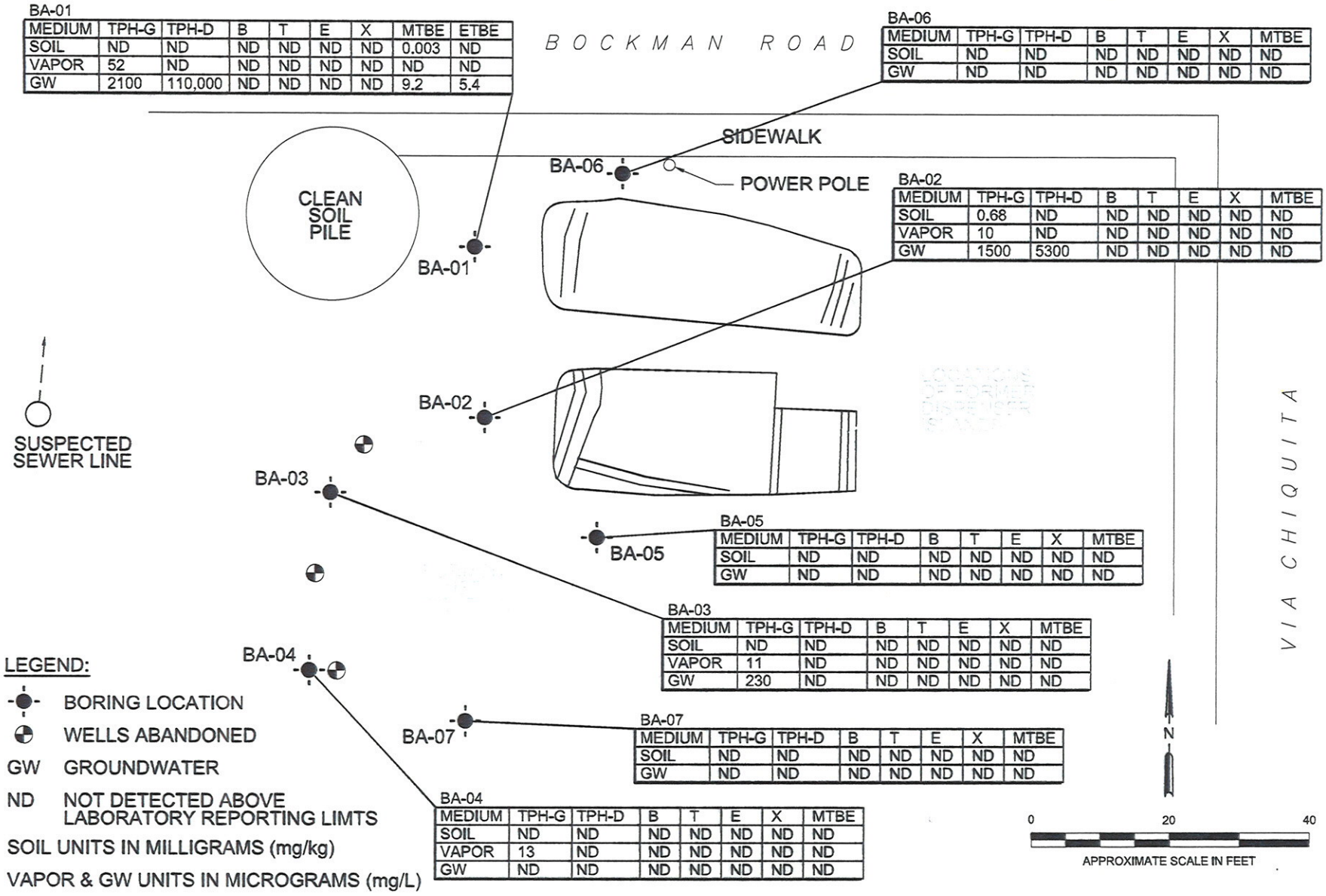
FOR:
OLSON - SAN LORENZO
1210-1366 BOCKMAN ROAD
SAN LORENZO, CA

SITE PLAN SHOWING ANALYTICAL RESULTS

FIGURE: 6

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
04OT.29215.54	GH	JA		2/22/07

FILEPATH:Q:\CADD-61\004 Redlands\OLSON CO\04OT.29215.54\29215 SAMPLE LOCALS.dwg|ghinkle|Feb 22, 2007 at 8:52|Layout: ANALYTICAL RESULTS



BA-01

MEDIUM	TPH-G	TPH-D	B	T	E	X	MTBE	ETBE
SOIL	ND	ND	ND	ND	ND	ND	0.003	ND
VAPOR	52	ND	ND	ND	ND	ND	ND	ND
GW	2100	110,000	ND	ND	ND	ND	9.2	5.4

BA-06

MEDIUM	TPH-G	TPH-D	B	T	E	X	MTBE
SOIL	ND	ND	ND	ND	ND	ND	ND
GW	ND	ND	ND	ND	ND	ND	ND

BA-02

MEDIUM	TPH-G	TPH-D	B	T	E	X	MTBE
SOIL	0.68	ND	ND	ND	ND	ND	ND
VAPOR	10	ND	ND	ND	ND	ND	ND
GW	1500	5300	ND	ND	ND	ND	ND

BA-05

MEDIUM	TPH-G	TPH-D	B	T	E	X	MTBE
SOIL	ND	ND	ND	ND	ND	ND	ND
GW	ND	ND	ND	ND	ND	ND	ND

BA-03

MEDIUM	TPH-G	TPH-D	B	T	E	X	MTBE
SOIL	ND	ND	ND	ND	ND	ND	ND
VAPOR	11	ND	ND	ND	ND	ND	ND
GW	230	ND	ND	ND	ND	ND	ND

BA-07

MEDIUM	TPH-G	TPH-D	B	T	E	X	MTBE
SOIL	ND	ND	ND	ND	ND	ND	ND
GW	ND	ND	ND	ND	ND	ND	ND

BA-04

MEDIUM	TPH-G	TPH-D	B	T	E	X	MTBE
SOIL	ND	ND	ND	ND	ND	ND	ND
VAPOR	13	ND	ND	ND	ND	ND	ND
GW	ND	ND	ND	ND	ND	ND	ND

LEGEND:

- BORING LOCATION
- WELLS ABANDONED
- GW GROUNDWATER
- ND NOT DETECTED ABOVE LABORATORY REPORTING LIMTS

SOIL UNITS IN MILLIGRAMS (mg/kg)

VAPOR & GW UNITS IN MICROGRAMS (mg/L)

