Ultramar, Inc.

May 25, 2010

Mr. Jerry Wickham
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

SUBJECT: WORK PLAN FOR SUBUSRFACE INVESTIGATION
FORMER BEACON STATION NO. 12574
22315 REDWOOD ROAD RWQCB Case No. 01-0167
CASTRO VALLEY, CALIFORNIA ACDEH: RO0000355

Mr. Wickham:

Please find enclosed the **Work Plan for Subsurface Investigation** for the above-referenced facility. Pursuant to your requests, I declare, under penalty of perjury, that the following information and/or recommendations contained in the attached report are true and correct to the best of my knowledge.

Please call if you have any questions or comments regarding this letter or the enclosed report (210) 345-4663.

Sincerely,
ULTRAMAR INC.

C. Shay Wideman
Director – Environmental Liability Management

Enclosures

cc w/o encl. Mr. Ken Mateik, Horizon Environmental

HORIZON ENVIRONMENTAL INC.

Specialists in Site Assessment, Remedial Testing, Design and Operation

May 27, 2010

Mr. Jerry Wickham
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: **Work Plan for Subsurface Investigation**
Former Beacon Station 12574 RWQCB Case No. 01-0167
22315 Redwood Road, Castro Valley, California ACEHS Case No. 00355

Mr. Wickham:

At the request of Ultramar Inc., Horizon Environmental Inc. (Horizon) is forwarding the enclosed *Work Plan for Subsurface Investigation* dated May 27, 2010.

Please call Horizon at 916-939-2170 if you have any questions or require additional information.

Sincerely,
HORIZON ENVIRONMENTAL INC.

Karen P. Liptak
Staff Geologist

Enclosure

cc: Mr. C. Shay Wideman, Valero Energy Corp.
Mr. Allen Shin, Banya Investment LLC
Mr. Bill Courtney, Property Manager
Mr. Ali Kashikar
Mr. Phillip and Mrs. Meeiru Tai

HORIZON ENVIRONMENTAL INC.

Specialists in Site Assessment, Remedial Testing, Design and Operation

May 27, 2010

Mr. Jerry Wickham, Haz Mat Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: **Work Plan for Subsurface Investigation**
Former Beacon Station No. 12574 RWQCB Case No. 01-0167
22315 Redwood Road, Castro Valley, California ACEHS Case No. 00355

Mr. Wickham:

At the request of Ultramar Inc. (Ultramar), Horizon Environmental Inc. (Horizon) has prepared this letter work plan for additional subsurface investigation work at the above-referenced site (Site). Preparation of this work plan was requested by the Alameda County Environmental Health Services (ACEHS) in their letter dated March 25, 2010 (see Attachment A). The purpose of the additional subsurface work is to investigate petroleum hydrocarbons in soil and groundwater beneath the Site, and utilize the results to prepare a Site Conceptual Model (SCM), a Tier 2 Risk-Based Corrective Action (RBCA) analysis, and a Corrective Action Plan (CAP) for the Site. This work plan was developed in general accordance with the Regional Water Quality Control Board (RWQCB) document Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites and ACEHS guidelines.

Site Description

The Site is located on the southwestern corner of the intersection of Redwood Road and Grove Way in Castro Valley, California, as depicted on the Site Location Map (Figure 1). The Site is bounded by Grove Way to the north, a vacant office building to the south, Redwood Road to the east, and private residences to the west. Chevron #9-2960 was formerly located at 2416 Grove Avenue, northeast of the Beacon site and across the intersection of Grove Avenue and Redwood Road. The Chevron site is an open Fuel Leak case (RWQCB Case No. 01-0346 and ACEHS Case No. 0275).

Existing site facilities include a 7-11 convenience store and other commercial buildings situated on the western portion of the Site extending to the property line, and a parking lot and landscaping areas situated on the central and eastern portions of the Site. Former site facilities included eight former USTs located in the southern portion of the property. There are currently five groundwater monitoring wells (MW-1 through MW-4 and MW-6) associated with the Site. Wells MW-1 through MW-4 are located within the property boundaries, while well MW-6 is located offsite to the south of the property on an adjoining

property. Well MW-5 was destroyed by a third party due to offsite construction activities. Locations of these and other pertinent site features are shown on the Site Map (Figure 2) and Site Area Map (Figure 3).

Site Background

Prior to 1981, the Site was leased and operated by Shell Oil Company. Acton, Mickelson, van Dam, Inc. (AMD) indicated that at least one previous generation of USTs had been installed and used at the Site by Shell Oil Company (AMD, November 1994). A copy of a 1960 (revised in 1975) Shell Oil Company Plot Plan showing the three former USTs, the former station building, and two former dispenser islands has been acquired by Horizon from the Alameda County Planning Department (see Attachment A). The three former fuel USTs were apparently removed by Shell Oil Company sometime prior to 1981, and replaced with four fuel USTs. During the installation of the four fuel USTs, a waste-oil UST and four dispenser islands were also installed along with a new station building. The former station building, two dispenser islands, and two residences were demolished and the three USTs removed to make room for the expanded station facilities. No records of any soil sampling have been located documenting this UST removal and replacement work.

Ultramar leased the Site and operated a Beacon retail gasoline service station from 1981 to 1987. Information provided by Ultramar indicates that the former Beacon site facilities included four former fuel USTs located in the southeastern portion of the property and one former waste-oil UST located in the southwestern portion of the property. These five USTs were removed by Ultramar in 1987 (AGS, June 1987). According to the 1994 AMD report, Ultramar was not aware of any specific incidents in which gasoline leaked from the former Beacon USTs or was spilled during filling of any of the USTs in use during the Ultramar lease period (AMD, 1994).

On May 5, 1987, five USTs were removed from the Site. The USTs consisted of one 500-gallon waste oil UST (Tank T1), two 5,000-gallon diesel USTs (Tanks T2 and T4), an 8,000-gallon gasoline UST (Tank T3), and a 7,000-gallon gasoline UST (Tank T5). Records made available by Ultramar indicate that these USTs were originally installed and owned by Shell (AMD, 1994). Analytical results of soil samples collected at the time of the UST removals indicated the presence of petroleum constituents in soil underlying the USTs. Over-excavation of the tank basin to a depth of approximately 20 feet below surface grade (bsg) was performed in May 1987. After completion of the over-excavation work, laboratory analysis of the seven soil samples collected at the limits of the excavation indicated concentrations of 125.5, 208.7, and 1,989 milligrams per kilogram (mg/Kg or parts per million [ppm]) of total volatile hydrocarbons (TVH) and 1,192 ppm of total extractable hydrocarbons (TEH) primarily along the northern side of the over-excavated UST excavation (AGS, 1987).

Groundwater monitoring and sampling has been performed at the Site since 1992. Historical groundwater level data has indicated that groundwater has been seasonally present beneath the Site between the depths of approximately 14 to 22 feet bsg, and the direction of groundwater flow beneath the Site has been consistently to the south-southwest beneath the

site. A Benzene Isoconcentration Map for the January 29, 2010 analytical data is shown on Figure 4. A detailed site history will be presented in the SCM report to be prepared.

In May 2009, Horizon retained CalClean, Inc. (CalClean) of Tustin, California to conduct HVDPE pilot testing at the Site. Approximately 220 pounds of vapor-equivalent TPHg and 1.6 pounds of vapor-equivalent benzene were removed from the subsurface, and approximately 1,660 gallons of groundwater were extracted from wells MW-1 and MW-2 during the 48-hour HVDPE testing. The results of the testing indicated HVDPE is effective in extracting gasoline vapors from the vadose zone soils beneath the former USTs, and in capturing impacted groundwater from beneath the Site, as reported in the High Vacuum Dual-Phase Extraction Testing Report (Horizon, June 2009).

In December 2009, Horizon retained TEG Northern California (TEG) of Rancho Cordova, California to advance five onsite direct-push soil gas probes (SG-1 through SG-5), and to collect and analyze the soil gas samples in TEG's mobile lab. No access was received from the offsite property owners for offsite soil gas sampling locations SG-6 and SG-7. The analytical soil gas results indicated that elevated concentrations of gasoline hydrocarbons are present in shallow soil gas samples SG-1, SG-2, SG-3 and SG-5. The highest concentrations were encountered in sample location SG-3, which was located adjacent to the front of the commercial buildings at the Site, as reported in the Soil Gas Survey and Soil Assessment Report (Horizon, January 2010).

Also in December 2009, Horizon retained Well Test Inc. (WTI) of San Jose, California to sample subsurface soil and groundwater from onsite borings B-1 through B-5. The boring locations were selected based on locations of the former USTs and dispenser islands. The analytical soil and groundwater results indicated that elevated concentrations of petroleum hydrocarbons are present in saturated soils beneath the western portion of the former UST pit, and are also present in unsaturated and saturated soils beneath the former eastern dispenser islands, as reported in the Soil Gas Survey and Soil Assessment Report (Horizon, January 2010). After review of the Soil Gas Survey and Soil Assessment Report by the ACEHS, the ACEHS issued a letter dated March 25, 2010 requesting a Work Plan for additional subsurface work (Attachment A).

