

# PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

406 North Gaffey Street  
San Pedro, California 90731

SGI Job No. 04-CRA-008

Prepared for:



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Los Angeles, California 90013

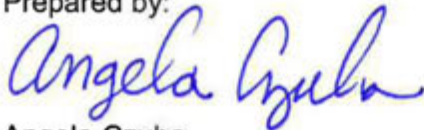
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April 20, 2010

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## **CERTIFICATION**

I hereby certify and declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in accordance with the standards and practices set forth in 40 CFR Part 312.

Further, the enclosed report documents that the all appropriate inquiries were performed in accordance with the requirements of the All Appropriate Inquires (AAI) and ASTM E1527-05, or with deviations as noted in the report.



Paul Parmentier, P.G. 3915  
Principal Hydrogeologist

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Signature

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## **EXECUTIVE SUMMARY PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**CRA/LA Property  
406 North Gaffey Street  
San Pedro, California 90731**

In March 2010, the Community Redevelopment Agency of Los Angeles (CRA/LA) contracted The Source Group, Inc. (SGI) to conduct a Phase I Environmental Site Assessment/All Appropriate Inquires evaluation of the property (herein referred to as the subject property), located at 406 North Gaffey Street, in San Pedro, California (see Figure 1). The CRA/LA is evaluating previous site uses and recognized environmental conditions (RECs) at the subject property that may impact the value and present or future use.

### **SUMMARY OF FINDINGS AND CONCLUSIONS**

- The subject property consists of one parcel, identified by the County of Los Angeles Assessor's Office as APN #7448-009-029, with a total area of approximately 3,615.2 square feet.
- The subject property is a former Shell service station and is currently non-operational. The property is a vacant lot and all the buildings and underground storage tanks have been removed, however the former station building's concrete pad, hoists, and clarifier are still intact. Based on information from CRA, the property is planned to be used as a park.
- The subject property is currently under the oversight of the California Regional Water Quality Control Board-Los Angeles.
- The subject property was identified in seven databases reported by GeoSearch.
- The GeoSearch report identified 32 properties within a one mile radius of the subject property that were included in one or more regulatory agency lists or databases.
- CRA/LA provided six environmental reports pertaining to the subject property for SGI to review. SGI also reviewed additional reports at the LARWQCB and the City of LA Fire Department.
- A review of aerial photographs dating back to 1928 did not reveal indications of RECs on or adjacent to the subject property.
- Sanborn maps were not available for review, but that data gap is considered to be minor.
- A field reconnaissance of the subject property and nearby area was conducted on April 9, 2010 by SGI personnel. Abandoned tires, trash, oil staining, and oily materials were observed on site.
- Data from previous site assessments indicate that soil and groundwater beneath the Site have been impacted by petroleum hydrocarbons and fuel oxygenates. The extent of the contamination has not been determined. Pilot testing of remediation methods has also been conducted. No active remediation is going on at the site.

- Groundwater monitoring wells MW-1 through MW-7 and observation wells (OB-1 through OB-6) have been installed. The Groundwater monitoring wells have been gauged and sampled on a quarterly basis since July 2006.

The recognized environmental conditions for the site include:

- Subsurface contamination associated with previous underground storage tanks at the Site. The on-going site investigation and future remediation is likely to impact site usage, as access to specific locations may be required.
- A clarifier, an apparent oil/water separator, hoists, and oily ground surfaces at the site indicate potential residual contamination sources.
- Abandoned tires, trash, and oily containers were observed at the Site.
- Additionally, the presence of volatile petroleum hydrocarbons in the subsurface may present vapor intrusion concerns.

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## 1.0 INTRODUCTION

As authorized by Community Redevelopment Agency, City of Los Angeles (CRA/LA), The Source Group, Inc. (SGI) conducted a Phase I Environmental Site Assessment (ESA) of the property (herein referred to as the subject property), located at 406 North Gaffey Street, in Los Angeles, California (see Figure 1). According to the Los Angeles County Assessor's Office, the subject property is comprised of a single parcel, identified as assessor's parcel number (APN) 7448-009-029, with a total area of approximately 3,615.2 square feet. (Figure 2).

This report presents the results and findings of the Phase I ESA conducted in accordance (with noted exceptions) the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I ESA Process, E 1527-05 (ASTM, 2005) and the All Appropriate Inquires (AAI) rule set forth in 40 CFR Part 312. The site location map is shown on Figure 1, the site vicinity map on Figure 2, and the Assessor's Parcel Map for the subject property is included in Appendix A.

### 1.1 Purpose

The purpose of the Phase I ESA was to identify the potential presence of "recognized environmental conditions" (RECs) or other potential sources of contamination or environmental issues and concerns, including aspects that may affect the potential liability in the event of changes in ownership, or potentially impact the value and present or future use of the subject property.

According to the ASTM, "recognized environmental condition" is defined as the presence or likely presence of regulated hazardous or dangerous wastes and/or substances, including petroleum products, under conditions that indicate an existing release, a past release, or a material threat of a release into the ground, groundwater, or surface water of the subject property.

This Phase I ESA was requested by CRA/LA, and is thus identified as the *user* or party seeking to use ASTM Practice E 1527-05 for the purpose of evaluating previous site uses and RECs at the subject property that may impact the value and present or future use.

### 1.2 Scope of Work

The Phase I ESA was performed in accordance (with noted exceptions) the recently promulgated AAI rule included in the final federal regulations and the requirements of the interim standards. The generally accepted standards of practice include, but are not limited to 40 CFR 312; applicable sections of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA); and the recently adopted AAI-ASTM Standard E 1527-05. Other state and local regulations related to site assessments and investigation of potential releases of hazardous substances or waste to the environment also were considered.

The scope of work included the following tasks:

- Review of state and federal regulatory agency lists to identify sites with known or suspected soil or groundwater contamination up to a 1 mile radius of the subject property.

- Review available sources of historical land use information such as aerial photographs, fire insurance maps, topographic maps, city directories, and to identify past activities of potential environmental concern.
- Review of available records pertaining to the presence, storage, use, unauthorized release, discharge, and disposal of hazardous materials and waste including: petroleum products, solvents, pesticides, asbestos, and other chemical compounds that may adversely affect public health and the environment.
- Interview of regulatory agency representatives to verify or obtain additional information on listed sites or reported violations, as warranted. Regional Water Quality Control Board-Los Angeles and City of Los Angeles Fire Department records were reviewed.
- Conducting a site reconnaissance of the subject property and adjacent sites to visually observe and identify indicators of potential environmental concern or recognized environmental conditions.
- Interview of current and past owner(s) and occupants, as necessary, with personnel knowledgeable of the site history and facility operations to obtain background information of the properties could not be performed. CRA/LA personnel (Daniel Weissman) prepared a response to SGI's questionnaire on site usage.
- Identification of data gaps and potential significance with the ability to identify conditions indicative of releases and threatened release.
- Preparation of this report presenting the results and findings of the above activities.

The scope of work did not include a title search; sampling and analysis of hazardous materials such as lead-based paint (LBP), asbestos, polychlorinated biphenyls (PCBs), mold or pesticides; subsurface sampling; or geotechnical investigation.

The regulatory agency database search and review within the ASTM standard search radius was conducted by GeoSearch under subcontract to SGI, including research of available historical land use information such as Sanborn maps, city directories, and an environmental lien search.

The AAI-ASTM Standard E 1527-05 is consistent with the environmental due diligence requirements of the Superfund Amendments and Reauthorization Act (SARA), which includes limited research, review of specified and reasonably ascertainable regulatory listings and a site reconnaissance to identify RECs.

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## 2.0 SITE DESCRIPTION

The following sections describe the location and the current uses of the subject and adjacent properties.

The subject property consists of a single parcel, identified as APN 7448-009-029, with a total area of approximately 3,615.2 square feet, and is located in an area that is zoned for general or commercial development. The Site is located on the northeast corner of the intersection of North Gaffey and West O'Farrell Streets in San Pedro. The property is owned by Equilon Enterprises LLC, Shell Oil Products US.

The property is under the regulatory oversight of the California Regional Water Quality Control Board-Los Angeles (CRWQCB-LA). On November 9, 2006, the CRWQCB-LA added the Site to the Underground Storage Tank Expedited Agency Oversight Program (EAOP) and is a Class D Priority site. The CRWQCB-LA classified the site as a lower priority case and in EAOP, the responsible party implements a reduced regulatory oversight "self-directed" process to complete the necessary assessment and cleanup at the Site.

As shown on Figure 2, the subject property is bounded to the north by the 110 Freeway, an alley, and a single-family residence. It is bounded to the east by West Oliver Street, a small residential street. It is bounded to the south by West O'farrell Street, and to the west by North Gaffey Street. The property is currently a vacant lot surrounded by a locked fence. The former station building's concrete pad, hoists, an apparent oil/water separator, and clarifier are still in place. Tires and other debris were observed at the site. Several monitoring well covers were observed, but no remediation equipment was observed at the site. Photographs of the subject property taken during site reconnaissance on April 9, 2010 are presented in Appendix B.

Based on information received from CRA, the property is planned to be used as a park.

### 2.1 Adjoining Properties

Properties presently adjoining or in the immediate vicinity of the properties are as follows:

- North:** A plot of land that has a single-family residence, a portion of the pedestrian crossway that travels west to east over the 110 Freeway and North Gaffey Street, and the 110 Freeway.
- East:** Single- and multi-family residences. Barton Hill Elementary is 0.2 miles east of the Site.
- South:** Single- and multi-family residences.
- West:** Bandini Canyon Park. Bandini Street Elementary is 0.4 miles west of the Site.

### 2.2 Topography

The following is a description of the physical setting and pertinent environmental features of the subject properties and neighboring sites.

### **2.2.1 Geology/Soils**

The subject property is approximately two miles west of the Palos Verdes Hills, which border the Coastal Plain of Los Angeles County to the southwest. The Site is bounded on the north by the Palo Verde Fault Zone and on the south by the Cabrillo Fault. The main channel of the Los Angeles Harbor lies approximately one mile east of the Site. The Palos Verdes Hills highlands are almost entirely composed of rocks of pre-Tertiary and Tertiary age and are essentially-non-water bearing. The Palos Verdes Hills are an uplifted fault block composed of Catalina schist basement and marine sediments of Tertiary (Miocene Monterey Formation) and Quaternary age that have been folded into a general anticlinal form. (WGR, Site Assessment Report, 2006).

### **2.2.2 Hydrogeology**

The current depth to groundwater beneath the site is approximately 35 feet below ground surface. The site is located in the southeastern part of the West Coast Groundwater Basin, which is separated from the Central Basin to the north-northeast by the Newport-Inglewood uplift. Natural underflow recharge to the West Coast Basin is provided by the Central Basin, which is partially impeded by the Newport-Inglewood uplift zone.

The upper surface of the Gage Aquifer occurs beneath the site at a depth of approximately 35 feet. The Gage aquifer consists of fine to medium sand with variable amounts of gravel, sandy silt and clay. The thickness of the Gage ranges up to 160 feet and is estimated to be approximately 100 feet thick in the site vicinity based on data from wells within the immediate area installed by the Los Angeles County Flood Control District as part of the Dominguez Gap Barrier Project. The contact between the base of the Lakewood and the San Pedro Formations is an unconformity. This unconformity typically is associated with an aquitard unit. This unnamed aquitard separates the Gage Aquifer from the Lynwood Aquifer and consists mainly of clays, silts, and sandy silt deposits.

Groundwater flow in the Gage Aquifer is generally towards the north-northwest. Groundwater levels have been depressed below sea level by inland pumping and significant seawater intrusion has occurred throughout this aquifer. (WGR, Site Assessment Report, 2006).

The investigation reports associated with the former USTs indicate that the groundwater flows in sedimentary rocks under the site and may be controlled by heterogeneities in the subsurface.

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### 3.0 USER PROVIDED INFORMATION

Mr. Daniel Weissman, Principal Engineer for CRA/LA provided SGI with six previous environmental reports of the subject property for review. The observations, findings, and recommendations of the environmental reports are summarized below.

Mr. Weissman also indicated to SGI that the property is planned to be used as a park.

The User also provided reports are presented in Appendix C. Note that additional site investigation reports, available at the RWQCB-LA office, were also reviewed.

***Phase 2 Site Assessment Report, Shell Station, 406 North Gaffey Street, San Pedro California, prepared by WGR, Southwest, Inc., dated February 12, 2000.***

- The property was being utilized as an operational self-service Shell Station.
- The Phase 2 was conducted for Equivia Services to determine the environmental conditions in the subsurface prior to site divestment.
- The property consisted of a service station building with three service bays, two dispenser islands, three 10,000-gallon fiberglass gasoline USTs, and one 550-gallon fiberglass waste oil UST.
- In July 1988, four gasoline USTs were removed: one 8,000-gallon, two 5,000-gallon, and one 10,000-gallon. The removed USTs were replaced by three 10,000-gallon double walled fiberglass USTs. Impacted soil underneath the former USTs was excavated and transported from the site to an appropriate disposal facility. Details of the UST removal are referenced to W. W. Irwin's Tank Removal Report dated August 10, 1988.
- Phase 2 field activities consisted of advancing nine borings (WGR-1 to WGR-9) at various depths and the soil samples were collected for analyses and lithologic characterization. The soil mainly consists of brown and gray clay with minor amounts of silts and fine-grained sand. Groundwater was encountered at a 35 feet below ground surface (bgs).
- Analytical results of the soil sampling indicated detectable Total Petroleum Hydrocarbons (gasoline) TPHg, Benzene, Toluene, Ethylbenzene, Total Xylenes, and Methly Tertiary-Butyl Ether (MTBE). The analytical results indicated the possibility of hydrocarbon impacted groundwater beneath the Site.

***Site Assessment Report, Former Shell Service Station /SAP #136042, 406 North Gaffey Street, San Pedro California, prepared by WGR, Southwest , Inc., dated July 12, 2006.***

- On June 12-13, 2006, WGR advanced one soil boring (WGR-10) and installed four groundwater monitoring wells (MW-1 to MW-4). All the borings were drilled to 55 feet bgs. Soil samples were collected for analysis and lithologic characterization. TPHg, MTBE, and Tertiary-Butyl Alcohol (TBA) concentrations were found in all soil samples.

***Quarterly Status and Groundwater Monitoring Report, Former Shell Service Station, 406 North Gaffey Street, San Pedro California, prepared by Wayne Perry, Inc., dated April 8, 2008.***

- On February 18, 2008, Blaine Tech Services gauged and sampled wells MW-1 and MW-4. Wells MW-2 and MW-3 were not located by Blaine. TPHg, Benzene, and MTBE concentrations were found in all groundwater samples.



***Additional Site Assessment Report and Interim Remedial Action Plan, Former Shell Service Station, 406 North Gaffey Street, San Pedro California, prepared by Wayne Perry, Inc., dated June 22, 2009.***

- In 2008, three groundwater monitoring wells (MW-5 to MW-7) were installed and the installation is detailed in the *Additional Site Assessment Report*, prepared by Wayne Perry, dated January 1, 2009.
- On January 27, 2009, aquifer tests were performed on MW-1 through MW-6 to determine the hydrologic parameters of the first water-bearing unit.
- On January 28, 2009, one boring B-1 to approximately 50 feet to characterize the lithology and 12 soil vapor probes (SV-1 to SV-12) were installed to a depth of approximately five feet. Benzene, Toluene, Ethylbenzene, Xylenes, and MTBE were detected in the soil vapor probe samples.
- On March 5, 2009, all monitoring wells were gauged and sampled. Benzene was detected in samples from all the wells, MTBE was detected in four of the seven wells, and TBA was detected in five of the seven wells.
- Wayne Perry recommended conducting a dual-phase extraction pilot test to determine if dual-phase extraction would be effective at the Site.

***Dual-Phase Extraction Pilot Test Report, Former Shell Service Station, 406 North Gaffey Street, San Pedro California, prepared by Wayne Perry, Inc., dated March 9, 2010.***

- On October 6 through 8, 2009, six observation wells (OB-1 to OB-6) were installed to a total depth of approximately 50 feet. On October 19, 2009, a 10-hour dual-phase extraction test was performed. Approximately 32 pounds of vapor-phase hydrocarbons were recovered and approximately 63 gallons of groundwater were extracted during the 10-hour pilot test.
- Wayne Perry concluded that soil vapor extraction appears to be effective in removing residual hydrocarbons and MTBE; however, groundwater extraction does not appear to be feasible due to low flow rate and limited radius of influence.
- Wayne Perry proposed to conduct additional pilot testing and install one sparge well and four observation wells. (Appendix K).

#### 4.0 REGULATORY DATABASE RECORDS REVIEW

An environmental information database search was performed by GeoSearch on March 19, 2010 under subcontract to SGI for the subject property. The GeoSearch search included federal, state, and local databases. The results of the environmental databases searched within the standard search radius and the identified sites are presented in Appendix D.

The assumptions and approach to the regulatory database search, as well as the results, are described in Appendix D. The database search and review was conducted to identify sites or properties within the vicinity of the subject property and standard ASTM search radius with respect to reported unauthorized releases of hazardous substances or regulatory violations that could result in potential adverse environmental effects on the subject property. Maps included in the GeoSearch report indicate the approximate location of properties that may pose environmental concerns.

The subject property was identified in seven regulatory databases:

1. Historical Underground Storage Tank (HIST UST)
2. Hazardous Waste Tanner Summary (HWTS)
3. Leaking Underground Storage Tanks (LUST)
4. Statewide Environmental Evaluation and Planning System (SWEEPS)
5. Underground Storage Tanks (UST/CUPA)
6. Facility Registration System (FRS)
7. Geotracker Cleanup Sites (CLEANUPSITES)

Below is a summary of the GeoSearch results for the subject property:

<b>SUBJECT PROPERTY</b>			
<b>Database</b>	<b>Site ID</b>	<b>Details</b>	<b>Page # in Appendix</b>
HISTUST	<b>Shell Oil Company</b> 0002836B	<ul style="list-style-type: none"> <li>• Tank 1: Capacity: 5,000 gallons. Premium motor vehicle fuel.</li> <li>• Tank 2: Capacity: 5,000 gallons. Premium motor vehicle fuel.</li> <li>• Tank 3: Capacity: 550 gallons. Waste oil.</li> <li>• Tank 4: Capacity: 8,000 gallons. Unleaded motor vehicle fuel.</li> <li>• Tank 5: Capacity: 10,000 gallons. Regular motor vehicle fuel.</li> </ul>	2

<b>SUBJECT PROPERTY</b>			
<b>Database</b>	<b>Site ID</b>	<b>Details</b>	<b>Page # in Appendix</b>
HWTS	<b>Shell</b> CAL000194162	<ul style="list-style-type: none"> <li>• 1998: Manifest; 2 tons of empty containers were disposed of.</li> </ul>	5
LUST	<b>San Pedro Shell (Former)</b> T0603717723	<ul style="list-style-type: none"> <li>• LARWQCB LUST Program.</li> <li>• Automotive gasoline- groundwater contamination.</li> <li>• Leak discovered: 6/16/2000.</li> </ul>	8
SWEEPS	<b>Sun Kyung Kim Shell Station</b> A19-050-160	<ul style="list-style-type: none"> <li>• Tank 1: Capacity: 5,000 gallons. Regular motor vehicle fuel.</li> <li>• Tank 2: Capacity: 5,000 gallons. Regular motor vehicle fuel.</li> <li>• Tank 3: Capacity: 550 gallons. Waste oil.</li> <li>• Tank 4: Capacity: 8,000 gallons. Regular motor vehicle fuel.</li> </ul>	11
USTCUPA	<b>San Pedro Shell</b> 011564	<ul style="list-style-type: none"> <li>• San Pedro Shell; 406 N. Gaffey St, San Pedro, CA</li> </ul>	12
FRS	<b>Shell Service Station</b> 110002938242	<ul style="list-style-type: none"> <li>• Programs listed for this facility: RCRAINFO-Resource Conservation and Recovery Act Information System</li> </ul>	13
CLEANUPSITES	<b>San Pedro Shell (Former)</b> T0603717723	<ul style="list-style-type: none"> <li>• LARWQCB LUST Cleanup Site.</li> <li>• Potential gasoline contamination of aquifer used for drinking water supply.</li> <li>• Case opened: 6/16/2000.</li> <li>• Open site assessment.</li> </ul>	80

The GeoSearch report identified 32 properties within a one mile radius of the subject property that were included in one or more regulatory agency lists or databases. Because subsurface contamination may migrate from adjacent sites in groundwater or soil vapor, regulatory agency databases and files were reviewed to determine if contaminant releases or fuel leaks at or near the subject property pose a potential risk.

Below is a summary of the GeoSearch results by database:

- (BF) One property, within a 1/8 mile radius of the subject property, was identified in the Brownfields Management System database.
- (CERCLIS) One property, within a 1/4 mile radius, was identified in the Comprehensive Environmental Response, Compensation & Liability Information System database.
- (CALSITES) Six properties, one within a 1/4 mile radius and five within a mile radius were identified in the CALSITES database.

- (CLEANER) One property, within a 1/8 mile radius, was identified in the Dry Cleaner Facilities Database.
- (CORTESE) Three properties, one within a 1/8 mile and two within a 1/4 mile radius, were identified in the Cortese List data base.
- (CLEANUPSITES) Thirteen properties, three within a 1/8 mile, one within a 1/4 mile, and nine within a 1/2 mile radius, were identified in the Geotracker Cleanup Sites database.
- (ENVIROSTOR) Eleven properties, three within a 1/4 mile and eight within a 1/2 mile radius were identified in the EnviroStor Permitted and Corrective Action Sites database.
- (HISTUST) One property, within a 1/8 mile radius, was identified in the Historical Underground Storage Tanks database,
- (LUST) Fourteen properties, three within a 1/8 mile, one within a 1/4 mile, and ten within a 1/2 mile radius, were identified in the Leaking Underground Storage Tanks database.
- (NFE) One property, within a 1/4 mile radius, was identified in the Sites Needing Further Evaluation database.
- (NFRAP) One property, within 1/4 mile radius, was identified in the No Further Remedial Action Planned Sites database.
- (REF) One property, within a 1/4 mile radius, was identified in the Referred to Another Local or State Agency database.
- (SCH) One property, within a 1/4 mile radius, was identified in the School Property Evaluations database.
- (SWEEPS) Five properties, three within a 1/4 mile radius and two within a 1/2 mile radius, were identified in the Statewide Environmental Evaluation and Planning System database.
- (SWRCY) Three properties, within a 1/2 mile radius, was identified in the Recycling Centers database.
- (USTCUPA) Two properties, within a 1/2 mile radius, were identified in the Underground Storage Tanks database.

Below are three properties that are within a 1/8 mile radius of the subject property and they are discussed in more detail.

**Texaco Service Station**

336 North Gaffey Street  
San Pedro, California 90731

**Map ID: 1**

**Approximate Distance from the Property:** 0.025 miles south

**Databases Listed:** CLEANUPSITES, CORTESE, LUST, SWEEPS,

**Regulatory Data Summary:** According to the CLEANUPSITES and LUST databases, the facility had a tank that leaked automobile gasoline and soil was impacted. The case was opened June 21, 1983, remediation began April 18, 1988, and the case was closed July 18, 1996 under the direction of the Regional Water Quality Control Board.

**Lee's Service**

335 North Gaffey Street  
San Pedro, California 90731

**Map ID: 2**

**Approximate Distance from the Property:** 0.034 miles southwest

## 5.0 HISTORICAL RECORDS REVIEW

Information from local governmental agencies, historic Sanborn fire insurance maps, city directories, and interviews of people knowledgeable of the subject property were reviewed to determine historical use of the site and neighboring properties, the results of which are discussed below.

### 5.1 Sanborn Fire Insurance Maps

No Sanborn fire insurance maps were available from Geosearch for the subject property.

### 5.2 City Directories

Research regarding the historical city directories was conducted by Geosearch. The subject property was listed as a Shell Service Station from 1971 to 1996. From 2002 to 2008, Charlie Quezada was listed at the subject property. The surrounding area had residential and business listings along North Gaffey Street and there were residential listings along West O'Farrell Street from 1971 to 2008. A copy of the City Directories report is included in Appendix E.

CITY DIRECTORY SUMMARY	
Year	Comments
1971	<b>Subject Property:</b> (406 N. Gaffey) Yung Kim's Shell Service. <b>Surrounding Area:</b> (351 N. Gaffey) M Giacoletti, (403 N. Gaffey) Fred McCoy, (405 N. Gaffey) Jas E. Parsons, (427 N. Gaffey) Williams Hallet Plumbing, (502 N. Gaffey) Bertel's Furniture & Carpets. (600 Block of W O'Farrell) Residential Listings.
1976	<b>Subject Property:</b> (406 N. Gaffey) Yung Kim's Shell Service. <b>Surrounding Area:</b> (335 N. Gaffey) Auto Mat Oil Co, (336 N. Gaffey) San Pedro Club Tow, (351 N. Gaffey) M Giacoletti, (403 N. Gaffey) Fred McCoy, (405 N. Gaffey) Jas E. Parsons, (427 N. Gaffey) Williams Hallet Plumbing, (502 N. Gaffey) Bertel's Furniture & Carpets. (600 Block of W O'Farrell) Residential Listings.
1981	<b>Subject Property:</b> (406 N. Gaffey) Shell Service Station. <b>Surrounding Area:</b> (335 N. Gaffey) Auto Mat Oil Co, (336 N. Gaffey) S&S Oil Co, (351 N. Gaffey) Boettcher Engineering, (403 N. Gaffey) James Parsons, (409 N. Gaffey) Marie Smith, (427 N. Gaffey) Alan Williams, (502 N. Gaffey) Nader's Furniture. (600 Block of W O'Farrell) Residential Listings.
1985-1986	<b>Subject Property:</b> (406 N. Gaffey) Shell Service Station. <b>Surrounding Area:</b> (335 N. Gaffey) Auto Mat Oil Co, (336 N. Gaffey) S&S Oil Co, (351 N. Gaffey) Boettcher Engineering, (403 N. Gaffey) James Parsons, (409 N. Gaffey) Marie Smith, (427 N. Gaffey) Alan Williams, (502 N. Gaffey) Nader's Furniture. (600 Block of W O'Farrell) Residential Listings.

<b>CITY DIRECTORY SUMMARY</b>	
<b>Year</b>	<b>Comments</b>
1991	<b>Subject Property:</b> (406 N. Gaffey) Shell Service Station. <b>Surrounding Area:</b> (335 N. Gaffey) Lee’s Service Station, (336 N. Gaffey) Tru Valu Inns, (351 N. Gaffey) Boettcher Engineering, (403 N. Gaffey) Francisco Noyola, (427 N. Gaffey) Alan Williams, (502 N. Gaffey) Nader’s Furniture. (600 Block of W O’Farrell) Residential Listings.
1996	<b>Subject Property:</b> (406 N. Gaffey) Shell Service Station. <b>Surrounding Area:</b> (335 N. Gaffey) Lee’s Service Station, (336 N. Gaffey) Tru Valu Inns, (351 N. Gaffey) Boettcher Engineering, (403 N. Gaffey) Francisco Noyola, (427 N. Gaffey) Alan Williams, (502 N. Gaffey) Nader’s Furniture. (600 Block of W O’Farrell) Residential Listings.
2002	<b>Subject Property:</b> (406 N. Gaffey) Charlie Quezada. <b>Surrounding Area:</b> (312 N. Gaffey) Office Building (6 Occupants), (335 N. Gaffey) Chun Lee, (351 N. Gaffey) Boettcher Engineering, (403 N. Gaffey) Silvester Salazar, (408 N. Gaffey) Mayra Angula, (427 N. Gaffey) Alan Williams, (502 N. Gaffey) Nader’s Furniture Stores. (600 Block of W O’Farrell) Residential Listings.
2008	<b>Subject Property:</b> (406 N. Gaffey) Charlie Quezada. <b>Surrounding Area:</b> (312 N. Gaffey) Office Building (7 Occupants), (335 N. Gaffey) Chun Lee, (351 N. Gaffey) Boettcher Engineering, (403 N. Gaffey) Silvester Salazar, (408 N. Gaffey) Mayra Angula, (415 N. Gaffey) Gilberto Carrion, (427 N. Gaffey) Alan Williams, (502 N. Gaffey) Nader’s Furniture Stores. (600 Block of W O’Farrell) Residential Listings.

### 5.3 Historical Topographic Maps

SGL reviewed available historical topographic maps provided by GeoSearch for the following years: 1892, 1925, 1944, 1951, 1964, 1972, and 1981 all of which are included in Appendix F. Review of available historical topographic maps did not indicate that the subject property was or is adjacent to areas of potential environmental concern as discussed below.

**1892:** The subject property and surrounding areas are undeveloped.

**1925:** The subject property and surrounding areas appear to be developed and major streets are visible. The Los Angeles Harbor, Turning Basin, West Basin, East Basin Channel, and Terminal Island are labeled on the map.

**1944:** The subject property and surrounding areas are developed and the Los Angeles Harbor is labeled on the map.

**1951:** The subject property and surrounding areas are developed and Gaffey Street, Pacific Avenue, and Plaza Harbor Boulevard are distinctive streets (4 lanes) on the map near the subject property.

**1964:** The subject property and surrounding area appear similar to the 1951 topographic map, with the exception of the addition of the 110 freeway extension.

**1972:** The subject property and surrounding area appear similar to the 1964 topographic map, with the exception of another extension of the 110 freeway and ramps for the freeway.

**1981:** The subject property and surrounding area appear similar to the 1972 topographic map.

## 5.4 Aerial Photographs

Based on a review of historical aerial photographs, it appears that the subject property and the surrounding area have been developed since at least 1928. A listing of selected photographs reviewed and a summary of each is presented below with copies of the aerial photographs included in Appendix G. The review of the aerial photographs did not indicate any RECs.

### Aerial Photographs Reviewed

Date	Photograph Source and Scale	
	Source	Scale
1928	ASCS	1" = 700'
1947	Fairchild	1" = 700'
1953	ASCS	1" = 700'
1968	Teledyne	1" = 700'
1976	Teledyne	1" = 700'
1982	AMI	1" = 700'
1994	USGS	1" = 700'
2005	USGS	1" = 700'
Source: GeoSearch, Inc., 2010		

**1928:** The subject property appears to be developed, along with the surrounding areas to the north, south, east, and west. The surrounding streets are also clearly visible in the photo.

**1947:** The subject property and surrounding areas appear to have undergone more development and North Gaffey Street has been expanded and is clearly visible in the photo.

**1953:** The subject property and surrounding areas appear similar to the 1947 photo.

**1968:** This photo has a better resolution than the previous ones. The subject property is developed with three structures of the apparent Service Station, the pedestrian

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crossway has been constructed and runs east-west over North Gaffey Street, and grading has taken place in preparation of the expansion of the 110 freeway.

**1976:** The subject property and surrounding areas appear similar to the 1968 photo, with the exception of the construction of the 110 freeway.

**1982:** The subject property and surrounding areas appear similar to the 1976 photo.

**1994:** The subject property appears to have had a structure or two added to the property. The surrounding areas appear similar to the 1982 photo.

**2005:** The subject property appears to have had a structure removed in the southern part of the property. The surrounding areas appear similar to the 1994 photo.

## **5.5 Oil, Gas, and Water Well Reports**

An Oil and Gas report and Water Well report were provided by GeoSearch for the subject property. The reports did not indicate any oil, gas, or water wells within a ½-mile distance. Copies of these reports are included in Appendix H.

## **5.6 Environmental Lien and Activity and Use Limitations**

An Environmental Lien report was provided by GeoSearch for the subject property. The report did not indicate any environmental liens on the property, however, it was noted that the Shell Oil Company is in the process of cleaning up the site and there is a restriction: “No Service Station; buyer must perform due diligence.” A copy of the Environmental Lien Search is provided in Appendix I.

## **5.7 Interviews**

The owner of the property was not available for a one on one interview on the subject property, however, on April 20, 2010, CRA/LA forwarded to SGI a completed questionnaire from Hamid Pournamarj (spelling unclear), a current or former site owner. Copies of the Standard Phase I ESA Questionnaires completed by the owner and SGI personnel are included in Appendix J.

The owner responded in the questionnaire that he is aware of the past and present existence of hazardous substances or petroleum products at the Site and he indicated that he is not aware of previous environmental assessments or violations. He responded that there are no past or present pits, ponds or lagoons at the site that would be used for waste treatment. The questionnaire did not include a specific question regarding the past or current presence of an oil/water separator or a clarifier at the Site. The site reconnaissance conducted by SGI personnel confirmed the existence of a clarifier and an apparent oil/water separator. The owner indicated that there are no visible past or present staining at the Site, however, SGI’s site reconnaissance indicated several oil stained areas. The owner responded that there are no storage tanks currently on Site, nor were there any in the past. According to agency documents, four USTs were removed and replaced in July 1988 and subsequently those newer USTs were removed July 16, 2000. The owner answered no to the question regarding evidence of past or current leaks, spills or staining at the Site. According to agency documents, there have been past leaks associated with the USTs. The owner acknowledged the presence of hydraulic equipment which could indicate the presence of



**Databases Listed:** LUST, SWEEPS, BF, CLEANUPSITES

**Regulatory Data Summary:** According to the CLEANUPSITES database, the facility had a tank that leaked gasoline which has potentially affected an aquifer used for drinking water. The case was opened April 12, 2001 and remediation activities are taking place. The case is under the oversight of the Regional Water Quality Control Board.

**UNOCAL Service Station #6174**

311 North Gaffey Street  
San Pedro, California 90731

**Map ID:** 3

**Approximate Distance from the Property:** 0.058 miles southwest

**Databases Listed:** HISTUST, LUST, SWEEPS, CLEANUPSITES

**Regulatory Data Summary:** According to the LUST and CLEANUPSITES databases, the automobile gasoline leak was discovered during a tank closure November 12, 1992. Groundwater was affected by the leak. Contaminated soil was excavated and disposed of. The case was closed October 23, 1996 under the direction of the Regional Water Quality Control Board.

Polychlorinated Biphenyls (PCBs). During SGI's site reconnaissance, three hoists, surrounded by black oil stains were observed.

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## 6.0 REGULATORY AGENCY DOCUMENTS REVIEW

During this Phase I ESA, SGI contacted regulatory agencies to obtain possible information pertaining to the possible use, storage or disposal of hazardous substances for the subject properties.

SGI requested file searches at the following agencies:

- Los Angeles Regional Water Quality Control Board (LARWQCB)
- Department of Toxics Substances Control Board
- Los Angeles City Department of Public Works (LADPW)
- Los Angeles City Fire Department- Underground Storage Tank Department (LAFD-UST)
- South Coast Air Quality Management District (SCAQMD)
- Los Angeles County Public Health – Hazardous Materials (LACPH)
- Division of Oil, Gas and Geothermal Resources (DOGGR)
- California Environmental Protection Agency (CalEPA)
- City/County of Los Angeles Department of Building & Safety (LACDBS)

The following is a summary of regulatory agency contacts and information obtained on the subject property.

Los Angeles Regional Water Quality Control Board: Information was requested to determine if the subject property had any reported open or closed environmental cases. SGI personnel reviewed all Site reports at the RWQCB-LA office on April 15, 2010. Copies of selected LARWQCB documents are presented in Appendix K.

- *Underground Tank Abandonment Report, Shell Service Station, 406 North Gaffey Street, Prepared by WGR, October 2, 2000.* Three 10,000-gallon, fiberglass underground storage tanks, and one 550-gallon, fiberglass waste oil tank, and associated piping were removed on June 16, 2000. TPH and MTBE were detected in soil samples collected from below the removed UST. (Appendix K).
- *Site Assessment Report, Former Shell Service Station /SAP #136042, 406 North Gaffey Street, San Pedro California, prepared by WGR, Southwest, Inc., dated July 12, 2006.* On June 12-13, 2006, WGR advanced one soil boring (WGR-10) and installed four groundwater monitoring wells (MW-1 to MW-4). All the borings were drilled to 55 feet bgs. Soil samples were collected for analysis and lithologic characterization. TPHg, MTBE, and Tertiary-Butyl Alcohol (TBA) concentrations were found in all soil samples. (Appendix K).
- *Quarterly Status and Groundwater Monitoring Report- Third Quarter 2006, Former Shell Service Station, 406 North Gaffey Street, prepared by WGR, Southwest, dated September 22, 2006.* The groundwater monitoring wells (MW-1 to MW-4) were installed

June 2006 and this was the first ever sampling event. TPHg, Benzene, and total Xylenes were detected in every well, MTBE was detected in three wells. (Appendix K).

- Quarterly Status and Groundwater Monitoring Reports for the Fourth Quarter 2006 and the First and Second Quarters 2007 were prepared by Wayne Perry. TPHg, Benzene, MTBE, and TBA were detected in the sampled wells.

Los Angeles City Fire Department, Underground Storage Tank Department: Information was requested to determine if the subject property had any reported open or closed environmental cases. SGI personnel visited the agency to review Site records on April 12, 2010. Copies of selected LA Fire Department documents are presented in Appendix K.

- July 15, 1988, Notification of Underground Tank Abandonment. One 10,000-gallon, one 8,000-gallon, and two 5,000-gallon tanks were removed. (Appendix K).
- July 15, 1988, Underground Tank Enforcement Unit-Abandonment Information Sheet. One 10,000-gallon, one 8,000-gallon, and two 5,000-gallon tanks were removed and will be replaced. (Appendix K).
- *Underground Tank Abandonment Report*, Shell Service Station, 406 North Gaffey Street, Prepared by WGR, October 2, 2000. (Appendix K).
- May 25, 2005, Letter addressed to Joe Lentini (Equivia Services LLC) from the Los Angeles Fire Department which stated that the LA Fire Department reviewed the Tank Abandonment Report dated October 2, 2000, prepared by WGR. The LA Fire Department concluded that groundwater contamination was probable. (Appendix K).
- November 9, 2006, Letter addressed to Joe Lentini from the CRWQCB-LA which stated that in June 2005, the LA Fire Department referred the case (406 N. Gaffey St., case No. 907310543) to the Regional Board which in turn added the case to the Underground Storage Tank (UST) Program's Expedited Agency Oversight Program (EAOP). (Appendix K).

South Coast Air Quality Management District: Information on permits to operate, notices of violation, equipment lists, complaints, air monitoring, and asbestos notifications were requested for the subject property. Information from the SCAQMD was provided by Mr. Rafael Villa from the SCAQMD Public Records Department. An audit, notices of violation, facility equipment list reports, notices to comply, and a complaint report for dates ranging from 1986 to 1999 were provided by the SCAQMD. The SCAQMD documents cited the former Shell station for having expired/invalid permits, for not having permits onsite, for not maintaining maintenance logs, for not conducting inspections, and for not maintaining fuel dispensing equipment and vapor recovery system equipment.

The remaining public records request did not return any files. If files that change the findings and conclusions of this report are provided to SGI at a later time, an addendum will be submitted under separate cover.

## **7.0 OTHER ENVIRONMENTAL CONSIDERATIONS**

### **7.1 Asbestos Containing Materials**

There are no buildings currently on the subject property.

### **7.2 Lead-Based Paint**

There are no buildings currently on the subject property.

### **7.3 Lead in Drinking Water**

This item was not included in the scope of the assessment.

### **7.4 Regulatory Compliance**

The property is under the regulatory oversight of the California Regional Water Quality Control Board-Los Angeles (CRWQCB-LA). On November 9, 2006, the CRWQCB-LA added the Site to the Underground Storage Tank Expedited Agency Oversight Program (EAOP) and is a Class D Priority site.

### **7.5 Ecological Resources**

No ecological issues were discovered on the subject property during SGI's site reconnaissance or research.

### **7.6 High Voltage Power Lines**

No high-voltage power lines were discovered on the subject property during SGI's site reconnaissance.

### **7.7 Endangered Species**

No endangered species appeared to be on the subject property during SGI's site reconnaissance or research.

### **7.8 Wildlife Sanctuaries**

No wildlife sanctuaries were observed on or near the subject property during SGI's site reconnaissance or research.

### **7.9 Cultural and Historic Resources**

No cultural or historical resources are currently on the subject property.

## 8.0 SITE RECONNAISSANCE

A field reconnaissance of the Site and nearby area was conducted on April 9, 2010 by SGI personnel. The purpose of the Site reconnaissance was to look for visual evidence of past or present uses that could potentially affect the soil and/or groundwater quality at the Site. The following is a summary of conditions observed during the Site reconnaissance. Selected annotated photographs taken during the site reconnaissance are included in Appendix B.

The Site is located on the northeast corner of the intersection of North Gaffey and West O'Farrell Streets. The property is bordered on the north by the 110 Freeway, an alley, and a single-family residence, on the east by West Oliver Street, on the south by West O'farrell Street, and to the west by North Gaffey Street. There are residences to the east and south of the property. The park to the west is undergoing improvements.

The Site is currently a vacant lot with a chain link fence along West O'Farrell and North Gaffey Streets and a cinderblock wall along West Oliver Street. The cinderblock runs about two-thirds of the way along the alley to the north and a tin fence covers the rest; there is a gap between the tin fence and the cinderblock wall. The gate to the property is locked for security.

The former station building's concrete pad, hoists, an apparent oil/water separator, and a clarifier remain at the Site. The majority of the Site is paved with asphalt and there are areas where the weeds have taken root. There are black oil stains around the hoists and the clarifier. There are also oil stains located on the asphalt to the north and west of the former station building's concrete pad. Near the entrance gate located to the south, there are a pile of 18 tires (there is a tire in the northern end of the property- for a total of 19 tires), trash, a five-gallon bucket with an unknown oily substance, and black oil stains on the ground.

## **9.0 DATA GAPS / DEVIATIONS**

Any significant data gaps identified for the completeness of this report is described in this section. A data gap is information that is either not found, identified, available or provided to SGI despite efforts to obtain from various sources at the time this report was published.

During this investigation, Sanborn maps were not available for review. This is not considered to be a significant deviation for this investigation.



## 10.0 OPINION

It is the Environmental Professional's opinion that the results of the environmental assessment have revealed evidence of RECs in connection with the subject property associated with the former USTs and current site conditions at the Site.

SGL's Phase I ESA activities revealed evidence of previous USTs and subsurface hydrocarbon contamination. The recognized environmental conditions for the site include:

- Subsurface contamination associated with previous underground storage tanks at the Site. The on-going site investigation and future remediation is likely to impact site usage, as access to specific locations may be required.
- A clarifier, an apparent oil/water separator, hoists, and oily ground surfaces at the site indicate potential residual contamination sources.
- Abandoned tires, trash, and oily containers were observed at the Site.
- Additionally, the presence of volatile petroleum hydrocarbons in the subsurface may present vapor intrusion concerns.

## **11.0 CONCLUSIONS**

SGI performed a Phase 1 Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527 of 406 N Gaffey Street, the property. Any exceptions to, or deletions from this practice are described in Section 9 of this report. This assessment has revealed the following recognized environmental conditions:

- Subsurface contamination associated with previous underground storage tanks at the Site. The on-going site investigation and future remediation is likely to impact site usage, as access to specific locations may be required.
- A clarifier, an apparent oil/water separator, hoists, and oily ground surfaces at the site indicate potential residual contamination sources.
- Abandoned tires, trash, and oily containers were observed at the Site.
- Additionally, the presence of volatile petroleum hydrocarbons in the subsurface may present vapor intrusion concerns.

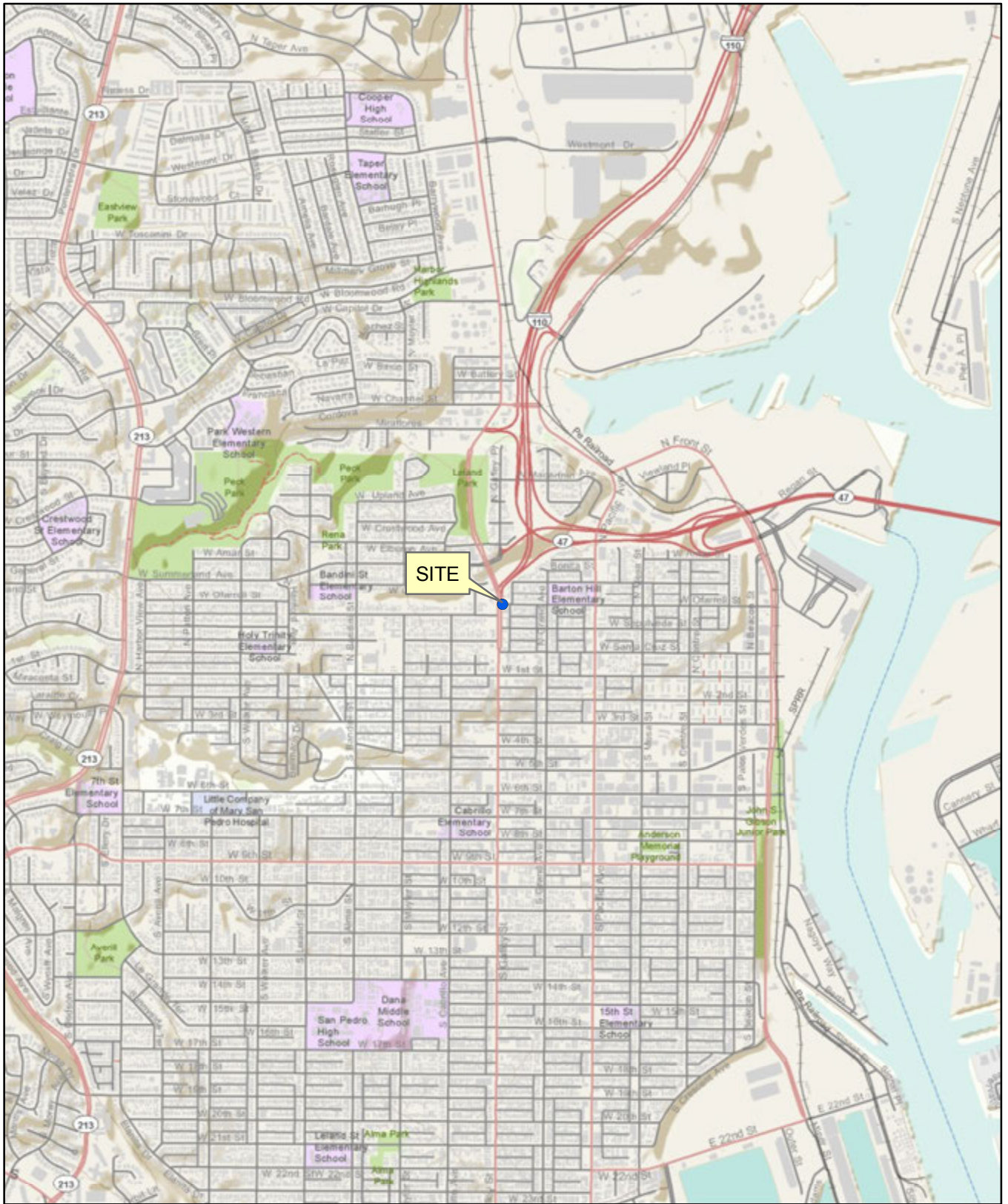
## **12.0 LIMITATIONS**

This environmental site assessment report was prepared on behalf of and for the exclusive use of CRA/LA. SGI has prepared the report in accordance with generally accepted industry practices for similar type of work completed in the area at the time of the project.

The conclusions and recommendations presented above are based on the agreed scope of work outlined in this report. SGI makes no warranties or guarantees as to the accuracy or completeness of information provided or compiled by others. It is possible that information exists beyond the scope of this investigation. Also, changes in site use may have occurred sometime in the past due to rainfall, temperature, water usage, economic, agricultural, or other factors. Additional information that was not located, available, or could not be obtained during the preparation of this report may result in modification of the conclusions and recommendations presented herein.

SGI does not represent that the site contains no hazardous or toxic materials, products, or other latent conditions beyond that observed during the site assessment. Further, the services herein are in no way to be construed or intended to be relied upon as a legal opinion, interpretation or advice.

## FIGURES



SOURCE:  
 ESRI 7.5 MINUTE TOPOGRAPHIC MAP.  
<http://resources.esri.com/arcgisonline/services>

PROJECT NO.: 04-CRA-008  
 DATE: 3/30/2010  
 DR. BY: AC  
 APP. BY: SN

SCALE= 1:24,000  
 0 750 1,500 3,000 Feet

N



**SGI** THE SOURCE GROUP, INC.  
 environmental  
 1962 FREEMAN AVE.  
 SIGNAL HILL, CA 90755

**406 NORTH GAFFEY STREET  
 SAN PEDRO, CALIFORNIA 90731**

**SITE LOCATION MAP**

**FIGURE  
 1**





SOURCE:  
GOOGLE MAPS

PROJECT NO.:	DATE:	DR. BY:	APP. BY:
04-CRA-008	4/1/2010	AC	SN

0 25 50 100  
Feet

N



**SGI** THE SOURCE GROUP, INC.  
environmental  
1962 FREEMAN AVE.  
SIGNAL HILL, CA 90755

406 NORTH GAFFEY STREET  
SAN PEDRO, CALIFORNIA 90731

**SITE VACINITY MAP**

FIGURE  
2

**APPENDIX A**

**LOS ANGELES COUNTY ASSESSOR'S PARCEL MAP AND INFORMATION**

7448 | 9  
SCALE 1" = 60'

2003

Revised:  
2-21-65  
11-16-65  
1-4-66  
4-15-66  
6-6-67  
6-11-67  
461219  
676209  
676619113  
20020803  
671102300  
69103104

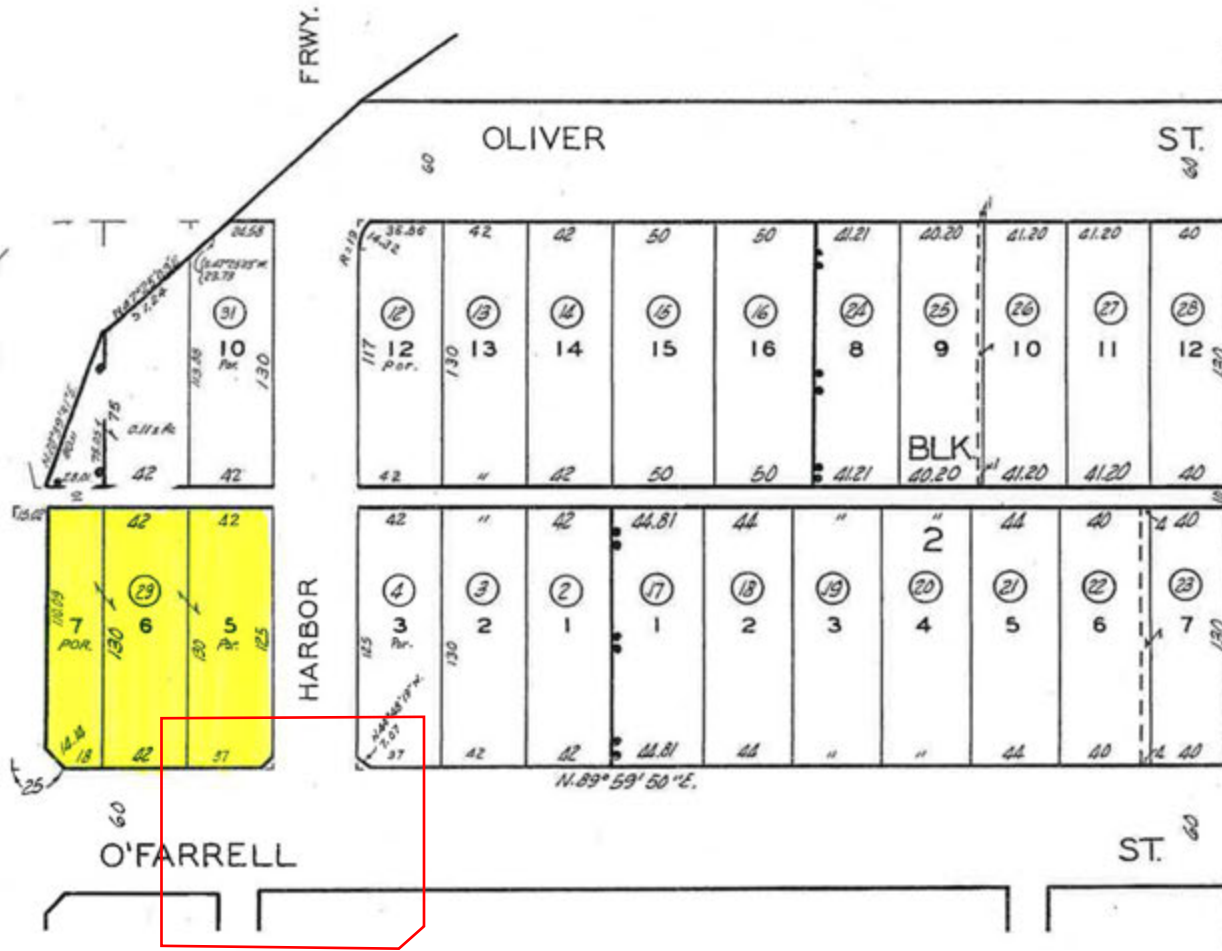
Los Angeles Parcel Map



GAFFEY ST  
CF 1596-2

ST

100



TRACT NO. 3263  
M. B. 35-71

TRACT NO. 2241  
M. B. 22-97

CODE 13245

FOR PREV. ASSM'T. SEE: 7448-9

ASSESSOR'S MAP  
COUNTY OF LOS ANGELES, CALIF.





## City of Los Angeles Department of City Planning

02/03/2010

### PARCEL PROFILE REPORT

#### PROPERTY ADDRESSES

406 N GAFFEY ST

#### ZIP CODES

90731

#### RECENT ACTIVITY

Current Hillside Area(Zoning).If ZI-2407 also listed,this area will remain as part of the New Proposed Hillside Area(Zoning) ZA-2002-5351-CU-A1

#### CASE NUMBERS

CPC-30674  
CPC-2005-8252-CA  
CPC-2000-199-CRA  
ORD-159142  
ORD-102804  
ZA-2002-5351-ZV-CU  
ZA-1987-1186-CR  
ENV-2005-8253-ND  
ENV-2005-8253-MND  
ENV-2002-5352-MND  
ND-83-87-ZC-HD

#### Address/Legal Information

PIN Number:	018B197 477
Lot Area (Calculated):	3,615.2 (sq ft)
Thomas Brothers Grid:	PAGE 824 - GRID B4
Assessor Parcel No. (APN):	7448009029
Tract:	TR 3263
Map Reference:	M B 35-71
Block:	None
Lot:	FR 7
Arb (Lot Cut Reference):	None
Map Sheet:	018B197

#### Jurisdictional Information

Community Plan Area:	San Pedro
Area Planning Commission:	Harbor
Neighborhood Council:	Central San Pedro
Council District:	CD 15 - Janice Hahn
Census Tract #:	2965.00
LADBS District Office:	San Pedro

#### Planning and Zoning Information

Special Notes:	None
Zoning:	[Q]C2-1VL
Zoning Information (ZI):	ZI-2130 Harbor State Enterprise Zone
General Plan Land Use:	General Commercial
Plan Footnote - Site Req.:	See Plan Footnotes
Additional Plan Footnotes:	San Pedro
Specific Plan Area:	None
Design Review Board:	No
Historic Preservation Review:	No
Historic Preservation Overlay Zone:	None
Other Historic Designations:	None
Other Historic Survey Information:	None
Mills Act Contract:	None
POD - Pedestrian Oriented Districts:	None
CDO - Community Design Overlay:	None
NSO - Neighborhood Stabilization Overlay:	No
Streetscape:	No
Sign District:	No
Adaptive Reuse Incentive Area:	None
CRA - Community Redevelopment Agency:	Pacific Corridor Redevelopment Project
Central City Parking:	No
Downtown Parking:	No
Building Line:	None
500 Ft School Zone:	No
500 Ft Park Zone:	Active: Bandini Canyon Park

#### Assessor Information

Assessor Parcel No. (APN):	7448009029
Ownership (Assessor) :	H AND M AND A LLC 0 PO BOX 1627 REDONDO BEACH CA 90278
Ownership (City Clerk):	H & M & A LLC PO BOX 1627 REDONDO BEACH CA 90278
APN Area (Co. Public Works)*:	0.343 (ac)
Use Code:	Not Available
Assessed Land Val.:	\$415,068

State Enterprise Zone:  
Targeted Neighborhood Initiative:

Harbor State Enterprise Zone  
None

**Public Safety**

Police Information:

Bureau:

South

Division / Station:

Harbor

Report District:

555

Fire Information:

District / Fire Station:

36

Battalion:

6

Division:

2

Red Flag Restricted Parking:

No

**APPENDIX B**

**SITE RECONNAISSANCE PHOTOGRAPHS**

**Site Reconnaissance Photos**  
406 North Gaffey Street, San Pedro, California

**Photo 1: Photo facing north towards the pedestrian crossway and the alley behind the property. Note the tin and cinderblock walls along the north edge of the property.**



**Photo 2: Photo facing east towards Oliver St. The former station building's concrete pad is located in the northeast corner of the property.**



**Site Reconnaissance Photos**  
406 North Gaffey Street, San Pedro, California

**Photo 3: Photo facing south towards O'Farrell St.**



**Photo 4: Photo facing west toward N. Gaffey St. Note the staining from the hoist on the former station building's concrete pad.**





**Site Reconnaissance Photos**  
406 North Gaffey Street, San Pedro, California

**Photo 5: Photo facing north. Note the staining on the concrete pad where the hoists are located. The clarifier is located in the northeast corner of the concrete pad.**



**Photo 6: Photo facing east. Note the remaining linoleum tile on the concrete pad.**



**Site Reconnaissance Photos**  
406 North Gaffey Street, San Pedro, California

**Photo 7: Photo facing east. Note the apparent oil/water separator located on the concrete pad.**



**Photo 8: Close-up of the apparent oil/water separator.**





**Site Reconnaissance Photos**  
406 North Gaffey Street, San Pedro, California

**Photo 9: Photo facing east. Note the staining around the clarifier.**



**Photo 10: Close-up of the staining around the hoist.**





**Site Reconnaissance Photos**  
406 North Gaffey Street, San Pedro, California

**Photo 11: Photo facing east toward Oliver St.**



**Photo 12: Five gallon bucket located in the southeast corner of Site near the entrance gate.**



**Site Reconnaissance Photos**  
406 North Gaffey Street, San Pedro, California

**Photo 13: Photo facing north towards the pedestrian crossway and the 110 freeway.**



**Photo 14: Photo facing west across N. Gaffey St. towards the park.**



## APPENDIX C

### USER PROVIDED DOCUMENTS

1. *Phase 2 Site Assessment Report, Shell Station, 406 North Gaffey Street, San Pedro California*, prepared by WGR, Southwest, Inc., dated February 12, 2000.
2. *Site Assessment Report, Former Shell Service Station /SAP #136042, 406 North Gaffey Street, San Pedro California*, prepared by WGR, Southwest, Inc., dated July 12, 2006.
3. *Quarterly Status and Groundwater Monitoring Report, Former Shell Service Station, 406 North Gaffey Street, San Pedro California*, prepared by Wayne Perry, Inc., dated April 8, 2008.
4. *Additional Site Assessment Report and Interim Remedial Action Plan, Former Shell Service Station, 406 North Gaffey Street, San Pedro California*, prepared by Wayne Perry, Inc., dated June 22, 2009.
5. *Dual-Phase Extraction Pilot Test Report, Former Shell Service Station, 406 North Gaffey Street, San Pedro California*, prepared by Wayne Perry, Inc., dated March 9, 2010.

1. ***Phase 2 Site Assessment Report, Shell Station, 406 North Gaffey Street, San Pedro California***, prepared by WGR, Southwest, Inc., dated February 12, 2000.

**PHASE 2 SITE ASSESSMENT REPORT**

SHELL STATION  
406 NORTH GAFFEY STREET  
SAN PEDRO, CALIFORNIA

136042

FEBRUARY 12, 2000

PREPARED FOR



MR. JOE LENTINI

*EQUIVA SERVICES, LLC  
P.O. BOX 7869  
BURBANK, CALIFORNIA 91504-7869*

BY

**WGR**

Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

RECEIVED - S101  
FEB 15 2000  
SCIENCE & TECHNOLOGY CENTER

8

## **PHASE 2 SITE ASSESSMENT REPORT**

**SHELL STATION  
406 NORTH GAFFEY STREET  
SAN PEDRO, CALIFORNIA**

**FEBRUARY 12, 2000**

### **1.0 INTRODUCTION**

The property is currently utilized as an operational self-service Shell Station. It is located on the northeast corner of the intersection of Gaffey Street and O'Farrell Streets in San Pedro, California (**Figure 1**).

In January 2000, Equiva Services contracted WGR Southwest, Inc. to conduct a Phase 2 Investigation at the site. The purpose of the investigation was to determine the current environmental conditions in the subsurface prior to site divestment.

### **2.0 SITE SETTING**

The site is located in a commercial district of San Pedro, California. A private single family residence and the entrance/exit ramp to the 110 Freeway are located north of the subject property. Oliver Street, a small residential street is located just east of the subject property with single family residences bordering on the west side of the street close to the subject property. O'Farrell Street is located south of the property and Gaffey Street is located west of the subject property.

An active self-service gasoline station currently occupies the subject property. The property consists of a service station building with three service bays, two dispenser islands each equipped with two multi-product dispenser pumps, three 10,000-gallon fiberglass gasoline underground storage tanks (USTs) and associated piping and one 550 gallon fiberglass waste oil UST.

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### **3.0 PREVIOUS INVESTIGATIONS**

In July 1988, routine UST removal and replacement operations were conducted at the subject property. Four gasoline USTs were removed: one 8,000 gallon, two 5,000 gallon, and one 10,000 gallon USTs were removed and replaced with three 10,000 gallon double walled fiberglass USTs. Impacted soil located beneath the former USTs was excavated and transported from the site to an appropriate disposal facility. Details of the UST removal operations and soil sampling are presented in W. W. Irwin's Tank Removal Report dated August 10, 1988.

In a letter dated March 12, 1990, following review of the UST removal report the City of Los Angeles Fire Department granted site closure. Based on information made available to WGR Southwest, Inc. there appears to be no other soil sampling or assessment data collected at the site prior to the current investigation conducted by WGR Southwest, Inc.

### **4.0 SITE GEOLOGY AND HYDROGEOLOGY**

The subject site is approximately two miles west of the Palos Verdes Hills, which border the Coastal Plain of Los Angeles County to the southwest. The site is bounded on the north by the Palo Verde Fault Zone and on the south by the Cabrillo Fault. The main channel of the Los Angeles Harbor lies approximately 1 mile east of the site. The Palos Verdes Hills highlands are almost entirely composed of rocks of pre-Tertiary and Tertiary age and are essentially-non-water bearing. The Palos Verdes Hills are an uplifted fault block composed of Catalina schist basement and marine sediments of Tertiary (Miocene Monterey Formation) and Quaternary age that have been folded into a general anticlinal form.

The current depth to groundwater beneath the site is approximately 35 feet bgs. The site is located in the southeastern part of the West Coast Groundwater Basin, which is separated from the Central Basin to the north-northeast by the Newport-Inglewood uplift. Natural underflow recharge to the West Coast Basin is provided by the Central Basin, which is partially impeded by the Newport-Inglewood uplift zone.

Southwest, Inc.

The upper surface of the Gage Aquifer occurs beneath the site at a depth of approximately 35 feet. The Gage aquifer consists of fine to medium sand with variable amounts of gravel, sandy silt and clay. The thickness of the Gage ranges up to 160 feet and is estimated to be approximately 100 feet thick in the site vicinity based on data from wells within the immediate area installed by the Los Angeles County Flood Control District as part of the Dominguez Gap Barrier Project. The contact between the base of the Lakewood and the San Pedro Formations is an unconformity. This unconformity typically is associated with an aquitard unit. This unnamed aquitard separates the Gage Aquifer from the Lynwood Aquifer and consists mainly of clays, silts, and sandy silt deposits.

Groundwater flow in the Gage Aquifer is generally towards the north-northwest. Groundwater levels have been depressed below sea level by inland pumping and significant seawater intrusion has occurred throughout this aquifer.

## **5.0 FIELD ACTIVITIES**

### **5.1 DRILLING AND SAMPLING PROCEDURES**

Seven soil borings, (WGR-1 through WGR-7) were drilled and sampled and two hand auger borings (WGR-8 and WGR-9) were advanced and sampled on January 12, 2000 at the subject property to determine whether subsurface contamination existed beneath the site and if so, to what degree. Boring locations are shown in **Figure 2**. Borings WGR-4 through WGR-7 were drilled to approximate depths of 25 feet bgs and placed adjacent to the gasoline dispenser islands. Borings WGR-2 and WGR-3 were drilled adjacent to the existing underground storage tank area to depths of 35 and 40 feet bgs, respectively. Boring WGR-1 was drilled adjacent to the existing waste oil UST to a depth of 15 feet bgs. Hand auger borings WGR-8 and WGR-9 were drilled adjacent to the clarifier located within the service bay area to depths of 3 and 4 feet bgs respectively before encountering refusal.

During this investigation standard practices and procedures for field sampling as outlined in Publication SW-846, Second Edition, United States Environmental Protection Agency and any local agency mandated sampling procedures were followed. A Marl M5T low-profile drilling rig was utilized for the



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advancement of the soil borings. Pre-cleaned and/or steam cleaned augers were used throughout the drilling operation to prevent potential cross contamination.

Undisturbed soil samples were collected for analyses and lithologic characterization at approximate five-foot depth intervals from each of the soil borings. The soil samples submitted for analyses were collected in an 18-inch long, 2.0-inch O. D. split-spoon sampler lined with 1.5-inch O. D. metal sample tubes. The bottom sample tubes from each five-foot sample interval were immediately sealed with Teflon film and a polyethylene cap. The samples were labeled with all pertinent sampling information, and then packed on ice for subsequent delivery to a California Department of Health Services (CDHS)-certified laboratory for analyses. The soil in the remaining tubes was described and logged by the field geologist in accordance with the Unified Soil Classification System (USCS). All sampling equipment was decontaminated between sampling episodes utilizing a triple rinse method consisting of a wash with Alconox (or equivalent) solution, an initial rinse with tap water, and a final rinse with deionized water. Soil samples collected from hand auger borings WGR-8 and WGR-9 were collected utilizing a slide hammer and soil sampler lined with 2-inch O.D brass tubes. Immediately following sampling, all borings were backfilled with bentonite grout. All borings were completed at surface with concrete. Chain of custody protocol was followed throughout field and laboratory procedures.

## 5.2 HEALTH AND SAFETY PLAN

A site specific Health and Safety Plan detailing all known or potential hazards and emergency response procedures was prepared prior to field operations. All on-site personnel reviewed the plan and a "tailgate" safety meeting was conducted prior to initiation of field activities. The plan was maintained on-site throughout the duration of field activities.

## 5.3 DRILL SITE CLEARANCE

Prior to the initiation of field operations, drilling locations were marked with white paint and Underground Service Alert (USA) was contacted to identify any potential subsurface obstructions and/or conflicts. In order to further insure that no underground utilities or obstructions existed at the proposed boring locations a geophysical survey was conducted at the property prior to conducting the filed investigation. Additionally, the initial 5 feet of drilling of each boring was

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The waste oil tank boring (WGR-1) contained no detectable TRPH or oxygenate concentrations. Samples collected from hand auger borings WGR-8 and WGR-9 contained TRPH concentrations of 295 mg/kg and 144 mg/kg, respectively and no BTEX or oxygenate concentrations.

Analytical results for TPHg, BTEX, and MTBE concentrations are summarized in **Table 1**. Laboratory reports and chain of custody documents are provided in **Appendix B**.

## 7.0 SOIL DISPOSAL

The drill cuttings generated during the field investigation were stored temporarily on site in 55-gallon DOT-approved steel drums pending characterization. Each drum was labeled with the site name and address, generation date, and type and source of the material it contains. Following characterization, the drums will be transported to an appropriate facility for disposal. Copies of disposal documentation will be forwarded upon receipt.

## 8.0 SUMMARY AND CONCLUSIONS

Nine soil borings were advanced and sampled at the subject site on January 13, 2000 to ascertain whether detectable hydrocarbons existed beneath the site and if so, to what degree. Sediments encountered during the drilling investigation consisted mainly of brown and gray clay with minor amounts of silt and fine-grained sand. Groundwater was encountered at a depth of 35 feet

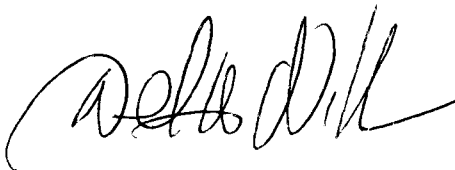
Analytical results of soil sample analyses indicate that either detectable TPHg, BTEX, or MTBE occurs in each soil boring drilled at the subject property. Additionally the oxygenates TBA and DIPE were found to occur in several of the borings. Maximum TPH-g and benzene concentrations of 49 mg/kg and 2.5 mg/kg occurred in samples collected at or below the

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groundwater interface indicating there is probable evidence of groundwater impaction beneath the site.

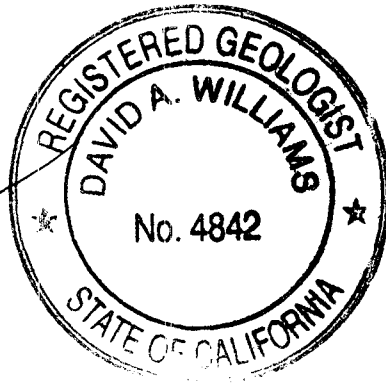
Respectfully submitted,

**WGR Southwest, Inc.**

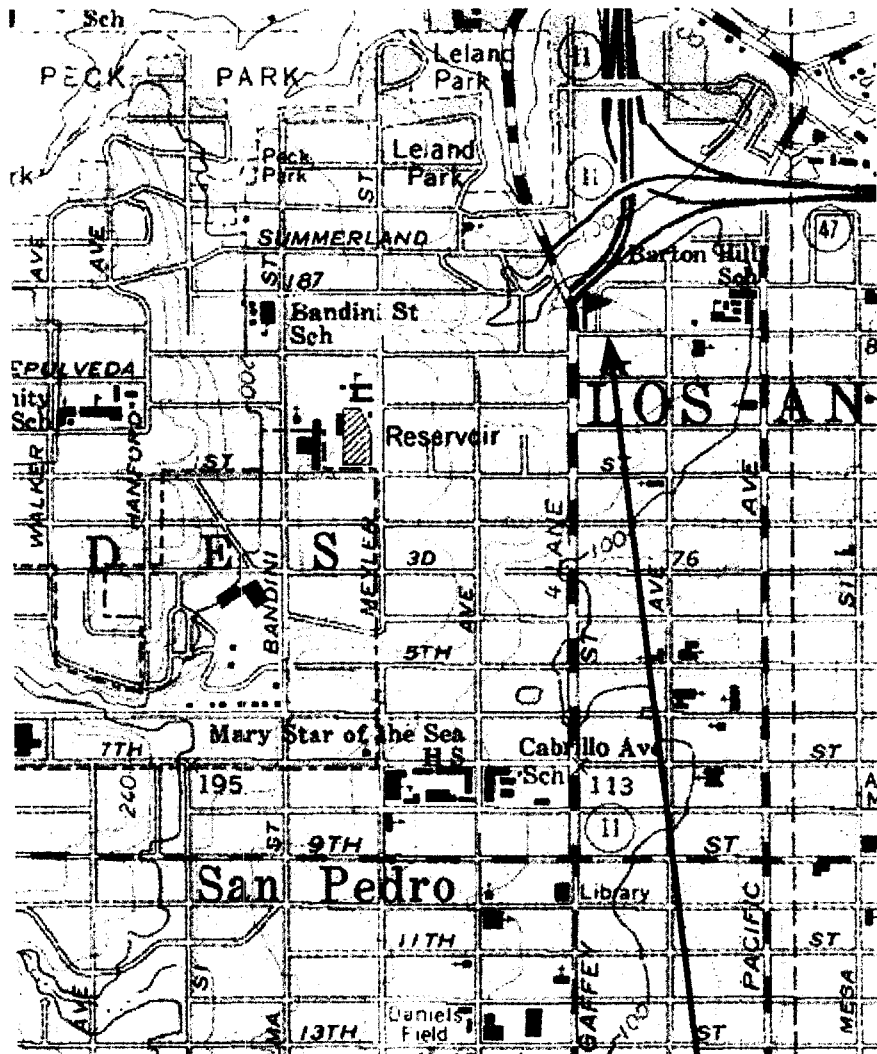


David A. Williams

Calif. Reg. Geologist No. 4842



## FIGURES



Printed from TOPO! ©1997 Wildflower Productions (www.topo.com)

# Site Location



## Legend

Source: 1997 Topo  
CD-ROM

# WGR

Southwest, Inc.

11021 Winners Circle, Suite 101  
Los Alamitos, CA 90722

Equiva Services, LLC

## Site Vicinity Map

406 N. Gaffey Street, San Pedro, California

DATE  
2/22/00

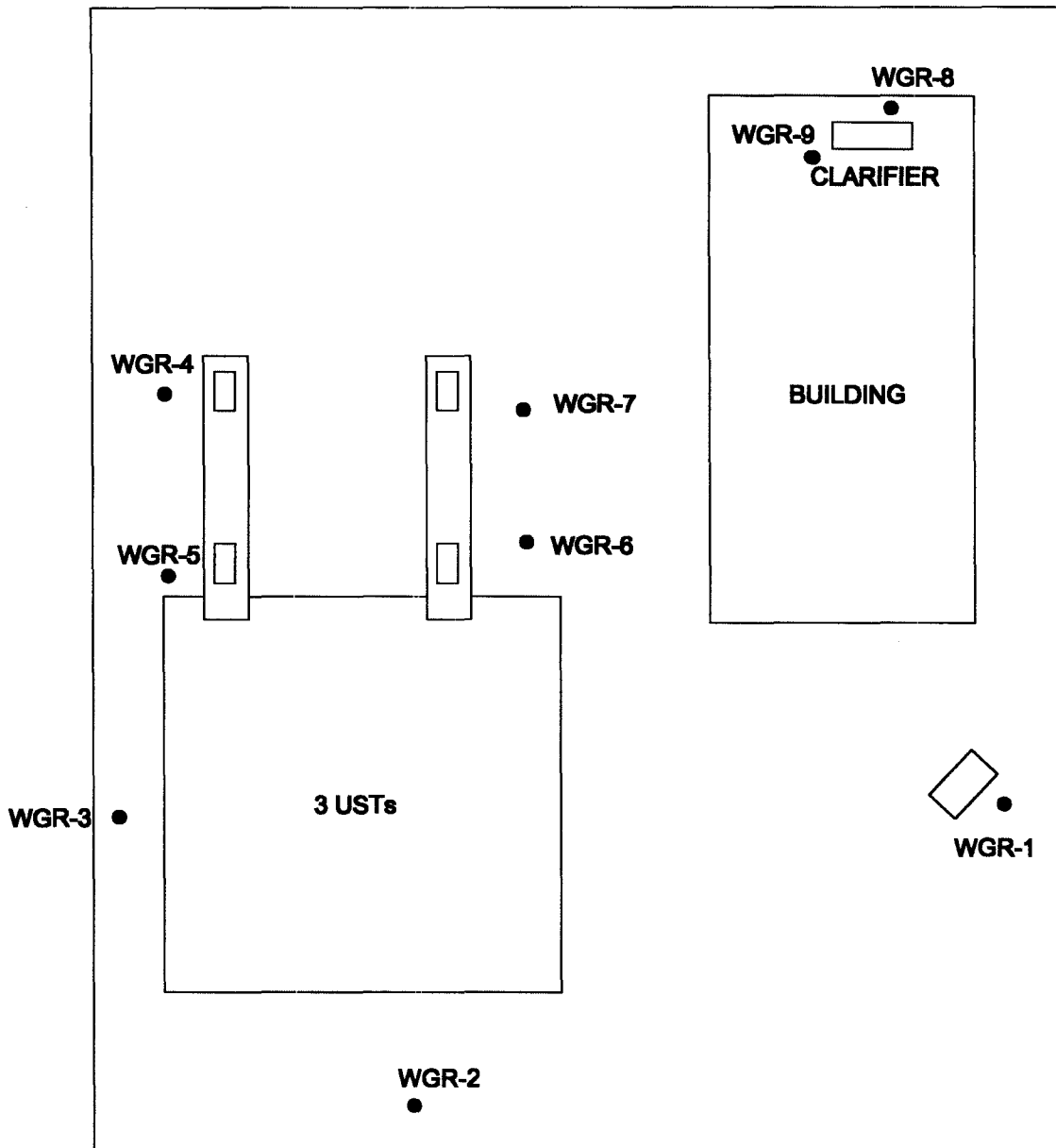
PROJECT NUMBER  
131.EQL.00

DWN BY  
JGM

DWG #

Figure

1



Legend

**WGR**

Southwest, Inc.