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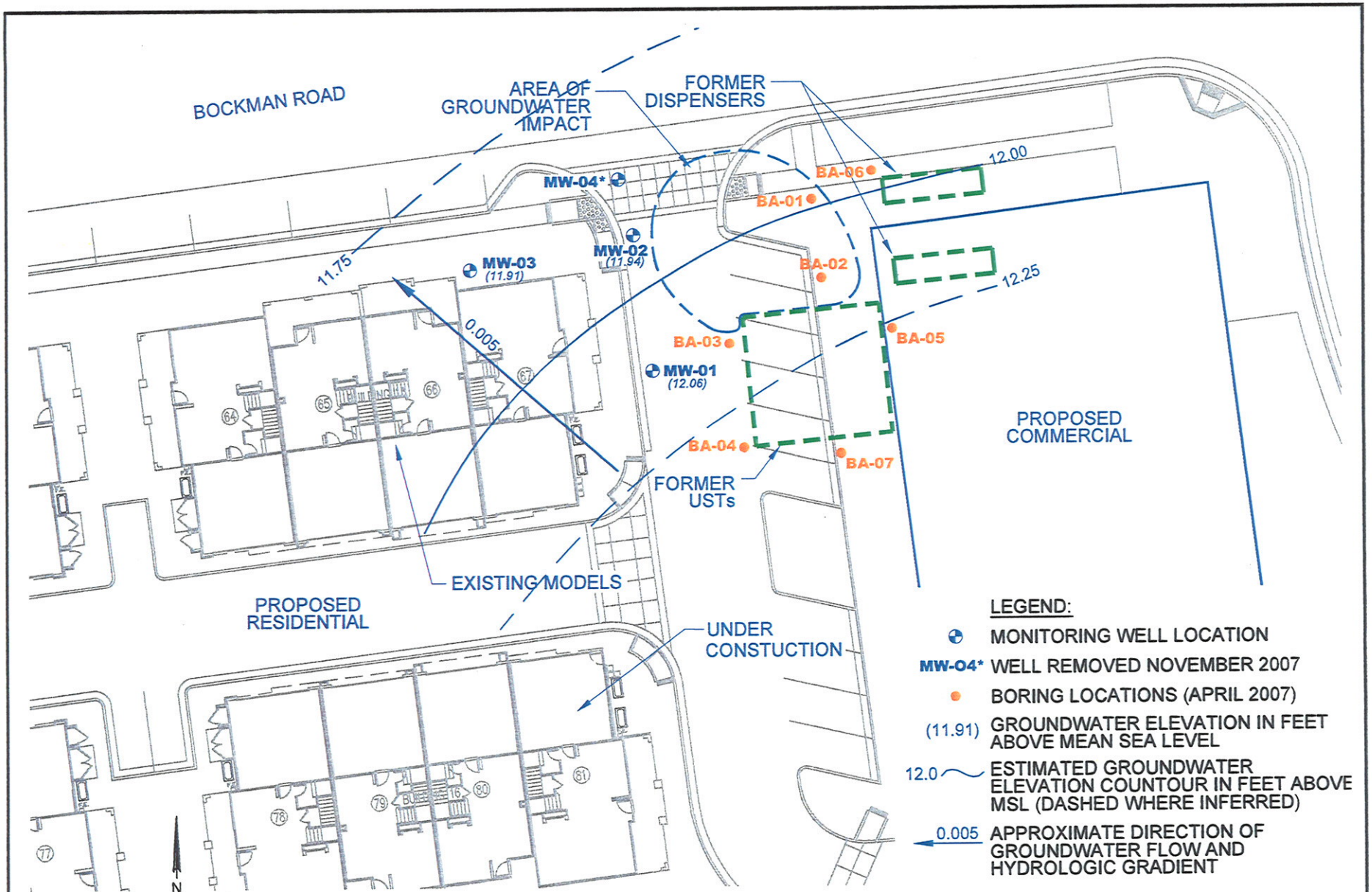
FOR:
OLSON - SAN LORENZO
1210-1366 BOCKMAN ROAD
SAN LORENZO, CA

SITE PLAN WITH ANALYTICAL DATA

FIGURE: 7

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
04OT.29215.54	GH	JA		5/3/07

FILEPATH:Q:\CADD-61\004 Redlands\OLSON CO\04OT.29215.54\29215 BORING LOCALS.dwg|ghinkle|May 17, 2007 at 9:51|Layout: ANALYTICAL DATA



SECOR
25864-F BUSINESS CENTER DRIVE
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PHONE: (909) 335-6116 FAX:(909) 335-6120

