Ultramar, Inc.

April 26, 2011

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

SUBJECT: VAPOR EXTRACTION TESTING WORK PLAN
FORMER BEACON STATION NO. 12574
22315 REDWOOD ROAD — RWQCB Case No. 01-0167
CASTRO VALLEY, CALIFORNIA — ACDEH: RO 0000355

Mr. Wickham:

Please find enclosed the **Vapor Extraction Testing Work Plan** 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

April 28, 2011

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

Subject: **Vapor Extraction Testing Work Plan**
Former Beacon Station No. 12574 RWQCB Case No. 01-0167
22315 Redwood Road, Castro Valley, California ACDEH: RO0000355

Mr. Wickham:

On behalf of Ultramar Inc. (Ultramar), Horizon Environmental (Horizon) has prepared this letter work plan to conduct Vapor Extraction Testing (VET) at the above-referenced site (Site). Horizon recommended that soil vapor extraction (SVE) feasibility testing be performed at the Site to evaluate the suitability of SVE as a site remedial technology. This recommendation was proposed in the Subsurface Investigation Report (Horizon, December 22, 2010). The Alameda County Department of Environmental Health (ACDEH) requested this work plan in their letter dated March 6, 2007 (attached). The scope of work described in this work plan is intended to comply with the California Water Resources Control Board document Leaking Underground Fuel Tanks (LUFT) Manual, the Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites dated April 2004, and ACDEH 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 shown on the Site Location Map (Figure 1). The Site is bounded by Grove Way to the north, Redwood Road to the east, a vacant office building to the south, and residential apartments to the west. Chevron #9-2960 was formerly located at 2416 Grove Avenue, northeast of the 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 ACDEH Case No. 0275).

Existing Site facilities include a 7-11 convenience store and other commercial buildings situated on the western portion of the Site property, and a parking lot and landscaping areas situated on the central and eastern portions of the Site. Former service station facilities included eight former USTs located in the southern portion of the Site, six former dispenser islands, and associated former fuel distribution piping located in the northern and eastern portions of the Site. 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 Site boundaries, while wells MW-5A and MW-6 are located offsite to the west and south of the Site. Locations of these and other pertinent Site features are shown on the Site Map (Figure 2) and the Site Area Map (Figure 3).

Prior to 1981, the Site had been leased and operated by the Shell Oil Company (Shell). Ultramar leased the Site and operated a retail service station (Beacon #574) from 1981 to 1987. A history of the Site is included in Attachment A.

Scope of Work

The proposed scope of work is to evaluate the suitability of SVE as a site remedial technology for the remediation of hydrocarbon-impacted soil, and to provide data for design of a remediation system, if appropriate. The proposed scope of work shall be accomplished by performing the following tasks:

Task 1 Notify the property manager of the proposed work to minimize impact to the existing tenants. Update the site-specific Health and Safety Plan to identify and mitigate issues related to the proposed SVE testing. Coordinate with the analytical laboratory to schedule the submittal of the vapor samples for performance of timely analyses. Notify the Bay Area Air Quality Management District (BAAQMD) of the proposed SVE testing event.

Task 2 Conduct a maximum five-day vapor extraction test (VET) on vapor wells VW-2 and VW-3; utilize a vacuum blower with a rating of 100 to 150 cubic feet per minute (cfm) flow and vacuum of 30 to 50 inches of water column; connect the vapor extraction unit to both vapor wells with the ability to monitor and extract from each well separately and in combination. The duration of the VET will be based on results obtained during the initial 8 hours of testing.

Monitor vapor extraction flow rates and influent hydrocarbon concentrations as total influent for both wells VW-2 and VW-3 and from each well separately; monitor effluent flow for volatile hydrocarbon concentrations; monitor the vapor extraction radius of influence (ROI) by monitoring induced vacuum utilizing vapor points VP-1, VP-2 and VP-3, and wells MW-1, MW-2, and VW-1 as observation wells. The locations of the extraction wells and these selected observation wells are shown on Figure 2.