11081 Winners Circle, Suite 101  
Los Alamitos, CA 90720

TEXACO REFINING AND MARKETING INC.

SITE PLAN

408 N Gaffey Street San Pedro, California

DATE  
2/8/00

PROJECT NUMBER  
001.TEX.00

DWN BY  
JRR

DWG #  
10140C.dwg

Figure  
2

WGR

Southwest, Inc.

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# TABLE

Table 1 (continued)

TABLE 1. SUMMARY OF SOIL SAMPLE ANALYSES								
SITE ASSESSMENT								
SHELL STATION								
406 N. Gaffey Street								
San Pedro, California								
Sample No.	Date Sampled	TPH-g (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE 8021 (mg/kg)	MTBE 8260 (mg/kg)
WGR2-6'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR2-10'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR2-15'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR2-28'	1/12/00	0.73	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.22	0.120
WGR2-35'	1/12/00	49	1.3	3.0	0.66	4.1	ND<0.63	NA
WGR2-40'	1/12/00	20	2.5	3.9	0.37	2.3	ND<0.25	NA
WGR3-6'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR3-10'	1/12/00	0.53	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.64	0.340
WGR3-15'	1/12/00	1.6	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	1.8	1.500
WGR3-20'	1/12/00	0.89	0.047	0.035	0.0083	0.050	0.36	0.250
WGR3-25'	1/12/00	3.0	0.11	0.11	0.028	0.19	0.20	0.048
WGR3-30'	1/12/00	7.6	0.49	0.71	0.14	0.86	ND<0.025	NA
WGR3-35'	1/12/00	15.00	1.1	2.3	0.41	2.6	ND<0.025	NA
WGR4-6'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR4-10'	1/12/00	48.00	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR4-15'	1/12/00	1.8	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR4-20'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR4-25'	1/12/00	2.7	0.14	0.21	0.056	0.27	ND<0.025	NA
WGR5-6'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR5-10'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR5-15'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR5-20'	1/12/00	2.0	0.12	0.13	0.049	0.25	0.084	0.072
WGR5-25'	1/12/00	0.65	0.081	0.075	0.014	0.065	ND<0.025	NA



Table 1 (continued)

Sample No.	Date Sampled	TPH-g (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE 8021 (mg/kg)	MTBE 8260 (mg/kg)
WGR6-6'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.049	0.032
WGR6-10'	1/12/00	0.91	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	1.1	0.730
WGR6-15'	1/12/00	0.83	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.94	0.830
WGR6-20'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.46	0.410
WGR6-25'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.039	0.038
WGR7-6'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR7-10'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR7-15'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA
WGR7-20'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.036	0.033
WGR7-25'	1/12/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.049	0.039
WGR8-3'	1/12/00	NA	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	ND<0.0050
WGR9-4'	1/12/00	NA	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	NA	ND<0.0050
Sample No.	Date Sampled	TRPH 418.1 (mg/kg)	TBA 8260 (mg/kg)	DIPE 8260 (mg/kg)	ETBE 8260 (mg/kg)	TAME 8260 (mg/kg)		
WGR1-5'	1/12/00	ND<10	NA	NA	NA	NA		
WGR1-10'	1/12/00	ND<10	NA	NA	NA	NA		
WGR1-15'	1/12/00	ND<10	NA	NA	NA	NA		
WGR8-3'	1/12/00	295.00	NA	NA	NA	NA		
WGR9-4'	1/12/00	144.00	NA	NA	NA	NA		
WGR2-28'	1/12/00	NA	ND<0.250	ND<0.010	ND<0.010	ND<0.010		
WGR3-10'	1/12/00	NA	ND<0.500	ND<0.020	ND<0.020	ND<0.020		
WGR3-15'	1/12/00	NA	ND<6.300	ND<0.250	ND<0.250	ND<0.250		
WGR3-20'	1/12/00	NA	0.850	ND<0.010	ND<0.010	ND<0.010		
WGR3-25'	1/12/00	NA	3.700	ND<0.010	ND<0.010	ND<0.010		
WGR5-20'	1/12/00	NA	0.770	0.037	ND<0.010	ND<0.010		



WGR

Southwest, Inc.


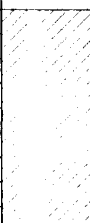
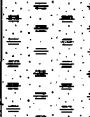
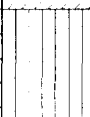


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**APPENDIX A**  
**SOIL BORING LOGS**



# BORING LOG

Drill Rig: Marl M5T      Date Drilled: 1-12-00      Logged By:  
 Boring Dia: 8 Inches      Boring Number: WGR-1      Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
	NA		0	5		Dark brown clay, slightly moist, no odor
	NA		0	10		Light brown clayey silt, slightly moist, no odor
	NA		0	15		Medium brown clayey silt with occasionally thin interbedded medium sand lenses, slightly moist
				20		
				25		
				30		
				35		
				40		
				45		

**Completion Notes:**  
 Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**  
 Shell Station  
 406 N Gaffey Street  
 San Pedro, CA



# BORING LOG

Drill Rig: Marl M5K      Date Drilled: 1-12-00      Logged By:  
 Boring Dia: 8 Inches      Boring Number: WGR-2      Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description	
	NA		0	5		Brown to gray clay, slightly moist, very faint odor	
	NA		0	10		Gray to tan clay, dense, slightly moist, no odor	
	NA		0	15		Gray clay, dense, slightly moist, no odor	
				20			
				25			Medium brown clay, no odor
							Brown clay, soft, very moist, no odor
	NA		0	30			
	NA		0	35			Greenish gray to reddish brown clay, wet, no odor
	NA	0	40		Brown clay, wet to saturated, no odor		
				45			

**Completion Notes:**  
 Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**  
 Shell Station  
 406 N Gaffey Street  
 San Pedro, CA



# BORING LOG

Drill Rig: Marl M5K      Date Drilled: 1-12-00      Logged By:  
 Boring Dia: 8 Inches      Boring Number: WGR-3      Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
	NA		0	5		Medium brown clayey medium sand, moist, no odor
	NA		0	10		Grayish brown clay, slightly moist, very faint odor
	NA		0	15		Light brown clay with gypsum, slightly moist, no odor
	NA		0	20		Medium brown clay, slightly moist, no odor
	NA		0	25		
	NA		0	30		
	NA		0	35		Light brown clay, moist to wet, faint odor
				40		
				45		

**Completion Notes:**  
 Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**  
 Shell Station  
 406 N Gaffey Street  
 San Pedro, CA



# BORING LOG

Drill Rig:	Marl M5K	Date Drilled:	1-12-00	Logged By:
Boring Dia:	8 Inches	Boring Number:	WGR-4	Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description	
	NA		0	5		Medium brown clayey sand, moist, no odor	
	NA		0	10			Medium gray clay, moderate odor, slightly moist
	NA		0	15			Medium brown clay with minor gypsum, slightly moist, very faint to no odor
	NA		0	20			
	NA		0	25			
				30			
				35			
				40			
				45			

**Completion Notes:**

Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**

Shell Station  
 406 N Gaffey Street  
 San Pedro, CA



# BORING LOG

Drill Rig:	Marl M5K	Date Drilled:	1-12-00	Logged By:
Boring Dia:	8 Inches	Boring Number:	WGR-5	Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
	NA		0	5		Grayish brown to reddish brown clayey medium sand, moist, no odor
	NA		0	10		Greenish brown clay, slightly moist, stiff, faint odor
	NA		0	15		Gray clay, slightly moist, stiff, faint odor
	NA		0	20		Medium brown clay with gypsum, slightly moist, faint odor
	NA		0	25		Medium brown clay with gypsum, slightly moist, faint odor
				30		
				35		
				40		
				45		

**Completion Notes:**

Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**

Shell Station  
406 N Gaffey Street  
San Pedro, CA





# BORING LOG

Drill Rig:	Marl M5K	Date Drilled:	1-12-00	Logged By:
Boring Dia:	8 Inches	Boring Number:	WGR-6	Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
	NA		0	5		Dark gray sandy clay, slightly moist, odor
	NA		0	10		Buff to light gray clayey silt, mottled, slightly moist, very faint odor
	NA		0	15		Gray clay, slightly moist, moderate odor
	NA		0	20		Brown clay with gypsum, slightly moist, faint odor
	NA		0	25		
				30		
				35		
				40		
				45		

**Completion Notes:**  
 Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**  
 Shell Station  
 406 N Gaffey Street  
 San Pedro, CA



# BORING LOG

Drill Rig: Marl M5K      Date Drilled: 1-12-00      Logged By:  
 Boring Dia: 8 Inches      Boring Number: WGR-7      Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
	NA		NA	5		Dark brown sandy clay, slightly moist, very faint odor
	NA		NA	10		Light brown to light gray silty clay, slightly moist, very faint odor
	NA		NA	15		
	NA		NA	20		
	NA		NA	25		Light greenish gray clay, very faint odor, slightly moist
				30		
				35		
				40		
				45		


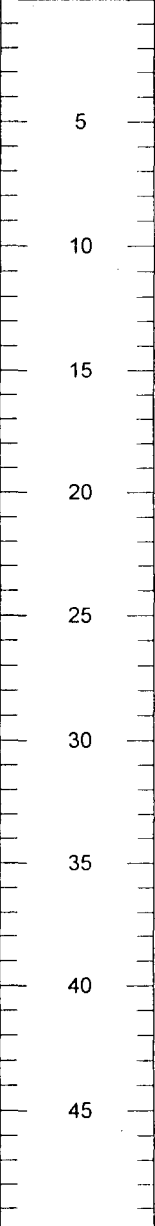

**Completion Notes:**  
 Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**  
 Shell Station  
 406 N Gaffey Street  
 San Pedro, CA



# BORING LOG

Drill Rig: Hand Auger      Date Drilled: 1-12-00      Logged By:  
Boring Dia: 2.5 Inches      Boring Number: WGR-8      Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
	NA		0			Dark brown clayey silt, slightly moist, no odor


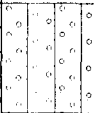
**Completion Notes:**  
Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**  
Shell Station  
406 N Gaffey Street  
San Pedro, CA



# BORING LOG

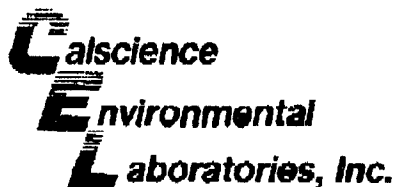
Drill Rig: Hand Auger	Date Drilled: 1-12-00	Logged By:
Boring Dia: 2.5 Inches	Boring Number: WGR-9	Kevin Clark

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
	NA		0	5		Dark brown silty fine sand, slightly moist, no odor
				10		
				15		
				20		
				25		
				30		
				35		
				40		
				45		

**Completion Notes:**  
 Boring backfilled with bentonite from TD to 1 foot bgs, completed to surface with concrete.

**Site:**  
 Shell Station  
 406 N Gaffey Street  
 San Pedro, CA

**APPENDIX B**  
**ANALYTICAL LABORATORY REPORTS**



January 21, 2000

Dave Williams  
WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

**Subject: Calscience Work Order No.: 00-01-0298**  
**Client Reference: 406 North Gaffey, San Pedro, CA**

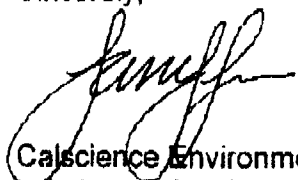
Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 01/13/00 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,



CalScience Environmental  
Laboratories, Inc.  
Larry Lem  
Project Manager



William H. Christensen  
Quality Assurance Manager



**Analytical Report**

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**LABORATORY ID: 00-01-0298**

**Method: EPA 418.1M TRPH**  
**Matrix: Soil/Solid**

**CLIENT: WGR Southwest, Inc.**  
**PROJECT: 406 North Gaffey Street, San Pedro, CA**

**Results**

Sample ID	TRPH (mg/kg)	Dilution Factor	Date Extracted	Date Analyzed
WGR-1-5'	ND	1	01/14/00	01/14/00
WGR-1-10'	ND	1	01/14/00	01/14/00
WGR-1-16'	ND	1	01/14/00	01/14/00
WGR-8-3'	285	2	01/14/00	01/14/00
WGR-9-4'	144	1	01/14/00	01/14/00
Method Blank	ND	1	01/14/00	01/14/00

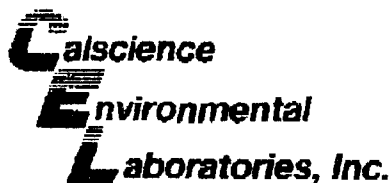
Reporting Limit: 10

**Quality Assurance and Control Information**

Matrix Spike Sample ID:	WGR-1-10									
Batch ID:	Spike Conc. ppm	LCS Result ppm	LCS Rec (%)	LCS Control Limits	MS Rec (%)	MSD Rec (%)	MS/MSD Control Limits	MS/MSD RPD (%)	RPD Control Limits	
00011402	200	200	100	70-130	100	100	55-135	0	0-30	

**Laboratory Notes**

Key: Rec=Recovery, ND=Not Detected at the reporting level



# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-2-8'	00-01-0298-4	01/12/00	Solid	N/A	01/14/00	00011301aa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	83	47-137		1,4-Bromofluorobenzene - FID	95	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-2-10'	00-01-0298-5	01/12/00	Solid	N/A	01/14/00	00011301aa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	77	47-137		1,4-Bromofluorobenzene - FID	89	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-2-16'	00-01-0298-6	01/12/00	Solid	N/A	01/14/00	00011301aa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	80	47-137		1,4-Bromofluorobenzene - FID	92	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-2-28'	00-01-0298-7	01/12/00	Solid	N/A	01/14/00	00011301aa

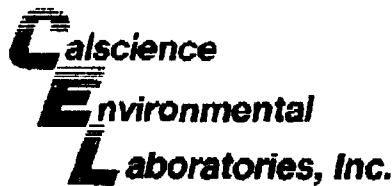
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.22	0.02	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	0.73	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	84	47-137		1,4-Bromofluorobenzene - FID	97	34-141	

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: Ext + EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-2-36'	00-01-0298-8	01/12/00	Solid	01/15/00	01/15/00	00011602sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	1.3	0.1	25	D	mg/kg	Xylenes (total)	4.1	0.2	25	D	mg/kg
Toluene	3.0	0.1	25	D	mg/kg	Methyl-tert-Butyl Ether	ND	0.83	25	D	mg/kg
Ethylbenzene	0.66	0.13	25	D	mg/kg	TPH for Gasoline	49	13	25	D	mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	86	47-137		1,4-Bromofluorobenzene - FID	93	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-2-40'	00-01-0298-9	01/12/00	Solid	01/15/00	01/15/00	00011602sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	2.5	0.050	10	D	mg/kg	Xylenes (total)	2.3	0.1	10	D	mg/kg
Toluene	3.9	0.050	10	D	mg/kg	Methyl-tert-Butyl Ether	ND	0.25	10	D	mg/kg
Ethylbenzene	0.37	0.05	10	D	mg/kg	TPH for Gasoline	20	5	10	D	mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	84	47-137		1,4-Bromofluorobenzene - FID	90	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-8'	00-01-0298-10	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	78	47-137		1,4-Bromofluorobenzene - FID	82	34-141	

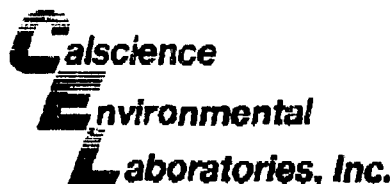
Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-10'	00-01-0298-11	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.54	0.02	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	0.53	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	87	47-137		1,4-Bromofluorobenzene - FID	92	34-141	

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-15'	00-01-0298-12	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	1.8	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	1.6	0.5	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>			<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>		
1,4-Bromofluorobenzene	77	47-137				1,4-Bromofluorobenzene - FID	82	34-141			

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-20'	00-01-0298-13	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	0.047	0.005	1		mg/kg	Xylenes (total)	0.050	0.010	1		mg/kg
Toluene	0.035	0.005	1		mg/kg	Methyl-tert-Butyl Ether	0.36	0.02	1		mg/kg
Ethylbenzene	0.0083	0.0050	1		mg/kg	TPH for Gasoline	0.89	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>			<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>		
1,4-Bromofluorobenzene	78	47-137				1,4-Bromofluorobenzene - FID	81	34-141			

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-25'	00-01-0298-14	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	0.11	0.0050	1		mg/kg	Xylenes (total)	0.19	0.01	1		mg/kg
Toluene	0.11	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.20	0.02	1		mg/kg
Ethylbenzene	0.028	0.005	1		mg/kg	TPH for Gasoline	3.0	0.5	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>			<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>		
1,4-Bromofluorobenzene	77	47-137				1,4-Bromofluorobenzene - FID	81	34-141			

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-30'	00-01-0298-15	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	0.49	0.0050	1		mg/kg	Xylenes (total)	0.86	0.01	1		mg/kg
Toluene	0.71	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	0.14	0.0050	1		mg/kg	TPH for Gasoline	7.6	0.5	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>			<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>		
1,4-Bromofluorobenzene	82	47-137				1,4-Bromofluorobenzene - FID	92	34-141			

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-35'	00-01-0298-16	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	1.1	0.0050	1		mg/kg	Xylenes (total)	2.6	0.010	1		mg/kg
Toluene	2.3	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	0.41	0.0050	1		mg/kg	TPH for Gasoline	15	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	88	47-137		1,4-Bromofluorobenzene - FID	101	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-4-6'	00-01-0298-17	01/12/00	Solid	N/A	01/14/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	80	47-137		1,4-Bromofluorobenzene - FID	85	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-4-10'	00-01-0298-18	01/12/00	Solid	N/A	01/16/00	00011401sa

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard..

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	48	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	107	47-137		1,4-Bromofluorobenzene - FID	119	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-4-15'	00-01-0298-19	01/12/00	Solid	N/A	01/15/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	1.8	0.5	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	80	47-137		1,4-Bromofluorobenzene - FID	87	34-141	

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-4-20'	00-01-0298-20	01/12/00	Solid	N/A	01/15/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	75	47-137				1,4-Bromofluorobenzene - FID	80	34-141			

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-4-25'	00-01-0298-21	01/12/00	Solid	N/A	01/15/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	0.14	0.0050	1		mg/kg	Xylenes (total)	0.27	0.01	1		mg/kg
Toluene	0.21	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	0.056	0.005	1		mg/kg	TPH for Gasoline	2.7	0.5	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	82	47-137				1,4-Bromofluorobenzene - FID	89	34-141			

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-5-5'	00-01-0298-22	01/12/00	Solid	N/A	01/15/00	00011401sa

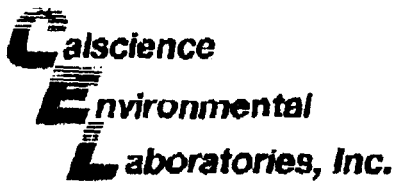
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	82	47-137				1,4-Bromofluorobenzene - FID	86	34-141			

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-5-10'	00-01-0298-23	01/12/00	Solid	N/A	01/15/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	78	47-137				1,4-Bromofluorobenzene - FID	83	34-141			

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501



# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

Page 6 of 10

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-6-15'	00-01-0298-24	01/12/00	Solid	N/A	01/16/00	00011401aa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	83	47-137		1,4-Bromofluorobenzene - FID	88	34-141	

WGR-5-20'	00-01-0298-25	01/12/00	Solid	N/A	01/16/00	00011401aa
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	0.12	0.0050	1		mg/kg	Xylenes (total)	0.25	0.01	1		mg/kg
Toluene	0.13	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.084	0.025	1		mg/kg
Ethylbenzene	0.049	0.005	1		mg/kg	TPH for Gasoline	2.0	0.5	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	82	47-137		1,4-Bromofluorobenzene - FID	90	34-141	

WGR-5-25'	00-01-0298-26	01/12/00	Solid	01/16/00	01/17/00	00011701aa
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	0.081	0.005	1		mg/kg	Xylenes (total)	0.085	0.010	1		mg/kg
Toluene	0.075	0.005	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	0.014	0.005	1		mg/kg	TPH for Gasoline	0.65	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	82	47-137		1,4-Bromofluorobenzene - FID	75	34-141	

WGR-6-6'	00-01-0298-27	01/12/00	Solid	N/A	01/16/00	00011401aa
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.049	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	47-137		1,4-Bromofluorobenzene - FID	107	34-141	

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	CC Batch ID:
WGR-6-16'	00-01-0298-28	01/12/00	Solid	N/A	01/16/00	00011401sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	1.1	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	0.91	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	82	47-137		1,4-Bromofluorobenzene - FID	87	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	CC Batch ID:
WGR-6-15'	00-01-0298-29	01/12/00	Solid	N/A	01/17/00	00011701sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.94	0.02	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	0.83	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	74	47-137		1,4-Bromofluorobenzene - FID	66	34-141	

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	CC Batch ID:
WGR-6-20'	00-01-0298-30	01/12/00	Solid	N/A	01/17/00	00011701sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.46	0.02	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	67	47-137		1,4-Bromofluorobenzene - FID	62	34-141	

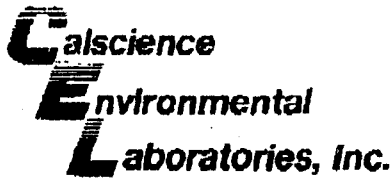
Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	CC Batch ID:
WGR-6-25'	00-01-0298-31	01/12/00	Solid	N/A	01/17/00	00011701sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.039	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	71	47-137		1,4-Bromofluorobenzene - FID	65	34-141	

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
 11021 Winners Circle, Suite 101  
 Los Alamitos, CA 90720

Date Received: 01/13/00  
 Work Order No: 00-01-0298  
 Preparation: EPA 5030B  
 Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

Page 8 of 10

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-7-5'	00-01-0298-32	01/12/00	Solid	N/A	01/17/00	00011701sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	74	47-137				1,4-Bromofluorobenzene - FID	67	34-141			

WGR-7-10'	00-01-0298-33	01/12/00	Solid	N/A	01/18/00	00011701sa
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	72	47-137				1,4-Bromofluorobenzene - FID	66	34-141			

WGR-7-15'	00-01-0298-34	01/12/00	Solid	N/A	01/18/00	00011701sa
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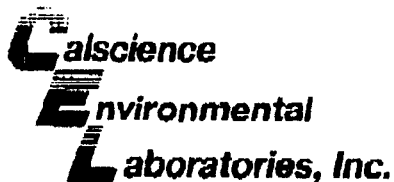
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	68	47-137				1,4-Bromofluorobenzene - FID	62	34-141			

WGR-7-20'	00-01-0298-35	01/12/00	Solid	N/A	01/18/00	00011701sa
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.036	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
1,4-Bromofluorobenzene	76	47-137				1,4-Bromofluorobenzene - FID	70	34-141			

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: EPA 5030B  
Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-7-25'	00-01-0298-38	01/12/00	Solid	N/A	01/18/00	00011701sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	0.049	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual				
1,4-Bromofluorobenzene	73	47-137		1,4-Bromofluorobenzene - FID	67	34-141					

Method Blank	000-01-002-1.603	N/A	Solid	N/A	01/13/00	00011301sa
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual				
1,4-Bromofluorobenzene	83	47-137		1,4-Bromofluorobenzene - FID	90	34-141					

Method Blank	000-01-002-1.606	N/A	Solid	N/A	01/14/00	00011401sa
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual				
1,4-Bromofluorobenzene	92	47-137		1,4-Bromofluorobenzene - FID	98	34-141					

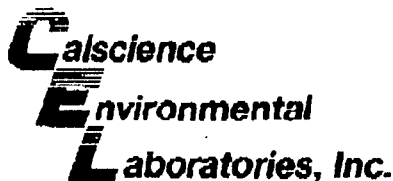
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.050	10		mg/kg	Xylenes (total)	ND	0.10	10		mg/kg
Toluene	ND	0.050	10		mg/kg	Methyl-tert-Butyl Ether	ND	0.25	10		mg/kg
Ethylbenzene	ND	0.050	10		mg/kg	TPH for Gasoline	ND	5.0	10		mg/kg
Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual				
1,4-Bromofluorobenzene	96	47-137		1,4-Bromofluorobenzene - FID	101	34-141					

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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**ANALYTICAL REPORT**

WGR Southwest, Inc.  
 11021 Winners Circle, Suite 101  
 Los Alamitos, CA 90720

Date Received: 01/13/00  
 Work Order No: 00-01-0298  
 Preparation: EPA 5030B  
 Method: EPA 8015M/8021B

Project: 406 North Gaffey, San Pedro, CA

Page 10 of 10

Client Sample Number:	Lab Sample Number	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID
Method Blank	098-01-002-1,512	N/A	Solid	N/A	01/17/00	00011701sa

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Benzene	ND	0.0050	1		mg/kg	Xylenes (total)	ND	0.010	1		mg/kg
Toluene	ND	0.0050	1		mg/kg	Methyl-tert-Butyl Ether	ND	0.025	1		mg/kg
Ethylbenzene	ND	0.0050	1		mg/kg	TPH for Gasoline	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	98	47-137				1,4-Bromofluorobenzene - FID	90	34-141			

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

Page 1 of 3

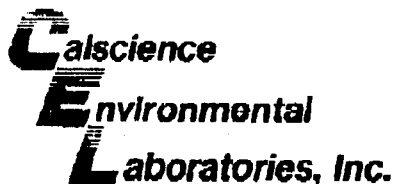
Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3'	00-01-0298-37	01/12/00	Solid	N/A	01/13/00	000113AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Acetone	ND	50	1		ug/kg	1,3-Dichloropropane	ND	5.0	1		ug/kg
Benzene	ND	5.0	1		ug/kg	2,2-Dichloropropane	ND	5.0	1		ug/kg
Bromobenzene	ND	5.0	1		ug/kg	1,1-Dichloropropene	ND	5.0	1		ug/kg
Bromochloromethane	ND	5.0	1		ug/kg	o-1,3-Dichloropropene	ND	5.0	1		ug/kg
Bromodichloromethane	ND	5.0	1		ug/kg	t-1,3-Dichloropropene	ND	5.0	1		ug/kg
Bromoforn	ND	5.0	1		ug/kg	Ethylbenzene	ND	5.0	1		ug/kg
Bromomethane	ND	5.0	1		ug/kg	2-Hexanone	ND	50	1		ug/kg
2-Butanone	ND	50	1		ug/kg	Isopropylbenzene	ND	5.0	1		ug/kg
n-Butylbenzene	ND	5.0	1		ug/kg	p-Isopropyltoluene	ND	5.0	1		ug/kg
sec-Butylbenzene	ND	5.0	1		ug/kg	Methylene Chloride	ND	50	1		ug/kg
tert-Butylbenzene	ND	5.0	1		ug/kg	4-Methyl-2-Pentanone	ND	50	1		ug/kg
Carbon Disulfide	ND	50	1		ug/kg	Naphthalene	ND	50	1		ug/kg
Carbon Tetrachloride	ND	5.0	1		ug/kg	n-Propylbenzene	ND	5.0	1		ug/kg
Chlorobenzene	ND	5.0	1		ug/kg	Styrene	ND	5.0	1		ug/kg
Chloroethane	ND	5.0	1		ug/kg	1,1,1,2-Tetrachloroethane	ND	5.0	1		ug/kg
Chloroform	ND	5.0	1		ug/kg	1,1,2,2-Tetrachloroethane	ND	5.0	1		ug/kg
Chloromethane	ND	5.0	1		ug/kg	Tetrachloroethene	ND	5.0	1		ug/kg
2-Chlorotoluene	ND	5.0	1		ug/kg	Toluene	ND	5.0	1		ug/kg
4-Chlorotoluene	ND	5.0	1		ug/kg	1,2,3-Trichlorobenzene	ND	10	1		ug/kg
Dibromochloromethane	ND	5.0	1		ug/kg	1,2,4-Trichlorobenzene	ND	5.0	1		ug/kg
1,2-Dibromo-3-Chloropropane	ND	10	1		ug/kg	1,1,1-Trichloroethane	ND	5.0	1		ug/kg
1,2-Dibromoethane	ND	5.0	1		ug/kg	1,1,2-Trichloroethane	ND	5.0	1		ug/kg
Dibromomethane	ND	5.0	1		ug/kg	Trichloroethene	ND	5.0	1		ug/kg
1,2-Dichlorobenzene	ND	5.0	1		ug/kg	Trichlorofluoromethane	ND	50	1		ug/kg
1,3-Dichlorobenzene	ND	5.0	1		ug/kg	1,2,3-Trichloropropane	ND	5.0	1		ug/kg
1,4-Dichlorobenzene	ND	5.0	1		ug/kg	1,2,4-Trimethylbenzene	ND	5.0	1		ug/kg
Dichlorodifluoromethane	ND	5.0	1		ug/kg	1,3,5-Trimethylbenzene	ND	5.0	1		ug/kg
1,1-Dichloroethane	ND	5.0	1		ug/kg	Vinyl Acetate	ND	50	1		ug/kg
1,2-Dichloroethane	ND	5.0	1		ug/kg	Vinyl Chloride	ND	5.0	1		ug/kg
1,1-Dichloroethene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
c-1,2-Dichloroethene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
t-1,2-Dichloroethene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
1,2-Dichloropropane	ND	5.0	1		ug/kg						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	105	80-120		Toluene-d8	102	81-117	
1,4-Bromofluorobenzene	99	74-121					

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92841-1432    TEL: (714) 895-5494    FAX: (714) 894-7501



# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

Page 2 of 3

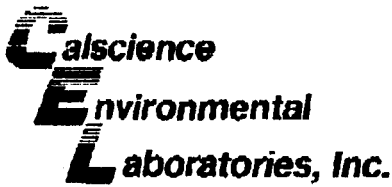
Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-9-4'	00-01-0298-38	01/12/00	Solid	N/A	01/13/00	000113AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Acetone	ND	50	1		ug/kg	1,3-Dichloropropane	ND	5.0	1		ug/kg
Benzene	ND	5.0	1		ug/kg	2,2-Dichloropropane	ND	5.0	1		ug/kg
Bromobenzene	ND	5.0	1		ug/kg	1,1-Dichloropropene	ND	5.0	1		ug/kg
Bromochloromethane	ND	5.0	1		ug/kg	o-1,3-Dichloropropene	ND	5.0	1		ug/kg
Bromodichloromethane	ND	5.0	1		ug/kg	t-1,3-Dichloropropene	ND	5.0	1		ug/kg
Bromoform	ND	5.0	1		ug/kg	Ethylbenzene	ND	5.0	1		ug/kg
Bromomethane	ND	5.0	1		ug/kg	2-Hexanone	ND	50	1		ug/kg
2-Butanone	ND	50	1		ug/kg	Isopropylbenzene	ND	5.0	1		ug/kg
n-Butylbenzene	ND	5.0	1		ug/kg	p-Isopropyltoluene	ND	5.0	1		ug/kg
sec-Butylbenzene	ND	5.0	1		ug/kg	Methylene Chloride	ND	50	1		ug/kg
tert-Butylbenzene	ND	5.0	1		ug/kg	4-Methyl-2-Pentanone	ND	50	1		ug/kg
Carbon Disulfide	ND	50	1		ug/kg	Naphthalene	ND	50	1		ug/kg
Carbon Tetrachloride	ND	5.0	1		ug/kg	n-Propylbenzene	ND	5.0	1		ug/kg
Chlorobenzene	ND	5.0	1		ug/kg	Styrene	ND	5.0	1		ug/kg
Chloroethane	ND	5.0	1		ug/kg	1,1,1,2-Tetrachloroethane	ND	5.0	1		ug/kg
Chloroform	ND	5.0	1		ug/kg	1,1,2,2-Tetrachloroethane	ND	5.0	1		ug/kg
Chloromethane	ND	5.0	1		ug/kg	Tetrachloroethane	ND	5.0	1		ug/kg
2-Chlorotoluene	ND	5.0	1		ug/kg	Toluene	ND	5.0	1		ug/kg
4-Chlorotoluene	ND	5.0	1		ug/kg	1,2,3-Trichlorobenzene	ND	10	1		ug/kg
Dibromochloromethane	ND	5.0	1		ug/kg	1,2,4-Trichlorobenzene	ND	5.0	1		ug/kg
1,2-Dibromo-3-Chloropropane	ND	10	1		ug/kg	1,1,1-Trichloroethane	ND	5.0	1		ug/kg
1,2-Dibromoethane	ND	5.0	1		ug/kg	1,1,2-Trichloroethane	ND	5.0	1		ug/kg
Dibromomethane	ND	5.0	1		ug/kg	Trichloroethene	ND	5.0	1		ug/kg
1,2-Dichlorobenzene	ND	5.0	1		ug/kg	Trichlorofluoromethane	ND	50	1		ug/kg
1,3-Dichlorobenzene	ND	5.0	1		ug/kg	1,2,3-Trichloropropene	ND	5.0	1		ug/kg
1,4-Dichlorobenzene	ND	5.0	1		ug/kg	1,2,4-Trimethylbenzene	ND	5.0	1		ug/kg
Dichlorodifluoromethane	ND	5.0	1		ug/kg	1,3,5-Trimethylbenzene	ND	5.0	1		ug/kg
1,1-Dichloroethane	ND	5.0	1		ug/kg	Vinyl Acetate	ND	50	1		ug/kg
1,2-Dichloroethane	ND	5.0	1		ug/kg	Vinyl Chloride	ND	5.0	1		ug/kg
1,1-Dichloroethene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
o-1,2-Dichloroethene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
t-1,2-Dichloroethene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
1,2-Dichloropropane	ND	5.0	1		ug/kg						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	105	80-120		Toluene-d8	100	81-117	
1,4-Bromofluorobenzene	98	74-121					

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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**ANALYTICAL REPORT**

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

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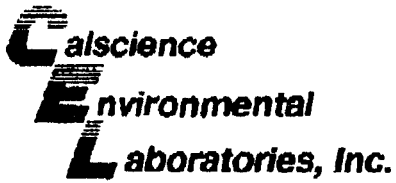
Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
Method Blank	095-01-025-1,799	N/A	Solid	N/A	01/13/00	000113AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Acetone	ND	50	1		ug/kg	1,3-Dichloropropane	ND	5.0	1		ug/kg
Benzene	ND	5.0	1		ug/kg	2,2-Dichloropropane	ND	5.0	1		ug/kg
Bromobenzene	ND	5.0	1		ug/kg	1,1-Dichloropropane	ND	5.0	1		ug/kg
Bromochloromethane	ND	5.0	1		ug/kg	o-1,3-Dichloropropene	ND	5.0	1		ug/kg
Bromodichloromethane	ND	5.0	1		ug/kg	i-1,3-Dichloropropene	ND	5.0	1		ug/kg
Bromoform	ND	5.0	1		ug/kg	Ethylbenzene	ND	5.0	1		ug/kg
Bromomethane	ND	5.0	1		ug/kg	2-Hexanone	ND	50	1		ug/kg
2-Butanone	ND	50	1		ug/kg	Isopropylbenzene	ND	5.0	1		ug/kg
n-Butylbenzene	ND	5.0	1		ug/kg	p-Isopropyltoluene	ND	5.0	1		ug/kg
sec-Butylbenzene	ND	5.0	1		ug/kg	Methylene Chloride	ND	50	1		ug/kg
tert-Butylbenzene	ND	5.0	1		ug/kg	4-Methyl-2-Pentanone	ND	50	1		ug/kg
Carbon Disulfide	ND	50	1		ug/kg	Naphthalene	ND	50	1		ug/kg
Carbon Tetrachloride	ND	5.0	1		ug/kg	n-Propylbenzene	ND	5.0	1		ug/kg
Chlorobenzene	ND	5.0	1		ug/kg	Styrene	ND	5.0	1		ug/kg
Chloroethane	ND	5.0	1		ug/kg	1,1,1,2-Tetrachloroethane	ND	5.0	1		ug/kg
Chloroform	ND	5.0	1		ug/kg	1,1,2,2-Tetrachloroethane	ND	5.0	1		ug/kg
Chloromethane	ND	5.0	1		ug/kg	Tetrachloroethane	ND	5.0	1		ug/kg
2-Chlorotoluene	ND	5.0	1		ug/kg	Toluene	ND	5.0	1		ug/kg
4-Chlorotoluene	ND	5.0	1		ug/kg	1,2,3-Trichlorobenzene	ND	10	1		ug/kg
Dibromochloromethane	ND	5.0	1		ug/kg	1,2,4-Trichlorobenzene	ND	5.0	1		ug/kg
1,2-Dibromo-3-Chloropropane	ND	10	1		ug/kg	1,1,1-Trichloroethane	ND	5.0	1		ug/kg
1,2-Dibromoethane	ND	5.0	1		ug/kg	1,1,2-Trichloroethane	ND	5.0	1		ug/kg
Dibromomethane	ND	5.0	1		ug/kg	Trichloroethane	ND	5.0	1		ug/kg
1,2-Dichlorobenzene	ND	5.0	1		ug/kg	Trichlorofluoromethane	ND	50	1		ug/kg
1,3-Dichlorobenzene	ND	5.0	1		ug/kg	1,2,3-Trichloropropane	ND	5.0	1		ug/kg
1,4-Dichlorobenzene	ND	5.0	1		ug/kg	1,2,4-Trimethylbenzene	ND	5.0	1		ug/kg
Dichlorodifluoromethane	ND	5.0	1		ug/kg	1,3,5-Trimethylbenzene	ND	5.0	1		ug/kg
1,1-Dichloroethane	ND	5.0	1		ug/kg	Vinyl Acetate	ND	50	1		ug/kg
1,2-Dichloroethane	ND	5.0	1		ug/kg	Vinyl Chloride	ND	5.0	1		ug/kg
1,1-Dichloroethene	ND	5.0	1		ug/kg	p/m-Xylene	ND	5.0	1		ug/kg
c-1,2-Dichloroethene	ND	5.0	1		ug/kg	o-Xylene	ND	5.0	1		ug/kg
i-1,2-Dichloroethene	ND	5.0	1		ug/kg	Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg
1,2-Dichloropropane	ND	5.0	1		ug/kg						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	103	80-120		Toluene-d8	100	81-117	
1,4-Bromofluorobenzene	98	74-121					

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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**ANALYTICAL REPORT**

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-2-28'	00-01-0298-7	01/12/00	Solid	N/A	01/18/00	000118AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	120	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	ND	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	ND	10	1		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	108	80-120				Toluene-d8	93	81-117			
1,4-Dromofluorobenzene	98	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-10'	00-01-0298-11	01/12/00	Solid	N/A	01/18/00	000118AS

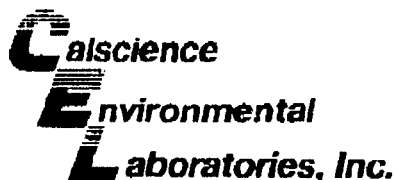
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	340	10	2		ug/kg	Ethyl t-butyl ether (ETBE)	ND	20	2		ug/kg
Tert-Butyl alcohol (TBA)	ND	500	2		ug/kg	Tert-Amyl methyl ether	ND	20	2		ug/kg
Diisopropyl ether (DIPE)	ND	20	2		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	109	80-120				Toluene-d8	101	81-117			
1,4-Bromofluorobenzene	96	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-3-16'	00-01-0298-12	01/12/00	Solid	N/A	01/18/00	000118AE

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	1500	130	25		ug/kg	Ethyl t-butyl ether (ETBE)	ND	250	25		ug/kg
Tert-Butyl alcohol (TBA)	ND	6300	25		ug/kg	Tert-Amyl methyl ether	ND	250	25		ug/kg
Diisopropyl ether (DIPE)	ND	250	25		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	107	80-120				Toluene-d8	102	81-117			
1,4-Bromofluorobenzene	99	74-121									

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID
WGR-3-20'	00-01-0298-13	01/12/00	Solid	N/A	01/18/00	000118A5

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	250	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	850	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	ND	10	1		ug/kg						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Dibromofluoromethane	109	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	98	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID
WGR-3-25'	00-01-0298-14	01/12/00	Solid	N/A	01/18/00	000118A5

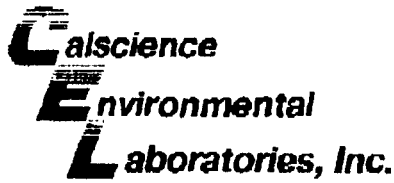
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	48	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	3700	6300	25	J,D	ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	ND	10	1		ug/kg						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Dibromofluoromethane	111	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	90	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID
WGR-6-20'	00-01-0298-25	01/12/00	Solid	N/A	01/18/00	000118A5

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	72	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	770	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	37	10	1		ug/kg						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Dibromofluoromethane	109	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	90	74-121									

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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**ANALYTICAL REPORT**

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

Page 3 of 6

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-6-6'	00-01-0298-27	01/12/00	Solid	N/A	01/18/00	000118AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	32	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	ND	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	ND	10	1		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	108	80-120				Toluene-d8	101	81-117			
1,4-Bromofluorobenzene	98	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-6-10'	00-01-0298-28	01/12/00	Solid	N/A	01/18/00	000118AS

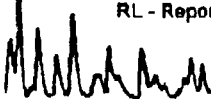
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	730	10	2		ug/kg	Ethyl t-butyl ether (ETBE)	ND	20	2		ug/kg
Tert-Butyl alcohol (TBA)	ND	500	2		ug/kg	Tert-Amyl methyl ether	ND	20	2		ug/kg
Diisopropyl ether (DIPE)	ND	20	2		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	101	80-120				Toluene d8	102	81-117			
1,4-Bromofluorobenzene	98	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-6-15'	00-01-0298-29	01/12/00	Solid	N/A	01/18/00	000118AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	830	10	2		ug/kg	Ethyl t-butyl ether (ETBE)	ND	20	2		ug/kg
Tert-Butyl alcohol (TBA)	750	500	2		ug/kg	Tert-Amyl methyl ether	ND	20	2		ug/kg
Diisopropyl ether (DIPE)	ND	20	2		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	102	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	97	74-121									

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501





**ANALYTICAL REPORT**

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

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Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-6-20	00-01-0298-30	01/12/00	Solid	N/A	01/18/00	000118AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	110	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	250	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	ND	10	1		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>			<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>		
Dibromofluoromethane	109	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	99	74-121									

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-8-25	00-01-0298-31	01/12/00	Solid	N/A	01/18/00	000118AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	38	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	ND	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	22	10	1		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>			<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>		
Dibromofluoromethane	110	80-120				Toluene-d8	102	81-117			
1,4-Bromofluorobenzene	97	74-121									

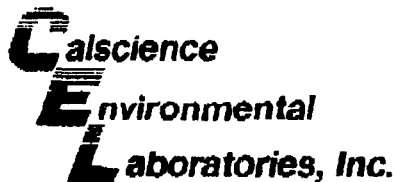
Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-7-20	00-01-0298-35	01/12/00	Solid	N/A	01/19/00	000118AS

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	33	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	ND	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	25	10	1		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>			<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>	<b>Qual</b>		
Dibromofluoromethane	109	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	98	74-121									

RL - Reporting Limit    DF - Dilution Factor    Qual - Qualifiers

7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501





# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

Page 5 of 6

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	QC Batch ID:
WGR-7-25'	00-01-0298-38	01/12/00	Solid	N/A	01/19/00	000118B8

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	39	5	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	ND	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	57	10	1		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	107	80-120				Toluene-d8	103	81-117			
1,4-Bromofluorobenzene	97	74-121									

Method Blank	099-10-006-21	N/A	Solid	N/A	01/18/00	000118A8
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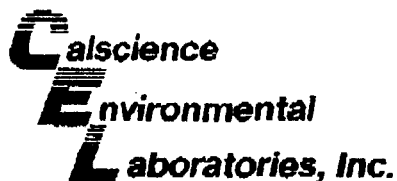
Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	ND	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	ND	10	1		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	107	80-120				Toluene-d8	94	81-117			
1,4-Bromofluorobenzene	99	74-121									

Method Blank	099-10-006-22	N/A	Solid	N/A	01/18/00	000118AE
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Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	ND	50	10		ug/kg	Ethyl t-butyl ether (ETBE)	ND	100	10		ug/kg
Tert-Butyl alcohol (TBA)	ND	2500	10		ug/kg	Tert-Amyl methyl ether	ND	100	10		ug/kg
Diisopropyl ether (DIPE)	ND	100	10		ug/kg						
<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>		<b>Surrogates:</b>	<b>REC (%)</b>	<b>Control Limits</b>		<b>Qual</b>	
Dibromofluoromethane	108	80-120				Toluene-d8	101	81-117			
1,4-Bromofluorobenzene	99	74-121									

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

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# ANALYTICAL REPORT

WGR Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Date Received: 01/13/00  
Work Order No: 00-01-0298  
Preparation: N/A  
Method: EPA 8260B

Project: 406 North Gaffey, San Pedro, CA

Page 6 of 6

Client Sample Number:	Lab Sample Number:	Date Collected:	Matrix:	Date Prepared:	Date Analyzed:	OC Batch ID:
Method Blank	099-10-005-23	N/A	Solid	N/A	01/18/00	00011885

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Methyl-tert-Butyl Ether	ND	5.0	1		ug/kg	Ethyl t-butyl ether (ETBE)	ND	10	1		ug/kg
Tert-Butyl alcohol (TBA)	ND	250	1		ug/kg	Tert-Amyl methyl ether	ND	10	1		ug/kg
Diisopropyl ether (DIPE)	ND	10	1		ug/kg						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
Dibromofluoromethane	107	80-120				Toluene-d8	102	81-117			
1,4-Bromofluorobenzene	98	74-121									

RL - Reporting Limit      DF - Dilution Factor      Qual - Qualifiers

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**CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.**

7440 LINCOLN WAY  
GARDEN GROVE, CA 92841-1432  
TEL: (714) 895-5494 • FAX: (714) 894-7501

**CHAIN OF CUSTODY RECORD**

Date: 1-13-2000  
Page 1 of 4

LABORATORY CLIENT: <u>WGR Southwest</u>				CLIENT PROJECT NAME / NUMBER: <u>Shell 604 Gaffey Street</u>					P.C. NO.:														
ADDRESS: <u>11021 Winners Circle</u>				PROJECT CONTACT: <u>Dave Williams</u>					QUOTE NO.:														
CITY: <u>Los Alamitos</u> STATE: <u>CA</u> ZIP: <u>90720</u>		TEL: <u>562 799 8510</u> FAX: <u>562 799 8556</u> EMAIL:		SAMPLER(S): (SIGNATURE)					LAB USE ONLY <input checked="" type="checkbox"/> 1 - <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 9 <input checked="" type="checkbox"/> 8														
TURNAROUND TIME <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAYS <input type="checkbox"/> 10 DAYS				<b>REQUESTED ANALYSES</b>																			
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input type="checkbox"/> RWQCB REPORTING <input type="checkbox"/> ARCHIVE SAMPLES UNTIL ___/___/___																							
SPECIAL INSTRUCTIONS: <u>confirm MTBE hits by method 8260 and report other oxygenates</u>																							
LAB USE ONLY	SAMPLE ID	LOCATION/DESCRIPTION	SAMPLING		MATRIX	NO. OF CONT.	TPH (R)	TPH (D) (D)	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	EDB / DBCP (504.1) or (8011)	CAC, T22 METALS (6010B)	ICP/MS METALS (8020)	PNAs (8310)	VOCs (T0-14A) or (T0-15)	CH <sub>4</sub> / TGNM0 (25.1)	FIXED GASES (25.1) or (D194A)	TRPH	
			DATE	TIME																			
	WGR-1	6'	1-12-00	705	SOIL	1																	X
	WGR-1	10'		715		1																	X
	WGR-1	15'		725		1																	X
	WGR-2	6'		745		1	X	X															
	WGR-2	10'		755		1	X	X															
	WGR-2	15'		759		1	X	X															
	WGR-2	28'		805		1	X	X															
	WGR-2	35'		815		1	X	X															
	WGR-2	40'		825		1	X	X															
	WGR-3	6'		845		1	X	X															
Relinquished by: (Signature)				Received by: (Signature)					Date: <u>1-13-2000</u> Time: <u>958</u>														
Relinquished by: (Signature)				Received by: (Signature)					Date: _____ Time: _____														
Relinquished by: (Signature)				Received for Laboratory by: (Signature)					Date: <u>1-13-00</u> Time: <u>1509</u>														

ORS: DISTRIBUTION: white for final report, Green to File, Yellow and Pink to Client  
Please note that pages 1 and 2 of 2 of our TPOs are printed on the reverse side of the yellow and pink copies respectively

LABORATORY CLIENT: <b>WGR Southwest</b>		CLIENT PROJECT NAME / NUMBER: <b>Shell 604 Gaffey Street</b>		P.O. NO.:
ADDRESS: <b>11021 Winners Circle</b>		PROJECT CONTACT: <b>Dave Williams</b>		QUOTE NO.:
CITY: <b>Los Alamitos</b>	STATE: <b>CA</b>	SAMPLER(S): (SIGNATURE)		LAB USE ONLY
TEL:	FAX:	E-MAIL:		<input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
TURNAROUND TIME		<b>REQUESTED ANALYSES</b>		

TURNAROUND TIME  
 SAME DAY  24 HR  48 HR  72 HR  5 DAYS  10 DAYS  
 SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY):  
 RWQCB REPORTING  ARCHIVE SAMPLES UNTIL \_\_\_/\_\_\_/\_\_\_

SPECIAL INSTRUCTIONS  
*confirm MTBE hits  
 by method 8260 and report  
 other oxygenates*

LAB USE ONLY	SAMPLE ID	LOCATION/DESCRIPTION	SAMPLING		MATRIX	NO. OF CNT.	TPH (G)	TPH (D) (M)	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	EOB / DBCP (504.1) or (8011)	CAC, T22 METALS (8010B)	ICP/MS METALS (6020)	PbAs (8310)	VOCs (TO-14A) or (TO-15)	CH <sub>4</sub> / TGNM (25.1)	FIXED GASES (25.1) or (01946)	
			DATE	TIME																		
	WGR-3	10'	1-12-00	855	soil	1	X	X														
	WGR-3	15'		915		1	X	X														
	WGR-3	20'		935		1	X	X														
	WGR-3	25'		955		1	X	X														
	WGR-3	30'		1015		1	X	X														
	WGR-3	35'		1035		1	X	X														
	WGR-4	6'		1105		1	X	X														
	WGR-4	10'		1125		1	X	X														
	WGR-4	15'		1145		1	X	X														
	WGR-4	20'		1205		1	X	X														

Relinquished by: (Signature)	Received by: (Signature)	Date: <u>1-13-2000</u>	Time: <u>928</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received for Laboratory by: (Signature)	Date: <u>1-13-00</u>	Time: <u>1509</u>

14 000 2000  
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 14 000 2000

02/01/99 Revision

**CALSCIENCE ENVIRONMENTAL  
LABORATORIES, INC.**

7440 LINCOLN WAY  
GARDEN GROVE, CA 92841-1432  
TEL: (714) 895-5494 • FAX: (714) 894-7501

**CHAIN OF CUSTODY RECORD**

Date 1-13-2000  
Page 3 of 4

LABORATORY CLIENT: <u>WGR Southwest</u>				CLIENT PROJECT NAME / NUMBER: <u>Shell 604 Gaffey Street</u>				P.O. NO.:																
ADDRESS: <u>11021 Wilshire Circle</u>				PROJECT CONTACT: <u>Dave Williams</u>				QUOTE NO.:																
CITY: <u>Los Alamitos</u>		STATE: <u>CA</u>		ZIP: <u>90720</u>		LAB USE ONLY																		
TEL:		FAX:		E-MAIL:		<input type="checkbox"/> 1 - <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4																		
TURNAROUND TIME <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAYS <input type="checkbox"/> 10 DAYS						<b>REQUESTED ANALYSES</b>																		
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input type="checkbox"/> R/WQCB REPORTING <input type="checkbox"/> ARCHIVE SAMPLES UNTIL ___/___/___						<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 5%;">TPH (G)</td> <td style="width: 5%;">TPH (D) (0)</td> <td style="width: 5%;">BTEX / MTBE (8021B)</td> <td style="width: 5%;">HALOCARBONS (8021B)</td> <td style="width: 5%;">VOCs (8260B)</td> <td style="width: 5%;">SVOCs (8270C)</td> <td style="width: 5%;">PEST (8081A)</td> <td style="width: 5%;">PCBs (8082)</td> <td style="width: 5%;">COB / DBCP (504.1) or (8011)</td> <td style="width: 5%;">CAC, T22 METALS (8010B)</td> <td style="width: 5%;">ICP/MS METALS (8020)</td> <td style="width: 5%;">PbAs (8310)</td> <td style="width: 5%;">VOCs (TD-14A) or (TO-15)</td> <td style="width: 5%;">CH<sub>4</sub> / TGNM0 (25.1)</td> <td style="width: 5%;">FIXED GASES (25.1) or (D1946)</td> </tr> </table>				TPH (G)	TPH (D) (0)	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	COB / DBCP (504.1) or (8011)	CAC, T22 METALS (8010B)	ICP/MS METALS (8020)	PbAs (8310)	VOCs (TD-14A) or (TO-15)	CH <sub>4</sub> / TGNM0 (25.1)	FIXED GASES (25.1) or (D1946)
TPH (G)	TPH (D) (0)	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	SVOCs (8270C)					PEST (8081A)	PCBs (8082)	COB / DBCP (504.1) or (8011)	CAC, T22 METALS (8010B)	ICP/MS METALS (8020)	PbAs (8310)	VOCs (TD-14A) or (TO-15)	CH <sub>4</sub> / TGNM0 (25.1)	FIXED GASES (25.1) or (D1946)						
SPECIAL INSTRUCTIONS <u>confirm MTBE hits by method 8260 and report other oxygenates</u>																								
LAB USE ONLY	SAMPLE ID	LOCATION/DESCRIPTION	SAMPLING		MATRIX	NO. OF COMPS	TPH (G)	TPH (D) (0)	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	COB / DBCP (504.1) or (8011)	CAC, T22 METALS (8010B)	ICP/MS METALS (8020)	PbAs (8310)	VOCs (TD-14A) or (TO-15)	CH <sub>4</sub> / TGNM0 (25.1)	FIXED GASES (25.1) or (D1946)			
			DATE	TIME																				
	WGR-4	25'	1-12-00	1225	soil	1	X	X																
	WGR-5	6'		1245		1	X	X																
	WGR-5	10'		1305		1	X	X																
	WGR-5	15'		1325		1	X	X																
	WGR-5	20'		1345		1	X	X																
	WGR-5	25'		1401		1	X	X																
	WGR-6	6'		1502		1	X	X																
	WGR-6	10'		1530		1	X	X																
	WGR-6	15'		1601		1	X	X																
	WGR-6	20'		1630		1	X	X																
Relinquished by: (Signature) <u>[Signature]</u>						Received by: (Signature) <u>[Signature]</u>						Date: <u>1-13-2000</u>		Time: <u>928</u>										
Relinquished by: (Signature)						Received by: (Signature)						Date:		Time:										
Relinquished by: (Signature) <u>[Signature]</u>						Received for Laboratory by: (Signature) <u>[Signature]</u>						Date: <u>1-13-2000</u>		Time: <u>1509</u>										

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JAN-21-2000 13:21 CALSCIENCE FROM NIGHT 714 896 2006 P.24 25

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GARDEN GROVE, CA 92841-1432  
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**CHAIN OF CUSTODY RECORD**

Date 1-13-2000  
Page 4 of 4

LABORATORY CLIENT: WGR Southwest  
ADDRESS: 11021 Winners Circle  
CITY: Los Alamitos STATE: CA ZIP: 90720  
TEL: \_\_\_\_\_ FAX: \_\_\_\_\_ E-MAIL: \_\_\_\_\_

CLIENT PROJECT NAME / NUMBER: Shell 607 Gaffey Street  
PROJECT CONTACT: Dave Williams  
P.O. NO.: \_\_\_\_\_  
QUOTE NO.: \_\_\_\_\_  
SAMPLER(S) / SIGNATURE: [Signature]  
LAB USE ONLY:  1 -  2 -  3 -  4 -  5 -  6 -  7 -  8 -  9 -  10

TURNAROUND TIME  
 SAME DAY  24 HR  48 HR  72 HR  5 DAYS  10 DAYS  
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)  
 RWQCB REPORTING  ARCHIVE SAMPLES UNTIL \_\_\_\_\_  
SPECIAL INSTRUCTIONS  
confirm MTBE hits by method 8260 and report other oxygenates

**REQUESTED ANALYSES**

LAB USE ONLY	SAMPLE ID	LOCATION/DESCRIPTION	SAMPLING		MAYTAG	NO OF CONT.	TPH (G)	TPH (D) (D)	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	EDB / DBCP (504.1) or (8071)	CAC, T22 METALS (5010B)	ICP/MS METALS (6020)	PNAs (8310)	VOCs (TD-14A) or (TD-15)	CH4 / TGNM0 (25.1)	FIXED BASES (25.1) or (D1946)	TRPH
			DATE	TIME																		
	<del>WGR-5</del>		<del>1-12-00</del>		<del>501</del>	1	X															
	WGR-6	25'	1-12-00	1701	501	1	X	X														
	WGR-7	6'		1730		1	X	X														
	WGR-7	10'		1740		1	X	X														
	WGR-7	15'		1755		1	X	X														
	WGR-7	20'		1805		1	X	X														
	WGR-7	25'		1830		1	X	X														
	WGR-8	3'		1839		1				X											X	
	WGR-9	4'		1843		1				X											X	

Relinquished by (Signature): [Signature] Received by (Signature): [Signature] Date: 1-13-2000 Time: 928  
Relinquished by (Signature): \_\_\_\_\_ Received by (Signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished by (Signature): [Signature] Received for Laboratory by (Signature): [Signature] Date: 1-13-00 Time: 1509

CALSCIENCE PROJ 1011

TOTAL P. 19

2. ***Site Assessment Report, Former Shell Service Station /SAP #136042, 406 North Gaffey Street, San Pedro California, prepared by WGR, Southwest, Inc., dated July 12, 2006.***

Southwest, Inc.

August 8, 2006

Regional Water Quality Control Board  
Los Angeles Region  
320 West First Street, Suite 200  
Los Angeles, CA 90013  
Attn: Ms. Chandra Cansler

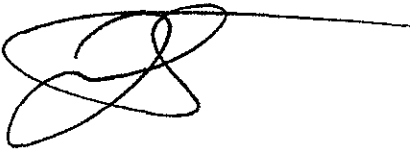
**SUBJECT: SITE ASSESSMENT REPORT**  
**Former Shell Service Station /SAP #136042**  
**406 North Gaffey Street**  
**San Pedro, California**  
**WGR Southwest, Inc., Project No. 142.EQL.00**

Dear Ms. Cansler:

WGR Southwest, Inc., on behalf of Equilon Enterprises LLC dba Shell Oil Products US, is forwarding the attached Site Assessment Report for the above referenced site.

If you have any questions, please do not hesitate to call me at (562) 799-8510 or Mr. Joe Lentini, Environmental Engineer, Shell Oil Products US at (310) 376-0649.

Sincerely,  
WGR Southwest, Inc.



J Graydon Martz, PG  
Project Manager

Enc.

Cc Mr. Charlie Quezada  
Mr. Frank Lauro  
Mr. Joe Lentini, Shell Oil Products US



# **SITE ASSESSMENT REPORT**

**Former Shell Service Station /SAP #136042  
406 North Gaffey Street  
San Pedro, California**

**July 12, 2006**

**for**

**Mr. Joe Lentini  
Shell Oil Products US  
20945 S. Wilmington Avenue  
Carson, California 90810**

**prepared by**

**WGR**

**Southwest, Inc.**

**11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720**

**WGR Southwest, Inc. Project Number 142.EQL.00**

Southwest, Inc.

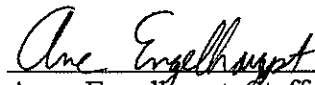
**SITE ASSESSMENT REPORT**  
**Former Shell Service Station /SAP #136042**  
**406 North Gaffey Street**  
**San Pedro, California**

**LIMITATIONS, WARRANTIES AND CERTIFICATION**

This report was prepared by WGR Southwest, Inc. for the exclusive use, in its entirety, by Shell Oil Products US and other authorized parties. The interpretations and conclusions presented in this report have been developed in accordance with generally accepted professional standards in the industry. The interpretations and conclusions provided in this report are based on information supplied by a third party service company, as such, WGR Southwest, Inc. does not warrant information supplied by independent parties. No other warranty, either expressed or implied, is made.

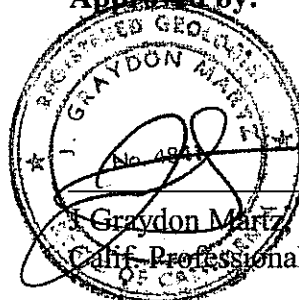
Interpretations, conclusions and opinions provided by WGR Southwest, Inc. are based on specific information collected during a specific time interval as documented in this report. Development of additional data or changes in site conditions due to chemical migration, mitigation or releases may render the interpretations, conclusions and opinions in this report invalid. WGR Southwest, Inc. assumes no responsibility for conditions resulting from a change in Federal, State or local regulations.

**WGR Southwest, Inc.**  
**Prepared by:**



\_\_\_\_\_  
Anne Engelhaupt, Staff Geologist

**Approved by:**



\_\_\_\_\_  
Graydon Martz, Project Manager  
Calif. Professional Geologist No. 4841

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**SITE ASSESSMENT REPORT**  
**Former Shell Service Station /SAP #136042**  
**406 North Gaffey Street**  
**San Pedro, California**

**1.0 INTRODUCTION**

The property is the location of a former self-service Shell Station. The site is currently non-operational with a building, canopy and a fence around the site. It is located on the northeast corner of the intersection of Gaffey Street and O'Farrell Streets in San Pedro, California (**Figure 1**).

In June 2006, one soil boring and four groundwater monitoring wells were advanced at the subject property.

**2.0 SITE SETTING**

The site is located in a commercial district of San Pedro, California. A private single family residence and the entrance/exit ramp to the 110 Freeway are located north of the subject property. Oliver Street, a small residential street is located just east of the subject property with single family residences bordering on the west side of the street close to the subject property. O'Farrell Street is located south of the property and Gaffey Street is located west of the subject property.

A former self-service gasoline station occupies the subject property. The property consists of a service station building with three service bays, canopy and a fence surrounding the site.

**3.0 PREVIOUS INVESTIGATIONS**

In July 1988, routine underground storage tanks (USTs) removal and replacement operations were conducted at the subject property. Four gasoline USTs were removed: one 8,000 gallon, two 5,000 gallon, and one 10,000 gallon USTs were removed and replaced with three 10,000 gallon double walled fiberglass USTs. Impacted soil located beneath the former USTs was excavated and transported from the site to an appropriate disposal facility. Details of the UST removal operations and soil sampling are presented in W. W. Irwin's Tank Removal Report dated August 10, 1988.

In a letter dated March 12, 1990, following review of the UST removal report the City of Los Angeles Fire Department granted site closure. Based on information made available to WGR Southwest, Inc. there appears to be no other soil sampling or assessment data collected at the site prior to the phase II investigation conducted by WGR Southwest, Inc. in January 2000.

Seven soil borings, (WGR-1 through WGR-7) were drilled and sampled and two hand auger borings (WGR-8 and WGR-9) were advanced and sampled on January 12, 2000 at the subject

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property. See **Figure 2** for boring locations. Sediments encountered during the drilling investigation consisted predominantly of gray and brown clays with minor amounts of silt and sand.

Groundwater was encountered in borings WGR-2 and WGR-3 at a depth of approximately 35 feet below ground surface (bgs). Analytical results of soil samples indicate that detectable total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethyl benzene and total xylenes (known collectively as BTEX), or methyl tert butyl ether (MTBE) occurs in each soil boring drilled at the subject property. Additionally, tert butyl alcohol (TBA) and di-isopropyl ether (DIPE) were found to occur in several of the borings. Maximum TPH-g and benzene concentrations of 49 milligrams per kilogram (mg/kg) and 2.5 mg/kg occurred in samples collected at or below the groundwater interface. The waste oil tank boring (WGR-1) contained no detectable total recoverable petroleum hydrocarbons (TRPH) or oxygenate concentrations. Samples collected from hand auger borings WGR-8 and WGR-9 contained TRPH concentrations of 295 mg/kg and 144 mg/kg, respectively and no BTEX or oxygenate concentrations.

On June 16, 2000, three 10,000-gallon fiberglass gasoline USTs, associated piping, two dispenser islands each equipped with two multi-product dispenser pumps, and one 550 gallon fiberglass waste oil UST were removed from the site. Compliance samples were collected from beneath the tanks (T-1, T-2 at 20 feet bgs, T-3, T-4, T-5 at 17 feet bgs and T-6 at 18 feet bgs), the dispensers (D-1 through D-4 at between 3 to 4.5 feet bgs), the waste oil tank (WO-1 at 11 feet bgs), and the vent lines piping run (VL-1 and VL-2 at 5 feet bgs).

TPH-g concentrations were present in all of the six UST soil samples and two dispenser samples (D-1 and D-2) with the maximum concentration reported in sample T-1 (360 mg/kg). No detectable Benzene or Toluene concentrations were reported in any of the samples. MTBE was reported in all of the six UST samples, two dispenser samples (D-1 and D-2) and one vent line sample (VL-2) with the maximum concentration reported in sample T-1 (13 mg/kg by method 8021B). Confirmation testing by EPA method 8260B indicated the presence of detectable MTBE in this sample at a concentration of 13,000 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ). TRPH was not detected in the sample collected from below the waste oil UST (WO-1).

#### **4.0 SITE GEOLOGY AND HYDROGEOLOGY**

The subject site is approximately two miles west of the Palos Verdes Hills, which border the Coastal Plain of Los Angeles County to the southwest. The site is bounded on the north by the Palo Verde Fault Zone and on the south by the Cabrillo Fault. The main channel of the Los Angeles Harbor lies approximately 1 mile east of the site. The Palos Verdes Hills highlands are almost entirely composed of rocks of pre-Tertiary and Tertiary age and are essentially non-water bearing. The Palos Verdes Hills are an uplifted fault block composed of Catalina schist basement and marine sediments of Tertiary (Miocene Monterey Formation) and Quaternary age that have been folded into a general anticlinal form.

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The current depth to groundwater beneath the site is approximately 35 feet bgs. The site is located in the southeastern part of the West Coast Groundwater Basin, which is separated from the Central Basin to the north-northeast by the Newport-Inglewood uplift. Natural underflow recharge to the West Coast Basin is provided by the Central Basin, which is partially impeded by the Newport-Inglewood uplift zone.

The upper surface of the Gage Aquifer occurs beneath the site at a depth of approximately 35 feet. The Gage aquifer consists of fine to medium sand with variable amounts of gravel, sandy silt and clay. The thickness of the Gage ranges up to 160 feet and is estimated to be approximately 100 feet thick in the site vicinity based on data from wells within the immediate area installed by the Los Angeles County Flood Control District as part of the Dominguez Gap Barrier Project. The contact between the base of the Lakewood and the San Pedro Formations is an unconformity. This unconformity typically is associated with an aquitard unit. This unnamed aquitard separates the Gage Aquifer from the Lynwood Aquifer and consists mainly of clays, silts, and sandy silt deposits.

Groundwater flow in the Gage Aquifer is generally towards the north-northwest. Groundwater levels have been depressed below sea level by inland pumping and significant seawater intrusion has occurred throughout this aquifer.

## **5.0 FIELD ACTIVITIES**

### **5.1 DRILLING AND SAMPLING PROCEDURES**

One soil boring (WGR-10) and four groundwater wells (MW-1 to MW-4) were advanced at the site on June 12-13, 2006. Boring locations are shown in **Figure 2**. All the borings were drilled to approximately 55 feet bgs.

During this investigation standard practices and procedures for field sampling as outlined in Publication SW-846, Second Edition, United States Environmental Protection Agency and any local agency mandated sampling procedures were followed. A CME 75 hollow stem auger drilling rig was utilized for the advancement of the soil borings. Pre-cleaned and/or steam cleaned augers were used throughout the drilling operation to prevent potential cross contamination. The field investigation was conducted under the supervision of a California Professional Geologist.

Undisturbed soil samples were collected for analyses and lithologic characterization at approximate five-foot depth intervals, starting at 10 feet bgs, from each of the soil borings. The soil samples were collected in accordance with EPA Method 5035, Encore™ samplers. The soil was collected in an 18-inch long, 2.0-inch O. D. split-spoon sampler lined with 1.5-inch O. D. metal sample tubes. The bottom sample tubes from each five-foot sample interval were immediately sealed with Teflon

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film and a polyethylene cap. The samples were labeled with all pertinent sampling information, and then packed on ice for subsequent delivery to a California Department of Health Services (CDHS)-certified laboratory for analyses. Chain of custody protocol was followed throughout field and laboratory procedures. The soil in the remaining tubes was described and logged by the field geologist in accordance with the Unified Soil Classification System (USCS). All sampling equipment was decontaminated between sampling episodes utilizing a triple rinse method consisting of a wash with Alconox (or equivalent) solution, an initial rinse with tap water, and a final rinse with deionized water.

Immediately following sampling, WGR-10 was backfilled with bentonite grout and capped to match the existing surface. The rest of the soil borings were completed as groundwater monitoring wells. The wells were constructed with 4-inch O.D. schedule 40 PVC with 0.020" machine slotted well screen 10 feet above to 20 feet below first encountered groundwater water (25 feet to 55 feet bgs) with the remaining pipe to surface consisting of 4-inch O.D. schedule 40 PVC Blank well casing. Number 3 Monterey Sand was utilized as a filter pack from the total depth to 2 feet above the slotted interval. The annular seal consists of 3 feet of hydrated Bentonite chips. The remaining annular space was filled with bentonite grout. The wells were completed with a 12-inch diameter Emco-Wheaton traffic rated well-vault in a 24 inch square, 1 foot thick, concrete pad to match the existing surface.

The wells will be developed, surveyed and added to the quarterly monitoring program in the third quarter 2006.

## 5.2 HEALTH AND SAFETY PLAN

A site specific Health and Safety Plan detailing all known or potential hazards and emergency response procedures was prepared prior to field operations. All on-site personnel reviewed the plan and a "tailgate" safety meeting was conducted prior to initiation of field activities. The plan was maintained on-site throughout the duration of field activities.

## 5.3 DRILL SITE CLEARANCE

Prior to the initiation of field operations, drilling locations were marked with white paint and Underground Service Alert (USA) was contacted to identify any potential subsurface obstructions and/or conflicts. Additionally, the initial 7 feet of drilling of each boring was advanced using airknife techniques.

## 5.4 LABORATORY ANALYSES

Soil samples collected from borings adjacent to the gasoline dispenser islands and/or fuel storage tanks were submitted to a State certified laboratory for analysis by Cal DHS modified EPA Method 8015M for gasoline, and by EPA Method 8260B full scan for BTEX, oxygenates and other

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substances.

## **6.0 RESULTS OF INVESTIGATION**

Sediments encountered during the drilling investigation consisted predominantly of gray, brown and black clays with minor amounts of silt and sand. Groundwater was encountered at a depth of approximately 35 feet bgs. Boring logs are attached in **Appendix A**.

Analytical results indicated no detectable concentrations of ETBE and Ethanol. TPH-g was found in all borings with a maximum concentration (1,100 mg/kg) in MW-2 at a depth of 20 feet bgs. Benzene was found in all borings with a maximum concentration (6,300 µg/kg) in MW-3 at a depth of 40 feet bgs. MTBE was found in all borings with a maximum concentration (9,400 µg/kg) in MW-3 at a depth of 25 feet bgs. TBA was found in all borings with a maximum concentration (12,000 µg/kg) in MW-1 at a depth of 25 feet bgs.

Analytical results are summarized in **Table 1**. Laboratory reports and chain of custody documents are provided in **Appendix B**.

## **7.0 SOIL DISPOSAL**

The drill cuttings generated during the field investigation were stored temporarily on site in 55-gallon DOT-approved steel drums pending characterization. Each drum was labeled with the site name and address, generation date, and type and source of the material it contains. Following characterization, the drums will be transported to an appropriate facility for disposal. Copies of disposal documentation will be forwarded upon receipt.

## **8.0 SUMMARY AND CONCLUSIONS**

One soil boring (WGR-10) and four groundwater wells (MW-1 to MW-4) were advanced at the site on June 12-13, 2006.

Sediments encountered during the drilling investigation consisted predominantly of gray, brown and black clays with minor amounts of silt and sand. Groundwater was encountered at a depth of approximately 35 feet bgs.

The wells were constructed with 4-inch O.D. schedule 40 PVC with 0.020" machine slotted well screen 10 feet above to 20 feet below first encountered groundwater water (25 feet to 55 feet bgs) with the remaining pipe to surface consisting of 4-inch O.D. schedule 40 PVC Blank well casing. Number 3 Monterey Sand was utilized as a filter pack from the total depth to 2 feet above the slotted interval. The annular seal consists of 3 feet of hydrated Bentonite chips.