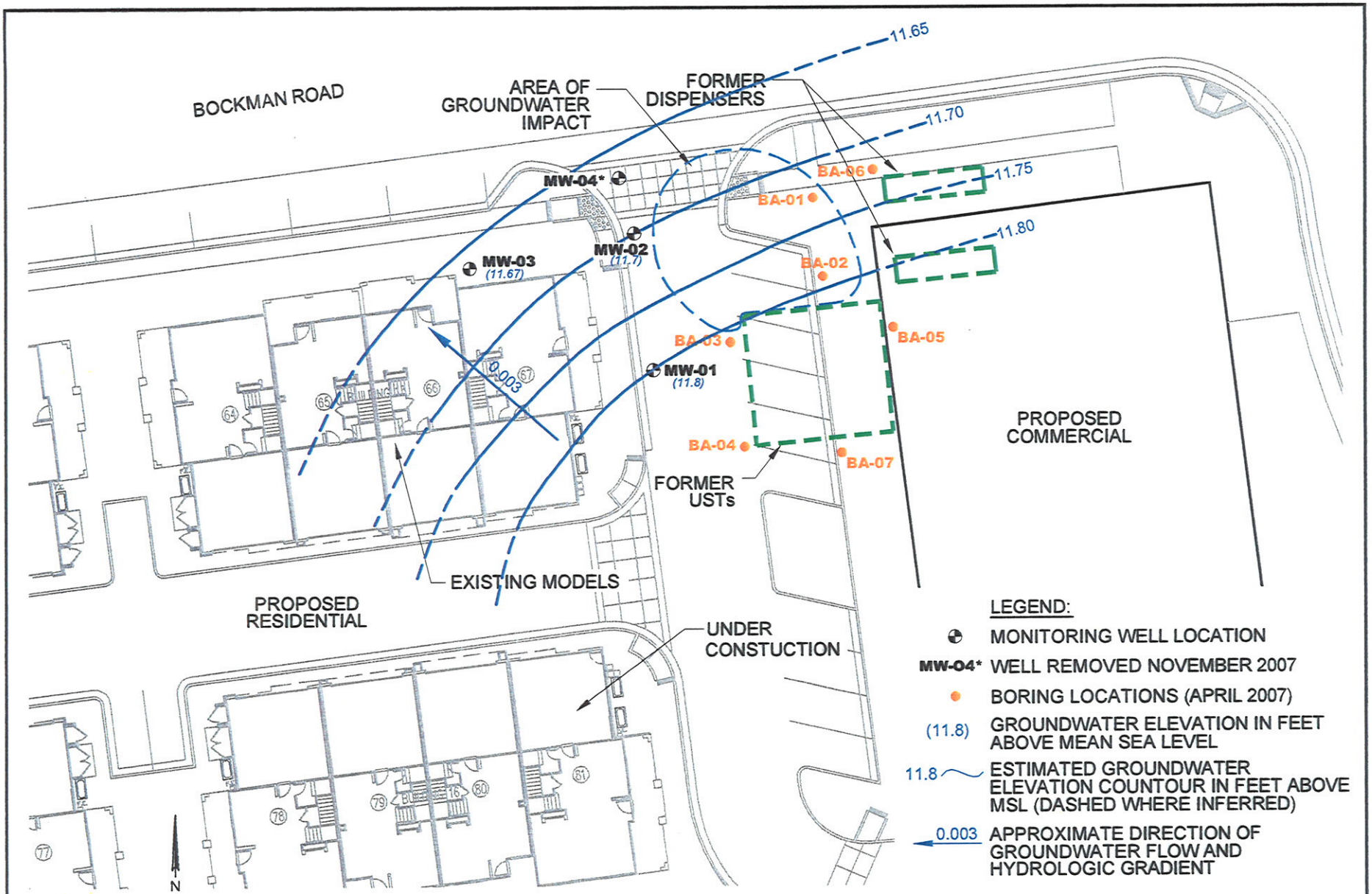
FOR:
VILLAGE WALK
1210 BOCKMAN ROAD
SAN LORENZO, CA

GROUNDWATER GRADIENT MAP

FIGURE: 8

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
04OT.29215.69	GH/JBL	JA		3/26/08

FILEPATH:Q:\CADD-10\Other Office Work\Office 04\29215 MW LOCATION MAP.dwg|ssmith|Mar 26, 2008 at 15:02|Layout: SITEMAP



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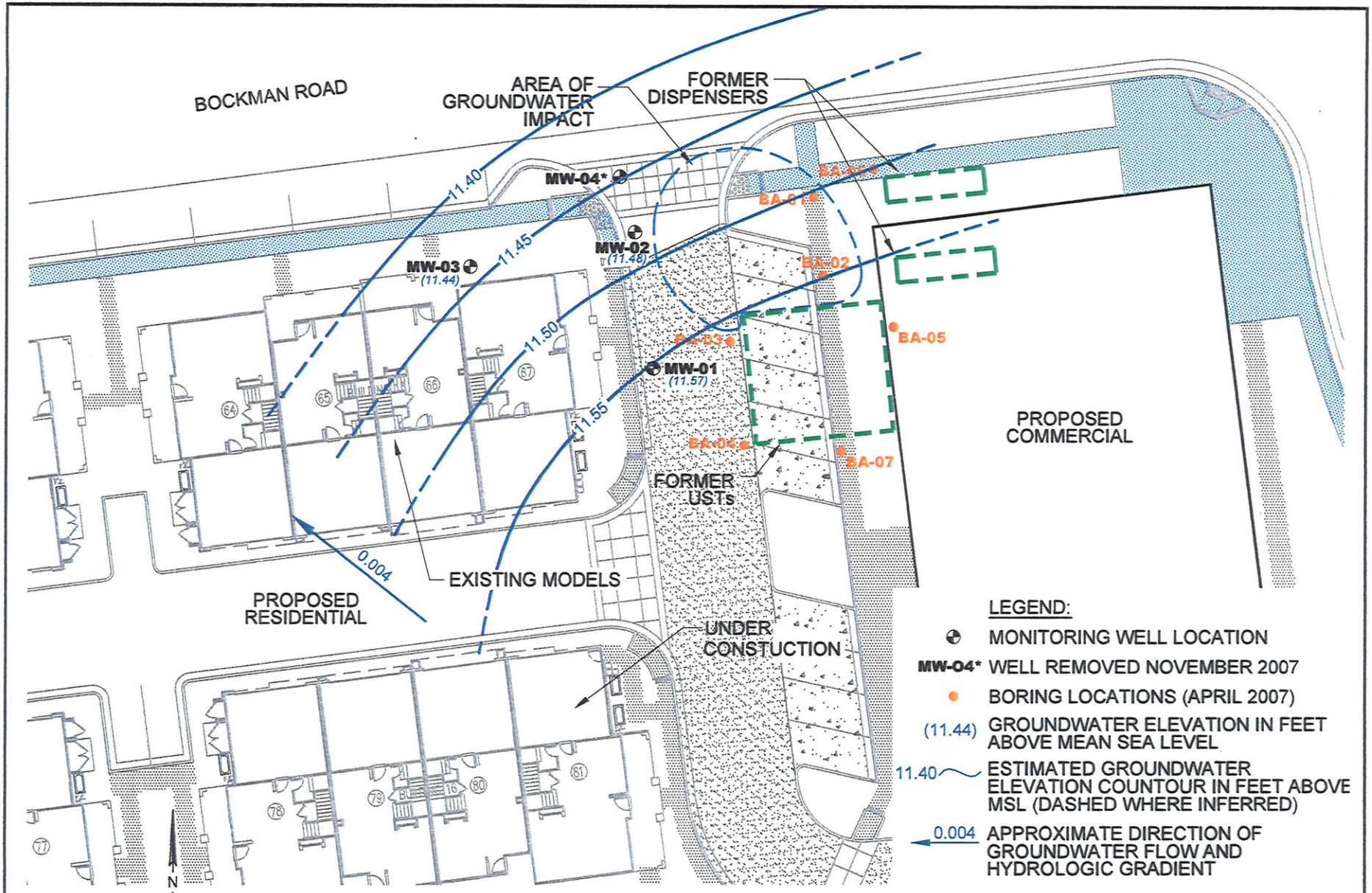
FOR:
VILLAGE WALK
1210 BOCKMAN ROAD
SAN LORENZO, CA