Offsite Access

Horizon has continued to pursue off-site access for proposed soil gas sampling locations SG-6 and SG-7. A summary of the off-site access work performed to date includes the following:

- In January 2010, Horizon mailed a Request for Right of Entry Agreement to the owners of the properties where soil gas sampling locations SG-6 and SG-7 would be located. Horizon has not received a signed copy of the ROE Agreements back from the following parties, who are listed by Alameda County as the property owners:

Location SG-6:	Mr. Phillip and Mrs. Meeiru Tai
APN# 415-100-127	33366 Croation Way, Union City, CA 94587
Location SG-7:	Mr. Ali Kashikar
APN# 415-100-122-3	P.O. Box 20307, Castro Valley, CA 94546

- On May 5, 2010, Horizon sent via certified mail a Second Request for Signed Right of Entry Agreement to the owners of the properties where soil gas sampling locations SG-6 and SG-7 would be located. Tracking documents downloaded from the U.S. Postal Service website indicate that the Second Request was delivered and accepted at the Tai residence in Union City on May 6, 2010; and the Second Request was delivered and accepted at the Kashikar P.O. Box in Castro Valley on May 12, 2010.
- Horizon has left repeated voice mail messages for Mr. and Mrs. Tai, with no responses to date.
- Horizon has spoken with Mr. Al Kashikar, who has forwarded the matter to his attorney.
- To date, Horizon has not yet received a signed copy of the ROE Agreements from these offsite property owners and request that ACEHD become involved with this process.

Proposed Scope of Work

In order to further evaluate the petroleum hydrocarbon levels in soil beneath the Site, Horizon proposes the following work at the Site:

Task 1 Retain and schedule a C-57-licensed drilling contractor to perform drilling and well installation activities. Obtain an encroachment permit from the City of Castro Valley and/or the Alameda County Public Works Agency (ACPWA) for proposed offsite well MW-5A within the Sixth Avenue right-of-way, and well permits from the ACPWA for the proposed wells and probes described below. Update the Site Health and Safety Plan (SHSP), and notify Underground Services Alert (USA) for field location of known underground utilities. All field work will be performed in accordance with Horizon's Field Methods and Procedures contained in Attachment B.

Task 2 Advance four 8-inch diameter borings and three 10-inch diameter borings at the proposed locations shown on the Site Map (Figure 2) and Site Area Map (Figure 3). The borings will be used for the following wells and probes:

- The one offsite 8-inch boring will be drilled for the installation of proposed offsite 2-inch inside diameter (ID) groundwater monitoring well **MW-5A**. The Well Construction Diagram for proposed monitoring well MW-5A is shown as Figure 5, and shows the anticipated screened interval between the depths of approximately 10 and 25 feet bsg based upon historical groundwater monitoring data reported from former well MW-5 between 1993 and 2004.
- The three onsite 8-inch borings will be drilled for the installation of proposed onsite 2-inch ID vapor probes **VP-1, VP-2 and VW-3**. The Well Construction Diagram for proposed vapor probes VP-1, VP-2 and VW-3 is shown as Figure 6, and shows the anticipated screened interval between the depths of approximately 5 and 8 feet bsg.
- The three onsite 10-inch borings will be drilled for the installation of proposed onsite 4-inch ID vapor extraction wells **VW-1, VW-2 and VW-3**.

The Well Construction Diagrams for proposed vapor extraction wells VW-1, VW-2 and VW-3 are shown as Figures 7 and 8. Figure 7 shows the anticipated screened interval for vapor extraction wells VW-1 and VW-2 between the depths of approximately 10 and 20 feet bsg based upon the analytical soil data from borings B-4 and B-5, and Figure 8 shows the anticipated screened interval for vapor extraction well VW-3 between the depths of approximately 15 and 20 feet bsg. The shorter screened interval for vapor extraction well VW-3 is to minimize short-circuiting of the extracted vapors by the backfill materials present in the nearby former UST excavations, as reported to a depth of approximately 15 feet bsg in boring B-1 in December 2009.

Task 3 Collect soil samples with a California modified split-spoon sampler at 5-foot intervals or less. The soil samples will be field-screened for the presence of volatile hydrocarbons using a photo-ionization detector (PID) or equivalent device. The soils will be described using the Unified Soil Classification System (USCS). Drill cuttings will be temporarily stored in 55-gallon steel drums at the Site property prior to offsite disposal by an Ultramar-approved transporter and disposal contractor.

Submit selected soil samples under chain-of-custody documentation to a State-certified analytical laboratory to be analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), the volatile aromatics benzene, toluene, ethylbenzene, total xylenes (BTEX), and the fuel oxygenate methyl tert-butyl ether (MTBE) utilizing Environmental Protection Agency (EPA) Method 8260B. In addition, soil samples collected from borings VW-1, VW-2 and VW-3 will be analyzed for TPHd using modified EPA Method 8015M. A 4-point composite soil sample collected from the drilled soil cuttings will also be analyzed for total lead using modified EPA Method 6010 for disposal purposes.

Task 4 Develop and sample monitoring well MW-5A. Groundwater samples collected from monitoring well MW-5A will be submitted under Chain-of-Custody to a State-certified laboratory to be analyzed for TPHg, BTEX, and the fuel oxygenates MTBE, di-isopropyl ether (DIPE), ethyl-t-butyl ether (ETBE), tert-amyl methyl ether (TAME) and tert-butanol (TBA), and the lead scavenger compounds 1,2-dichloroethane (DCA) and 1,2-dibromoethane (EDB) using EPA Method 8260B.

Task 5 Survey wells VW-1, VW-2, and MW-5A using a licensed land surveyor for Global Positioning System (GPS) locations (X and Y coordinates) and elevations (Z coordinates) for GeoTracker EDF data evaluation of the groundwater flow direction beneath the Site area.

Task 6 Incorporate well MW-5A into the groundwater monitoring program at the Site.

Task 7 Prepare a Tier 2 Risk-Based Corrective Action (RBCA) analysis report for the Site. The purpose of a RBCA is to evaluate risks to human health and the environment, and to propose site-specific target levels (SSTLs) as clean-up criteria for the petroleum hydrocarbons present in the soil and groundwater beneath the Site. The results will be incorporated into the Site Conceptual Model (SCM) report described below.

Task 8 Prepare and submit a SCM for the Site approximately **90 days after** the drilling and installation of wells VW-1, VW-2 and MW-5A. The SCM report is designed to present the site characteristics, the current hypothesis for the release scenario, and the likely distribution of the chemicals of concern (COC) at the Site. The SCM provides a framework for additional site investigations and remedial planning efforts, and is a working hypothesis that will be revised as new information becomes available during future investigations or other work. If necessary, the SCM and Corrective Action Plan (CAP) report discussed below will be combined for the Site.

Include a Sensitive Receptor Survey and a Well Records Search in the SCM report for the Site. The Well Records Search will utilize California water well databases and additional data records compiled by the California Department of Water Resources (DWR) and the ACPWA. The Sensitive Receptor Survey and Well Records Search will be performed for a 2,000-foot radius of the Site.

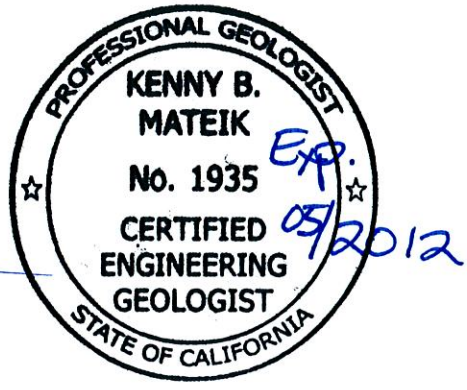
Prepare and submit a Corrective Action Plan (CAP) report for the Site. The purpose of a CAP is to recommend cost-effective remedial alternatives for the soil and groundwater based on previous investigations, feasibility testing work, and SSTLs for the Site. Information utilized in the preparation of the SCM and RBCA reports will be utilized for the CAP. The ACEHS has requested submittal of a Draft CAP to allow for comments or possible amendments incurred during the public participation process during the proposed corrective action review and approval.

If you have any questions, please contact Horizon at (916) 939-2170.

Sincerely,
HORIZON ENVIRONMENTAL INC.