Task 3 Collect pre- and post-VET vapor samples from vapor points VP-1, VP-2 and VP-3 to evaluate soil gas concentrations at these locations.

Task 4 Collect vapor samples during the VET at approximately one hour into the VET from both wells VW-2 and VW-3, and the total influent at elapsed times of 4 hours and 8 hours from the influent flow; and collect a vapor sample from the vapor effluent at the end of the VET. Submit the vapor samples under COC documentation to a California-certified analytical laboratory for analysis of TPHg, BTEX, and MTBE utilizing EPA Method 8260B. The field measurements discussed in Task 3 may be used in lieu of the analytical samples for calculating hydrocarbon removal rates.

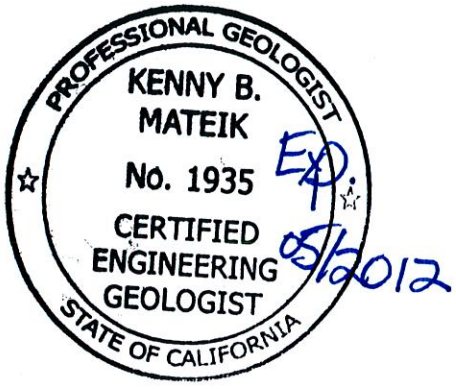
Task 5 Prepare and submit a report presenting the field procedures, results, evaluation, and conclusions of the VET, which will be included in the requested Site Conceptual Model (SCM) and [Draft] CAP.

If you have any questions regarding this work plan, contact Horizon at (916) 939-2170.

Sincerely,
HORIZON ENVIRONMENTAL INC.

Gary D. Barker
Senior Project Manager

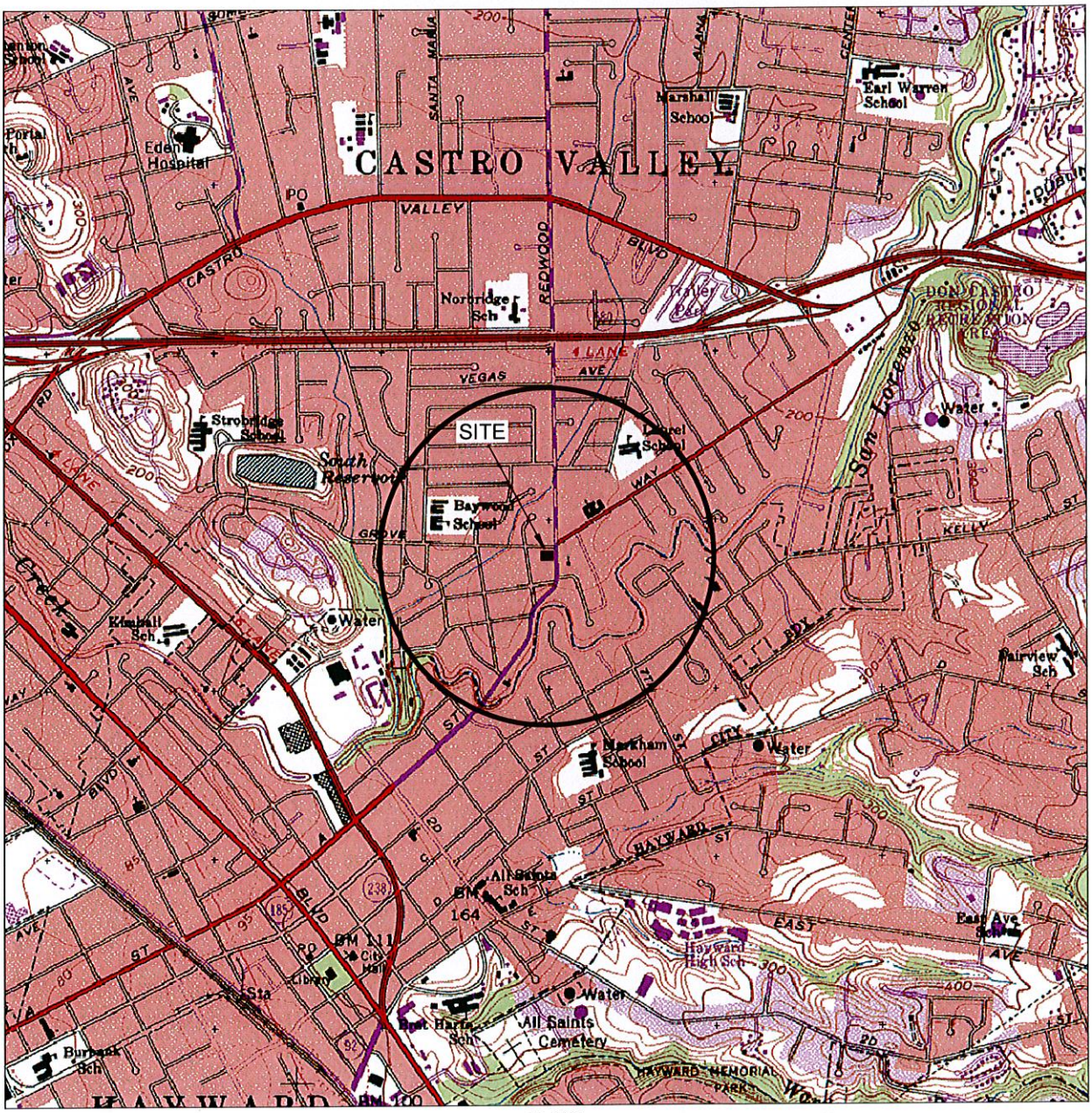
Kenny B. Mateik
Professional Geologist, C.E.G. No. 1935