GROUNDWATER GRADIENT MAP

FIGURE: 9

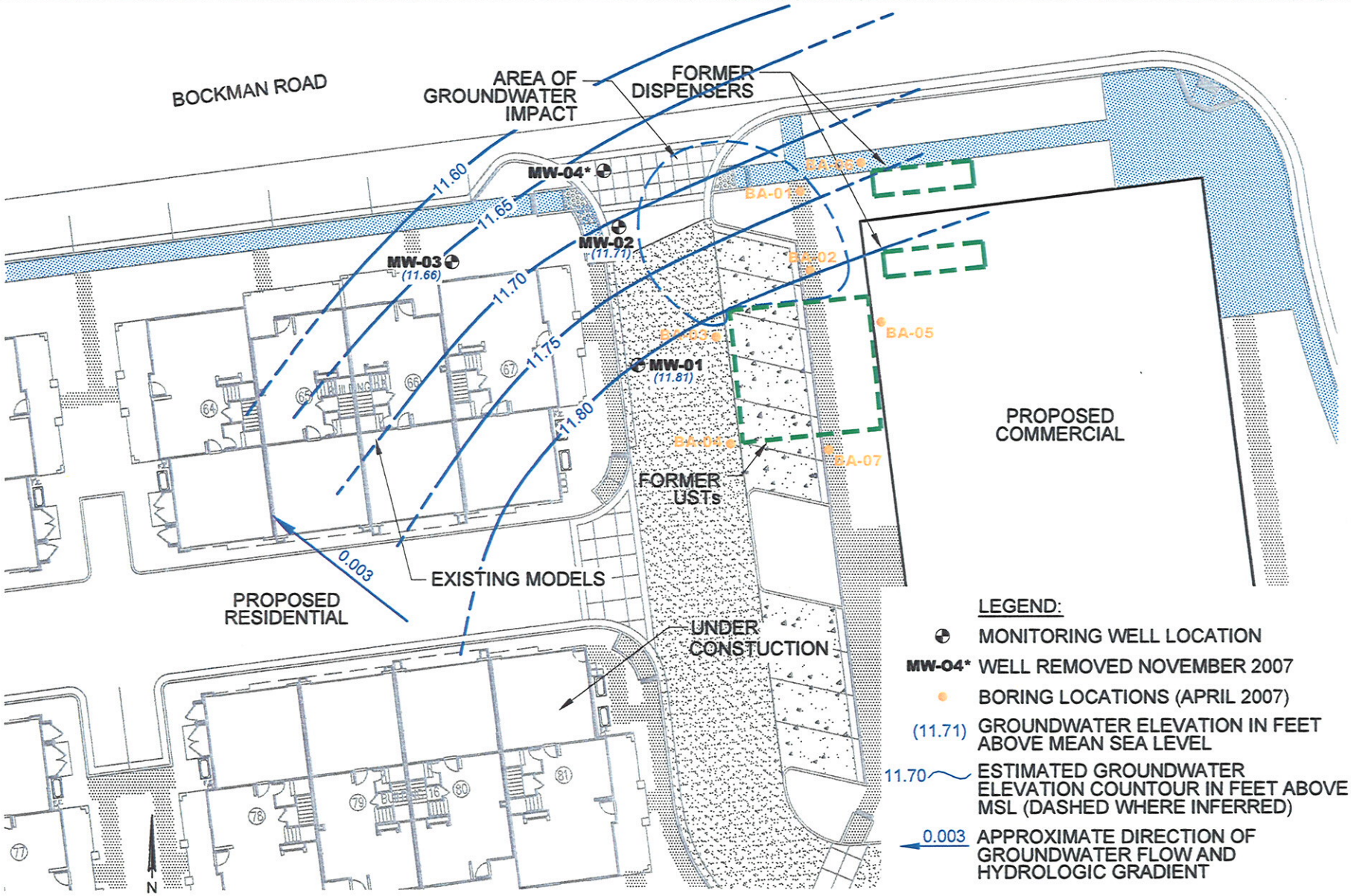
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
04OT.29215.69	GH/JBL	JA		06/19/08

FILEPATH:Q:\CADD-94\00_OTHER OFFICES\Redlands\Village_Walk\dwg\29215 fig-3.dwg|jlieberman|Jun 19, 2008 at 11:50|Layout: SITEMAP



SECOR
25864-F BUSINESS CENTER DRIVE
REDLANDS, CA 92374
PHONE: (909) 335-6116 FAX: (909) 335-6120

FOR:		GROUNDWATER GRADIENT MAP		FIGURE:
VILLAGE WALK 1210 BOCKMAN ROAD SAN LORENZO, CA				10
JOB NUMBER: 04OT.29215.69	DRAWN BY: GH/JBL	CHECKED BY: JA	APPROVED BY:	DATE: 09/22/08



SECOR
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FOR:		GROUNDWATER GRADIENT MAP	FIGURE:
VILLAGE WALK 1210 BOCKMAN ROAD SAN LORENZO, CA			11
JOB NUMBER: 04OT.29215.69	DRAWN BY: GH/JBL	CHECKED BY: JA	APPROVED BY:	DATE: 12/15/08

FILEPATH:M:\00_OTHER OFFICES\Redlands\Village_Walk\4th-QTR-2008\29215 fig-3.dwg|jlieberman|Dec 15, 2008 at 8:52|Layout: SITEMAP

Table 1 A

Summary of Chemical Analysis of Soil Samples Collected from Soil Borings SB-4 and SB-5, EPA Test Methods 8260B and 8015M

Location	Depth (ft)	Date	Gasoline	Benzene	n-Butylbenzene	tert-Butylbenzene	Ethylbenzene	Isopropylbenzene	p-Isopropyltoluene	Methyl-tert-butyl ether (MtBE)	Naphthalene	n-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes, m-, p-	Xylenes, o-
SB-4	**2**	11/3/2003	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB-4	**5**	11/3/2003	**4.9**	**0.003**	**0.050**	**0.002**	**0.007**	**0.030**	**0.004**	**0.11**	**0.088**	**0.11**	**0.024**	**0.002**	**0.005**	ND
SB-5	**2**	11/3/2003	ND	ND	ND	ND	**0.002**	ND	ND	ND	ND	ND	ND	ND	**0.009**	**0.003**
SB-5	**5**	11/3/2003	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reporting Limit mg/Kg			**0.50**	**0.001**	**0.002**	**0.002**	**0.001**	**0.001**	**0.002**	**0.005**	**0.002**	**0.001**	**0.001**	**0.001**	**0.002**	**0.001**

*Only VOCs detected in one or more sample are included in this table. All other VOCs were not detected above laboratory reporting limits in any of the samples.