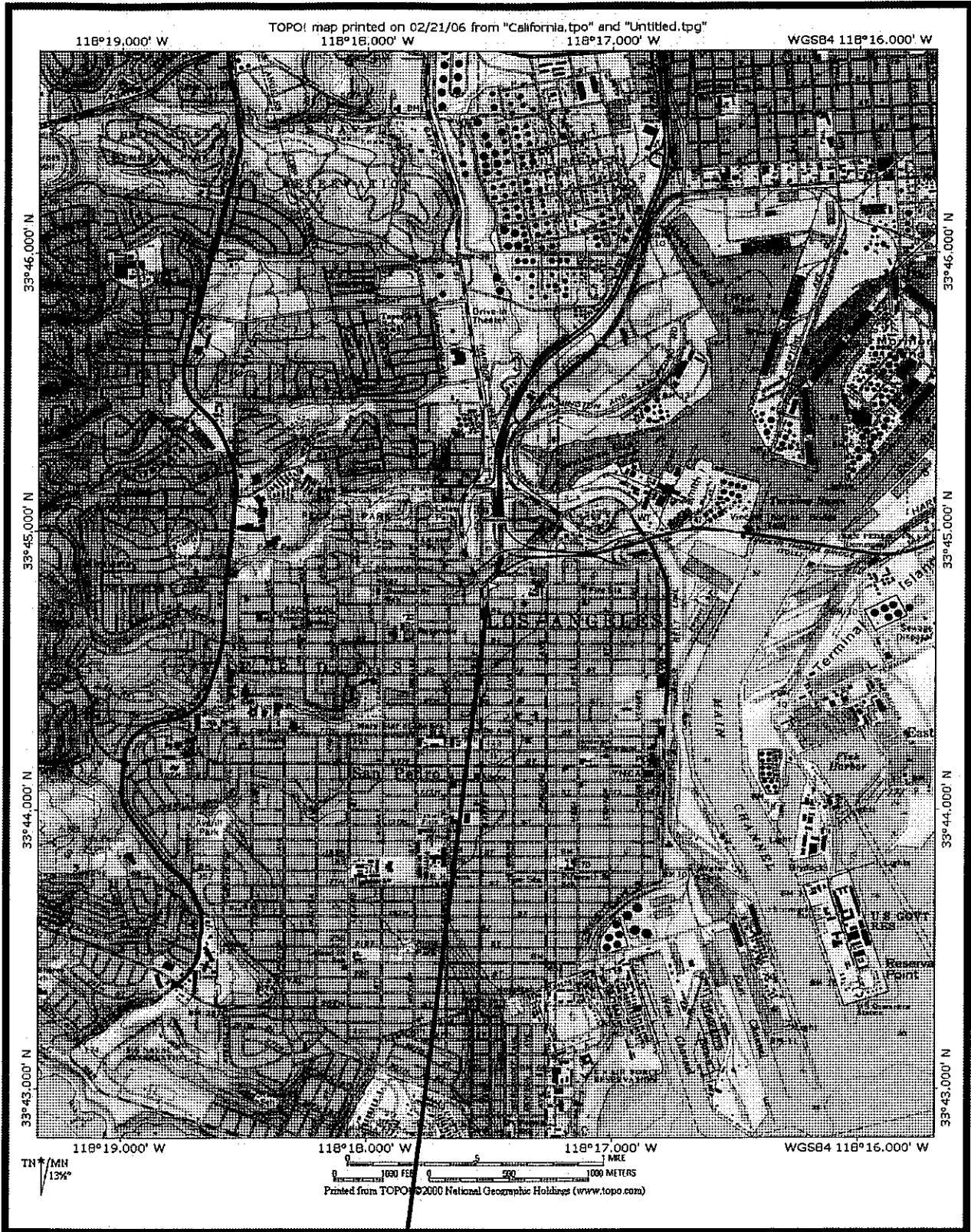


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The wells will be developed, surveyed and added to the quarterly monitoring program in the third quarter 2006.

## FIGURES



**Site Location**



**Legend**

Source: TOPO 2000 CD-ROM

**WGR**

**Southwest, Inc.**

11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

**SHELL OIL PRODUCTS US**

**Site Vicinity Map**

406 N. Gaffey Street

San Pedro, CA

DATE  
2006

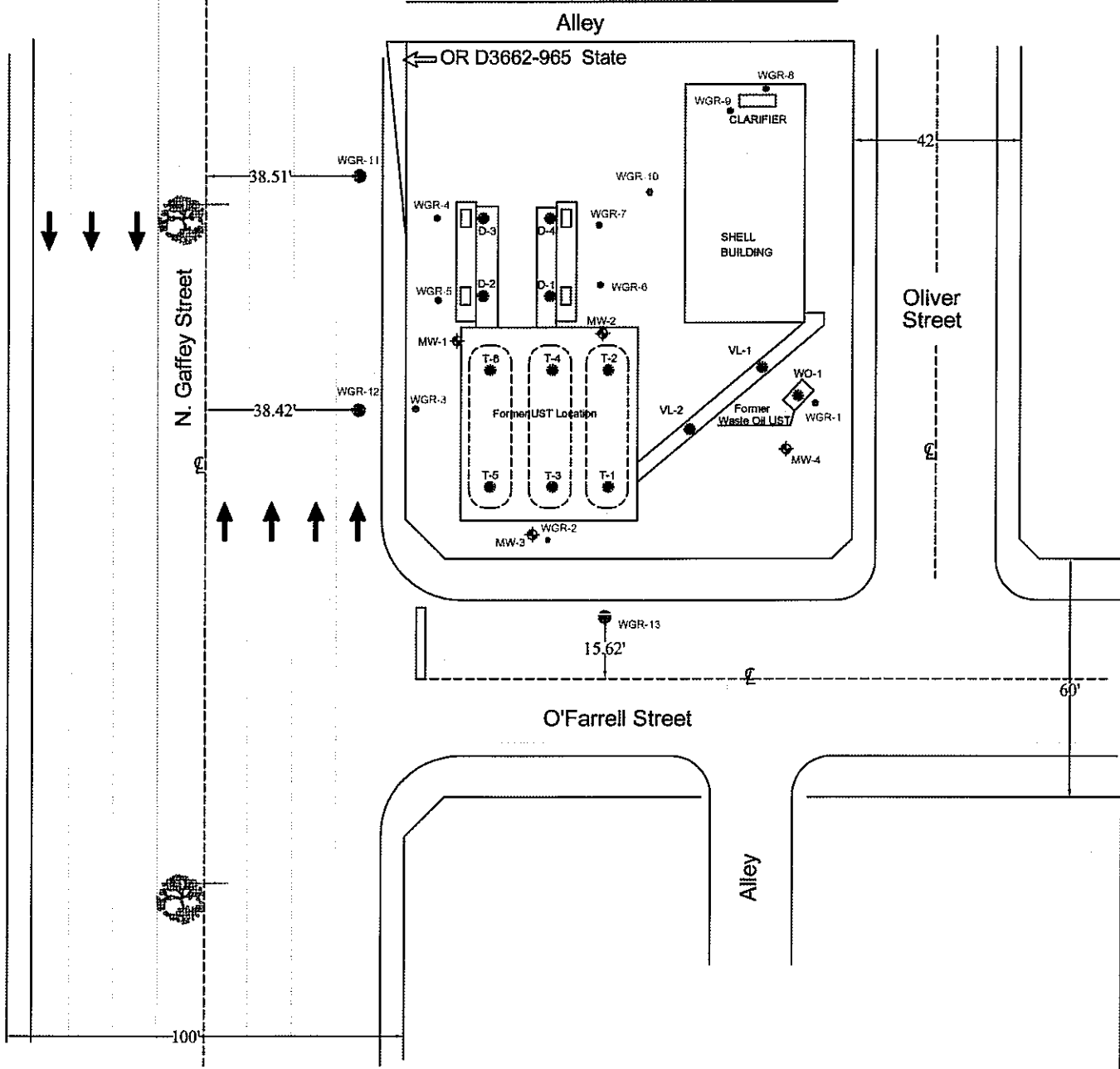
PROJECT NUMBER  
142.EQL.00

DWN BY  
JGM

DWG #

Figure

**1**



LEGEND	
◆	Groundwater Monitoring Wells 6-2006
•	Boring Location 6-2006
●	Proposed Borings 3-2006
•	Boring Location 2-2000
●	Sampling Location 6-2000

**WGR**  
**Southwest, Inc.**  
 11021 Winners Circle, Suite 101  
 Los Alamitos, CA 90720

SHELL OIL PRODUCTS US				Figure <b>2</b>
SITE PLAN				
406 N. Gaffey Street		San Pedro, California		
DATE 2006	PROJECT NUMBER 142.EQL.00	DWN BY JRR	DWG #	

**Table 1**  
**Soil Sample Analytical Summary**  
**Former Shell Service Station**  
**406 North Gaffey Street**  
**San Pedro, California**

Boring Number	Sample Date	Sample Depth (Feet)	8015	EPA Method 8260B									
			TPH-g (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)
WGR-10	06/13/06	10	ND<0.25	ND<0.98	ND<0.98	ND<0.98	ND<2.98	ND<2.0	ND<20	ND<0.98	ND<0.98	ND<0.98	ND<490
	06/13/06	15	ND<0.29	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	2.3	ND<1.1	ND<1.1	ND<560
	06/13/06	20	ND<0.29	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	3.1	ND<1.1	ND<1.1	ND<550
	06/13/06	25	ND<0.30	ND<1.2	ND<1.2	ND<1.2	ND<3.7	3.8	190	28	ND<1.2	ND<1.2	ND<620
	06/13/06	30	0.98	14	ND<1.0	16	6.4	5.7	46	99	ND<1.0	ND<1.0	ND<510
	06/13/06	35	46	51	ND<1.0	41	3.4	58	110	150	ND<1.0	ND<1.0	ND<520
	06/13/06	40	3.1	1100	34	110	482	ND<2.2	220	9.0	ND<1.1	ND<1.1	ND<550
	06/13/06	45	2.4	1200	110	160	788	ND<2.1	220	9.6	ND<1.0	ND<1.0	ND<520
	06/13/06	50	2.1*	5800	1.7	93	120	ND<2.4	110	ND<1.2	ND<1.2	ND<1.2	ND<600
06/13/06	55	ND<0.28	ND<1.2	ND<1.2	ND<1.2	ND<3.5	ND<2.3	ND<23	ND<1.2	ND<1.2	ND<1.2	ND<580	
MW-1	06/12/06	10	ND<0.26	ND<1.1	ND<1.1	ND<1.1	ND<3.4	20	ND<23	ND<1.1	ND<1.1	ND<1.1	ND<570
	06/12/06	15	ND<0.30	ND<1.1	ND<1.1	ND<1.1	ND<3.3	150	190	5.6	ND<1.1	ND<1.1	ND<560
	06/12/06	20	3.4	120	190	51	350	1500	7300	38	ND<1.1	ND<1.1	ND<570
	06/12/06	25	5.3	500	710	160	770	210	12000	63	ND<1.3	ND<1.3	ND<660
	06/12/06	30	46	4000	9700	1200	7200	ND<2.3	10000	39	ND<1.1	ND<1.1	ND<570
	06/12/06	35	110	4000	14000	2700	16700	ND<2.3	10000	31	ND<1.2	ND<1.2	ND<590
	06/12/06	40	28	2100	1900	1100	5000	76	140	2.3	ND<1.3	ND<1.3	ND<630
	06/12/06	45	23	4400	3.5	2400	290	ND<2.4	28	ND<1.2	ND<1.2	ND<1.2	ND<600
	06/12/06	50	ND<0.30	2.9	ND<1.3	ND<1.3	ND<3.9	ND<2.6	ND<26	ND<1.3	ND<1.3	ND<1.3	ND<650
06/12/06	55	ND<0.29	43	15	6.3	20.5	ND<2.4	ND<24	ND<1.2	ND<1.2	ND<1.2	ND<600	

**Table 1**  
**Soil Sample Analytical Summary**  
**Former Shell Service Station**  
**406 North Gaffey Street**  
**San Pedro, California**

Boring Number	Sample Date	Sample Depth (Feet)	8015	EPA Method 8260B									
			TPH-g (mg/kg)	Ethyl				Total					Ethanol (µg/kg)
				Benzene (µg/kg)	Toluene (µg/kg)	Benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	
MW-2	06/12/06	10	ND<0.22	ND<0.84	ND<0.84	ND<0.84	ND<2.54	ND<1.7	ND<17	ND<0.84	ND<0.84	ND<0.84	ND<420
	06/12/06	15	0.39*	ND<1.2	ND<1.2	ND<1.2	ND<3.6	180	87	ND<1.2	ND<1.2	ND<1.2	ND<600
	06/12/06	20	1100	160	ND<110	78000	ND<330	6500	5300	ND<110	ND<110	ND<110	ND<55000
	06/12/06	25	38	ND<90	ND<90	150	ND<270	3200	ND<1800	ND<90	ND<90	ND<90	ND<45000
	06/12/06	30	170	ND<110	ND<110	2200	ND<320	4200	6000	ND<110	ND<110	ND<110	ND<53000
	06/12/06	35	550	ND<110	ND<110	7100	ND<330	3700	ND<2200	ND<110	ND<110	ND<110	ND<56000
	06/12/06	40	20*	3700	5800	490	2700	ND<220	ND<2200	ND<110	ND<110	ND<110	ND<55000
	06/12/06	45	14*	3800	1100	440	2450	ND<2.1	280	4.0	ND<1.0	ND<1.0	ND<520
	06/12/06	50	0.56*	500	3.5	20	114	ND<2.3	96	ND<1.2	ND<1.2	ND<1.2	ND<580
06/12/06	55	0.31*	740	120	28	77	34	69	1.4	ND<1.1	ND<1.1	ND<570	
MW-3	06/12/06	10	ND<0.29	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	ND<1.1	ND<1.1	ND<1.1	ND<560
	06/12/06	15	ND<0.31	ND<1.6	ND<1.6	ND<1.6	ND<4.7	ND<3.1	ND<31	ND<1.6	ND<1.6	ND<1.6	ND<780
	06/12/06	20	1.5*	ND<1.1	ND<1.1	ND<1.1	ND<3.2	3700	200	ND<1.1	ND<1.1	2.4	ND<530
	06/12/06	25	3.6*	ND<1.1	ND<1.1	ND<1.1	ND<3.2	9400	510	2.3	ND<1.1	6.2	ND<530
	06/12/06	30	200	2.3	ND<1.2	1.7	ND<3.6	5200	580	7.7	ND<1.2	5.6	ND<590
	06/12/06	35	210	1200	9100	5800	37000	2000	6100	ND<230	ND<230	ND<230	ND<110000
	06/12/06	40	35*	6300	9100	950	5300	ND<450	ND<4500	ND<230	ND<230	ND<230	ND<110000
	06/12/06	45	14*	3200	3300	150	1790	ND<2.2	79	ND<1.1	ND<1.1	ND<1.1	ND<560
	06/12/06	50	ND<0.29	2.4	4.2	ND<1.2	ND<3.5	ND<2.3	ND<23	ND<1.2	ND<1.2	ND<1.2	ND<580
	06/12/06	55	ND<0.30	2.4	2.3	ND<1.1	ND<3.4	ND<2.3	ND<23	ND<1.1	ND<1.1	ND<1.1	ND<570

**Table 1**  
**Soil Sample Analytical Summary**  
**Former Shell Service Station**  
**406 North Gaffey Street**  
**San Pedro, California**

Boring Number	Sample Date	Sample Depth (Feet)	8015	EPA Method 8260B									
			TPH-g (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)
MW-4	06/13/06	10	ND<0.23	ND<1.1	ND<1.1	ND<1.1	ND<3.2	2.6	ND<21	ND<1.1	ND<1.1	ND<1.1	ND<530
	06/13/06	15	ND<0.26	ND<1.1	ND<1.1	ND<1.1	ND<3.2	2.5	ND<21	ND<1.1	ND<1.1	ND<1.1	ND<530
	06/13/06	20	ND<0.28	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<2.0	ND<20	1.5	ND<1.0	ND<1.0	ND<500
	06/13/06	25	ND<0.28	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	3.9	ND<1.1	ND<1.1	ND<560
	06/13/06	30	0.49	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<2.0	ND<20	50	ND<1.0	ND<1.0	ND<510
	06/13/06	35	400	320	ND<120	12000	ND<350	ND<230	ND<2300	ND<120	ND<120	ND<120	ND<58000
	06/13/06	40	ND<0.28	ND<1.1	ND<1.1	ND<1.1	ND<3.3	20	ND<22	3.5	ND<1.1	ND<1.1	ND<560
	06/13/06	45	0.45*	120	ND<1.1	13	57	ND<2.1	25	5.6	ND<1.1	ND<1.1	ND<530
	06/13/06	50	ND<0.27	120	ND<1.2	11	27.8	ND<2.3	ND<23	ND<1.2	ND<1.2	ND<1.2	ND<590
	06/13/06	55	ND<0.29	ND<1.2	ND<1.2	ND<1.2	ND<3.6	ND<2.4	ND<24	ND<1.2	ND<1.2	ND<1.2	ND<610

ND: Non Detect above specified limit

\* The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

**APPENDIX A**

**SOIL BORING LOGS**





# BORING LOG

Drill Rig: CME 75 Date Drilled: 6/12/06 Logged By:  
 Boring Dia: 10 Inches Boring Number: MW-1 A. Engelhaupt

Sample	Blow Counts	Completion	Depth Feet	Lithology	Description
			5		Airknifed to 7' --dark brown Clay
	4-5-7		10		Clay (CL), light brown mottled yellow brown, stiff, moderate to low plasticity, moist, slightly brittle, iron oxides, no odor, 0ppm
	9-10-13		15		Clay (CL), medium brown mottled light gray, very stiff, moderate plasticity, moist, no odor, 0ppm
	7-11-12		20		Clay (CL), medium brown, very stiff, moderate plasticity, moist, no odor, 0ppm
	8-8-11		25		Clay (CL), medium brown, very stiff, moderate to low plasticity, very trace very fine sand, moist, no odor, evaporite crystals in soil fractures, 0ppm
	8-10-12		30		Clay (CL), medium brown, stiff, moderate, very trace very fine sand, moist, no odor, soil fracturing, 0ppm
	10-12-13		35		Clay (CL), medium brown, very stiff, moderate plasticity, very trace very fine sand, moist, no odor, iron oxides, soil fracturing, 0ppm
	5-6-9		40		Clay (CL), medium brown gray, stiff, moderate to high plasticity, trace very fine sand, moist, no odor, iron oxides, soil fracturing, 0ppm
	5-5-7		45		Clay (CL), brown mottled black, stiff, moderate to low plasticity, very trace very fine sand, moist, no odor, one rock fragment 0.5 inch, black areas more brittle, 0ppm
	8-9-11		50		Clay (CL), black, very stiff, moderate to low plasticity trace very fine sand and silt, moist, slight odor, brittle, 0ppm
	8-11-12		55		Clay (CL), black, very stiff, moderate to high plasticity, very trace very fine sand, moist to very moist, slight sulfur-like odor, 0ppm

**Completion Notes:**

The boring was completed as a 4-inch monitoring well using 0.020 inch slotted screen and #3 monterey Sand. The screen interval extends from 25-55 feet (bsg) with sand extending 2 foot above the screen and a 3 foot bentonite chip seal. The remaining annular space was filled with bentonite grout. Total Depth of Boring 55.5 feet bsg.

**Site:**

Former Shell Service Station  
 406 N. Gaffey Street  
 San Pedro, CA 90731

**BORING LOG**

Drill Rig: CME 75

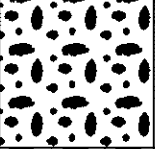



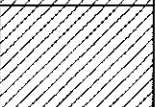
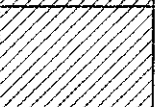
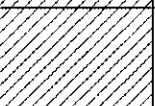
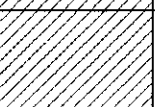


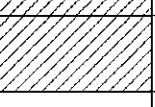
Date Drilled: 6/12/06

Logged By:

Boring Dia: 10 Inches

Boring Number: MW-2

A. Engelhaupt

Sample	Blow Counts	Completion	Depth Feet	Lithology	Description
			5		Airknifed to 7' - Silty Sandy Gravel, Tank Pit Fill
	2-3-4		10		Clayey Gravel (GC), Probably Fill, light brown some fine and clay, high plasticity, moist, no odor, 0ppm
	2-5-6		15		Clay (CL), black and gray mottled, stiff, moderate to low plasticity, dry, brittle, iron oxides, soil fracturing, slight odor, 48ppm
	4-4-7		20		Clay (CL), dark gray and light brown mottled, stiff, moderate to low plasticity, moist, odor, 120ppm
	3-4-6		25		Clay (CL), medium gray, stiff, moderate plasticity, very trace very fine sand, moist, slight odor, iron oxides, soil fracturing, 30ppm
	5-7-8		30		Clay (CL), light gray, stiff, moderate to high plasticity, some silt, moist, no odor, iron oxides, 0ppm
	5-6-6		35		Clay (CL), dark gray, stiff, moderate plasticity, moist, slight odor, brittle, iron oxides, soil fracturing, 20ppm
	3-4-5		40		Clay (CL), medium brown gray, stiff, moderate to high plasticity, moist, no odor, iron oxides, soil fracturing, 0ppm
	4-4-7		45		Clay (CL), medium brown gray, stiff, moderate plasticity, very trace very fine sand, moist, no odor, iron oxides, soil fracturing, small pieces of crystal easily broken, 0ppm
	3-4-4		50		Clay (CL), black, stiff, low plasticity clay mottled with medium brown, stiff, moderate plasticity, trace silt clay, moist, no odor, brittle, 0ppm
	4-5-8		55		Clay (CL), black, stiff, low plasticity, very trace very fine sand, moist, slight sulfur-like odor, 0ppm

**Completion Notes:**

The boring was completed as a 4-inch monitoring well using 0.020 inch slotted screen and #3 monterey Sand. The screen interval extends from 25-55 feet (bsg) with sand extending 2 foot above the screen and a 3 foot bentonite chip seal. The remaining annular space was filled with bentonite grout. Total Depth of Boring 55.5 feet bsg.

**Site:**

Former Shell Service Station  
406 N. Gaffey Street  
San Pedro, CA 90731

Project No.: 142.eql.00

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**BORING LOG**

Drill Rig: CME 75      Date Drilled: 6/12/06      Logged By:  
Boring Dia: 10 Inches      Boring Number: MW-3      A. Engelhaupt

Sample	Blow Counts	Completion	Depth Feet	Lithology	Description
			5		Airknifed to 7' --light brown clay and gravel fill
	6-7-11		10		Clay (CL), gray, very stiff, low plasticity, dry, brittle, iron oxides, soil fracturing, partially mottled yellow brown, no odor, 0ppm
	10-7-8		15		Clay (CL), gray, very stiff, low plasticity, dry, brittle, iron oxides, soil fracturing, partially mottled yellow brown, no odor, 0ppm
	4-5-9		20		Clay (CL), dark gray, stiff, moderate to low plasticity, very trace very fine sand, moist, no odor, dark iron oxides, soil fracturing, 0ppm
	5-5-9		25		Clay (CL), medium brown, stiff, moderate plasticity, very trace very fine sand, moist, slight odor, iron oxides, evaporite crystals in fracture, soil fracturing, 40ppm
	6-7-11		30		Clay (CL), medium brown, very stiff, moderate to high plasticity, moist, no odor, dark iron oxides, evaporite crystals in fracture, soil fracturing, partially mottled yellow brown near iron oxides, 0ppm
	5-5-9		35		Clay (CL), medium brown, stiff, moderate plasticity, moist, slight odor, iron oxides, soil fracturing, partially mottled yellow brown, 32ppm
	6-7-9		40		Clay (CL), medium brown, very stiff, moderate to high plasticity, moist, no odor, iron oxides, soil fracturing, partially mottled yellow brown, slightly brittle, 0ppm
	4-4-6		45		Clay (CL), medium brown gray, stiff, moderate to low plasticity, dry to moist, no odor, partially mottled yellow brown, brittle, 0ppm
	4-4-5		50		Clay (CL), black, stiff, low plasticity, trace very fine sand, dry to moist, no odor, brittle, soil fracturing, 0ppm
	3-5-6		55		Clay (CL), black, stiff, moderate to low plasticity, very trace very fine sand, moist, slight sulfur-like odor, slightly brittle, soil fracturing, 0ppm

**Completion Notes:**

The boring was completed as a 4-inch monitoring well using 0.020 inch slotted screen and #3 monterey Sand. The screen interval extends from 25-55 feet (bsg) with sand extending 2 foot above the screen and a 3 foot bentonite chip seal. The remaining annular space was filled with bentonite grout. Total Depth of Boring 55.5 feet bsg. Groundwater contact approximately 38 feet bsg.

**Site:**

Former Shell Service Station  
406 N. Gaffey Street  
San Pedro, CA 90731

Project No.: 142.eql.00

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**BORING LOG**

Drill Rig: CME 75	Date Drilled: 6/13/06	Logged By:
Boring Dia: 10 Inches	Boring Number: MW-4	A. Engelhaupt

Sample	Blow Counts	Completion	Depth Feet	Lithology	Description
			5		Airknifed to 7' --brown clay
	3-4-5		10		Sandy Clay (CL), light brown, stiff, moderate to low plasticity, some very fine to fine sand, moist to dry, no odor, 0ppm
	4-4-6		15		Clay (CL), medium brown gray, stiff, low plasticity, dry, brittle, iron oxides, soil fracturing, black staining, no odor, 0ppm
	4-5-8		20		Clay (CL), medium brown gray, stiff, moderate to low plasticity, dry to moist, brittle, iron oxides, soil fracturing, partially mottled yellow brown, no odor, 0ppm
	3-5-8		25		Clay (CL), medium gray brown, stiff, moderate plasticity, very trace very fine sand, moist, no odor, iron oxides, soil fracturing, 0ppm
	4-4-7		30		Clay (CL), medium gray brown, stiff, moderate to low plasticity, moist, odor, dark iron oxides, soil fracturing, partially mottled yellow brown near iron oxides, 50ppm
	5-5-5		35		Clay (CL), gray mottled black, stiff, moderate to low plasticity, moist to very moist, odor, soil fracturing, 300ppm
	5-6-7		40		Clay (CL), medium gray brown, stiff, moderate plasticity, moist to dry, odor, iron oxides, soil fracturing, partially mottled yellow brown, trace black staining, slightly brittle, 120ppm
	4-5-6		45		Clay (CL), medium brown gray, stiff, moderate to low plasticity, trace very fine sand, moist, slight odor, iron oxides, soil fracturing, partially mottled yellow brown near iron oxides, sticky, 0ppm
	3-4-4		50		Clay (CL), medium brown, stiff, moderate to high plasticity, moist, no odor, iron oxides, slightly brittle, soil fracturing partially mottled yellow brown, sticky, 0ppm
	4-4-4		55		Clay (CL), black, stiff, low plasticity, very trace very fine sand, moist to dry, slight sulfur-like odor, slightly brittle, soil fracturing, 0ppm

**Completion Notes:**

The boring was completed as a 4-inch monitoring well using 0.020 inch slotted screen and #3 monterey Sand. The screen interval extends from 25-55 feet (bsg) with sand extending 2 foot above the screen and a 3 foot bentonite chip seal. The remaining annular space was filled with bentonite grout. Total Depth of Boring 55.5 feet bsg. Groundwater contact approximately 35 feet bsg.

**Site:**

Former Shell Service Station  
406 N. Gaffey Street  
San Pedro, CA 90731

Project No.: 142.eql.00

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# BORING LOG

Drill Rig: CME 75      Date Drilled: 6/13/06      Logged By:  
 Boring Dia: 10 Inches      Boring Number: WGR-10      A. Engelhaupt

Sample	Blow Counts	Completion	Depth Feet	Lithology	Description
			5		Airknifed to 7' --brown clay
	3-4-6		10		Clay (CL), medium gray, stiff, moderate plasticity, dry to moist, no odor, slightly cohesive, iron oxides, soil fracturing, 0ppm
	4-4-5		15		Clay (CL), medium gray, stiff, low plasticity, dry, brittle, iron oxides, soil fracturing, no odor, 0ppm
	5-5-6		20		Clay (CL), medium gray brown, stiff, moderate to low plasticity, moist to dry, no odor, brittle, iron oxides, soil fracturing, 0ppm
	5-6-8		25		Clay (CL), medium gray brown, stiff, moderate to low plasticity, moist, slight odor, iron oxides, soil fracturing, brittle, black staining, partially mottled yellow brown, 0ppm
	4-4-5		30		Clay (CL), medium gray brown, stiff, low plasticity, moist to dry, no odor, brittle, iron oxides, soil fracturing, partially mottled yellow brown near iron oxides, evaporite crystals in fracture, black staining, 0ppm
	5-5-7		35		Clay (CL), medium gray brown, stiff, moderate plasticity, trace very fine sand, moist to dry, slight odor, dark iron oxides along many fractures, soil fracturing, partially mottled yellow brown near iron oxides, brittle, 0ppm
	6-6-9		40		Clay (CL), medium gray brown, stiff, moderate to high plasticity, moist, no odor, iron oxides, soil fracturing, 0ppm
	3-3-5		45		Clay (CL), medium brown gray, stiff, moderate to high plasticity, moist, slight odor, iron oxides, soil fracturing, partially mottled yellow brown near iron oxides, evaporite crystals clear fracture planes easily broken, sticky, 0ppm
	4-6-7		50		Clay (CL), dark red brown to black, stiff, low plasticity, dry to moist, no odor, iron oxides, 0ppm
	4-5-6		55		Clay (CL), black, stiff, low plasticity, very trace very fine sand, moist to dry, slight sulfur-like odor, slightly brittle, soil fracturing, 0ppm

**Completion Notes:**

The boring was completed to a total depth of 55.5 feet bsg. The annular space was filled with bentonite grout to within one foot of the surface. The boring was capped to match the existing surface.

**Site:**

Former Shell Service Station  
 406 N. Gaffey Street  
 San Pedro, CA 90731

- 3. *Quarterly Status and Groundwater Monitoring Report, Former Shell Service Station, 406 North Gaffey Street, San Pedro California*, prepared by Wayne Perry, Inc., dated April 8, 2008.**



WAYNE PERRY, INC.

April 8, 2008

*Environmental Remediation, Construction and Consulting*

California Regional Water Quality Control Board  
Los Angeles Region  
320 West 4<sup>th</sup> Street, Suite 200  
Los Angeles, California 90013

Attention: Dr. Yue Rong

**SUBJECT: QUARTERLY STATUS AND GROUNDWATER MONITORING  
REPORT**

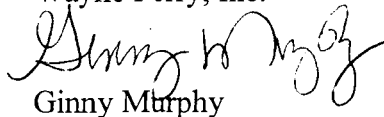
**FORMER SHELL SERVICE STATION**  
FIRST QUARTER 2008  
406 N. GAFFEY STREET (at O'Farrell Street)  
SAN PEDRO, CALIFORNIA  
CASE NO. 907310543 EAOP CLASS D SITE  
SAP CODE: 136042  
WPI FILE NO. 06.407

Dear Dr. Rong:

On behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), Wayne Perry, Inc. (WPI) is submitting this Quarterly Status and Groundwater Monitoring Report for above referenced site.

If you have any questions or require additional information, please contact Ms. Deborah Pryor of Shell at (323) 291-9595 or the undersigned at (714) 826-0352.

Respectfully submitted  
Wayne Perry, Inc.

  
Ginny Murphy

cc: Ms. Deborah Pryor, Shell Oil Products US  
Mr. Hamid Pournamdari, Property Owner

## QUARTERLY STATUS REPORT - FIRST QUARTER 2008

**FORMER SHELL SERVICE STATION  
406 N. GAFFEY STREET (at O'Farrell Street)  
SAN PEDRO, CALIFORNIA  
CASE NO. 907310543 EAOP CLASS D SITE  
WPI PROJECT NO. 06.407**

### SITE DESCRIPTION

The site is a former Shell service station and is currently non-operational service station building with three service bays, canopy, and a fence surrounding the site. It is located on the northeast corner of the intersection of Gaffey Street and O'Farrell in San Pedro, California (Figure 1).

The property is located in a commercial district of San Pedro. A private single-family residence and the entrance/exit ramp to the 110 Freeway are located north of the subject property. Oliver Street, a small residential street is located just east of the subject property with single-family residences bordering on the west side of the street close to the subject property. O'Farrell Street is located south of the property and Gaffey Street is located west of the subject property.

The site is under the regulatory oversight of the Los Angeles Regional Water Quality Control Board and is a Class D Priority site in the Expedited Agency Oversight Program (EAOP).

### SITE HISTORY

<b>Date</b>	<b>Activity/Method</b>	<b>No. of Wells, Borings or Samples</b>	<b>Report Date</b>	<b>Consultant</b>	<b>Comments</b>
04/94	Product Line Leak	—	—	—	Los Angeles City Fire Department records show that on April 26, 1994 the regular gasoline product line failed a hydrostatic product line test and had an estimated leak rate of 0.03 gallons per hour.
06/98	UST Upgrade Sampling	—	—	WPI	No detectable TPHg or MTBE in any samples. Only one product piping soil sample (L3) contained 0.017 mg/kg toluene, 0.012 mg/kg ethylbenzene and 0.019 mg/kg xylenes.



<b>Date</b>	<b>Activity/Method</b>	<b>No. of Wells, Borings or Samples</b>	<b>Report Date</b>	<b>Consultant</b>	<b>Comments</b>
07/88	UST Removal	—	8/10/88	WWI	One 8,000 gal, two 5,000 gal, and one 10,000 gal USTs were removed and replaced by three 10,000 fiberglass USTs.
01/00	Site Assessment	Nine borings WGR-1 through WGR-9		WGR	Max TPH-g of 49 mg/kg in and max benzene of 2.5 mg/kg in samples at or below groundwater interface.
06/00	UST Removal	—	10/2/00	WGR	Three 10,000 gal USTs were removed. Max MTBE of 13,000 µg/kg.
5/05	Agency Correspondence	—	5/25/05	—	LAFD reviewed the October 2000 UST removal and transferred the environmental case to the CRWQCB-LA.
7/05	Agency Correspondence	—	7/27/05	—	CRWQCB-LA request for additional information.
8/05	Agency response	—	8/29/05	WGR	WGR provided the CRWQCB-LA with the additional information.
2/06	Work plan	—	2/28/06	WGR	WGR proposed to advance 4 soil borings and three groundwater monitoring wells in areas identified with petroleum hydrocarbons during the UST removal.
06/06	Site Assessment	One boring WGR-10 and four wells MW-1 through MW-4	8/8/06	WGR	One soil boring and four monitoring wells were installed on June 12-13, 2006. Max TPH-G of 1,100 µg/kg in the sample from MW-2 at 20 feet bgs. Max benzene of 6,300 µg/kg in the sample from MW-3 at 40 feet bgs. Max MTBE concentration 9,400 µg/kg in MW-3 at 25 feet bgs. Max TBA of 12,000 µg/kg in the sample from MW-1 at 25 feet bgs. Off-site soil borings were unable to be completed due to permitting delays.
11/06	Agency Correspondence	—	11/9/06	—	CRWQCB-LA placed the site in the EAOP Class D program.

### **WORK PERFORMED THIS QUARTER**

On February 18, 2008, Wells MW-1 and MW-4 were gauged and sampled by Blaine Tech Services, Inc. of San Jose, California. Wells MW-2 and MW-3 were unable to be located. Groundwater gauging, elevation, and analytical data for this reporting period are included in the attached First Quarter 2008 Groundwater Monitoring Report.

### **WORK TO BE PERFORMED NEXT QUARTER**

Quarterly groundwater monitoring will continue.

WPI will continue to permit for drilling of the three proposed off site borings with the County of Los Angeles – Department of Health Services and the City of San Pedro. Once the necessary permits are obtained, the borings will be drilled.

### **Attachment**

Groundwater Monitoring Report

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**GROUNDWATER MONITORING REPORT**  
**FIRST QUARTER 2008**

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**WAYNE PERRY, INC.**

*Environmental Remediation, Construction and Consulting*

March 20, 2008

California Regional Water Quality Control Board  
Los Angeles Region  
320 West 4<sup>th</sup> Street, Suite 200  
Los Angeles, California 90013

Attention: Dr. Yue Rong

**SUBJECT: GROUNDWATER MONITORING REPORT**  
FIRST QUARTER 2008  
FORMER SERVICE STATION  
406 NORTH GAFFEY STREET (at O'Farrell Street)  
SAN PEDRO, CALIFORNIA  
CASE NO. 907310543  
SAP CODE: 136042  
WPI FILE: 06.407

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Dear Dr. Rong:

Wayne Perry, Inc. (WPI), on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), is submitting this Quarterly Groundwater Monitoring Report. This report includes a description of the groundwater monitoring activities, tables, figures showing groundwater data, copies of field data sheets and analytical reporting.

March 20, 2008  
Former Service Station  
406 North Gaffey Street  
Page 2

### **Groundwater Gauging and Sampling**


The wells were gauged and sampled on February 18, 2008, by Blaine Tech Services, Inc. Groundwater gauging and analytical data are in Tables 1 and 2. Groundwater elevation data are on Figure 2. Analytical data for the quarter are on Figure 3. Copies of Blaine Tech Services, Inc. field data and the laboratory analytical report with chain of custody are in the appendix.

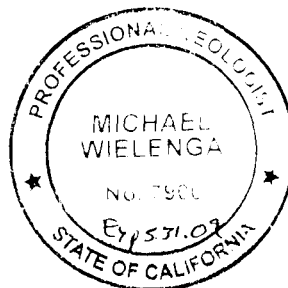
This report has been prepared by WPI for the exclusive use of Shell, as it pertains to the Shell Service Station located at the subject site. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists, hydrogeologists, and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report.

Groundwater gauging and sampling activities were performed by Blaine Tech Services, Inc. WPI does not accept responsibility as to the accuracy of the Blaine Tech Services, Inc. data.

If you have any questions regarding this report, please contact Mr. Michael Wielenga of WPI at (714) 826-0352. If you have any questions regarding the Blaine Tech Services, Inc. field data, please contact Mr. Francis Thie at (408) 573-0555. If you have any questions regarding this project, please contact Ms. Erica Takach of WPI at (714) 826-0352 or Ms. Deborah Pryor of Shell at (323) 291-9595.

Sincerely,  
**WAYNE PERRY, INC.**

  
Michael Wielenga  
California Professional Geologist 7900



March 20, 2008  
Former Service Station  
406 North Gaffey Street  
Page 3

Attachments: Table 1, Current Groundwater Data  
Table 2, Historical Groundwater Data

Figure 1, Site Location Map  
Figure 2, Groundwater Elevation Map  
Figure 3, Hydrocarbon Distribution Map

Appendix, Blaine Tech Services, Inc. Field Data Sheets and Laboratory  
Analytical Report with Chain-of-Custody Documentation

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# TABLES

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**TABLE 1**  
**CURRENT GROUNDWATER ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 N. Gaffey, San Pedro**

DATE	WELL	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL- BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS
02/18/08	MW-1	38.22	0.00	92.09	54.56	3100	1300	190	220	380	27	ND<250	ND<25	ND<25	ND<25	Unable to locate Unable to locate
02/18/08	MW-2															
02/18/08	MW-3															
02/18/08	MW-4	36.16	0.00	91.72	54.30	780	ND<0.50	ND<0.50	2.2	ND<1.0	74	44	22	ND<1.0	ND<1.0	

**Notes:**

1. ND - Not detected
2. TBA - Tertiary-butyl alcohol
3. DIPE - Diisopropyl ether
4. ETBE - Ethyl tertiary-butyl ether
5. TAME - Tertiary-amyl methyl ether
6. J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).



TABLE 2  
HISTORICAL GROUNDWATER ANALYTICAL DATA  
FORMER SHELL SERVICE STATION  
406 N. Gaffey, San Pedro

WELL	DATE	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL- BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS		
MW-1	<b>Top of casing elevation (ft): 130.31</b>																Well Development	
	07/19/06	36.40	0.00	93.91														
	08/28/06	36.73	0.00	93.58		1900	1100	150	120	230	ND<10	ND<100	ND<10	ND<10	ND<10			
	<b>Top of casing elevation (ft): 130.31</b>																	
	11/22/06	37.35	0.00	92.96	54.60	3200	1600	160	320	620	ND<20	ND<500	ND<20	ND<20	ND<20			
	02/22/07	37.82	0.00	92.49	54.69	2100	1700	100	310	430	10	70	3.6	ND<1.0	ND<1.0			
	05/14/07	38.41	0.00	91.90	54.58	3600	2000	190	380	710	ND<20	ND<200	ND<20	ND<20	ND<20			
	08/30/07	38.25	0.00	92.06	54.60	3500	2100	130	370	650	ND<20	ND<200	ND<20	ND<20	ND<20			
	12/07/07	38.80	0.00	91.51	54.60	4100	1800	73	320	570	ND<20	ND<200	ND<20	ND<20	ND<20			
	02/18/08	38.22	0.00	92.09	54.56	3100	1300	190	220	380	27	ND<250	ND<25	ND<25	ND<25			
MW-2	<b>Top of casing elevation (ft): 129.64</b>																Well Development	
	11/22/06	35.61	0.00	94.03														
	<b>Top of casing elevation (ft): 129.64</b>																	
	05/14/07	35.78	0.00	93.86		23000	6100	1600	1200	5100	580	1400	46	ND<20	ND<20			
	11/22/06	36.54	0.00	93.10	54.75	15000	6700	1000	1100	2600	1300	ND<2500	58 J	ND<100	ND<100			
	02/22/07															Unable to locate		
	05/14/07	37.38	0.00	92.26	54.65	14000	6100	1000	1400	1800	2000	1600	82	ND<20	ND<20			
	08/30/07	37.10	0.00	92.54	54.60	3600	2000	120	340	580	ND<50	ND<500	ND<50	ND<50	ND<50			
12/07/07															Unable to locate			
02/18/08															Unable to locate			
MW-3	<b>Top of casing elevation (ft): 128.99</b>																Well Development	
	<b>Top of casing elevation (ft): unknown</b>																	
	11/22/06	35.28	0.00		53.92	59000	14000	18000	3400	15000	ND<200	ND<5000	ND<200	ND<200	ND<200			
	02/18/08	34.98	0.00	94.01												Unable to locate		
	02/22/07															Unable to locate		
	05/14/07															Unable to locate		
	11/22/06	34.67	0.00	94.32		70000	11000	22000	3200	15000	87	ND<400	ND<40	ND<40	ND<40			
08/30/07															Unable to locate			
12/07/07															Unable to locate			
02/18/08															Unable to locate			
MW-4	<b>Top of casing elevation (ft): 127.89</b>																Well Development	
	07/19/06	34.46	0.00	93.43														
	08/28/06	34.70	0.00	93.19		1100	16	3.0	130	5.0	140	130	48	ND<1.0	ND<1.0			
	<b>Top of casing elevation (ft): 127.88</b>																	
	11/22/06	35.42	0.00	92.46	54.27	790	ND<5.0	ND<5.0	56	ND<10	200	110 J	48	ND<10	ND<10			
	02/22/07	36.14	0.00	91.74	54.34	430	1.1	ND<0.50	14	ND<1.0	130	92	33	ND<1.0	ND<1.0			
	05/14/07	37.05	0.00	90.83	54.33	670	ND<0.50	ND<0.50	ND<0.50	ND<1.0	130	85	32	ND<1.0	ND<1.0			
	08/30/07	36.90	0.00	90.98	54.25	600	ND<0.50	ND<0.50	ND<0.50	ND<1.0	110	54	31	ND<1.0	ND<1.0			
	12/07/07	37.26	0.00	90.62	54.30	610	ND<0.50	ND<0.50	ND<0.50	ND<1.0	63	37	22	ND<1.0	ND<1.0			
	02/18/08	36.16	0.00	91.72	54.30	780	ND<0.50	ND<0.50	2.2	ND<1.0	74	44	22	ND<1.0	ND<1.0			

Notes:

TABLE 2  
 HISTORICAL GROUNDWATER ANALYTICAL DATA  
 FORMER SHELL SERVICE STATION  
 406 N. Gaffey, San Pedro

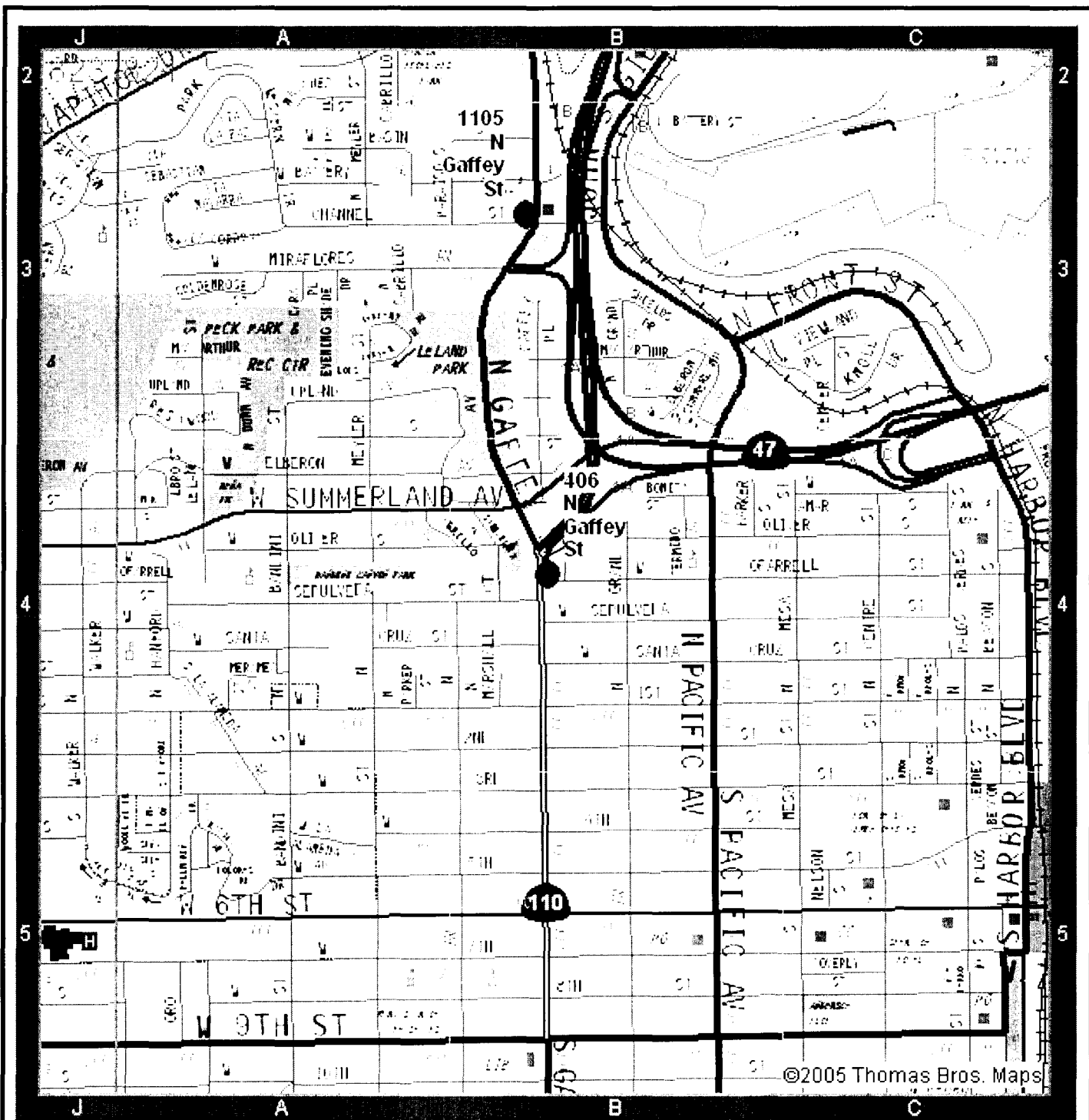
WELL	DATE	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL- BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS
------	------	--------------------------	--------------------------	---------------------------------------	-------------------------	-----------------	-------------------	-------------------	-----------------------------	----------------------------	------------------------	---------------	----------------	----------------	----------------	----------

1. ND - Not detected
2. TBA - Tertiary-butyl alcohol
3. DIPE - Diisopropyl ether
4. ETBE - Ethyl tertiary-butyl ether
5. TAME - Tertiary-amyl methyl ether
6. J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).
7. TPH-g results obtained via GC/MS.
8. Survey results were obtained by Dulin and Boynton Surveyors in July 2006.

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# FIGURES

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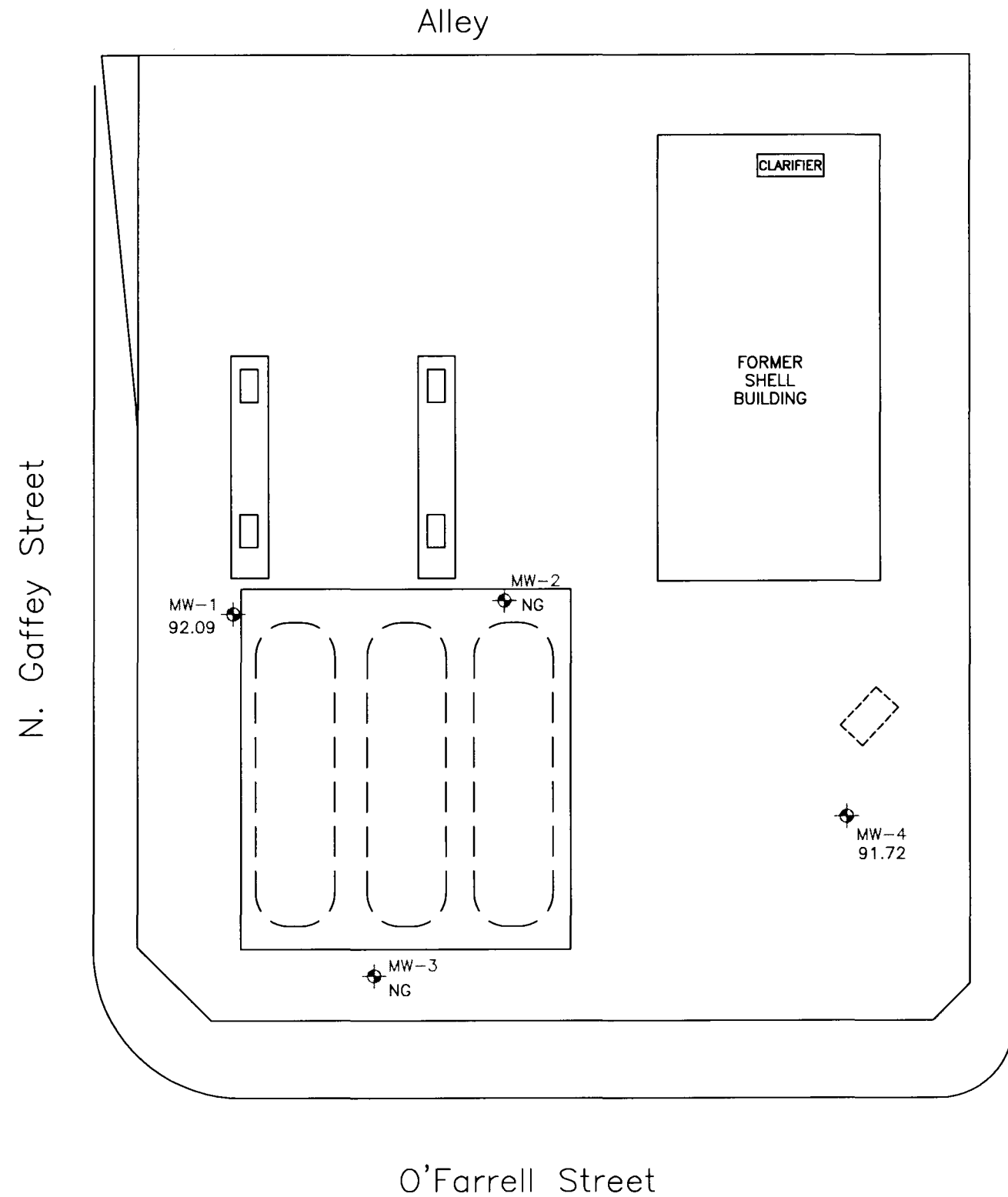
DATE	
REVISED	
CAD FILE	06407LM

SITE LOCATION MAP

---

FORMER SHELL SERVICE STATION  
 406 N. GAFFEY ST.  
 SAN PEDRO, CA

FIGURE NO.	<b>1</b>
PROJECT NO.	06.407



**LEGEND**

- GROUNDWATER MONITORING WELL SHOWING GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- GROUNDWATER ELEVATION CONTOUR
- DIRECTION OF GROUNDWATER FLOW
- CONTOUR INTERVAL = 1.00 FOOT

**NOTES:**

NG - NOT GAUGED, UNABLE TO LOCATE

- FORMER UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND WASTE-OIL TANK
- FORMER DISPENSER ISLAND



DATE DRAWN  
DRAWN BY  
CAD FILE  
06407GW

GROUNDWATER ELEVATION MAP  
FEBRUARY 18, 2008

FORMER SHELL SERVICE STATION  
406 N. GAFFEY ST.  
SAN PEDRO, CA

FIGURE NO.

**2**

PROJECT NO.

06.407



### LEGEND

◆ GROUNDWATER MONITORING WELL SHOWING TPH-G, BENZENE, MTBE AND TBA CONCENTRATIONS IN ug/L

#### NOTES:

ND - NOT DETECTED

NS - NOT SAMPLED, UNABLE TO LOCATE

TPH-G - TOTAL PETROLEUM HYDROCARBONS (GASOLINE)

B - BENZENE

MTBE - METHYL TERTIARY-BUTYL ETHER

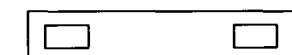
TBA - TERTIARY-BUTYL ALCOHOL



FORMER UNDERGROUND STORAGE TANK



FORMER UNDERGROUND WASTE-OIL TANK

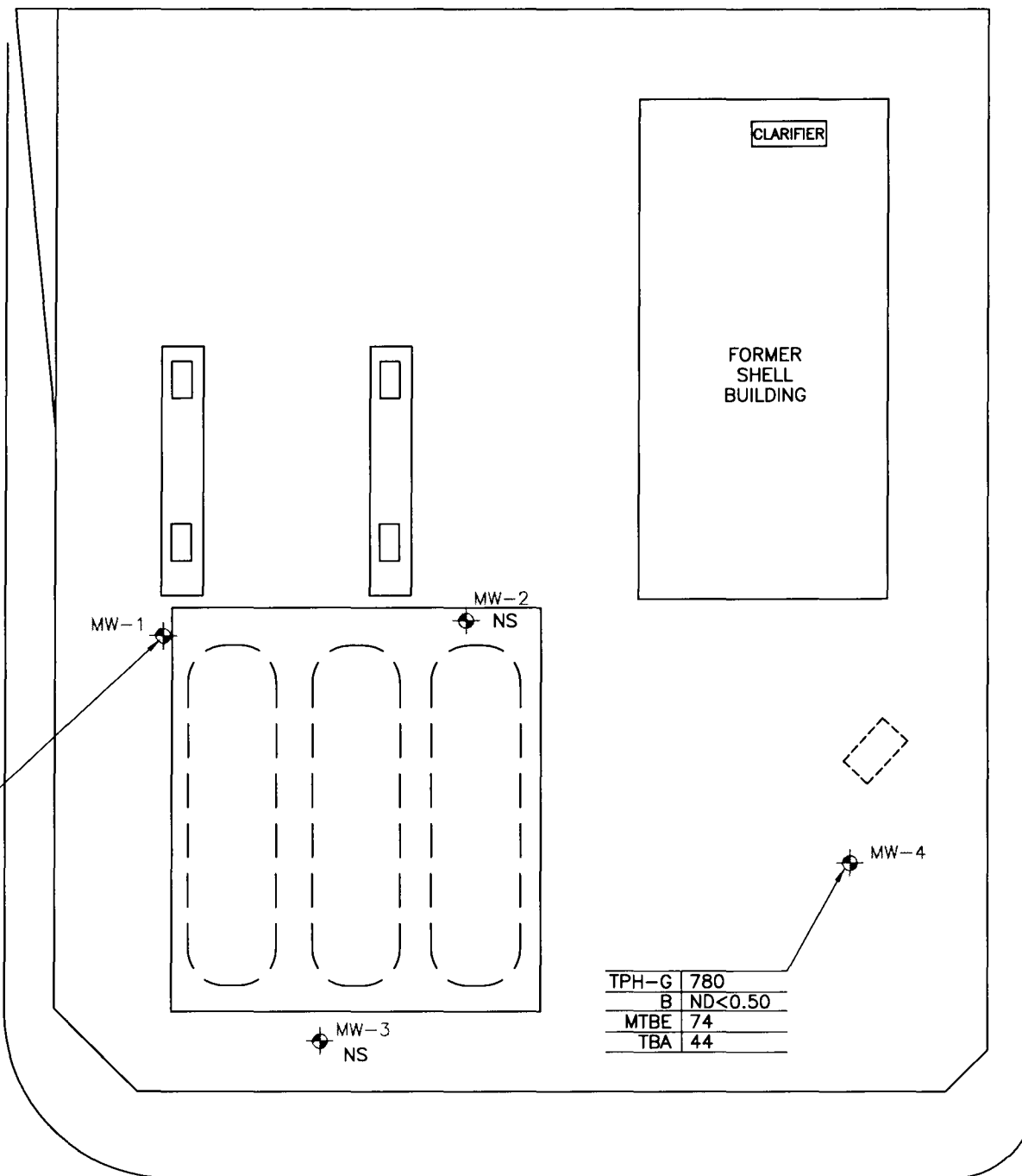


FORMER DISPENSER ISLAND

N. Gaffey Street

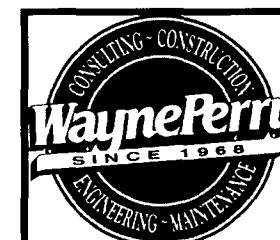
Oliver St.

O'Farrell Street



TPH-G	3100
B	1300
MTBE	27
TBA	ND<250

TPH-G	780
B	ND<0.50
MTBE	74
TBA	44



DATE DRAWN	
DRAWN BY	
CAD FILE	06407HC

HYDROCARBON DISTRIBUTION MAP  
FEBRUARY 18, 2008

FORMER SHELL SERVICE STATION  
406 N. GAFFEY ST.  
SAN PEDRO, CA

FIGURE NO.	<b>3</b>
PROJECT NO.	06.407

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# **APPENDIX**

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**Blaine Tech Services, Inc. Field Data Sheets  
Laboratory Analytical Report with Chain-of-Custody  
Documents**

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**BLAINE**  
TECH SERVICES INC.

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GROUNDWATER SAMPLING SPECIALISTS  
SINCE 1985

March 10, 2008

Joe Lentini  
Shell Oil Products US  
20945 S. Wilmington Ave.  
Carson, CA 90810

First Quarter 2008 Groundwater Monitoring at  
Former Shell-branded Service Station  
406 N. Gaffey Street  
San Pedro, CA

Monitoring performed on February 18, 2008

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Groundwater Monitoring Report: **080218-JR-2**

This report covers the routine monitoring of groundwater wells at this former Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purge water (if applicable) is, likewise, collected and transported to Crosby & Overton.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.



Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,



Lorin King  
Project Manager

LK/ss

attachments: Cumulative Table of WELL CONCENTRATIONS  
Certified Analytical Report  
Field Data Sheets

cc: Truedi Balsitis  
Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621

**TABLE 1  
CURRENT GROUNDWATER DATA  
FORMER SHELL SERVICE STATION  
406 N. Gaffey Street, San Pedro**

DATE	WELL	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	DO (ppm)	DO METHOD	COMMENTS
11/22/06	MW-1	37.35	0.00	92.96	54.60	3200	1600	160	320	620	ND<20	ND<500	ND<20	ND<20	ND<20			
11/22/06	MW-2	36.54	0.00	93.10	54.75	15000	6700	1000	1100	2600	1300	ND<2500	58 J	ND<100	ND<100			
11/22/06	MW-3	35.28	0.00	53.92	59000	14000	18000	3400	15000	ND<200	ND<5000	ND<200	ND<200	ND<200	ND<200			
11/22/06	MW-4	35.42	0.00	92.46	54.27	790	ND<5.0	ND<5.0	56	ND<10	200	110 J	48	ND<10	ND<10			
02/22/07	MW-1	37.82	0.00	92.49	54.69	2100	1700	100	310	430	10	70	3.6	ND<1.0	ND<1.0			Unable to locate
02/22/07	MW-2																	Unable to locate
02/22/07	MW-3																	
02/22/07	MW-4	36.14	0.00	91.74	54.34	430	1.1	ND<0.50	14	ND<1.0	130	92	33	ND<1.0	ND<1.0			
05/14/07	MW-1	38.41	0.00	91.90	54.58	3600	2000	190	380	710	ND<20	ND<200	ND<20	ND<20	ND<20			
05/14/07	MW-2	37.38	0.00	92.26	54.65	14000	6100	1000	1400	1800	2000	1600	82	ND<20	ND<20			Unable to locate
05/14/07	MW-3																	
05/14/07	MW-4	37.05	0.00	90.83	54.33	670	ND<0.50	ND<0.50	ND<0.50	ND<1.0	130	85	32	ND<1.0	ND<1.0			
08/30/07	MW-1	38.25	0.00	92.06	54.60	3500	2100	130	370	650	ND<20	ND<200	ND<20	ND<20	ND<20			
08/30/07	MW-2	37.10	0.00	92.54	54.60	3600	2000	120	340	580	ND<50	ND<500	ND<50	ND<50	ND<50			Unable to locate
08/30/07	MW-3																	
08/30/07	MW-4	36.90	0.00	90.98	54.25	600	ND<0.50	ND<0.50	ND<0.50	ND<1.0	110	54	31	ND<1.0	ND<1.0			
12/07/07	MW-1	38.80	0.00	91.51	54.60	4100	1800	73	320	570	ND<20	ND<200	ND<20	ND<20	ND<20			Unable to locate
12/07/07	MW-2																	Unable to locate
12/07/07	MW-3																	
12/07/07	MW-4	37.26	0.00	90.62	54.30	610	ND<0.50	ND<0.50	ND<0.50	ND<1.0	63	37	22	ND<1.0	ND<1.0			
02/18/08	MW-1	38.22	0.00	92.09	54.56	3100	1300	190	220	380	27	ND<250	ND<25	ND<25	ND<25			Unable to locate
02/18/08	MW-2																	Unable to locate
02/18/08	MW-3																	
02/18/08	MW-4	36.16	0.00	91.72	54.30	780	ND<0.50	ND<0.50	2.2	ND<1.0	74	44	22	ND<1.0	ND<1.0			

**Notes:**

1. ND - Not detected
2. TBA - Tertiary-butyl alcohol
3. DIPE - Diisopropyl ether
4. ETBE - Ethyl tertiary-butyl ether
5. TAME - Tertiary-amyl methyl ether
6. J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).

# SHELL WELLHEAD INSPECTION FORM (FOR SAMPLE TECHNICIAN)

Site Address 406 N. Gaffney St San Pedro Date 2/18/08

Job Number 080218-JRZ Technician JRZ Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Well Box Meets Compliance Requirements *See Below	Water Bailed From Wellbox	Cap Replaced	Lock Replaced	Well Not Inspected (explain in notes)	New Deficiency Identified	Previously Identified Deficiency Persists	Notes
MW-1								X	
MW-2						X			UNABLE TO LOCATE
MW-3						X			" "
MW-4								X	

\*Well box must meet all three criteria to be compliant: 1) WELL IS SECURABLE BY DESIGN (12" or less) 2) WELL IS MARKED WITH THE WORDS "MONITORING WELL" (12" or less) 3) WELL TAG IS PRESENT, SECURE, AND CORRECT

Notes: \_\_\_\_\_

NO. 671730

# NON-HAZARDOUS WASTE DATA FORM

GENERATING SITE:

WIC #

EPA I.D. NO.

NOT REQUIRED

NAME SHELL OIL PRODUCTS US

406 N. GAFFEY ST.

ADDRESS 20915 E. WILMINGTON

SAN PEDRO, CA

PROFILE NO.

43305

CITY, STATE, ZIP CARSON, CA 90810

PHONE NO. ( )

ATTN: DUBORAIL PRYOR

CONTAINERS: No.

VOLUME

50 GAL.

WEIGHT

TYPE:

TANK TRUCK

DUMP TRUCK

DRUMS

CARTONS

OTHER

WASTE DESCRIPTION NON-HAZARDOUS GROUNDWATER

GENERATING PROCESS DUGGED GROUNDWATER

1. WATER 99-100%

5. CAD#

2. TPH < 1%

6. INCIDENT# 97617581

3.

7. REST#

4.

8.

PROPERTIES:

pH 7-10

SOLID

LIQUID

SLUDGE

SLURRY

OTHER

HANDLING INSTRUCTIONS: 24-HOUR EMERGENCY PHONE (800) 424-9300

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

*Jonathan Romero*

2/10/08

TRANSPORTER #1

TRANSPORTER #2

NAME BLAINE TECH SERVICES, INC

NIETO & SONS TRUCKING, INC

ADDRESS 20735 BELSHAW AVE

1291 BREA CANYON RD

SERVICE ORDER NO.

CITY, STATE, ZIP CARSON, CA 90746

BREA, CA 92821

PICK UP DATE

PHONE NO. 310-895-4455

714-990-6855

TRUCK, UNIT, I.D. NO.

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

NAME CROSBY & OVERTON

EPA I.D. NO.