Attachments:
Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Site Area Map

Attachment A: ACDEH letter (February 14, 2011)
Attachment B: Horizon Field Methods and Procedures

c: Mr. C. Shay Wideman, Valero Energy Corp.
Mr. Bill Courtney, Property Manager
Mr. Allen Shin, Banya Investment LLC



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

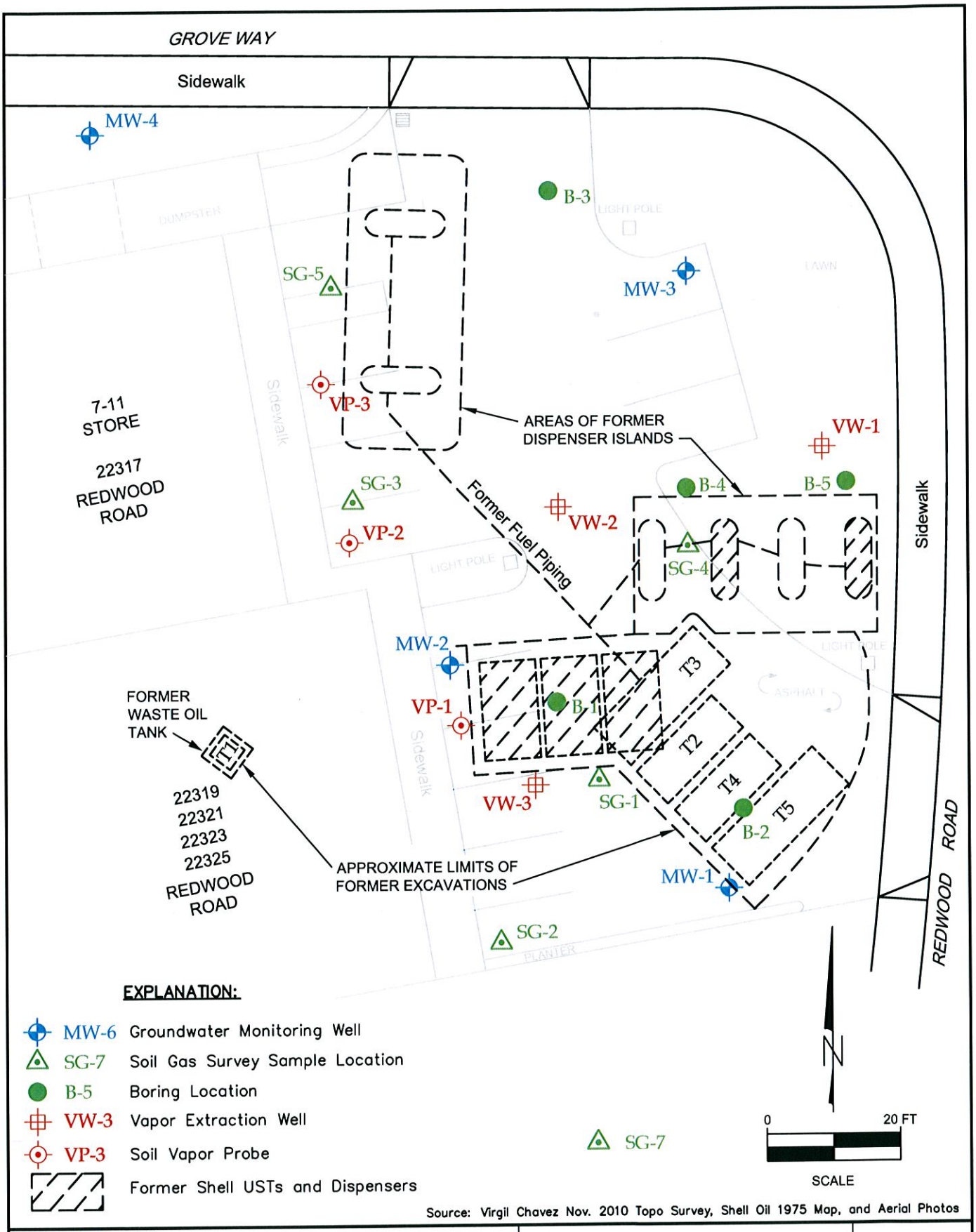
QUADRANGLE LOCATION

0 2000 FT

SCALE 1:24,000

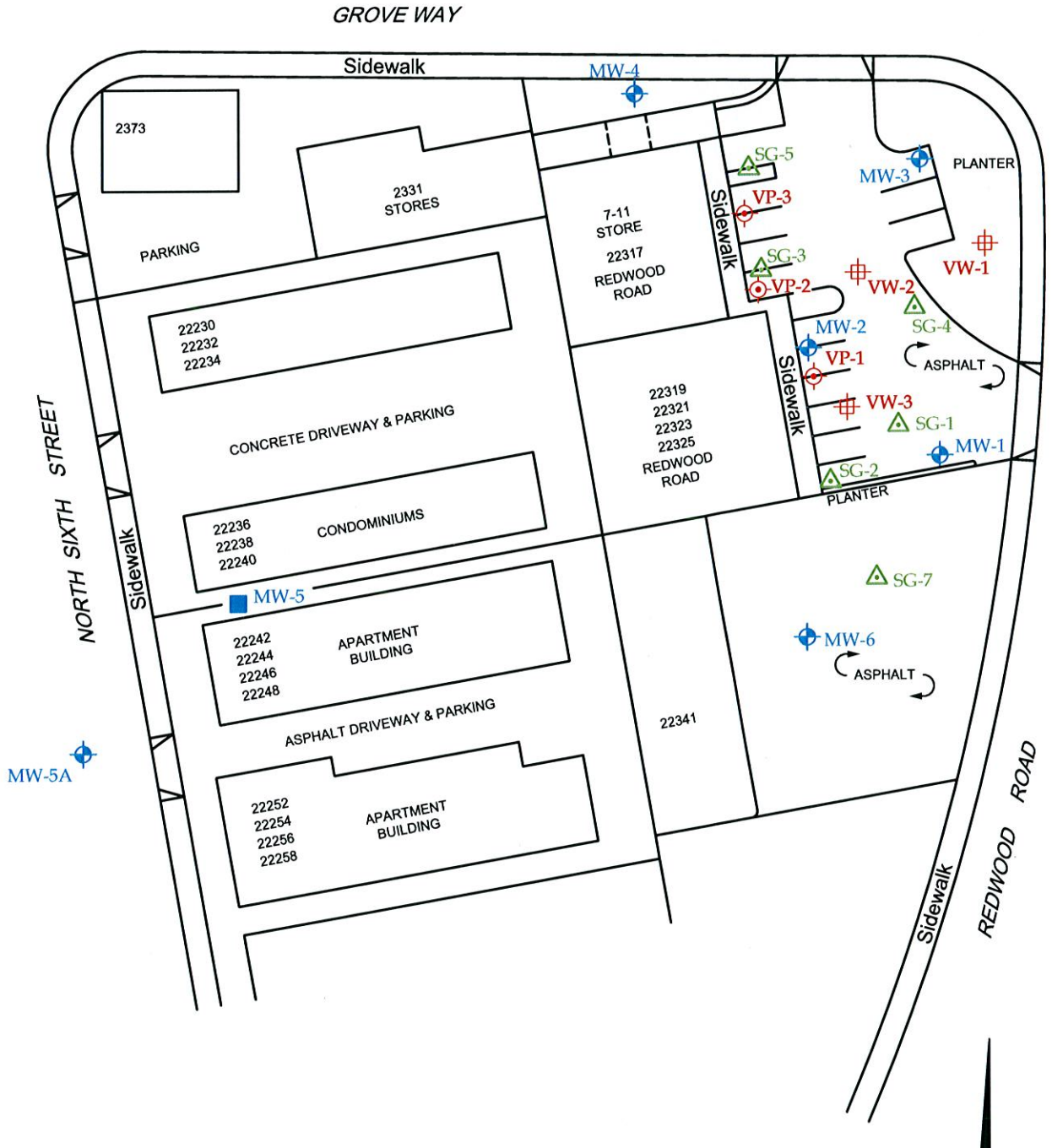
NORTH

HORIZON ENVIRONMENTAL INC.		SITE LOCATION MAP	FIGURE 1
Project Number: 1574.41 Prepared By: K. Liptak Reviewed By: K. Mateik	Drawn By: M. LaCoste Date: 10/7/04 Revised Date:	FORMER BEACON STATION NO. 12574 22315 REDWOOD ROAD CASTRO VALLEY, CA.	