Table 1 (Continued), A

Summary of Chemical Analysis of Select Soil Samples Collected from Soil Borings SB-2 and SB-7, EPA Test Methods GCMS and GC/FID

Location	Depth (ft)	Date	Carbon Chain C6-C12	Carbon Chain C12-C2	Carbon Chain C22-C4
SB-2	2	12/15/2004	ND	ND	ND
SB-2	5	12/15/2004	ND	ND	ND
SB-7	2	12/15/2004	ND	ND	ND
SB-7	8	12/15/2004	ND	ND	ND
CRWQCB Maximum Soil Screening Levels mg/Kg			**100**	**100**	**1,000**
Reporting Limit mg/Kg			**0.50**	**10**	**10**

Table 1 (Continued)A

Summary of Chemical Analysis of Select Soil Samples Collected from Soil Borings SP-1 through SB-3, EPA Test Methods 8081

Location	Depth (ft)	Date	Aldrin	Alpha-BHC	Beta-BHC	Delta-BHC	Gamma-BHC (Lindane)	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endrin	Methoxychlor
SP-1	0.5	12/16/2004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SP-2	0.5	12/16/2004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SP-3	0.5	12/16/2004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reporting Limit µg/Kg			**10**	**10**	**10**	**10**	**10**	**100**	**20**	**20**	**20**	**20**	**10**	**20**	**20**	**100**

Table 1 (Continued)

Summary of Chemical Analysis of Select Soil Samples Collected from Soil Boring SB-7 by EPA Test Method 8082

Location	Depth (ft)	Date	Arochlor 1016 (PCB)	Arochlor 1221 (PCB)	Arochlor 1232 (PCB)	Arochlor 1242 (PCB)	Arochlor 1248 (PCB)	Arochlor 1254 (PCB)	Arochlor 1260 (PCB)
SB-7	8	12/15/2004	ND	ND	ND	ND	ND	ND	ND
Reporting Limit µg/Kg			**50**	**50**	**50**	**50**	**50**	**50**	**50**

Table 1B

Summary of Chemical Analysis of Groundwater Samples Collected from Borings HP-1 through HP-3, EPA Test Methods 8260B and GCMS

Location	Depth (ft)	Date	TPH-g	Acetone	2-Butanone (MEK)	1,2-Dichloroethane	cis-1,2-Dichloroether	Methylene Chloride	Tetrachloroethene	Tetrachloroethene	Vinyl chloride	Xylenes, o-	Methyl-tert-butyl ether (MtBE)	Xylenes, m-, p-
HP-1	13	12/15/2004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.0**
HP-2	9	12/16/2004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HP-3	8	12/16/2004	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Federal/State MCL µg/L												**1,750**		**1,750**
Reporting Limit µg/L			**500**	**50**	**10**	**0.5**	**0.5**	**50**	**0.5**	**0.5**	**0.5**	**0.5**	**1.0**	**1.0**

*NA= Not Applicable, these groundwater samples were not analyzed for TPH-g

Table 2A
Summary of Soil Analytical Results
TPH by modified EPA 8015B (mg/Kg)
Olson - San Lorenzo
1245 - 1415 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.67

	Sample ID	Sampling Depth [1]	Sampling Date	TPH [2] (8015)[3] C6-C12[4]	TPH [2] (8015)[3] C13-C22[5]
	USEPA PRG (mg/Kg)			100[a]	100[a]
Excavation 1 (North)	N-1-5	5	12/20/2006	<0.02	<10
	N-2-5	5	12/20/2006	<0.02	<10
	S-1-5	5	12/20/2006	<0.02	<10
	S-2-5	5	12/20/2006	<0.02	<10
	E-1-5	5	12/20/2006	<0.02	<10
	W-1-5	5	12/20/2006	<0.02	<10
	B-1	10	12/20/2006	**120**	**13**
Excavation 2 (South)	N-3-5	5	12/20/2006	<0.02	<10
	N-4-5	5	12/20/2006	<0.02	<10
	S-3-5	5	12/20/2006	<0.02	<10
	S-4-5	5	12/20/2006	**0.78**	**19**
	E-2-5	5	12/20/2006	<0.02	<10
	W-2-5	5	12/20/2006	<0.02	**23**
	B-2	10	12/20/2006	**2.7**	<10
Impacted Soil	CS-1	Composite	12/20/2006	**4.4**	<10
	CS-2	Composite	12/20/2006	**14**	**14**
	CS-3	Composite	12/20/2006	**47**	<10
Clean Soil	CS-4	Composite	12/20/2006	<0.02	**21**
	CS-5	Composite	12/20/2006	<0.02	<10

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in mg/Kg
(3) EPA Test Method
(4) Characteristic carbon chain of Gasoline
(5) Characteristic carbon chain of Diesel
a - Maximum Soil Screening Levels in mg/Kg; soil located <20 feet above groundwater;
Source: Cal/EPA CRWQCB-LA Interim Site Assessment & Cleanup Guidebook, 19
< - Indicates the concentration was not detected about the laboratory method detection limit.
Only samples analyzed which reported detections were included on the table.

ABBREVIATIONS:
TPH - Total petroleum hydrocarbons
USEPA PRG - United States Environmental Protection Agency Preliminary Remediation Goals

Table 2B
Summary of Soil Analytical Results
VOCs by EPA 8260B (mg/Kg)
Olson - San Lorenzo
1245 - 1415 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.67

	Sample ID	Sampling Depth [1]	Sampling Date	VOCs [2] (8260)[3]					
				Methyl-tert-butyl ether (MtBE)	tert-Butanol (TBA)	Benzene	Ethylbenzene	Toluene	Total Xylenes
	USEPA PRG for Residential Soils(mg/Kg)			62		0.6	8.9	5200	2700
	Samples								
Excavation 1 (North)	N-1-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	N-2-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	S-1-5	5	12/20/2006	**0.015**	**0.057**	<0.005	<0.005	<0.001	<0.003
	S-2-5	5	12/20/2006	0.002	<0.02	<0.005	<0.005	<0.001	<0.003
	E-1-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	W-1-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	B-1	10	12/20/2006	**0.4**	<0.02	<0.005	**0.15**	<0.001	<0.003
Excavation 2 (South)	N-3-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	N-4-5	5	12/20/2006	**0.015**	**0.028**	<0.005	<0.005	<0.001	<0.003
	S-3-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	S-4-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	E-2-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	W-2-5	5	12/20/2006	<0.01	<0.02	<0.005	<0.005	<0.001	<0.003
	B-2	10	12/20/2006	**0.003**	<0.02	<0.005	**0.003**	<0.001	<0.003
Impacted Soil	CS-1	Composite	12/20/2006	**0.005**	<0.02	<0.005	**0.053**	**0.002**	**0.29**
	CS-2	Composite	12/20/2006	<0.01	<0.02	<0.005	**0.023**	<0.001	**0.74**
	CS-3	Composite	12/20/2006	<0.01	<0.02	<0.005	**0.18**	<0.001	**0.27**
Clean Soil	CS-4	Composite	12/20/2006	<0.01	<0.02	<0.005	<0.005	**0.004**	**0.005**
	CS-5	Composite	12/20/2006	<0.01	<0.02	<0.005	<0.005	**0.002**	**0.003**

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in mg/Kg
(3) EPA Test Method
< - Indicates the concentration was not detected above the laboratory method detection limit.