Gary Barker
Senior Project Manager

Kenny B. Mateik
Professional Geologist, C.E.G. No. 1935

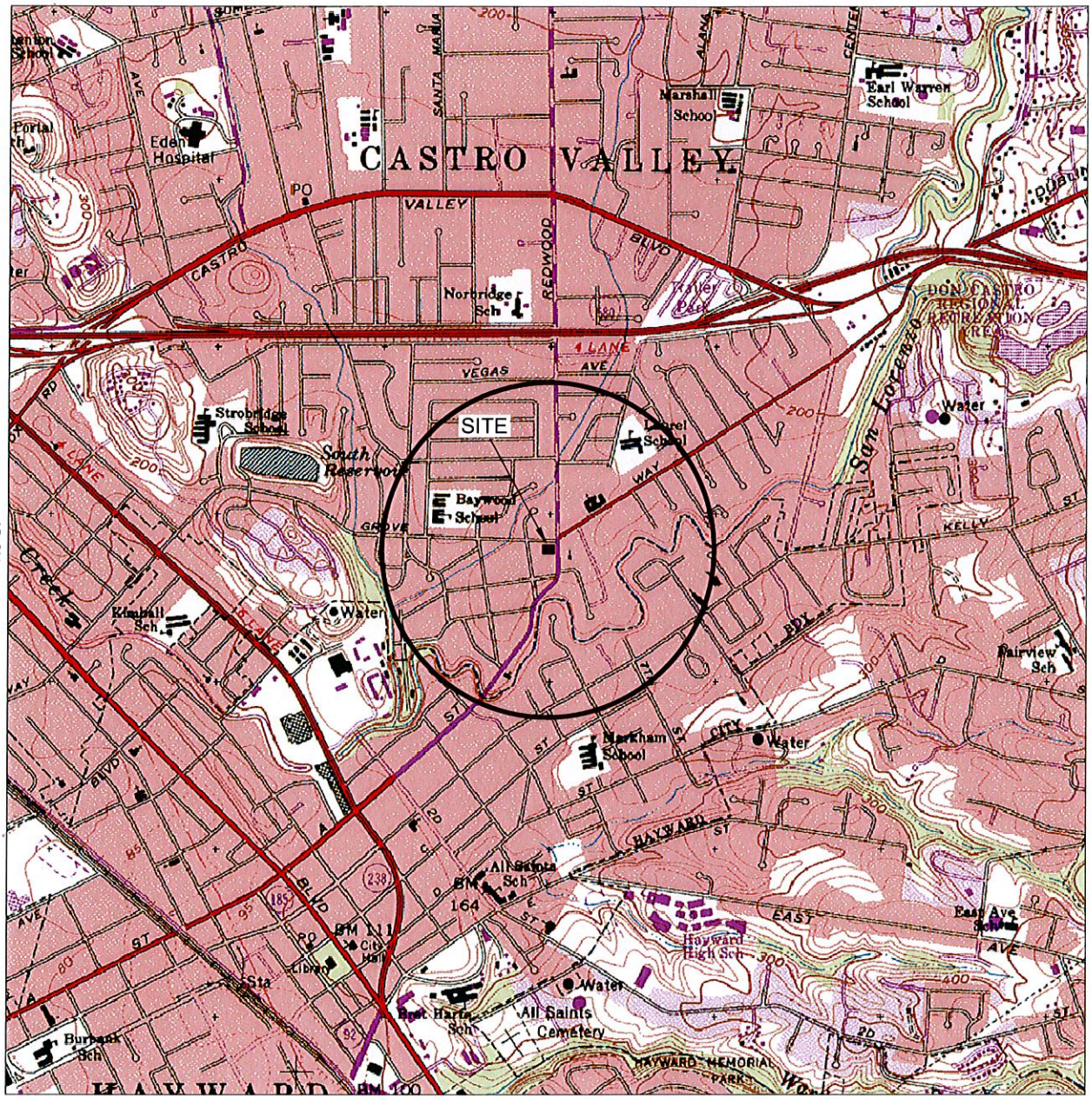


Attachments:

Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Site Area Map
Figure 4: Benzene Isoconcentration Map
Figure 5: Well Construction Diagram for Proposed Monitoring Well MW-5A
Figure 6: Well Construction Diagram for Proposed Vapor Points
Figure 7: Well Construction Diagram for Proposed Vapor Well VW-1
Figure 8: Well Construction Diagram for Proposed Vapor Well VW-2

Attachment A: ACEHS Work Plan Request Letter (March 25, 2010)
Shell Oil Company Plot Plan (1960, revised 1975)
Attachment B: Horizon's Field Methods and Procedures

c: Mr. C. Shay Wideman, Valero Energy Corp.
Mr. Allen Shin, Banya Investment LLC
Mr. Bill Courtney, Property Manager
Mr. Ali Kashikar
Mr. Phillip and Mrs. Meeiru Tai



T.3 S.

R.2 W.

GENERAL NOTES:
BASE MAP FROM U.S.G.S.
HAYWARD, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

QUADRANGLE LOCATION

0 2000 FT

SCALE 1:24,000

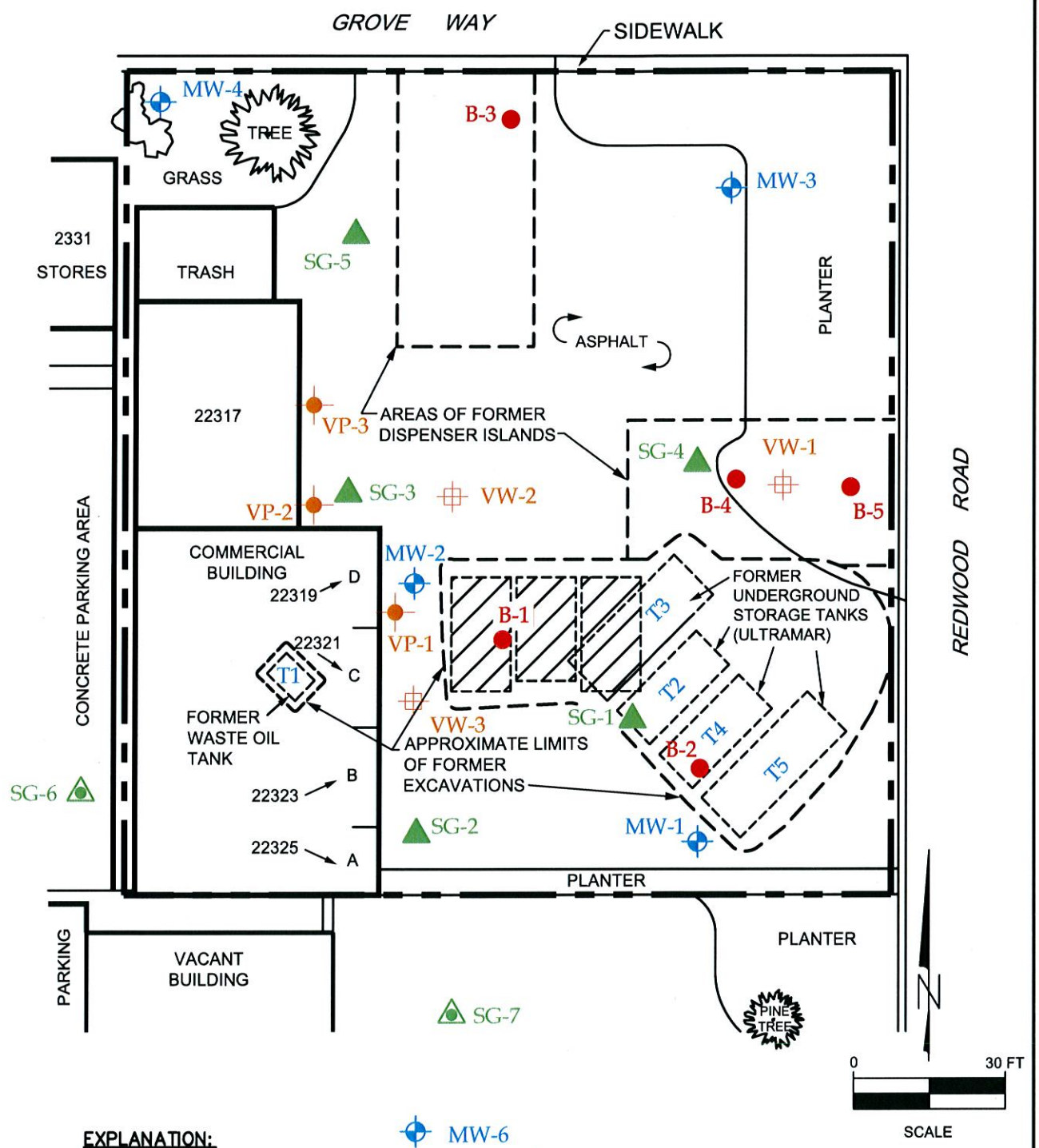
NORTH

HORIZON ENVIRONMENTAL INC.

Project Number: 1574.41	Drawn By: M. LaCoste	SITE LOCATION MAP
Prepared By: K. Liptak	Date: 10/7/04	FORMER BEACON STATION NO. 12574
Reviewed By: K. Mateik	Revised Date:	22315 REDWOOD ROAD CASTRO VALLEY, CA.