Source: Virgil Chavez Nov. 2010 Topo Survey, Shell Oil 1975 Map, and Aerial Photos

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



EXPLANATION:

- MW-6 Groundwater Monitoring Well
- SG-7 Soil Gas Location
- VW-3 Vapor Extraction Well
- VP-3 Soil Vapor Probe
- MW-5 Abandoned Monitoring Well

Source: Virgil Chavez Nov. 2010 Topo Survey, Shell Oil 1975 Map, and Aerial Photos

HORIZON ENVIRONMENTAL INC.		SITE AREA MAP FORMER BEACON STATION NO. 12574 22315 REDWOOD ROAD CASTRO VALLEY, CA.	FIGURE 3
Project Number: 1574.13 Prepared By: E. Kruck Reviewed By: K. Mateik	Drawn By: C. Bechtell Date: Revised Date:		

ATTACHMENT A

ACDEH LETTER (02-14-11)

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

February 14, 2011

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: Review of Subsurface Investigation Report for Fuel Leak Case No. RO0000355 and GeoTracker Global ID T0600100155, Beacon #12574, 22315 Redwood Road, Castro Valley, CA 94546

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, *"Subsurface Investigation Report, Former Beacon Station No. 12574, 22315 Redwood Road, Castro Valley, CA,"* dated December 22, 2010 and received by ACEH on January 6, 2011. The Report, which was prepared on your behalf by Horizon Environmental, Inc., presents the results of soil, groundwater, and soil vapor sampling conducted in December 2010.