DISPOSAL METHOD

ADDRESS 1630 W. 17<sup>TH</sup> STREET

LANDFILL  OTHER

CITY, STATE, ZIP LONG BEACH, CA 90813

PHONE NO. 562-432-5445

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

GEN	OLD/NEW	L	A	TONS
TRANS		S	B	
C/O		RT/CD	HWDF	NONE

DISCREPANCY

TO BE COMPLETED BY GENERATOR

TRANSPORTER

TSD FACILITY

### WELL GAUGING DATA

Project # 080218-SR2      Date 2/18/08      Client Shell

Site 406 N. Grady St. San An Ln

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <u>FOU</u>	Notes
MU-1	0725	4					38.22	54.56	↓	
MU-2	- unable to locate well									
MU-3	- unable to locate well									
MU-4	0715	4					36.16	54.30		

**SHELL WELL MONITORING DATA SHEET**

BTS #: 080213-JR2	Site: 97617581
Sampler: JR TR	Date: 2-13-08
Well I.D.: MW-1	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 54.56	Depth to Water (DTW): 38.22
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>POS</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 41.49	

Purge Method:  Bailer       Waterra      Sampling Method:  Bailer  
 Disposable Bailer       Peristaltic       Disposable Bailer  
 Positive Air Displacement       Extraction Pump       Extraction Port  
 Electric Submersible       Other \_\_\_\_\_       Dedicated Tubing

Other: \_\_\_\_\_

10.4 (Gals.) X 3 = 31.8 Gals.  
 I Case Volume      Specified Volumes      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0807	69.1	4.2	9368	115	11	
0810	70.7	4.7	10.64 MS	313	22	
			WELL DEWATERED @ 22 GAL			
0945	64.5	4.8	9658	167	—	

Did well dewater?  No      Gallons actually evacuated: 22

Sampling Date: 2-13-08      Sampling Time: 0945      Depth to Water: 41.49

Sample I.D.: MW-1      Laboratory: CalScience Columbia Other TEST AM

Analyzed for:  TPH-G     BTEX     MTBE     TPH-D     Oxygenates (5)    Other:

EB I.D. (if applicable): @ \_\_\_\_\_ Time      Duplicate I.D. (if applicable):

Analyzed for: TPH-G    BTEX    MTBE    TPH-D    Oxygenates (5)    Other:

D.O. (if req'd): Pre-purge: \_\_\_\_\_ mg/L      Post-purge: \_\_\_\_\_ mg/L

O.R.P. (if req'd): Pre-purge: \_\_\_\_\_ mV      Post-purge: \_\_\_\_\_ mV

## SHELL WELL MONITORING DATA SHEET

BTS #: 080218-JE2	Site: 976/7581
Sampler: JZ	Date: 2/18/09
Well I.D.: 4W-2	Well Diameter: 2 3 4 6 8 _____
Total Well Depth (TD): _____	Depth to Water (DTW): _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>EVE</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: _____	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Water: Peristaltic Extraction Pump Other: _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	---	---

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

_____ (Gals.) X _____	= _____ Gals.
1 Case Volume	Specified Volumes      Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
- Unable to locate well -						
- Sift covered in dirt -						
- searched w/ shovel -						
- NO Sample taken -						

Did well dewater? Yes No	Gallons actually evacuated: _____
Sampling Date: _____	Sampling Time: _____
Sample I.D.: _____	Depth to Water: _____
Laboratory: CalScience Columbia Other _____	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____	
EB I.D. (if applicable): _____ @ _____ Time	Duplicate I.D. (if applicable): _____
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____	
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: _____ mg/L
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV

## SHELL WELL MONITORING DATA SHEET

BTS #: 080218-JR2	Site: 97617581
Sampler: JR	Date: 2/18/08
Well I.D.: MU-3	Well Diameter: 2 3 4 6 8 <u>    </u>
Total Well Depth (TD): <u>    </u>	Depth to Water (DTW): <u>    </u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>    </u>	

Purge Method: Bailer      Water      Sampling Method: Bailer  
 Disposable Bailer      Peristaltic      Disposable Bailer  
 Positive Air Displacement      Extraction Pump      Extraction Port  
 Electric Submersible      Other \_\_\_\_\_      Dedicated Tubing

$\frac{\text{--- (Gals.) X ---}}{\text{I Case Volume Specified Volumes}} = \text{--- Gals. Calculated Volume}$	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
— unable to locate well —						
— site covered in dirt —						
— searched w/ shovel —						
— No sample taken —						

Did well dewater? Yes No	Gallons actually evacuated:
Sampling Date:	Sampling Time:      Depth to Water:
Sample I.D.:	Laboratory: CalScience Columbia Other _____
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:	
EB I.D. (if applicable): @ Time	Duplicate I.D. (if applicable):
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:	
D.O. (if req'd): Pre-purge: <u>    </u> mg/L	Post-purge: <u>    </u> mg/L
O.R.P. (if req'd): Pre-purge: <u>    </u> mV	Post-purge: <u>    </u> mV



## SHELL WELL MONITORING DATA SHEET

BTS #: 080218-JR2	Site: 97617581
Sampler: JR TR	Date: 2-18-08
Well I.D.: MW-4	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 54.30	Depth to Water (DTW): 36.16
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 39.79	

Purge Method: Bailer  Watertra  Sampling Method: Bailer  
 Disposable Bailer  Peristaltic  Disposable Bailer   
 Positive Air Displacement  Extraction Pump  Extraction Port   
 Electric Submersible  Other \_\_\_\_\_ Dedicated Tubing

$11.8 \text{ (Gals.)} \times 3 = 35.4 \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														
I Case Volume      Specified Volumes      Calculated Volume																	

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0751	69.5	6.6	3715	51	12	
0753	71.6	6.4	4165	>1000	24	
		WELL DEWATERED @		25 GAL	<del>35</del> JR	
0850	69.5	6.5	4109	>1000	—	

Did well dewater?  Yes    No    Gallons actually evacuated: 26

Sampling Date: 2-18-08    Sampling Time: 0850    Depth to Water: 38.76

Sample I.D.: MW-4    Laboratory: CalScience    Columbia    Other: TEST AM

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ Time    Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## LABORATORY REPORT

Prepared For: Blaine Tech Service/Wayne Perry Construction, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621  
Attention: Nick Sudano

Project: 406 Gaffey Street, San Pedro  
97617581

Sampled: 02/18/08  
Received: 02/19/08  
Issued: 03/03/08 16:12

NELAP #01108CA California ELAP#1197 CSDLAC #10256

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody, 1 page, is included and is an integral part of this report.*

*This entire report was reviewed and approved for release.*

## SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IRB1796-01	MW-1	Water
IRB1796-02	MW-4	Water

Reviewed By:



TestAmerica Irvine

Lisa Reightley For Debby Wilson  
Project Manager

Blaine Tech Service/Wayne Perry Construction, Inc. Project ID: 406 Gaffey Street, San Pedro  
 8281 Commonwealth Avenue 97617581  
 Buena Park, CA 90621 Report Number: IRB1796  
 Attention: Nick Sudano

Sampled: 02/18/08  
 Received: 02/19/08

## VOLATILE FUEL HYDROCARBONS BY GC/MS (CA LUFT)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRB1796-01 (MW-1 - Water)</b>								
Reporting Units: ug/l								
<b>Volatile Fuel Hydrocarbons (C4-C12)</b>	TPH by GC/MS	8B22001	1200	<b>3100</b>	25	2/22/2008	2/22/2008	
Surrogate: Dibromofluoromethane (80-120%)				89 %				
Surrogate: Toluene-d8 (80-120%)				91 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				85 %				
<b>Sample ID: IRB1796-02 (MW-4 - Water)</b>								
Reporting Units: ug/l								
<b>Volatile Fuel Hydrocarbons (C4-C12)</b>	TPH by GC/MS	8B22001	50	<b>780</b>	1	2/22/2008	2/22/2008	
Surrogate: Dibromofluoromethane (80-120%)				89 %				
Surrogate: Toluene-d8 (80-120%)				90 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				86 %				

TestAmerica Irvine

Lisa Reightley For Debby Wilson  
 Project Manager

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Blaine Tech Service/Wayne Perry Construction, Inc. Project ID: 406 Gaffey Street, San Pedro  
 8281 Commonwealth Avenue 97617581  
 Buena Park, CA 90621 Report Number: IRB1796  
 Attention: Nick Sudano

Sampled: 02/18/08  
 Received: 02/19/08

## BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
<b>Sample ID: IRB1796-01 (MW-1 - Water)</b>								
Reporting Units: ug/l								
Benzene	EPA 8260B	8B22001	12	1300	25	2/22/2008	2/22/2008	
Ethylbenzene	EPA 8260B	8B22001	12	220	25	2/22/2008	2/22/2008	
Toluene	EPA 8260B	8B22001	12	190	25	2/22/2008	2/22/2008	
o-Xylene	EPA 8260B	8B22001	12	170	25	2/22/2008	2/22/2008	
m,p-Xylenes	EPA 8260B	8B22001	25	210	25	2/22/2008	2/22/2008	
Xylenes, Total	EPA 8260B	8B22001	25	380	25	2/22/2008	2/22/2008	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	8B22001	25	27	25	2/22/2008	2/22/2008	
Di-isopropyl Ether (DIPE)	EPA 8260B	8B22001	25	ND	25	2/22/2008	2/22/2008	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	8B22001	25	ND	25	2/22/2008	2/22/2008	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	8B22001	25	ND	25	2/22/2008	2/22/2008	
tert-Butanol (TBA)	EPA 8260B	8B22001	250	ND	25	2/22/2008	2/22/2008	
Surrogate: Dibromofluoromethane (80-120%)				89 %				
Surrogate: Toluene-d8 (80-120%)				91 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				85 %				
<b>Sample ID: IRB1796-02 (MW-4 - Water)</b>								
Reporting Units: ug/l								
Benzene	EPA 8260B	8B22001	0.50	ND	1	2/22/2008	2/22/2008	
Ethylbenzene	EPA 8260B	8B22001	0.50	2.2	1	2/22/2008	2/22/2008	
Toluene	EPA 8260B	8B22001	0.50	ND	1	2/22/2008	2/22/2008	
o-Xylene	EPA 8260B	8B22001	0.50	ND	1	2/22/2008	2/22/2008	
m,p-Xylenes	EPA 8260B	8B22001	1.0	ND	1	2/22/2008	2/22/2008	
Xylenes, Total	EPA 8260B	8B22001	1.0	ND	1	2/22/2008	2/22/2008	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	8B22001	1.0	74	1	2/22/2008	2/22/2008	
Di-isopropyl Ether (DIPE)	EPA 8260B	8B22001	1.0	22	1	2/22/2008	2/22/2008	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	8B22001	1.0	ND	1	2/22/2008	2/22/2008	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	8B22001	1.0	ND	1	2/22/2008	2/22/2008	
tert-Butanol (TBA)	EPA 8260B	8B22001	10	44	1	2/22/2008	2/22/2008	
Surrogate: Dibromofluoromethane (80-120%)				89 %				
Surrogate: Toluene-d8 (80-120%)				90 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				86 %				

TestAmerica Irvine

Lisa Reightley For Debby Wilson  
 Project Manager

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Blaine Tech Service/Wayne Perry Construction, Inc. Project ID: 406 Gaffey Street, San Pedro  
 8281 Commonwealth Avenue 97617581  
 Buena Park, CA 90621 Report Number: IRB1796  
 Attention: Nick Sudano

Sampled: 02/18/08  
 Received: 02/19/08

## METHOD BLANK/QC DATA

### VOLATILE FUEL HYDROCARBONS BY GC/MS (CA LUFT)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8B22001 Extracted: 02/22/08</b>										
<b>Blank Analyzed: 02/22/2008 (8B22001-BLK1)</b>										
Volatile Fuel Hydrocarbons (C4-C12)	ND	50	ug/l							
Surrogate: Dibromofluoromethane	21.6		ug/l	25.0		86	80-120			
Surrogate: Toluene-d8	23.0		ug/l	25.0		92	80-120			
Surrogate: 4-Bromofluorobenzene	20.8		ug/l	25.0		83	80-120			
<b>LCS Analyzed: 02/22/2008 (8B22001-BS2)</b>										
Volatile Fuel Hydrocarbons (C4-C12)	422	50	ug/l	500		84	55-130			
Surrogate: Dibromofluoromethane	21.4		ug/l	25.0		85	80-120			
Surrogate: Toluene-d8	22.8		ug/l	25.0		91	80-120			
Surrogate: 4-Bromofluorobenzene	20.4		ug/l	25.0		82	80-120			
<b>Matrix Spike Analyzed: 02/22/2008 (8B22001-MS1)</b>					<b>Source: IRB1795-01</b>					
Volatile Fuel Hydrocarbons (C4-C12)	1020	50	ug/l	1720	ND	59	50-145			
Surrogate: Dibromofluoromethane	21.2		ug/l	25.0		85	80-120			
Surrogate: Toluene-d8	23.1		ug/l	25.0		92	80-120			
Surrogate: 4-Bromofluorobenzene	22.0		ug/l	25.0		88	80-120			
<b>Matrix Spike Dup Analyzed: 02/22/2008 (8B22001-MSD1)</b>					<b>Source: IRB1795-01</b>					
Volatile Fuel Hydrocarbons (C4-C12)	1060	50	ug/l	1720	ND	62	50-145	4	20	
Surrogate: Dibromofluoromethane	20.8		ug/l	25.0		83	80-120			
Surrogate: Toluene-d8	22.2		ug/l	25.0		89	80-120			
Surrogate: 4-Bromofluorobenzene	21.4		ug/l	25.0		86	80-120			

TestAmerica Irvine

Lisa Reightley For Debby Wilson  
 Project Manager

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Blaine Tech Service/Wayne Perry Construction, Inc. Project ID: 406 Gaffey Street, San Pedro  
 8281 Commonwealth Avenue 97617581  
 Buena Park, CA 90621 Report Number: IRB1796  
 Attention: Nick Sudano

Sampled: 02/18/08  
 Received: 02/19/08

## METHOD BLANK/QC DATA

### BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD Limit	Data Qualifiers
<b>Batch: 8B22001 Extracted: 02/22/08</b>									
<b>Blank Analyzed: 02/22/2008 (8B22001-BLK1)</b>									
Benzene	ND	0.50	ug/l						
Ethylbenzene	ND	0.50	ug/l						
Toluene	ND	0.50	ug/l						
o-Xylene	ND	0.50	ug/l						
m,p-Xylenes	ND	1.0	ug/l						
Xylenes, Total	ND	1.0	ug/l						
Methyl-tert-butyl Ether (MTBE)	ND	1.0	ug/l						
Di-isopropyl Ether (DIPE)	ND	1.0	ug/l						
Ethyl tert-Butyl Ether (ETBE)	ND	1.0	ug/l						
tert-Amyl Methyl Ether (TAME)	ND	1.0	ug/l						
tert-Butanol (TBA)	ND	10	ug/l						
Surrogate: Dibromofluoromethane	21.6		ug/l	25.0		86	80-120		
Surrogate: Toluene-d8	23.0		ug/l	25.0		92	80-120		
Surrogate: 4-Bromofluorobenzene	20.8		ug/l	25.0		83	80-120		
<b>LCS Analyzed: 02/22/2008 (8B22001-BS1)</b>									
Benzene	21.7	0.50	ug/l	25.0		87	70-120		
Ethylbenzene	21.3	0.50	ug/l	25.0		85	75-125		
Toluene	22.8	0.50	ug/l	25.0		91	70-120		
o-Xylene	22.0	0.50	ug/l	25.0		88	75-125		
m,p-Xylenes	44.7	1.0	ug/l	50.0		89	75-125		
Xylenes, Total	66.7	1.0	ug/l	75.0		89	70-125		
Methyl-tert-butyl Ether (MTBE)	24.5	1.0	ug/l	25.0		98	60-135		
Di-isopropyl Ether (DIPE)	21.0	1.0	ug/l	25.0		84	60-135		
Ethyl tert-Butyl Ether (ETBE)	22.5	1.0	ug/l	25.0		90	65-135		
tert-Amyl Methyl Ether (TAME)	25.3	1.0	ug/l	25.0		101	60-135		
tert-Butanol (TBA)	116	10	ug/l	125		93	70-135		
Surrogate: Dibromofluoromethane	22.1		ug/l	25.0		88	80-120		
Surrogate: Toluene-d8	23.0		ug/l	25.0		92	80-120		
Surrogate: 4-Bromofluorobenzene	22.3		ug/l	25.0		89	80-120		

TestAmerica Irvine

Lisa Reightley For Debby Wilson  
 Project Manager

Blaine Tech Service/Wayne Perry Construction, Inc. Project ID: 406 Gaffey Street, San Pedro  
 8281 Commonwealth Avenue 97617581  
 Buena Park, CA 90621 Report Number: IRB1796  
 Attention: Nick Sudano

Sampled: 02/18/08  
 Received: 02/19/08

## METHOD BLANK/QC DATA

### BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8B22001 Extracted: 02/22/08</b>										
<b>Matrix Spike Analyzed: 02/22/2008 (8B22001-MS1)</b>					<b>Source: IRB1795-01</b>					
Benzene	22.0	0.50	ug/l	25.0	ND	88	65-125			
Ethylbenzene	21.2	0.50	ug/l	25.0	ND	85	65-130			
Toluene	23.5	0.50	ug/l	25.0	ND	94	70-125			
o-Xylene	21.5	0.50	ug/l	25.0	ND	86	65-125			
m,p-Xylenes	43.3	1.0	ug/l	50.0	ND	87	65-130			
Xylenes, Total	64.8	1.0	ug/l	75.0	ND	86	60-130			
Methyl-tert-butyl Ether (MTBE)	32.1	1.0	ug/l	25.0	9.21	92	55-145			
Di-isopropyl Ether (DIPE)	21.0	1.0	ug/l	25.0	ND	84	60-140			
Ethyl tert-Butyl Ether (ETBE)	21.1	1.0	ug/l	25.0	ND	85	60-135			
tert-Amyl Methyl Ether (TAME)	24.3	1.0	ug/l	25.0	ND	97	60-140			
tert-Butanol (TBA)	121	10	ug/l	125	ND	97	65-140			
Surrogate: Dibromofluoromethane	21.2		ug/l	25.0		85	80-120			
Surrogate: Toluene-d8	23.1		ug/l	25.0		92	80-120			
Surrogate: 4-Bromofluorobenzene	22.0		ug/l	25.0		88	80-120			
<b>Matrix Spike Dup Analyzed: 02/22/2008 (8B22001-MSD1)</b>					<b>Source: IRB1795-01</b>					
Benzene	23.2	0.50	ug/l	25.0	ND	93	65-125	5	20	
Ethylbenzene	22.7	0.50	ug/l	25.0	ND	91	65-130	7	20	
Toluene	23.9	0.50	ug/l	25.0	ND	95	70-125	2	20	
o-Xylene	22.7	0.50	ug/l	25.0	ND	91	65-125	6	20	
m,p-Xylenes	44.7	1.0	ug/l	50.0	ND	89	65-130	3	25	
Xylenes, Total	67.4	1.0	ug/l	75.0	ND	90	60-130	4	20	
Methyl-tert-butyl Ether (MTBE)	33.4	1.0	ug/l	25.0	9.21	97	55-145	4	25	
Di-isopropyl Ether (DIPE)	21.5	1.0	ug/l	25.0	ND	86	60-140	2	25	
Ethyl tert-Butyl Ether (ETBE)	22.0	1.0	ug/l	25.0	ND	88	60-135	4	25	
tert-Amyl Methyl Ether (TAME)	25.4	1.0	ug/l	25.0	ND	101	60-140	4	30	
tert-Butanol (TBA)	127	10	ug/l	125	ND	101	65-140	5	25	
Surrogate: Dibromofluoromethane	20.8		ug/l	25.0		83	80-120			
Surrogate: Toluene-d8	22.2		ug/l	25.0		89	80-120			
Surrogate: 4-Bromofluorobenzene	21.4		ug/l	25.0		86	80-120			

TestAmerica Irvine

Lisa Reightley For Debby Wilson  
 Project Manager

Blaine Tech Service/Wayne Perry Construction, Inc. Project ID: 406 Gaffey Street, San Pedro  
8281 Commonwealth Avenue 97617581  
Buena Park, CA 90621 Report Number: IRB1796  
Attention: Nick Sudano

Sampled: 02/18/08  
Received: 02/19/08

## DATA QUALIFIERS AND DEFINITIONS

**ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.  
**RPD** Relative Percent Difference

## ADDITIONAL COMMENTS

**For 8260 analyses:**

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD.  
The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

**For Volatile Fuel Hydrocarbons (C4-C12):**

Volatile Fuel Hydrocarbons (C4-C12) are quantitated against a gasoline standard. Quantitation begins immediately before TBA-d9.

TestAmerica Irvine

Lisa Reightley For Debby Wilson  
Project Manager

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**IRB1796** <Page 7 of 8>



Blaine Tech Service/Wayne Perry Construction, Inc. Project ID: 406 Gaffey Street, San Pedro  
8281 Commonwealth Avenue 97617581  
Buena Park, CA 90621 Report Number: IRB1796  
Attention: Nick Sudano

Sampled: 02/18/08  
Received: 02/19/08

## Certification Summary

### TestAmerica Irvine

Method	Matrix	Nelac	California
EPA 8260B	Water	X	X
TPH by GC/MS	Water	X	X

*Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at [www.testamericainc.com](http://www.testamericainc.com)*

### TestAmerica Irvine

Lisa Reightley For Debby Wilson  
Project Manager

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LAB:

- TA - Irvine, California
- TA - Morgan Hill, California
- TA - Sacramento, California
- TA - Nashville, Tennessee
- Calscience
- Other



# SHELL Chain Of Custody Record

<b>NAME OF PERSON TO BILL:</b> Deborah Pryor		<b>INCIDENT # (ES ONLY)</b> 9 7 6 1 7 5 8 1	
<input checked="" type="checkbox"/> ENVIRONMENTAL SERVICES <input type="checkbox"/> NETWORK DEV / FE <input type="checkbox"/> COMPLIANCE		<input type="checkbox"/> CHECK BOX TO VERIFY IF NO INCIDENT # APPLIES <input type="checkbox"/> BILL CONSULTANT <input type="checkbox"/> RMT/CRMT	
PO #		SAP or CRMT #	

DATE 2-13-08  
PAGE 1 of 1

<b>SAMPLING COMPANY</b> Blaine Tech Services	<b>LOG CODE</b> BTST	<b>SITE ADDRESS: Street and City</b> 406 N Gaffey Street, San Pedro	<b>State</b> CA	<b>GLOBAL ID NO</b> T0603717723
<b>ADDRESS</b> 20735 Belshaw Avenue, Carson, CA 90746		<b>EDF DELIVERABLE TO (Name, Company, Office Location)</b> Truedi Balsitis, WPI, Buena Park office	<b>PHONE NO</b> 714-826-0352	<b>E-MAIL</b> tbalsitis@wpinc.com
<b>PROJECT CONTACT (Hardcopy or PDF Report to)</b> Nick Sudano		<b>SAMPLER NAME(S) (Print)</b> JOHNATHAN RAMIREZ TRAVIS RHYMES		<b>CONSULTANT PROJECT NO</b> 08-213-JR2
<b>TELEPHONE</b> 310-886-4455	<b>FAX</b> 310-637-5802	<b>E-MAIL</b> nsudano@blainetech.com		<b>LAB USE ONLY</b> IRB1796

TAT (STD IS 10 BUSINESS DAYS / RUSH IS CALENDAR DAYS)  
 STD  5 DAY  3 DAY  2 DAY  24 HOURS

RESULTS NEEDED ON WEEKEND

LA - RWQCB REPORT FORMAT  UST AGENCY: \_\_\_\_\_

**SPECIAL INSTRUCTIONS OR NOTES:**

- EDD NOT NEEDED
- SHELL CONTRACT RATE APPLIES
- STATE REIMB RATE APPLIES
- RECEIPT VERIFICATION REQUESTED

REQUESTED ANALYSIS										FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
TPH-G - Purgeable (8260B)	BTEX (8260B)	5 Oxygenates (8260B) (MTBE, TBA, DIPE, TAME, ETBE)	1,2 DCA (8260B)	EDB (8260B)	Ethanol (8260B)	Methanol (8016M)	TPH-D - Extractable (8016M)			
										TEMPERATURE ON RECEIPT C° 4.7/2.7

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	TPH-G - Purgeable (8260B)	BTEX (8260B)	5 Oxygenates (8260B) (MTBE, TBA, DIPE, TAME, ETBE)	1,2 DCA (8260B)	EDB (8260B)	Ethanol (8260B)	Methanol (8016M)	TPH-D - Extractable (8016M)		
		DATE	TIME												
	MW-1	2/12/08	0945	W	4	X	X	X							
	MW-4	2/12/08	0850	W	4	X	X	X							

Relinquished by: (Signature)	Received by: (Signature)	Date: 2/12/08	Time: 1540
Relinquished by: (Signature)	Received by: (Signature)	Date: 2/19/08	Time: 0903
Relinquished by: (Signature)	Received by: (Signature)	Date: 2/19/08	Time: 1130

A.G.  
 I.P.I.T.  
 2/11/08

(B)

4. *Additional Site Assessment Report and Interim Remedial Action Plan, Former Shell Service Station, 406 North Gaffey Street, San Pedro California*, prepared by Wayne Perry, Inc., dated June 22, 2009.

**ADDITIONAL SITE ASSESSMENT  
REPORT AND INTERIM REMEDIAL  
ACTION PLAN**

**FORMER SHELL SERVICE STATION  
406 NORTH GAFFEY STREET (at O'FARRELL)  
SAN PEDRO, CALIFORNIA  
EAOP SITE**

**June 22, 2009**

***SUBMITTED TO:***

**CALIFORNIA REGIONAL WATER QUALITY CONTROL  
BOARD – LOS ANGELES REGION  
320 West 4<sup>th</sup> Street, Suite 200  
Los Angeles, California 90013-2342  
Attention: Dr. Yue Rong**

***PREPARED FOR:***

**SHELL OIL PRODUCTS US  
20945 South Wilmington Avenue  
Carson, California**

***PREPARED BY:***

**WAYNE PERRY, INC.  
8281 Commonwealth Avenue  
Buena Park, California 90621  
(714) 826-0352**



**SAP CODE: 136042  
WPI PROJECT NUMBER: 06.407  
CRWQCB-LA FILE NUMBER: 907310543**

**ADDITIONAL SITE ASSESSMENT REPORT AND INTERIM REMEDIAL ACTION PLAN, FORMER SHELL SERVICE STATION**

**WARRANTY STATEMENT:**

This report has been prepared by Wayne Perry, Inc. for the exclusive use of Equilon Enterprises LLC dba Shell Oil Products US (Shell), as it pertains to the Former Shell Service Station located at 406 North Gaffey Street (at O'Farrell) in San Pedro, California. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists, hydrogeologists, and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report.

Groundwater monitoring and sampling activities were performed by Blaine Tech Services, Inc. WPI accepts no responsibility as to the accuracy of the Blaine Tech Services, Inc. report.

**REPORT PREPARED BY:**

*Cristi A. Farrell*  
Cristi A. Farrell  
Project Manager



*David M. Henry*  
David M. Henry  
California Registered Geologist 4085

June 22, 2009

**WPI Project No. 06.407**

cc: Ms. Deborah Pryor, Shell  
Mr. Hamid Pournamdari, Property Owner

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## **1.0 INTRODUCTION**

Data from the previous phases of site assessment indicate that soil and groundwater beneath the former Shell Service Station at 406 North Gaffey Street (at O'Farrell Street) in San Pedro, California (site) have been impacted by petroleum hydrocarbons and oxygenated compounds. The site is scheduled for redevelopment into a public park. In the December 17, 2008, work plan, Wayne Perry Inc. (WPI) proposed additional assessment in order to collect data to better evaluate remedial options and potential risk posed by residual hydrocarbons at the site. This report, submitted by WPI on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), documents the procedures and results of the additional assessment activities performed at the site.

In a letter dated November 9, 2006, the California Regional Water Quality Control Board – Los Angeles Region (CRWQCB-LA) placed the site into the self-directed Expedited Agency Oversight Program (EAOP).

## **2.0 SITE DESCRIPTION**

### **2.1 SITE DESCRIPTION**

The site is on the northeast corner of the intersection of Gaffey Street and O'Farrell Street in San Pedro (Figure 1). Three 12,000-gallon underground storage tanks (USTs), one 550-gallon waste oil UST, four fuel dispensers, underground product piping, and a station building with three service bays and a store were removed from the site in June 2000. The site is currently vacant.

Surrounding land use is a combination of residential and commercial. A single-family residence, a pedestrian overpass for Gaffey Street, and the 110 Freeway are located north of the site. Oliver Street and single-family residences are located east of the site. A two-story commercial building with subterranean parking is located south of the site across O'Farrell Street. A public park is located west of the site across Gaffey Street.



## 2.2 SITE HISTORY

Date	Activity/Method	No. of Wells, Borings or Samples	Report Date	Consultant	Comments
4/94	Product Line Leak	—	—	—	The Los Angeles City Fire Department (LACFD) records for April 26, 1994, indicate that a gasoline product line failed a hydrostatic test and had an estimated leak rate of 0.03 gallon/hour.
6/98	UST Upgrade Sampling	—	—	WPI	Total petroleum hydrocarbons as gasoline (TPHg), benzene, and methyl tertiary butyl ether (MTBE) were not detected in any of the soil samples.
12/99	Phase I Environmental Assessment	—	1/31/00	Artemis	
1/00	Phase II Site Assessment	9 soil borings (WGR-1 through WGR-9)	2/12/00	WGR	TPH-g, benzene, and/or MTBE were detected in soil samples to a maximum depth of approximately 40 feet.
6/00	UST Removal	—	10/2/00	WGR	MTBE was detected in soil samples collected beneath the USTs and dispensers.
5/05	Agency Correspondence	—	5/25/05	—	The LACFD transferred the environmental case to the CRWQCB-LA.
7/05	Agency Correspondence	—	7/27/05	—	The CRWQCB-LA requested additional information.
8/05	Response to Agency	—	8/29/05	WGR	WGR provided the CRWQCB-LA with additional information.
2/06	Site Assessment Work Plan	—	2/28/06	WGR	WGR proposed drilling/sampling four soil borings and installation of three groundwater monitoring wells.
6/06	Site Assessment	1 soil boring (WGR-10); 4 groundwater (GW) wells (MW-1 through MW-4)	8/8/06	WGR	TPHg, benzene, MTBE, and tertiary butyl alcohol (TBA) was detected in soil and/or groundwater samples. Off-site soil borings were unable to be completed due to delays in permitting.
7/06 – current	Quarterly groundwater monitoring and sampling	—	—	Various	Quarterly groundwater monitoring and sampling reports were submitted.
11/06	Agency Correspondence	—	11/9/06	—	The CRWQCB-LA placed the site in the EAOP Class D program.
11/06 to 8/08	Site Redevelopment	—	—	—	
8/08	Work Plan for Additional Site Assessment	—	8/27/08	WPI	WPI proposed installation of four groundwater monitoring wells to define the lateral extent of impacted groundwater.

<b>Date</b>	<b>Activity/Method</b>	<b>No. of Wells, Borings or Samples</b>	<b>Report Date</b>	<b>Consultant</b>	<b>Comments</b>
9/08	Additional Site Assessment	3 GW wells (MW-5 to MW-7)	1/19/09	WPI	The lateral extents of hydrocarbon-and oxygenate-impacted soil and groundwater were not defined.
12/08	Work Plan for Additional Assessment	—	12/17/08	WPI	WPI proposed drilling/sampling one boring and performing a soil vapor survey and aquifer test.

Boring/well data are in Table 1. Soil analytical data is in Table 2. Groundwater analytical data is in Table 3.

## **2.3 GEOLOGIC AND HYDROGEOLOGIC SETTINGS**

The site is approximately 100 feet above sea level (USGS, 1964). Based previous phases of assessment, the site is underlain by clay with varying amounts of silt and sand (WGR, 2006). However, data from the September 2008 site assessment indicates that the site is underlain by siltstone beginning at a depth of approximately 15 feet (WPI, 2009).

The site is located in the southeastern part of the West Coast Groundwater Basin. Since 2006, the depth to groundwater at the site has ranged from approximately 34 to 38 feet. Groundwater flow is toward the north and east at a gradient between 0.02 and 0.03 foot/foot.

## **2.4 POTENTIAL SENSITIVE RECEPTORS**

Based on information provided by the Los Angeles County Department of Public Works (LACDPW) Ground Water Wells website, there are no active wells within one mile of the site (LACDPW, 2009).

There are two schools located within a 0.5-mile radius of the site: Barton Hill Elementary is located approximately 0.2-mile east; and Bandini Street Elementary is located approximately 0.5-mile west (Google Maps, 2009).

# **3.0 SCOPE OF WORK**

## **3.1 DRILLING AND SOIL SAMPLING ACTIVITIES**

On January 28, 2009, boring B-1 was drilled and sampled using a hollow stem auger drill rig operated by BC2 Environmental Corporation (C-57 License No. 686255) of Orange, California. The boring location is shown on Figure 2. Soil was continuously logged for lithologic purposes to the total depth drilled of approximately 50 feet.

Details of the soil sampling procedures are in Appendix A. A copy of the drilling permit is in Appendix B. A detailed log of the materials found during drilling and sampling is in Appendix C. All work was conducted under an approved WPI site-specific Site Safety and Health Plan and under the supervision of a California Professional Geologist.

## **3.2 AQUIFER TEST**

Aquifer tests were performed on January 27, 2009, using wells MW-1 through MW-6 to determine the hydraulic parameters of the first water-bearing unit. Pressure transducers were placed in the wells and allowed to equilibrate for a minimum of 24 hours. Prior to installation in the wells, the transducers were washed in non-phosphate soap and rinsed in distilled water and programmed to collect data at predetermined intervals before being placed in the wells. Prior to placing the transducers in the wells, the depth to groundwater and well depth were measured using an electronic interface probe. This data was used to determine the volume of water in the wells.

After 24 hours, approximately one half of the volume of water in each well was removed and groundwater was then allowed to return to equilibrium conditions. Changes in groundwater elevation were measured by the pressure transducers. The transducers were removed from the wells, washed in non-phosphate soap, and rinsed in distilled water. Data from the transducers was downloaded to a computer and analyzed using the Aquifer<sup>Win32</sup> Analytical Solution, a computer driven slug test analysis. Due to equipment failure, recovery data was not collected from wells MW-3, MW-4, MW-5, and MW-6. Test data for wells MW-1 and MW-2 are in Appendix D. Individual well recovery curves are on Graphs 1 and 2 in Appendix D.

## **3.3 SOIL VAPOR SURVEY**

### ***3.3.1 Probe Installation***

On January 28, 2009, twelve soil vapor probes were installed to a depth of approximately five feet at the locations shown on Figure 2 using a direct push rig operated by H&P Mobile Geochemistry, Inc. of Carlsbad, California. The borings were hand-augered by WPI personnel to a depth of four feet. Drive rods with a hardened drop-off tip with soil gas intake ports were advanced to a total depth of approximately five feet. At total depth, the drive rods were retracted to expose the soil gas intake ports. Small diameter tubing was inserted through the center of the rods and threaded into a gas tight fitting just above the intake ports. A filter pack consisting of No. 2/12 Monterey sand was placed in the boring annulus around the intake ports. The remaining annular space was sealed with bentonite chips and hydrated with tap water up to the ground surface. Prior to purging and sampling, each probe was allowed to equilibrate for a minimum of 72 hours.

### ***3.3.2 Purge Volume Test and Vapor Sampling***

On February 11, 2009, one, three, and seven purge volumes were removed from well PV-1 to determine the purge volume to be applied at all sampling points. The purge volume to be used at the site was selected based on the highest concentrations of VOCs detected during the step test. Based on the step test, one purge volume was used for collecting vapor samples.

Due to equipment problems with the mobile laboratory and heavy rainfall, collection of the remaining vapor samples was postponed until February 20, 2009. Due to water present in the sample collected from location SV-2, only ten vapor samples and one duplicate were collected for analysis. To ensure that ambient air was not infiltrating the vapor sample, 1,1-difluoroethane was

used as a tracer compound at the ground surface of each probe location. Vapor flow rates during purging and sampling did not exceed 200 milliliters per minute.

Vapor samples were collected in summa canisters, labeled with borehole name and sample depth, and recorded on a chain-of-custody document. Upon completion of the soil vapor sample collection, the tubing at each vapor probe location was removed and the hole was backfilled with bentonite chips to the surface and hydrated with tap water.

The soil vapor survey was conducted in accordance with the guidelines set by the Department of Toxic Substances Control and California Regional Water Quality Control Board – Los Angeles Region's *Advisory – Active Soil Gas Investigations*, dated January 28, 2003.

### **3.4 GROUNDWATER MONITORING**

All monitoring wells were gauged and sampled on March 5, 2009 by Blaine Tech Services Inc. of San Jose, California. A copy of the Blaine Tech Services Inc. report is in Appendix E.

### **3.5 LABORATORY ANALYSES**

Selected soil samples (one per lithologic unit) were delivered to PTS Laboratories, Inc. of Santa Fe Springs, California, and analyzed for moisture content, air filled porosity, water-filled porosity, total porosity, bulk density, grain size analysis, air permeability, fraction organic carbon, and hydraulic conductivity. A copy of the PTS Laboratories, Inc. report and chain-of-custody document is in Appendix F.

Groundwater samples were delivered to Calscience Environmental Laboratories Inc. of Garden Grove, California, under chain of custody procedures. Groundwater samples were analyzed for total purgeable petroleum hydrocarbons, volatile and oxygenated compounds using EPA Method 8260B. A copy of the groundwater analytical report is included in Appendix E.

Vapor samples were delivered to H&P Laboratories, Inc. in Carlsbad, California, and analyzed for volatile organic compounds and MTBE using EPA Method TO-15. Copies of the vapor analytical reports are in Appendix G.

## **4.0 FINDINGS**

### **4.1 GEOLOGY AND HYDROLOGY**

Materials observed during drilling and sampling consisted of sandy gravel, fine-to medium-grained silty sand, gravel with silt, and medium-grained sand to a depth of 15 feet; and siltstone from approximately 15 to 50 feet.

On March 5, 2009, depth to groundwater ranged from 32.01 feet (MW-6) to 37.15 feet (MW-1). The direction of groundwater flow ranged from north-northwest to northeast at a gradient of 0.02 to 0.03 foot/foot (Figure 3).

## 4.2 AQUIFER TEST RESULTS

Aquifer test results are in Table 4.2.

**Table 4.2, Hydraulic Conductivity**

Well Number	Hydraulic Conductivity (feet/sec)	Hydraulic Conductivity (centimeters/sec)
MW-1	$5.5 \times 10^{-7}$	$1.68 \times 10^{-5}$
MW-2	$1.27 \times 10^{-7}$	$3.87 \times 10^{-6}$

## 4.3 ANALYTICAL RESULTS

### 4.3.1 Soil

Soil analytical results are summarized in Table 4.3.1.

Boring/ Sample Depth	Moisture Content (% by weight)	Bulk Density (g/cc)	Total Porosity	Air Filled Porosity	Total Pore Fluid Saturation (%Pv)	Effective Permeability to Air (millidarcy)	Effective Permeability to Water (millidarcy)	Hydraulic Conductivity (cm/sec)	FOC (g/g) *	TOC (mg/kg) **
<b>B-1</b>										
10	13.8	1.76	34.3	10.0	70.7	0.893	0.589	$5.63 \times 10^{-7}$	$2.40 \times 10^{-3}$	2400
12	9.1	1.91	28.7	11.3	60.4	4.13	0.866	$8.28 \times 10^{-7}$	$1.30 \times 10^{-3}$	1300
15	54.7	0.93	66.9	16.0	76.0	18.5	0.823	$7.91 \times 10^{-7}$	$1.20 \times 10^{-3}$	1200
35	55.1	0.97	61.5	8.3	86.5	0.428	0.305	$2.91 \times 10^{-7}$	$1.20 \times 10^{-3}$	1200
50	73.3	0.76	68.6	12.7	81.4	0.168	0.241	$2.29 \times 10^{-7}$	$9.75 \times 10^{-3}$	9750

\*Fractional Organic Carbon

\*\*Total Organic Carbon

### 4.3.2 Groundwater

Benzene was detected in samples from all the wells at concentrations ranging from 0.58 µg/L (MW-4) to 11,000 µg/L (MW-3).

MTBE was detected in samples from wells MW-2 (420 µg/L), MW-4 (68 µg/L), MW-5 (380 µg/L), and MW-6 (3.3 µg/L).

TBA was detected in samples from wells MW-2 (860 µg/L), MW-4 (46 µg/L), MW-5 (2,200 µg/L), MW-6 (19 µg/L), and MW-7 (140 µg/L).

Groundwater analytical data is in Table 3. A copy of the Blaine Tech Services, Inc. report is in Appendix E.

### **4.3.3 Vapor**

Benzene was detected in vapor samples SV-1 (170 µg/m<sup>3</sup>), SV-3 (23 µg/m<sup>3</sup>), SV-6 (17 µg/m<sup>3</sup>), and SV-12 (30 µg/m<sup>3</sup>).

Toluene was detected in vapor samples SV-1, SV-3, SV-6, and SV-8 through SV-12 at concentrations ranging from 5.4 µg/m<sup>3</sup> (SV-8) to 180 µg/m<sup>3</sup> (SV-12).

Ethylbenzene was detected in vapor samples SV-1, SV-3 through SV-6, SV-9, and SV-12 at concentrations ranging from 5.6 µg/m<sup>3</sup> (SV-9) to 1,000 µg/m<sup>3</sup> (SV-1).

Xylenes were detected in all of the vapor samples except SV-11 at concentrations ranging from 17 µg/m<sup>3</sup> (SV-7) to 3,382 µg/m<sup>3</sup> (SV-1).

MTBE was detected in vapor samples SV-1, SV-3, SV-4, SV-9, SV-10, and SV-12 at concentrations ranging from 7.0 µg/m<sup>3</sup> (SV-3) to 1,200 µg/m<sup>3</sup> (SV-9).

The tracer compound, 1, 1-difluoroethane, was not detected in any of the samples. Soil vapor analytical data is in Table 4 and summarized on Figure 4.

## **5.0 EXTENT OF HYDROCARBONS**

### **5.1 SOIL**

Analytical data indicate that soil from depths of approximately 20 to 45 feet in the vicinity of borings WGR-3, WGR-10, MW-1, MW-2, MW-3, MW-5, and MW-6 have been impacted by benzene and/or MTBE at concentrations in excess of 1,000 µg/kg. Based on the depth and laterally extensive distribution of hydrocarbons, the bulk of impacts are located in the capillary fringe and saturated zone.

Figures 5 and 6 are benzene isoconcentration maps at depths of 20 and 30 feet. The data show that the lateral extent of benzene-impacted soil is not defined to the west of MW-1 and to the north of MW-2.

Figures 7 and 8 are MTBE isoconcentration maps at depths of 20 and 30 feet. The data show that the lateral extent of MTBE-impacted soil is not defined to the west of MW-1 and to the south of MW-3.

### **5.2 GROUNDWATER**

Figures 9 to 12 are TPPH, benzene, MTBE and TBA isoconcentration maps for the March 5, 2009, groundwater monitoring episode. The data show that the extent of impacted groundwater is not defined for any of the previously mentioned constituents.

## **6.0 EVALUATION OF REMEDIAL OPTIONS**

### **6.1 NO ACTION**

At this time, a “no action” option is not feasible because petroleum hydrocarbons have affected groundwater quality beneath the site. A “no action” approach will not meet agency objectives.

### **6.2 EXCAVATION**

Excavation of hydrocarbon-impacted soil could effectively remove the source areas and reduce additional diffusion of hydrocarbons and oxygenates into groundwater beneath the site. However, excavation would not remediate the existing groundwater impacts or provide hydraulic containment of impacted groundwater.

Based on the data, the bulk of soil impacts at the site are from approximately 20 to 45 feet. Standard excavating methods would require shoring and dewatering of the excavation in order to remove all the impacted soil beneath the site. However, an alternative to using an excavator would be to drill out the impacted soil with a construction auger. An array of borings would be drilled to a depth of approximately 45 feet and backfilled with two-sack cement slurry to within approximately five feet from the surface. It is anticipated that excavation would be limited to areas where benzene and/or MTBE impacts exceed 1,000 µg/kg.

Although technically feasible, the depth and lateral extent of soil impacts beneath the site makes excavation logistically and economically impractical. As such, excavation is not considered an acceptable remedial option at this site.

### **6.3 SOIL VAPOR EXTRACTION**

Soil vapor extraction (SVE) is accomplished by applying a vacuum to wells, which results in vapor flow through the unsaturated soil zone and causes contaminants to volatilize from the soil matrix. Entrained vapors are treated above ground using a thermal or catalytic treatment unit or activated carbon. SVE is most effective at sites with relatively permeable unsaturated zone soil consisting of sand and gravel and having a thickness of at least 5 feet (USEPA, 1997).

The site is underlain by sandy gravel, fine-to medium-grained silty sand, gravel with silt, and medium-grained sand to a depth of 15 feet; and siltstone from approximately 15 to 50 feet. The bulk residual hydrocarbons are located in the siltstone. Results of laboratory analyses show that the underlying soils have low permeability with respect to air and high moisture content. Further, permit cost for a vapor extraction unit for this site would be very expensive (>\$100,000). Based on the data, vapor extraction is not considered to be feasible at this site.

## **6.4 GROUNDWATER PUMP AND TREAT**

Pumping of hydrocarbon-impacted groundwater with surface treatment is a common method of achieving hydraulic containment and limited source removal. Pumping of groundwater creates a cone of depression around the extraction well, which may result in SPH flow into the well under the induced hydraulic gradient (Baker, et al., 1995). However, a substantial fraction of the SPH may not flow into the pumping well under the influence of gravity, and will remain trapped in the submerged soil. This residual SPH, along with hydrocarbons adsorbed to soil particles, will continue to dissolve into the groundwater during the remediation process (Burt, et al., 1999).

Preferential channels for groundwater flow typically develop during pumping. Remediation time may be increased because of the time required for dissolved-phase hydrocarbons to diffuse through relatively stagnant groundwater to the flow channels (Boersma, et al., 1995). Pumping would likely be more effective for remediation of MTBE than for other petroleum hydrocarbons, such as benzene, because MTBE does not adsorb significantly to soil (USEPA, 1998).

Results of the aquifer tests and physical analyses show that the permeability of the underlying soil ranges from  $10^{-5}$  to  $10^{-7}$  cm/sec which is considered very low. Based on the data, it is anticipated that extraction rates would be much less than one gallon per minute and that the effective radius of influence would be very limited. This would require installation of additional wells to adequately remediate groundwater beneath the site. Further, pump and treat would not address residual hydrocarbon impacts in the soil. Currently, the extent of impacted groundwater is not defined and as such, the number of wells necessary for remediation is unknown. Based on the data, groundwater pump and treat may be feasible for remediation of MTBE-/TBA-impacted groundwater. However, additional assessment would have to be performed in order to better define the extent of impacted groundwater and to determine a pump rate and radius of influence for the extraction well(s).

## **6.5 DUAL-PHASE EXTRACTION**

Dual-phase extraction (DPE) involves simultaneous extraction of liquids and vapor from the soil using various pumping schemes. The generic technology is also referred to as multi-phase extraction (MPE) (USEPA, 1999). In the conventional application of DPE, liquids and soil vapor are extracted by separate pumps and sometimes from different wells. Surface treatment is simplified because liquid and vapor streams are separate throughout the process. Well vacuums in this application may range from low to relatively high levels (USEPA, 1996).

DPE systems remove hydrocarbons from saturated soils by three mechanisms: 1) vapor flow induced by the applied vacuum; 2) extraction of groundwater containing dissolved-phase hydrocarbons; and, in some cases, 3) extraction of SPH. Subsurface oxygen levels are typically increased by DPE operations. This may result in additional source reduction of compounds amenable to biodegradation.

When examined at the scale of individual soil pores, DPE is potentially more effective than conventional pump and treat for removal of residual SPH in the source area. SPH that does not flow under normal conditions reside in the soil under negative (subatmospheric) pore pressure (Keet,



1995). Within the region of vacuum influence of a DPE well, the pore pressure exerted on SPH globules may change from negative to positive. In this instance, capillary forces preventing SPH from draining into the well can be overcome. The application of vacuum increases the liquid-phase pressure drop between the formation and the well, increasing the hydraulic gradient and thus the driving force for flow of SPH toward the well (Baker, 1995; and Baker, et al., 1995).

Multi-phase flow of NAPL, vapor, and groundwater is an extremely complex phenomenon. The relative permeability of each phase is governed by fluid density; viscosity; interfacial tension between the air, water, and NAPL interfaces; and the wettability of each liquid phase onto soil grains (Burt, et al., 1999).

While soil vapor extraction and groundwater pump and treat do not appear to be effective solutions independent of each other, dual-phase extraction may be feasible at the site. However, prior to system design, pilot testing would have to be performed to determine whether dual-phase extraction is ultimately feasible.

## **6.6 AIR SPARGING/BIOSPARGING**

Air sparging/biosparging involves injection of air under pressure below the water table. The objective of air sparging is to transfer hydrocarbons from the dissolved phase to the vapor phase. The objective of biosparging is to increase dissolved oxygen levels in groundwater to enhance the biological degradation of hydrocarbons. Soil vapor extraction (SVE) is frequently used to remove vapors stripped from the groundwater by sparging.

Optimum air sparging performance is usually obtained with medium- to coarse-grained sands with minimal horizontal stratification. The minimum acceptable flow rate per well is approximately 5 standard cubic feet per minute (SCFM); maximum acceptable pressure is about 0.75 pound per square inch (psi) per foot of overburden soil (ESTCP, 1999). Biosparging involves the injection of air at low flow rates in order to minimize volatilization and encourage bioremediation of hydrocarbons. In the majority of documented air sparging cases, injection well screens have been placed between 5 and 15 feet below the water table (Leeson, et al., 1999).

As mentioned previously, the permeability of the underlying soil is very low. Accordingly, air sparging/biosparging does not appear to be feasible at the site.

## **7.0 EVALUATION OF POTENTIAL RISK**

Chemicals are introduced to the body typically through inhalation, ingestion (direct or indirect) and/or dermal contact. At this site, inhalation of vapors emanating from residual hydrocarbons in the soil would appear to be the most likely pathway. Ingestion and dermal contact are not considered likely due to the depth of impacted soil and groundwater (>20 feet). Since the site is currently being evaluated for redevelopment into a park, impacted soil identified during the previous assessment would not be encountered during redevelopment due to the depth of impacts.

Although inhalation is the most likely exposure pathway, it is not considered to pose a potential health risk due to the planned site development as a park with landscape areas, benches, but no buildings. Under these circumstances, vapors generated by residual hydrocarbons in the soil which might reach the surface would have no place to accumulate and would dissipate rapidly into the atmosphere.

These conclusions are predicated on the understanding that the site will be developed as a park. If redevelopment plans change, potential risk would have to be reevaluated based on the site conditions and the planned development.

Since surrounding properties include single family residences, the risk posed by vapor intrusion was evaluated using the Johnson and Ettinger vapor intrusion model. Potential health risk posed by the presence of BTEX and MTBE were evaluated. The model results for the carcinogenic and non-carcinogenic risks are in Table 7.0. Copies of the soil vapor screening model input and output are in Appendix H.

**Table 7.0 – Vapor Intrusion Model Results**

<b>Constituent</b>	<b>Highest Concentration (in µg/m<sup>3</sup>)</b>	<b>Carcinogenic Risk</b>	<b>Non-carcinogenic Risk/ Hazard Quotient</b>
Benzene	170	1.5 E-07	4.0 E-04
Toluene	240	-	5.6 E-05
Ethylbenzene	1,000	6.5 E-08	6.0 E-05
p-Xylene	3,300	-	2.0 E-03
MTBE	1,200	1.2 E-08	3.5 E-05

Calculated values for incremental cancer risk for benzene, ethylbenzene, and MTBE in soil vapor are less than of  $1.0 \times 10^{-6}$ . Calculated values for the hazard quotient for non-carcinogenic compounds, toluene and xylenes, were less than 1.0. Based on the results of the risk analyses, residual BTEX and MTBE concentrations in soil vapor beneath the site do not pose a health risk.

## **8.0 DISCUSSION**

Based on the data, the lateral extent of petroleum hydrocarbon- and oxygenate-impacted soil and groundwater beneath the site have not been defined. Additional assessment is necessary to delineate the lateral extent of impacted groundwater to the north, south, and east. Further delineation west of the site is not possible since North Gaffey Street is located in Caltrans right-of-way for the 110 Freeway. Previous requests to install monitoring wells in North Gaffey Street have been denied.

Evaluation of remedial options indicates that dual-phase extraction is the most feasible remedial alternative for this site. However, aquifer test and results of the physical analyses indicate that the underlying soil have very low permeabilities to both air and water. Although dual-phase extraction may be the most feasible alternative, there can be no assurance based on site conditions, that dual-phase extraction will actually be an effective remedial method for this site. Accordingly, a dual-

phase extraction pilot test should be performed to determine if dual-phase extraction would be effective at this site.

## **9.0 PROPOSED SCOPE OF WORK**

### **9.1 ADDITIONAL SITE ASSESSMENT**

#### **9.1.1 Pre-Field Activities**

Underground Services Alert (USA) will be notified of pending drilling activities at the site at least one week prior to commencement of work. In addition, a private utility locator will be used to check the boring locations for conflicts with substructures. Prior to drilling, each borehole location will be air knifed to a depth of approximately 7 feet and to a width three inches greater than the width of the proposed borehole.

#### **9.1.2 Well Installation**

Five groundwater monitoring wells will be installed to a depth of approximately 55 feet at the locations shown on Figure 13. Well(s) will be relocated if subsurface utilities or overhead obstructions prevent installation at the proposed locations. All drilling, soil sampling, and well installation activities will be performed under a site-specific WPI Site Safety and Health Plan and the supervision of a California Professional Geologist.

Soil samples will be collected during drilling at five-foot intervals to the total depth drilled. Samples will be collected using a modified California split-spoon sampler lined with brass tubes 6 inches long by 2 inches in diameter. The sampler will be lowered through the augers to the target depth and driven 18 inches into the soil by the repeated drop of a 140-pound hammer from a height of approximately 30 inches.

Upon retrieval, samples will be collected from one of the tubes using the EPA 5035 protocol. The ends of the remaining sample tube will be used as backup and sealed with Teflon® sheets and covered with plastic end caps. Samples will be labeled, recorded on the chain of custody document, and placed in cold storage for delivery to the analytical laboratory where they will be analyzed.

Soil in the remaining tubes will be examined in the field for observable signs of petroleum hydrocarbon impacts and for soil classification. Soil will be classified in general accordance with the Unified Soil Classified System. The soil classification and description, including blow counts, grain size, subordinate constituents, color, density, and moisture content will be recorded on a boring log maintained for each location.

Organic vapor monitoring will be performed in the field using a portable photoionization detector (PID) calibrated to hexane. A portion of the soil collected from the sample tubes will be placed in a brass sample tube until approximately half full. The container will then be capped and allowed to sit undisturbed for approximately 10 minutes. The PID probe will then be inserted through the cap and

the organic vapor content of the headspace will be measured. This reading will be recorded on the boring log.

Soil generated from the borings will be placed in DOT approved 55-gallon drums. Each drum will be labeled with the boring location and depth interval. Results from the soil analyses will be used to select an appropriate offsite disposal facility.

Groundwater monitoring wells will be constructed of clean, two-inch-diameter, Schedule 40, threaded PVC. Screened casing with factory-milled 0.02-inch slots will be installed in the center of the borehole between approximately 55 feet to 25 feet. Blank casing will be installed from the top of the screened sections to ground surface. A threaded cap will be placed at the bottom of the well screens prior to installation.

After each casing is installed, a filter pack of No. 2/12 Monterey sand will be placed in the well annulus from 55 to approximately 23 feet. An annular seal of bentonite chips with a minimum thickness of two feet will be installed above the filter pack. The bentonite chips will be hydrated with tap water. The remainder of the annular space will be backfilled to within one foot of the surface with neat cement.

A traffic-rated, Emco-Wheaton well box with a removable lid will be placed within a concrete encasement to protect the top of the well casing. The lid will be secured to the well box. An expandable Morrison test well plug with a Master lock will be used to secure the top of the well casing.

### **9.1.3 Well Development and Survey**

At least 72 hours after well completion, the wells will be developed by surging and bailing. A surge block will be used to draw fine-grained materials into the well. After a period of surging, water and suspended fines will be removed using a bailer or pump. This process will be repeated until a baseline level of turbidity is established. Groundwater depths before and after well development, well depths, well development times and dates, volumes of water removed, and turbidity levels will be recorded on a well development log.

A California Licensed Surveyor will survey and record the horizontal coordinates and elevations of the top of the monitoring well casing at the survey mark and ground surface. Survey data will be relative to mean sea level (NAVD 1988). The wells will then be incorporated into the quarterly groundwater monitoring program at the site.

### **9.1.4 Groundwater Monitoring**

All the wells will be gauged and sampled by Blaine Tech Services Inc.

### **9.1.5 Decontamination Procedures**

Any sampling equipment that comes into direct contact with soil or groundwater will be rinsed and cleaned between each sample collection using a solution of tap water and non-phosphate soap, followed by a triple rinse in de-ionized water. This process may be repeated as necessary. Sets of clean augers may also be used at the site in place of decontamination procedures.

### **9.1.6 Laboratory Analyses**

Soil and groundwater samples will be delivered under chain-of-custody procedures to a state-certified laboratory and analyzed for TPPH, BTEX, and oxygenates using EPA Method 8260B.

## **9.2 DUAL-PHASE EXTRACTION PILOT TEST**

### **9.2.1 Installation of Observation Points**

Six observation points will be installed to a depth of approximately 50 feet at the locations shown on Figure 13. Soil samples will be collected at five foot intervals to the total depth drilled for lithologic purposed only. Soil samples will be collected according to the previously described method.

Observation points will be constructed of clean, one inch-diameter, Schedule 40, threaded PVC. Screened casing with factory-milled 0.02-inch slots will be installed in the center of the borehole between approximately 50 feet to 25 feet. Blank casing will be installed from the top of the screened sections to ground surface. A threaded cap will be placed at the bottom of the well screens prior to installation.

After each casing is installed, a filter pack of No. 2/12 Monterey sand will be placed in the well annulus. The filter pack will extend from the 50 to approximately 23 feet. An annular seal of bentonite chips will be installed from approximately 23 to 21 feet. The bentonite chips will be hydrated with tap water. The remainder of the annular space will be backfilled to within one foot of the surface with neat cement.

A traffic-rated, Emco-Wheaton well box with a removable lid will be placed within a concrete encasement to protect the top of the well casing. The lid will be secured to the well box. An expandable Morrison test well plug with a Master lock will be used to secure the top of the well casing.

### **9.2.2 Pilot Test**

A ten-hour dual-phase extraction pilot test will be performed using a mobile dual-phase extraction system. The dual-phase extraction apparatus will consist of a liquid-ring vacuum pump capable of generating a vacuum of up to 29 inches of mercury, a vapor/liquid separator tank, a thermal oxidizer vapor treatment apparatus capable of flow rates of up to 350 standard cubic feet per minute (scfm), and appropriate instrumentation. Well MW-2 will be used as the extraction well during the test. The six proposed observation points and wells MW-1 and MW-3 will be used as observation wells. System vacuum rates will be adjusted during the test to determine the vacuum needed to maximize vapor and groundwater flow rates.

The dual-phase extraction system will be connected to the extraction well via a surface manifold. Liquids and vapor will be removed under vacuum using a 1.5-inch-diameter drop tube suspended in the wells. The top of the wells will be sealed around the drop tube to maintain a vacuum in the well. The groundwater will be separated from the vapor above grade and the vapors will be oxidized by the vapor treatment unit. The vapor treatment unit will be fired by propane and will have a various locations South Coast Air Quality Management District (SCAQMD) permit. The extracted liquid

will be discharged into a Baker tank for storage until it can be transported to an appropriate facility for disposal.

The following measurements will be collected during the pilot test:

- Pump inlet vacuum and vacuum at the extraction and observation wellheads;
- System flow rate;
- Vapor treatment system parameters (per SCAQMD permit);
- System influent/effluent and wellhead hydrocarbon vapor concentrations using a portable organic vapor analyzer (OVA);
- Depth to groundwater and SPH thickness, if any, in observation wells; and,
- Volume of groundwater extracted.

Vapor samples will be collected from the system influent at the start of the test, in the middle of the test, and prior to system shutdown. Groundwater samples will be collected from wells MW-1, MW-2, and MW-3 immediately prior to the start and at the end of the test. Vapor and groundwater samples will be submitted to a state-certified laboratory and analyzed for TPH-G, BTEX, and oxygenated compounds using the appropriate EPA Methods.

### **9.3 SCHEDULING AND REPORTING**

The proposed assessment activities will be initiated upon receipt of appropriate permits. A report summarizing the procedures and results of the assessment activities will be submitted to the CRWQCB-LA within 75 days following completion of all field activities.

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# **TABLES**

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**TABLE 1**  
**BORING/WELL DATA**  
Former Shell Service Station  
406 North Gaffey Street, San Pedro

Name	Type	Date Installed	Surface Elevation (feet)	Total Depth (feet)	Sample Increment or Depth(s) (feet)		First Groundwater (feet)		Screen Diameter (inches)	Screen Depth (feet)		Comments
							Depth	Elevation		Top	Bottom	
WGR-1	Boring	1/12/00	-	15	5	5-15	-	-	-	-	-	---
WGR-2	Boring	1/12/00	-	35	5	5-35	35	-	-	-	-	---
WGR-3	Boring	1/12/00	-	40	5	5-40	35	-	-	-	-	---
WGR-4	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-5	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-6	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-7	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-8	Hand Auger	1/12/00	-	3	-	-	-	-	-	-	-	Refusal met at 3 feet
WGR-9	Hand Auger	1/12/00	-	4	-	-	-	-	-	-	-	Refusal met at 4 feet
MW-1	GW Well	6/12/06	130.31	55.5	5	10-55	37.72	92.59	4	25	55	---
MW-2	GW Well	6/12/06	129.64	55.5	5	10-55	36.77	92.87	4	25	55	---
MW-3	GW Well	6/12/06	128.99	55.5	5	10-55	35.61	93.35	4	25	55	---
MW-4	GW Well	6/13/06	127.88	55.5	5	10-55	36.17	91.71	4	25	55	---
WGR-10	Boring	6/13/06	-	55	5	10-55	35	-	-	-	-	---
MW-5	GW Well	9/10/08	128.55	55.5	5	10-55	36.82	91.73	4	25	55	---
MW-6	GW Well	9/11/08	130.83	55.5	5	10-55	37.56	93.27	4	25	55	---
MW-7	GW Well	9/10/08	126.22	55.5	5	10-55	32.70	93.52	4	25	55	---
B-1	Boring	1/28/09	-	50	5	10-55	30	-	-	-	-	---

\*Elevations in feet relative to mean sea level.

\*\*Groundwater depth/elevation data from October 2, 2008, sampling.

TABLE 2  
SOIL ANALYTICAL DATA  
FORMER SHELL SERVICE STATION  
406 North Gaffey Street, San Pedro

Boring/Well ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>T-1</b>	6/16/2000												
20	360	-	ND<130	ND<130	ND<130	ND<250	13000	-	-	-	-	-	
<b>T-2</b>	6/16/2000												
20	4.9	-	ND<5	ND<5	ND<5	ND<10	6300	-	-	-	-	-	
<b>T-3</b>	6/16/2000												
17	5.5	-	ND<5	ND<5	ND<5	ND<10	7500	-	-	-	-	-	
<b>T-4</b>	6/16/2000												
17	3.3	-	ND<5	ND<5	ND<5	ND<10	8600	-	-	-	-	-	
<b>T-5</b>	6/16/2000												
17	3.9	-	ND<5	ND<5	ND<5	ND<10	4000	-	-	-	-	-	
<b>T-6</b>	6/16/2000												
18	1.9	-	ND<5	ND<5	ND<5	ND<10	7500	-	-	-	-	-	
<b>D-1</b>	6/16/2000												
4	4.0	-	ND<5	ND<5	ND<5	ND<10	7.5	-	-	-	-	-	
<b>D-2</b>	6/16/2000												
4	14	-	ND<5	ND<5	76	180	6.3	-	-	-	-	-	
<b>D-3</b>	6/16/2000												
4	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
<b>D-4</b>	6/16/2000												
4	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
<b>WO-1</b>	6/16/2000												
11	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
<b>VL-1</b>	6/20/2000												
5	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
<b>VL-2</b>	6/20/2000												
5	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	97	-	-	-	-	-	
<b>WGR-2</b>	1/12/2000												
6	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
10	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
15	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
28	0.73	-	ND<5	ND<5	ND<5	ND<10	120	ND<25	ND<10	ND<10	ND<10	-	
35	49	-	1300	3000	660	4100	-	-	-	-	-	-	
40	20	-	2500	3900	370	2300	-	-	-	-	-	-	

TABLE 2  
SOIL ANALYTICAL DATA  
FORMER SHELL SERVICE STATION  
406 North Gaffey Street, San Pedro

Boring/Well ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl-benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>WGR-3</b>	1/12/2000												
6	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
10	0.53	-	ND<5	ND<5	ND<5	ND<10	340	ND<500	ND<20	ND<20	ND<20	-	
15	1.6	-	ND<5	ND<5	ND<5	ND<10	1500	ND<6300	ND<25	ND<25	ND<25	-	
20	0.89	-	47	35	8.3	50	250	850	ND<10	ND<10	ND<10	-	
25	3.0	-	110	110	28	190	48	3700	ND<10	ND<10	ND<10	-	
30	7.6	-	490	710	140	860	-	-	-	-	-	-	
35	15	-	1100	2300	410	2600	-	-	-	-	-	-	
<b>WGR-4</b>	1/12/2000												
6	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
10	48	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
15	1.8	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
20	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
25	2.7	-	140	210	56	270	-	-	-	-	-	-	
<b>WGR-5</b>	1/12/2000												
6	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
10	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
15	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
20	2.0	-	120	130	49	250	72	770	37	ND<10	ND<10	-	
25	0.65	-	81	75	14	65	-	-	-	-	-	-	
<b>WGR-6</b>	1/12/2000												
6	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	32	ND<250	ND<10	ND<10	ND<10	-	
10	0.91	-	ND<5	ND<5	ND<5	ND<10	730	ND<500	ND<20	ND<20	ND<20	-	
15	0.83	-	ND<5	ND<5	ND<5	ND<10	830	750	ND<20	ND<20	ND<20	-	
20	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	410	250	ND<10	ND<10	ND<10	-	
25	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	38	ND<250	22	ND<10	ND<10	-	
<b>WGR-7</b>	1/12/2000												
6	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
10	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
15	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	-	-	-	-	-	-	
20	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	33	ND<250	25	ND<10	ND<10	-	
25	ND<0.50	-	ND<5	ND<5	ND<5	ND<10	39	ND<250	57	ND<100	ND<100	-	

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Well ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl-benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>WGR-10</b>	6/13/2006												
10	ND<0.25	-	ND<0.98	ND<0.98	ND<0.98	ND<2.98	ND<2.0	ND<20	ND<0.98	ND<0.98	ND<0.98	ND<490	cl
15	ND<0.29	-	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	2.3	ND<1.1	ND<1.1	ND<560	cl
20	ND<0.29	-	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	3.1	ND<1.1	ND<1.1	ND<550	cl
25	ND<0.30	-	ND<1.2	ND<1.2	ND<1.2	ND<3.7	3.8	190	28	ND<1.2	ND<1.2	ND<620	cl
30	0.98	-	14	ND<1.0	16	6.4	5.7	46	99	ND<1.0	ND<1.0	ND<510	cl
35	46	-	51	ND<1.0	41	3.4	58	110	150	ND<1.0	ND<1.0	ND<520	cl
40	3.1	-	1100	34	110	482	ND<2.2	220	9.0	ND<1.1	ND<1.1	ND<550	cl
45	2.4	-	1200	110	160	788	ND<2.1	220	9.6	ND<1.0	ND<1.0	ND<520	cl
50	2.1	-	5800	1.7	93	120	ND<2.4	110	ND<1.2	ND<1.2	ND<1.2	ND<600	cl
55	ND<0.28	-	ND<1.2	ND<1.2	ND<1.2	ND<3.5	ND<2.3	ND<23	ND<1.2	ND<1.2	ND<1.2	ND<580	cl
<b>MW-1</b>	6/12/2006												
10	ND<0.26	-	ND<1.1	ND<1.1	ND<1.1	ND<3.4	20	ND<23	ND<1.1	ND<1.1	ND<1.1	ND<570	cl
15	ND<0.30	-	ND<1.1	ND<1.1	ND<1.1	ND<3.3	150	190	5.6	ND<1.1	ND<1.1	ND<560	cl
20	3.4	-	120	190	51	350	1500	7300	38	ND<1.1	ND<1.1	ND<570	cl
25	5.3	-	500	710	160	770	210	12000	63	ND<1.3	ND<1.3	ND<660	cl
30	46	-	4000	9700	1200	7200	ND<2.3	10000	39	ND<1.1	ND<1.1	ND<570	cl
35	110	-	4000	14000	2700	16700	ND<2.3	10000	31	ND<1.2	ND<1.2	ND<590	cl
40	28	-	2100	1900	1100	5000	76	140	2.3	ND<1.3	ND<1.3	ND<630	cl
45	23	-	4400	3.5	2400	290	ND<2.4	28	ND<1.2	ND<1.2	ND<1.2	ND<600	cl
50	ND<0.30	-	2.9	ND<1.3	ND<1.3	ND<3.9	ND<2.6	ND<26	ND<1.3	ND<1.3	ND<1.3	ND<650	cl
55	ND<0.29	-	43	15	6.3	20.5	ND<2.4	ND<24	ND<1.2	ND<1.2	ND<1.2	ND<600	cl
<b>MW-2</b>	6/12/2006												
10	ND<0.22	-	ND<0.84	ND<0.84	ND<0.84	ND<2.54	ND<1.7	ND<17	ND<0.84	ND<0.84	ND<0.84	ND<420	gc
15	0.39	-	ND<1.2	ND<1.2	ND<1.2	ND<3.6	180	87	ND<1.2	ND<1.2	ND<1.2	ND<600	cl
20	1100	-	160	ND<110	78000	ND<330	6500	5300	ND<110	ND<110	ND<110	ND<55000	cl
25	38	-	ND<90	ND<90	150	ND<270	3200	ND<1800	ND<90	ND<90	ND<90	ND<45000	cl
30	170	-	ND<110	ND<110	2200	ND<320	4200	6000	ND<110	ND<110	ND<110	ND<53000	cl
35	550	-	ND<110	ND<110	7100	ND<330	3700	ND<2200	ND<110	ND<110	ND<110	ND<56000	cl
40	20	-	3700	5800	490	2700	ND<220	ND<2200	ND<110	ND<110	ND<110	ND<55000	cl
45	14	-	3800	1100	440	2450	ND<2.1	280	4.0	ND<1.0	ND<1.0	ND<520	cl
50	0.56	-	500	3.5	20	114	ND<2.3	96	ND<1.2	ND<1.2	ND<1.2	ND<580	cl
55	0.31	-	740	120	28	77	34	69	1.4	ND<1.1	ND<1.1	ND<570	cl

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Well ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>MW-3</b> 6/12/2006													
10	ND<0.29	-	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	ND<1.1	ND<1.1	ND<1.1	ND<560	cl
15	ND<0.31	-	ND<1.6	ND<1.6	ND<1.6	ND<4.7	ND<3.1	ND<31	ND<1.6	ND<1.6	ND<1.6	ND<780	cl
20	1.5	-	ND<1.1	ND<1.1	ND<1.1	ND<3.2	3700	200	ND<1.1	ND<1.1	2.4	ND<530	cl
25	3.6	-	ND<1.1	ND<1.1	ND<1.1	ND<3.2	9400	510	2.3	ND<1.1	6.2	ND<530	cl
30	200	-	2.3	ND<1.2	1.7	ND<3.6	5200	580	7.7	ND<1.2	5.6	ND<590	cl
35	210	-	1200	9100	5800	37000	2000	6100	ND<230	ND<230	ND<230	ND<110000	cl
40	35	-	6300	9100	950	5300	ND<450	ND<4500	ND<230	ND<230	ND<230	ND<110000	cl
45	14	-	3200	3300	150	1790	ND<2.2	79	ND<1.1	ND<1.1	ND<1.1	ND<560	cl
50	ND<0.29	-	2.4	4.2	ND<1.2	ND<3.5	ND<2.3	ND<23	ND<1.2	ND<1.2	ND<1.2	ND<580	cl
55	ND<0.30	-	2.4	2.3	ND<1.1	ND<3.4	ND<2.3	ND<23	ND<1.1	ND<1.1	ND<1.1	ND<570	cl
<b>MW-4</b> 6/13/2006													
10	ND<0.23	-	ND<1.1	ND<1.1	ND<1.1	ND<3.2	2.6	ND<21	ND<1.1	ND<1.1	ND<1.1	ND<530	cl
15	ND<0.26	-	ND<1.1	ND<1.1	ND<1.1	ND<3.2	2.5	ND<21	ND<1.1	ND<1.1	ND<1.1	ND<530	cl
20	ND<0.28	-	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<2.0	ND<20	1.5	ND<1.0	ND<1.0	ND<500	cl
25	ND<0.28	-	ND<1.1	ND<1.1	ND<1.1	ND<3.3	ND<2.2	ND<22	3.9	ND<1.1	ND<1.1	ND<560	cl
30	0.49	-	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<2.0	ND<20	50	ND<1.0	ND<1.0	ND<510	cl
35	400	-	320	ND<120	12000	ND<350	ND<230	ND<2300	ND<120	ND<120	ND<120	ND<58000	cl
40	ND<0.28	-	ND<1.1	ND<1.1	ND<1.1	ND<3.3	20	ND<22	3.5	ND<1.1	ND<1.1	ND<560	cl
45	0.45	-	120	ND<1.1	13	57	ND<2.1	25	5.6	ND<1.1	ND<1.1	ND<530	cl
50	ND<0.27	-	120	ND<1.2	11	27.8	ND<2.3	ND<23	ND<1.2	ND<1.2	ND<1.2	ND<590	cl
55	ND<0.29	-	ND<1.2	ND<1.2	ND<1.2	ND<3.6	ND<2.4	ND<24	ND<1.2	ND<1.2	ND<1.2	ND<610	cl
<b>MW-5</b> 9/10/2008													
5	-	ND<86	ND<0.86	ND<0.86	ND<0.86	ND<0.86	ND<0.86	ND<8.6	ND<1.7	ND<1.7	ND<1.7	-	cl
10	-	ND<130	ND<1.3	ND<1.3	ND<1.3	ND<1.3	ND<1.3	ND<13	ND<2.5	ND<2.5	ND<2.5	-	sst
15	-	ND<110	ND<1.1	ND<1.1	ND<1.1	ND<1.1	ND<1.1	ND<11	ND<2.1	ND<2.1	ND<2.1	-	cl
20	-	ND<95	ND<0.95	ND<0.95	ND<0.95	ND<0.95	ND<0.95	ND<9.5	ND<1.9	ND<1.9	ND<1.9	-	cl
25	-	100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	32	40	ND<2.0	ND<2.0	-	cl
30	-	2300	490	65	91	281	ND<1.1	71	71	ND<2.2	ND<2.2	-	cl
35	-	130000	2600	3700	1800	12700	ND<99	ND<990	210	ND<200	ND<200	-	cl
40	-	40000	5900	9200	850	5500	150	ND<1000	ND<200	ND<200	ND<200	-	cl
45	-	32000	3800	1100	1100	7100	140	ND<1100	ND<220	ND<220	ND<220	-	cl
50	-	140	11	ND<1.2	ND<1.2	ND<1.2	1.7	94	ND<2.3	ND<2.3	ND<2.3	-	cl
55	-	320	1.3	ND<1.3	ND<1.3	ND<1.3	ND<1.3	ND<13	ND<2.5	ND<2.5	ND<2.5	-	cl

TABLE 2  
SOIL ANALYTICAL DATA  
FORMER SHELL SERVICE STATION  
406 North Gaffey Street, San Pedro

Boring/Well ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>MW-6</b> 9/11/2008													
5	-	ND<99	ND<0.99	ND<0.99	ND<0.99	ND<0.99	ND<0.99	ND<9.9	ND<2.0	ND<2.0	ND<2.0	-	cl
10	-	ND<97	ND<0.97	ND<0.97	ND<0.97	ND<0.97	ND<0.97	ND<9.7	ND<1.9	ND<1.9	ND<1.9	-	sst
15	-	300	ND<1.0	ND<1.0	ND<1.0	ND<1.0	280	120	ND<2.0	ND<2.0	ND<2.0	-	sst
20	-	2000	ND<0.94	ND<0.94	ND<0.94	ND<0.94	2000	ND<990	ND<1.9	ND<1.9	ND<1.9	-	sst
25	-	2500	ND<1.0	ND<1.0	4.9	32.1	1600	750	4.6	ND<2.1	ND<2.1	-	sst
30	-	11000	170	510	81	1260	450	630	16	ND<2.2	ND<2.2	-	sst
35	-	29000	340	720	410	2930	ND<110	ND<1100	ND<220	ND<220	ND<220	-	cl
40	-	11000	710	58	600	2280	ND<1.1	58	3.0	ND<2.1	ND<2.1	-	cl
45	-	3700	160	ND<1.2	180	400	ND<1.2	12	ND<2.3	ND<2.3	ND<2.3	-	cl
50	-	2700	290	ND<1.1	150	239	ND<1.1	ND<11	ND<2.2	ND<2.2	ND<2.2	-	cl
55	-	120000	4300	ND<120	9200	27400	ND<120	ND<1200	ND<230	ND<230	ND<230	-	cl
<b>MW-7</b> 9/10/2008													
5	-	ND<90	ND<0.90	ND<0.90	ND<0.90	ND<0.90	ND<0.90	ND<9.0	ND<1.8	ND<1.8	ND<1.8	-	cl
10	-	ND<110	ND<1.1	ND<1.1	ND<1.1	ND<1.1	ND<1.1	ND<11	ND<2.1	ND<2.1	ND<2.1	-	sst
15	-	ND<91	ND<0.91	ND<0.91	ND<0.91	ND<0.91	ND<0.91	ND<91	ND<1.8	ND<1.8	ND<1.8	-	sst
20	-	ND<99	ND<0.99	ND<0.99	ND<0.99	ND<0.99	ND<0.99	ND<9.9	ND<2.0	ND<2.0	ND<2.0	-	sst
25	-	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<10	ND<2.1	ND<2.1	ND<2.1	-	sst
30	-	570	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<10	ND<2.0	ND<2.0	ND<2.0	-	cl
35	-	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	13	3.3	ND<2.0	ND<2.0	-	cl
40	-	ND<10000	1900	2.9	220	1020	ND<1.1	110	ND<2.2	ND<2.2	ND<2.2	-	cl
45	-	610	130	ND<0.95	24	34	ND<0.95	19	ND<1.9	ND<1.9	ND<1.9	-	cl
50	-	450	3.0	1.2	ND<1.1	1.6	ND<1.1	ND<11	ND<2.2	ND<2.2	ND<2.2	-	cl
55	-	610	6.6	ND<1.2	ND<1.2	1.2	ND<1.2	ND<12	ND<2.3	ND<2.3	ND<2.3	-	cl

Notes:

ND: Non-detect above specified limit

TPH-G: total petroleum hydrocarbons as gasoline

TPPH: total purgeable petroleum hydrocarbons

MTBE: methyl tertiary butyl ether

TBA: tertiary butyl alcohol

DIPE: di-isopropyl ether

ETBE: ethyl tertiary butyl ether

TAME: tertiary amyl methyl ether

ETOH: ethanol

**TABLE 3**  
**GROUNDWATER ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 N. Gaffey, San Pedro**

WELL	DATE	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	TPPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS	
MW-1	<b>Top of casing elevation (ft): 130.31</b>																	
	08/28/06	36.73	0.00	93.58		1900		1100	150	120	230	ND<10	ND<100	ND<10	ND<10	ND<10		
	<b>Top of casing elevation (ft): 130.31</b>																	
	11/22/06	37.35	0.00	92.96	54.60	3200		1600	160	320	620	ND<20	ND<500	ND<20	ND<20	ND<20	ND<20	
	02/22/07	37.82	0.00	92.49	54.69	2100		1700	100	310	430	10	70	3.6	ND<1.0	ND<1.0	ND<1.0	
	05/14/07	38.41	0.00	91.90	54.58	3600		2000	190	380	710	ND<20	ND<200	ND<20	ND<20	ND<20	ND<20	
	08/30/07	38.25	0.00	92.06	54.60	3500		2100	130	370	650	ND<20	ND<200	ND<20	ND<20	ND<20	ND<20	
	12/07/07	38.80	0.00	91.51	54.60	4100		1800	73	320	570	ND<20	ND<200	ND<20	ND<20	ND<20	ND<20	
	02/18/08	38.22	0.00	92.09	54.56	3100		1300	190	220	380	27	ND<250	ND<25	ND<25	ND<25	ND<25	
	05/07/08	36.97	0.00	93.34	54.64			5900	1600	160	270	540	ND<1.0	80	5.9	ND<2.0	ND<2.0	ND<2.0
	08/27/08	37.54	0.00	92.77	54.68			4700	1400	51	280	540	ND<20	ND<200	ND<40	ND<40	ND<40	ND<40
	10/02/08	37.72	0.00	92.59	54.75			3900	1200	23	210	360	3.3	60	ND<2.0	ND<2.0	ND<2.0	ND<2.0
	03/05/09	37.15	0.00	93.16	54.60			4300	1500	38	230	350	ND<10	ND<100	ND<20	ND<20	ND<20	ND<20
MW-2	<b>Top of casing elevation (ft): 129.64</b>																	
	08/28/06	35.61	0.00	94.03														Well Development
	11/22/06	36.54	0.00	93.10	54.75	15000		6700	1000	1100	2600	1300	ND<2500	58 J	ND<100	ND<100	ND<100	Unable to locate
	02/22/07																	Unable to locate
	05/14/07	37.38	0.00	92.26	54.65	14000		6100	1000	1400	1800	2000	1600	82	ND<20	ND<20	ND<20	Unable to locate
	08/30/07	37.10	0.00	92.54	54.60	3600		2000	120	340	580	ND<50	ND<500	ND<50	ND<50	ND<50	ND<50	Unable to locate
	12/07/07																	Unable to locate
	02/18/08																	Unable to locate
	05/07/08																	Unable to locate
	08/27/08																	Unable to locate
10/02/08	36.77	0.00	92.87	54.90	13000		2800	430	690	1360	1400	950	53	ND<40	ND<40	ND<40	ND<40	
03/05/09	36.36	0.00	93.28	54.57			12000	3100	330	540	1600	490	860	ND<40	ND<40	ND<40	ND<40	
MW-3	<b>Top of casing elevation (ft): 128.99</b>																	
	08/28/06	34.67	0.00	94.32		70000		11000	22000	3200	15000	87	ND<400	ND<40	ND<40	ND<40	ND<40	ND<40
	11/22/06	35.28	0.00		53.92	59000		14000	18000	3400	15000	ND<200	ND<5000	ND<200	ND<200	ND<200	ND<200	ND<200
	02/22/07																	Unable to locate
	05/14/07																	Unable to locate
	08/30/07																	Unable to locate
	12/07/07																	Unable to locate
	02/18/08																	Unable to locate
	05/07/08																	Unable to locate
08/27/08																	Unable to locate	
<b>Top of casing elevation (ft): 128.96</b>																		
10/02/08	35.61	0.00	93.35	54.04	84000		13000	17000	2400	11400	ND<50	ND<500	ND<100	ND<100	ND<100	ND<100	ND<100	
03/05/09	35.29	0.00	93.67	53.70			83000	11000	17000	2400	12000	ND<100	ND<1000	ND<200	ND<200	ND<200	ND<200	ND<200



**TABLE 3**  
**GROUNDWATER ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 N. Gaffey, San Pedro**

WELL	DATE	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	TPPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS	
MW-4		<b>Top of casing elevation (ft): 127.89</b>																
	08/28/06	34.70	0.00	93.19		1100		16	3.0	130	5.0	140	130	48	ND<1.0	ND<1.0		
		<b>Top of casing elevation (ft): 127.88</b>																
	11/22/06	35.42	0.00	92.46	54.27	790		ND<5.0	ND<5.0	56	ND<10	200	110 J	48	ND<10	ND<10		
	02/22/07	36.14	0.00	91.74	54.34	430		1.1	ND<0.50	14	ND<1.0	130	92	33	ND<1.0	ND<1.0		
	05/14/07	37.05	0.00	90.83	54.33	670		ND<0.50	ND<0.50	ND<0.50	ND<1.0	130	85	32	ND<1.0	ND<1.0		
	08/30/07	36.90	0.00	90.98	54.25	600		ND<0.50	ND<0.50	ND<0.50	ND<1.0	110	54	31	ND<1.0	ND<1.0		
	12/07/07	37.26	0.00	90.62	54.30	610		ND<0.50	ND<0.50	ND<0.50	ND<1.0	63	37	22	ND<1.0	ND<1.0		
	02/18/08	36.16	0.00	91.72	54.30	780		ND<0.50	ND<0.50	2.2	ND<1.0	74	44	22	ND<1.0	ND<1.0		
	05/07/08	34.67	0.00	93.21	54.30	950		ND<0.50	ND<1.0	1.9	ND<1.0	63	36	20	ND<2.0	ND<2.0		
	08/27/08	35.77	0.00	92.11	54.30		460	ND<0.50	ND<1.0	ND<1.0	ND<1.0	67	39	20	ND<2.0	ND<2.0		
10/02/08	36.17	0.00	91.71	54.46		450	ND<0.50	ND<1.0	ND<1.0	ND<1.0	53	41	17	ND<2.0	ND<2.0			
03/05/09	35.86	0.00	92.02	54.25		350	0.58	ND<1.0	ND<1.0	ND<1.0	68	46	25	ND<2.0	ND<2.0			
MW-5	09/17/08	36.30	0.00		54.15													
		<b>Top of casing elevation (ft): 128.55</b>																
	10/02/08	36.82	0.00	91.73	54.30		82000	13000	15000	1600	10600	460	1700	70	ND<20	ND<20		
03/05/09	36.31	0.00	92.24	54.12		40000	9900	6800	1100	4600	380	2200	ND<200	ND<200	ND<200			
MW-6	09/17/08	37.75	0.00		52.75													
		<b>Top of casing elevation (ft): 130.83</b>																
	10/02/08	37.56	0.00	93.27	52.78		6800	370	220	390	1720	22	31	2.3	ND<2.0	ND<2.0		
03/05/09	32.01	0.00	98.82	52.71		2700	420	2.1	140	250	3.3	19	ND<2.0	ND<2.0	ND<2.0			
MW-7	09/17/08	32.72	0.00		54.00													
		<b>Top of casing elevation (ft): 126.22</b>																
	10/02/08	32.70	0.00	93.52	54.46		4300	1500	5.4	180	320	ND<1.0	84	ND<2.0	ND<2.0	ND<2.0		
03/05/09	32.45	0.00	93.77	54.20		7400	1900	ND<10	390	510	ND<10	140	ND<20	ND<20	ND<20			

- Notes:**
1. ND - Not detected
  2. TBA - Tertiary-butyl alcohol
  3. DIPE - Diisopropyl ether
  4. ETBE - Ethyl tertiary-butyl ether
  5. TAME - Tertiary-amyl methyl ether
  6. J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).
  7. TPH-g results obtained via GC/MS.
  8. Survey results were obtained by Dulin and Boynton Surveyors in July 2006.