ABBREVIATIONS:
VOCs - volatile organic compounds
SEPA PRG - United States Environmental Protection Agency Preliminary Remediation Goals

Table 2C

Summary of Soil Analytical Results
Total Lead By EPA 6010B (mg/Kg)
Olson - San Lorenzo
1245 - 1415 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.67

	Sample ID	Sampling Depth (1)	Sampling Date	ad by 6010
	USEPA PRG (mg/Kg)			150
	Samples			
Excavation 1 (North)	N-1-5	5	12/20/2006	4.06
	N-2-5	5	12/20/2006	3.97
	S-1-5	5	12/20/2006	4.27
	S-2-5	5	12/20/2006	4.10
	E-1-5	5	12/20/2006	4.03
	W-1-5	5	12/20/2006	3.88
	B-1	10	12/20/2006	6.34
Excavation 1 (South)	N-3-5	5	12/20/2006	4.36
	N-4-5	5	12/20/2006	3.47
	S-3-5	5	12/20/2006	4.08
	S-4-5	5	12/20/2006	16.5
	E-2-5	5	12/20/2006	3.89
	W-2-5	5	12/20/2006	4.24
	B-2	10	12/20/2006	3.86
Clean Soil	CS-4	Composite	12/20/2006	5.84
	CS-5	Composite	12/20/2006	4.82

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in mg/Kg
(3) EPA Test Method
< - Indicates the concentration was not detected about the laboratory method detection li
ABBREVIATIONS:
SEPA PRG - United States Environmental Protection Agency Preliminary Remediation G
Pb - Lead

Table 3A

Summary of Soil Analytical Results
TPH by modified EPA 8015B (mg/Kg)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Depth [1]	Sampling Date	TPH [2] (8015)[3] C4-C12[4]	C12-C22[5]	C22-C40[6]
RWQCB MCL (mg/Kg)			100[a]	100[a]	1000[a]
BA-01-5	5	4/26/2007	<0.5	<10	<20
BA-02-7	7	4/26/2007	**0.68**	<10	<20
BA-03-7	7	4/26/2007	<0.5	<10	<20
BA-04-7	7	4/26/2007	<0.5	<10	<20
BA-05-8	8	4/27/2007	<0.5	<10	<20
BA-06-7	7	4/27/2007	<0.5	<10	<20
BA-07-7	7	4/27/2007	<0.5	<10	<20

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in mg/Kg
(3) EPA Test Method
(4) Characteristic carbon chain of Gasoline
(5) Characteristic carbon chain of Diesel
(6) Characteristic carbon chain of Oil
a - Maximum Soil Screening Levels in mg/Kg; soil located <20 feet above groundwater;
Source: Cal/EPA CRWQCB-LA Interim Site Assessment & Cleanup Guidebook, 1996.
< - Indicates the concentration was not detected above the laboratory method detection limit.
Only samples analyzed which reported detections were included on the table.

ABBREVIATIONS:
TPH - Total petroleum hydrocarbons
RWQCB MCL - Regional Water Quality Control Board Maximum Contaminant Level

Table 3B
Summary of Soil Analytical Results
VOCs by EPA 8260B (mg/Kg)
Olson - San Lorenzo
1245 - 1415 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Depth [1]	Sampling Date	VOCs [2] (8260)[3]										
			Methyl-tert-butyl ether (MtBE)	tert-Amyl Methyl Ether (TAME)	Diisopropyl Ether (DIPE)	Ethyl tert-Butyl Ether (EtBE)	tert-Butanol (TBA)	Benzene	Dibromoethane (EDB)	Dichloroethane (EDC)	Ethylbenzene	Toluene	Total Xylenes
USEPA PRG for Residential Soils(mg/Kg)			62	NR	NR	NR	NR	0.6	0.007	120	8.9	5200	2700
Samples													
BA-01-5	5	4/26/2007	**0.003**	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003
BA-02-7	7	4/26/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003
BA-03-7	7	4/26/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003
BA-04-7	7	4/26/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003
BA-05-8	8	4/27/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003
BA-06-7	7	4/27/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003
BA-07-7	7	4/27/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in mg/Kg
(3) EPA Test Method
< - Indicates the concentration was not detected above the laboratory method detection limit.

ABBREVIATIONS:
VOCs - volatile organic compounds
USEPA PRG - United States Environmental Protection Agency Preliminary Remediation Goals
NR - Not Reported

Table 3C
Summary of Soil Analytical Results
Total Lead By EPA 6010B (mg/Kg)
Olson - San Lorenzo
1245 - 1415 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Depth [1]	Sampling Date	Lead by 6010
USEPA PRG (mg/Kg)			150
Typical Background Concentrations in California Soils			12.4-97.1
Samples			
BA-01-5	5	4/26/2007	4.28
BA-02-7	7	4/26/2007	4.16
BA-03-7	7	4/26/2007	5.15
BA-04-7	7	4/26/2007	4.25
BA-05-8	8	4/27/2007	5.33
BA-06-7	7	4/27/2007	6.98
BA-07-7	7	4/27/2007	5.14

NOTES:
(1) Sample depth is reported as feet below ground surface

Table 3D

Summary of Soil Vapor Analytical Results
TPH by modified EPA 8015B (µg/L)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Depth [1]	Sampling Date	TPH [2] (8015)[3] C4-C12[4]	C12-C22[5]	Methane
RWQCB ESLs			26	26	NR
BA-01-V	5	4/26/2007	**52**	<50	<500
BA-02-V	5	4/26/2007	**10**	<50	<500
BA-03-V	5	4/26/2007	**11**	<50	<500
BA-04-V	5	4/26/2007	**13**	<50	<500

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in µg/L of air
(3) EPA Test Method
(4) Characteristic carbon chain of Gasoline
(5) Characteristic carbon chain of Diesel
< - Indicates the concentration was not detected about the laboratory method detection limit.