FIGURE

1

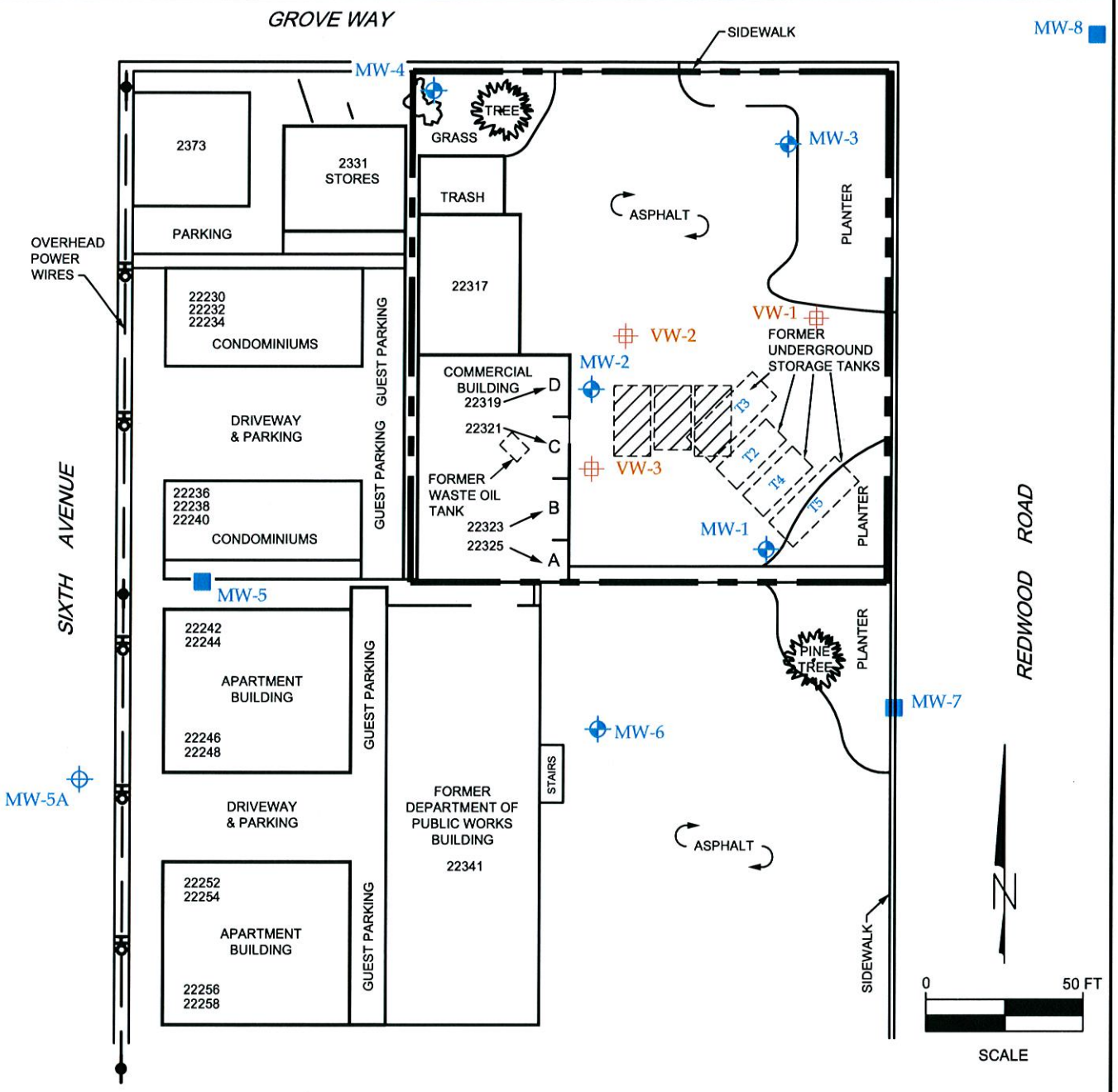


EXPLANATION:

- MW-4 Groundwater Monitoring Well
- SG-5 Soil Gas Survey Sample Location
- B-5 Boring Locations
- Former Shell Oil USTs
- MW-6
- SG-7 Proposed Soil Gas Location
- VW-3 Proposed Vapor Extraction Well
- VP-3 Proposed Soil Vapor Probe

Source: Figure Modified From Survey Drawing Prepared By Others For Ultramar

HORIZON ENVIRONMENTAL INC.		SITE MAP	FIGURE
Project Number: 1574.13 Prepared By: K. Mateik Reviewed By: G. Barker	Drawn By: C. Bechtell Date: 05/10 Revised Date:	FORMER BEACON STATION NO. 12574 22315 REDWOOD ROAD CASTRO VALLEY, CA.	2

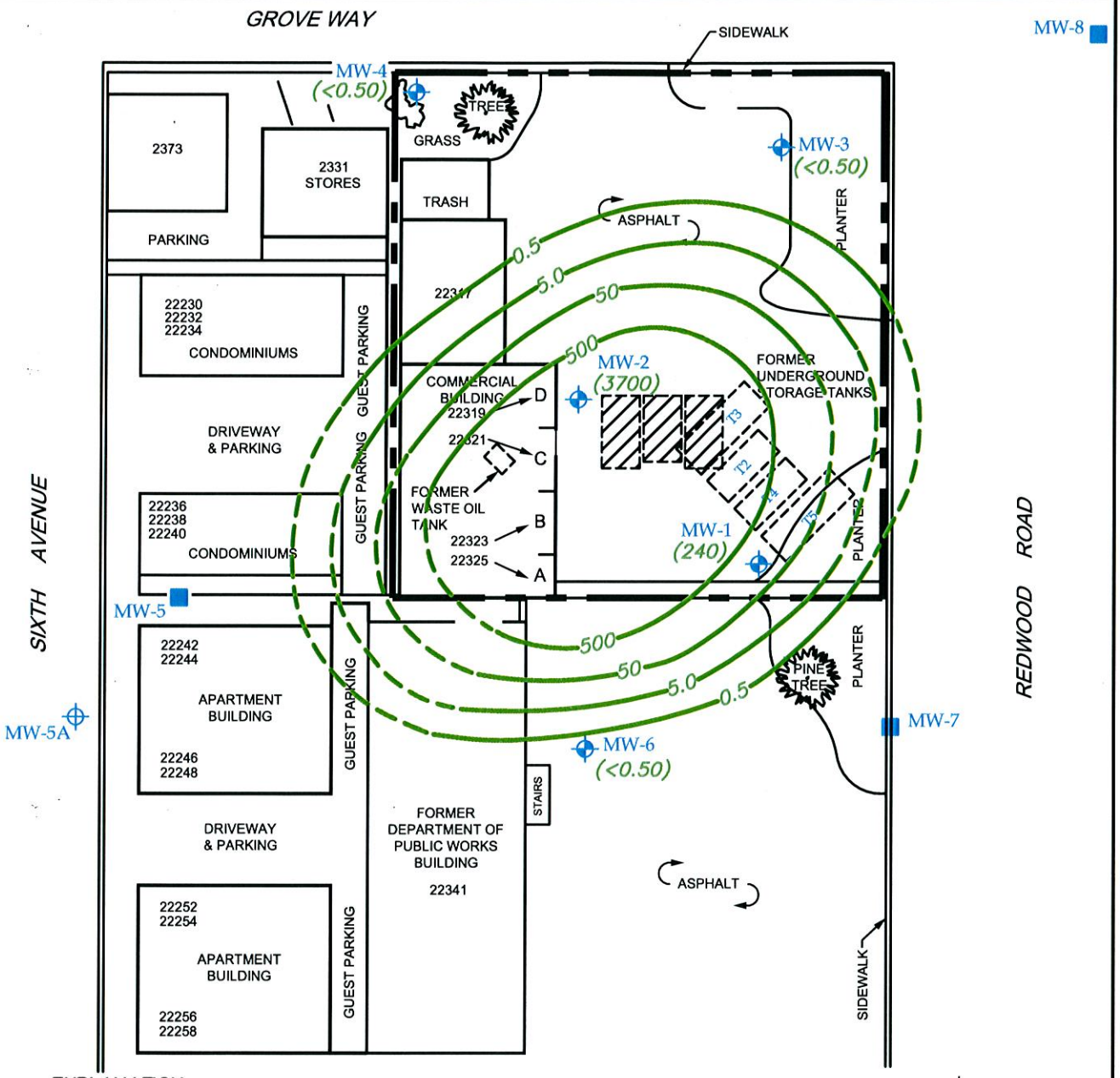


EXPLANATION:

- MW-6 Groundwater Monitoring Well
- MW-8 Abandoned Monitoring Well
- MW-5A Proposed Groundwater Monitoring Well
- VW-3 Proposed Vapor Extraction Well
- Former Shell Oil USTs

Source: Figure Modified From Survey Drawing Prepared By Majors For Tesoro Refining.

HORIZON ENVIRONMENTAL INC.		SITE AREA MAP	FIGURE
Project Number: 1574.46 Prepared By: K. Liptak Reviewed By: K. Mateik	Drawn By: C. Bechtell Date: Revised Date:	FORMER BEACON STATION NO. 12574 22315 REDWOOD ROAD CASTRO VALLEY, CA.	3



EXPLANATION:

- MW-5A — Proposed Monitoring Well
- MW-6 — Groundwater Monitoring Well
- MW-8 — Abandoned Monitoring Well
- Former Shell Oil USTs
- (3700) — Benzene Concentrations Measured In Parts Per Billion
- 500 — Line Of Equal Concentration Of Benzene Measured In Parts Per Billion
- Wells Sampled 01/29/10

Source: Figure Modified From Survey Drawing Prepared By Majors For Tesoro Refining.

HORIZON ENVIRONMENTAL INC.