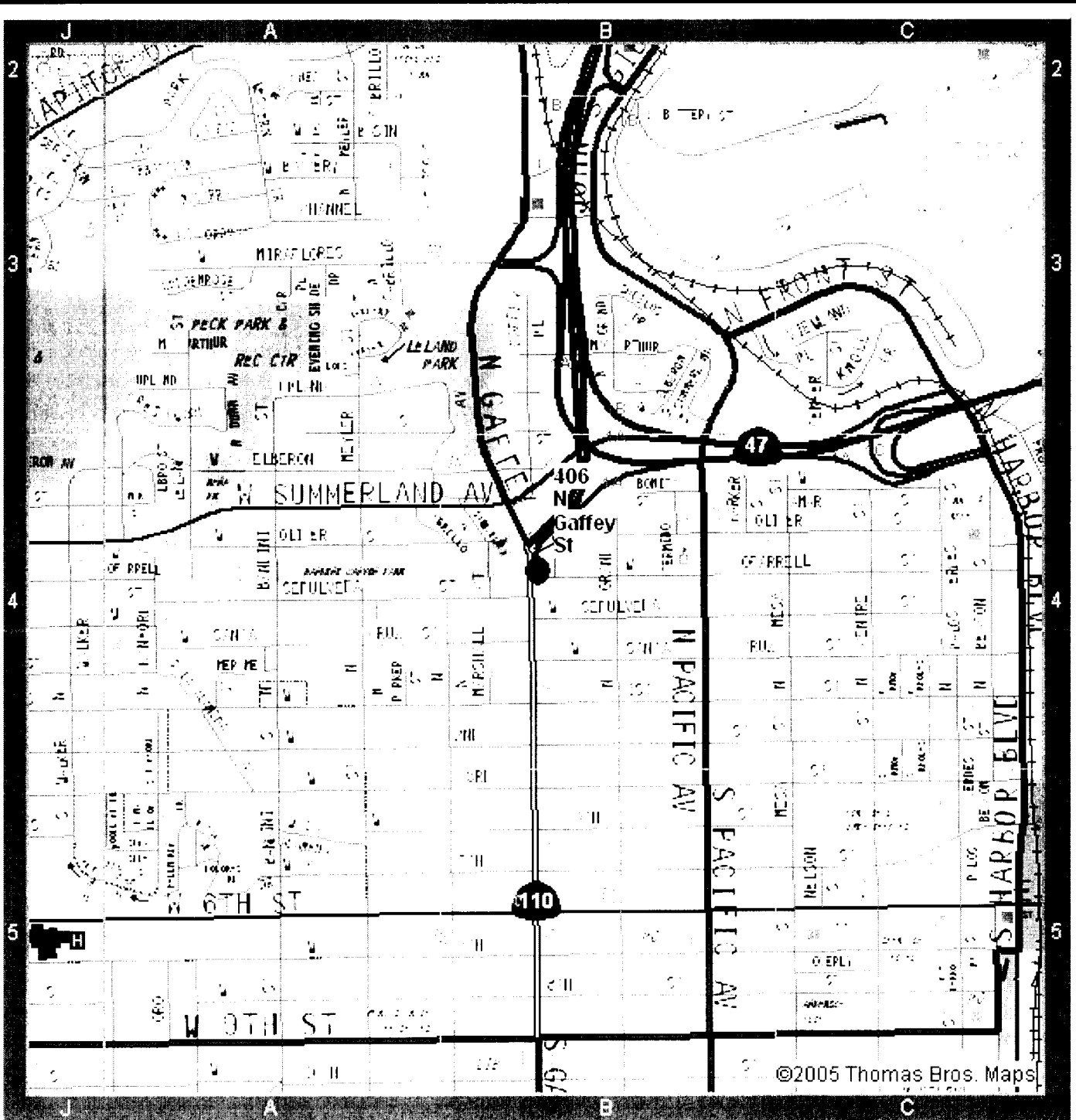
**TABLE 4**  
**SOIL VAPOR ANALYTICAL DATA**  
**Former Shell Service Station**  
**406 North Gaffey Street, San Pedro**

<b>Sample ID and Depth (feet)</b>	<b>Benzene (µg/m3)</b>	<b>Toluene (µg/m3)</b>	<b>Ethylbenzene (µg/m3)</b>	<b>Xylenes (µg/m3)</b>	<b>MTBE (µg/m3)</b>	<b>Comments</b>
SV-11 5	2/11/2009 ND<5.0	8	ND<5.0	ND<5.0	ND<5.0	One purge volume (5 cc)
5	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	Three purge volumes (15 cc)
5	ND<5.0	7.1	ND<5.0	ND<5.0	ND<5.0	Seven purge volumes (35 cc)
SV-1 5	2/20/2009 170	21	1,000	3,382	250	One purge volume (5 cc)
SV-2 5	2/20/2009 -	-	-	-	-	Water present in sample; location not used
SV-3 5	2/20/2009 23	26	110	437	7	One purge volume (5 cc)
SV-4 5	2/20/2009 ND<5.0	ND<5.0	13	52	11	One purge volume (5 cc)
SV-5 5	2/20/2009 ND<5.0	ND<5.0	6.6	31	ND<5.0	One purge volume (5 cc)
SV-6 5	2/20/2009 17	5.6	8.4	36	ND<5.0	One purge volume (5 cc)
SV-7 5	2/20/2009 ND<5.0	ND<5.0	ND<5.0	17	ND<5.0	One purge volume (5 cc)
SV-8 5	2/20/2009 ND<5.0	5.4	ND<5.0	18	ND<5.0	One purge volume (5 cc)
SV-9 5	2/20/2009 ND<5.0	6.4	5.6	22	1,200	One purge volume (5 cc)
SV-10 5	2/20/2009 ND<5.0	7.4	ND<5.0	19	44	One purge volume (5 cc)
SV-12 5	2/20/2009 30	180	30	58	680	One purge volume (5 cc)

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# FIGURES

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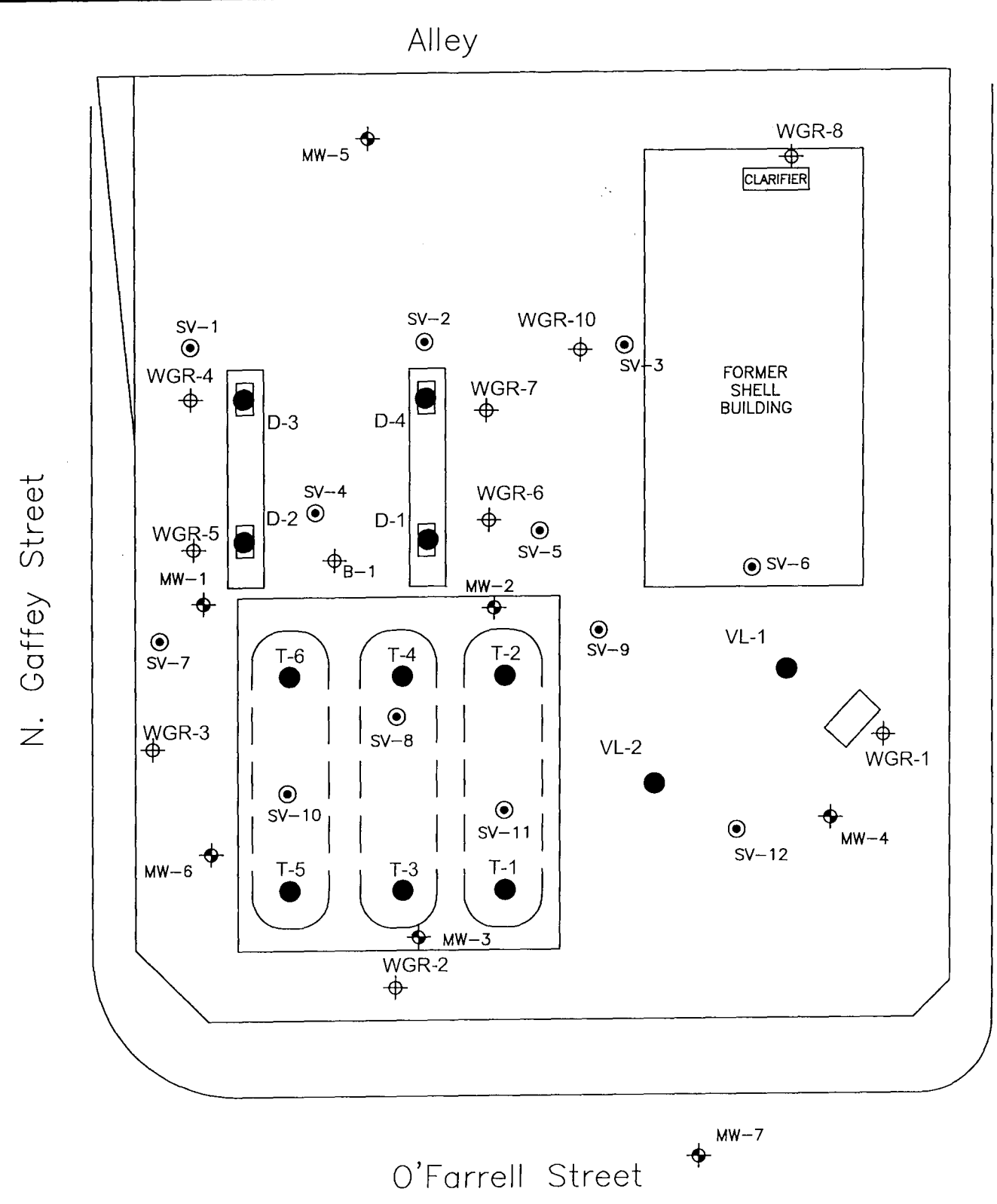
NOT TO SCALE



DATE	
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CAD FILE	06407LM

SITE LOCATION MAP  FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA
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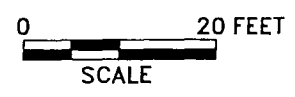
FIGURE NO.	<b>1</b>
PROJECT NO.	06.407



**LEGEND**

- GROUNDWATER MONITORING WELL
- SOIL BORING
- SOIL SAMPLE
- VAPOR POINT

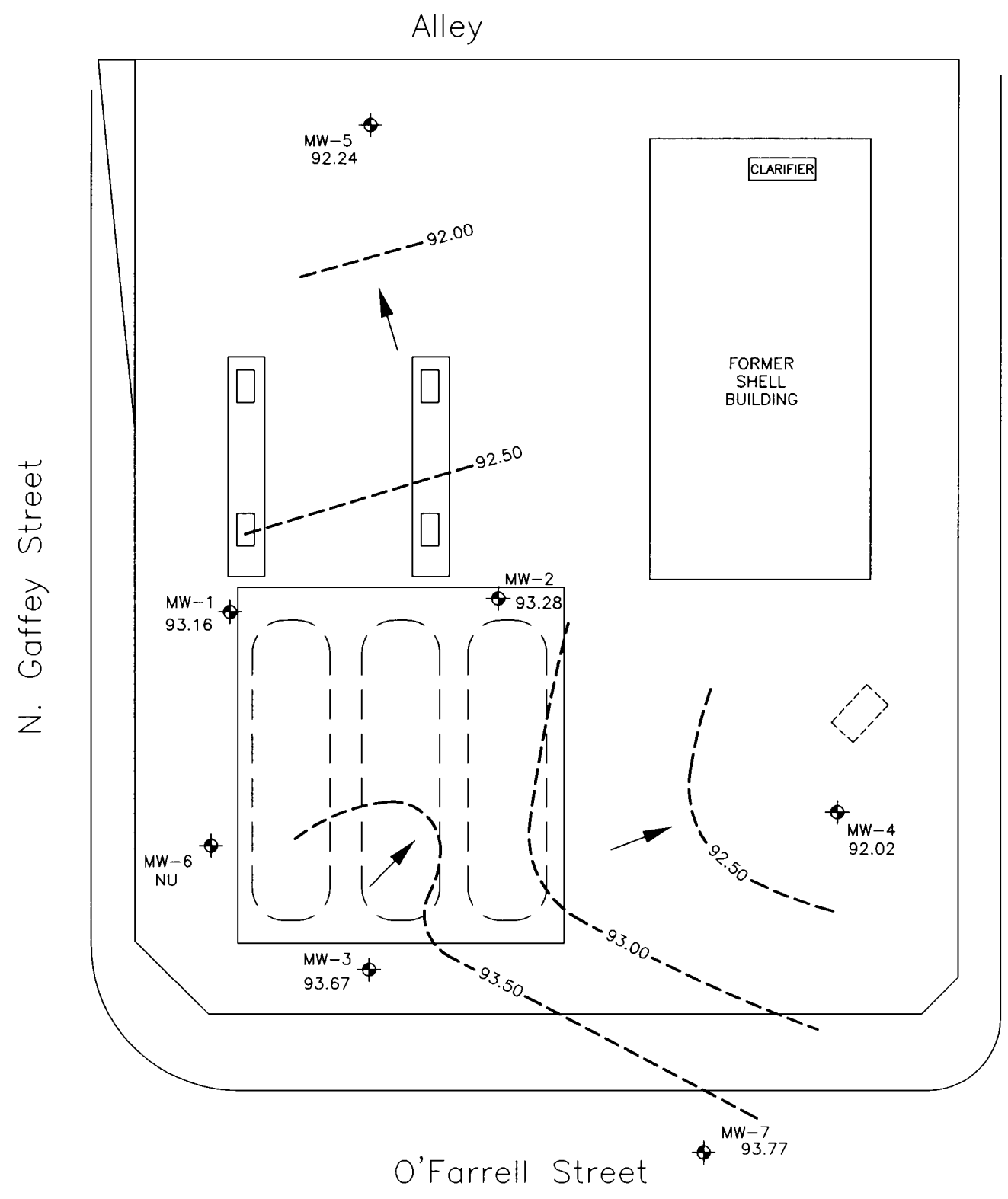
- FORMER UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND WASTE-OIL TANK
- FORMER DISPENSER ISLAND



DATE DRAWN  
DRAWN BY  
CAD FILE  
06407PP

PLOT PLAN  
FORMER SHELL SERVICE STATION  
406 N. GAFFEY ST.  
SAN PEDRO, CA

FIGURE NO.  
**2**  
PROJECT NO.  
06.407



**LEGEND**

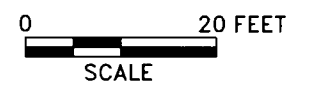
- GROUNDWATER MONITORING WELL SHOWING GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL
- GROUNDWATER ELEVATION CONTOUR
- DIRECTION OF GROUNDWATER FLOW

CONTOUR INTERVAL = 1.00 FOOT

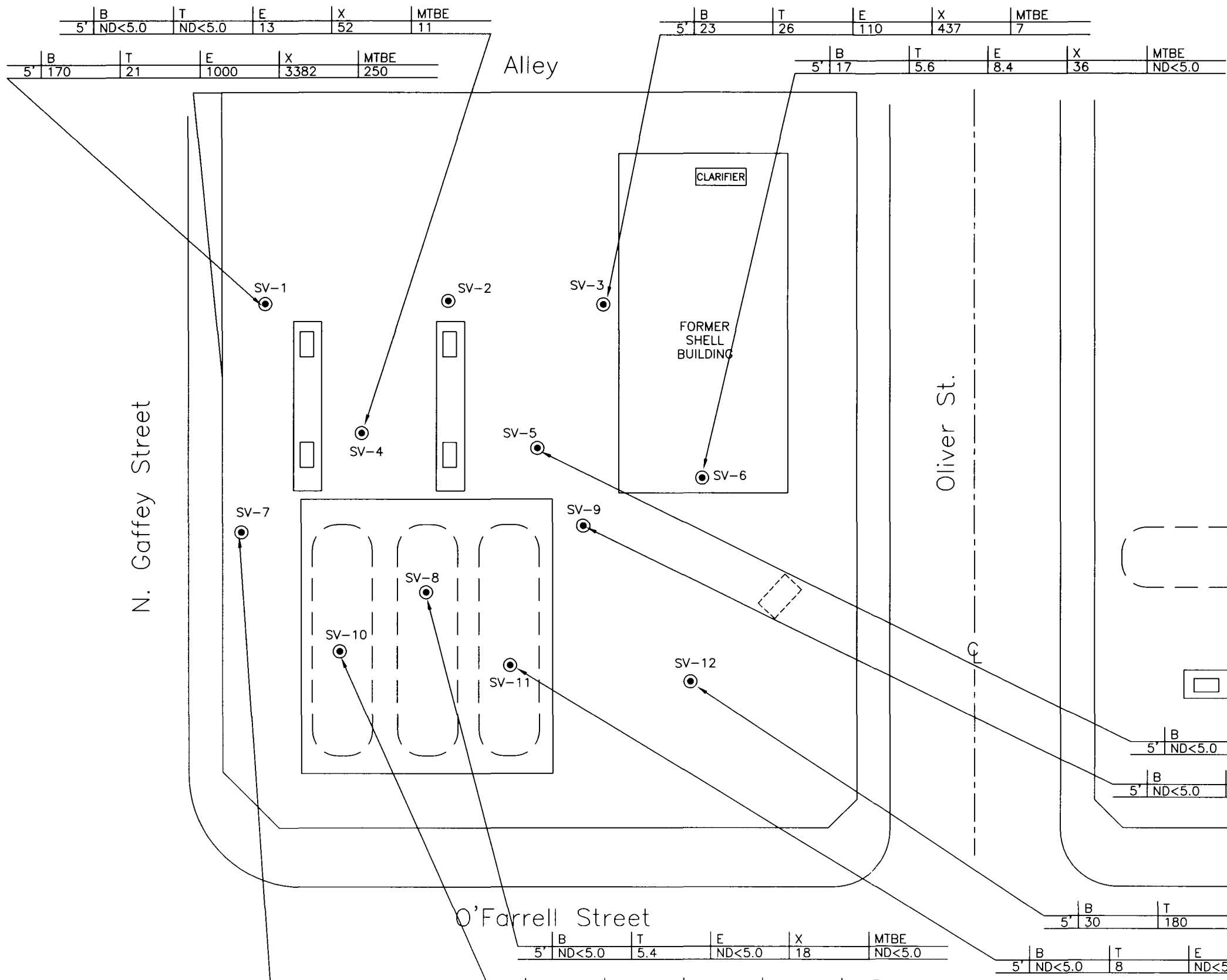
**NOTES:**

- NG - NOT GAUGED, TOP OF CASING ELEVATION UNKNOWN
- NU - NOT USED, DATA ANOMALOUS

- FORMER UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND WASTE-OIL TANK
- FORMER DISPENSER ISLAND



	DATE DRAWN	GROUNDWATER ELEVATION CONTOUR MAP MARCH 5, 2009	FIGURE NO. <b>3</b>
	DRAWN BY		FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA
	CAD FILE C06407GW		



### LEGEND

● VAPOR POINT SAMPLE SHOWING BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND MTBE CONCENTRATIONS IN ug/m3

#### NOTES:

ND - NOT DETECTED

SAMPLE SV-2 WAS NOT COLLECTED DUE TO WATER PRESENT IN THE SAMPLE

B - BENZENE

T - TOLUENE

E - ETHYLBENZENE

X - XYLENES

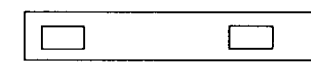
MTBE - METHYL TERTIARY-BUTYL ETHER



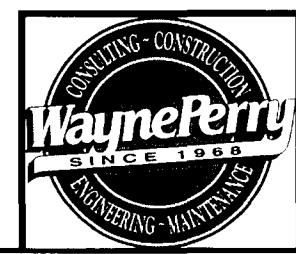
FORMER UNDERGROUND STORAGE TANK



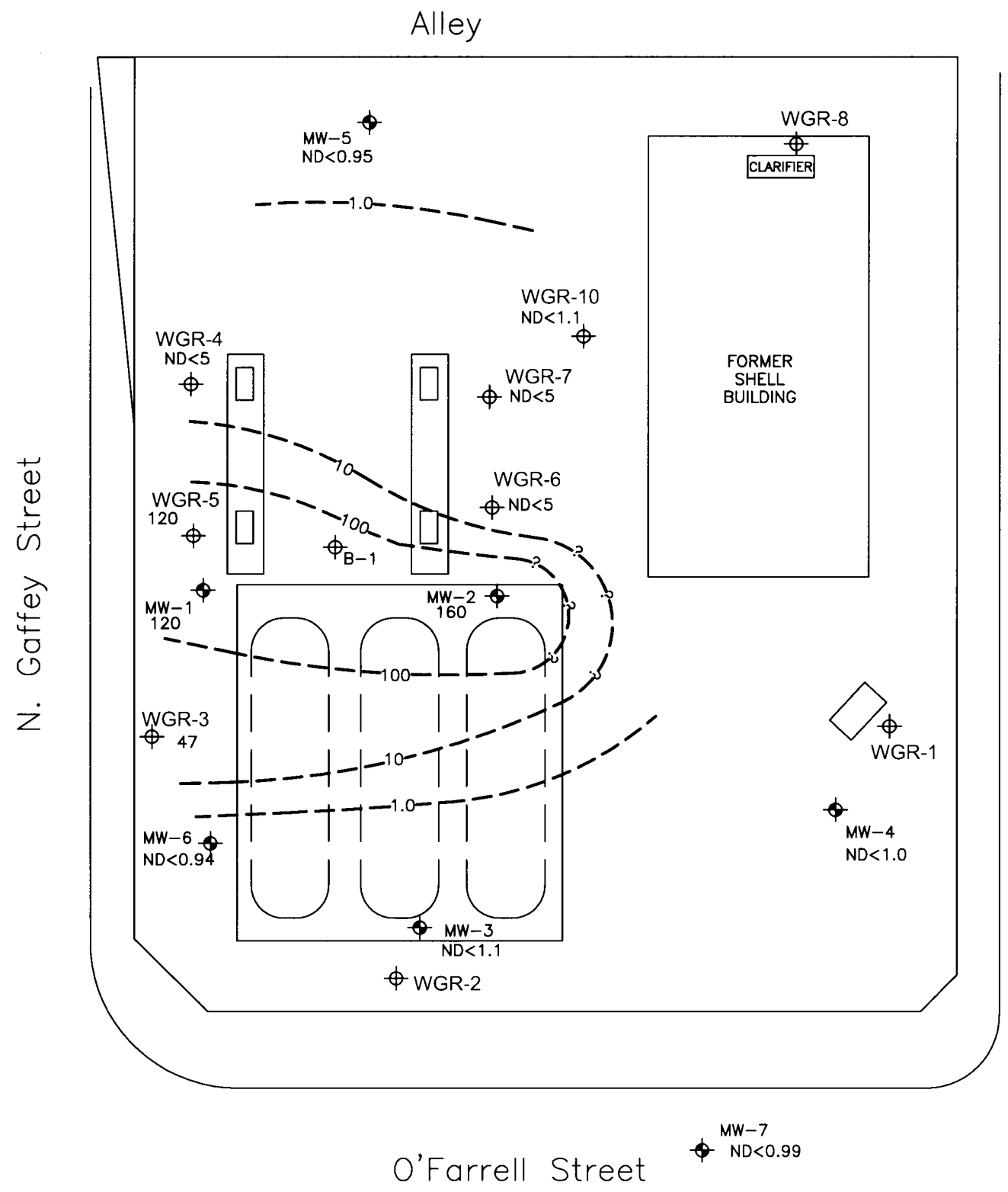
FORMER UNDERGROUND WASTE-OIL TANK





FORMER DISPENSER ISLAND



DATE DRAWN	<b>HYDROCARBON DISTRIBUTION IN SOIL VAPOR MAP</b>  FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA	FIGURE NO.
DRAWN BY		<b>4</b>
CAD FILE 06407HCS1		PROJECT NO. 06.407

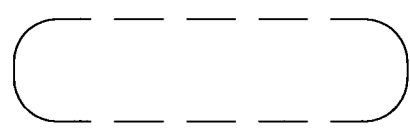
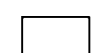
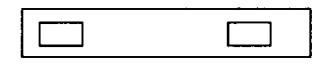


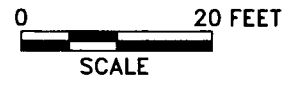
**LEGEND**


-  GROUNDWATER MONITORING WELL SHOWING BENZENE CONCENTRATION IN mg/kg
-  SOIL BORING SHOWING BENZENE CONCENTRATION IN mg/kg

----- LINE OF EQUAL BENZENE CONCENTRATION

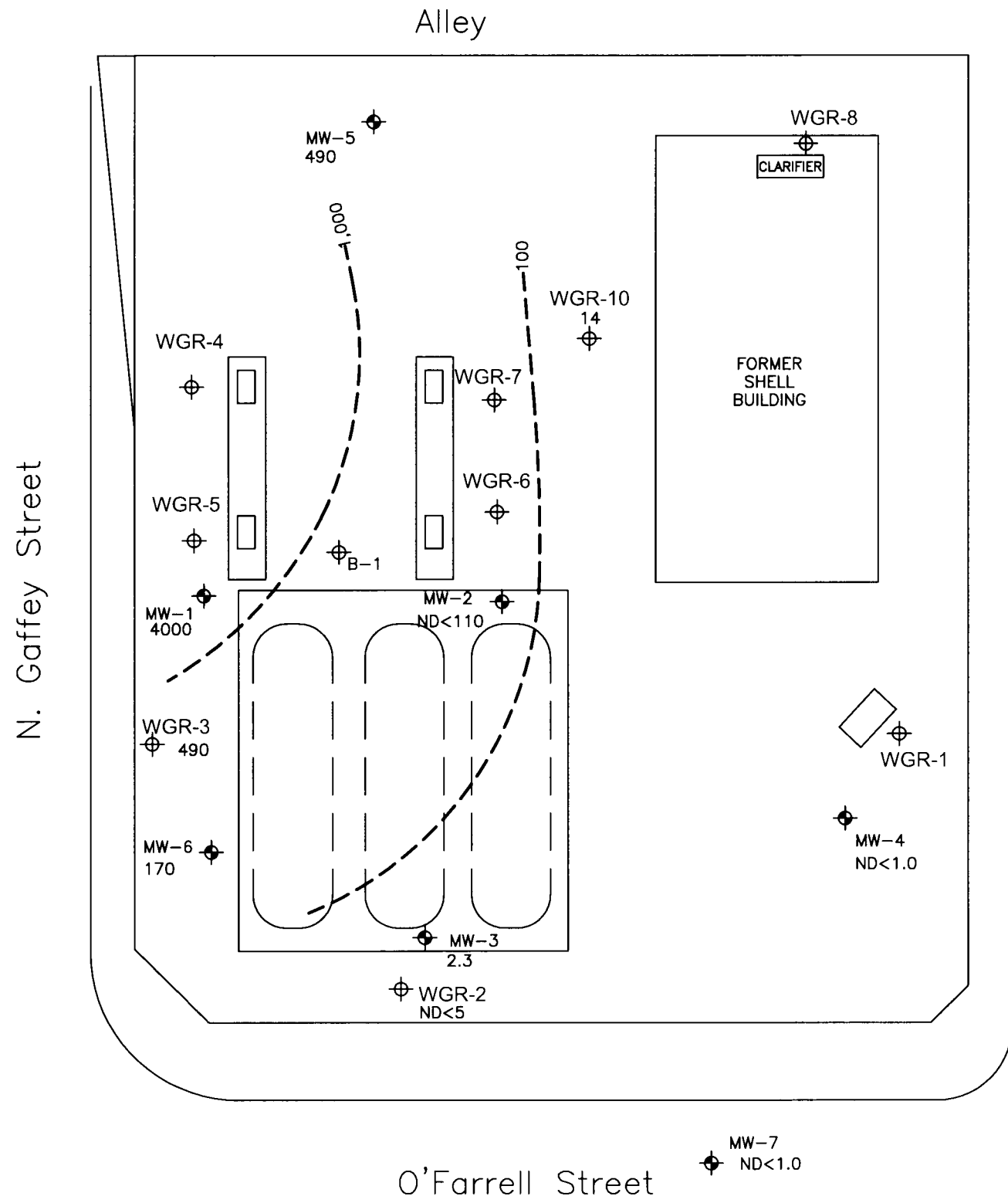
NOTE:  
ND - NOT DETECTED

-  FORMER UNDERGROUND STORAGE TANK
-  FORMER UNDERGROUND WASTE-OIL TANK
-  FORMER DISPENSER ISLAND



	DATE DRAWN	<b>BENZENE ISOCONCENTRATION IN SOIL AT 20 FEET</b>	FIGURE NO.
	DRAWN BY		<b>5</b>
CAD FILE	<b>06407BEN20</b>	<b>FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA</b>	





**LEGEND**

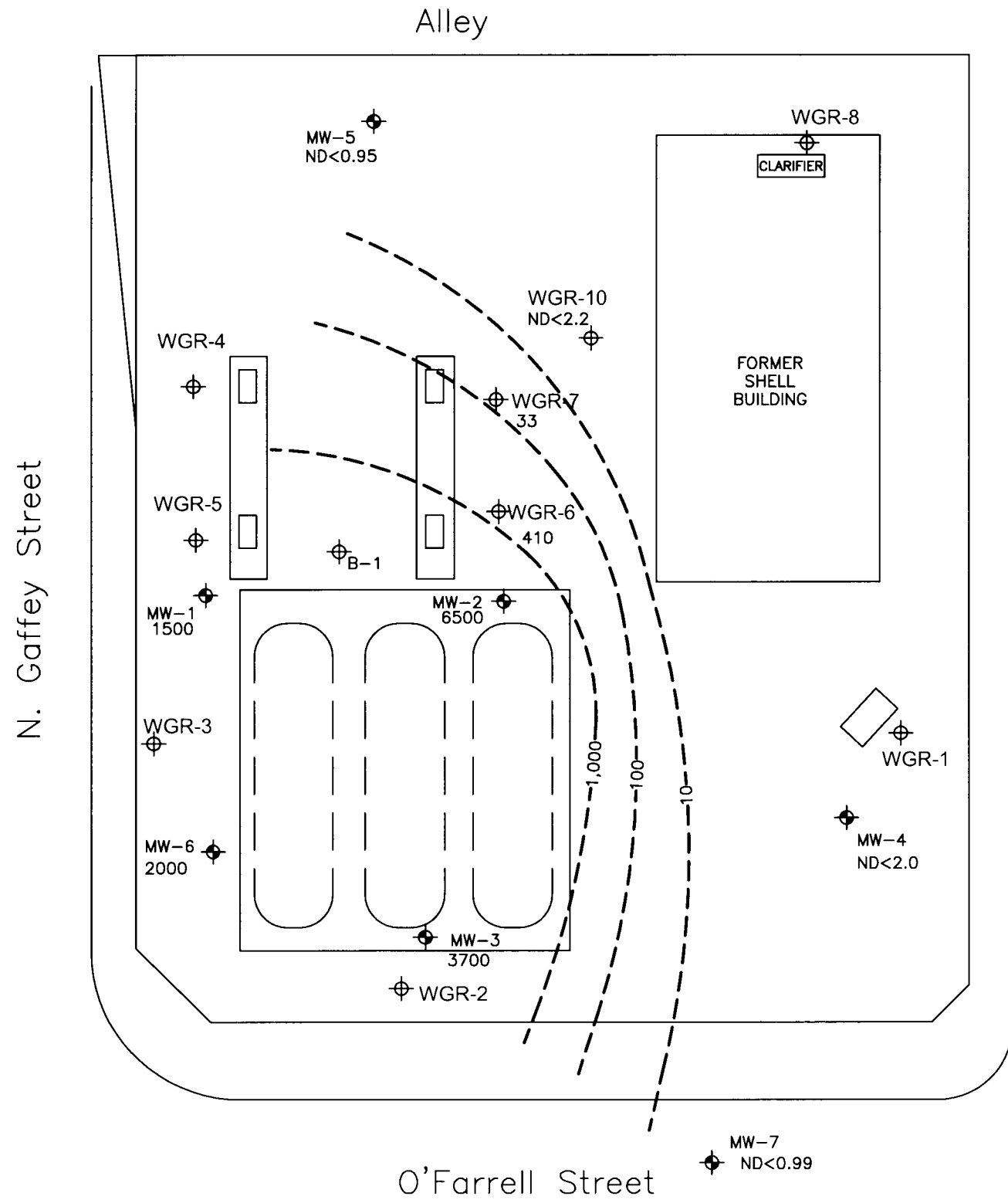
- GROUNDWATER MONITORING WELL SHOWING BENZENE CONCENTRATION IN mg/kg
- SOIL BORING SHOWING BENZENE CONCENTRATION IN mg/kg
- LINE OF EQUAL BENZENE CONCENTRATION

NOTE:  
ND - NOT DETECTED

- FORMER UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND WASTE-OIL TANK
- FORMER DISPENSER ISLAND



	DATE DRAWN	<b>BENZENE ISOCONCENTRATION IN SOIL AT 30 FEET</b>	FIGURE NO.
	DRAWN BY		<b>6</b>
	CAD FILE 06407BEN30	<b>FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA</b>	PROJECT NO. 06.407





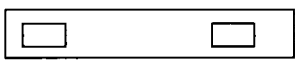
**LEGEND**

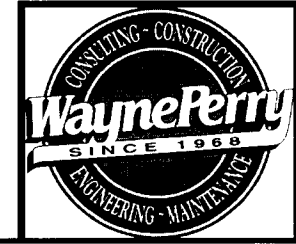
⊕ GROUNDWATER MONITORING WELL SHOWING MTBE CONCENTRATION IN mg/kg

⊕ SOIL BORING SHOWING MTBE CONCENTRATION IN mg/kg

----- LINE OF EQUAL MTBE CONCENTRATION

NOTE:  
ND - NOT DETECTED

-  FORMER UNDERGROUND STORAGE TANK
-  FORMER UNDERGROUND WASTE-OIL TANK
-  FORMER DISPENSER ISLAND



DATE DRAWN  
DRAWN BY  
CAD FILE  
06407MTB20

MTBE ISOCONCENTRATION IN SOIL AT 20 FEET

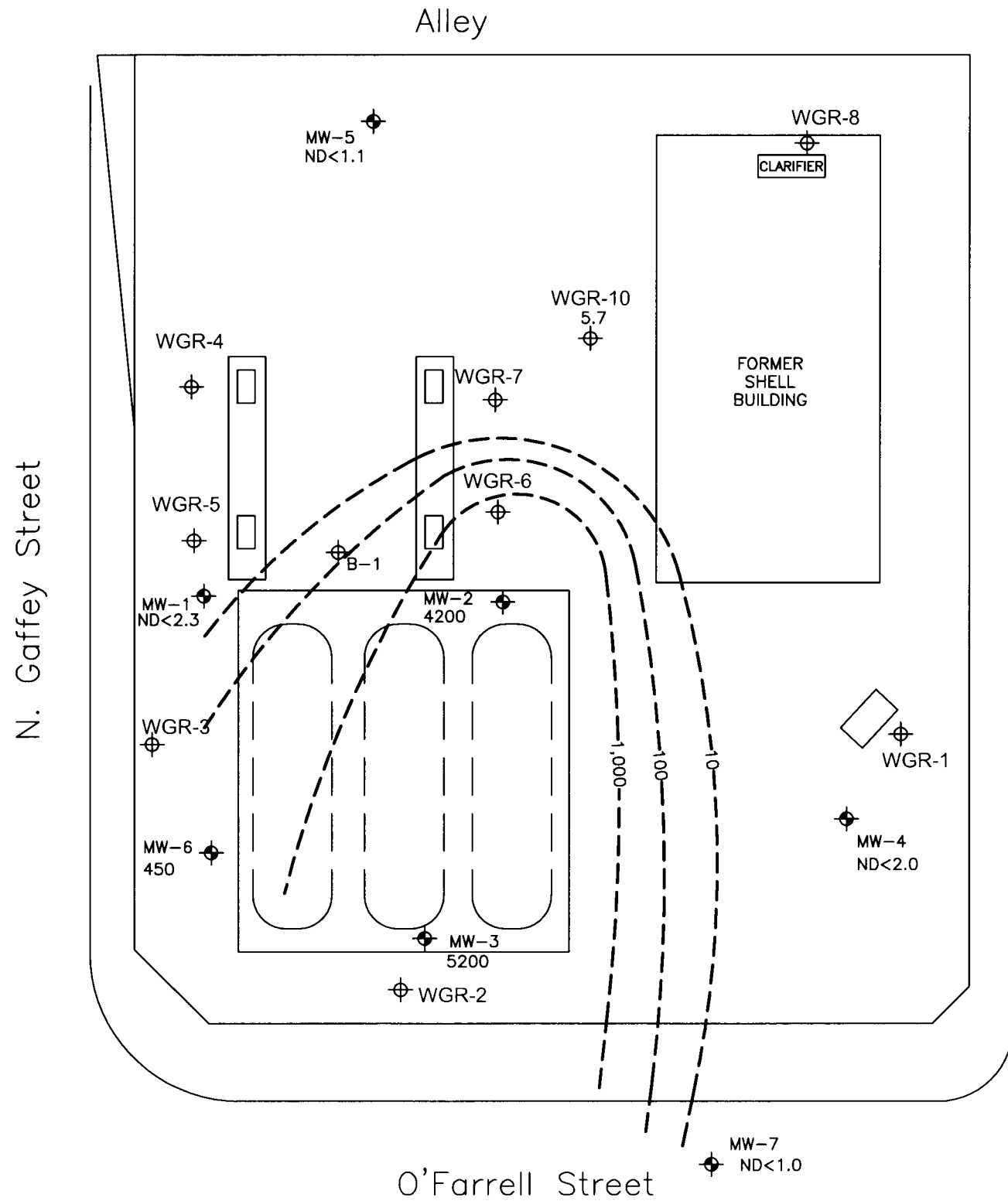
FORMER SHELL SERVICE STATION  
406 N. GAFFEY ST.  
SAN PEDRO, CA

FIGURE NO.

**7**

PROJECT NO.

06.407



**LEGEND**

⊕ GROUNDWATER MONITORING WELL SHOWING MTBE CONCENTRATION IN mg/kg

⊕ SOIL BORING SHOWING MTBE CONCENTRATION IN mg/kg

----- LINE OF EQUAL MTBE CONCENTRATION

NOTE:

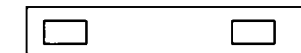
ND - NOT DETECTED



FORMER UNDERGROUND STORAGE TANK



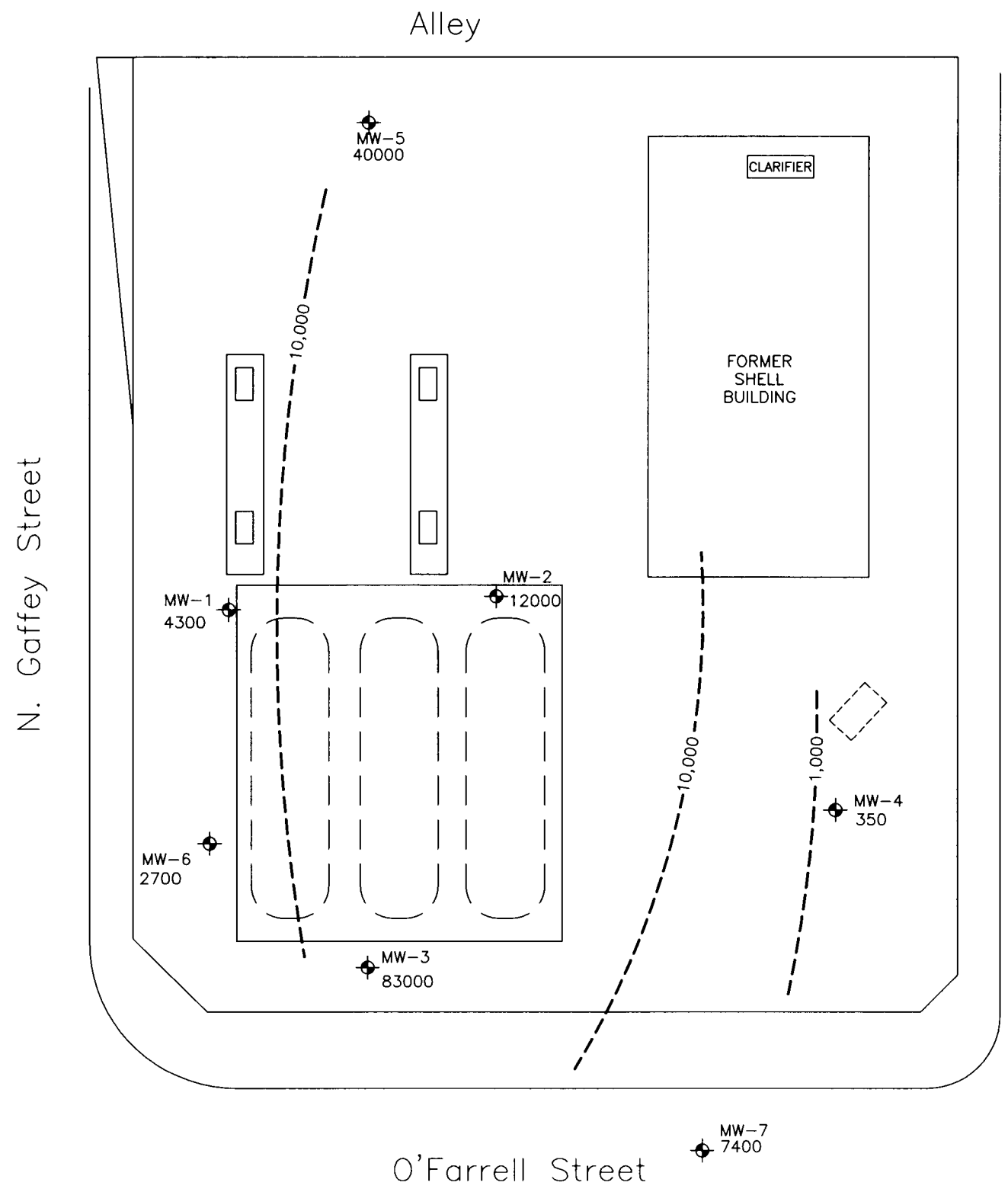
FORMER UNDERGROUND WASTE-OIL TANK



FORMER DISPENSER ISLAND



DATE DRAWN	MTBE ISOCONCENTRATION IN SOIL AT 30 FEET	FIGURE NO.
DRAWN BY		<b>8</b>
CAD FILE 06407MTB30	FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA	PROJECT NO. 06.407



**LEGEND**

- GROUNDWATER MONITORING WELL SHOWING TPH CONCENTRATION IN ug/L
- LINE OF EQUAL TPH CONCENTRATION

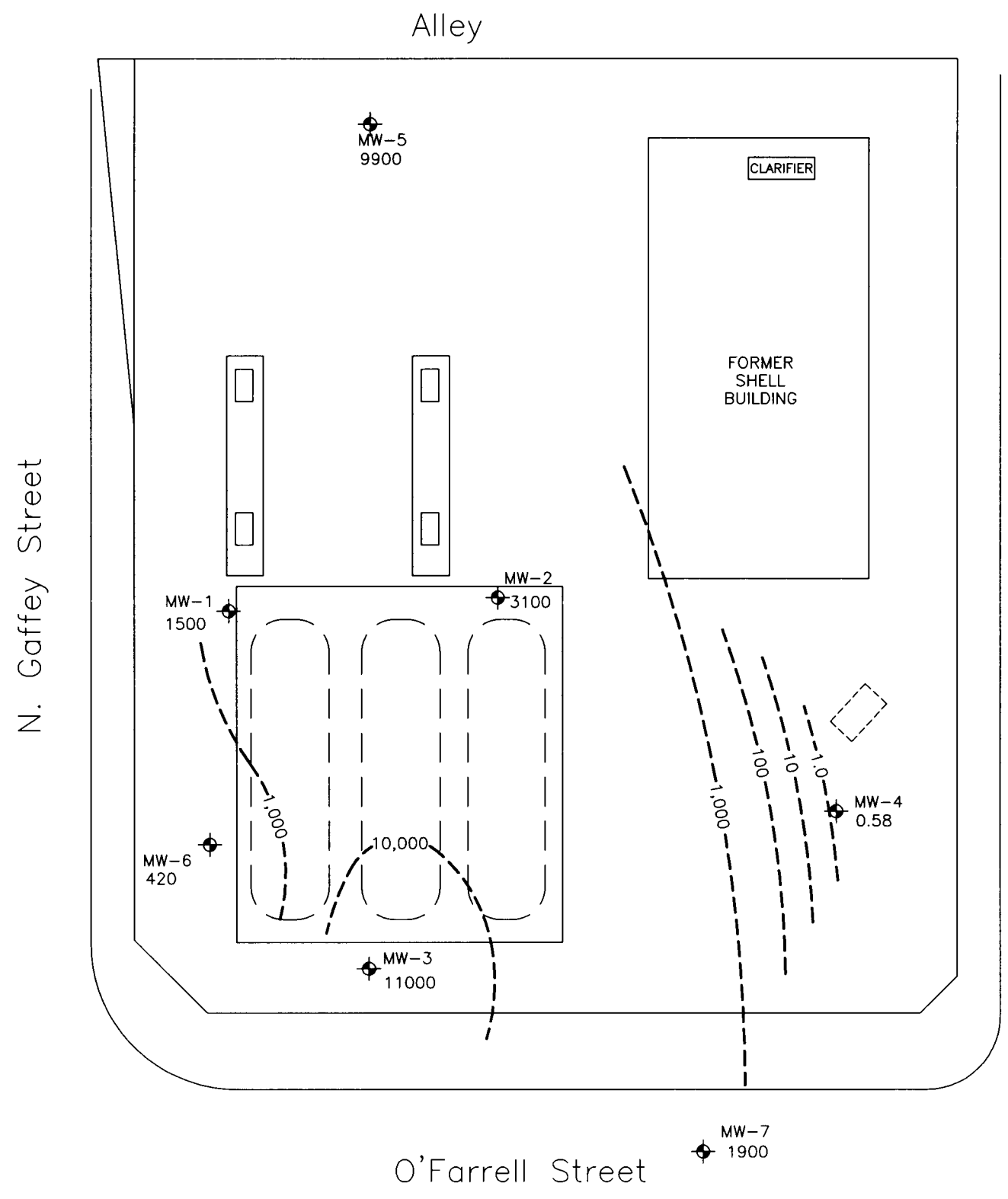
NOTES:

ND - NOT DETECTED

- FORMER UNDERGROUND STORAGE TANK
- FORMER UNDERGROUND WASTE-OIL TANK
- FORMER DISPENSER ISLAND



	DATE DRAWN	TPPH ISOCONCENTRATION MAP MARCH 5, 2009	FIGURE NO.
	DRAWN BY		FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA
	CAD FILE	06407TPH	
			06.407



**LEGEND**

⊕ GROUNDWATER MONITORING WELL  
SHOWING BENZENE CONCENTRATION  
IN ug/L

----- LINE OF EQUAL BENZENE CONCENTRATION

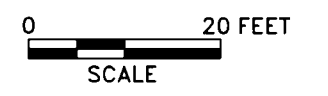
NOTES:

ND - NOT DETECTED

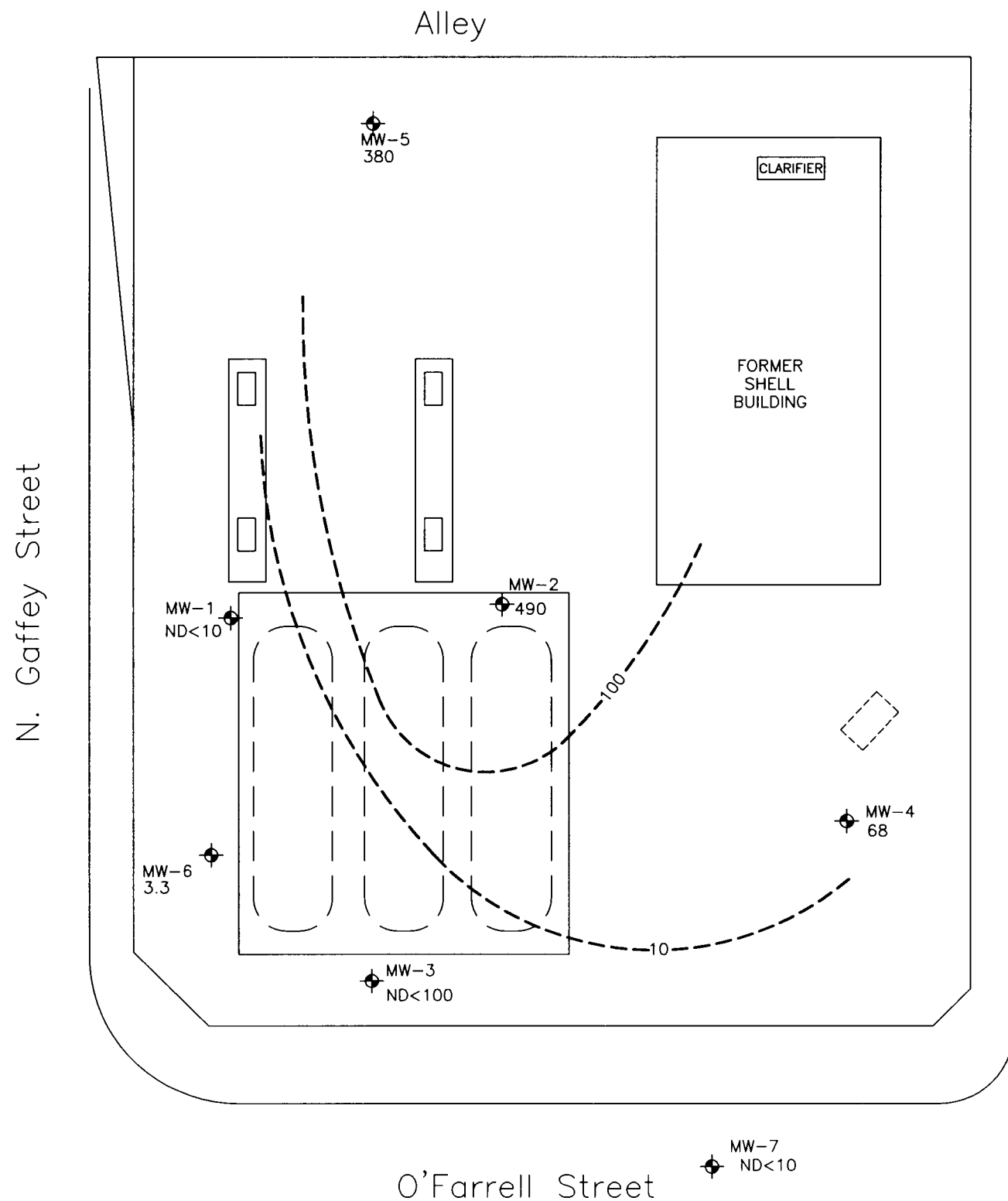
(-----) FORMER UNDERGROUND STORAGE TANK

(-----) FORMER UNDERGROUND WASTE-OIL TANK

(---) FORMER DISPENSER ISLAND



	DATE DRAWN	BENZENE ISOCONCENTRATION MAP MARCH 5, 2009	FIGURE NO.
	DRAWN BY		FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA
	CAD FILE		PROJECT NO.
	06407BEN		06.407



### LEGEND

⊕ GROUNDWATER MONITORING WELL  
SHOWING MTBE CONCENTRATION  
IN ug/L

----- LINE OF EQUAL MTBE CONCENTRATION

#### NOTES:

ND - NOT DETECTED

(-----) FORMER UNDERGROUND STORAGE TANK

(-----) FORMER UNDERGROUND WASTE-OIL TANK

( ) FORMER DISPENSER ISLAND

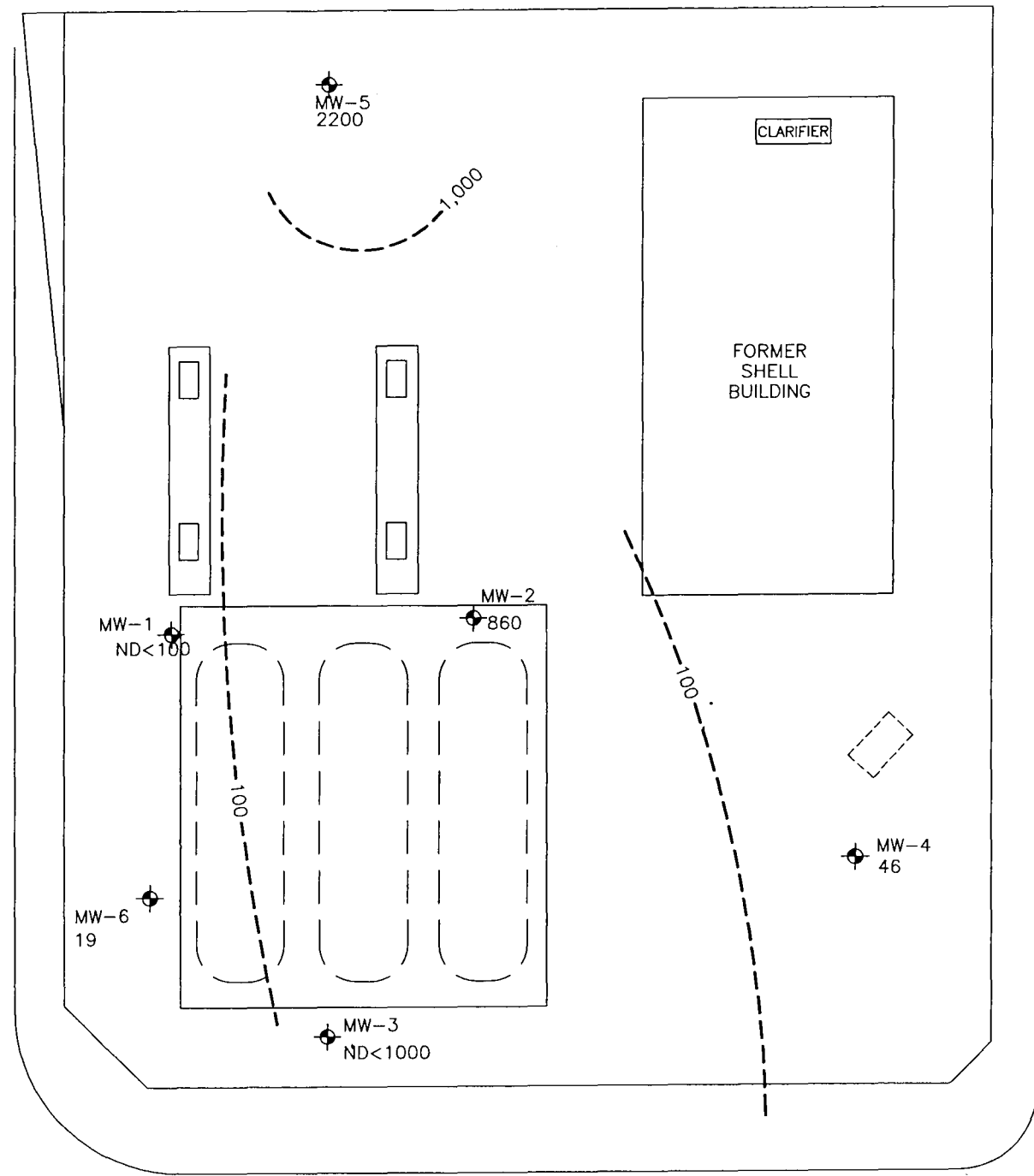


DATE DRAWN	MTBE ISOCONCENTRATION MAP MARCH 5, 2009	FIGURE NO.
DRAWN BY		<b>11</b>
CAD FILE C06407MTB	FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA	PROJECT NO. 06.407



N. Gaffey Street

Alley



Oliver St.

O'Farrell Street

### LEGEND

GROUNDWATER MONITORING WELL  
 SHOWING TBA CONCENTRATION  
 IN ug/L

LINE OF EQUAL TBA CONCENTRATION

#### NOTES:

ND - NOT DETECTED

FORMER UNDERGROUND STORAGE TANK

FORMER UNDERGROUND WASTE-OIL TANK

FORMER DISPENSER ISLAND



DATE DRAWN  
 DRAWN BY  
 CAD FILE  
 C06407TBA

TBA ISOCONCENTRATION MAP  
MARCH 5, 2009

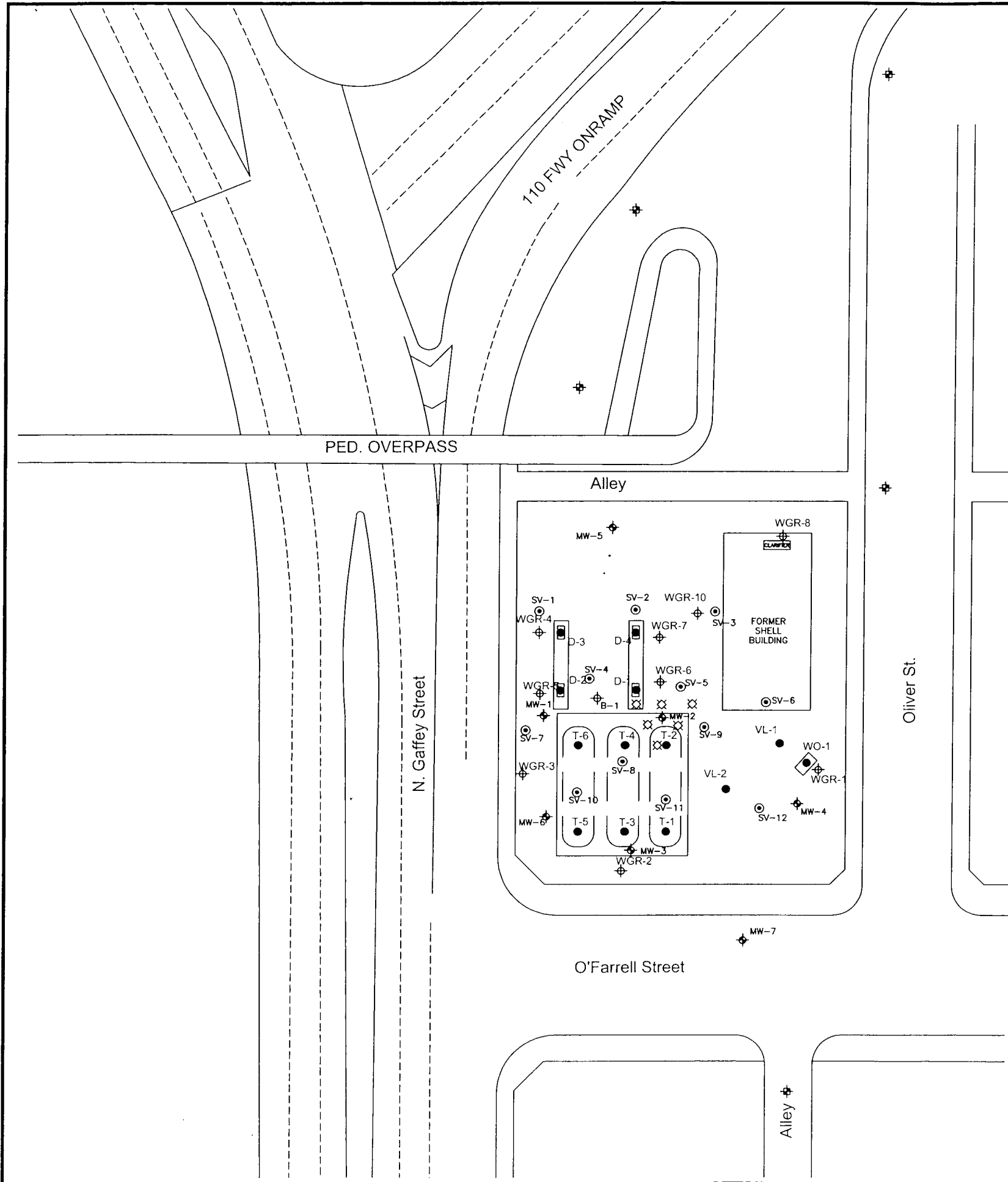
FORMER SHELL SERVICE STATION  
 406 N. GAFFEY ST.  
 SAN PEDRO, CA

FIGURE NO.









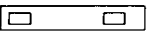
**12**

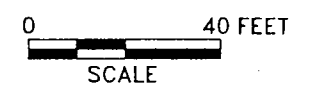
PROJECT NO.


06.407



**LEGEND**

-  GROUNDWATER MONITORING WELL
-  SOIL BORING
-  SOIL SAMPLE
-  VAPOR POINT
-  PROPOSED GROUNDWATER MONITORING WELL
-  PROPOSED OBSERVATION POINT
-  FORMER UNDERGROUND STORAGE TANK
-  FORMER UNDERGROUND WASTE-OIL TANK
-  FORMER DISPENSER ISLAND



	DATE DRAWN	<b>PLOT PLAN SHOWING PROPOSED WELL LOCATIONS</b>	FIGURE NO. <b>13</b>
	DRAWN BY		PROJECT NO. 06.407
	CAD FILE 06407VM	FORMER SHELL SERVICE STATION 406 N. GAFFEY ST. SAN PEDRO, CA	



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# **APPENDIX A**

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## **PRE-FIELD AND FIELD PROCEDURES**

# PRE-FIELD AND FIELD PROCEDURES

## Pre-Field Activities

The pre-field activities included the following:

- Updating the existing WPI Site Safety and Health Plan, as necessary;
- Scheduling subcontractors;
- Notifying Underground Service Alert (USA) and performing an underground utility clearance for the planned drilling locations; and
- Obtaining the drilling/soil sampling permit.

## Drilling and Soil Sampling Activities

### Utility Location

Underground Services Alert was notified of pending drilling activities at the station at least 48 hours prior to commencement of work. Immediately prior to drilling, the borehole location was hand excavated to a depth of approximately 7 feet and to a width at least three inches greater than the desired width of the borehole.

### Drilling and Sampling

The boring was drilled using a truck-mounted, hollow-stem auger drill rig, operated by BC2 Environmental Corp. (C-57 License No. 686255) of Orange, California. All drilling and soil sampling activities were performed under an approved WPI health and safety plan and under the supervision of a California Professional Geologist.

Soil samples were collected at five-foot intervals from a depth of approximately 10 feet to the total depth drilled for lithologic logging purposes only. Samples were collected using a modified California split-spoon sampler lined with brass tubes 6 inches long by 2 inches in diameter. The sampler was lowered through the augers to the target depth and driven 18 inches into the soil by the repeated drop of a 140-pound hammer from a height of approximately 30 inches.

Upon retrieval of the sampler, the ends of one sample tube were sealed with Teflon<sup>®</sup> sheets and covered with plastic caps. Samples were labeled and recorded on the chain-of-custody document for delivery to PTS Laboratories, Inc. Soil in the remaining tubes was examined in the field for observable signs of petroleum hydrocarbons and for soil classification. Soil was classified in general accordance with the Unified Soil Classified System. The soil classification and description, including blow counts, grain size, subordinate constituents, color, density, and moisture content were recorded on the boring log.

Organic vapor monitoring was performed in the field using a portable photo-ionization detector (PID). A portion of the soil collected from the sample tubes was placed in a brass sample tube until approximately half full. The container was capped and allowed to sit undisturbed for approximately 10 minutes. The PID probe was then inserted through the cap and the organic vapor content of the headspace will be measured. This reading was recorded on the boring log.

Soil generated from the borings was placed in DOT approved 55-gallon drums that were sealed upon completion of the work activities. The soil cuttings were properly disposed.

#### Decontamination Procedures

All sampling equipment that came into direct contact with soil or groundwater was cleaned after each sampling event using a solution of non-phosphate soap and tap water, and then rinsed with tap water. The decontamination process was repeated as often as necessary prior to reuse of equipment. Clean augers were used for the borehole drilled at the site.

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# **APPENDIX B**

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**DRILLING PERMIT**

**WELL PERMIT APPLICATION - NON PRODUCTION WELLS**  
 WATER QUALITY PROGRAM - ENVIRONMENTAL HEALTH DIVISION  
 5050 COMMERCE DRIVE, BALDWIN PARK, CA 91706 TELE (626) 430-5420 FAX (626) 813-3016

DATE 1/14/09

NEW WELL CONSTRUCTION     RECONSTRUCTION OR RENOVATION     DECOMMISSIONING     OTHER: \_\_\_\_\_  
 MONITORING     CATHODIC     INJECTION     EXTRACTION     HEAT EXCHANGE  
 HYDROPUNCH     C.P.T. (For Ground Water Sampling)     OTHER: soil boring

**WELL LOCATION**

Site Address 406 N Gaffey    City San Pedro    Zip Code 90731  
 Nearest Intersection D'Fawell    Thomas Guide Map Book Page/Grid 824 B4    Number of Wells in Each Parcel 1

**WELL STRUCTURE**

Total Depth of Well Boring 50 feet    Depth of Well Casing N/A    Sanitary / Annular Sealing Material neat cement  
 Depth of Sanitary / Annular Seal N/A    Conductor Casing Seal N/A

**OWNER INFORMATION**

Owner's Name Shell Oil Products US    Telephone Number (323) 201-9595  
 Address 20945 S Wilmington    City Carson    Zip Code 90810

**DRILLER INFORMATION**

Driller's Name BC2 Environmental    Telephone Number (714) 744-2990    C-57 License Number 1081205  
 Address 1150 W Trenton Ave    City Orange    Zip Code 92867

**WELL DECOMMISSIONING INFORMATION**

Well-Depth  log/records    Method of Well-Assessment     Depth and Number of Perforations \_\_\_\_\_  
 Type and Amount of Sealant \_\_\_\_\_    Type of Performer \_\_\_\_\_    Size of Perforations \_\_\_\_\_    Method of Upper Seal Pressure Application \_\_\_\_\_

**CONSULTANT INFORMATION**

Company Wayne Perry Inc  
 Address 8281 Commonwealth Ave    City Beverly Park    State CA    Zip Code 90629  
 Project Manager Chris Fawell    Telephone Number (714) 826-0352    Fax Number (714) 523-7890

**ATTENTION: WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THIS DEPARTMENT.**

I hereby agree to comply in every respect with all the regulations of the County Environmental Health Division and with all ordinances and laws of the County of Los Angeles and the State of California pertaining to well construction, reconstruction, and decommissioning data deemed necessary by the County Environmental Health Division Of Los Angeles County.

Signature of Applicant: [Signature]    Printed Name: Chris Fawell

**THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED OFF BY THE DEPUTY HEALTH OFFICER. WELL CONSTRUCTION OR DECOMMISSIONING CANNOT BE INITIATED WITHOUT A WORK PLAN APPROVAL FROM THIS DEPARTMENT.**



<b>WORK PLAN APPROVAL</b> This Approval is Valid for 180 Days	REHS <u>MICHELLE TSIEBOS</u>	DATE <u>1/22/09</u>
Conditions: <u>On 01/15/09 \$201.00 was paid for permit # 8300 to drill 1 soil boring into groundwaters. Maintain all set-backs.</u>		
<u>M.TSIEBOS @ PH. LACOUNTY. GOV (310) 665-8441</u>		
<b>FINAL INSPECTION</b> The placement of the annular seal must be witnessed by a Deputy Health Officer for the permit to be valid. Contact this Department to arrange for an appointment	REHS	DATE

**NOTICE**

This well permit approval is limited to compliance with the California Well Standards and the Los Angeles County Code and does not grant any rights to construct, reconstruct, or decommission any well. The applicant is responsible for securing all other necessary permits.

1/22/09

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# **APPENDIX C**

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## **BORING LOG**



**WAYNE PERRY, INC.**  
 8281 Commonwealth Avenue  
 Buena Park, California 90621  
 (714) 826-0352  
 www.wpinc.com

## Log of Boring/Well B-1

PROJECT: <i>Shell Service Station</i>	SURFACE ELEVATION:	
LOCATION: <i>406 N. Gaffey Ave. San Pedro, Ca</i>	TOTAL DEPTH: <i>50.5 feet</i>	BORING DIAMETER: <i>8 inches</i>
PROJECT NO.: <i>06.407</i>	DEPTH TO FIRST SATURATION: <i>30 feet</i>	
DATE BEGAN: <i>1/28/09</i>	FINISHED: <i>1/28/09</i>	TOP OF WELL CASING ELEVATION: <i>N/A</i>
DRILLING COMPANY: <i>BC2 Environmental Corp.</i>	STATIC GW ELEVATION: <i>N/A</i>	DATE: <i>N/A</i>
DRILLING METHOD: <i>Hollow-Stem Auger</i>	LOGGED BY: <i>A. Dollemore</i> CHECKED BY: <i>D. Henry</i>	

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location, there may be consequential changes in conditions.

DEPTH (feet)	Samples	Sample I.D.	Time	Blow Counts (per 6 inches)	PID/LEL (ppm/%)	Geologic Description	Soil Class	Graphic Log	DEPTH (feet)	Well Diagram
5						<b>Sandy GRAVEL</b> - fine gravel (<1/2-inch in diameter) in a fine- to coarse-grained sand matrix, pale brown [10YR 6/3], dense, moist.	gp		5	
10	B-1d7	pass		peagravel					10	
10	B-1d10	0723	6/7/9 7/11/13	6/7/9 7/11/13	0.0	<b>Silty SAND</b> - fine- to medium-grained, brown [10YR 5/3], medium dense, moist, trace fine gravel (<1/2").	sm		10	
15	B-1d15	0750	9/15/15	9/15/15	9.4	<b>GRAVEL with Sand and Silt</b> - light brownish gray [10YR 6/2], medium dense, moist, gravel (<1/2").	gp		15	
15			9/15/20	9/15/20		<b>SILTSTONE</b> - gray [10YR 6/1], moderately hard, with iron oxide mottling;	ss		15	
20	B-1d20	0807	10/15/20/24 10/15/17	10/15/20/24 10/15/17	28.3	dark gray [10YR 4/1], with black [10YR 2/1] mottling at 20 feet;			20	
25	B-1d25	0823	15/19/23	15/19/23		gray [10YR 5/1], with iron oxide mottling at 22 feet;			25	
25			31/50-6" 25/28/33	31/50-6" 25/28/33		no recovery at 25 feet (hard);			25	
30	B-1d30	0837	21/27/30	21/27/30					30	
30			11/18/25/30 13/19/24	11/18/25/30 13/19/24	31.3	groundwater at 30 feet;			30	
35	B-1d35	0852	18/23/23	18/23/23					35	
35			15/20/25/26 11/15/19	15/20/25/26 11/15/19	821.0	hydrocarbon odor;			35	
40	B-1d40	0911	9/15/16	9/15/16		iron oxide veins at 37 feet.			40	
40			11/11/15/20 17/20/22	11/11/15/20 17/20/22	107.0				40	
45	B-1d45	0924	16/19/20	16/19/20					45	
45			7/9/15/20 9/13/17	7/9/15/20 9/13/17	31.8				45	
50	B-1d50	0940	7/11/13	7/11/13					50	
50			8/10/12/17	8/10/12/17	0.0	Bottom at 50.5 feet.			50	
55									55	
60									60	

Remarks/Notes: 1) PID Used.

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# **APPENDIX D**

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**AQUIFER TEST FIELD DATA SHEETS AND GRAPHS**







WAYNE PERRY, INC.  
Gauging Sheet  
Recovery Record

For: SHELL

Job Number: 26407

Location: GARREY SAN PEDRO

Date: 1/28/09

Well No	Depth of Well	To Liquid	To Water	Total Liquid in Well	Product Thickness	Comments
754	MW3	35 40				
746 <sup>SM</sup>	MW5	34 70				
744 <sup>SM</sup>	MW6	37 31				
10A <sup>SM</sup>	MW1	37 33				
1005	MW4	36 55				
10 <sup>70</sup>	MW2	36 62				
PUT SLUG (1/2 CASING VOLUME) BACK IN WELL						

Portable Pumping Recovery Record

Tank size: \_\_\_\_\_

	Total Liquid		Water		Product	
	Inches	Gallons	Inches	Gallons	Inches	Gallons
After pumping						
Before pumping						
Site Total						

Automatic System Recovery Record

Tank size: \_\_\_\_\_

	Inches	Gallons
Total Liquid		
Water		
Product		

Notes: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Gauged by: \_\_\_\_\_

**WAYNE PERRY, INC.**  
**WELL GAUGING FORM**

Date: 2-2-09

Job Number: 06-407

Station No.: \_\_\_\_\_ Location: 406 N. GAFFEY ST.