ABBREVIATIONS:
TPH - Total petroleum hydrocarbons
RWQCB ESLs - Regional Water Quality Control Board Enviromental Screening Levels

Table 3E
Summary of Soil Vapor Analytical Results
VOCs by EPA 8260B (µg/L)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Depth [1]	Sampling Date	VOCs [2] (8260)[3]										
			Methyl-tert butyl ether (MtBE)	tert-Amyl Methyl Ether (TAME)	Diisopropyl Ether (DIPE)	Ethyl tert-Butyl Ether (EtBE)	tert-Butanol (TBA)	Benzene	Dibromoethane (EDB)	Dichloroethane (EDC)	Ethyl-benzene	Toluene	Total Xylenes
CHHSLs			4	NR	NR	NR	NR	0.036	NR	0.05	NR	135	319
RWQCB ESLs			9.4	NR	NR	NR	2.6	0.085	0.034	0.12	420	63	150
Samples													
BA-01-V	5	4/26/2007	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BA-02-V	5	4/26/2007	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BA-03-V	5	4/26/2007	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BA-04-V	5	4/26/2007	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in µg/L of air
(3) EPA Test Method
< - Indicates the concentration was not detected about the laboratory method detection limit.

ABBREVIATIONS:
VOCs - volatile organic compounds
CHHSLs - California Human Health Screening Levels
RWQCB ESLs - Regional Water Quality Control Board Enviromental Screening Levels
NR - Not Reported

Table 3F

Summary of Groundwater Analytical Results
TPH by modified EPA 8015B (µg/L)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Depth [1]	Sampling Date	TPH [2] (8015)[3] C4-C12[4]	TPH [2] (8015)[3] C12-C22[5]
USEPA PRG (µg/L)			100	100
BA-01-W	9	4/26/2007	**2,100**	**110,000**
BA-02-W	9	4/26/2007	**1,500**	**5,300**
BA-03-W	9	4/26/2007	**230**	<50
BA-04-W	9	4/26/2007	<50	<50
BA-05-W	9	4/27/2007	<0.1	<0.4
BA-06-W	9	4/27/2007	<0.1	<0.4
BA-07-W	9	4/27/2007	<0.1	<0.4

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in µg/L
(3) EPA Test Method
(4) Characteristic carbon chain of Gasoline
(5) Characteristic carbon chain of Diesel
< - Indicates the concentration was not detected about the laboratory method detection limit.

ABBREVIATIONS:
TPH - Total petroleum hydrocarbons
USEPA PRG - United States Environmental Protection Agency Preliminary Remediation Goals

Table 3C

Summary of Groundwater Analytical Results
VOCs by EPA 8260B (µg/L)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Depth [1]	Sampling Date	VOCs [2] (8260)[3]										
			Methyl-tert-butyl ether (MtBE)	tert-Amyl Methyl Ether (TAME)	Diisopropyl Ether (DIPE)	Ethyl tert-Butyl Ether (EtBE)	tert-Butanol (TBA)	Benzene	Dibromo ethane (EDB)	Dichloro ethane (EDC)	Ethyl-benzene	Toluene	Total Xylenes
CA MCLs (µg/L)			13	NR	NR	NR	NR	1	0.5	0.5	700	150	1750
Fedral MCLs (µg/L)			NR	NR	NR	NR	NR	5	0.05	5	700	1000	10000
Samples													
BA-01-W	9	4/26/2007	**9.2**	<0.5	<0.5	**5.4**	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BA-02-W	9	4/26/2007	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BA-03-W	9	4/26/2007	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BA-04-W	9	4/26/2007	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BA-05-W	9	4/27/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	<0.001	<0.003
BA-06-W	9	4/27/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	**0.5**	<0.003
BA-07-W	9	4/27/2007	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.005	**0.7**	<0.003

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in µg/L
(3) EPA Test Method
< - Indicates the concentration was not detected above the laboratory method detection limit.

ABBREVIATIONS:
VOCs - volatile organic compounds
CA MCLs - Maximum Contaminant Levels for Drinking Water set by the California Department of Health Services
Federal MCLs - Maximum Contaminant Levels for Drinking Water set by the US Environmental Protection Agency
NR - Not Reported

Table 4A

Summary of Soil Analytical Results
TPH by modified EPA 8015B (mg/Kg)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.69

Sample ID	Sampling Depth [1]	Sampling Date	TPH [2] (8015)[3] C4-C12[4]	C12-C22[5]
RWQCB MCL (mg/Kg)			100[a]	100[a]
MW-01-18	18	11/7/2007	<0.5	<10
MW-01-20	20	11/7/2007	<0.5	<10
MW-02-17	17	11/7/2007	<0.5	<10
MW-02-20	20	11/7/2007	**2.0**	<10
MW-03-13	13	11/7/2007	<0.5	<10
MW-03-20	20	11/7/2007	<0.5	<10
MW-04-13	13	11/7/2007	**6.1**	<10
MW-04-20	20	11/7/2007	**2.9**	<10

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in mg/Kg
(3) EPA Test Method
(4) Characteristic carbon chain of Gasoline
(5) Characteristic carbon chain of Diesel
a - Maximum Soil Screening Levels in mg/Kg; soil located <20 feet above groundwater;
Source: Cal/EPA CRWQCB-LA Interim Site Assessment & Cleanup Guidebook, 1996.
< - Indicates the concentration was not detected above the laboratory method detection limit.
Only samples analyzed which reported detections were included on the table.

ABBREVIATIONS:
TPH - Total petroleum hydrocarbons
RWQCB MCL - Regional Water Quality Control Board Maximum Contaminant Level

Table 4/15

Summary of Soil Analytical Results
VOCs by EPA 8260B (mg/Kg)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.69

Sample ID	Sampling Depth (1)	Sampling Date	VOCs (2) (8260)(3) Acetone	n-Butylbenzene	sec-butylbenzene	Methyl-tert-butyl ether (MtBE)	tert-Amyl Methyl Ether (TAME)	Diisopropyl Ether (DIPE)	Ethyl tert-Butyl Ether (EtBE)	tert-Butanol (TBA)	Benzene	Dibromoethane (EDB)	1,3,5 Trimethylbenzene	1,2,4 Trimethylbenzene	Dichloroethane (EDC)	Isopropylbenzene	n-Propylbenzene	Ethylbenzene	Toluene	Total Xylenes
USEPA PRG for Residential			1600	240	220	62	NR	NR	NR	NR	0.6	0.007	21	52	120	NR	240	8.9	5200	2700
Samples																				
MW-01-18	18	11/7/2007	<0.050	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005	**0.001**	<0.003
MW-01-20	20	11/7/2007	**0.083**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	**0.002**	<0.001	**0.011**
MW-02-17	17	11/7/2007	<0.050	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005	<0.001	<0.003
MW-02-20	20	11/7/2007	<0.050	**0.015**	**0.010**	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.01	<0.01	**0.004**	**0.016**	<0.005	<0.001	<0.003
MW-03-13	13	11/7/2007	<0.050	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005	**0.002**	<0.003
MW-03-20	20	11/7/2007	<0.050	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005	**0.001**	<0.003
MW-04-13	13	11/7/2007	**0.27**	**0.006**	**0.011**	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	**0.002**	**0.003**	<0.01	**0.003**	**0.005**	**0.041**	**0.021**	**0.18**
MW-04-20	20	11/7/2007	**0.40**	**0.002**	**0.003**	<0.002	<0.002	<0.002	<0.002	<0.02	<0.005	<0.001	**0.001**	**0.002**	<0.01	**0.001**	**0.002**	**0.026**	**0.013**	**0.116**

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in mg/Kg
(3) EPA Test Method
< - Indicates the concentration was not detected above the laboratory method detection limit.