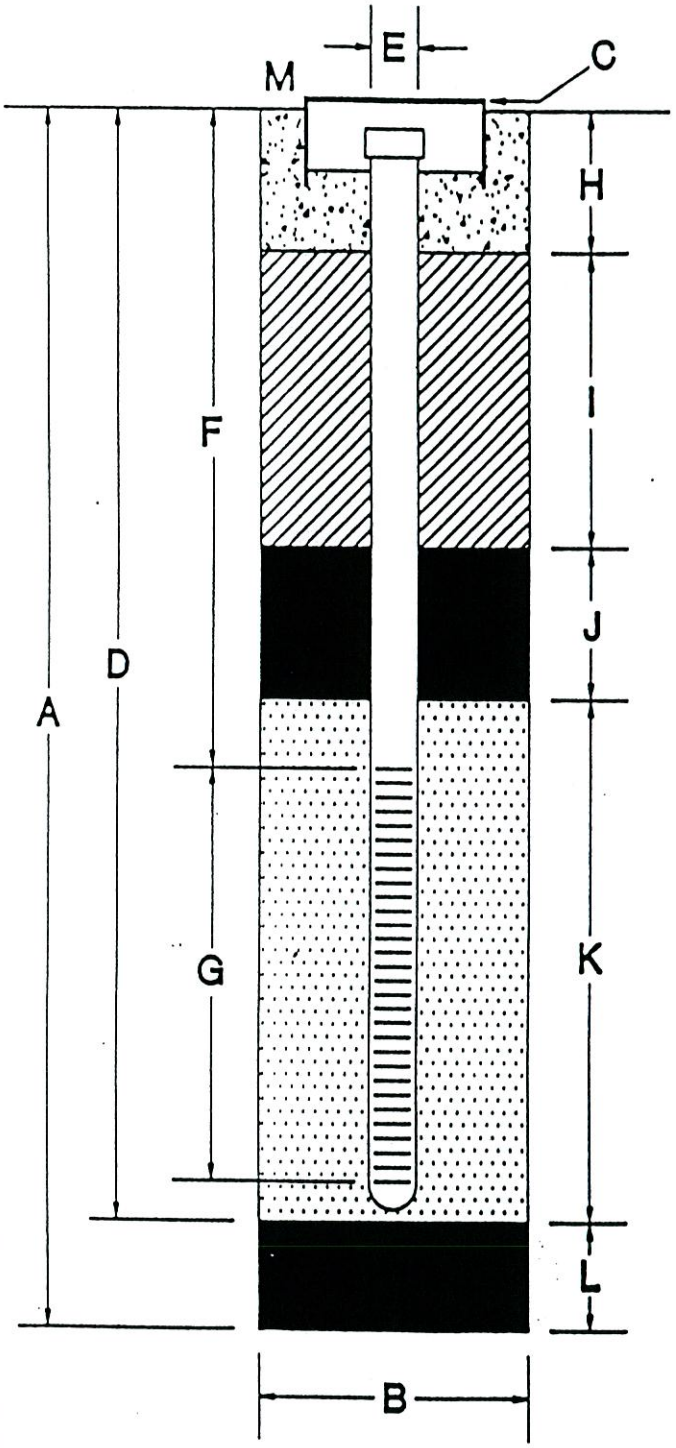
Project Number: 1574.47	Drawn By: C. Bechtell
Prepared By: K. Liptak	Date: 02/10
Reviewed By: K. Mateik	Revised Date:

BENZENE
ISOCONCENTRATION MAP

FORMER BEACON STATION NO. 12574
22315 REDWOOD ROAD
CASTRO VALLEY, CA.

FIGURE
4

WELL CONSTRUCTION DETAIL



A Total Depth Of Boring ~25 ft.

B Diameter Of Boring 8 inches in.
Drilling Method Hollow-Stem Auger

C Top Of Box Elevation ~151 ft.
☒ Referenced To Mean Sea Level
☐ Referenced To Project Datum

D Casing Length 25 feet ft.
Material Schedule 40 PVC

E Casing Diameter 2 inches in.

F Depth To Top Perforations 10 feet ft.

G Perforated Length 15 feet ft.
Perforated Interval From 10 to 25 ft.
Perforation Type machine-slotted
Perforation Size 0.010-inch in.

H Surface Seal From 0 to 1 ft.
Seal Material concrete

I Backfill From 1 to 6 ft.
Backfill Material neat cement

J Seal From 6 to 8 ft.
Seal Material bentonite

K ~~Gravel~~ Sand Pack From 8 to 25 ft.
Pack Material #2 X #12 sand

L Bottom Seal N/A ft.
Seal Material N/A

M

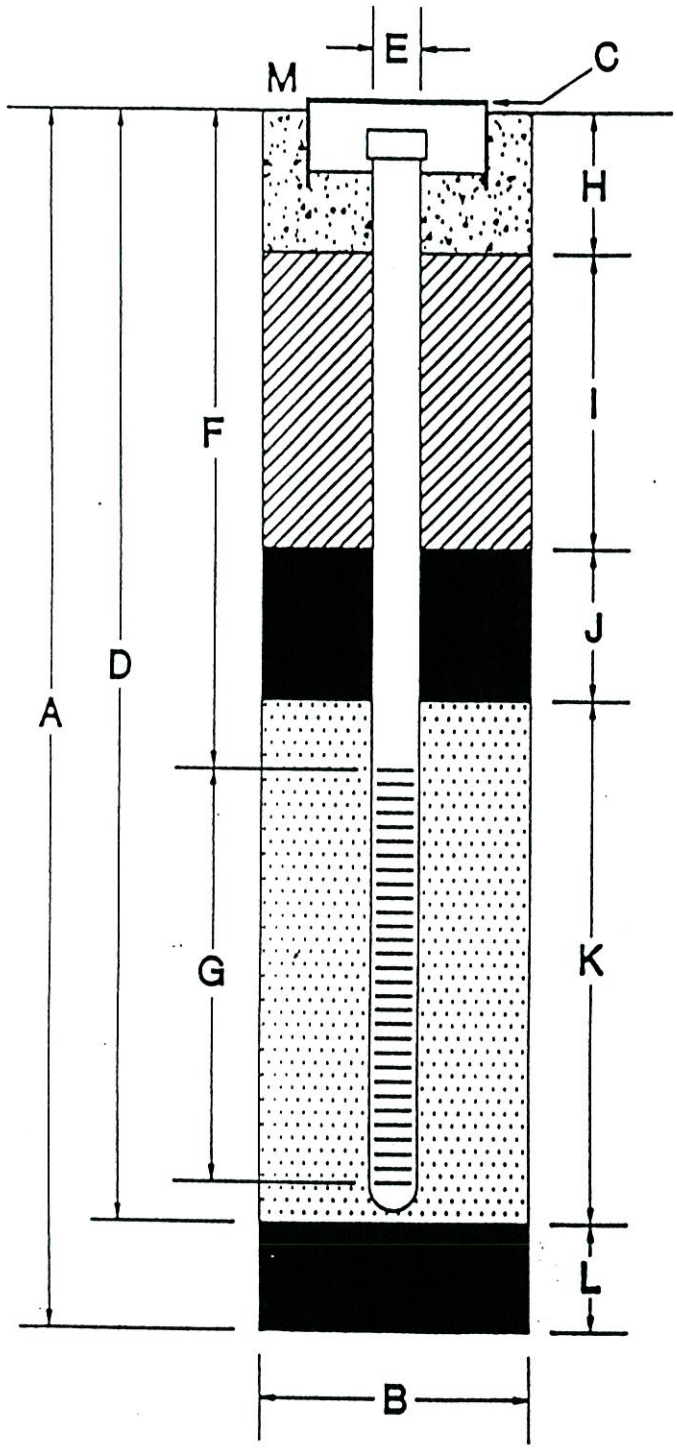
MONITORING WELL MW-5A

Note: Depths measured from initial ground surface.

HORIZON ENVIRONMENTAL INC.

FIGURE 5: TYPICAL WELL CONSTRUCTION DIAGRAM

WELL CONSTRUCTION DETAIL



A Total Depth Of Boring ~8 ft.

B Diameter Of Boring 8 inches in.
Drilling Method Hollow-Stem Auger

C Top Of Box Elevation ~158 ft.
☒ Referenced To Mean Sea Level
☐ Referenced To Project Datum

D Casing Length 8 feet ft.
Material schedule 40 PVC

E Casing Diameter 2 inches in.

F Depth To Top Perforations 5 feet ft.

G Perforated Length 3 feet ft.
Perforated Interval From 5 to 8 ft.
Perforation Type machine-slotted
Perforation Size 0.020-inch in.