Page 1 of 1

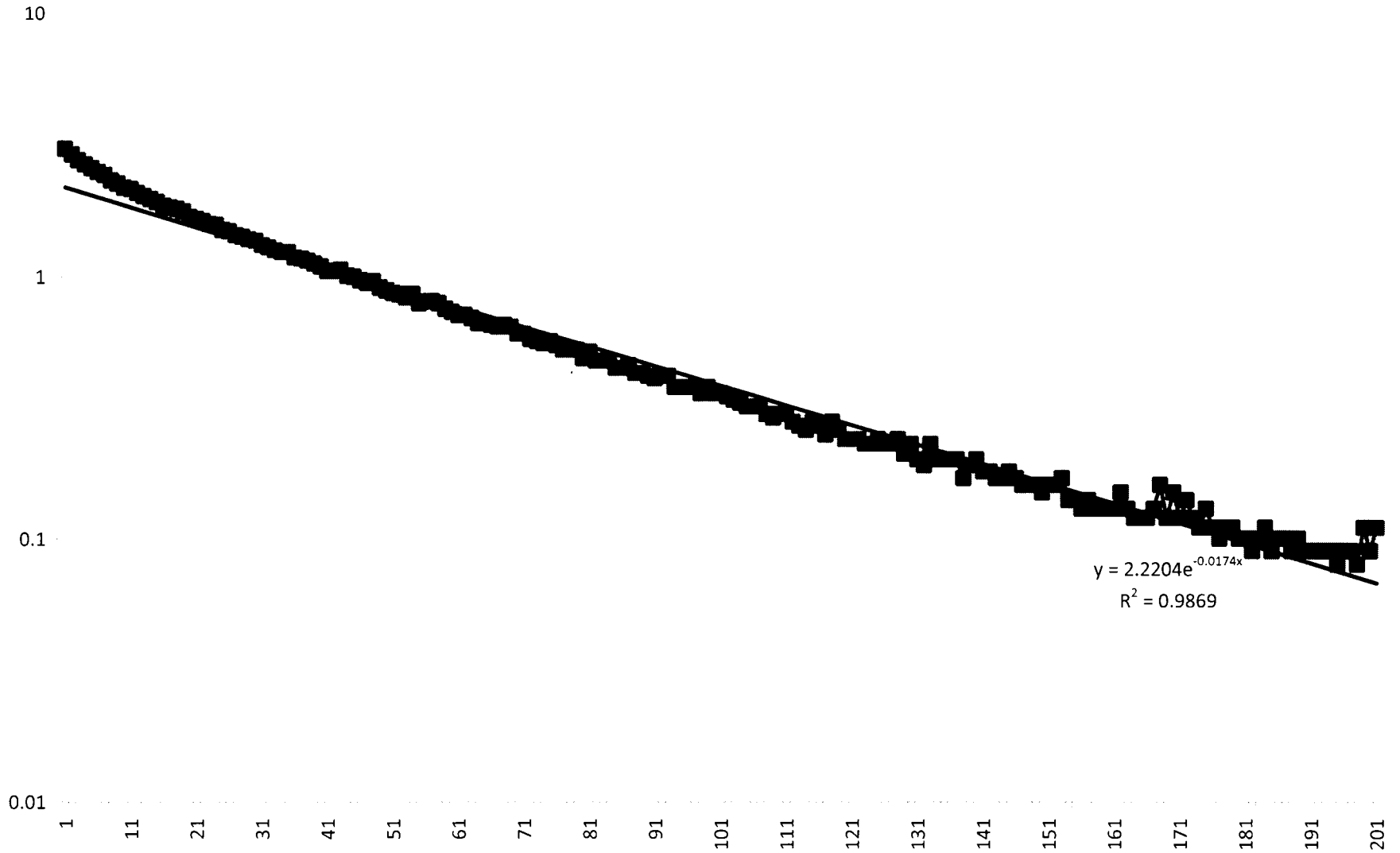
Client Name: SHELL

(CO'FARRELL) Gauged by: M. PIERSON

Well ID	Well Diam.	Gauging Order	Depth to Product	Depth To Water	Depth to Water (Check)	Depth to Well Bottom	Product Thickness	Length of Water Column	Comments	
MW-1	4"	#1		37.22		54.63			11:32	
MW-2	4"	#2		36.44		54.79			11:41	
MW-3	4"	#3		35.29		53.96			11:47	
MW-4	4"	#4		36.37		54.31			11:56	
MW-5	2"	#5		36.49		54.22			12:08	
MW-6	2"	#6		37.13		52.63			12:17	
			REMOVE DATA LOGGERS							

FORMER SHELL SERVICE STATION  
406 North Gaffey Street, San Pedro, CA

Recovery vs. Time (Bouwer & Rice), Well MW-1



FORMER SHELL SERVICE STATION  
406 North Gaffey Street, San Pedro, CA

Recovery vs. Time (Bouwer & Rice), Well MW-2

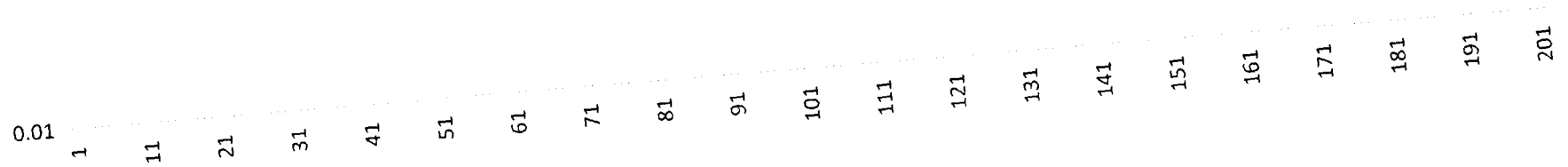
10



$$y = 3.0012e^{-0.0053x}$$
$$R^2 = 0.9941$$

1

0.1



0.01

Graph No. 2

06.407

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# **APPENDIX E**

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**BLAINE TECH SERVICES, INC. REPORT**

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**BLAINE**  
TECH SERVICES INC.

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GROUNDWATER SAMPLING SPECIALISTS  
SINCE 1985

March 27, 2009

Deborah Pryor  
Shell Oil Products US  
20945 S. Wilmington Ave.  
Carson, CA 90810

First Quarter 2009 Groundwater Monitoring at  
Former Shell-branded Service Station  
406 N. Gaffey Street  
San Pedro, CA

Monitoring performed on March 5, 2009

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Groundwater Monitoring Report: **090305-TW-2**

This report covers the routine monitoring of groundwater wells at this former Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purge water (if applicable) is, likewise, collected and transported to Crosby & Overton.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,



Lorin King  
Project Manager

LK/ss

attachments: Cumulative Table of WELL CONCENTRATIONS  
Certified Analytical Report  
Field Data Sheets

cc: Truedi Balsitis  
Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621



**TABLE I**  
**CURRENT GROUNDWATER DATA**  
**FORMER SHELL SERVICE STATION**  
**406 N. Gaffey Street, San Pedro**

DATE	WELL	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	TPPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	NITRATE (mg/L)	SULFATE (mg/L)	FERROUS IRON (mg/L)	METHANE (ug/L)	ORP (m/V)	DO (ppm)	DO METHOD	COMMENTS	
11/22/06	MW-1	37.35	0.00	92.96	54.60	3200		1600	160	320	620	ND<20	ND<500	ND<20	ND<20	ND<20									
11/22/06	MW-2	36.54	0.00	93.10	54.75	15000		6700	1000	1100	2600	1300	ND<2500	58.1	ND<100	ND<100									
11/22/06	MW-3	35.28	0.00	93.92	53.92	59000		14000	18000	3400	15000	ND<200	ND<5000	ND<200	ND<200	ND<200									
11/22/06	MW-4	35.42	0.00	92.46	54.27	790		ND<5.0	ND<5.0	56	ND<10	200	110 J	48	ND<10	ND<10									
02/22/07	MW-1	37.82	0.00	92.49	54.69	2100		1700	100	310	430	10	70	3.6	ND<1.0	ND<1.0									
02/22/07	MW-2																							Unable to locate	
02/22/07	MW-3																							Unable to locate	
02/22/07	MW-4	36.14	0.00	91.74	54.34	430		11	ND<0.50	14	ND<1.0	130	92	33	ND<1.0	ND<1.0									
05/14/07	MW-1	38.41	0.00	91.90	54.58	3600		2000	190	380	710	ND<20	ND<200	ND<20	ND<20	ND<20									
05/14/07	MW-2	37.38	0.00	92.26	54.65	14000		6100	1000	1400	1800	2000	1600	82	ND<20	ND<20									
05/14/07	MW-3																							Unable to locate	
05/14/07	MW-4	37.05	0.00	90.83	54.33	670		ND<0.50	ND<0.50	ND<0.50	ND<1.0	130	85	32	ND<1.0	ND<1.0									
08/30/07	MW-1	38.25	0.00	92.06	54.60	3500		2100	130	370	650	ND<20	ND<200	ND<20	ND<20	ND<20									
08/30/07	MW-2	37.10	0.00	92.54	54.60	3600		2000	120	340	580	ND<50	ND<500	ND<50	ND<50	ND<50									
08/30/07	MW-3																							Unable to locate	
08/30/07	MW-4	36.90	0.00	90.98	54.25	600		ND<0.50	ND<0.50	ND<0.50	ND<1.0	110	54	31	ND<1.0	ND<1.0									
12/07/07	MW-1	38.80	0.00	91.51	54.60	4100		1800	73	320	570	ND<20	ND<200	ND<20	ND<20	ND<20									
12/07/07	MW-2																							Unable to locate	
12/07/07	MW-3																							Unable to locate	
12/07/07	MW-4	37.26	0.00	90.62	54.30	610		ND<0.50	ND<0.50	ND<0.50	ND<1.0	63	37	22	ND<1.0	ND<1.0									
02/18/08	MW-1	38.22	0.00	92.09	54.56	3100		1300	190	220	380	27	ND<250	ND<25	ND<25	ND<25									
02/18/08	MW-2																							Unable to locate	
02/18/08	MW-3																							Unable to locate	
02/18/08	MW-4	36.16	0.00	91.72	54.30	780		ND<0.50	ND<0.50	2.2	ND<1.0	74	44	22	ND<1.0	ND<1.0									
05/07/08	MW-1	36.97	0.00	93.34	54.64	5900		1600	160	270	540	ND<1.0	80	5.9	ND<2.0	ND<2.0									
05/07/08	MW-2																							Unable to locate	
05/07/08	MW-3																							Unable to locate	
05/07/08	MW-4	34.67	0.00	93.21	54.30	950		ND<0.50	ND<1.0	1.9	ND<1.0	63	36	20	ND<2.0	ND<2.0									
08/27/08	MW-1	37.54	0.00	92.77	54.68	4700		1400	51	280	540	ND<20	ND<200	ND<40	ND<40	ND<40									
08/27/08	MW-2																							Unable to locate	
08/27/08	MW-3																							Unable to locate	
08/27/08	MW-4	35.77	0.00	92.11	54.30	460		ND<0.50	ND<1.0	ND<1.0	ND<1.0	67	39	20	ND<2.0	ND<2.0									
09/17/08	MW-5	36.30	0.00	92.25																					
09/17/08	MW-6	37.75	0.00	93.08																					
09/17/08	MW-7	32.72	0.00	93.50																					
10/02/08	MW-1	37.72	0.00	92.59	54.75	3900		1200	23	210	360	3.3	60	ND<2.0	ND<20	ND<2.0									
10/02/08	MW-2	36.77	0.00	94.90	54.90	13000		2800	430	690	1360	1400	950	53	ND<40	ND<40									
10/02/08	MW-3	35.61	0.00	93.35	54.04	84000		13000	17000	2400	11400	ND<50	ND<500	ND<100	ND<100	ND<100									
10/02/08	MW-4	36.17	0.00	91.71	54.46	450		ND<0.50	ND<1.0	ND<1.0	ND<1.0	53	41	17	ND<2.0	ND<2.0									
10/02/08	MW-5	36.82	0.00	91.73	54.30	82000		13000	15000	1600	10600	460	1700	70	ND<20	ND<20									
10/02/08	MW-6	37.56	0.00	93.27	52.78	6800		370	220	390	1720	22	31	2.3	ND<2.0	ND<2.0									
10/02/08	MW-7	32.70	0.00	93.52	54.46	4300		1500	5.4	180	320	ND<1.0	84	ND<2.0	ND<2.0	ND<2.0									

CONTINUED ON NEXT PAGE

**TABLE 1**  
**CURRENT GROUNDWATER DATA**  
**FORMER SHELL SERVICE STATION**  
**406 N. Gaffey Street, San Pedro**

DATE	WELL	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	TPPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	NITRATE (mg/L)	SULFATE (mg/L)	FERROUS IRON (mg/L)	METHANE (ug/L)	ORP (mV)	DO (ppm)	DO METHOD	COMMENTS
03/05/09	MW-1	37.15	0.00	93.16	54.60		4300	1500	38	230	350	ND<10	ND<100	ND<20	ND<20	ND<20	0.20	3900	11	10.6	210	0.36		
03/05/09	MW-2	36.36	0.00	93.67	54.57		12000	3100	330	540	1600	490	860	ND<40	ND<40	ND<200	ND<60.20	3600	15	48.8	86	0.34		TOC Unknown
03/05/09	MW-3	35.29	0.00	93.67	53.70		83000	11000	17000	2400	12000	ND<100	ND<1000	ND<200	ND<200	ND<200	ND<60.20	3000	15	4.43	111	0.38		
03/05/09	MW-4	35.86	0.00	92.02	54.25		350	0.58	ND<1.0	ND<1.0	ND<1.0	68	46	25	ND<2.0	ND<2.0	ND<60.10	1400	20	90.4	-110	0.40		
03/05/09	MW-5	36.31	0.00	92.24	54.12		40000	9900	6800	1100	4600	380	2200	ND<200	ND<200	ND<200	ND<60.20	3500	13	8.05	49	0.44		
03/05/09	MW-6	32.01	0.00	98.82	52.71		2700	420	2.1	140	250	3.3	19	ND<2.0	ND<2.0	ND<2.0	ND<60.20	3500	11	13.1	203	0.30		
03/05/09	MW-7	32.45	0.00	93.77	54.20		7400	1900	ND<10	390	510	ND<10	140	ND<20	ND<20	ND<20	ND<60.10	3100	14	45.6	152	1.00		

- Notes:**  
1. ND - Not detected  
2. TBA - Tertiary-butyl alcohol  
3. DIPE - Diisopropyl ether  
4. ETBE - Ethyl tertiary-butyl ether  
5. TAME - Tertiary-amyl methyl ether  
6. J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).  
7. TPH-G - Analyzed by method 8015B  
8. TPPH - Analyzed by method 8260B

# SHELL WELLHEAD INSPECTION FORM

(FOR SAMPLE TECHNICIAN)

Site Address 406 N Gaffey St San Pedro Date 3/5/09  
 Job Number 090305-TWZ Technician Tyler Witts Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Well Box Meets Compliance Requirements *See Below	Water Bailed From Wellbox	Cap Replaced	Lock Replaced	Well Not Inspected (explain in notes)	New Deficiency Identified	Previously Identified Deficiency Persists	Notes
MW-1	X								no tag
MW-2	X								↓
MW-3	* TW								<del>no tag</del> , no tag
MW-4	X								no tag
MW-5	X		X						↓
MW-6	X		X						↓
MW-7	X								↓

\*Well box must meet all three criteria to be compliant: 1) WELL IS SECURABLE BY DESIGN (12" or less) 2) WELL IS MARKED WITH THE WORDS "MONITORING WELL" (12" or less) 3) WELL TAG IS PRESENT, SECURE, AND CORRECT

Notes: \_\_\_\_\_

NO. 853539

# NON-HAZARDOUS WASTE DATA FORM

1. BEST #

2. Generator's Name and Mailing Address  
 SHELL OIL PRODUCTS US  
 20945 B. WILMINGTON  
 CARSON, CA 90810  
 ATTN: Deborah Pryor

Generator's Site Address (if different than mailing address)  
 SHELL OIL #  
 406 N Gaffey St  
 San Pedro

Generator's Phone: (714) 974-0088  
 24-HOUR EMERGENCY PHONE: (909) 424-9500

3. Transporter 1 Company Name  
 Plains Tech Services, Inc  
 Phone # (310) 385-4155

4. Transporter 2 Company Name  
 Niato & Sons Trucking, Inc  
 Phone # (714) 990-6955

5. Designated Facility Name and Site Address  
 CROSBY & OVERTON  
 1630 W. 17th STREET  
 LONG BEACH, CA 90813  
 Phone # (562) 432-5445

6. Waste Shipping Name and Description	7. Containers		8. Total Quantity	9. Unit W/Vol	10. Profile No.
	No.	Type			
A. NON-HAZARDOUS WATER	1	TT	120	G	48305
B.					
C.					
D.					

11. Special Handling Instructions and Additional Information  
 WEAR ALL APPROPRIATE PROTECTIVE CLOTHING SAP #  
 WELL PURGING / DECOR WATER INCIDENT # 976175Bj

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this data form are non-hazardous.  
 Generator's/Officer's Printed/Typed Name: Tyler Watts  
 Signature: *T. Watts* (ON BEHALF OF SOPUS)  
 Month: 3 Day: 5 Year: 07

13. Transporter Acknowledgment of Receipt of Materials  
 Transporter 1 Printed/Typed Name: Tyler Watts  
 Signature: *T. Watts* Month: 3 Day: 5 Year: 07  
 Transporter 2 Printed/Typed Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

14. Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.  
 Printed/Typed Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Month: \_\_\_\_\_ Day: \_\_\_\_\_ Year: \_\_\_\_\_

GENERATOR

TRANSPORTER

FACILITY

## WELL GAUGING DATA

Project # 090305-TW2 Date 3/5/09 Client Shell

Site 406 N. Gaffey St, San Pedro

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1	1109	4					37.15	54.60	↓	
MW-2	1120	4				36.36	54.57			
MW-3	1115	4				35.29	53.70			
MW-4	1105	4				35.86	54.25			
MW-5	1122	2				36.31	54.12			
MW-6	1114	<del>4</del> rwf <sub>2</sub>				32.01	52.71			
MW-7	1250	2				32.45	54.20			

## SHE WELL MONITORING DATA SHEET

BTS #: 090305-TW)	Site: 9761758)
Sampler: TW	Date: 3/5/09
Well I.D.: MW-1	Well Diameter: 2 3 ④ 6 8
Total Well Depth (TD): 54.60	Depth to Water (DTW): 37.15
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 40.64	

Purge Method: Bailer                      Waterra                      Sampling Method: Bailer  
 Disposable Bailer                      Peristaltic                      Disposable Bailer  
 Positive Air Displacement                      Extraction Pump                      Extraction Port  
Electric Submersible                      Other \_\_\_\_\_                      Dedicated Tubing  
 Other: \_\_\_\_\_

$11.4 \text{ (Gals.)} \times 3 = 34.2 \text{ Gals.}$ I Case Volume                      Specified Volumes                      Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
1205	73.4	4.5	9499	410	12	
1208	73.9	4.0	9793	473	23	
—	well dewatered at			23 gals	—	
1515	64.3	4.7	6511	13	—	

Did well dewater? Yes No                      Gallons actually evacuated: 23.0

Sampling Date: 3/5/09                      Sampling Time: 1515                      Depth to Water: 37.84

Sample I.D.: MW-1                      Laboratory: Test America CalScience Other \_\_\_\_\_

Analyzed for: ~~TPH-G~~ BTEX MTBE TPH-D Oxygenates (5) ~~Other~~ See SOW

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd): Pre-purge:	mg/L	Post-purge:	0.36 mg/L
-----------------------------	------	-------------	-----------

O.R.P. (if req'd): Pre-purge:	mV	Post-purge:	210 mV
-------------------------------	----	-------------	--------

**SHE WELL MONITORING DATA SHEET**

BTS #: 090305-TW2	Site: 97617581
Sampler: Tw	Date: 3/5/09
Well I.D.: MW-2	Well Diameter: 2 3 ④ 6 8
Total Well Depth (TD): 54.57	Depth to Water (DTW): 36.36
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 40.00	

Purge Method: Bailer	Watterra	Sampling Method: (Bailer)
Disposable Bailer	Peristaltic	Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
(Electric Submersible)	Other _____	Dedicated Tubing
		Other: _____

$11.9 \text{ (Gals.)} \times 3 = 35.7 \text{ Gals.}$ <p>I Case Volume      Specified Volumes      Calculated Volume</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1218	72.6	5.3	10.08	285	12	odor
—	well dewatered at		21 gals	—————		
1530	69.4	5.4	11.99	71000	—	

Did well dewater?  Yes    No      Gallons actually evacuated: 21.0

Sampling Date: 3/5/09    Sampling Time: 1530      Depth to Water: 43.52 (>2hrs)

Sample I.D.: MW-2      Laboratory: Test America (CalScience) Other \_\_\_\_\_

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D (Oxygenates (5)) Other: see SAW

EB I.D. (if applicable): @ Time      Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.34 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	86 mV

**SHE WELL MONITORING DATA SHEET**

BTS #: 090305-TW	Site: 97617581
Sampler: TW	Date: 3/5/09
Well I.D.: MW-3	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 53.70	Depth to Water (DTW): 35.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVS</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 38.97	

Purge Method: Bailer      Waterra      Sampling Method: Bailer  
 Disposable Bailer      Peristaltic      Disposable Bailer  
 Positive Air Displacement      Extraction Pump      Extraction Port  
Electric Submersible      Other \_\_\_\_\_      Dedicated Tubing

Other: \_\_\_\_\_

$\frac{12.0 \text{ (Gals.)} \times 3}{\text{Specified Volumes}} = \frac{36.0}{\text{Calculated Volume}} \text{ Gals.}$	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
1231	72.5	5.4	9185	>1000	12	very strong odor
—	well dewatered at			17 gals	—	—
1545	65.1	4.5	11.21	>1000	—	—

Did well dewater? Yes No      Gallons actually evacuated: 17.0

Sampling Date: 3/5/09      Sampling Time: 1545      Depth to Water:

Sample I.D.: MW-3      Laboratory: Test America CalScience Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: see SOU

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.38	mg/L
	O.R.P. (if req'd):	mV	Post-purge:	111	mV



**SHE WELL MONITORING DATA SHEET**

BTS #: 090305-Tw2	Site: 97617581
Sampler: Tw	Date: 3/5/09
Well I.D.: MW-4	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 54.25	Depth to Water (DTW): 35.86
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 39.54	

Purge Method: Bailer Disposable Bailer Positive Air Displacement <u>Electric Submersible</u>	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: <u>Bailer</u> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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$12.0 \text{ (Gals.)} \times 3 = 36.0 \text{ Gals.}$ I Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
1150	73.9	6.7	3916	407	12	odor, <del>                    </del>
1153	74.5	6.5	4193	>1000	24	
well dewatered out				24 gals		
1500	69.2	5.4	4219			

Did well dewater? Yes No      Gallons actually evacuated: 24.0

Sampling Date: 3/5/09      Sampling Time: 1500      Depth to Water: 36.40

Sample I.D.: MW-4      Laboratory: Test America EarthScience Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other See SOW

EB I.D. (if applicable): @ Time      Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.40	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-110	mV

**SHE WELL MONITORING DATA SHEET**

BTS #: 010305-TW1	Site: 176175B1
Sampler: TW	Date: 3/5/09
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 54.12	Depth to Water (DTW): 36.31
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 39.87	

Purge Method: (Bailer)      Waterra      Sampling Method: (Bailer)

Disposable Bailer      Peristaltic      Disposable Bailer

Positive Air Displacement      Extraction Pump      Extraction Port

Electric Submersible      Other \_\_\_\_\_      Dedicated Tubing

Other: \_\_\_\_\_

$2.9 \text{ (Gals.)} \times 3 = 8.7 \text{ Gals.}$ <p>I Case Volume      Specified Volumes      Calculated Volume</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1410	68.6	5.1	11.80	>1000	3	
1416	70.0	5.2	10.95	>1000	6	
1423	70.6	5.1	11.75	>1000	9	

Did well dewater?    Yes    (No)      Gallons actually evacuated: 9

Sampling Date: 3/5/09    Sampling Time: 1440    Depth to Water: 39.87

Sample I.D.: MW-5      Laboratory: Test America (CalScience) Other \_\_\_\_\_

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D (Oxygenates (5)) (Other) See Saw

EB I.D. (if applicable): @ Time      Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	(Post-purge)	0.44 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	(Post-purge):	49 mV

**SHE WELL MONITORING DATA SHEET**

BTS #: 090305-TW1	Site: 97617581
Sampler: TW	Date: 3/5/09
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 52.71	Depth to Water (DTW): 32.01
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 36.15	

Purge Method: <u>Bailer</u> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: <u>Bailer</u> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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$\underline{3.4} \text{ (Gals.)} \times \underline{3} = \underline{10.2} \text{ Gals.}$ I Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <del>µS</del> )	Turbidity (NTUs)	Gals. Removed	Observations
1330	69.2	4.0	8078	>1000	3.5	
1338	69.8	3.9	8030	>1000	7.0	
1345	68.0	3.8	8069	>1000	10.5	

Did well dewater? Yes  No  Gallons actually evacuated: 10.5

Sampling Date: 3/5/09      Sampling Time: 1355      Depth to Water: 36.08

Sample I.D.: MW-6      Laboratory: Test America CalScience Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See SDW

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.30 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	203 mV

**SHE WELL MONITORING DATA SHEET**

BTS #: 090305-TW2	Site: 97617581
Sampler: TW	Date: 3/5/09
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 54.20	Depth to Water (DTW): 32.45
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 36.80	

Purge Method: (Bailer) Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other:	Sampling Method: (Bailer) Disposable Bailer Extraction Port Dedicated Tubing Other:
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3.5 (Gals.) X 3 = 10.5 Gals. I Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
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1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1254	72.6	5.4	8018	>1000	3.5	
1300	71.4	5.4	8118	>1000	7.0	
1307	72.5	5.2	8399	>1000	10.5	

Did well dewater? Yes  No  Gallons actually evacuated: 10.5

Sampling Date: 3/5/09      Sampling Time: 1320      Depth to Water: 33.21

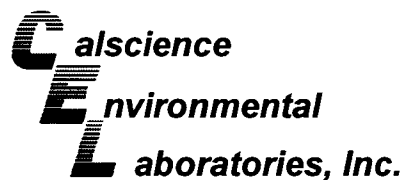
Sample I.D.: MW-7      Laboratory: Test America (CalScience) Other:

Analyzed for: (TPH-S) (BTEX) MTBE TPH-D (Oxygenates (5)) Other: see SOW

EB I.D. (if applicable): @ Time      Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.00 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	152 mV



March 19, 2009

Lorin King  
Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Subject: **Calscience Work Order No.: 09-03-0469**  
**Client Reference: 406 N. Gaffey Street, San Pedro, CA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/5/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

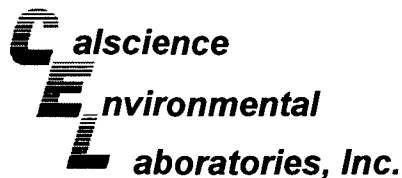
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Xuan Dang" followed by a flourish.

Calscience Environmental  
Laboratories, Inc.  
Xuan Dang  
Project Manager

A handwritten signature in black ink, appearing to read "Xuan Dang" followed by a flourish.



## Analytical Report

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: 03/05/09  
Work Order No: 09-03-0469  
Preparation: N/A  
Method: RSK-175M

Project: 406 N. Gaffey Street, San Pedro, CA

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-1</b>	<b>09-03-0469-1-D</b>	<b>03/05/09 16:16</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>

Parameter	Result	RL	DF	Qual	Units
Methane	10.6	1.00	1		ug/L

<b>MW-2</b>	<b>09-03-0469-2-D</b>	<b>03/05/09 15:30</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>
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Parameter	Result	RL	DF	Qual	Units
Methane	48.8	1.00	1		ug/L

<b>MW-3</b>	<b>09-03-0469-3-D</b>	<b>03/05/09 16:46</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>
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Parameter	Result	RL	DF	Qual	Units
Methane	4.43	1.00	1		ug/L

<b>MW-4</b>	<b>09-03-0469-4-D</b>	<b>03/05/09 16:00</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>
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Parameter	Result	RL	DF	Qual	Units
Methane	90.4	1.00	1		ug/L

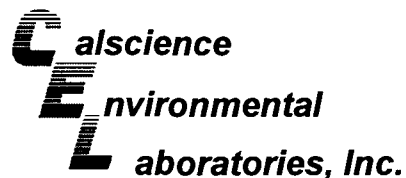
<b>MW-5</b>	<b>09-03-0469-5-D</b>	<b>03/05/09 14:40</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>
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Parameter	Result	RL	DF	Qual	Units
Methane	8.05	1.00	1		ug/L

<b>MW-6</b>	<b>09-03-0469-6-D</b>	<b>03/05/09 13:56</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>
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Parameter	Result	RL	DF	Qual	Units
Methane	13.1	1.00	1		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: 03/05/09  
Work Order No: 09-03-0469  
Preparation: N/A  
Method: RSK-175M

Project: 406 N. Gaffey Street, San Pedro, CA

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-7</b>	<b>09-03-0469-7-D</b>	<b>03/05/09 13:20</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>

Parameter	Result	RL	DF	Qual	Units
Methane	45.6	1.00	1		ug/L

<b>Method Blank</b>	<b>099-12-663-511</b>	<b>N/A</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09 00:00</b>	<b>090306L01</b>
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Parameter	Result	RL	DF	Qual	Units
Methane	ND	1.00	1		ug/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

**Analytical Report**

Blaine Tech Services, Inc  
 20735 Belshaw Avenue  
 Carson, CA 90746-3509

Date Received: 03/05/09  
 Work Order No: 09-03-0469  
 Preparation: EPA 5030B  
 Method: LUFT GC/MS / EPA 8260B  
 Units: ug/L

Project: 406 N. Gaffey Street, San Pedro, CA

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-1</b>	<b>09-03-0469-1-B</b>	<b>03/05/09 15:15</b>	<b>Aqueous</b>	<b>GC/MS T</b>	<b>03/16/09</b>	<b>03/17/09 00:41</b>	<b>090316L01</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	1500	5.0	10		Tert-Butyl Alcohol (TBA)	ND	100	10	
Ethylbenzene	230	10	10		Diisopropyl Ether (DIPE)	ND	20	10	
Toluene	38	10	10		Ethyl-t-Butyl Ether (ETBE)	ND	20	10	
Xylenes (total)	350	10	10		Tert-Amyl-Methyl Ether (TAME)	ND	20	10	
Methyl-t-Butyl Ether (MTBE)	ND	10	10		TPPH	4300	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	122	74-140			1,2-Dichloroethane-d4	125	74-146		
Toluene-d8	96	88-112			Toluene-d8-TPPH	99	88-112		
1,4-Bromofluorobenzene	94	74-110							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-2</b>	<b>09-03-0469-2-B</b>	<b>03/05/09 15:30</b>	<b>Aqueous</b>	<b>GC/MS T</b>	<b>03/16/09</b>	<b>03/17/09 01:10</b>	<b>090316L01</b>

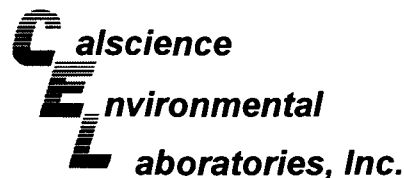
Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	3100	10	20		Tert-Butyl Alcohol (TBA)	860	200	20	
Ethylbenzene	540	20	20		Diisopropyl Ether (DIPE)	ND	40	20	
Toluene	330	20	20		Ethyl-t-Butyl Ether (ETBE)	ND	40	20	
Xylenes (total)	1600	20	20		Tert-Amyl-Methyl Ether (TAME)	ND	40	20	
Methyl-t-Butyl Ether (MTBE)	490	20	20		TPPH	12000	1000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	117	74-140			1,2-Dichloroethane-d4	118	74-146		
Toluene-d8	99	88-112			Toluene-d8-TPPH	102	88-112		
1,4-Bromofluorobenzene	95	74-110							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-3</b>	<b>09-03-0469-3-C</b>	<b>03/05/09 15:45</b>	<b>Aqueous</b>	<b>GC/MS LL</b>	<b>03/18/09</b>	<b>03/18/09 19:07</b>	<b>090318L01</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	11000	50	100		Tert-Butyl Alcohol (TBA)	ND	1000	100	
Ethylbenzene	2400	100	100		Diisopropyl Ether (DIPE)	ND	200	100	
Toluene	17000	100	100		Ethyl-t-Butyl Ether (ETBE)	ND	200	100	
Xylenes (total)	12000	100	100		Tert-Amyl-Methyl Ether (TAME)	ND	200	100	
Methyl-t-Butyl Ether (MTBE)	ND	100	100		TPPH	83000	5000	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	102	74-140			1,2-Dichloroethane-d4	113	74-146		
Toluene-d8	100	88-112			Toluene-d8-TPPH	99	88-112		
1,4-Bromofluorobenzene	102	74-110							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





## Analytical Report

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: 03/05/09  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B  
Units: ug/L

Project: 406 N. Gaffey Street, San Pedro, CA

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-4</b>	<b>09-03-0469-4-C</b>	<b>03/05/09 15:00</b>	<b>Aqueous</b>	<b>GC/MS LL</b>	<b>03/17/09</b>	<b>03/17/09 20:40</b>	<b>090317L01</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.58	0.50	1		Tert-Butyl Alcohol (TBA)	46	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	25	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	68	1.0	1		TPPH	350	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	102	74-140			1,2-Dichloroethane-d4	109	74-146		
Toluene-d8	103	88-112			Toluene-d8-TPPH	103	88-112		
1,4-Bromofluorobenzene	99	74-110							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-5</b>	<b>09-03-0469-5-C</b>	<b>03/05/09 14:40</b>	<b>Aqueous</b>	<b>GC/MS LL</b>	<b>03/17/09</b>	<b>03/17/09 21:07</b>	<b>090317L01</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	9900	50	100		Tert-Butyl Alcohol (TBA)	2200	1000	100	
Ethylbenzene	1100	100	100		Diisopropyl Ether (DIPE)	ND	200	100	
Toluene	6800	100	100		Ethyl-t-Butyl Ether (ETBE)	ND	200	100	
Xylenes (total)	4600	100	100		Tert-Amyl-Methyl Ether (TAME)	ND	200	100	
Methyl-t-Butyl Ether (MTBE)	380	100	100		TPPH	40000	5000	100	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	102	74-140			1,2-Dichloroethane-d4	108	74-146		
Toluene-d8	100	88-112			Toluene-d8-TPPH	100	88-112		
1,4-Bromofluorobenzene	99	74-110							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-6</b>	<b>09-03-0469-6-B</b>	<b>03/05/09 13:55</b>	<b>Aqueous</b>	<b>GC/MS T</b>	<b>03/16/09</b>	<b>03/16/09 22:42</b>	<b>090316L01</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	420	2.5	5		Tert-Butyl Alcohol (TBA)	19	10	1	
Ethylbenzene	140	5.0	5		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	2.1	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	250	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	3.3	1.0	1		TPPH	2700	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	111	74-140			1,2-Dichloroethane-d4	116	74-146		
Toluene-d8	98	88-112			Toluene-d8-TPPH	101	88-112		
1,4-Bromofluorobenzene	101	74-110							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

**Analytical Report**

Blaine Tech Services, Inc  
 20735 Belshaw Avenue  
 Carson, CA 90746-3509

Date Received: 03/05/09  
 Work Order No: 09-03-0469  
 Preparation: EPA 5030B  
 Method: LUFT GC/MS / EPA 8260B  
 Units: ug/L

Project: 406 N. Gaffey Street, San Pedro, CA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>MW-7</b>	<b>09-03-0469-7-C</b>	<b>03/05/09 13:20</b>	<b>Aqueous</b>	<b>GC/MS LL</b>	<b>03/17/09</b>	<b>03/17/09 22:02</b>	<b>090317L01</b>

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	1900	25	50		Tert-Butyl Alcohol (TBA)	140	100	10	
Ethylbenzene	390	10	10		Diisopropyl Ether (DIPE)	ND	20	10	
Toluene	ND	10	10		Ethyl-t-Butyl Ether (ETBE)	ND	20	10	
Xylenes (total)	510	10	10		Tert-Amyl-Methyl Ether (TAME)	ND	20	10	
Methyl-t-Butyl Ether (MTBE)	ND	10	10		TPPH	7400	500	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	100	74-140			1,2-Dichloroethane-d4	110	74-146		
Toluene-d8	100	88-112			Toluene-d8-TPPH	100	88-112		
1,4-Bromofluorobenzene	102	74-110							

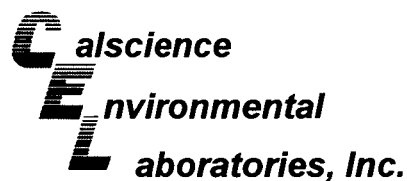
Method Blank	099-12-767-1,326	N/A	Aqueous	GC/MS T	03/16/09	03/16/09 22:12	090316L01
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1		TPPH	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	117	74-140			1,2-Dichloroethane-d4	120	74-146		
Toluene-d8	100	88-112			Toluene-d8-TPPH	103	88-112		
1,4-Bromofluorobenzene	85	74-110							

Method Blank	099-12-767-1,335	N/A	Aqueous	GC/MS LL	03/17/09	03/17/09 14:20	090317L01
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1		TPPH	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	96	74-140			1,2-Dichloroethane-d4	103	74-146		
Toluene-d8	102	88-112			Toluene-d8-TPPH	102	88-112		
1,4-Bromofluorobenzene	98	74-110							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report

Blaine Tech Services, Inc  
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Carson, CA 90746-3509

Date Received: 03/05/09  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B  
Units: ug/L

Project: 406 N. Gaffey Street, San Pedro, CA

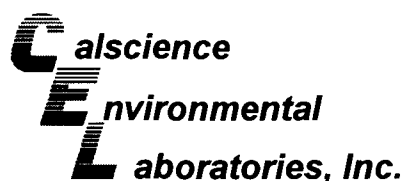
Page 4 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-767-1,340	N/A	Aqueous	GC/MS LL	03/18/09	03/18/09 15:01	090318L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	2.0	1	
Toluene	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Xylenes (total)	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1		TPPH	ND	50	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	99	74-140			1,2-Dichloroethane-d4	108	74-146		
Toluene-d8	101	88-112			Toluene-d8-TPPH	101	88-112		
1,4-Bromofluorobenzene	95	74-110							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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## Analytical Report

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: 03/05/09  
Work Order No: 09-03-0469

Project: 406 N. Gaffey Street, San Pedro, CA

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Client Sample Number	Lab Sample Number	Date Collected	Matrix
<b>MW-1</b>	<b>09-03-0469-1</b>	<b>03/05/09</b>	<b>Aqueous</b>

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	0.20	0.20	2		mg/L	N/A	03/05/09	EPA 300.0
Sulfate	3900	100	100		mg/L	N/A	03/05/09	EPA 300.0
Iron (II)	11	0.20	2		mg/L	03/05/09	03/05/09	SM3500-FeB

<b>MW-2</b>	<b>09-03-0469-2</b>	<b>03/05/09</b>	<b>Aqueous</b>
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Comment(s): (3) The reporting limit is elevated resulting from matrix interference.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N) (3)	ND	0.20	2		mg/L	N/A	03/05/09	EPA 300.0
Sulfate	3600	100	100		mg/L	N/A	03/05/09	EPA 300.0
Iron (II)	15	0.20	2		mg/L	03/05/09	03/05/09	SM3500-FeB

<b>MW-3</b>	<b>09-03-0469-3</b>	<b>03/05/09</b>	<b>Aqueous</b>
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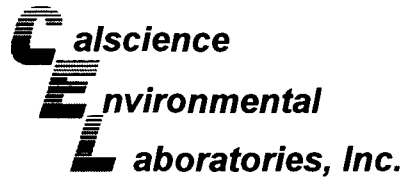
Comment(s): (3) The reporting limit is elevated resulting from matrix interference.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N) (3)	ND	0.20	2		mg/L	N/A	03/05/09	EPA 300.0
Sulfate	3000	100	100		mg/L	N/A	03/05/09	EPA 300.0
Iron (II)	15	0.20	2		mg/L	03/05/09	03/05/09	SM3500-FeB

<b>MW-4</b>	<b>09-03-0469-4</b>	<b>03/05/09</b>	<b>Aqueous</b>
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Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	0.10	1		mg/L	N/A	03/06/09	EPA 300.0
Sulfate	1400	20	20		mg/L	N/A	03/06/09	EPA 300.0
Iron (II)	20	0.40	4		mg/L	03/05/09	03/05/09	SM3500-FeB

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: 03/05/09  
Work Order No: 09-03-0469

Project: 406 N. Gaffey Street, San Pedro, CA

Page 2 of 2

Client Sample Number	Lab Sample Number	Date Collected	Matrix
<b>MW-5</b>	<b>09-03-0469-5</b>	<b>03/05/09</b>	<b>Aqueous</b>

Comment(s): (3) The reporting limit is elevated resulting from matrix interference.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N) (3)	ND	0.20	2		mg/L	N/A	03/06/09	EPA 300.0
Sulfate	3500	100	100		mg/L	N/A	03/06/09	EPA 300.0
Iron (II)	13	0.20	2		mg/L	03/05/09	03/05/09	SM3500-FeB

<b>MW-6</b>	<b>09-03-0469-6</b>	<b>03/05/09</b>	<b>Aqueous</b>
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Comment(s): (3) The reporting limit is elevated resulting from matrix interference.

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N) (3)	ND	0.20	2		mg/L	N/A	03/06/09	EPA 300.0
Sulfate	3500	100	100		mg/L	N/A	03/06/09	EPA 300.0
Iron (II)	11	0.20	2		mg/L	03/05/09	03/05/09	SM3500-FeB

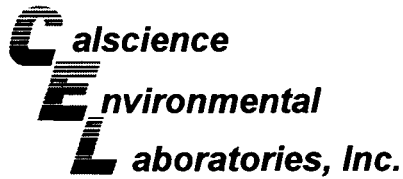
<b>MW-7</b>	<b>09-03-0469-7</b>	<b>03/05/09</b>	<b>Aqueous</b>
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Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	0.10	1		mg/L	N/A	03/06/09	EPA 300.0
Sulfate	3100	50	50		mg/L	N/A	03/06/09	EPA 300.0
Iron (II)	14	0.20	2		mg/L	03/05/09	03/05/09	SM3500-FeB

<b>Method Blank</b>	<b>N/A</b>	<b>Aqueous</b>
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Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Nitrate (as N)	ND	0.10	1		mg/L	N/A	03/05/09	EPA 300.0
Sulfate	ND	1.0	1		mg/L	N/A	03/05/09	EPA 300.0
Iron (II)	ND	0.10	1		mg/L	03/05/09	03/05/09	SM3500-FeB

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Quality Control - Spike/Spike Duplicate

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

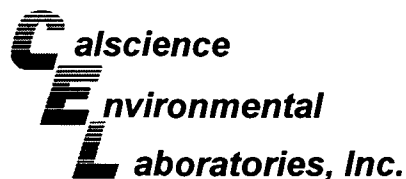
Date Received: 03/05/09  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA  
8260B

Project 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
<b>MW-6</b>	<b>Aqueous</b>	<b>GC/MS T</b>	<b>03/16/09</b>	<b>03/16/09</b>	<b>090316S01</b>

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	0	0	88-118	0	0-7	3
Carbon Tetrachloride	96	93	67-145	3	0-11	
Chlorobenzene	96	97	88-118	1	0-7	
1,2-Dibromoethane	97	100	70-130	2	0-30	
1,2-Dichlorobenzene	102	102	86-116	0	0-8	
1,1-Dichloroethene	97	96	70-130	1	0-25	
Ethylbenzene	41	37	70-130	1	0-30	3
Toluene	102	101	87-123	0	0-8	
Trichloroethene	97	98	79-127	1	0-10	
Vinyl Chloride	91	87	69-129	4	0-13	
Methyl-t-Butyl Ether (MTBE)	97	96	71-131	0	0-13	
Tert-Butyl Alcohol (TBA)	95	92	36-168	3	0-45	
Diisopropyl Ether (DIPE)	104	106	81-123	1	0-9	
Ethyl-t-Butyl Ether (ETBE)	118	117	72-126	1	0-12	
Tert-Amyl-Methyl Ether (TAME)	110	113	72-126	3	0-12	
Ethanol	88	100	53-149	12	0-31	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

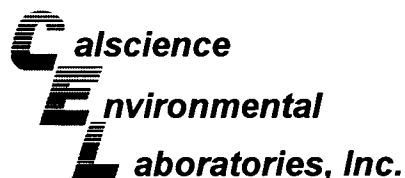
Date Received: 03/05/09  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA  
8260B

Project 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-0489-7	Aqueous	GC/MS LL	03/17/09	03/17/09	090317S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	91	90	88-118	1	0-7	
Carbon Tetrachloride	95	98	67-145	3	0-11	
Chlorobenzene	89	90	88-118	1	0-7	
1,2-Dibromoethane	94	96	70-130	1	0-30	
1,2-Dichlorobenzene	85	87	86-116	2	0-8	3
1,1-Dichloroethene	79	80	70-130	2	0-25	
Ethylbenzene	90	90	70-130	0	0-30	
Toluene	97	95	87-123	2	0-8	
Trichloroethene	87	86	79-127	1	0-10	
Vinyl Chloride	84	89	69-129	5	0-13	
Methyl-t-Butyl Ether (MTBE)	94	97	71-131	3	0-13	
Tert-Butyl Alcohol (TBA)	106	102	36-168	4	0-45	
Diisopropyl Ether (DIPE)	88	89	81-123	2	0-9	
Ethyl-t-Butyl Ether (ETBE)	89	91	72-126	2	0-12	
Tert-Amyl-Methyl Ether (TAME)	96	95	72-126	1	0-12	
Ethanol	92	96	53-149	4	0-31	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate

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20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: 03/05/09  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA  
8260B

Project 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-0491-1	Aqueous	GC/MS LL	03/18/09	03/18/09	090318S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	92	92	88-118	0	0-7	
Carbon Tetrachloride	103	102	67-145	1	0-11	
Chlorobenzene	89	88	88-118	1	0-7	
1,2-Dibromoethane	94	95	70-130	1	0-30	
1,2-Dichlorobenzene	85	86	86-116	0	0-8	3
1,1-Dichloroethene	86	86	70-130	0	0-25	
Ethylbenzene	91	89	70-130	2	0-30	
Toluene	97	97	87-123	0	0-8	
Trichloroethene	88	88	79-127	1	0-10	
Vinyl Chloride	84	92	69-129	10	0-13	
Methyl-t-Butyl Ether (MTBE)	96	105	71-131	4	0-13	
Tert-Butyl Alcohol (TBA)	102	100	36-168	1	0-45	
Diisopropyl Ether (DIPE)	91	94	81-123	4	0-9	
Ethyl-t-Butyl Ether (ETBE)	91	94	72-126	4	0-12	
Tert-Amyl-Methyl Ether (TAME)	97	100	72-126	3	0-12	
Ethanol	90	88	53-149	3	0-31	

RPD - Relative Percent Difference , CL - Control Limit

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**Calscience**  
**Environmental**  
**Laboratories, Inc.**

**Quality Control - Spike/Spike Duplicate**

Blaine Tech Services, Inc  
 20735 Belshaw Avenue  
 Carson, CA 90746-3509

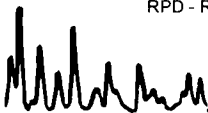
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 Work Order No: 09-03-0469

Project: 406 N. Gaffey Street, San Pedro, CA

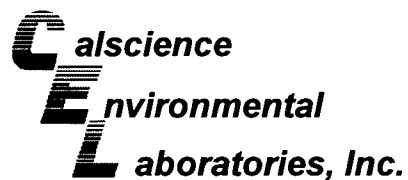
**Matrix: Aqueous**

<u>Parameter</u>	<u>Method</u>	<u>Quality Control</u> <u>Sample ID</u>	<u>Date</u> <u>Analyzed</u>	<u>Date</u> <u>Extracted</u>	<u>MS%</u> <u>REC</u>	<u>MSD%</u> <u>REC</u>	<u>%REC</u> <u>CL</u>	<u>RPD</u>	<u>RPD</u> <u>CL</u>	<u>Qualifiers</u>
Nitrate (as N)	EPA 300.0	09-03-0406-1	03/05/09	N/A	92	91	58-142	1	0-6	
Sulfate	EPA 300.0	09-03-0406-1	03/05/09	N/A	90	91	49-133	0	0-3	
Iron (II)	SM3500-FeB	09-03-0449-2	03/05/09	3/5/09	97	96	70-130	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit



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## Quality Control - LCS/LCS Duplicate

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: N/A  
Work Order No: 09-03-0469  
Preparation: N/A  
Method: RSK-175M

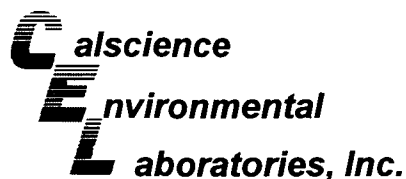
Project: 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
<b>099-12-663-511</b>	<b>Aqueous</b>	<b>GC 33</b>	<b>N/A</b>	<b>03/06/09</b>	<b>090306L01</b>

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	99	100	79-109	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: N/A  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B

Project: 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
<b>099-12-767-1,326</b>	<b>Aqueous</b>	<b>GC/MS T</b>	<b>03/16/09</b>	<b>03/16/09</b>	<b>090316L01</b>		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	100	100	84-120	78-126	0	0-8	
Carbon Tetrachloride	97	99	63-147	49-161	1	0-10	
Chlorobenzene	98	99	89-119	84-124	1	0-7	
1,2-Dibromoethane	104	103	80-120	73-127	0	0-20	
1,2-Dichlorobenzene	101	103	89-119	84-124	2	0-9	
1,1-Dichloroethene	99	97	77-125	69-133	2	0-16	
Ethylbenzene	109	110	80-120	73-127	1	0-20	
Toluene	103	104	83-125	76-132	1	0-9	
Trichloroethene	102	107	89-119	84-124	4	0-8	
Vinyl Chloride	92	94	63-135	51-147	1	0-13	
Methyl-t-Butyl Ether (MTBE)	100	99	82-118	76-124	1	0-13	
Tert-Butyl Alcohol (TBA)	100	97	46-154	28-172	4	0-32	
Diisopropyl Ether (DIPE)	107	107	81-123	74-130	0	0-11	
Ethyl-t-Butyl Ether (ETBE)	106	108	74-122	66-130	2	0-12	
Tert-Amyl-Methyl Ether (TAME)	110	112	76-124	68-132	1	0-10	
Ethanol	101	120	60-138	47-151	18	0-32	
TPPH	79	95	65-135	53-147	18	0-30	

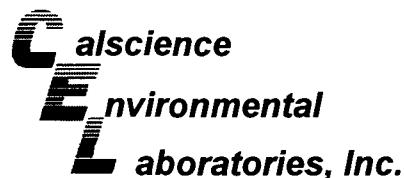
Total number of LCS compounds : 17

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: N/A  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B

Project: 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
<b>099-12-767-1,335</b>	<b>Aqueous</b>	<b>GC/MS LL</b>	<b>03/17/09</b>	<b>03/17/09</b>	<b>090317L01</b>		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	93	94	84-120	78-126	2	0-8	
Carbon Tetrachloride	99	97	63-147	49-161	1	0-10	
Chlorobenzene	91	92	89-119	84-124	2	0-7	
1,2-Dibromoethane	98	98	80-120	73-127	0	0-20	
1,2-Dichlorobenzene	90	89	89-119	84-124	0	0-9	
1,1-Dichloroethene	81	82	77-125	69-133	1	0-16	
Ethylbenzene	92	94	80-120	73-127	2	0-20	
Toluene	97	100	83-125	76-132	3	0-9	
Trichloroethene	92	94	89-119	84-124	2	0-8	
Vinyl Chloride	85	88	63-135	51-147	4	0-13	
Methyl-t-Butyl Ether (MTBE)	100	99	82-118	76-124	1	0-13	
Tert-Butyl Alcohol (TBA)	102	104	46-154	28-172	1	0-32	
Diisopropyl Ether (DIPE)	92	92	81-123	74-130	0	0-11	
Ethyl-t-Butyl Ether (ETBE)	95	95	74-122	66-130	0	0-12	
Tert-Amyl-Methyl Ether (TAME)	102	102	76-124	68-132	0	0-10	
Ethanol	87	81	60-138	47-151	8	0-32	
TPPH	98	88	65-135	53-147	11	0-30	

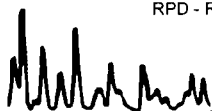
Total number of LCS compounds : 17

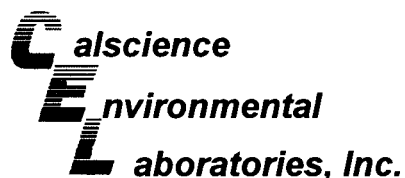
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - LCS/LCS Duplicate

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: N/A  
Work Order No: 09-03-0469  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B

Project: 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
<b>099-12-767-1,340</b>	<b>Aqueous</b>	<b>GC/MS LL</b>	<b>03/18/09</b>	<b>03/18/09</b>	<b>090318L01</b>		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	98	94	84-120	78-126	4	0-8	
Carbon Tetrachloride	110	104	63-147	49-161	6	0-10	
Chlorobenzene	96	91	89-119	84-124	6	0-7	
1,2-Dibromoethane	103	97	80-120	73-127	6	0-20	
1,2-Dichlorobenzene	92	87	89-119	84-124	6	0-9	ME
1,1-Dichloroethene	94	87	77-125	69-133	7	0-16	
Ethylbenzene	98	91	80-120	73-127	7	0-20	
Toluene	103	98	83-125	76-132	5	0-9	
Trichloroethene	96	92	89-119	84-124	5	0-8	
Vinyl Chloride	95	91	63-135	51-147	4	0-13	
Methyl-t-Butyl Ether (MTBE)	103	98	82-118	76-124	4	0-13	
Tert-Butyl Alcohol (TBA)	103	100	46-154	28-172	3	0-32	
Diisopropyl Ether (DIPE)	97	93	81-123	74-130	5	0-11	
Ethyl-t-Butyl Ether (ETBE)	97	93	74-122	66-130	5	0-12	
Tert-Amyl-Methyl Ether (TAME)	102	99	76-124	68-132	3	0-10	
Ethanol	95	97	60-138	47-151	1	0-32	
TPPH	92	88	65-135	53-147	4	0-30	

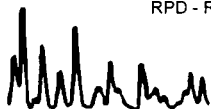
Total number of LCS compounds : 17

Total number of ME compounds : 1

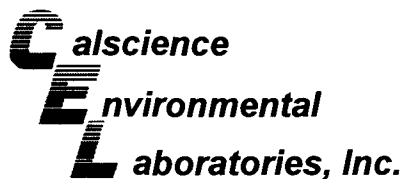
Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



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## Quality Control - LCS/LCS Duplicate

Blaine Tech Services, Inc  
20735 Belshaw Avenue  
Carson, CA 90746-3509

Date Received: N/A  
Work Order No: 09-03-0469

Project: 406 N. Gaffey Street, San Pedro, CA

Matrix: Aqueous

<u>Parameter</u>	<u>Method</u>	<u>Quality Control</u> Sample ID	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Analyzed</u>	<u>LCS %</u> <u>REC</u>	<u>LCSD %</u> <u>REC</u>	<u>%REC</u> <u>CL</u>	<u>RPD</u>	<u>RPD</u> <u>CL</u>	<u>Qual</u>
Nitrate (as N)	EPA 300.0	099-12-906-37	N/A	03/05/09	96	95	87-111	1	0-12	
Sulfate	EPA 300.0	099-12-906-37	N/A	03/05/09	95	94	89-107	2	0-13	

RPD - Relative Percent Difference , CL - Control Limit

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**Calscience**  
**Environmental** Quality Control - Laboratory Control Sample  
**Laboratories, Inc.**

Blaine Tech Services, Inc  
 20735 Belshaw Avenue  
 Carson, CA 90746-3509

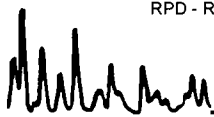
Date Received: N/A  
 Work Order No: 09-03-0469

Project: 406 N. Gaffey Street, San Pedro, CA

**Matrix : Aqueous**

<u>Parameter</u>	<u>Method</u>	<u>Quality Control Sample ID</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>Conc Added</u>	<u>Conc Recovered</u>	<u>LCS %Rec</u>	<u>%Rec CL</u>	<u>Qualifiers</u>
Iron (II)	SM3500-FeB	099-05-111-3,251	03/05/09	03/05/09	1.00	1.01	101	80-120	

RPD - Relative Percent Difference , CL - Control Limit



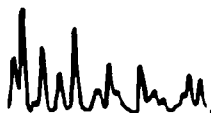
7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501

**Glossary of Terms and Qualifiers**

 Work Order Number: 09-03-0469
 

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<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.







# Shell Oil Products Chain Of Custody Record

LAB (LOCATION)

CALSCIENCE ( )

SPL ( )

XENCO ( )

TEST AMERICA ( )

OTHER ( )

Please Check Appropriate Box:

ENV. SERVICES     MOTIVA RETAIL     SHELL RETAIL

MOTIVA S&CM     CONSULTANT     LUBES

SHELL PIPELINE     OTHER

Print Bill To Contact Name: Deborah Pryor

INCIDENT # (ENV. SERVICES): 9 7 6 1 7 5 8 1

PO #    SAP #

CHECK IF NO INCIDENT # APPLIES

DATE: 3/5/09

PAGE: 1 of 1

SAMPLING COMPANY: Blaine Tech Services

LOG CODE: BTST

ADDRESS: 20735 Belshaw Ave, Carson, CA 90746

SITE ADDRESS: Street and City: 406 N. Gaffey Street, San Pedro

State: CA

GLOBAL ID NO.: T0603717723

EDF DELIVERABLE TO (Name, Company, Office Location): Truedi Balsitis, WPI, Buena Park office

PHONE NO.: 714-826-0352

E-MAIL: tbalsitis@wpinc.com

CONSULTANT PROJECT NO.: 090305-TW2

PROJECT CONTACT (Hardcopy or PDF Report to): Lorin King

TELEPHONE: 310-585-4455

FAX: 310-637-5802

E-MAIL: lking@blainetech.com

SAMPLER NAME(S) (Print): Tyler Watts

LAB USE ONLY: 09-03-0469

TURNAROUND TIME (CALENDAR DAYS):

STANDARD (14 DAY)     5 DAYS     3 DAYS     2 DAYS     24 HOURS

RESULTS NEEDED ON WEEKEND

REQUESTED ANALYSIS

LA - RWQCB REPORT FORMAT     UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES:

SHELL CONTRACT RATE APPLIES

STATE REIMBURSEMENT RATE APPLIES

EDD NOT NEEDED

RECEIPT VERIFICATION REQUESTED

TEMPERATURE ON RECEIPT C°
Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE					NO. OF CONT.	REQUESTED ANALYSIS													TEMPERATURE ON RECEIPT C°	Container PID Readings or Laboratory Notes
		DATE	TIME		HCL	HNO3	H2SO4	NONE	OTHER		TPH-G - Purgeable (8260B)	BTEX (8260B)	5 Oxygenates (8260B) (MIBK, TBA, DIBP, TAME, ETBE)	1,2 DCA (8260B)	EDB (8260B)	Ethanol (8260B)	Methanol (8015M)	TPH-O - Extractable (8015M)	Nitrate (EPA 300.0)	Sulfate (EPA 300.0)	Ferrous Iron (SM3500)	Methane (RSK-175)			
	MW-1	3/5/09	1515	W	X			X		6	X	X	X							X	X	X	X		
	MW-2		1520		X			X			X	X	X							X	X	X	X		
	MW-3		1545		X			X			X	X	X							X	X	X	X		
	MW-4		1500		X			X			X	X	X							X	X	X	X		
	MW-5		1440		X			X			X	X	X							X	X	X	X		
	MW-6		1375		X			X			X	X	X							X	X	X	X		
	MW-7		1320		X			X			X	X	X							X	X	X	X		

Relinquished by (Signature): *[Signature]*

Relinquished by (Signature): *[Signature]*

Relinquished by (Signature):

Received by (Signature): *[Signature]*

Received by (Signature): Danny CCL

Received by (Signature):

Date: 3/5/09

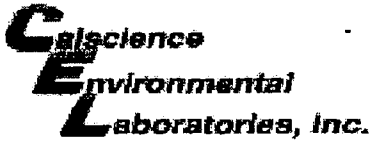
Date: 3/5/09

Date:

Time: 1630

Time: 17:40

Time:



WORK ORDER #: 09-03-0469

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: BLAINE-TECH

DATE: 03/05/09

**TEMPERATURE:** (Criteria: 0.0°C – 6.0°C, not frozen)

Temperature 2.2 °C - 0.2 °C (CF) = 2.0 °C     Blank     Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_).

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:     Air     Filter     Metals Only     PCBs Only    Initial: SO

**CUSTODY SEALS INTACT:**

Cooler     \_\_\_\_\_     No (Not Intact)     Not Present     N/A    Initial: SO

Sample     \_\_\_\_\_     No (Not Intact)     Not Present    Initial: SO

**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

**Solid:**     4ozCGJ     8ozCGJ     16ozCGJ     Sleeve     EnCores®     TerraCores®     \_\_\_\_\_

**Water:**     VOA     VOA<sub>h</sub>     VOA<sub>na2</sub>     125AGB     125AGB<sub>h</sub>     125AGB<sub>po4</sub>     1AGB     1AGB<sub>na2</sub>

1AGB<sub>s</sub>     500AGB     500AGB<sub>s</sub>     250CGB     250CGB<sub>s</sub>     1PB     500PB     500PB<sub>na</sub>     250PB

250PB<sub>n</sub>     125PB     125PB<sub>znna</sub>     100PBsterile     100PB<sub>na2</sub>     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

**Air:**     Tedlar®     Summa®     \_\_\_\_\_

Container:    C:Clear    A:Amber    P:Poly/Plastic    G:Glass    J:Jar    B:Bottle

Preservative:    h:HCL    n:HNO<sub>3</sub>    na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>    na:NaOH    po<sub>4</sub>:H<sub>3</sub>PO<sub>4</sub>    s:H<sub>2</sub>SO<sub>4</sub>    znna:ZnAc<sub>2</sub>+NaOH

Checked/Labeled by: SO

Reviewed by: D.L

Scanned by: SO

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# **APPENDIX F**

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**PTS LABORATORIES, INC. REPORT  
AND CHAIN-OF-CUSTODY DOCUMENT**



8100 Secura Way • Santa Fe Springs, CA 90670  
Telephone (562) 347-2500 • Fax (562) 907-3610

February 23, 2009

Truedi Balsitis  
Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Re: PTS File No: 39095  
06.407

Dear Ms. Balsitis:

Please find enclosed report for Physical Properties analyses conducted upon cores received from your 06.407 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please give me a call at (562) 347-2504.

Sincerely,  
PTS Laboratories, Inc.

Rachel Spitz  
Project Manager

Encl.

RECEIVED  
FEB 25 2009

406 N. Gaffey  
BY: San Pedro, CA

# PTS Laboratories

Project Name: N/A  
 Project Number: 06.407

PTS File No: 39095  
 Client: Wayne Perry, Inc.

## TEST PROGRAM

CORE ID	Depth ft.	Core Recovery ft.	Grain Size Analysis	Fraction Organic Carbon Walkey-Black	*Soil Properties Package	Hydraulic Conductivity EPA 9100		Notes
		<b>Plugs:</b>	Grab	Grab	Vert. 1"	Vert. 1"		
Rcvd. 1/30/09								
B-1d10	N/A	N/A	X	X	X	X		
B-1d12	N/A	N/A	X	X	X	X		
B-1d15	N/A	N/A	X	X	X	X		
B-1d35	N/A	N/A	X	X	X	X		
B-1d50	N/A	N/A	X	X	X	X		
<b>TOTALS:</b>	<b>5 cores</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>		

### Laboratory Test Program Notes

\*Includes Permeability to air, Total, Air and Water-Filled Porosity, Bulk and Grain Density, Moisture Content, and Total Pore Fluids.

PTS File No: 39095  
 Client: Wayne Perry, Inc.

**PHYSICAL PROPERTIES DATA - SOIL PROPERTIES PACKAGE (VADOSE ZONE)**

PROJECT NAME: N/A  
 PROJECT NO: 06.407

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	METHODS: API RP 40 / ASTM D2216		API RP 40		API RP 40		API RP 40	
				DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	25 PSI CONFINING STRESS		
				BULK, g/cc	GRAIN, g/cc	TOTAL	AIR FILLED		EFFECTIVE PERMEABILITY TO AIR (4), millidarcy		
B-1d10	N/A	V	13.8	1.76	2.68	34.3	10.0	70.7	0.893		
B-1d12	N/A	V	9.1	1.91	2.68	28.7	11.3	60.4	4.13		
B-1d15	N/A	V	54.7	0.93	2.81	66.9	16.0	76.0	18.5		
B-1d35	N/A	V	55.1	0.97	2.51	61.5	8.3	86.5	0.428		
B-1d50	N/A	V	73.3	0.76	2.43	68.6	12.7	81.4	0.168		

(1) Sample Orientation: H = horizontal; V = vertical (2) Total Porosity = no pore fluids in place; all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids (3) Reported as water only; (4) Native or Effective State = As received with pore fluids in place Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected

PTS File No: 39095  
 Client: Wayne Perry, Inc.

**PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY**

PROJECT NAME: N/A  
 PROJECT NO: 06.407

METHODS: API RP 40; EPA 9100

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	25 PSI CONFINING STRESS	
			EFFECTIVE (3,4) PERMEABILITY TO WATER, millidarcy	HYDRAULIC CONDUCTIVITY (2,3), cm/s
B-1d10	N/A	V	0.589	5.63E-07
B-1d12	N/A	V	0.866	8.28E-07
B-1d15	N/A	V	0.823	7.91E-07
B-1d35	N/A	V	0.305	2.91E-07
B-1d50	N/A	V	0.241	2.29E-07

(1) Sample Orientation: H = horizontal; V = vertical (2) Native State or Effective = With as-received pore fluids in place (3) Permeability to water and hydraulic conductivity measured at saturated conditions

PTS File No: 39095  
 Client: Wayne Perry, Inc.

**ORGANIC CARBON DATA - TOC (foc)**

PROJECT NAME: N/A  
 PROJECT NO: 06.407

SAMPLE ID.	DEPTH, ft.	SAMPLE MATRIX	METHOD: WALKLEY-BLACK	
			FRACTION ORGANIC CARBON, g/g	TOTAL ORGANIC CARBON, mg/kg
B-1d10	N/A	SOIL	2.40E-03	2400
B-1d12	N/A	SOIL	1.30E-03	1300
B-1d15	N/A	SOIL	1.20E-03	1200
B-1d35	N/A	SOIL	1.20E-03	1200
B-1d50	N/A	SOIL	9.75E-03	9750



**PARTICLE SIZE SUMMARY**  
(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: N/A  
PROJECT NO: 06.407

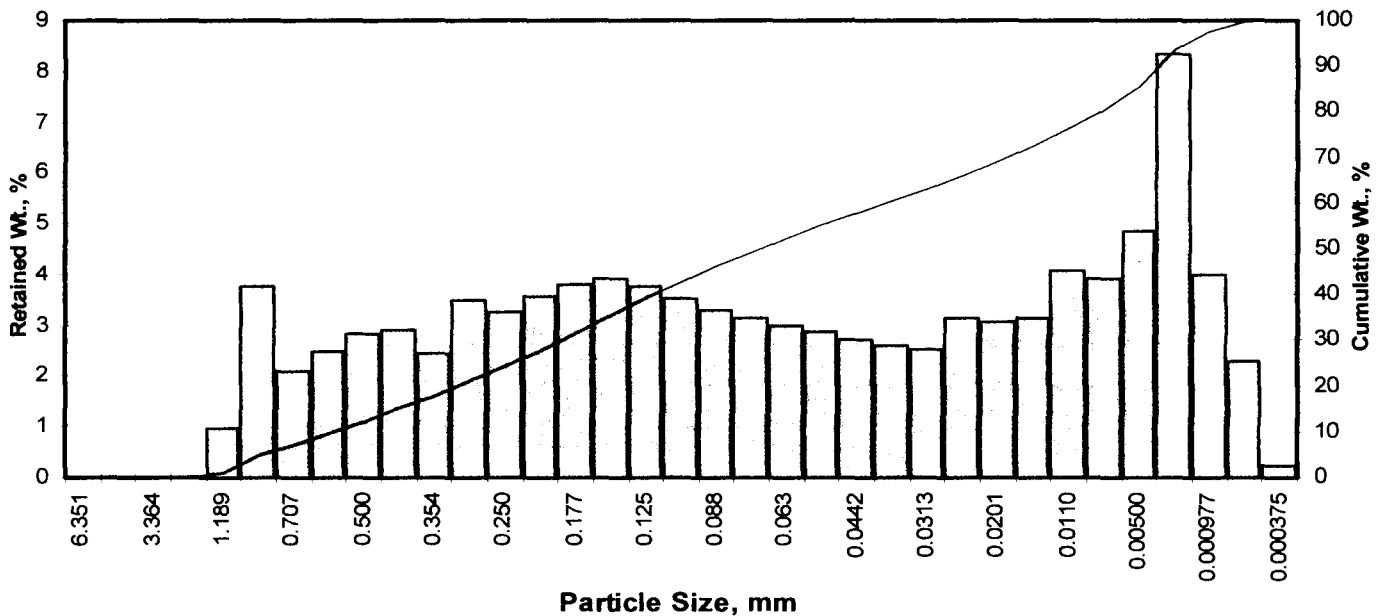
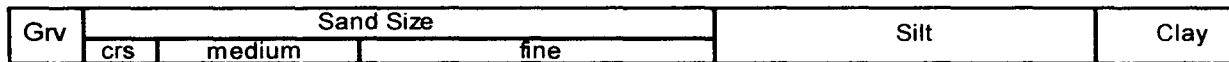
Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
B-1d10	N/A	Fine sand	0.071	0.00	0.00	15.05	34.17	35.94	14.85	50.78
B-1d12	N/A	Gravel	6.927	66.18	9.72	11.60	7.92	(2)	(2)	4.58
B-1d15	N/A	Silt	0.012	0.00	0.00	0.00	8.19	62.57	29.24	91.81
B-1d35	N/A	Silt	0.006	0.00	0.00	0.00	0.25	56.59	43.16	99.75
B-1d50	N/A	Silt	0.007	0.00	0.00	0.00	0.87	58.41	40.72	99.13

(1) Based on Mean from Trask

(2) Mechanical sieve does not differentiate silt/clay fractions.