The Report recommends soil vapor extraction (SVE) feasibility testing prior to submittal of a Corrective Action Plan (CAP). We have no objection to this recommendation and request that you submit a Work Plan for SVE feasibility testing no later than April 22, 2011. Please incorporate newly installed monitoring well MW-5A into the ongoing semi-annual groundwater monitoring. We request that you perform the proposed work and send us the reports described below.

TECHNICAL REPORT REQUEST

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

- **April 15, 2011** – First Quarter 2011, Semi-Annual Groundwater Monitoring Report
- **April 22, 2011** – Work Plan for SVE Feasibility Testing
- **October 18, 2011** – Third Quarter 2011, Semi-Annual Groundwater Monitoring Report

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,

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

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Gary Barker, Horizon Environmental, Inc., 4970 Windplay Drive, #C5, El Dorado Hills, CA 95762 (*Sent via E-mail to: GBarker@horizonenvironmental.net*

Kenny Mateik, Horizon Environmental, Inc., 4970 Windplay Drive, #C5, El Dorado Hills, CA 95762 (*Sent via E-mail to: KMateik@horizonenvironmental.net*)

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 (*Sent via E-mail to: jerry.wickham@acgov.org*)

GeoTracker, e-File

Attachment 1
Responsible Party(ies) Legal Requirements/Obligations

REPORT REQUESTS

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/electronic_submittal/report_rqmts.shtml.

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.

ATTACHMENT B

HORIZON FIELD METHODS AND PROCEDURES

HORIZON ENVIRONMENTAL INC.
FIELD METHODS AND PROCEDURES

The following sections describe field methods and procedures that are utilized by Horizon Environmental Inc. (Horizon) in performance of applicable project tasks.

1.0 HEALTH AND SAFETY PLAN

Fieldwork 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 subsurface work, the location of underground utilities will be researched with the assistance of Underground Service Alert (USA). USA will contact the owners of the various utilities in the vicinity of the site to have the utility owners mark the locations of their underground utilities.

3.0 GROUNDWATER DEPTH EVALUATION

Depth to groundwater in wells 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.

4.0 VAPOR WELL PURGING AND SAMPLING

Prior to vapor purging and sampling, the top cap or well plug will be replaced with a slip cap equipped with a threaded sample port in each vapor well casing. A valve will be installed in the threaded sample port in the slip cap for purging and vapor sampling. An air sampling pump and tubing will be connected to the valve, which will then be opened for vapor purging and the collection of vapor samples. The volume of vapor present in the vapor well casing will be calculated by multiplying the total depth of the well casing (or the depth to groundwater) by Pi (3.143) times the radius of the well casing (usually 2 inches) squared.

$$\text{Casing volume (in cubic inches)} = (\text{depth of casing}) \times (\text{Pi}) \times (\text{radius of casing})^2$$
$$= 96 \text{ inches} \times 3.143 \times 1 \text{ inch}^2 = 302 \text{ inches}^3$$

$$\text{Casing volume (in cubic feet)} = \text{divide the volume in cubic inches by } 1728$$
$$= 302 / 1728 = 0.175 \text{ cubic feet}$$

The volume of vapor to be purged from each well casing will be 1½ times the calculated casing volume. As the vapor is purged from each well casing with an air sampling pump, it will be monitored with a flow meter and a photo-ionization detector (PID) or comparable device to observe the hydrocarbon concentrations. After each casing has been sufficiently purged, vapor samples will be collected in Tedlar bags or Summa canisters. To reduce cross-contamination between samples, the tubing will be removed from the sampling pump, and new tubing will be used to collect the next vapor sample. Vapor samples collected

from vapor extraction wells during vapor extraction tests (VETs) will be collected from the Influent and Effluent locations of the vacuum blower manifold.

Sample labels will contain the following information: job number; sample date; time of sample collection; and a sample number unique to that sample. The vapor samples will be transported to the lab and analyzed by a California-certified laboratory. A Chain-of-Custody form will be completed 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 the sample integrity and confirm that the sample was collected in the proper container, and that there is an adequate volume for analysis. The vapor samples will be analyzed within the EPA-specified holding time for the requested analyses.