H Surface Seal From 0 to 1 ft.
Seal Material concrete

I Backfill From 1 to 3 ft.
Backfill Material neat cement

J Seal From 3 to 4 ft.
Seal Material bentonite

K ~~Gravel~~ Sand Pack From 4 to 8 ft.
Pack Material #3 sand

L Bottom Seal N/A ft.
Seal Material N/A

M

VAPOR PROBES

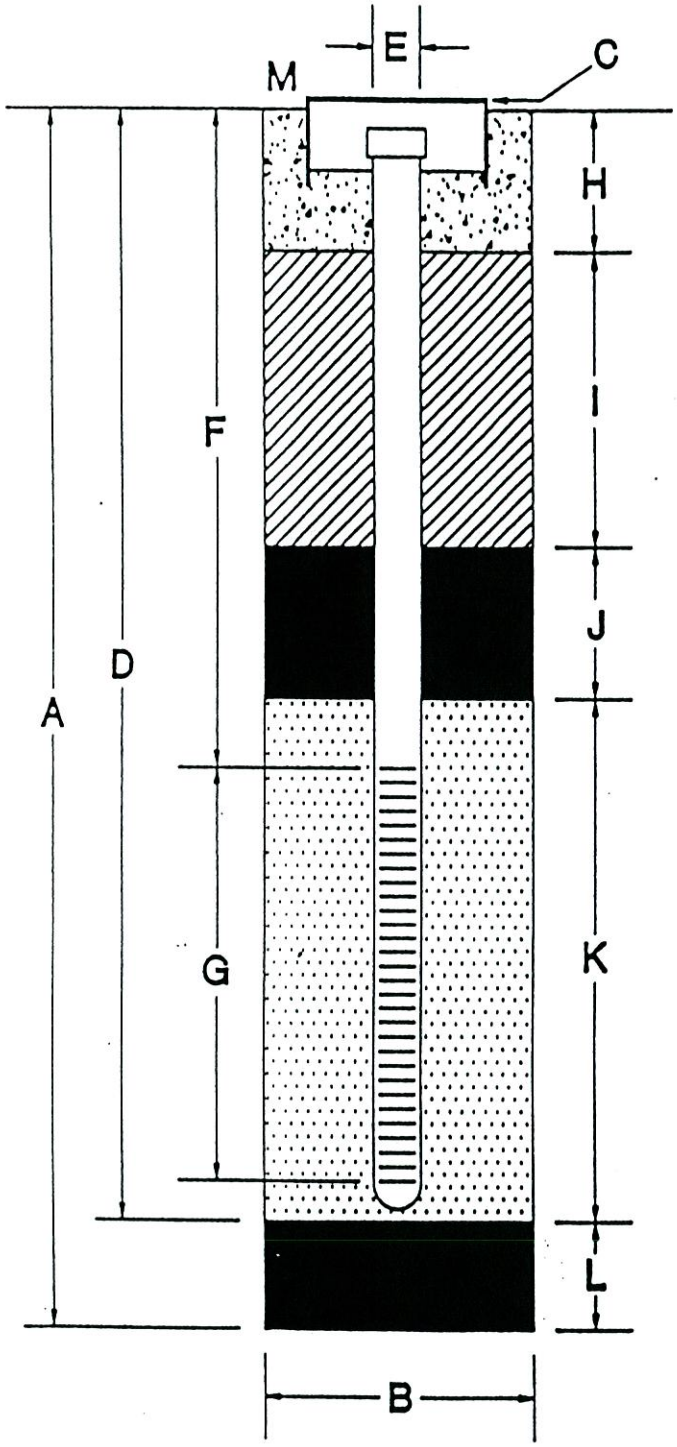
VP-1, VP-2, VP-3

Note: Depths measured from initial ground surface.

HORIZON ENVIRONMENTAL INC.

FIGURE 6: TYPICAL WELL CONSTRUCTION DIAGRAM

WELL CONSTRUCTION DETAIL



A Total Depth Of Boring ~20 ft.

B Diameter Of Boring 10 inches in.
Drilling Method Hollow-stem Auger

C Top Of Box Elevation ~158 ft.
☒ Referenced To Mean Sea Level
☐ Referenced To Project Datum

D Casing Length 20 feet ft.
Material schedule 40 PVC

E Casing Diameter 4 inches in.

F Depth To Top Perforations 10 feet ft.

G Perforated Length 10 feet ft.
Perforated Interval From 10 to 20 ft.
Perforation Type machine-slotted
Perforation Size 0.020-inch in.

H Surface Seal From 0 to 1 ft.
Seal Material concrete

I Backfill From 1 to 8 ft.
Backfill Material neat cement

J Seal From 8 to 10 ft.
Seal Material bentonite

K ~~Gravel~~ Sand Pack From 10 to 20 ft.
Pack Material #3 sand

L Bottom Seal N/A ft.
Seal Material N/A

M

VAPOR WELLS

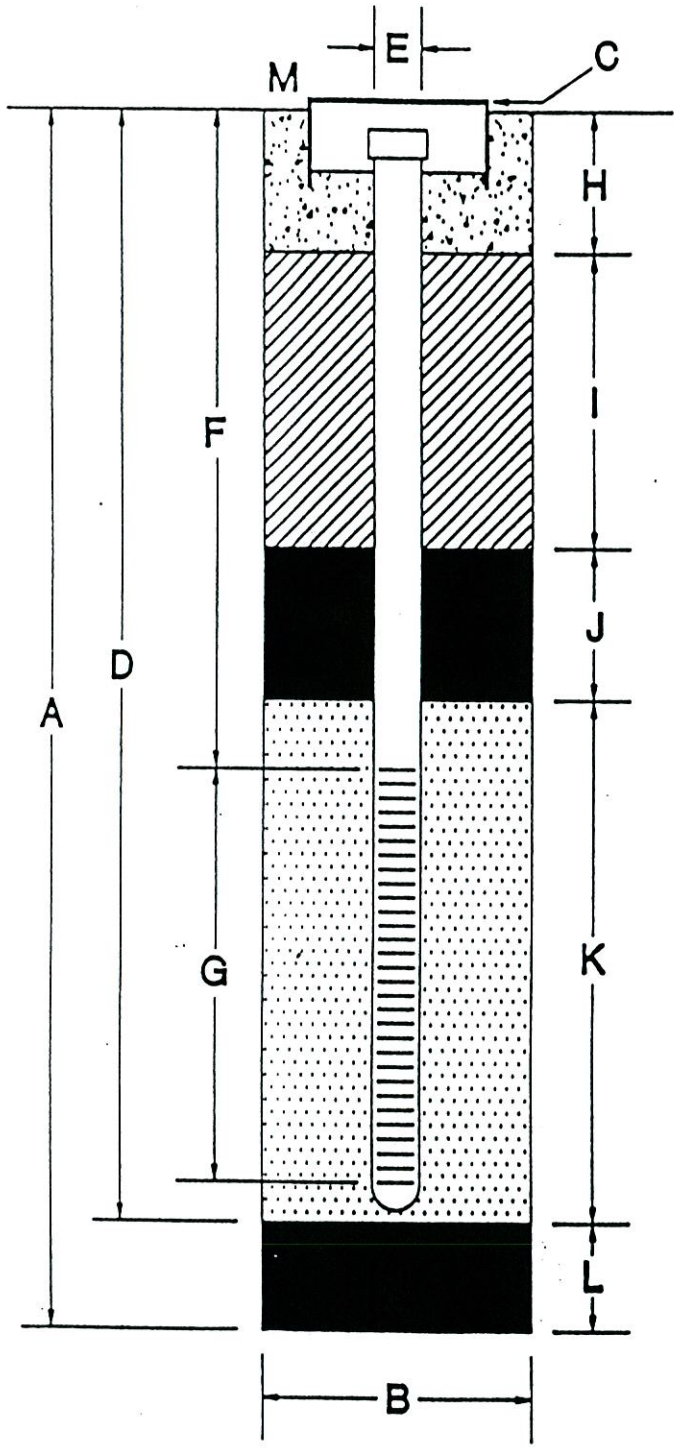
VW-1 and VW-2

Note: Depths measured from initial ground surface.

HORIZON ENVIRONMENTAL INC.

FIGURE 7: TYPICAL WELL CONSTRUCTION DIAGRAM

WELL CONSTRUCTION DETAIL



A Total Depth Of Boring ~20 ft.

B Diameter Of Boring 10 inches in.
Drilling Method Hollow-stem Auger

C Top Of Box Elevation ~158 ft.
☒ Referenced To Mean Sea Level
☐ Referenced To Project Datum

D Casing Length 20 feet ft.
Material schedule 40 PVC

E Casing Diameter 4 inches in.

F Depth To Top Perforations 15 feet ft.

G Perforated Length 5 feet ft.
Perforated Interval From 15 to 20 ft.
Perforation Type machine-slotted
Perforation Size 0.020-inch in.

H Surface Seal From 0 to 1 ft.
Seal Material concrete

I Backfill From 1 to 11 ft.
Backfill Material neat cement

J Seal From 11 to 13 ft.
Seal Material bentonite

K ~~Gravel~~ Sand Pack From 13 to 20 ft.
Pack Material #3 sand

L Bottom Seal N/A ft.
Seal Material N/A

M _____

VAPOR WELL
VW-3

Note: Depths measured from initial ground surface.

HORIZON ENVIRONMENTAL INC.

FIGURE 8: TYPICAL WELL CONSTRUCTION DIAGRAM

ATTACHMENT A

ALAMEDA COUNTY LETTER

AND

SHELL OIL COMPANY PLOT PLAN

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

March 25, 2010

1574. 13

Mr. C. Shay Wideman
Ultramar, Inc.
One Valero Way
San Antonio, TX 78249-1616

Castro Group LLC
2021 Francisco Street
Berkeley, CA 94709-2213

Ms. Mary Moore
EMB Group LLC & Mary Moore
Re Trust 611 Marlin Court
Redwood City, CA 94065-1214

Mr. Allen Shin
Banya Investments LLC
3011 Cabrillo Avenue
San Ramon, CA 94583

Mr. Paul Wilson
1238 Stanyan Street
San Francisco, CA 94117

Subject: Fuel Leak Case No. RO0000355 and Geotracker Global ID T0600100155, Beacon #12574, 22315 Redwood Road, Castro Valley, CA 94546 – Site Assessment Results

Dear Mr. Wideman, Castro Group LLC, Ms. Moore, Mr. Shin, and Mr. Wilson:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including the recently submitted document entitled, *"Soil Gas Survey and Soil Assessment Report,"* dated January 29, 2010 (Report). The Report, which was prepared on your behalf by Horizon Environmental, Inc., presents results from site assessment activities that included installation and sampling of five soil vapor probes (SG-1 through SG-5) and sampling of five soil borings (B-1 through B-5). The soil vapor sampling results indicate that elevated concentrations of petroleum hydrocarbons are present at four of the five soil vapor sampling locations. The soil boring sampling results indicate that elevated concentrations of petroleum hydrocarbons are present in saturated soil beneath at least the western portion of the former tank pit and are also present in both unsaturated and saturated soils beneath the former eastern dispenser islands. Based on these results, additional site investigation and cleanup is necessary.

The Report includes the following recommendations:

1. Continue to pursue off-site access for soil gas sampling locations SG-6 and SG-7.
2. Install a replacement groundwater monitoring well (MW-5A).
3. Install vapor extraction wells in the area of soil gas sampling location SG-3.
4. Prepare a Site Conceptual Model (SCM) Report and Corrective Action Plan (CAP).
5. Prepare a Risk-Based Corrective Action analysis.