Client: Wayne Perry, Inc.  
 Project: N/A  
 Project No: 06.407

PTS File No: 39095  
 Sample ID: B-1d10  
 Depth, ft: N/A



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.97	0.97	0.97
0.0331	0.841	0.25	20	3.75	3.75	4.72
0.0278	0.707	0.50	25	2.10	2.10	6.82
0.0234	0.595	0.75	30	2.48	2.48	9.30
0.0197	0.500	1.00	35	2.83	2.83	12.13
0.0166	0.420	1.25	40	2.92	2.92	15.05
0.0139	0.354	1.50	45	2.44	2.44	17.49
0.0117	0.297	1.75	50	3.49	3.49	20.98
0.0098	0.250	2.00	60	3.24	3.24	24.22
0.0083	0.210	2.25	70	3.55	3.55	27.77
0.0070	0.177	2.50	80	3.82	3.82	31.59
0.0059	0.149	2.75	100	3.92	3.92	35.51
0.0049	0.125	3.00	120	3.77	3.77	39.28
0.0041	0.105	3.25	140	3.52	3.52	42.80
0.0035	0.088	3.50	170	3.29	3.29	46.09
0.0029	0.074	3.75	200	3.13	3.13	49.22
0.0025	0.063	4.00	230	3.00	3.00	52.21
0.0021	0.053	4.25	270	2.86	2.86	55.07
0.00174	0.0442	4.50	325	2.73	2.73	57.80
0.00146	0.0372	4.75	400	2.61	2.61	60.41
0.00123	0.0313	5.00	450	2.53	2.53	62.94
0.000986	0.0250	5.32	500	3.16	3.16	66.10
0.000790	0.0201	5.64	635	3.06	3.06	69.16
0.000615	0.0156	6.00		3.16	3.16	72.32
0.000435	0.0110	6.50		4.06	4.06	76.38
0.000308	0.00781	7.00		3.93	3.93	80.31
0.000197	0.00500	7.65		4.84	4.84	85.15
0.000077	0.00195	9.00		8.33	8.33	93.48
0.000038	0.000977	10.00		3.98	3.98	97.46
0.000019	0.000488	11.00		2.29	2.29	99.75
0.000015	0.000375	11.38		0.25	0.25	100.00
<b>TOTALS</b>				<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	0.28	0.0323	0.822
10	0.81	0.0224	0.570
16	1.35	0.0155	0.393
25	2.06	0.0095	0.241
40	3.05	0.0047	0.121
50	3.82	0.0028	0.071
60	4.71	0.0015	0.038
75	6.33	0.0005	0.012
84	7.49	0.0002	0.006
90	8.43	0.0001	0.003
95	9.38	0.0001	0.001

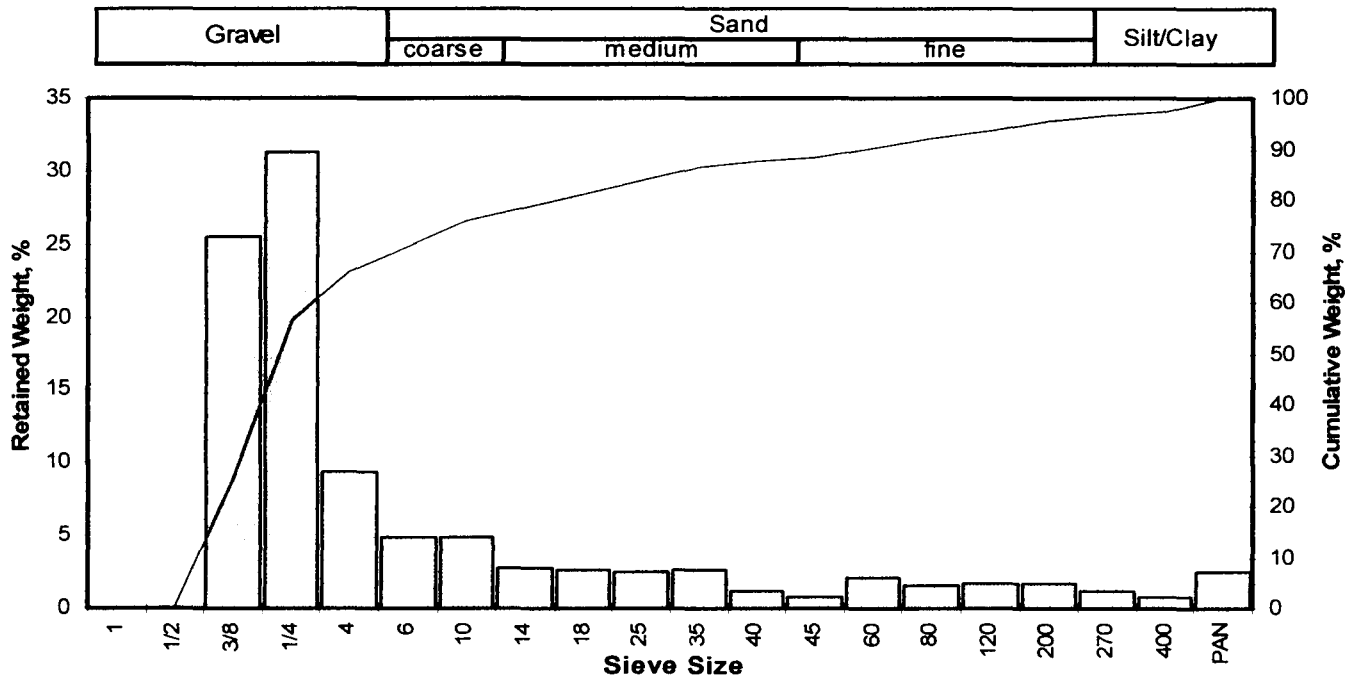
Measure	Trask	Inman	Folk-Ward
Median, phi	3.82	3.82	3.82
Median, in.	0.0028	0.0028	0.0028
Median, mm	0.071	0.071	0.071
Mean, phi	2.98	4.42	4.22
Mean, in.	0.0050	0.0018	0.0021
Mean, mm	0.127	0.047	0.054
Sorting	4.399	3.072	2.915
Skewness	0.770	0.197	0.210
Kurtosis	0.201	0.481	0.872

Grain Size Description (ASTM-USCS Scale) Fine sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	15.05
Fine Sand	200	34.17
Silt	>0.005 mm	35.94
Clay	<0.005 mm	14.85
<b>Total</b>		<b>100</b>

Client: Wayne Perry, Inc.  
 Project: N/A  
 Project No: 06.407

PTS File No: 39095  
 Sample ID: B-1d12  
 Depth, ft: N/A



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	16.88	25.43	25.43
0.2500	6.351	-2.67	1/4	20.79	31.32	56.75
0.1873	4.757	-2.25	4	6.26	9.43	66.18
0.1324	3.364	-1.75	6	3.21	4.84	71.02
0.0787	2.000	-1.00	10	3.24	4.88	75.90
0.0557	1.414	-0.50	14	1.84	2.77	78.67
0.0394	1.000	0.00	18	1.71	2.58	81.24
0.0278	0.707	0.50	25	1.65	2.49	83.73
0.0197	0.500	1.00	35	1.74	2.62	86.35
0.0166	0.420	1.25	40	0.76	1.14	87.50
0.0139	0.354	1.50	45	0.55	0.83	88.32
0.0098	0.250	2.00	60	1.36	2.05	90.37
0.0070	0.177	2.50	80	1.07	1.61	91.99
0.0049	0.125	3.00	120	1.11	1.67	93.66
0.0029	0.074	3.75	200	1.17	1.76	95.42
0.0021	0.053	4.25	270	0.81	1.22	96.64
0.0015	0.037	4.75	400	0.54	0.81	97.45
			PAN	1.69	2.55	100.00
<b>TOTALS</b>				66.38	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-3.57	0.4663	11.844
10	-3.49	0.4418	11.222
16	-3.39	0.4141	10.518
25	-3.25	0.3758	9.545
40	-2.98	0.3101	7.877
50	-2.79	0.2727	6.927
60	-2.52	0.2263	5.749
75	-1.14	0.0866	2.200
84	0.55	0.0269	0.682
90	1.91	0.0105	0.266
95	3.57	0.0033	0.084

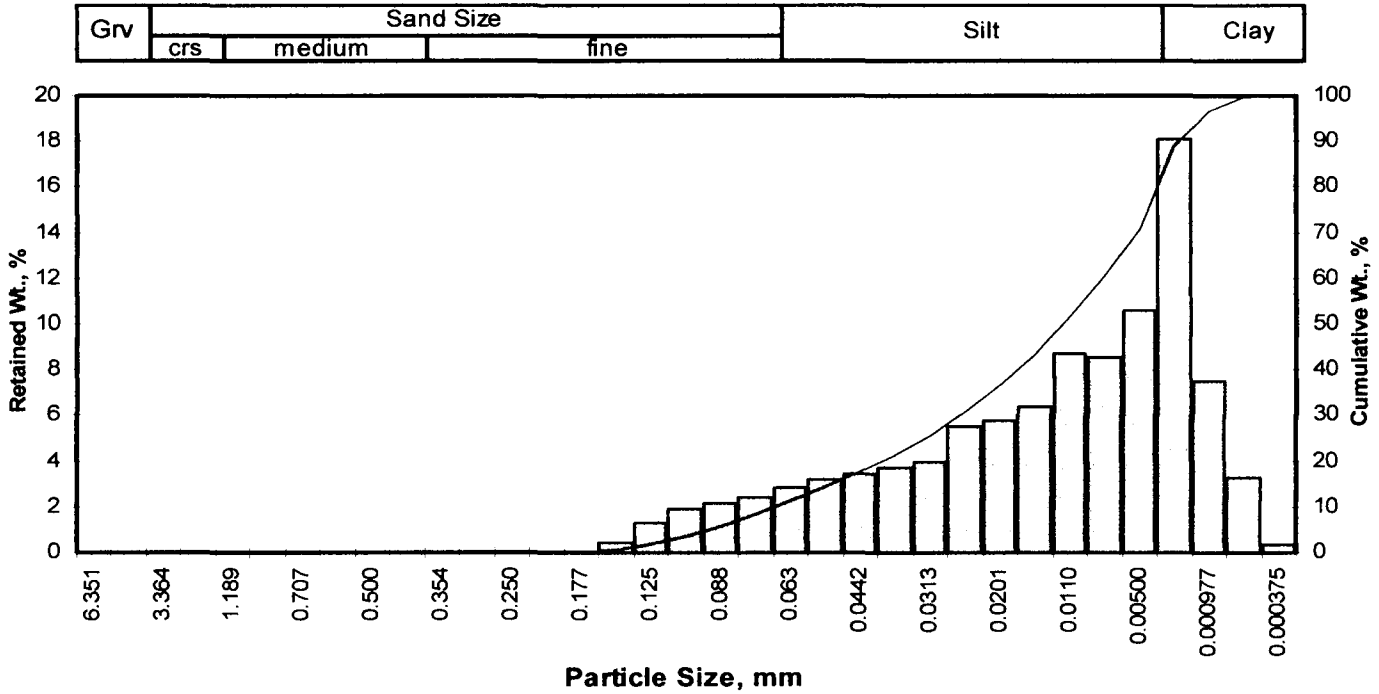
Measure	Trask	Inman	Folk-Ward
Median, phi	-2.79	-2.79	-2.79
Median, in.	0.2727	0.2727	0.2727
Median, mm	6.927	6.927	6.927
Mean, phi	-2.55	-1.42	-1.88
Mean, in.	0.2312	0.1055	0.1448
Mean, mm	5.872	2.679	3.677
Sorting	2.083	1.973	2.068
Skewness	0.662	0.695	0.739
Kurtosis	0.335	0.809	1.382

**Grain Size Description** (ASTM-USCS Scale) **Gravel** (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	66.18
Coarse Sand	10	9.72
Medium Sand	40	11.60
Fine Sand	200	7.92
Silt/Clay	<200	4.58
<b>Total</b>		<b>100</b>

Client: Wayne Perry, Inc.  
 Project: N/A  
 Project No: 06.407

PTS File No: 39095  
 Sample ID: B-1d15  
 Depth, ft: N/A



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.00	0.00	0.00
0.0083	0.210	2.25	70	0.00	0.00	0.00
0.0070	0.177	2.50	80	0.03	0.03	0.03
0.0059	0.149	2.75	100	0.41	0.41	0.44
0.0049	0.125	3.00	120	1.26	1.26	1.70
0.0041	0.105	3.25	140	1.88	1.88	3.57
0.0035	0.088	3.50	170	2.17	2.17	5.74
0.0029	0.074	3.75	200	2.45	2.45	8.19
0.0025	0.063	4.00	230	2.83	2.83	11.02
0.0021	0.053	4.25	270	3.16	3.16	14.18
0.00174	0.0442	4.50	325	3.44	3.44	17.61
0.00146	0.0372	4.75	400	3.69	3.69	21.30
0.00123	0.0313	5.00	450	3.99	3.99	25.29
0.000986	0.0250	5.32	500	5.49	5.49	30.78
0.000790	0.0201	5.64	635	5.80	5.80	36.57
0.000615	0.0156	6.00		6.40	6.40	42.97
0.000435	0.0110	6.50		8.67	8.66	51.63
0.000308	0.00781	7.00		8.54	8.53	60.17
0.000197	0.00500	7.65		10.60	10.59	70.76
0.000077	0.00195	9.00		18.10	18.09	88.85
0.000038	0.000977	10.00		7.53	7.53	96.37
0.000019	0.000488	11.00		3.31	3.31	99.68
0.000015	0.000375	11.38		0.32	0.32	100.00
<b>TOTALS</b>				<b>100.10</b>	<b>100.00</b>	<b>100.00</b>

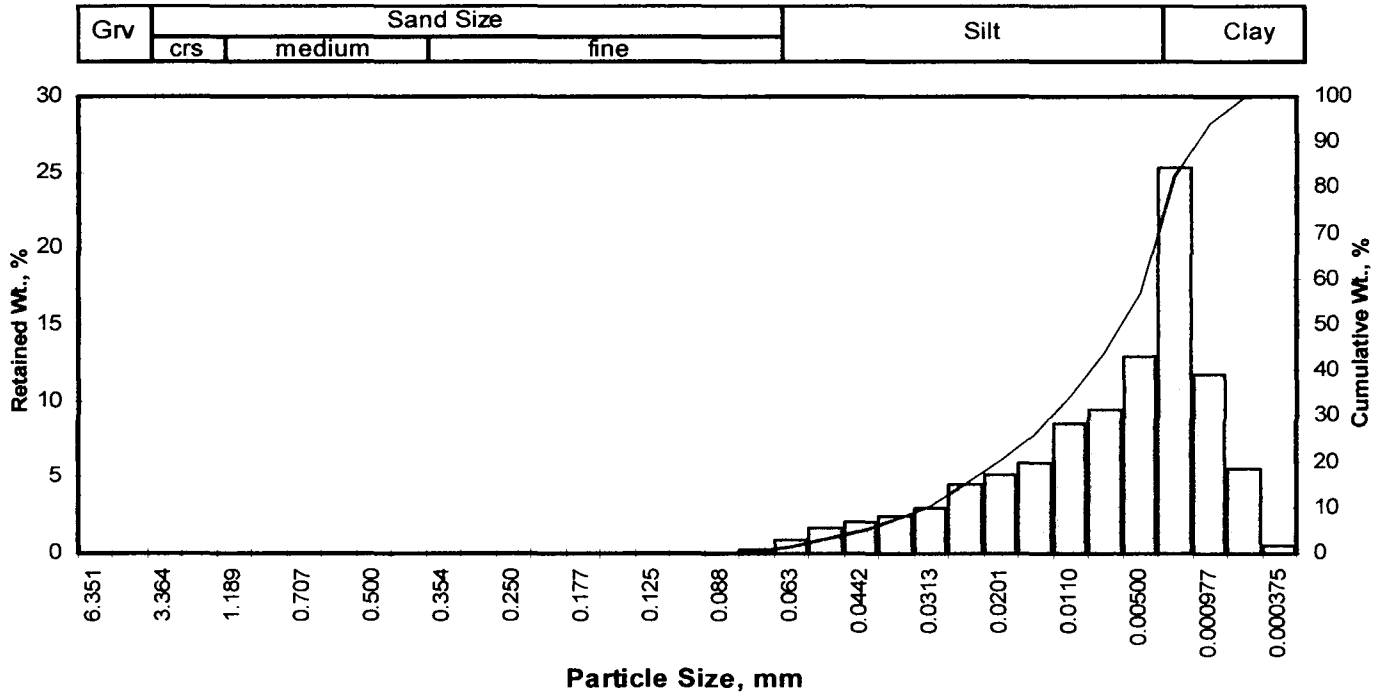
Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	3.41	0.0037	0.094
10	3.91	0.0026	0.067
16	4.38	0.0019	0.048
25	4.98	0.0012	0.032
40	5.83	0.0007	0.018
50	6.41	0.0005	0.012
60	6.99	0.0003	0.008
75	7.96	0.0002	0.004
84	8.64	0.0001	0.003
90	9.15	0.0001	0.002
95	9.82	0.0000	0.001

Measure	Trask	Inman	Folk-Ward
Median, phi	6.41	6.41	6.41
Median, in.	0.0005	0.0005	0.0005
Median, mm	0.012	0.012	0.012
Mean, phi	5.81	6.51	6.48
Mean, in.	0.0007	0.0004	0.0004
Mean, mm	0.018	0.011	0.011
Sorting	2.810	2.127	2.034
Skewness	0.955	0.049	0.057
Kurtosis	0.213	0.505	0.880
<b>Grain Size Description</b> (ASTM-USCS Scale)	Silt (based on Mean from Trask)		

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	8.19
Silt	>0.005 mm	62.57
Clay	<0.005 mm	29.24
<b>Total</b>		<b>100</b>

Client: Wayne Perry, Inc.  
 Project: N/A  
 Project No: 06.407

PTS File No: 39095  
 Sample ID: B-1d35  
 Depth, ft: N/A



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.00	0.00	0.00
0.0083	0.210	2.25	70	0.00	0.00	0.00
0.0070	0.177	2.50	80	0.00	0.00	0.00
0.0059	0.149	2.75	100	0.00	0.00	0.00
0.0049	0.125	3.00	120	0.00	0.00	0.00
0.0041	0.105	3.25	140	0.00	0.00	0.00
0.0035	0.088	3.50	170	0.01	0.01	0.01
0.0029	0.074	3.75	200	0.24	0.24	0.25
0.0025	0.063	4.00	230	0.93	0.93	1.18
0.0021	0.053	4.25	270	1.66	1.66	2.84
0.00174	0.0442	4.50	325	2.11	2.11	4.95
0.00146	0.0372	4.75	400	2.44	2.44	7.39
0.00123	0.0313	5.00	450	2.95	2.95	10.34
0.000986	0.0250	5.32	500	4.56	4.56	14.91
0.000790	0.0201	5.64	635	5.16	5.16	20.07
0.000615	0.0156	6.00		5.89	5.89	25.96
0.000435	0.0110	6.50		8.58	8.58	34.54
0.000308	0.00781	7.00		9.40	9.40	43.94
0.000197	0.00500	7.65		12.90	12.90	56.84
0.000077	0.00195	9.00		25.30	25.30	82.15
0.000038	0.000977	10.00		11.80	11.80	93.95
0.000019	0.000488	11.00		5.51	5.51	99.46
0.000015	0.000375	11.38		0.54	0.54	100.00
<b>TOTALS</b>				<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	4.50	0.0017	0.044
10	4.97	0.0013	0.032
16	5.39	0.0009	0.024
25	5.94	0.0006	0.016
40	6.79	0.0004	0.009
50	7.30	0.0002	0.006
60	7.81	0.0002	0.004
75	8.62	0.0001	0.003
84	9.16	0.0001	0.002
90	9.67	0.0000	0.001
95	10.19	0.0000	0.001

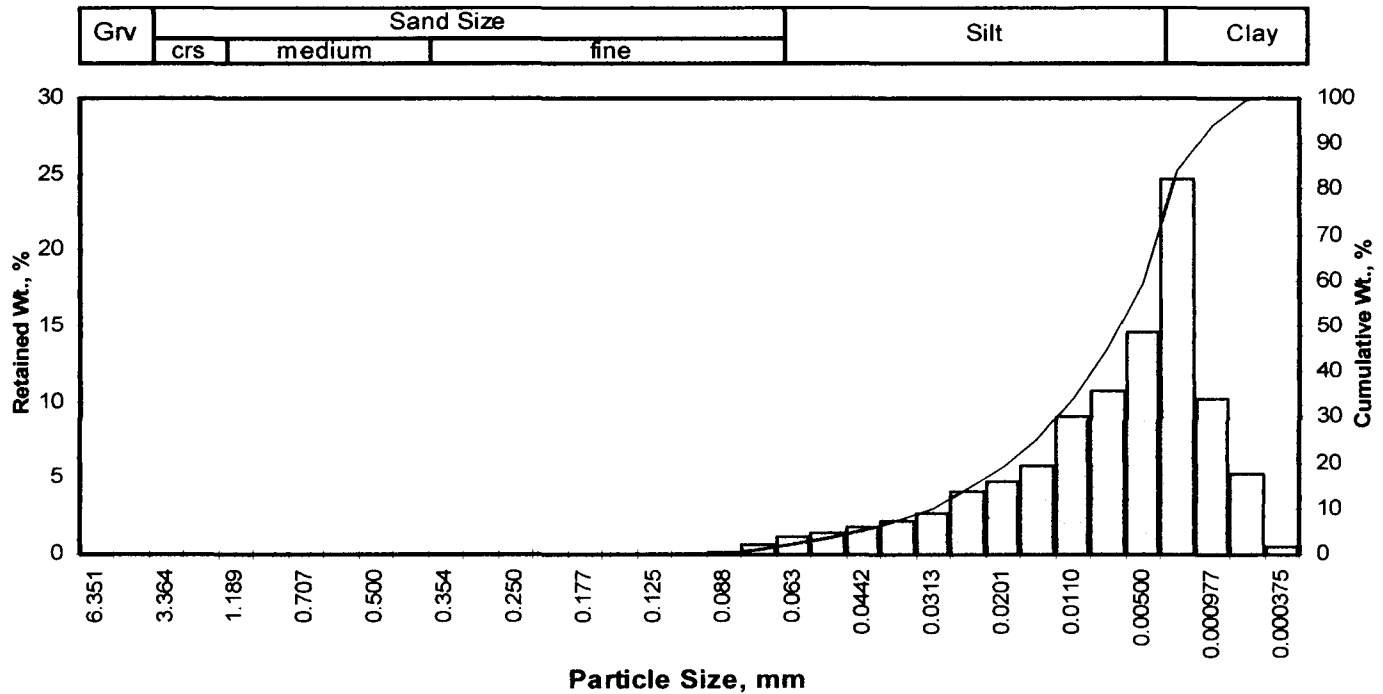
Measure	Trask	Inman	Folk-Ward
Median, phi	7.30	7.30	7.30
Median, in.	0.0002	0.0002	0.0002
Median, mm	0.006	0.006	0.006
Mean, phi	6.73	7.27	7.28
Mean, in.	0.0004	0.0003	0.0003
Mean, mm	0.009	0.006	0.006
Sorting	2.528	1.885	1.804
Skewness	1.016	-0.016	0.000
Kurtosis	0.224	0.509	0.871

**Grain Size Description** (ASTM-USCS Scale) **Silt** (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	0.25
Silt	>0.005 mm	56.59
Clay	<0.005 mm	43.16
<b>Total</b>		<b>100</b>

Client: Wayne Perry, Inc.  
 Project: N/A  
 Project No: 06.407

PTS File No: 39095  
 Sample ID: B-1d50  
 Depth, ft: N/A



Opening		Phi of Screen	U.S. No.	Sample Weight, grams	Increment Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.00	0.00	0.00
0.0331	0.841	0.25	20	0.00	0.00	0.00
0.0278	0.707	0.50	25	0.00	0.00	0.00
0.0234	0.595	0.75	30	0.00	0.00	0.00
0.0197	0.500	1.00	35	0.00	0.00	0.00
0.0166	0.420	1.25	40	0.00	0.00	0.00
0.0139	0.354	1.50	45	0.00	0.00	0.00
0.0117	0.297	1.75	50	0.00	0.00	0.00
0.0098	0.250	2.00	60	0.00	0.00	0.00
0.0083	0.210	2.25	70	0.00	0.00	0.00
0.0070	0.177	2.50	80	0.00	0.00	0.00
0.0059	0.149	2.75	100	0.00	0.00	0.00
0.0049	0.125	3.00	120	0.00	0.00	0.00
0.0041	0.105	3.25	140	0.01	0.01	0.01
0.0035	0.088	3.50	170	0.19	0.19	0.20
0.0029	0.074	3.75	200	0.67	0.67	0.87
0.0025	0.063	4.00	230	1.16	1.16	2.03
0.0021	0.053	4.25	270	1.47	1.47	3.50
0.00174	0.0442	4.50	325	1.76	1.76	5.26
0.00146	0.0372	4.75	400	2.17	2.17	7.43
0.00123	0.0313	5.00	450	2.70	2.70	10.13
0.000986	0.0250	5.32	500	4.17	4.17	14.30
0.000790	0.0201	5.64	635	4.85	4.85	19.15
0.000615	0.0156	6.00		5.78	5.78	24.92
0.000435	0.0110	6.50		9.07	9.07	33.99
0.000308	0.00781	7.00		10.70	10.70	44.69
0.000197	0.00500	7.65		14.60	14.60	59.28
0.000077	0.00195	9.00		24.70	24.69	83.97
0.000038	0.000977	10.00		10.20	10.20	94.17
0.000019	0.000488	11.00		5.28	5.28	99.45
0.000015	0.000375	11.38		0.55	0.55	100.00
<b>TOTALS</b>				<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	4.46	0.0018	0.045
10	4.99	0.0012	0.032
16	5.43	0.0009	0.023
25	6.00	0.0006	0.016
40	6.78	0.0004	0.009
50	7.23	0.0003	0.007
60	7.68	0.0002	0.005
75	8.51	0.0001	0.003
84	9.00	0.0001	0.002
90	9.59	0.0001	0.001
95	10.16	0.0000	0.001

Measure	Trask	Inman	Folk-Ward
Median, phi	7.23	7.23	7.23
Median, in.	0.0003	0.0003	0.0003
Median, mm	0.007	0.007	0.007
Mean, phi	6.77	7.22	7.22
Mean, in.	0.0004	0.0003	0.0003
Mean, mm	0.009	0.007	0.007
Sorting	2.381	1.785	1.755
Skewness	0.985	-0.010	0.008
Kurtosis	0.212	0.595	0.932

**Grain Size Description** (ASTM-USCS Scale) Silt (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	0.00
Fine Sand	200	0.87
Silt	>0.005 mm	58.41
Clay	<0.005 mm	40.72
<b>Total</b>		<b>100</b>



WAYNE PERRY, INC.  
 8281 Commonwealth Avenue • Buena Park, California 90621  
 (714) 826-0352 office • (800) 883-0351 toll free • (714) 523-7541 fax

39095

CHAIN OF CUSTODY RECORD

WPI Client & Contact:				WPI Job Number: 06:407				
Site Address: 406 N. Guffey San Pedro, Ca.				Laboratory: PTS				
Station Number:				Sampled By: A. Dolamore				
WPI Contact: Christi Farrell Truedi Balsitis (email reports/EDF to TBalsitis@WPINC.com)				Result Turnaround: <input checked="" type="checkbox"/> Std. [ ] 72 hrs. [ ] 48 hrs. [ ] 24 hrs.				
Generate EDF: [ ] Yes [ ] No			Matrix	No. of Cont.	EPA 8015M Gas	EPA 8260B BTEX oxygenates/ethanol	EPA 300 Sulfate/Nitrate/ferrous iron	Comments or Additional Instructions:
Global ID: _____								
Sample Name	Sampling Date	Sampling Time						
B-1 d10	1/28	0723	Soil	1				Please Sample each Depth for: - Grain Size analysis - Moisture Content - Density (bulk) - Porosity (air-filled) - Permeability to Air - Hydraulic Conductivity - water-filled porosity - total porosity - fractional organic carbon
B-1 d12		0728		1				
B-1 d15		0750		1				
B-1 d35		0852		1				
B-1 d50		0940		1				
Relinquished By:			Received By:			Date: 1/28/09		Time: 3:00p
Relinquished By:			Received By:  PS			Date: 1/30/09		Time: 8:26
Relinquished By:			Received By:			Date:		Time:

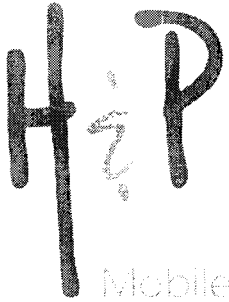
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# **APPENDIX G**

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**H&P MOBILE GEOCHEMISTRY, INC. LABORATORY REPORTS  
AND CHAIN-OF-CUSTODY DOCUMENTS**





Mobile  
Geochemistry  
Inc.

25 February 2009

Ms. Cristi Farrell  
Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621  
RE: WP021109-10

Enclosed are the results of analyses for samples received by the laboratory on 11-Feb-09 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Janis Villarreal', is written over a light grey rectangular background.

Janis Villarreal  
Laboratory Director

HandP Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2066, 2278, 2543, 2579 and 2595. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845



Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP021109-10  
Project Number: 06.407 / 406 N. Gaffey St.  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV11, PV1, P5cc	E902033-01	Vapor	11-Feb-09	11-Feb-09
SV11, PV3, P15cc	E902033-02	Vapor	11-Feb-09	11-Feb-09
SV11, PV7, P35cc	E902033-03	Vapor	11-Feb-09	11-Feb-09
Trip Blank	E902033-04	Vapor	11-Feb-09	11-Feb-09



Wayne Perry 8281 Commonwealth Avenue Buena Park, CA 90621	Project: WP021109-10 Project Number: 06.407 / 406 N. Gaffey St. Project Manager: Ms. Cristi Farrell	Reported: 25-Feb-09
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**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
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**SV11, PV1, P5cc (E902033-01) Vapor    Sampled: 11-Feb-09    Received: 11-Feb-09**

1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB91101	11-Feb-09	11-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
<b>Toluene</b>	7.9	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	80-120	"	"	"	"
Surrogate: Toluene-d8	96.8 %	80-120	"	"	"	"
Surrogate: 4-Bromofluorobenzene	84.3 %	80-120	"	"	"	"

**SV11, PV3, P15cc (E902033-02) Vapor    Sampled: 11-Feb-09    Received: 11-Feb-09**

1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB91101	11-Feb-09	11-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	80-120	"	"	"	"
Surrogate: Toluene-d8	85.3 %	80-120	"	"	"	"
Surrogate: 4-Bromofluorobenzene	81.5 %	80-120	"	"	"	"

**SV11, PV7, P35cc (E902033-03) Vapor    Sampled: 11-Feb-09    Received: 11-Feb-09**

1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB91101	11-Feb-09	11-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
<b>Toluene</b>	7.1	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	80-120	"	"	"	"
Surrogate: Toluene-d8	91.9 %	80-120	"	"	"	"
Surrogate: 4-Bromofluorobenzene	78.1 %	80-120	"	"	"	"

N-GC



Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP021109-10  
Project Number: 06.407 / 406 N. Gaffey St.  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>Trip Blank (E902033-04) Vapor Sampled: 11-Feb-09 Received: 11-Feb-09</b>									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB91101	11-Feb-09	11-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<hr/>									
Surrogate: 1,2-Dichloroethane-d4		102 %		80-120	"	"	"	"	
Surrogate: Toluene-d8		108 %		80-120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		75.5 %		80-120	"	"	"	"	S-GC



Wayne Perry 8281 Commonwealth Avenue Buena Park, CA 90621	Project: WP021109-10 Project Number: 06.407 / 406 N. Gaffey St. Project Manager: Ms. Cristi Farrell	Reported: 25-Feb-09
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**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EB91101 - TO-15**

<b>Blank (EB91101-BLK1)</b>				Prepared & Analyzed: 11-Feb-09						
1,1-Difluoroethane (LCC)	ND	10	ug/l							
Methyl tert-butyl ether	ND	5.0	ug/m3							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
o-Xylene	ND	5.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>122</i>		<i>"</i>	<i>103</i>		<i>119</i>	<i>80-120</i>			
<i>Surrogate: Toluene-d8</i>	<i>101</i>		<i>"</i>	<i>96.2</i>		<i>105</i>	<i>80-120</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>140</i>		<i>"</i>	<i>182</i>		<i>76.9</i>	<i>80-120</i>			<i>S-GC</i>

<b>LCS (EB91101-BS1)</b>				Prepared & Analyzed: 11-Feb-09						
Methyl tert-butyl ether	76.4	5.0	ug/m3	73.6		104	65-135			
Benzene	61.4	5.0	"	64.8		94.8	65-135			
Toluene	76.7	5.0	"	76.8		99.9	65-135			
Ethylbenzene	82.2	5.0	"	88.4		92.9	65-135			
m,p-Xylene	171	5.0	"	177		96.8	65-135			
o-Xylene	86.2	5.0	"	88.4		97.5	65-135			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>112</i>		<i>"</i>	<i>103</i>		<i>109</i>	<i>80-120</i>			
<i>Surrogate: Toluene-d8</i>	<i>91.2</i>		<i>"</i>	<i>96.2</i>		<i>94.8</i>	<i>80-120</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>187</i>		<i>"</i>	<i>182</i>		<i>102</i>	<i>80-120</i>			



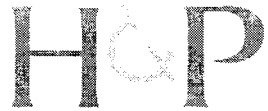
Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP021109-10  
Project Number: 06.407 / 406 N. Gaffey St.  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

#### Notes and Definitions

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



3470 Imperial Dr., Carson, CA 90210 • ph 780.604.8675 • fax 780.604.9159  
3625 Industry Avenue, Lakewood, CA 90712 • ph 562.420.6991 • fax 562.420.6995

# Chain of Custody Record

Date February 2008  
Hull Project # W-102-10-10  
Outside Lab IL, NCI, PWS  
CP22, n=15

1902633

Client Marina Keene  
Address 3625 Industry Ave, Lakewood, CA 90712  
Phone 562.420.6991

Color: Blue Page 1 of 1  
Client Project # W-102-10-10 Project Contactor Keene  
Location Keene, 3625 Industry Ave Turnaround Line STD

EDF Yes  No  
Global ID: \_\_\_\_\_

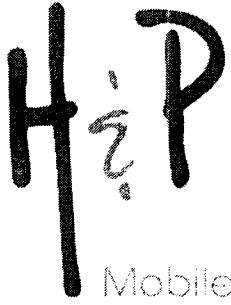
Sample Receipt  
Print  Yes  No  
See Instruct. Yes  No  N/A  
See Yes  No   
MA (Revised 01/2007)

Special Instructions  
See general instructions in folder

Sample No.	Volume (VOCs)	Field Cont Name	Range	Time	Date	Same as Container Type
1251	10.5	Keene	1000	15	2/11/08	Keene
1252	10.5	Keene	1000	15	2/11/08	Keene
1277	10.5	Keene	1000	15	2/11/08	Keene
1278	10.5	Keene	1000	15	2/11/08	Keene

	TPH   gasoline   diesel   ext		8260B	TO-15	
418 I INDI					
801 for BTEX-MTBE					
BTEX / Oxygenates					
TPH gas					
VOCs					
DTSC/LAWOOD					
Ketones					
Full List					
BTEX-MTBE					
LOC (specify)   T-Park					
Naphthalene   8260B   TO-15					
Methane					
Fixed Gases   CO <sub>2</sub>   O <sub>2</sub>   H <sub>2</sub>					
Total # of Exhibitors					

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Collected by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Analyzed by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Ready to Ship  Ready to Load  Pump



Mobile  
Geochemistry  
Inc.

25 February 2009

Ms. Cristi Farrell  
Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621  
RE: WP022009-12

Enclosed are the results of analyses for samples received by the laboratory on 20-Feb-09 . If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Janis Villarreal', is written over a light blue horizontal line.

Janis Villarreal  
Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

2470 Inspira Drive, Carlsbad, California 92010 | 760.804.9678 — Fax 760.804.9159  
1855 Coronado Avenue, Signal Hill, California 90755  
[www.HandPmg.com](http://www.HandPmg.com) | 1-800-834-9888







Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP022009-12  
Project Number: 06.407 / 406 N. Gaffey St  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-1, P5cc	E902068-01	Vapor	20-Feb-09	20-Feb-09
SV-3, P5cc	E902068-02	Vapor	20-Feb-09	20-Feb-09
SV-4, P5cc	E902068-03	Vapor	20-Feb-09	20-Feb-09
SV-5, P5cc	E902068-04	Vapor	20-Feb-09	20-Feb-09
SV-6, P5cc	E902068-05	Vapor	20-Feb-09	20-Feb-09
SV-7, P5cc	E902068-06	Vapor	20-Feb-09	20-Feb-09
SV-8, P5cc	E902068-07	Vapor	20-Feb-09	20-Feb-09
SV-9, P5cc	E902068-08	Vapor	20-Feb-09	20-Feb-09
SV-10, P5cc	E902068-09	Vapor	20-Feb-09	20-Feb-09
SV-12, P5cc	E902068-10	Vapor	20-Feb-09	20-Feb-09
SV-12 Dup, P405cc	E902068-11	Vapor	20-Feb-09	20-Feb-09
Trip Blank	E902068-12	Vapor	20-Feb-09	20-Feb-09



Wayne Perry 8281 Commonwealth Avenue Buena Park, CA 90621	Project: WP022009-12 Project Number: 06.407 / 406 N. Gaffey St Project Manager: Ms. Cristii Farrell	Reported: 25-Feb-09
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**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-1, P5cc (E902068-01) Vapor    Sampled: 20-Feb-09    Received: 20-Feb-09</b>									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	22-Feb-09	EPA TO-15	
Methyl tert-butyl ether	250	5.0	ug/m3	"	"	"	"	"	
Benzene	170	5.0	"	"	"	"	"	"	
Toluene	21	5.0	"	"	"	"	"	"	
Ethylbenzene	1000	50	"	10	"	"	23-Feb-09	"	
m,p-Xylene	3300	50	"	"	"	"	"	"	
o-Xylene	82	5.0	"	1	"	"	22-Feb-09	"	
Surrogate: 1,2-Dichloroethane-d4		98.3 %	80-120	"	"	"	"	"	
Surrogate: Toluene-d8		116 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	80-120	"	"	"	"	"	
<b>SV-3, P5cc (E902068-02) Vapor    Sampled: 20-Feb-09    Received: 20-Feb-09</b>									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	22-Feb-09	EPA TO-15	
Methyl tert-butyl ether	6.8	5.0	ug/m3	"	"	"	"	"	
Benzene	23	5.0	"	"	"	"	"	"	
Toluene	26	5.0	"	"	"	"	"	"	
Ethylbenzene	110	5.0	"	"	"	"	"	"	
m,p-Xylene	420	5.0	"	"	"	"	"	"	
o-Xylene	17	5.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		93.9 %	80-120	"	"	"	"	"	
Surrogate: Toluene-d8		95.8 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	80-120	"	"	"	"	"	
<b>SV-4, P5cc (E902068-03) Vapor    Sampled: 20-Feb-09    Received: 20-Feb-09</b>									
1,1-Difluoroethane (LCC)	ND	10	ug/l	2	EB92201	22-Feb-09	23-Feb-09	EPA TO-15	
Methyl tert-butyl ether	11	10	ug/m3	"	"	"	"	"	
Benzene	ND	10	"	"	"	"	"	"	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	13	10	"	"	"	"	"	"	
m,p-Xylene	52	10	"	"	"	"	"	"	
o-Xylene	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		88.6 %	80-120	"	"	"	"	"	
Surrogate: Toluene-d8		106 %	80-120	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	80-120	"	"	"	"	"	



Wayne Perry 8281 Commonwealth Avenue Buena Park, CA 90621	Project: WP022009-12 Project Number: 06.407 / 406 N. Gaffey St Project Manager: Ms. Cristi Farrell	Reported: 25-Feb-09
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**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-5, P5cc (E902068-04) Vapor    Sampled: 20-Feb-09    Received: 20-Feb-09</b>									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	22-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	6.6	5.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	31	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		90.9 %	80-120		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.8 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	80-120		"	"	"	"	
<b>SV-6, P5cc (E902068-05) Vapor    Sampled: 20-Feb-09    Received: 20-Feb-09</b>									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	22-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
<b>Benzene</b>	17	5.0	"	"	"	"	"	"	
<b>Toluene</b>	5.6	5.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	8.4	5.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	36	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	80-120		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.4 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	80-120		"	"	"	"	
<b>SV-7, P5cc (E902068-06) Vapor    Sampled: 20-Feb-09    Received: 20-Feb-09</b>									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	22-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	17	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		87.8 %	80-120		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.9 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %	80-120		"	"	"	"	



Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP022009-12  
Project Number: 06.407 / 406 N. Gaffey St  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-8, P5cc (E902068-07) Vapor</b> Sampled: 20-Feb-09 Received: 20-Feb-09									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	22-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
<b>Toluene</b>	5.4	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	18	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.5 %	80-120		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.0 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.8 %	80-120		"	"	"	"	
<b>SV-9, P5cc (E902068-08) Vapor</b> Sampled: 20-Feb-09 Received: 20-Feb-09									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	23-Feb-09	EPA TO-15	
<b>Methyl tert-butyl ether</b>	1200	25	ug/m3	5	"	"	"	"	
Benzene	ND	5.0	"	1	"	"	"	"	
<b>Toluene</b>	6.4	5.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	5.6	5.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	22	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	80-120		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.6 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	80-120		"	"	"	"	
<b>SV-10, P5cc (E902068-09) Vapor</b> Sampled: 20-Feb-09 Received: 20-Feb-09									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	23-Feb-09	EPA TO-15	
<b>Methyl tert-butyl ether</b>	44	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
<b>Toluene</b>	7.4	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
<b>m,p-Xylene</b>	19	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %	80-120		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.6 %	80-120		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		100 %	80-120		"	"	"	"	



Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP022009-12  
Project Number: 06.407 / 406 N. Gaffey St  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-12, P5cc (E902068-10) Vapor</b> Sampled: 20-Feb-09 Received: 20-Feb-09									
1,1-Difluoroethane (LCC)	ND	10	ug/l	5	EB92201	22-Feb-09	23-Feb-09	EPA TO-15	
Methyl tert-butyl ether	680	25	ug/m3	"	"	"	"	"	
Benzene	30	5.0	"	1	"	"	23-Feb-09	"	
Toluene	180	25	"	5	"	"	23-Feb-09	"	
Ethylbenzene	30	25	"	"	"	"	"	"	
m,p-Xylene	58	25	"	"	"	"	"	"	
o-Xylene	ND	25	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.1 %	80-120	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		114 %	80-120	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.1 %	80-120	"	"	"	"	"	
<b>SV-12 Dup, P405cc (E902068-11) Vapor</b> Sampled: 20-Feb-09 Received: 20-Feb-09									
1,1-Difluoroethane (LCC)	ND	10	ug/l	5	EB92201	22-Feb-09	23-Feb-09	EPA TO-15	
Methyl tert-butyl ether	600	25	ug/m3	"	"	"	"	"	
Benzene	26	25	"	"	"	"	"	"	
Toluene	240	25	"	"	"	"	"	"	
Ethylbenzene	47	25	"	"	"	"	"	"	
m,p-Xylene	91	25	"	"	"	"	"	"	
o-Xylene	ND	25	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		111 %	80-120	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		115 %	80-120	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.4 %	80-120	"	"	"	"	"	
<b>Trip Blank (E902068-12) Vapor</b> Sampled: 20-Feb-09 Received: 20-Feb-09									
1,1-Difluoroethane (LCC)	ND	10	ug/l	1	EB92201	22-Feb-09	22-Feb-09	EPA TO-15	
Methyl tert-butyl ether	ND	5.0	ug/m3	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		115 %	80-120	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	80-120	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		85.2 %	80-120	"	"	"	"	"	



Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP022009-12  
Project Number: 06.407 / 406 N. Gaffey St  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EB92201 - TO-15**

**Blank (EB92201-BLK1)**

Prepared & Analyzed: 22-Feb-09

1,1-Difluoroethane (LCC)	ND	10	ug/l							
Methyl tert-butyl ether	ND	5.0	ug/m3							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
o-Xylene	ND	5.0	"							

<i>Surrogate: 1,2-Dichloroethane-d4</i>	238		"	206		116	80-120			
<i>Surrogate: Toluene-d8</i>	199		"	192		103	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	309		"	364		84.8	80-120			

**LCS (EB92201-BS1)**

Prepared & Analyzed: 22-Feb-09

Methyl tert-butyl ether	72.2	5.0	ug/m3	73.6		98.0	65-135			
Benzene	58.0	5.0	"	64.8		89.5	65-135			
Toluene	77.8	5.0	"	76.8		101	65-135			
Ethylbenzene	82.6	5.0	"	88.4		93.4	65-135			
m,p-Xylene	166	5.0	"	177		93.8	65-135			
o-Xylene	83.3	5.0	"	88.4		94.3	65-135			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	200		"	206		97.5	80-120			
<i>Surrogate: Toluene-d8</i>	187		"	192		97.4	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	366		"	364		101	80-120			



Wayne Perry  
8281 Commonwealth Avenue  
Buena Park, CA 90621

Project: WP022009-12  
Project Number: 06.407 / 406 N. Gaffey St  
Project Manager: Ms. Cristi Farrell

Reported:  
25-Feb-09

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

# Chain of Custody Record



2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159  
 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

E-970-2009

Date: February 11, 2009  
 H&P Project # ~~W022009-12~~ W022009-12  
 Outside Lab: H&P in House TO-15  
 WPO22009-12

Client: Whims Perry Collector: Ross Kivens Page: 1 of 2  
 Address: 8281 Seaworth Ave Client Project # 06407 Project Contact: Christi Farrell  
Brea, CA 92603 Location: 406 N. Jolley St. San Pedro  
 Email: CFARRE@H&P.COM Phone: (714) 826-0352 Fax: \_\_\_\_\_ Turn around time: STO

EDF:  Yes  No  N/A  
 Global ID: \_\_\_\_\_  
 Sample Receipt  
 Intact:  Yes  No  
 Seal Intact:  Yes  No  N/A  
 Coid:  Yes  No  
 N/A (Received on Site) 200

Special Instructions:  
8-2 WATER IN - NO SAMPLE  
UNUSED # 370 / 034 / 264

Sample Name	Field Point Name	Purge vol	Time	Date	Sample Type	Container Type	TPH <input type="checkbox"/> gasoline <input type="checkbox"/> diesel <input type="checkbox"/> kerosene	8260B		TO-15		LCC (specify) <input type="checkbox"/> I-DFA	Naphthalene <input type="checkbox"/> 8260B <input type="checkbox"/> TO-15	Methane	Fixed Gases <input type="checkbox"/> CO2 <input type="checkbox"/> O2 <input type="checkbox"/> N2	Can #	Vacuum	Total # of containers	
								BTEX/Oxygenates	TPH gas	VOCs	DTSC/LAR/OCB								Ketones
15 min	SV-3	5cc	0742	2/10/09	Vapor	3000A						X	X						
18 min	SV-4	5cc	0750																
15 min	SV-5	5cc	0800																
18 min	SV-6	5cc	0809																
15 min	SV-7	5cc	0828																
10 min	SV-8	5cc	0845																
10 min	SV-9	5cc	0900																
	SV-10	5cc	0920																
	SV-12	5cc	0945																

Requested by (signature): [Signature] (company): WESTI PARRISH (WPI)  
 Received by (signature): [Signature] (company): H&P  
 Date: 2/20/09 Time: 1000





# Chain of Custody Record

2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159  
 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date FEBRUARY 20<sup>th</sup>, 2009  
 H&P Project # WPO22009-TSH  
 Outside Lab H&P In House  
WPO22009-12

W-117000

Client Jayne Perry  
 Address 1021 Commonwealth Ave  
BUENA PARK

Collector Russ Page 2 of 2  
 Client Project # 06-404 Project Contact Cristi Farrel  
 Location 406 N. Gaffey St.

Email \_\_\_\_\_ Phone \_\_\_\_\_ Fax \_\_\_\_\_ Turn around time STD

EDF  Yes  No

Global ID. \_\_\_\_\_

**Sample Receipt**  
 Intact  Yes  No  
 Seal Intact  Yes  No N/A  
 Cold  Yes  No  
 N/A (Received on Site) WV

Special Instructions \_\_\_\_\_

Can #001 - tip damaged

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	TPH <input type="checkbox"/> gasoline <input type="checkbox"/> diesel <input type="checkbox"/> ext		8260B		TO-15		Total # of containers	
							418 1 TRPH	8021 for BTEX/MTBE	BTEX / Oxygenates	TPH gas	VOC's	DTSC/LRW/CB		Ketones
	<u>SAL D-P</u>	<u>405.005</u>		<u>2/20</u>	<u>VAPOR SUMMA</u>									
	<u>TRIP BLANK</u>	<u>N/A</u>		<u>2/20</u>	<u>VAPOR SUMMA</u>									

Can #  
Vacuum  
\*001-135  
#151

Requested by (Signature) [Signature] (Company) (WPI) Received by (Signature) [Signature] (Company) [Signature] Date 2/20/09 Time 10:00  
 Requested by (Signature) \_\_\_\_\_ (Company) \_\_\_\_\_ Received by (Signature) \_\_\_\_\_ (Company) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Requested by (Signature) \_\_\_\_\_ (Company) \_\_\_\_\_ Received by (Signature) \_\_\_\_\_ (Company) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

---

# **APPENDIX H**

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**JOHNSON AND ETTINGER VAPOR INTRUSION MODEL AND  
RESULTS**

DATA ENTRY SHEET

SG-SCREEN  
A Version 2.0; 04/

DTSC  
Vapor Intrusion Guidance  
Interim Final 12/04  
(last modified 2/4/09)

Reset to  
Defaults

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., $C_g$ ( $\mu\text{g}/\text{m}^3$ )	OR	ENTER Soil gas conc., $C_g$ (ppmv)	Chemical
71432	1.70E+02			Benzene

MORE  
↓

ENTER Depth below grade to bottom of enclosed space floor, $L_f$ (15 or 200 cm)	ENTER Soil gas sampling depth below grade, $L_s$ (cm)	ENTER Average soil temperature, $T_s$ ( $^{\circ}\text{C}$ )	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, $k_v$ ( $\text{cm}^2$ )
15	152.4	24			8.81E-12

MORE  
↓

ENTER Vadose zone SCS soil type  Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, $\rho_b^A$ ( $\text{g}/\text{cm}^3$ )	ENTER Vadose zone soil total porosity, $n^V$ (unitless)	ENTER Vadose zone soil water-filled porosity, $\theta_w^V$ ( $\text{cm}^3/\text{cm}^3$ )	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) $Q_{\text{soil}}$ (L/m)
L	1.76	0.343	0.243	5

MORE  
↓

ENTER Averaging time for carcinogens, $AT_c$ (yrs)	ENTER Averaging time for noncarcinogens, $AT_{Nc}$ (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
--	--

1.5E-07	4.0E-04
---------	---------

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN  
A Version 2.0; 04/

DTSC  
Vapor Intrusion Guidance  
Interim Final 12/04  
(last modified 2/4/09)

Reset to  
Defaults

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., $C_a$ ( $\mu\text{g}/\text{m}^3$ )	OR	ENTER Soil gas conc., $C_a$ (ppmv)	Chemical
108883	2.40E+02			Toluene

MORE  
↓

ENTER Depth below grade to bottom of enclosed space floor, $L_f$ (15 or 200 cm)	ENTER Soil gas sampling depth below grade, $L_s$ (cm)	ENTER Average soil temperature, $T_s$ ( $^{\circ}\text{C}$ )	OR	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	ENTER User-defined vadose zone soil vapor permeability, $k_v$ ( $\text{cm}^2$ )
15	152.4	24			8.81E-12

MORE  
↓

ENTER Vadose zone SCS soil type  Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, $\rho_b^A$ ( $\text{g}/\text{cm}^3$ )	ENTER Vadose zone soil total porosity, $n^V$ (unitless)	ENTER Vadose zone soil water-filled porosity, $\theta_w^V$ ( $\text{cm}^3/\text{cm}^3$ )	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) $Q_{\text{soil}}$ (L/m)
L	1.76	0.343	0.243	5

MORE  
↓

ENTER Averaging time for carcinogens, $AT_c$ (yrs)	ENTER Averaging time for noncarcinogens, $AT_{nc}$ (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
--	--

NA	5.6E-05
----	---------

MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN  
A Version 2.0; 04/

DTSC  
Vapor Intrusion Guidance  
Interim Final 12/04  
(last modified 2/4/09)

Reset to  
Defaults

Soil Gas Concentration Data				
ENTER	ENTER	OR	ENTER	
Chemical CAS No. (numbers only, no dashes)	Soil gas conc., $C_q$ ( $\mu\text{g}/\text{m}^3$ )		Soil gas conc., $C_q$ (ppmv)	Chemical
100414	1.00E+03			Ethylbenzene

MORE  
↓

ENTER	ENTER	ENTER	ENTER	OR	ENTER
Depth below grade to bottom of enclosed space floor, $L_f$ (15 or 200 cm)	Soil gas sampling depth below grade, $L_s$ (cm)	Average soil temperature, $T_s$ ( $^{\circ}\text{C}$ )	Vadose zone SCS soil type (used to estimate soil vapor permeability)		User-defined vadose zone soil vapor permeability, $k_v$ ( $\text{cm}^2$ )
15	152.4	24			8.81E-12

MORE  
↓

ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	Vadose zone soil dry bulk density, $\rho_b^A$ ( $\text{g}/\text{cm}^3$ )	Vadose zone soil total porosity, $n^V$ (unitless)	Vadose zone soil water-filled porosity, $\theta_w^V$ ( $\text{cm}^3/\text{cm}^3$ )	Average vapor flow rate into bldg. (Leave blank to calculate) $Q_{\text{soil}}$ (L/m)
L	1.76	0.343	0.243	5

MORE  
↓

ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, $AT_c$ (yrs)	Averaging time for noncarcinogens, $AT_{nc}$ (yrs)	Exposure duration, ED (yrs)	Exposure frequency, EF (days/yr)
70	30	30	350

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
--	--

6.5E-08	6.0E-05
---------	---------

MESSAGE SUMMARY BELOW:

END



DATA ENTRY SHEET

SG-SCREEN  
A Version 2.0; 04/

DTSC  
Vapor Intrusion Guidance  
Interim Final 12/04  
(last modified 2/4/09)

Reset to Defaults

Soil Gas Concentration Data				
ENTER	ENTER	OR	ENTER	
Chemical CAS No. (numbers only, no dashes)	Soil gas conc., $C_a$ ( $\mu\text{g}/\text{m}^3$ )		Soil gas conc., $C_a$ (ppmv)	Chemical
106423	3.30E+03			p-Xylene

MORE  
↓

ENTER	ENTER	ENTER	ENTER	OR	ENTER
Depth below grade to bottom of enclosed space floor, $L_f$ (15 or 200 cm)	Soil gas sampling depth below grade, $L_s$ (cm)	Average soil temperature, $T_s$ ( $^{\circ}\text{C}$ )	Vadose zone SCS soil type (used to estimate soil vapor permeability)		User-defined vadose zone soil vapor permeability, $k_v$ ( $\text{cm}^2$ )
15	152.4	24			8.81E-12

MORE  
↓

ENTER	ENTER	ENTER	ENTER	ENTER
Vadose zone SCS soil type <small>Lookup Soil Parameters</small>	Vadose zone soil dry bulk density, $\rho_b^A$ ( $\text{g}/\text{cm}^3$ )	Vadose zone soil total porosity, $n^V$ (unitless)	Vadose zone soil water-filled porosity, $\theta_w^V$ ( $\text{cm}^3/\text{cm}^3$ )	Average vapor flow rate into bldg. (Leave blank to calculate) $Q_{\text{soil}}$ (L/m)
L	1.76	0.343	0.243	5

MORE  
↓

ENTER	ENTER	ENTER	ENTER
Averaging time for carcinogens, $AT_c$ (yrs)	Averaging time for noncarcinogens, $AT_{nc}$ (yrs)	Exposure duration, ED (yrs)	Exposure frequency, EF (days/yr)
70	30	30	350

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
--	--

NA	2.0E-03
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MESSAGE SUMMARY BELOW:

END

DATA ENTRY SHEET

SG-SCREEN  
A Version 2.0; 04/

DTSC  
Vapor Intrusion Guidance  
Interim Final 12/04  
(last modified 2/4/09)

Reset to  
Defaults

Soil Gas Concentration Data			
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., $C_a$ ( $\mu\text{g}/\text{m}^3$ )	OR	ENTER Soil gas conc., $C_a$ (ppmv)
			Chemical
1634044	1.20E+03		MTBE

MORE  
↓

ENTER Depth below grade to bottom of enclosed space floor, $L_f$ (15 or 200 cm)	ENTER Soil gas sampling depth below grade, $L_s$ (cm)	ENTER Average soil temperature, $T_s$ ( $^{\circ}\text{C}$ )	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, $k_v$ ( $\text{cm}^2$ )
15	152.4	24			8.81E-12

MORE  
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, $\rho_b^A$ ( $\text{g}/\text{cm}^3$ )	ENTER Vadose zone soil total porosity, $n^V$ (unitless)	ENTER Vadose zone soil water-filled porosity, $\theta_w^V$ ( $\text{cm}^3/\text{cm}^3$ )	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) $Q_{\text{soil}}$ (L/m)
L	1.76	0.343	0.243	5

MORE  
↓

ENTER Averaging time for carcinogens, $AT_c$ (yrs)	ENTER Averaging time for noncarcinogens, $AT_{nc}$ (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
1.2E-08	3.5E-05

MESSAGE SUMMARY BELOW:

END

5. *Dual-Phase Extraction Pilot Test Report, Former Shell Service Station, 406 North Gaffey Street, San Pedro California*, prepared by Wayne Perry, Inc., dated March 9, 2010.

# **DUAL-PHASE EXTRACTION PILOT TEST REPORT**

**FORMER SHELL SERVICE STATION  
406 NORTH GAFFEY STREET (at O'FARRELL)  
SAN PEDRO, CALIFORNIA**

**MARCH 9, 2010**

## ***SUBMITTED TO:***

**CALIFORNIA REGIONAL WATER QUALITY CONTROL  
BOARD – LOS ANGELES REGION  
320 West 4th Street, Suite 200  
Los Angeles, California 90013-2342**

**Attention: Dr. Yue Rong**

## ***PREPARED FOR:***

**EQUILON ENTERPRISES LLC dba  
SHELL OIL PRODUCTS US  
20945 S. Wilmington Avenue  
Carson, California 90810**

## ***PREPARED BY:***

**WAYNE PERRY, INC.  
8281 Commonwealth Avenue  
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(714) 826-0352**

**SAP CODE: 136042  
WPI PROJECT NUMBER: 09.517  
CRWQCB-LA EAOP CASE NUMBER: 907310543**



**WARRANTY STATEMENT:**

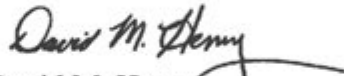
This report has been prepared by Wayne Perry, Inc. for the exclusive use of Equilon Enterprises LLC dba Shell Oil Products US, as it pertains to the former Shell Service Station located at 406 North Gaffey Street (at O'Farrell Street) in San Pedro, California. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists, hydrogeologists, and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report.

If you have questions or require additional information regarding this report, please contact Ms. Deborah Pryor of Shell at (323) 291-9595 or Ms. Ginny Murphy of WPI at (714) 826-0352.

**REPORT PREPARED BY:**

  
Cristi A. Farrell  
Project Manager



  
David M. Henry  
California Registered Geologist 4085

March 9, 2010

**WPI PROJECT NUMBER: 09.517**

cc: Ms. Deborah Pryor, Shell  
Mr. Hamid Pournamdari, Property Owner

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# 1.0 INTRODUCTION

Data from the previous phases of site assessment indicate that soil and groundwater beneath the former Shell Service Station at 406 North Gaffey Street (at O'Farrell Street) in San Pedro, California (site), have been impacted by petroleum hydrocarbons and fuel oxygenates. A dual-phase extraction pilot test was proposed in the June 22, 2009, Interim Remedial Action Plan, to determine the feasibility of soil vapor and groundwater extraction at the site. This report, submitted by Wayne Perry Inc. (WPI), on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), documents the procedures and results of feasibility testing performed at the site.

In correspondence dated February 15, 2005, the California Regional Water Quality Control Board-Los Angeles (CRWQCB-LA) identified this site as a "Class D" clean up priority and placed it in the self directed Expedited Agency Oversight Program (EAOP). This report is being submitted per EAOP guidelines as outlined in the CRWQCB-LA letters dated February 15, 2005, and January 18, 2006.

# 2.0 BACKGROUND

## 2.1 SITE DESCRIPTION

The site is on the northeast corner of the intersection of North Gaffey and O'Farrell Streets in San Pedro (Figure 1). Three 12,000-gallon underground storage tanks (USTs), one 550-gallon waste oil UST, four fuel dispensers, and associated underground product piping were removed from the site in June 2000. The station building with three service bays was later demolished by the property owner. The site is currently a vacant with the former station building's concrete pad, hoists, and clarifier left intact.

Surrounding land use is a combination of residential and commercial. A single-family residence, a pedestrian overpass for North Gaffey Street, and the 110 Freeway are located north of the site. Single-family residences are located east of the site across Oliver Street. A two-story commercial building with subterranean parking is located south of the site across O'Farrell Street. A public park is located west of the site across North Gaffey Street.

## 2.2 SITE HISTORY

Date	Activity/Method	No. of Wells, Borings or Samples	Report Date	Consultant	Comments
4/94	Product Line Leak	—	—	—	The Los Angeles City Fire Department (LACFD) records for April 26, 1994, indicate that a gasoline product line failed a hydrostatic test and had an estimated leak rate of 0.03 gallon/hour.

**DUAL-PHASE EXTRACTION PILOT TEST REPORT, FORMER SHELL SERVICE STATION**

Date	Activity/Method	No. of Wells, Borings or Samples	Report Date	Consultant	Comments
6/98	UST Upgrade Sampling	—	—	WPI	Total petroleum hydrocarbons as gasoline (TPHg), benzene, and methyl tertiary butyl ether (MTBE) were not detected in any of the soil samples.
12/99	Phase I Environmental Assessment	—	1/31/00	Artemis	
1/00	Phase II Site Assessment	9 soil borings (WGR-1 through WGR-9)	2/12/00	WGR	TPH-g, benzene, and/or MTBE were detected in soil samples to a maximum depth of approximately 40 feet.
6/00	UST Removal	—	10/2/00	WGR	MTBE was detected in soil samples collected beneath the USTs and dispensers.
5/05	Agency Correspondence	—	5/25/05	—	The LACFD transferred the environmental case to the CRWQCB-LA.
7/05	Agency Correspondence	—	7/27/05	—	The CRWQCB-LA requested additional information.
8/05	Response to Agency	—	8/29/05	WGR	WGR provided the CRWQCB-LA with additional information.
2/06	Site Assessment Work Plan	—	2/28/06	WGR	WGR proposed drilling/sampling four soil borings and installing three groundwater monitoring wells.
6/06	Site Assessment	1 soil boring (WGR-10); 4 groundwater (GW) wells (MW-1 through MW-4)	8.8/06	WGR	TPHg, benzene, MTBE, and tertiary butyl alcohol (TBA) was detected in soil and/or groundwater samples. Off-site soil borings were unable to be completed due to delays in permitting.
7/06 – 7/09	Quarterly Groundwater Monitoring	—	—	Various	Quarterly groundwater monitoring and sampling reports were submitted.
11/06	Agency Correspondence	—	11/9/06	—	The CRWQCB-LA placed the site in the EAOP Class D program.
11/06 to 8/08	Site Redevelopment	—	—	—	
8/08	Work Plan for Additional Site Assessment	—	8/27/08	WPI	WPI proposed installation of four groundwater monitoring wells to define the lateral extent of impacted groundwater.
9/08	Additional Site Assessment	3 GW wells (MW-5 to MW-7)	1/19/09	WPI	The lateral extents of hydrocarbon- and oxygenate-impacted soil and groundwater remain undefined.
12/08	Work Plan for Additional Assessment	—	12/17/08	WPI	WPI proposed drilling/sampling one boring, a soil vapor survey, and an aquifer test.

Date	Activity/Method	No. of Wells, Borings or Samples	Report Date	Consultant	Comments
1/09	Additional Site Assessment and Interim Remedial Action Plan	1 soil boring (B-1); 12 soil vapor probes (SV-1 to SV-12)	6/22/09	WPI	BTEX and MTBE were detected in soil vapor samples; however residual BTEX and MTBE concentrations in soil vapor beneath the site do not pose a health risk. WPI proposed five GW wells to further define the lateral extent of impacted groundwater. WPI also proposed the installation of six observation wells to be used in conjunction with a DPE pilot test at the site.
6/09	State Water Resources Control Board Resolution No. 2009-0042	—	—	6/15/09	Resolution allowed for the reduction/alteration of the existing sampling schedule. As such, WPI recommended wells MW-1 through MW-6 be sampled Semi-Annually in the First and Third Quarters, and street well MW-7 be sampled annually in the First Quarter.
7/09 – present	Semi-Annual Groundwater Monitoring and Sampling	—	—	Various	Groundwater monitoring and sampling reports were revised to semi-annual submittals.

Boring/well data is in Table 1. Soil analytical data is in Table 2. Groundwater data is in Table 3.

### 2.3 SITE GEOLOGY/HYDROLOGY

Based previous phases of assessment, the site is underlain by siltstone beginning at a depth of approximately 15 feet (WPI, 2009).

Since 2006, the depth to groundwater at the site has ranged from approximately 34 to 38 feet. Groundwater flow is toward the north and east at a gradient between 0.02 and 0.03 foot/foot.

### 2.4 SENSITIVE RECEPTORS

Based on information provided by the Los Angeles County Department of Public Works (LACDPW) Ground Water Wells website, there are no active wells within one mile of the site (LACDPW, 2009). There are two schools and two child care centers located within 0.5-mile of the site. The nearest hospital, Little Company of Mary, is located one mile southwest of the site. A summary of sensitive receptors is in Table 2.4.

**Table 2.4, Sensitive Receptor Information**

Facility	Distance from Site	Direction from Site	Flow Direction Relative to Site
Barton Hill Elementary	0.2-mile	East	Cross-Gradient
Toberman Child Care Center	0.2-mile	Southeast	Cross-Gradient
Comprehensive Child Development	0.3-mile	South	Up-Gradient
Bandini Street Elementary	0.4-mile	West	Cross-Gradient

## **3.0 SCOPE OF WORK**

### **3.1 WELL INSTALLATION**

#### **3.1.1 Pre-field Activities**

The pre-field activities included:

- Updating the existing WPI Site Safety and Health Plan (SSHP), as necessary;
- Scheduling subcontractors;
- Notifying Underground Service Alert (USA); and
- Obtaining drilling permits.

#### **3.1.2 Utility Location**

Underground Services Alert was notified of pending drilling activities at the site at least one week prior to commencement of work. Prior to drilling, an underground line survey was performed to locate all underground utility crossings at the proposed locations. Immediately prior to drilling, the borehole locations were air knifed to a depth of five feet and to a width three inches greater than the diameter of the lead auger.

#### **3.1.3 Drilling Activities**

Wells OB-1 through OB-6 were installed on October 6 through 8, 2009, using a hollow stem auger drill rig operated by BC2 Environmental Corporation of Orange, California (C-57 License 686255). Well locations are shown on Figure 2. A copy of the County of Los Angeles well installation permit is in Appendix A.

Details of the soil sampling and well installation procedures are in Tables 3.1.3a and 3.1.3b.

**Table 3.1.3a, Soil Sampling Procedures**

<b>Number of Borings</b>	<b>Depth of Boring (feet)</b>	<b>Drilling Method</b>	<b>Sample Interval (feet)</b>	<b>Sample Method</b>	<b>Sample Analysis</b>
6	50	Hollow stem auger	5-50	Modified California split spoon	None

**Table 3.1.3b, Well Construction Details**

Number of Wells	Type of Well	Depth of Well (feet)	Casing Material	Screen Interval (feet)	Filter Pack (#2/12 Monterey sand)	Well Seals	
						Bentonite Chip:	Neat Cement (1)
6	Observation	50	<u>Blank:</u> 2-inch diameter, schedule 40 PVC <u>Slotted Casing:</u> 2-inch diameter, schedule 40 PVC with factory milled 0.020 slot	25-50	23-50 feet	19-23 feet	1-19 feet

Notes:

- (1) Neat cement, 94 pounds Portland cement per six gallons of water

Soil in the tubes was examined in the field for observable signs of petroleum hydrocarbons, screened for hydrocarbon vapors using a photoionization detector calibrated to hexane, and examined for soil classification. Soil was classified in general accordance with the Unified Soil Classification System. The soil classification and description, including blow counts, grain size, size grading, subordinate constituents, color, density, moisture content, and organic vapor readings, were recorded on a field boring/well log. Copies of the boring logs are in Appendix B.

Site investigation activities were conducted in accordance with a site-specific WPI SSHP and under the supervision of a WPI California Professional Geologist.

### **3.2 WELL DEVELOPMENT**

The wells were developed by Blaine Tech Services, Inc. of San Jose, California, on October 13, 2009. Copies of the well development field sheets are in Appendix C.

### **3.3 EQUIPMENT DECONTAMINATION**

To avoid cross-contamination, all re-usable equipment was broken down after each use and cleaned using an approved non-phosphate detergent and double-rinsed in distilled water. The augers, drive hammers, and other drilling equipment were replaced with clean equipment between boreholes.

### **3.4 DUAL PHASE EXTRACTION TEST**

On October 19, 2009, a 10-hour DPE test was performed by Frontier Environmental Services, Inc. and overseen by WPI. Prior to starting the test, depth to groundwater was measured in observation wells OB-1 through OB-6. The DPE test was conducted using a 300 TCAT LR portable DPE system which consisted of a liquid-ring vacuum pump capable of generating a vacuum up to 29 inches Hg, a 50-gallon vapor/liquid separator tank, a vapor thermal oxidizer capable of flow rates of up to 300 standard cubic feet per minute (scfm), and appropriate instrumentation.

MW-2 was used as the extraction well and OB-1 through OB-6 were used as observation wells. A stinger was lowered into MW-2 and connected to the treatment unit using above ground piping. The stinger was set to a depth of approximately 54 feet. Transducers were set in observation wells OB-1



through OB-6, MW-1, and MW-3 at a depth of 49 feet. During the system operation, measurements of system flow rate, applied vacuum, influent vapor concentrations, stinger depth, gallons of groundwater removed, induced vacuum, and groundwater drawdown were measured every 30 minutes and recorded on field data sheets (Appendix D). Groundwater removed during the test was placed into 55-gallon drums for disposal.

### **3.5 LABORATORY ANALYSES**

Vapor samples were collected from extraction well MW-2 and delivered under chain-of-custody procedures to Calscience Environmental Laboratories, Inc. to be analyzed for TPH-G using EPA Method T0-3M, and for BTEX and fuel oxygenates using EPA Method T0-15. Vapor samples were also analyzed for methane, carbon dioxide, oxygen, and nitrogen using ASTM Method D-1946. Copies of the vapor analytical reports are in Appendix E.

### **3.6 WASTE DISPOSAL**

Waste generated by Blaine Tech Services, Inc. during well development activities was contained in a truck-mounted poly tank and transported off-site for pump out and disposal. A copy of the non-hazardous waste manifest is in Appendix F.

Waste generated by WPI was contained in either 55-gallon drums or a roll-off bin. Belshire Environmental Services, Inc. transported 55-gallon drums of decontamination water and soil cuttings off-site on November 2, 2009, and the soil bin off-site on November 4, 2009. Copies of the non-hazardous waste manifests are in Appendix F.

## **4.0 FINDINGS**

### **4.1 SITE STRATIGRAPHY**

Materials observed during drilling and sampling consisted of a layer of fine-grained silty sand and/or pea gravel fill materials to depths between 10 and 15 feet overlying siltstone to a depth of approximately 50 feet.

Prior to start of the pilot test, groundwater was measured in observation wells OB-1 through OB-6 at a depth of approximately 37 feet.

### **4.2 DUAL-PHASE EXTRACTION TEST**

#### **4.2.1 Field Data**

Field data are summarized in Tables 4.2.1a and 4.2.1b.

**Table 4.2.1a Summary of Vapor Extraction System Data**

<b>STINGER DEPTH</b>		<b>54 feet</b>
<b>Applied Vacuum (inches of H<sub>2</sub>O)</b>		
Maximum		265.2
Minimum		176.8
Average		187.3
<b>Flow Rate (SCFM)</b>		
Maximum		54.7
Minimum		53.9
Average		54.6
<b>Influent Vapor Concentration (ppmv)*</b>		
Maximum		10,270
Minimum		1,271
Average		3,950
<b>Hydrocarbon Extraction Rate (pounds/hour)</b>		
Maximum		6.7
Minimum		1.0
Average		2.8
<b>Groundwater Extraction Rate (gallons/minute)</b>		
Maximum		0.7
Minimum		0.1
Average		0.1

\*Influent vapor concentrations measured using a field photoionization detector.

A summary of the DPE pilot test results is in Table 4.

Based on laboratory analytical data, approximately 32 pounds of vapor-phase hydrocarbons were recovered over a 10-hour period of system operation.

**Table 4.2.1b, Summary of Observation Well Data**

	<b>Well</b>	<b>OB-1</b>	<b>OB-2</b>	<b>OB-3</b>	<b>OB-4</b>	<b>OB-5</b>	<b>OB-6</b>
<b>Average Induced Vacuum (inches of H<sub>2</sub>O)</b>	<b>Stinger Depth (feet)</b>						
	49	0.24	4.78	5.28	4.97	6.19	1.57
<b>Average Groundwater Drawdown (feet)</b>							
	-	0.39	0.18	0.25	0.25	0.27	0.22
<b>Distance from Extraction Well (feet)</b>							
	-	10.4	13.9	15.3	9.8	10.2	14

Approximately 63 gallons of groundwater were extracted during the 10-hour pilot.

Based on the data, no drawdown was observed during the pilot test. As shown on Graphs 1 through 8, water levels in observation wells mounded as a result of the application of vacuum during the pilot test.



#### 4.2.2 Radius of Vacuum Influence

To determine the effective radius of vacuum influence, the average induced vacuum measurements from the observation wells were plotted as a percentage of the applied vacuum versus the distance from the extraction well (Graph 9). The data points were used to create a best-fit line representing the vacuum distribution over distance from the extraction well. A value of one percent of the applied vacuum at the extraction well was used as an intercept to determine the effective radius of influence (Johnson and Ettinger, 1994). The distance corresponding to the intersection of the best-fit line with one percent of the extraction well vacuum is the effective radius of influence.

Based on the graph, the effective radius of vacuum influence at the site is approximately 20 feet. The data collected during the pilot test suggests that preferential pathways influenced the flow rate in the direction of wells OB-2 through OB-5, which are located northwest, west, south, and southeast of extraction well MW-2.

#### 4.2.3 Vapor Analytical Data

Vapor analytical data are in Table 5 and are summarized in Table 4.2.3.

**Table 4.2.3, Summary of Vapor Analytical Data**

Constituent	Minimum Concentration	Maximum Concentration
TPH-G (ppm <sub>v</sub> )	2,100	7,200
Benzene (ppb <sub>v</sub> )	920	3,600
Toluene (ppb <sub>v</sub> )	ND<2,500	ND<10,000
Ethylbenzene (ppb <sub>v</sub> )	11,000	39,000
Xylenes (ppb <sub>v</sub> )	ND<1,000	3,800
MTBE (ppb <sub>v</sub> )	28,000	74,000
TBA (ppb <sub>v</sub> )	ND<2,500	ND<10,000
DIPE (ppb <sub>v</sub> )	ND<1,000	ND<10,000
ETBE (ppb <sub>v</sub> )	ND<1,000	ND<10,000
TAME (ppb <sub>v</sub> )	ND<1,000	ND<10,000
ETOH (ppb <sub>v</sub> )	ND<25,000	ND<100,000

## 5.0 CONCLUSIONS

Based on the data, soil vapor extraction appears to be effective in removing residual hydrocarbons and MTBE; however, groundwater extraction does not appear to be feasible due to low flow rate and limited radius of influence. The groundwater extraction results are consistent with saturated zone lithology (siltstone/claystone), hydraulic conductivity results calculated from the January 2009 aquifer test, and low permeabilities calculated from physical properties analyses of depth-discrete soil samples. Given the vadose zone lithology, the vapor extraction pilot test results suggest that fracture patterns exist within the bedrock, influencing the flow rate.

Based on the extent of hydrocarbon- and oxygenate-impacted groundwater beneath the site, alternate remedial options for groundwater will be evaluated. Additional pilot testing will be conducted to determine the feasibility of air sparge at the site. WPI proposes to install one sparge well and four observation wells to be used during the pilot test.

## 6.0 PROPOSED SCOPE OF WORK

### 6.1 PRE-FIELD AND FIELD ACTIVITIES

Pre-field activities will include the following:

- Updating the existing WPI SSHP, as necessary;
- Scheduling subcontractors; and
- Notifying Underground Service Alert at least one week prior to commencement of work to perform an underground utility clearance for the planned drilling location.

Prior to any excavation, a utility line survey will be performed to locate all underground utility lines at the site. The boring location will be air-knifed to a depth of five feet depending on the location of the proposed boring relative to utility lines and to a width three inches larger than the width of the borehole.

### 6.2 WELL INSTALLATION

One sparge well will be installed for the air sparge pilot test. The proposed well location is shown on Figure 2. Details of the drilling and sampling schedule are in Table 6.2a. Details of the well construction are in Table 6.2b.

**Table 6.2a, Drilling and Sampling Information**

Number of Borings	Depth of Boring (feet)	Drilling Method	Sample Interval (feet)	Sample Method	Sample Analysis
1	50	Hollow stem auger	5-50	None	None

**Table 6.2b, Well Construction Data**

Number of Wells	Type of Well	Depth of Well (feet)	Casing Material	Screen Interval (feet)	Filter Pack (#2/12 Monterey Sand)	Well Seals	
						Bentonite Chips:	Neat Cement (1)
1	Sparge well	50	<u>Blank:</u> 2-inch diameter, schedule 80 PVC <u>Slotted Casing:</u> 2-inch diameter, schedule 80 PVC with factory milled 0.02-inch slots	48-50	47-50	43-47	0.5-43

Notes:

- (1) Neat cement, 94 pounds Portland cement per six gallons of water

Soil generated from the boring will be placed in 55-gallon drums and sealed upon completion of work activities. The soil cuttings will remain in the drums on site until they can be properly disposed.