ABBREVIATIONS:
VOCs - volatile organic compounds
USEPA PRG - United States Environmental Protection Agency Preliminary Remediation Goals
NR - Not Reported

Table 3C

Summary of Groundwater Analytical Results
TPH by modified EPA 8015B (µg/L)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Date	TPH [2] (8015)[3]	
		C4-C12[4]	C12-C22[5]
MW-01-W	11/9/2007	<500	<400
MW-02-W	11/9/2007	**710**	<400
MW-03-W	11/9/2007	<500	<400
MW-04-W	11/7/2007	<500	<400

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in µg/L
(3) EPA Test Method
(4) Characteristic carbon chain of Gasoline
(5) Characteristic carbon chain of Diesel
< - Indicates the concentration was not detected above the laboratory method detection limit.

ABBREVIATIONS:
TPH - Total Petroleum Hydrocarbons

Table 4D

Summary of Groundwater Analytical Results
VOCs by EPA 8260B (µg/L)
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
SECOR Job No.: 04OT.29215.68

Sample ID	Sampling Date	VOCs [2] (8260)[3]															
		Methyl-tert-butyl ether (MtBE)	tert-Amyl Methyl Ether (TAME)	Diisopropyl Ether (DIPE)	Ethyl tert-Butyl Ether (EtBE)	tert-Butanol (TBA)	Benzene	1,2 Dibromoethane (EDB)	1,2 Dichloroethane (EDC)	Ethyl-benzene	Toluene	Total Xylenes	n-Butylbenzene	sec-Butylbenzene	n-Propylbenzene	Isopropylbenzene	Napthalene
CA MCLs (µg/L)		13	NR	NR	NR	NR	1	NR	0.5	300	150	1750	NR	NR	NR	NR	NR
Fedral MCLs (µg/L)		NR	NR	NR	NR	NR	5	NR	5	700	1000	10000	NR	NR	NR	NR	NR
Samples																	
MW-01-W	11/9/2007	<1.0	<1.0	<1.0	<1.0	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5
MW-02-W	11/9/2007	<1.0	<1.0	<1.0	<1.0	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	13	10	21	6.7	0.8
MW-03-W	11/9/2007	<1.0	<1.0	<1.0	<1.0	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5
MW-04-W	11/7/2007	<1.0	<1.0	<1.0	<1.0	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5

NOTES:
(1) Sample depth is reported as feet below ground surface
(2) Concentrations reported in µg/L
(3) EPA Test Method
< - Indicates the concentration was not detected above the laboratory method detection limit.

ABBREVIATIONS:
VOCs - Volatile Organic Compounds
CA MCLs - Maximum Contaminant Levels established by the State of California
Federal MCLs - Maximum Contaminant Levels established by the Federal Environmental Protection Agency
NR - Not Reported

Table 4

Summary of Historical Groundwater Analytical Results
TPH and VOCs Detected in Groundwater
Olson - San Lorenzo
1210 Bockman Road
San Lorenzo, California
Stantec Job No.: 04OT.29215.69

Sample ID	Sampling Date	TPH[1] 8015[2]		VOCs[1] 8260[2]				
		C4-C12[3]	C12-C22[4]	n-Butylbenzene	sec-Butylbenzene	n-Propylbenzene	Isopropylbenzene	All Other VOCs
CA MCLs (µg/L)		NR	NR	NR	NR	NR	NR	varies
Fedral MCLs (µg/L)		NR	NR	NR	NR	NR	NR	varies
RWQCB ESLs (µg/L)		100	100	NR	NR	NR	NR	varies
Samples								
MW-01-W	11/9/2007	<500	<400	<1.0	<0.5	<0.5	<0.5	ND
	3/17/2008	<100	<100	<1.0	<0.5	<0.5	<0.5	ND
	6/10/2008	<50	**64**	<1.0	<1.0	<1.0	<0.5	ND
	9/8/2008	<50	<50	<1.0	<1.0	<1.0	<0.5	ND
	12/8/2008	<50	<50	NA	NA	NA	NA	ND
MW-02-W	11/9/2007	**710**	<400	**13**	**10**	**21**	**6.7**	Naphthalene 0.8 ug/L
	3/17/2008	**410**	<100	**3.4**	<0.5	**2.2**	**1.0**	ND
	6/10/2008	**400**	**230**	**1.4**	**1.7**	<1.0	**0.91**	ND
	9/80/2008	**300**	**170**	**1.1**	**1.2**	<1.0	<0.5	ND
	12/8/2008	**590**	**64**	<1.0	<1.0	<1.0	<0.5	ND
MW-03-W	11/9/2007	<500	<400	<1.0	<0.5	<0.5	<0.5	ND
	3/17/2008	<100	<100	<1.0	<0.5	<0.5	<0.5	ND
	6/10/2008	<50	<50	<1.0	<1.0	<1.0	<0.5	ND
	9/8/2008	<50	<50	<1.0	<1.0	<1.0	<0.5	ND
	12/8/2008	<50	**66**	<1.0	<1.0	<1.0	<0.5	ND
MW-04-W[5]	11/7/2007	<500	<400	<1.0	<0.5	<0.5	<0.5	ND

NOTES:
(1) Concentrations reported in micrograms per liter (µg/L)
(2) EPA Test Method
(3) Characteristic carbon chain of Gasoline
(4) Characteristic carbon chain of Diesel
(5) MW-04 was removed due to conflict with construction activities
< - Indicates the concentration was not detected above the laboratory method detection limit.
Highlighted yellow boxes indicate most recent laboratory data.

ABBREVIATIONS:
VOCs - Volatile Organic Compounds
TPH - Total Petroleum Hydrocarbons
CA MCLs - Maximum Contaminant Levels established by the State of California
Federal MCLs - Maximum Contaminant Levels established by the Federal Environmental Protection Agency
RWQCB ESLs - Environmental Screening Levels for Potential Source of Drinking Water established by the San Fransisco Bay Regional Water Quality Control Board (November 2007)
NR - Not Reported
NA - Not Analyzed