We request that you address the technical comments below, perform the proposed work, and send us the reports requested below.

TECHNICAL COMMENTS

1. **Off-site Soil Gas Sampling Locations.** We concur with the recommendation to continue to pursue off-site access agreements for soil vapor sampling locations SG-6 and SG-7. These soil vapor sampling locations are needed to evaluate the extent of off-site impacts. If necessary, ACEH is willing to write a request for access to adjacent landowners. To initiate this request from ACEH, please provide the name and address of the adjacent landowner and a chronology of events relevant to obtaining the off-site access agreement such as the dates on which access has been requested and relevant correspondence.

2. **Replacement Well MW-5A.** We concur with the proposed installation of downgradient well MW-5A. Please present plans for well installation in the Work Plan requested below.

3. **Installation of Vapor Extraction Wells.** We concur with the installation of vapor extraction wells in the area of SG-3 and south of MW-2 for the purpose of vapor extraction. Permanent soil vapor monitoring probes will also be required to further evaluate the potential for vapor intrusion to the adjacent commercial building and to evaluate the effectiveness of remediation. Please include plans for the installation of vapor extraction wells and soil vapor monitoring probes in the Work Plan requested below. Please also indicate whether vapor extraction is proposed as an interim remedial action or will be evaluated in the CAP discussed in technical comment 4.

4. **Preparation of SCM/CAP.** The preparation of a SCM/Draft CAP will be necessary for cleanup of the site. We request that you prepare a Draft Corrective Action Plan (Draft CAP) that meets the provisions of section 2725 of the UST regulations (CCR, Title 23, Chapter 16, section 2600, et seq.) and includes the following minimum information:

    - Proposed cleanup goals and the basis for cleanup goals.
    - Summary of site characterization data.
    - Receptor information including likely future land use scenarios, adjacent land use and sensitive receptors, and potential groundwater receptors.
    - Evaluation of remedial alternatives including discussion of feasibility and limitations for each remedial alternative.
    - Detailed description of proposed remediation including confirmation sampling and monitoring during implementation.
    - Post-remediation monitoring.
    - Schedule for implementation of cleanup.

    Public participation is a requirement for the Corrective Action Plan process. Therefore, we request that you submit a Draft CAP for ACEH review. Upon ACEH approval of a Draft CAP, ACEH will notify potentially affected members of the public who live or own property in the surrounding area of the proposed remediation described in the Draft CAP. Public comments on the proposed remediation will be accepted for a 30-day period. Please present a schedule for SCM/Draft CAP preparation no later than May 28, 2010.

5. **Detailed Well Survey.** In order to identify potential receptors for the fuel hydrocarbon plume from your site, we request that you locate all water supply wells within a radius of 2,000 feet of the subject site. We recommend that you obtain well information from both Alameda County Public Works Agency and the State of California Department of Water Resources. Submittal of maps showing the location of all wells identified in your study, and the use of tables to report the data collected as part of your survey are required. Please provide a table that includes the well designation, location, total depth, diameter, screen interval, date of well installation, current status, historic use, and owner of the wells. In addition, please provide well logs and completion records for wells downgradient from the site that are potential receptors. Results of the detailed well survey are to be included in the SCM/Draft CAP discussed in technical comment 4.

6. **Groundwater Monitoring.** Please continue the groundwater monitoring program on the current semi-annual basis. Please present the groundwater sampling results in the Groundwater Monitoring Reports requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **April 13, 2010** – First Quarter 2010, Semi-Annual Groundwater Monitoring Report
- **May 28, 2010** – Work Plan for Well Installation and Vapor Extraction Wells and Monitoring Probes
- **May 28, 2010** – Schedule for SCM/Draft CAP
- **October 13, 2010** – Third Quarter 2010, Semi-Annual Groundwater Monitoring Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells,

and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at 510-567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,

Digitally signed by Jerry Wickham
DN: cn=Jerry Wickham, o, ou, email=jerry.wickham@acgov.org, c=US
Date: 2010.03.25 10:47:00 -07'00'

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Gary Barker, Horizon Environmental, Inc., 4970 Windplay Drive, #C5, El Dorado Hills, CA 95762

Kenny Mateik, Horizon Environmental, Inc., 4970 Windplay Drive, #C5, El Dorado Hills, CA 95762

Robert Ehlers, Valero, 685 West Third Street, Hanford, CA 93230

Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH

Geotracker, File

GROVE WAY

REDWOOD ROAD

NEW 4" CONC DRIVEWAY

NEW 4" CONC SIDEWALK

30'-0" DRIVEWAY

79'-0" IN

59'-0" OUT ℄

38'-0" DRIVEWAY AT ℄

NEW 6" C. DRIVEWAY

EXISTING PROPERTY LINES

RELOCATED FLOOD-LIGHT POLE SHAFT TO BE MOUNTING TYPE SEE NOTE 1

DWELLING

PLANTER

NEW RETAINING WALL & GUARDRAIL FENCE

EXISTING WALL WITHOUT FENCE

EXISTING RETAINING WALL AND NEW GUARDRAIL FENCE

RELOCATE SIGN POLE

20 | 10 | 140 yds
9 Loads Concrete
6 Load a e

A.C. PAVEMENT
2" A C & 4" COMPACTED BASE

24'x50' Flat Island Cover

20'0" (6") CONC. SLAB

SEE NOTE 6

SEE NOTE 7

℄ 129.65'
½" EXP. JOINT

141'0"

22'0"

40'0"

EXISTING SERVICE STATION

24'x50' Flat Island Cover w/Closed Fixtures

½" CONDUIT U.G. FOR

ONE NEW O.H. DOOR TO MATCH EXISTING

6" CONC CURB

PLANTER

SECTION A-A
NOT TO SCALE

NEW 3" STEEL POST AND GUARDRAIL FENCE SEE NOTE 19

TO BE DE-ENERGIZED BY S.E.

A.C. PAVEMENT

FOUNDATION AT REAR & END WALLS TO BE DESIGNED BY BLDG. FABRICATOR

RELOCATE EXISTING BLDG. ADD. BAY AND PYLON P.E. FRONT AND TWO END BLDG. TO RESEMBLE S-20-B WITH SUFFIX LIGHTING FRONT & 2 ENDS

3174

SALES ROOM

NEW TILE BENCH

RELOCATED PAINT BOARD

STORE ROOM 10'6

NEW SLAB

WORKER WINDOW 7'10" FLOOR TO SILL 2'0" x 3'6"

NEW 11'8 FLOOR TO CEILING

PRIVATE DRINKING FOUNDATION

TRASH BIN

TEL BOOTH SEE NOTE 20

2" VENTS

SEE NOTES 1

3" FILL

6" CONC SLAB

EXISTING TANKS

550 GAL. DUPLEX SHELL

1000 GAL SUPER SHELL

1000 GAL SHELL

EXISTING GRADE

EXISTING RETAINING WALL & NEW GUARD RAIL FENCE

REMOVE PORTION OF EXISTING WALL

NEW RETAINING WALL & GUARDRAIL FENCE SEE GRAV. W-16319

EXISTING 550 GAL H.O TANK

5'6" x 5'0" CONC SLAB

EXISTING DISPENSER

EXTEND TIRE RACK AND ADD SHELVING 883 GRAV. W-19346

EXISTING GRADE WALL

EXISTING 8" CONC. CURB (TYP.)

PLANTER

6" CONC CURB

ONE NEW O.H. DOOR TO MATCH EXISTING

½" CONDUIT U.G. FOR DRIVE SIGNAL

6" DIA. GALV. STEEL PIPE ROOF DRAIN THROUGH SIDEWALK

SEE NOTE 4

EXISTING ISLAND

EXISTING ISLAND

20'-0" (6") CONC. SLAB

STEP-LIGHT

NEW 4" SIDEWALK

SEE NOTE 6

10'-0"

3'-0"

10'-0"

20'-0"

3'-0"

10'-0"

20'-0"

FLOODLIGHT POLE SEE NOTE 1

NEW 10 | PRICE SIGN SEE DWG. W-11678

GUTTER

EXISTING 25'SIGN MOUNT ONE 1 FLUOR. FIXTURE ON SIGN. 2" PIER ARM IMMEDIATELY BELOW SIGN BY GEN. CONTRACTOR

NEW 6" CONC DRIVEWAY

30'-0" DRIVEWAY

46'-0" OUT

35'-0" DRIVEWAY AT ℄

45'-0" IN AT ℄

NEW 6" DRIVEWAY

POWER POLE SERVICE U.G. TO BUILDING

PLANTER

FLOODLIGHT POLE SEE NOTE 1

40'-0"

6'-0"

2'-0"

General Notes

1. Steel Contractor to Furnish & Erect Island Cover on Foundation By Gen. Contr.
2. Light Fixtures To Be Closed Type.
3. Gen'l. Contr. To install Planter Area 6" min. of TOP SOIL
4. Planting By others.
5. Gen'l. Contr. to install Keyless Hose Bibb at Planter Areas.
6. Gen'l. Contr. To Patch Pave disturbed Yard Area

GENERAL NOTES:

1. 30'-0" FLOODLITE POLE WITH END MOUNTED 6 FT. FLEXIBLE - 4 TUBE FIXTURE (PETELCO OR WHITEWAY).
2. PROVIDE THREE POLE DOUBLE THROW SWITCH TO CHANGE FROM ONE SUPER SHELL PUMP TO THE OTHER.
3. 12' LENGTH OF 1½" PIPE SET IN CURB FOR GAUGE STICK. REAM END BEFORE INSTALLING.
4. BACKFILL OF TANK HOLES MUST BE WITH SAND. SUFFICIENT WATER TO BE ADDED TO INSURE MAXIMUM COMPACTION.
5. INSTALL SUBMERGED PUMPS IN SIDEWALK BOXES WITH HIGHWAY LOADING COVERS. INSTALL OPW #10 SAFETY SHUTOFF VALVES UNDER ALL DISPENSERS.
6. 12'-0" PUMP ISLAND WITHOUT LAMP CLOSTERS. SEE DRAWING W-2[illegible] 1/8" EXPANSION JOINT AROUND ISLANDS AND ACROSS SLABS.
7. HOSE BIB SET IN CONCRETE. SEE GRAV... W 16999.
8. [S] DENOTES SINGLE SHELL DISPENSER
9. [SS] DENOTES SINGLE SUPER SHELL DISPENSER
10. EXISTING FACILITIES, PUMPS, HOISTS, LIGHTING ETC. TO BE KEPT IN OPERATION, AS LONG AS POSSIBLE WITH MINIMUM SHUTDOWN FOR CHANGE OVER.
11. THE GENERAL CONTRACTOR IS TO BREAK THE BLDG LOOSE FROM THE FOUNDATION AND CAREFULLY REMOVE ALL MATERIAL TO BE REUSED ALONG WITH THAT TO BE JUNKED SO THAT THE BLDG. IS FREE TO BE MOVED BY THE STEEL BLDG. CONTRACTOR.
12. EXISTING DWELLINGS TO BE REMOVED BY GENERAL CONTRACTOR
13. ALL RESTROOM TILE TO BE NEW.

TILE COLORS:

WOMENS RESTROOM:
FLOOR: OLEON #9848-1 DARK GRAY BLOCK PATTERN
WALL: G.M. BEAN BN. 185
CAP & BASE: G.M. BEAN BN. 187

MEN'S RESTROOM:
FLOOR OLEAN #9848-1
WALL G.M. BEAN BN 185
CAP & BASE G.M. BEAN BN-1 WHITE

STEEL BLDG. FABRICATOR TO FURR RESTROOM WALLS. INSTALL CHANNELS FOR TILE AND PROVIDE SMOOTH WALLS ABOVE 6'-0" A.F.F. EXPANDED METAL LATH BY GENERAL CONTRACTOR.

15. RELOCATE BULKHEAD CABINET AND INSTALL NEW LINOLEUM TOP WITH ALUMINUM EDGING
16. ALL LIGHTING FIXTURES TO BE NEW PER S-20-B. PANEL BOARD TO BE NEW.
17. RELOCATE VERTICAL O.H. REEL PIPING AS REVISED STORY BOARD. REMOVE & REINSTALL 3 REELS.
18. CURBS & GUTTERS BY GEN. CONTRACTOR
19. INSTALL RAILS AFTER PAVING HAS BEEN COMPLETED
20. 1-2" TELEPHONE RACEWAY AND 1-1" CONDUIT U.G. TO BUILDING. FRONT BOOTH
21. STORE ROOM SHELVING TO BE NEW.

4	1-16-78	NEW 40' SIGN STRUCTURE	
3	5-17-70	Add 1 8M Tank & 4 Dual - 2 Prod. Disp.	
2	7/11/67	Added 2-24'x50' Flat I.C.	
1	4/17/61	CURB ADDED, APRON REMOVED	
MARK	DATE	DESCRIPTION	APPROVED

LIST OF CHANGES

2 3 2 3 Reduced C.V.
T.P. 9811 4-24-87

SHELL OIL COMPANY
SAN FRANCISCO DIVISION

PLOT PLAN
RELOCATION OF SERVICE STATION L-58
REDWOOD RD & GROVE WAY
HAYWARD
ALAMEDA CO.

SCALE 1/8" = 1'-0" | APPROVED
DATE DEC. 22 1960 | Y-29019
DRAWN BY E.V.D. TRD BY | 58
CHECKED BY

RECEIVED
APR 24 1987
COUNTY OF ALAMEDA
PERMIT CENTER

CHECKED AGAINST BOARD LAYOUT
BY J. Cabrera 4/17/61

△1 Install 8M Tank
2 " 4 Dual - 2 Prod. Disp.

201-1311-020-4

ATTACHMENT B

HORIZON FIELD METHODS AND PROCEDURES

HORIZON ENVIRONMENTAL INC.
FIELD METHODS AND PROCEDURES

The following section describes field procedures that will be completed by Horizon Environmental Inc. (Horizon) personnel in performance of this project.

1.0 HEALTH AND SAFETY PLAN

Field work performed by Horizon and subcontractors at the site will be conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP is a document that describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the SHSP will be at the site and available for reference by appropriate parties during work at the site.

2.0 LOCATING UNDERGROUND UTILITIES

Prior to commencement of work on site, the location of underground utilities will be researched with the assistance of Underground Service Alert (USA). USA contacts the owners of the various utilities in the vicinity of the site to have the utility owners mark the locations of their underground utilities. Work associated with the borings and monitoring well installations will be preceded by manual hand-augering to avoid contact with underground utilities.

3.0 SOIL BORING AND SOIL SAMPLING PROTOCOL

Soil borings and soil sampling will be performed under the supervision of a Horizon geologist. The soil borings will be advanced using a truck-mounted hollow-stem auger drilling rig. To reduce the chances of cross-contamination between boreholes, downhole drilling equipment and sampling equipment will be cleaned between borings. To reduce cross-contamination between samples, the split-barrel sampler will be washed in a soap solution and double-rinsed between each sampling event.

Soil sampling will be conducted in accordance with ASTM 1586-84. Using this procedure, a split-barrel sampler (California-type sampler) lined with brass sample sleeves will be driven into the soil at approximately 5-foot intervals by a 140-pound weight falling 30 inches. The number of blow counts required to advance the sample 18 inches will be recorded at each sample interval. Generally, the bottom soil sample will be sealed in the brass sleeve and stored at approximately 4°C for transport to the laboratory. The soil samples will be sealed in the sleeves using Teflon sheets and plastic caps; labeled; and promptly placed in iced storage.

Generally, the upper portions of each soil sample will be extruded from the brass sleeves, placed in a plastic bag, and sealed for later screening with a field calibrated (using isobutylene) hNu-type organic vapor meter (OVM). Another portion of the soil sample will be used for classification and description. After the portion of the soil sample is placed in the plastic bag, it will be allowed to warm, inducing volatilization of petroleum hydrocarbon vapors. The headspace vapors will then be screened with the OVM. The highest observed vapor reading will be recorded on the boring logs.

Composite characterization samples will be collected from soil stockpiles generated at the site. A composite sample is four sample locations (as discrete samples) per composite. The composite characterization samples will be collected from the stockpiled soil by selecting random locations accessible around the soil pile, removing approximately six inches of soil, and driving a clean brass sleeve into the soil pile at the selected location. The number of samples collected will be based on the estimated amount of stockpiled soil. Generally, one composite soil sample is collected per 50 or 100 cubic yards of soil. The samples collected will be prepared and chilled for transport under Chain-of-Custody protocol, and promptly sent to a State-certified laboratory for the analyses requested.

4.0 GROUNDWATER DEPTH EVALUATION

Depth to groundwater will be measured to the nearest 0.01-foot using an electronic hand-held water level indicator. The tip of the probe will be examined to evaluate whether a separate-phase hydrocarbon (SPH) sheen is present.

7.0 MONITORING WELL DEVELOPMENT / PURGING AND SAMPLING

Following installation, the wells will be surged with a surge block to remove fines from the sand pack. After surging, groundwater will be purged from each well using a bailer or centrifugal pump to remove sediment and enhance representative sample quality.

Groundwater sampling events conducted after the initial well development will be preceded by purging a minimum of three well casing volumes as described above. Purge water will be monitored for the parameters temperature, pH, and conductivity until stabilized. Wells will be allowed to recharge to 80% before sampling. If wells dewater, they will be allowed to recharge for a minimum of one hour prior to sampling.

After the water levels within the wells stabilize, a water sample will be collected with a clean disposable bailer. Samples will be contained in air-tight vials and then packed on ice and transported to the laboratory for analysis. Groundwater samples will be transported to the laboratory and analyzed within the EPA-specified holding time for requested analyses. Each sample container submitted for analysis will have a label affixed to identify the job number, sample date, time of sample collection, and a sample number unique to that sample. Samples will be analyzed by a California-certified laboratory

A Chain-of-Custody form will be used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them will relinquish the samples by signing the Chain-of-Custody form and noting the time. The Sample Control Officer at the laboratory will then verify sample integrity and confirm that the sample was collected in the proper container, preserved correctly, and that there is an adequate volume for analysis.

8.0 WELLHEAD TOP OF CASING MEASUREMENT

The top of each new well riser will be measured to allow correlation of the groundwater levels at the site. The measured point on each well riser will be marked to help insure future groundwater level measurements are taken from the same location. All measurements will be measured relative to a surveyed benchmark for Global Positioning System (GPS) locations (X and Y coordinates), and will be measured to the nearest 0.01-foot relative to a surveyed benchmark for the well elevations (Z coordinates).