At least 72 hours after well completion, the well will be developed by surging and bailing. A surge block will be used to draw fine-grained material into the well where it will be removed. After a period of surging, water and suspended fines will be removed using a PVC bailer. This process will be repeated until the removed water contains less than 10 NTUs of suspended solids or a baseline level of turbidity is established. Groundwater depths before and after development, well depth, well development times and dates, volumes of water removed, and turbidity levels will be recorded on a well development log.

To avoid cross-contamination, all reusable equipment will be broken down prior to and after each use and cleaned, using an approved non-phosphate detergent, double-rinsed in distilled water, and allowed to air dry.

All work will be performed under a site-specific WPI Site Safety and Health Plan and the supervision of a California Professional Geologist.

### **6.3 AIR SPARGE TEST**

An air sparge test will be conducted using an oil-less compressor to inject atmospheric air, a regulator to control the injection pressure, a flowmeter to measure the injection flowrate, and a pressure gauge to measure the injection pressure at the wellhead. Pressure transducers will be suspended below the water table to record any groundwater mounding and pressure gauges will be installed at the wellheads to measure any air pressure increases that may occur during the field test in the observation wells.

The field test will be conducted in three stages using injection pressures of approximately 10, 20, and 30 psi. Each stage of the field test will be conducted for approximately one hour. Airflow rate and injection pressure will be periodically measured at the injection well during the test. Dissolved oxygen content and oxidation-reduction potential of groundwater in the observation wells will be measured one-half hour before injection starts and immediately after injection stops. Air pressure in the observation wells will be measured while injection is occurring during the field test.

### **6.4 REPORTING**

A report will be submitted to the CRWQCB-LA that will include:

- Objectives and background;
- Methods used;
- Chemical data summarized in tables and on figures;
- Copies of laboratory reports and chain-of-custody documents;
- Well construction log;
- Discussion of results;
- Recommendations for appropriate remedial measures; and
- Remedial system design.

## **6.5 SCHEDULING**

The proposed activities will be initiated upon receipt of appropriate permits. A report summarizing the procedures and results of the assessment will be submitted to the CRWQCB-LA within 90 days following completion of all field activities.

## **7.0 REFERENCES**

Los Angeles County Department of Public Works (LACDPW) Ground Water Wells Website [<http://dpw2.co.la.ca.us/website/wells/viewer.asp>], 2009, reviewed on January 27, 2009.

Wayne Perry, Inc. (WPI), 2009, Additional Site Assessment and Interim Remedial Action Plan, Former Shell Service Station, 460 North Gaffey Street (at O'Farrell), San Pedro, California; Unpublished report for Shell Oil Products US, dated June 22, 2009.

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# **TABLES**

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**TABLE 1**  
**BORING/WELL DATA**  
Former Shell Service Station  
406 North Gaffey Street, San Pedro

Name	Type	Date Installed	Surface Elevation (feet)	Total Depth (feet)	Sample Increment or Depth(s) (feet)		First Groundwater (feet)		Screen Diameter (inches)	Screen Depth (feet)		Comments
							Depth	Elevation		Top	Bottom	
WGR-1	Boring	1/12/00	-	15	5	5-15	-	-	-	-	-	---
WGR-2	Boring	1/12/00	-	35	5	5-35	35	-	-	-	-	---
WGR-3	Boring	1/12/00	-	40	5	5-40	35	-	-	-	-	---
WGR-4	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-5	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-6	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-7	Boring	1/12/00	-	25	5	5-25	-	-	-	-	-	---
WGR-8	Hand Auger	1/12/00	-	3	-	-	-	-	-	-	-	Refusal met at 3 feet
WGR-9	Hand Auger	1/12/00	-	4	-	-	-	-	-	-	-	Refusal met at 4 feet
MW-1	GW Well	6/12/06	130.31	55.5	5	10-55	37.72	92.59	4	25	55	---
MW-2	GW Well	6/12/06	129.64	55.5	5	10-55	36.77	92.87	4	25	55	---
MW-3	GW Well	6/12/06	128.99	55.5	5	10-55	35.61	93.35	4	25	55	---
MW-4	GW Well	6/13/06	127.88	55.5	5	10-55	36.17	91.71	4	25	55	---
WGR-10	Boring	6/13/06	-	55	5	10-55	35	-	-	-	-	---
MW-5	GW Well	9/10/08	128.55	55.5	5	10-55	36.82	91.73	4	25	55	---
MW-6	GW Well	9/11/08	130.83	55.5	5	10-55	37.56	93.27	4	25	55	---
MW-7	GW Well	9/10/08	126.22	55.5	5	10-55	32.70	93.52	4	25	55	---
B-1	Boring	1/28/09	-	50	5	10-50	30	-	-	-	-	---
OB-1	Observation Well	10/6/09	-	50	5	10-50	-	-	2	25	50	---
OB-2	Observation Well	10/6/09	-	50	5	10-50	-	-	2	25	50	---
OB-3	Observation Well	10/7/09	-	50	5	10-50	-	-	2	25	50	---
OB-4	Observation Well	10/7/09	-	50	5	10-50	-	-	2	25	50	---
OB-5	Observation Well	10/8/09	-	50	5	10-50	-	-	2	25	50	---
OB-6	Observation Well	10/8/09	-	50	5	10-50	-	-	2	25	50	---

**TABLE 1**  
**BORING/WELL DATA**  
 Former Shell Service Station  
 406 North Gaffey Street, San Pedro

Name	Type	Date Installed	Surface Elevation (feet)	Total Depth (feet)	Sample Increment or Depth(s) (feet)		First Groundwater (feet)		Screen Diameter (inches)	Screen Depth (feet)		Comments
							Depth	Elevation		Top	Bottom	
MW-8	GW Well	10/16/09	128.60	55	5	10-55	30	-	2	25	55	---
MW-9	GW Well	10/16/09	121.16	55	5	10-55	40	-	2	25	55	---
MW-10	GW Well	10/19/09	123.64	55	5	10-55	40	-	2	25	55	---
MW-11	GW Well	10/20/09	124.68	55	5	10-55	35	-	2	25	55	---
MW-12	GW Well	10/20/09	127.23	55	5	10-55	40	-	2	25	55	---

\*Elevations in feet relative to mean sea level.

\*\*Groundwater depth/elevation data from October 2, 2008, sampling.



**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	IRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	EIPE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>T-1</b>	6/16/2000													
20	360	-	-	<130	<130	<130	<250	13000	-	-	-	-	-	
<b>T-2</b>	6/16/2000													
20	4.9	-	-	<5	<5	<5	<10	6300	-	-	-	-	-	
<b>T-3</b>	6/16/2000													
17	5.5	-	-	<5	<5	<5	<10	7500	-	-	-	-	-	
<b>T-4</b>	6/16/2000													
17	3.3	-	-	<5	<5	<5	<10	8600	-	-	-	-	-	
<b>T-5</b>	6/16/2000													
17	3.9	-	-	<5	<5	<5	<10	4000	-	-	-	-	-	
<b>T-6</b>	6/16/2000													
18	1.9	-	-	<5	<5	<5	<10	7500	-	-	-	-	-	
<b>D-1</b>	6/16/2000													
4	4.0	-	-	<5	<5	<5	<10	7.5	-	-	-	-	-	
<b>D-2</b>	6/16/2000													
4	14	-	-	<5	<5	76	180	6.3	-	-	-	-	-	
<b>D-3</b>	6/16/2000													
4	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
<b>D-4</b>	6/16/2000													
4	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
<b>WO-1</b>	6/16/2000													
11	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
<b>VL-1</b>	6/20/2000													
5	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
<b>VL-2</b>	6/20/2000													
5	<0.50	-	-	<5	<5	<5	<10	97	-	-	-	-	-	
<b>WGR-1</b>	1/12/2000													
5	-	-	<10	-	-	-	-	-	-	-	-	-	-	
10	-	-	<10	-	-	-	-	-	-	-	-	-	-	
15	-	-	<10	-	-	-	-	-	-	-	-	-	-	

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	TRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (µg/kg)	Xylenes (µg/kg)	MIBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>WGR-2*</b> 1/12/2000														
6	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
10	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
15	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
28	0.73	-	-	<5	<5	<5	<10	120	<25	<10	<10	<10	-	
35	49	-	-	1300	3000	660	4100	-	-	-	-	-	-	
40	20	-	-	2500	3900	370	2300	-	-	-	-	-	-	
<b>WGR-3*</b> 1/12/2000														
6	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
10	0.53	-	-	<5	<5	<5	<10	340	<500	<20	<20	<20	-	
15	1.6	-	-	<5	<5	<5	<10	1500	<6300	<25	<25	<25	-	
20	0.89	-	-	47	35	8.3	50	250	850	<10	<10	<10	-	
25	3.0	-	-	110	110	28	190	48	3700	<10	<10	<10	-	
30	7.6	-	-	490	710	140	860	-	-	-	-	-	-	
35	15	-	-	1100	2300	410	2600	-	-	-	-	-	-	
<b>WGR-4*</b> 1/12/2000														
6	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
10	48	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
15	1.8	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
20	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
25	2.7	-	-	140	210	56	270	-	-	-	-	-	-	
<b>WGR-5*</b> 1/12/2000														
6	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
10	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
15	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
20	2.0	-	-	120	130	49	250	72	770	37	<10	<10	-	
25	0.65	-	-	81	75	14	65	-	-	-	-	-	-	

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	TRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>WGR-6*</b> 1/12/2000														
6	<0.50	-	-	<5	<5	<5	<10	32	<250	<10	<10	<10	-	
10	0.91	-	-	<5	<5	<5	<10	730	<500	<20	<20	<20	-	
15	0.83	-	-	<5	<5	<5	<10	830	750	<20	<20	<20	-	
20	<0.50	-	-	<5	<5	<5	<10	410	250	<10	<10	<10	-	
25	<0.50	-	-	<5	<5	<5	<10	38	<250	22	<10	<10	-	
<b>WGR-7*</b> 1/12/2000														
6	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
10	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
15	<0.50	-	-	<5	<5	<5	<10	-	-	-	-	-	-	
20	<0.50	-	-	<5	<5	<5	<10	33	<250	25	<10	<10	-	
25	<0.50	-	-	<5	<5	<5	<10	39	<250	57	<100	<100	-	
<b>WGR-8*</b> 1/12/2000														
3	-	-	295	<5	<5	<5	<5	<5	-	-	-	-	-	
<b>WGR-9*</b> 1/12/2000														
4	-	-	144	<5	<5	<5	<5	<5	-	-	-	-	-	
<b>WGR-10</b> 6/13/2006														
10	<0.25	-	-	<0.98	<0.98	<0.98	<2.98	<2.0	<20	<0.98	<0.98	<0.98	<490	cl
15	<0.29	-	-	<1.1	<1.1	<1.1	<3.3	<2.2	<22	2.3	<1.1	<1.1	<560	cl
20	<0.29	-	-	<1.1	<1.1	<1.1	<3.3	<2.2	<22	3.1	<1.1	<1.1	<550	cl
25	<0.30	-	-	<1.2	<1.2	<1.2	<3.7	3.8	190	28	<1.2	<1.2	<620	cl
30	0.98	-	-	14	<1.0	16	6.4	5.7	46	99	<1.0	<1.0	<510	cl
35	46	-	-	51	<1.0	41	3.4	58	110	150	<1.0	<1.0	<520	cl
40	3.1	-	-	1100	34	110	482	<2.2	220	9.0	<1.1	<1.1	<550	cl
45	2.4	-	-	1200	110	160	788	<2.1	220	9.6	<1.0	<1.0	<520	cl
50	2.1	-	-	5800	1.7	93	120	<2.4	110	<1.2	<1.2	<1.2	<600	cl
55	<0.28	-	-	<1.2	<1.2	<1.2	<3.5	<2.3	<23	<1.2	<1.2	<1.2	<580	cl

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	TRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPF (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>MW-1</b>	6/12/2006													
10	<0.26	-	-	<1.1	<1.1	<1.1	<3.4	20	<23	<1.1	<1.1	<1.1	<570	cl
15	<0.30	-	-	<1.1	<1.1	<1.1	<3.3	150	190	5.6	<1.1	<1.1	<560	cl
20	3.4	-	-	120	190	51	350	1500	7300	38	<1.1	<1.1	<570	cl
25	5.3	-	-	500	710	160	770	210	12000	63	<1.3	<1.3	<660	cl
30	46	-	-	4000	9700	1200	7200	<2.3	10000	39	<1.1	<1.1	<570	cl
35	110	-	-	4000	14000	2700	16700	<2.3	10000	31	<1.2	<1.2	<590	cl
40	28	-	-	2100	1900	1100	5000	76	140	2.3	<1.3	<1.3	<630	cl
45	23	-	-	4400	3.5	2400	290	<2.4	28	<1.2	<1.2	<1.2	<600	cl
50	<0.30	-	-	2.9	<1.3	<1.3	<3.9	<2.6	<26	<1.3	<1.3	<1.3	<650	cl
55	<0.29	-	-	43	15	6.3	20.5	<2.4	<24	<1.2	<1.2	<1.2	<600	cl
<b>MW-2</b>	6/12/2006													
10	<0.22	-	-	<0.84	<0.84	<0.84	<2.54	<1.7	<17	<0.84	<0.84	<0.84	<420	gc
15	0.39	-	-	<1.2	<1.2	<1.2	<3.6	180	87	<1.2	<1.2	<1.2	<600	cl
20	1100	-	-	160	<110	78000	<330	6500	5300	<110	<110	<110	<55000	cl
25	38	-	-	<90	<90	150	<270	3200	<1800	<90	<90	<90	<45000	cl
30	170	-	-	<110	<110	2200	<320	4200	6000	<110	<110	<110	<53000	cl
35	550	-	-	<110	<110	7100	<330	3700	<2200	<110	<110	<110	<56000	cl
40	20	-	-	3700	5800	490	2700	<220	<2200	<110	<110	<110	<55000	cl
45	14	-	-	3800	1100	440	2450	<2.1	280	4.0	<1.0	<1.0	<520	cl
50	0.56	-	-	500	3.5	20	114	<2.3	96	<1.2	<1.2	<1.2	<580	cl
55	0.31	-	-	740	120	28	77	34	69	1.4	<1.1	<1.1	<570	cl
<b>MW-3</b>	6/12/2006													
10	<0.29	-	-	<1.1	<1.1	<1.1	<3.3	<2.2	<22	<1.1	<1.1	<1.1	<560	cl
15	<0.31	-	-	<1.6	<1.6	<1.6	<4.7	<3.1	<31	<1.6	<1.6	<1.6	<780	cl
20	1.5	-	-	<1.1	<1.1	<1.1	<3.2	3700	200	<1.1	<1.1	2.4	<530	cl
25	3.6	-	-	<1.1	<1.1	<1.1	<3.2	9400	510	2.3	<1.1	6.2	<530	cl
30	200	-	-	2.3	<1.2	1.7	<3.6	5200	580	7.7	<1.2	5.6	<590	cl
35	210	-	-	1200	9100	5800	37000	2000	6100	<230	<230	<230	<110000	cl
40	35	-	-	6300	9100	950	5300	<450	<4500	<230	<230	<230	<110000	cl
45	14	-	-	3200	3300	150	1790	<2.2	79	<1.1	<1.1	<1.1	<560	cl
50	<0.29	-	-	2.4	4.2	<1.2	<3.5	<2.3	<23	<1.2	<1.2	<1.2	<580	cl
55	<0.30	-	-	2.4	2.3	<1.1	<3.4	<2.3	<23	<1.1	<1.1	<1.1	<570	cl

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	TRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (ng/kg)	Xylenes (µg/kg)	MTBE (ng/kg)	TBA (µg/kg)	DIPE (ng/kg)	ETBE (µg/kg)	TAME (ng/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>MW-4</b>	6/13/2006													
10	<0.23	-	-	<1.1	<1.1	<1.1	<3.2	2.6	<21	<1.1	<1.1	<1.1	<530	cl
15	<0.26	-	-	<1.1	<1.1	<1.1	<3.2	2.5	<21	<1.1	<1.1	<1.1	<530	cl
20	<0.28	-	-	<1.0	<1.0	<1.0	<3.0	<2.0	<20	1.5	<1.0	<1.0	<500	cl
25	<0.28	-	-	<1.1	<1.1	<1.1	<3.3	<2.2	<22	3.9	<1.1	<1.1	<560	cl
30	0.49	-	-	<1.0	<1.0	<1.0	<3.0	<2.0	<20	50	<1.0	<1.0	<510	cl
35	400	-	-	320	<120	12000	<350	<230	<2300	<120	<120	<120	<58000	cl
40	<0.28	-	-	<1.1	<1.1	<1.1	<3.3	20	<22	3.5	<1.1	<1.1	<560	cl
45	0.45	-	-	120	<1.1	13	57	<2.1	25	5.6	<1.1	<1.1	<530	cl
50	<0.27	-	-	120	<1.2	11	27.8	<2.3	<23	<1.2	<1.2	<1.2	<590	cl
55	<0.29	-	-	<1.2	<1.2	<1.2	<3.6	<2.4	<24	<1.2	<1.2	<1.2	<610	cl
<b>MW-5</b>	9/10/2008													
5	-	<86	-	<0.86	<0.86	<0.86	<0.86	<0.86	<8.6	<1.7	<1.7	<1.7	-	cl
10	-	<130	-	<1.3	<1.3	<1.3	<1.3	<1.3	<13	<2.5	<2.5	<2.5	-	sst
15	-	<110	-	<1.1	<1.1	<1.1	<1.1	<1.1	<11	<2.1	<2.1	<2.1	-	cl
20	-	<95	-	<0.95	<0.95	<0.95	<0.95	<0.95	<9.5	<1.9	<1.9	<1.9	-	cl
25	-	100	-	<1.0	<1.0	<1.0	<1.0	<1.0	32	40	<2.0	<2.0	-	cl
30	-	2300	-	490	65	91	281	<1.1	71	71	<2.2	<2.2	-	cl
35	-	130000	-	2600	3700	1800	12700	<99	<990	210	<200	<200	-	cl
40	-	40000	-	5900	9200	850	5500	150	<1000	<200	<200	<200	-	cl
45	-	32000	-	3800	1100	1100	7100	140	<1100	<220	<220	<220	-	cl
50	-	140	-	11	<1.2	<1.2	<1.2	1.7	94	<2.3	<2.3	<2.3	-	cl
55	-	320	-	1.3	<1.3	<1.3	<1.3	<1.3	<13	<2.5	<2.5	<2.5	-	cl
<b>MW-6</b>	9/11/2008													
5	-	<99	-	<0.99	<0.99	<0.99	<0.99	<0.99	<9.9	<2.0	<2.0	<2.0	-	cl
10	-	<97	-	<0.97	<0.97	<0.97	<0.97	<0.97	<9.7	<1.9	<1.9	<1.9	-	sst
15	-	300	-	<1.0	<1.0	<1.0	<1.0	280	120	<2.0	<2.0	<2.0	-	sst
20	-	2000	-	<0.94	<0.94	<0.94	<0.94	2000	<990	<1.9	<1.9	<1.9	-	sst
25	-	2500	-	<1.0	<1.0	4.9	32.1	1600	750	4.6	<2.1	<2.1	-	sst
30	-	11000	-	170	510	81	1260	450	630	16	<2.2	<2.2	-	sst
35	-	29000	-	340	720	410	2930	<110	<1100	<220	<220	<220	-	cl
40	-	11000	-	710	58	600	2280	<1.1	58	3.0	<2.1	<2.1	-	cl
45	-	3700	-	160	<1.2	180	400	<1.2	12	<2.3	<2.3	<2.3	-	cl
50	-	2700	-	290	<1.1	150	239	<1.1	<11	<2.2	<2.2	<2.2	-	cl
55	-	120000	-	4300	<120	9200	27400	<120	<1200	<230	<230	<230	-	cl

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	TRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (µg/kg)	Xylenes (µg/kg)	MIBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	EIPE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>MW-7</b>	<b>9/10/2008</b>													
5	-	<90	-	<0.90	<0.90	<0.90	<0.90	<0.90	<9.0	<1.8	<1.8	<1.8	-	cl
10	-	<110	-	<1.1	<1.1	<1.1	<1.1	<1.1	<11	<2.1	<2.1	<2.1	-	sst
15	-	<91	-	<0.91	<0.91	<0.91	<0.91	<0.91	<91	<1.8	<1.8	<1.8	-	sst
20	-	<99	-	<0.99	<0.99	<0.99	<0.99	<0.99	<9.9	<2.0	<2.0	<2.0	-	sst
25	-	<100	-	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.1	<2.1	<2.1	-	sst
30	-	570	-	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<2.0	<2.0	<2.0	-	cl
35	-	<100	-	<1.0	<1.0	<1.0	<1.0	<1.0	<b>13</b>	<b>3.3</b>	<2.0	<2.0	-	cl
40	-	<10000	-	<b>1900</b>	<b>2.9</b>	<b>220</b>	<b>1020</b>	<1.1	<b>110</b>	<2.2	<2.2	<2.2	-	cl
45	-	610	-	<b>130</b>	<0.95	<b>24</b>	<b>34</b>	<0.95	<b>19</b>	<1.9	<1.9	<1.9	-	cl
50	-	450	-	<b>3.0</b>	<b>1.2</b>	<1.1	1.6	<1.1	<11	<2.2	<2.2	<2.2	-	cl
55	-	610	-	<b>6.6</b>	<1.2	<1.2	1.2	<1.2	<12	<2.3	<2.3	<2.3	-	cl
<b>MW-8</b>	<b>10/16/2009</b>													
5	-	<0.043	-	<0.85	<0.85	<0.85	<1.7	<1.7	<17	<0.85	<0.85	<0.85	-	
10	-	<0.047	-	<0.93	<0.93	<0.93	<1.9	<1.9	<19	<0.93	<0.93	<0.93	-	
15	-	<0.049	-	<0.98	<0.98	<0.98	<2.0	<2.0	<20	<0.98	<0.98	<0.98	-	
20	-	<0.049	-	<0.97	<0.97	<0.97	<1.9	<1.9	<19	<0.97	<0.97	<0.97	-	
25	-	<0.046	-	<0.93	<0.93	<0.93	<1.9	<1.9	<19	<0.93	<0.93	<0.93	-	
30**	-	0.7	-	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<10	<10	-	
35	-	140	-	400	460	1200	3800	<200	<2000	<98	<98	<98	-	
40	-	1.3	-	130	<1.0	40	200	<2.0	<20	<1.0	<1.0	<1.0	-	
45	-	0.074	-	4.3	2.2	<1.0	2.9	<2.1	<21	<1.0	<1.0	<1.0	-	
50	-	0.19	-	1.1	<1.1	<1.1	<2.2	<2.2	<22	<1.1	<1.1	<1.1	-	
55	-	0.31	-	<1.1	<1.1	<1.1	<2.2	<2.2	<22	<1.1	<1.1	<1.1	-	
<b>MW-9</b>	<b>10/16/2009</b>													
5	-	<0.045	-	1.1	0.98	<0.91	<1.8	<1.8	<18	<0.91	<0.91	<0.91	-	
10	-	<0.059	-	<1.2	1.7	<1.2	<2.4	<2.4	<24	<1.2	<1.2	<1.2	-	
15	-	<0.046	-	<0.92	<0.92	<0.92	<1.8	<1.8	<18	<0.92	<0.92	<0.92	-	
20	-	<0.049	-	<0.99	<0.99	<0.99	<2.0	<2.0	<20	<0.99	<0.99	<0.99	-	
25	-	<0.049	-	<0.97	<0.97	<0.97	<1.9	<1.9	<19	<0.97	<0.97	<0.97	-	
30	-	<0.047	-	<0.93	<0.93	<0.93	<1.9	<1.9	<19	<0.93	<0.93	<0.93	-	
35	-	540	-	<110	<110	2100	<210	<210	<2100	<110	<110	<110	-	
40	-	0.055	-	<1.0	1.2	<1.0	<2.0	<2.0	<20	<1.0	<1.0	<1.0	-	
45	-	<0.053	-	<1.1	<1.1	<1.1	<2.1	<2.1	<21	<1.1	<1.1	<1.1	-	
50	-	2.8	-	980	<1.2	110	100	<2.5	57	<1.2	<1.2	<1.2	-	
55	-	1.9	-	5200	2.3	55	40	<2.1	43	<1.1	<1.1	<1.1	-	

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	TRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
<b>MW-10</b>	<b>10/19/2009</b>													
5	-	<0.037	-	<0.74	<0.74	<0.74	<1.5	<1.5	<15	<0.74	<0.74	<0.74	-	
10	-	<0.041	-	<0.82	<0.82	<0.82	<1.6	<1.6	<16	<0.82	<0.82	<0.82	-	
15	-	<0.044	-	<0.89	<0.89	<0.89	<1.8	<1.8	<18	<0.89	<0.89	<0.89	-	
20	-	<0.047	-	<0.94	<0.94	<0.94	<1.9	<1.9	<19	<0.94	<0.94	<0.94	-	
25	-	<0.046	-	<0.92	<0.92	<0.92	<1.8	<1.8	<18	<0.92	<0.92	<0.92	-	
30														
35	-	83	-	<93	<93	260	360	<190	<1900	<93	<93	<93	-	
40	-	31	-	4200	5700	490	2800	<220	<2200	<110	<110	<110	-	
45	-	2.7	-	1200	5.9	130	180	<2.2	46	2.0	<1.1	<1.1	-	
50	-	<5.3	-	1100	21	160	430	<2.0	37	2.0	<1.0	<1.0	-	
55	-	0.45	-	<1.0	<1.0	<1.0	<2.1	<2.1	<21	<1.0	<1.0	<1.0	-	
<b>MW-11</b>	<b>10/20/2009</b>													
5	-	<0.042	-	<0.83	<0.83	<0.83	<1.7	<1.7	<17	<0.83	<0.83	<0.83	-	
10	-	<0.042	-	<0.85	0.88	<0.85	<1.7	<1.7	<17	<0.85	<0.85	<0.85	-	
15	-	<0.05	-	<0.99	<0.99	<0.99	<2.0	<2.0	<20	<0.99	<0.99	<0.99	-	
20	-	<0.049	-	<0.98	<0.98	<0.98	<2.0	<2.0	<20	<0.98	<0.98	<0.98	-	
25	-	<0.054	-	<1.1	<1.1	<1.1	<2.2	<2.2	<22	<1.1	<1.1	<1.1	-	
30	-	<0.052	-	<1.0	<1.0	<1.0	<2.1	<2.1	<21	<1.0	<1.0	<1.0	-	
35**	-	<0.5	-	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<10	<10	<10	-	
40	-	3.7	-	190	160	160	370	<2.1	160	12	<1.1	<1.1	-	
45	-	20	-	3.2	2.5	1.4	3.5	5.2	180	34	<1.2	<1.2	-	
50	-	0.27	-	<1.2	<1.2	<1.2	<2.3	<2.3	<23	20	<1.2	<1.2	-	
55	-	0.14	-	4.5	<1.1	<1.1	<2.2	<2.2	<22	24	<1.1	<1.1	-	

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 North Gaffey Street, San Pedro**

Boring/Wel ID and Depth (feet)	TPH-G (mg/kg)	TPPH (mg/kg)	TRPH (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl- benzene (µg/kg)	Xylenes (µg/kg)	MTBE (µg/kg)	TBA (µg/kg)	DIPE (µg/kg)	ETBE (µg/kg)	TAME (µg/kg)	Ethanol (µg/kg)	Soil Type (USGS)
MW-12	10/20/2009													
5	-	<0.055	-	<1.1	<1.1	<1.1	<2.2	<2.2	<22	<1.1	<1.1	<1.1	-	
10	-	<0.049	-	<0.99	<0.99	<0.99	<2.0	<2.0	<20	<0.99	<0.99	<0.99	-	
15	-	<0.058	-	<1.2	<1.2	<1.2	<2.3	<2.3	<23	<1.2	<1.2	<1.2	-	
20	-	<0.054	-	<1.1	<1.1	<1.1	<2.1	<2.1	<21	<1.1	<1.1	<1.1	-	
25	-	<0.05	-	<1.0	<1.0	<1.0	<2.0	<2.0	<20	<1.0	<1.0	<1.0	-	
30	-	0.53	-	26	1.4	<1.0	160	<2.0	36	1.5	<1.0	<1.0	-	
35	-	8.5	-	1500	1800	280	2500	<210	<2100	<100	<100	<100	-	
40	-	1900	-	7400	57000	28000	200000	<1100	<11000	<550	<550	<550	-	
45	-	240	-	40000	52000	6400	32000	<220	<2200	<110	<110	<110	-	
50	-	3.4	-	2700	4000	56	310	13	180	5.4	<1.1	<1.1	-	
55	-	0.17	-	4.5	5.7	<1.2	3.3	<2.3	<23	<1.2	<1.2	<1.2	-	

**Notes:**

\* BTEX analyzed by EPA Method 8021B

\*\* EPA Method 5035 protocol not used due to lab error.

ND: Not detected above specified limit

TPH-G: total petroleum hydrocarbons as gasoline

TPPH: total purgeable petroleum hydrocarbons

TRPH: total recoverable petroleum hydrocarbons

MTBE: methyl tertiary butyl ether

TBA: tertiary butyl alcohol

DIPE: di-isopropyl ether

ETBE: ethyl tertiary butyl ether

TAME: tertiary amyl methyl ether



**TABLE 3**  
**HISTORICAL GROUNDWATER ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 N. Gaffey, San Pedro**

WELL	DATE	DEPTH TO GW (feet)	SPR THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-G (ug/L)	TPPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS	
MW-1	<b>Top of casing elevation (ft): 130.31</b>																	
	08/28/06	36.73	0.00	93.58		1900		1100	150	120	230	ND<10	ND<100	ND<10	ND<10	ND<10		
	<b>Top of casing elevation (ft): 130.31</b>																	
	11/22/06	37.35	0.00	92.96	54.60	3200		1600	160	320	620	ND<20	ND<500	ND<20	ND<20	ND<20	ND<20	
	02/22/07	37.82	0.00	92.49	54.69	2100		1700	100	310	430	10	70	3.6	ND<1.0	ND<1.0	ND<1.0	
	05/14/07	38.41	0.00	91.90	54.58	3600		2000	190	380	710	ND<20	ND<200	ND<20	ND<20	ND<20	ND<20	
	08/30/07	38.25	0.00	92.06	54.60	3500		2100	130	370	650	ND<20	ND<200	ND<20	ND<20	ND<20	ND<20	
	12/07/07	38.80	0.00	91.51	54.60	4100		1800	73	320	570	ND<20	ND<200	ND<20	ND<20	ND<20	ND<20	
	02/18/08	38.22	0.00	92.09	54.56	3100		1300	190	220	380	27	ND<250	ND<25	ND<25	ND<25	ND<25	
	05/07/08	36.97	0.00	93.34	54.64		5900	1600	160	270	540	ND<1.0	80	5.9	ND<2.0	ND<2.0	ND<2.0	
	08/27/08	37.54	0.00	92.77	54.68		4700	1400	51	280	540	ND<20	ND<200	ND<40	ND<40	ND<40	ND<40	
	10/02/08	37.72	0.00	92.59	54.75		3900	1200	23	210	360	3.3	60	ND<2.0	ND<2.0	ND<2.0	ND<2.0	
	03/05/09	37.15	0.00	93.16	54.60		4300	1500	38	230	350	ND<10	ND<100	ND<20	ND<20	ND<20	ND<20	
06/04/09	37.27	0.00	93.04	54.73		4500	1400	71	270	420	17	110	ND<20	ND<20	ND<20	ND<20		
08/04/09	37.78	0.00	92.53	54.64		4300	1300	71	200	320	ND<10	ND<100	ND<20	ND<20	ND<20	ND<20		
12/02/09	38.24	0.00	92.07	54.73														
MW-2	<b>Top of casing elevation (ft): 129.64</b>																	
	08/28/06	35.61	0.00	94.03														Well Development
	11/22/06	36.54	0.00	93.10	54.75	15000		6700	1000	1100	2600	1300	ND<2500	58 J	ND<100	ND<100	ND<100	Unable to locate
	02/22/07																	Unable to locate
	05/14/07	37.38	0.00	92.26	54.65	14000		6100	1000	1400	1800	2000	1600	82	ND<20	ND<20	ND<20	Unable to locate
	08/30/07	37.10	0.00	92.54	54.60	3600		2000	120	340	580	ND<50	ND<500	ND<50	ND<50	ND<50	ND<50	Unable to locate
	12/07/07																	Unable to locate
	02/18/08																	Unable to locate
	05/07/08																	Unable to locate
	08/27/08																	Unable to locate
	10/02/08	36.77	0.00	92.87	54.90	13000		2800	430	690	1360	1400	950	53	ND<40	ND<40	ND<40	Unable to locate
	03/05/09	36.36	0.00	93.28	54.57		12000	3100	330	540	1600	490	860	ND<40	ND<40	ND<40	ND<40	Unable to locate
	06/04/09	36.38	0.00	93.26	54.86		17000	3900	430	940	2800	590	780	57	ND<50	ND<50	ND<50	Unable to locate
08/04/09	36.73	0.00	92.91	54.73		19000	3900	1100	1000	1800	670	1900	65	ND<50	ND<50	ND<50	Unable to locate	
12/02/09	37.15	0.00	92.49	54.90													Unable to locate	
MW-3	<b>Top of casing elevation (ft): 128.99</b>																	
	11/22/06	35.28	0.00		53.92	59000		14000	18000	3400	15000	ND<200	ND<5000	ND<200	ND<200	ND<200	ND<200	Unable to locate
	02/22/07																	Unable to locate
	05/14/07																	Unable to locate
	08/30/07																	Unable to locate
	08/28/06	34.67	0.00	94.32		70000		11000	22000	3200	15000	87	ND<400	ND<40	ND<40	ND<40	ND<40	Unable to locate
	12/07/07																	Unable to locate
	02/18/08																	Unable to locate
	05/07/08																	Unable to locate
08/27/08																	Unable to locate	

TABLE 3  
HISTORICAL GROUNDWATER ANALYTICAL DATA  
FORMER SHELL SERVICE STATION  
406 N. Gaffey, San Pedro

WELL	DATE	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSL)	WELL DEPTH (feet)	TPH-C (ug/L)	TPPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL-BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE #260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS	
		<b>Top of casing elevation (ft): 128.96</b>																
	10/02/08	35.61	0.00	93.35	54.04	84000		13000	17000	2400	11400	ND<50	ND<500	ND<100	ND<100	ND<100		
	03/05/09	35.29	0.00	93.67	53.70		83000	11000	17000	2400	12000	ND<100	ND<1000	ND<200	ND<200	ND<200		
	06/04/09	35.45	0.00	93.51	53.98		73000	8200	14000	2300	11000	ND<100	ND<1000	ND<200	ND<200	ND<200		
	08/04/09	35.78	0.00	93.18	53.80		97000	11000	17000	2600	13000	ND<100	ND<1000	ND<200	ND<200	ND<200		
	12/02/09	36.03	0.00	92.93	53.87													
<b>MW-4</b>		<b>Top of casing elevation (ft): 127.89</b>																
	08/28/06	34.70	0.00	93.19		1100		16	3.0	130	5.0	140	130	48	ND<1.0	ND<1.0		
		<b>Top of casing elevation (ft): 127.88</b>																
	11/22/06	35.42	0.00	92.46	54.27	790		ND<5.0	ND<5.0	56	ND<10	200	110 J	48	ND<10	ND<10		
	02/22/07	36.14	0.00	91.74	54.34	430		1.1	ND<0.50	14	ND<1.0	130	92	33	ND<1.0	ND<1.0		
	05/14/07	37.05	0.00	90.83	54.33	670		ND<0.50	ND<0.50	ND<0.50	ND<1.0	130	85	32	ND<1.0	ND<1.0		
	08/30/07	36.90	0.00	90.98	54.25	600		ND<0.50	ND<0.50	ND<0.50	ND<1.0	110	54	31	ND<1.0	ND<1.0		
	12/07/07	37.26	0.00	90.62	54.30	610		ND<0.50	ND<0.50	ND<0.50	ND<1.0	63	37	22	ND<1.0	ND<1.0		
	02/18/08	36.16	0.00	91.72	54.30	780		ND<0.50	ND<0.50	2.2	ND<1.0	74	44	22	ND<1.0	ND<1.0		
	05/07/08	34.67	0.00	93.21	54.30	950		ND<0.50	ND<1.0	1.9	ND<1.0	63	36	20	ND<2.0	ND<2.0		
	08/27/08	35.77	0.00	92.11	54.30		460	ND<0.50	ND<1.0	ND<1.0	ND<1.0	67	39	20	ND<2.0	ND<2.0		
	10/02/08	36.17	0.00	91.71	54.46		450	ND<0.50	ND<1.0	ND<1.0	ND<1.0	53	41	17	ND<2.0	ND<2.0		
	03/05/09	35.86	0.00	92.02	54.25		350	0.58	ND<1.0	ND<1.0	ND<1.0	68	46	25	ND<2.0	ND<2.0		
	06/04/09	35.64	0.00	92.24	54.08		630	ND<0.50	ND<1.0	ND<1.0	ND<1.0	66	68	33	ND<2.0	ND<2.0		
	08/04/09	36.01	0.00	91.87	54.33		770	ND<0.50	ND<1.0	ND<1.0	ND<1.0	110	53	40	ND<2.0	ND<2.0		
	12/02/09	36.56	0.00	91.32	54.44													
<b>MW-5</b>		<b>Top of casing elevation (ft): unknown</b>																
	09/17/08	36.30	0.00		54.15													
		<b>Top of casing elevation (ft): 128.55</b>																
	10/02/08	36.82	0.00	91.73	54.30		82000	13000	15000	1600	10600	460	1700	70	ND<20	ND<20		
	03/05/09	36.31	0.00	92.24	54.12		40000	9900	6800	1100	4600	380	2200	ND<200	ND<200	ND<200		
	06/04/09	36.25	0.00	92.30	54.23		22000	6000	2900	740	2600	250	1800	ND<200	ND<200	ND<200		
	08/04/09	36.83	0.00	91.72	54.17		81000	14000	14000	1900	9100	560	2200	ND<100	ND<100	ND<100		
	12/02/09	37.14	0.00	91.41	54.23													
<b>MW-6</b>		<b>Top of casing elevation (ft): unknown</b>																
	09/17/08	37.75	0.00		52.75													
		<b>Top of casing elevation (ft): 130.83</b>																
	10/02/08	37.56	0.00	93.27	52.78		6800	370	220	390	1720	22	31	2.3	ND<2.0	ND<2.0		
	03/05/09	32.01	0.00	98.82	52.71		2700	420	2.1	140	250	3.3	19	ND<2.0	ND<2.0	ND<2.0		
	06/04/09	37.22	0.00	93.61	52.53		11000	420	130	540	1900	71	55	ND<10	ND<10	ND<10		
	08/04/09	37.63	0.00	93.20	52.68		3200	400	17	190	370	6.8	ND<50	ND<10	ND<10	ND<10		
	12/02/09	38.11	0.00	92.72	52.67													
<b>MW-7</b>		<b>Top of casing elevation (ft): unknown</b>																

**TABLE 3**  
**HISTORICAL GROUNDWATER ANALYTICAL DATA**  
**FORMER SHELL SERVICE STATION**  
**406 N. Gaffey, San Pedro**

WELL	DATE	DEPTH TO GW (feet)	SPH THICKN. (feet)	GW ELEV. (feet relative to MSI.)	WELL DEPTH (feet)	TPH-G (ug/L)	TPPR (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL- BENZENE (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS	
	09/17/08	32.72	0.00		54.00													
		<b>Top of casing elevation (ft): 126.22</b>																
	10/02/08	32.70	0.00	93.52	54.46		4300	1500	5.4	180	320	ND<1.0	84	ND<2.0	ND<2.0	ND<2.0		
	03/05/09	32.45	0.00	93.77	54.20		7400	1900	ND<10	390	510	ND<10	140	ND<20	ND<20	ND<20		
	06/04/09	32.21	0.00	94.01	54.11		4800	1500	ND<20	230	290	ND<20	ND<200	ND<40	ND<40	ND<40		
	08/04/09	32.61	0.00	93.61	54.34		6000	1900	ND<10	290	270	ND<10	110	ND<20	ND<20	ND<20		
	12/02/09	32.47	0.00	93.75	54.43													
<b>MW-8</b>		<b>Top of casing elevation (ft): 128.60</b>																
	11/19/09	35.94	0.00	92.66	54.63													
	12/02/09	36.04	0.00	92.56	54.70		400	50	12	13	63	ND<10	24	ND<2.0	ND<2.0	ND<2.0		
<b>MW-9</b>		<b>Top of casing elevation (ft): 121.16</b>																
	11/19/09	35.72	0.00	85.44	54.55													
	12/02/09	35.73	0.00	85.43	54.60		1200	410	ND<1.0	59	14	ND<1.0	200	4.1	ND<2.0	ND<2.0		
<b>MW-10</b>		<b>Top of casing elevation (ft): 123.64</b>																
	11/19/09	35.61	0.00	88.03	54.29													
	12/02/09	35.65	0.00	87.99	54.34		8500	3300	690	370	760	2.4	220	11	ND<2.0	ND<2.0		
<b>MW-11</b>		<b>Top of casing elevation (ft): 124.68</b>																
	11/19/09	39.09	0.00	85.59	54.64													
	12/02/09	39.00	0.00	85.68	54.56		4300	140	160	220	1100	8.0	380	65	ND<10	ND<10		
<b>MW-12</b>		<b>Top of casing elevation (ft): 127.23</b>																
	11/19/09	39.60	0.00	87.63	54.92													
	12/02/09	39.61	0.00	87.62	55.00		77000	12000	21000	2200	12000	340	3500	ND<100	ND<100	ND<100		

**Notes:**

1. ND - Not detected
2. TBA - Tertiary-butyl alcohol
3. DIPE - Diisopropyl ether
4. ETBE - Ethyl tertiary-butyl ether
5. TAME - Tertiary-amy1 methyl ether
6. J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).
7. TPH-g results obtained via GC/MS.
8. Survey results were obtained by Dulin and Boynton Surveyors in July 2006.

TABLE 4. DPE SYSTEM DATA  
 FORMER SHELL SERVICE STATION  
 406 NORTH GAFFEY STREET (@ O'FARRELL)  
 SAN PEDRO, CALIFORNIA

Date/Time	DPE Test Hours Elapsed	SVE SYSTEM DATA											GROUNDWATER DATA					Comment(s)			
		Process Temp (°F)	Stinger Depth (ft bTOC)	Utilized Extraction Well	LR Blower Vacuum (in Hg)	Stinger Vacuum (in Hg)	Stinger Vacuum (in wc)	Differential Pressure (in wc)	Calculated Flowrate (scfm)	Dilution Air Flowrate (scfm)	Undiluted Influent Hydrocarbon Concentration (ppmv)	Calculated Using Lab Results		Calculated Using PID Results		Amount of GW in Separator (in)	GW Extracted per Period (gallons)		GW Extraction Flowrate (gpm)	GW Extraction Flowrate (gph)	Cumulative GW Extracted (gallons)
												Vapor-Phase Hydrocarbons Removed (lbs/hr)	Cumulative Vapor-Phase Hydrocarbons Removed (lbs)	Vapor-Phase Hydrocarbons Removed (lbs/hr)	Cumulative Vapor-Phase Hydrocarbons Removed (lbs)						
10/19/09 7:00	0.00	setup	setup	setup	setup	setup	setup	setup	setup	setup	setup	0.00	0.00	0.00	0.00	setup	setup	setup	setup	setup	Setup test and collected baseline vacuums.
10/19/09 7:30	0.00	Startup	54	MW-2	23.5	14.2	193.12	0.35	53.93	10	8,000	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	Startup test.
10/19/09 7:45	0.25	1,879	54	MW-2	26.2	19.5	265.20	0.35	53.93	15	10,270	3.42	0.86	6.72	1.68	-	0.00	0.00	0.00	0.00	
10/19/09 8:00	0.50	1,686	54	MW-2	23.7	13.5	183.60	0.35	53.93	25	6,330	3.42	1.71	6.11	3.21	10.500	22.05	0.73	-	22.05	
10/19/09 8:30	1.00	1,856	54	MW-2	24.7	13.5	183.60	0.35	53.93	35	6,140	3.42	3.42	4.59	5.50	1.500	3.15	0.10	6.30	25.20	
10/19/09 9:00	1.50	1,844	54	MW-2	21.5	13.0	176.80	0.36	54.67	40	1,841	3.45	5.15	2.96	6.98	1.375	2.89	0.10	5.77	28.09	
10/19/09 9:30	2.00	1,828	54	MW-2	21.5	13.0	176.80	0.36	54.67	40	1,695	3.47	6.88	1.32	7.64	1.500	3.15	0.10	6.30	31.24	
10/19/09 10:30	3.00	1,793	54	MW-2	21.5	13.0	176.80	0.36	54.67	40	1,702	3.47	10.35	1.27	8.91	1.750	3.68	0.06	3.68	34.91	
10/19/09 11:30	4.00	1,766	54	MW-2	21.5	13.0	176.80	0.36	54.67	40	1,485	3.47	13.82	1.19	10.10	2.250	4.73	0.08	4.73	39.64	
10/19/09 12:30	5.00	1,803	54	MW-2	22.5	13.1	178.16	0.36	54.67	30	1,530	3.47	17.29	1.12	11.22	1.750	3.68	0.06	3.68	43.31	Decreased dilution air flow into system.
10/19/09 13:30	6.00	1,885	54	MW-2	23.3	13.4	182.24	0.36	54.67	20	1,271	2.57	19.86	1.04	12.27	2.000	4.20	0.07	4.20	47.51	Decreased dilution air flow into system.
10/19/09 14:30	7.00	1,844	54	MW-2	23.3	13.4	182.24	0.36	54.67	20	4,000	2.57	22.44	1.97	14.23	1.750	3.68	0.06	3.68	51.19	
10/19/09 15:30	8.00	1,819	54	MW-2	23.3	13.4	182.24	0.36	54.67	20	3,820	3.25	25.68	2.92	17.15	1.750	3.68	0.06	3.68	54.86	
10/19/09 16:30	9.00	1,793	54	MW-2	23.3	13.4	182.24	0.36	54.67	20	3,610	3.25	28.93	2.77	19.92	2.000	4.20	0.07	4.20	59.06	
10/19/09 17:30	10.00	1,790	54	MW-2	23.3	13.4	182.24	0.36	54.67	20	3,600	3.25	32.17	2.69	22.61	2.000	4.20	0.07	4.20	63.26	End of test.

Notes:  
 Dilution air was needed to mix with the incoming soil vapors from MW-2 because the well did not produce enough oxygen to keep the flame in the oxidizer. The dilution air was mixed in the process stream at the blower intake. Therefore, the undiluted vapor concentration and process flowrate were not affected.

**TABLE 5. SUMMARY OF VAPOR ANALYTICAL RESULTS  
 FORMER SHELL SERVICE STATION  
 406 NORTH GAFFEY STREET (@ O'FARRELL)  
 SAN PEDRO, CALIFORNIA**

Sample Location	Sample Date/Time	Work Order No.	Analytical Vapor Results (EPA Method TO-3 for TPH-g and TO-15 for VOCs)											Analytical Fixed Gas Results (ASTM D-1946)				
			TPH-g (ppmv)	Benzene (ppbv)	Toluene (ppbv)	Ethylbenzene (ppbv)	Total Xylenes (ppbv)	MTBE (ppbv)	TBA (ppbv)	DIPE (ppbv)	ETBE (ppbv)	TAME (ppbv)	Ethanol (ppbv)	1,3,5-TMB (ppbv)	Methane (% vol)	Carbon Dioxide (% vol)	Carbon Monoxide (% vol)	Oxygen + Argon (% vol)
MW-2	10/19/09 8:00	09-10-1557	7,200	1,600	ND<10,000	21,000	ND<4,000	66,000	ND<10,000	ND<10,000	ND<10,000	ND<10,000	ND<100,000	ND<1,000	ND<0.500	13.3	ND<0.500	12.9
	10/19/09 12:30	09-10-1557	2,100	920	ND<2,500	11,000	ND<1,000	28,000	ND<2,500	ND<1,000	ND<1,000	ND<1,000	ND<25,000	ND<250	ND<0.500	4.50	ND<0.500	19.4
	10/19/09 14:30	09-10-1557	4,800	3,100	ND<6,200	39,000	3,500	74,000	ND<6,200	ND<2,500	ND<2,500	ND<2,500	ND<62,000	1,100	ND<0.500	11.5	ND<0.500	13.8
	10/19/09 17:00	09-10-1557	3,900	3,600	ND<5,000	33,000	3,800	74,000	ND<5,000	ND<2,000	ND<2,000	ND<2,000	ND<50,000	890	ND<0.500	11.8	ND<0.500	13.4

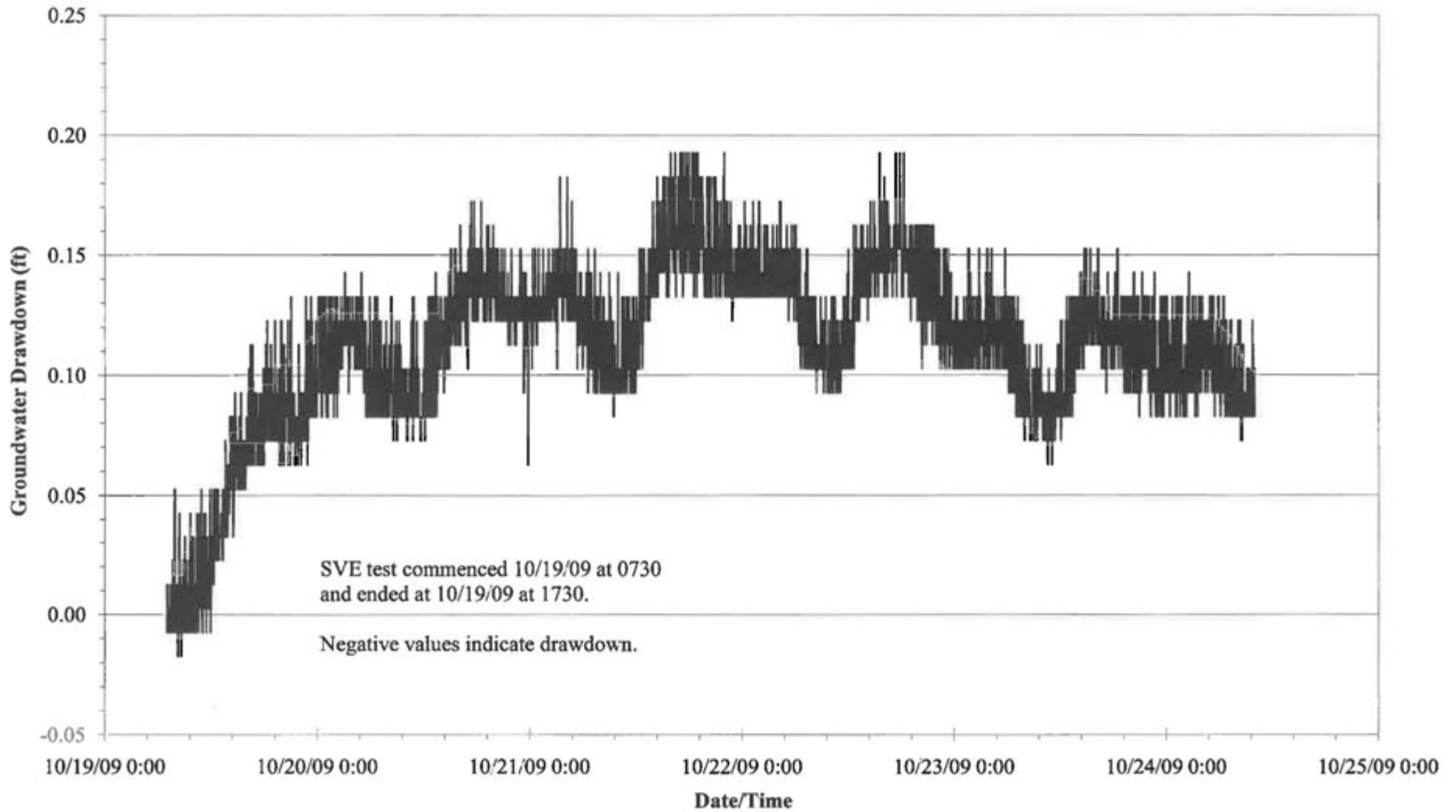
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# GRAPHS

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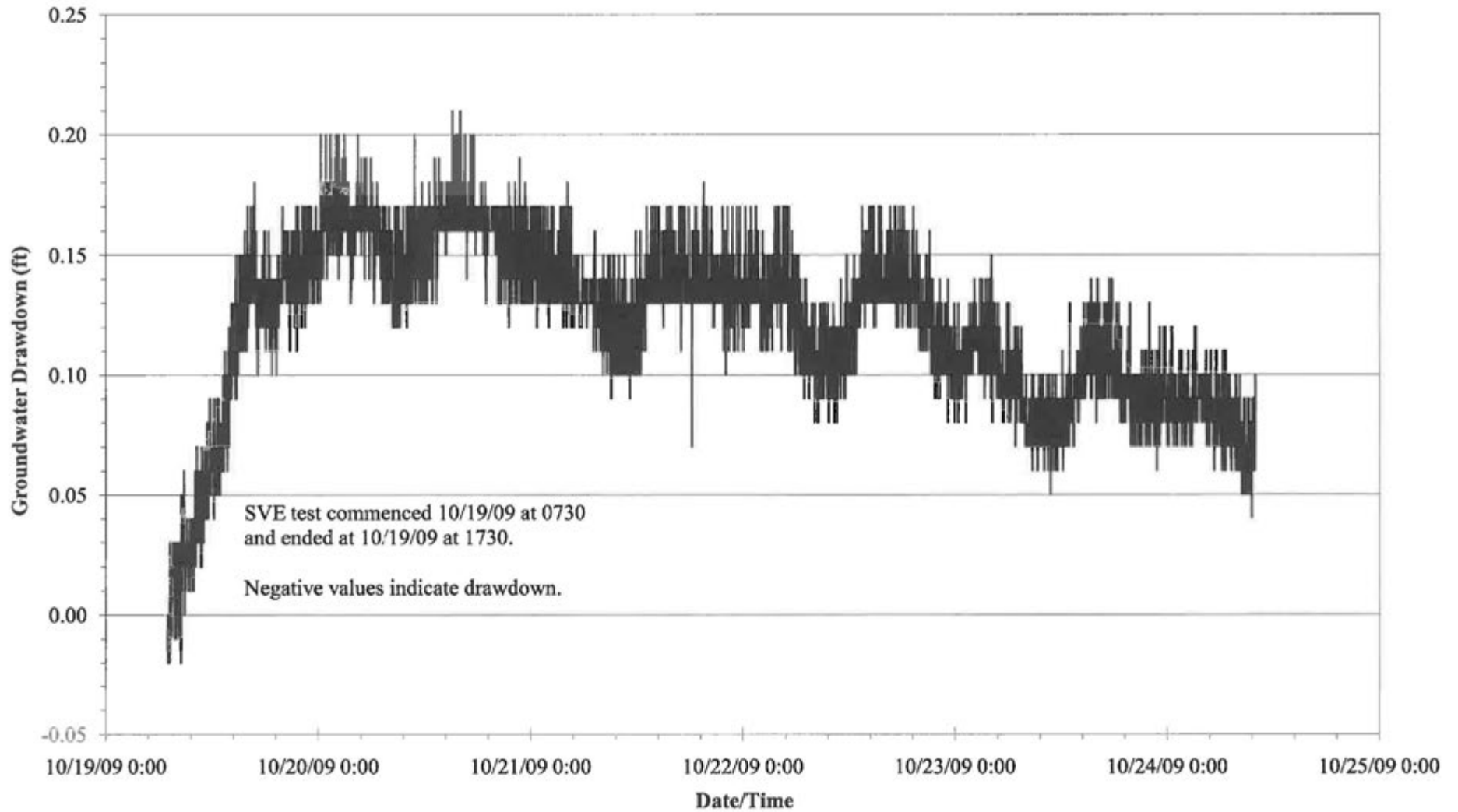
# GRAPH 1. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL MW-1

Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California



## GRAPH 2. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL MW-3

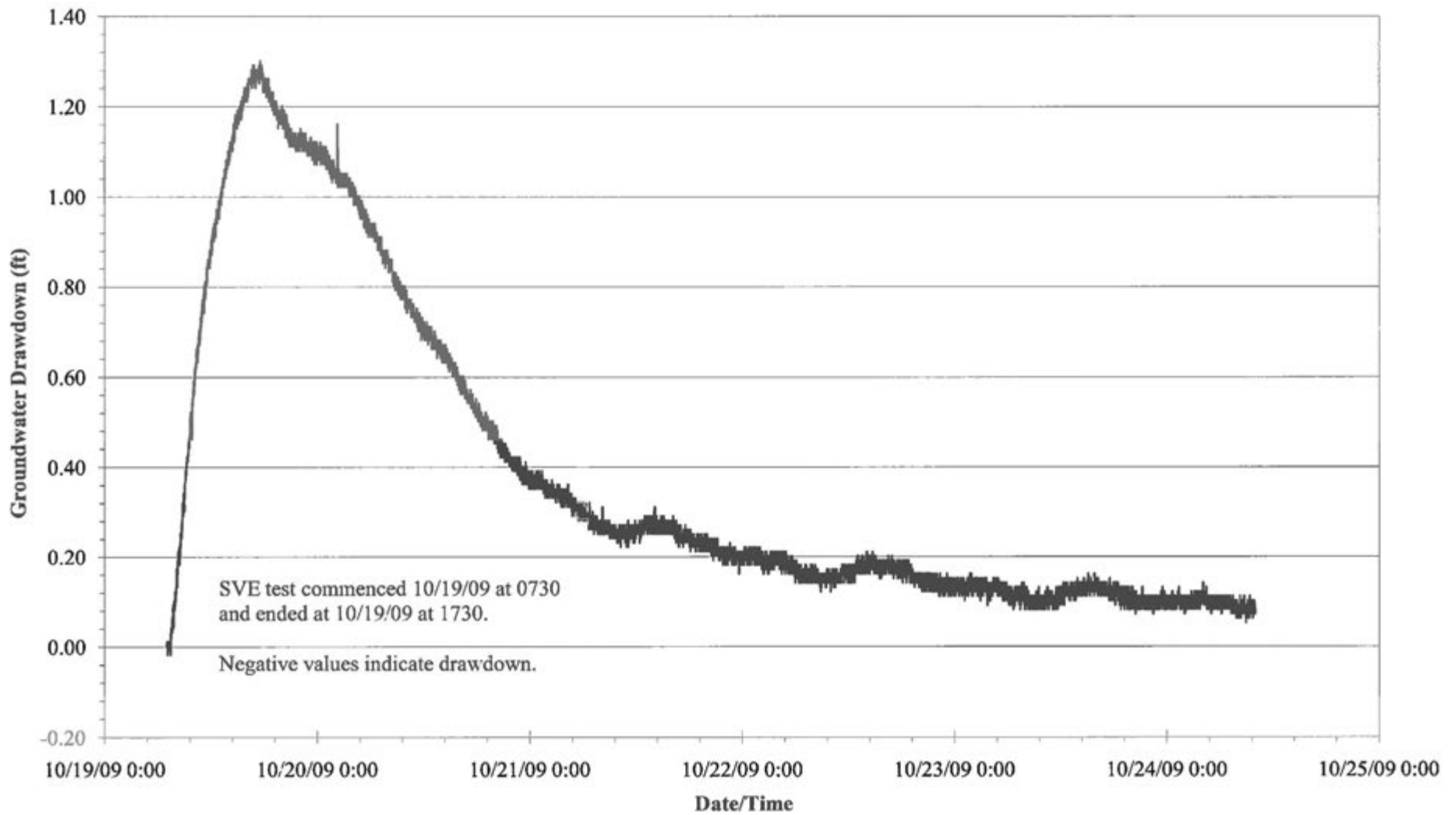
Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California





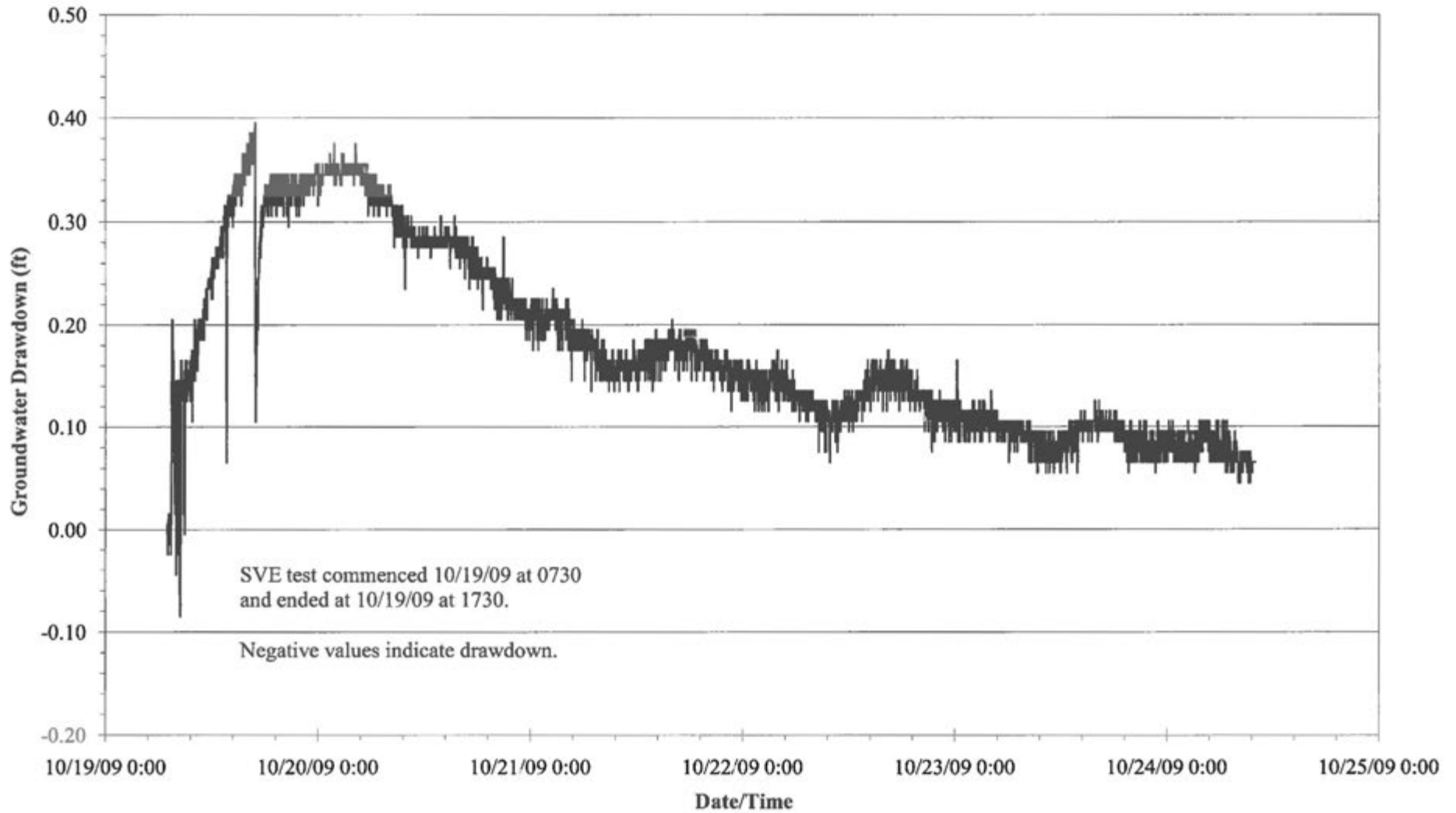
### GRAPH 3. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL OB-1

Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California



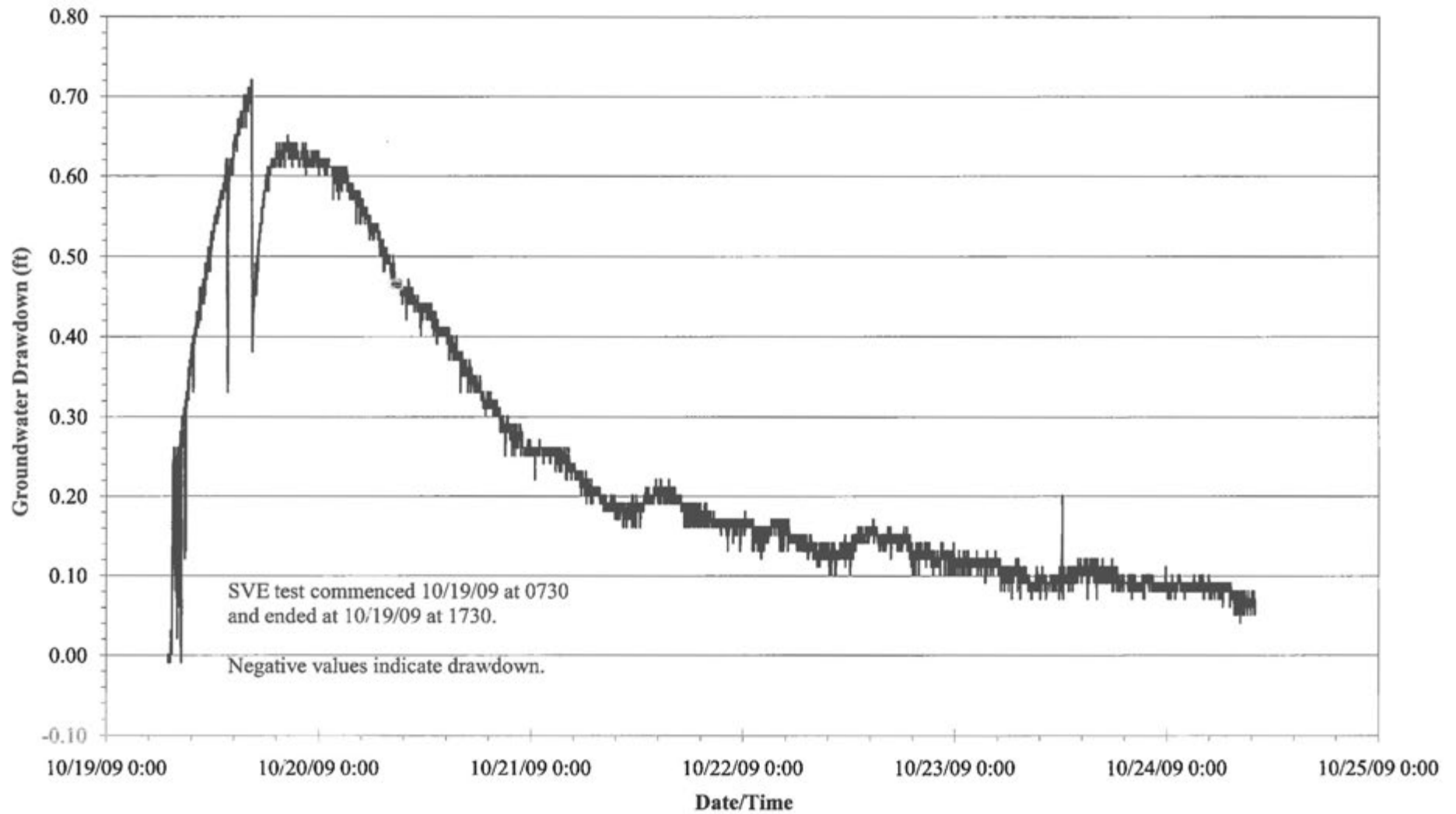
#### GRAPH 4. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL OB-2

Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California



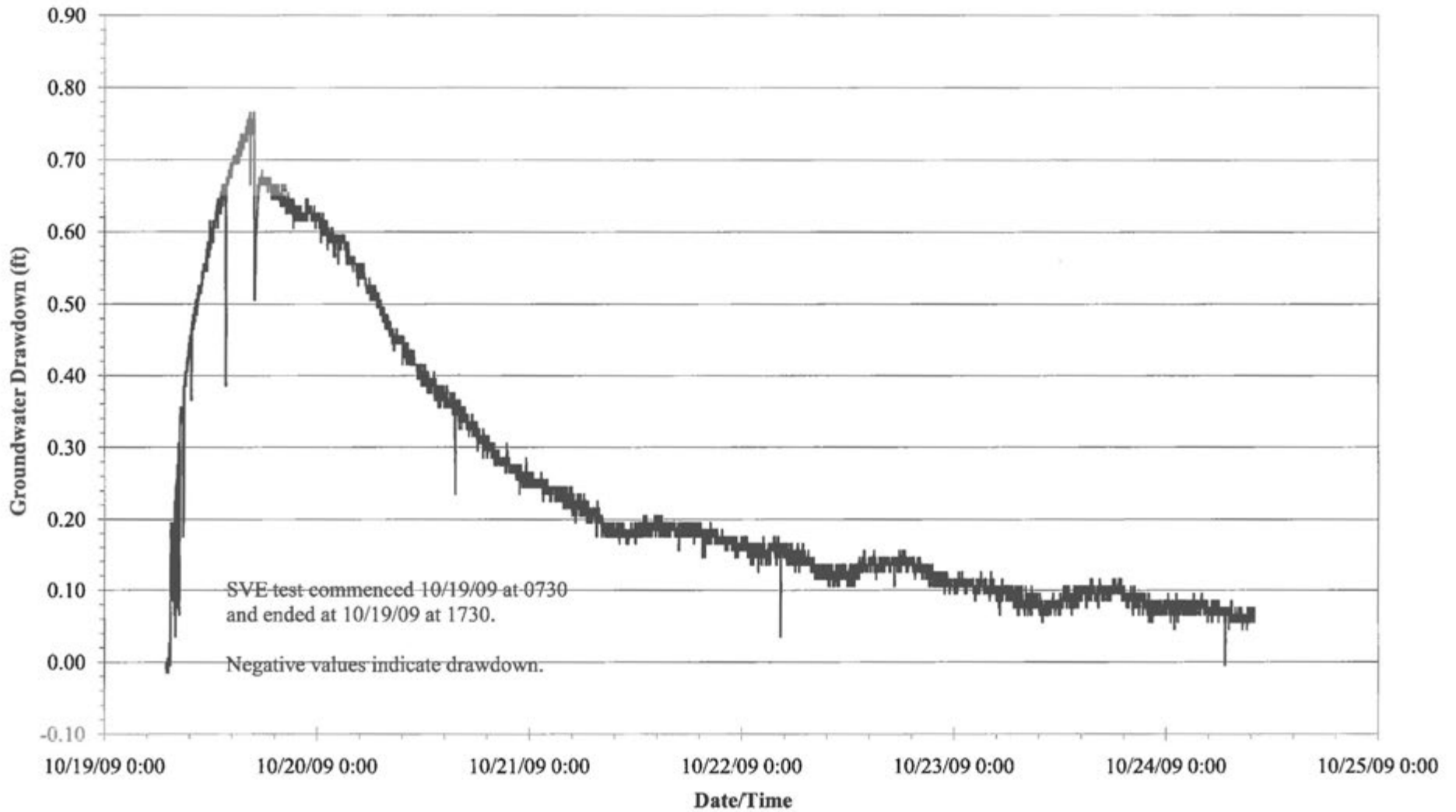
### GRAPH 5. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL OB-3

Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California



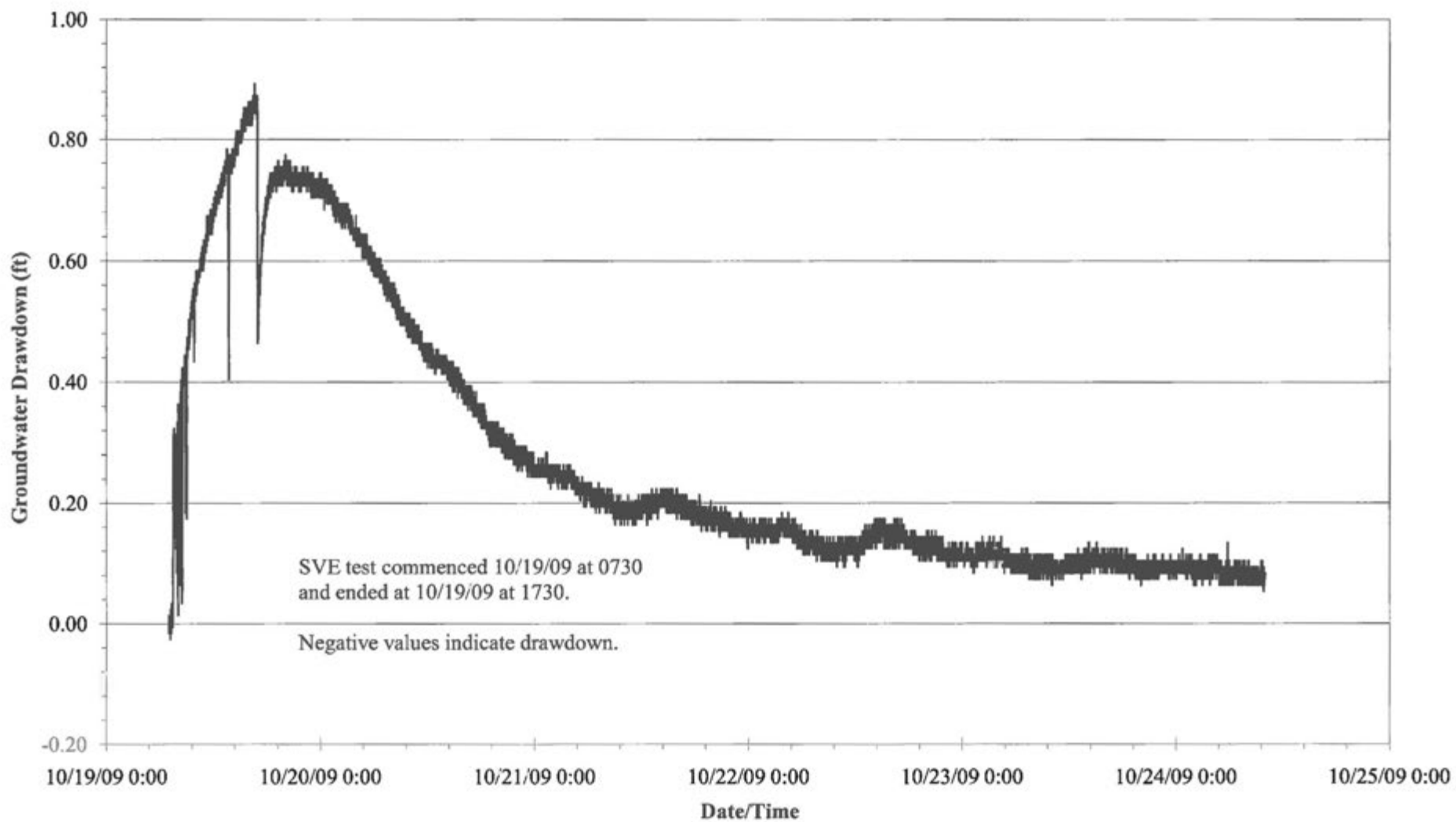
### GRAPH 6. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL OB-4

Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California



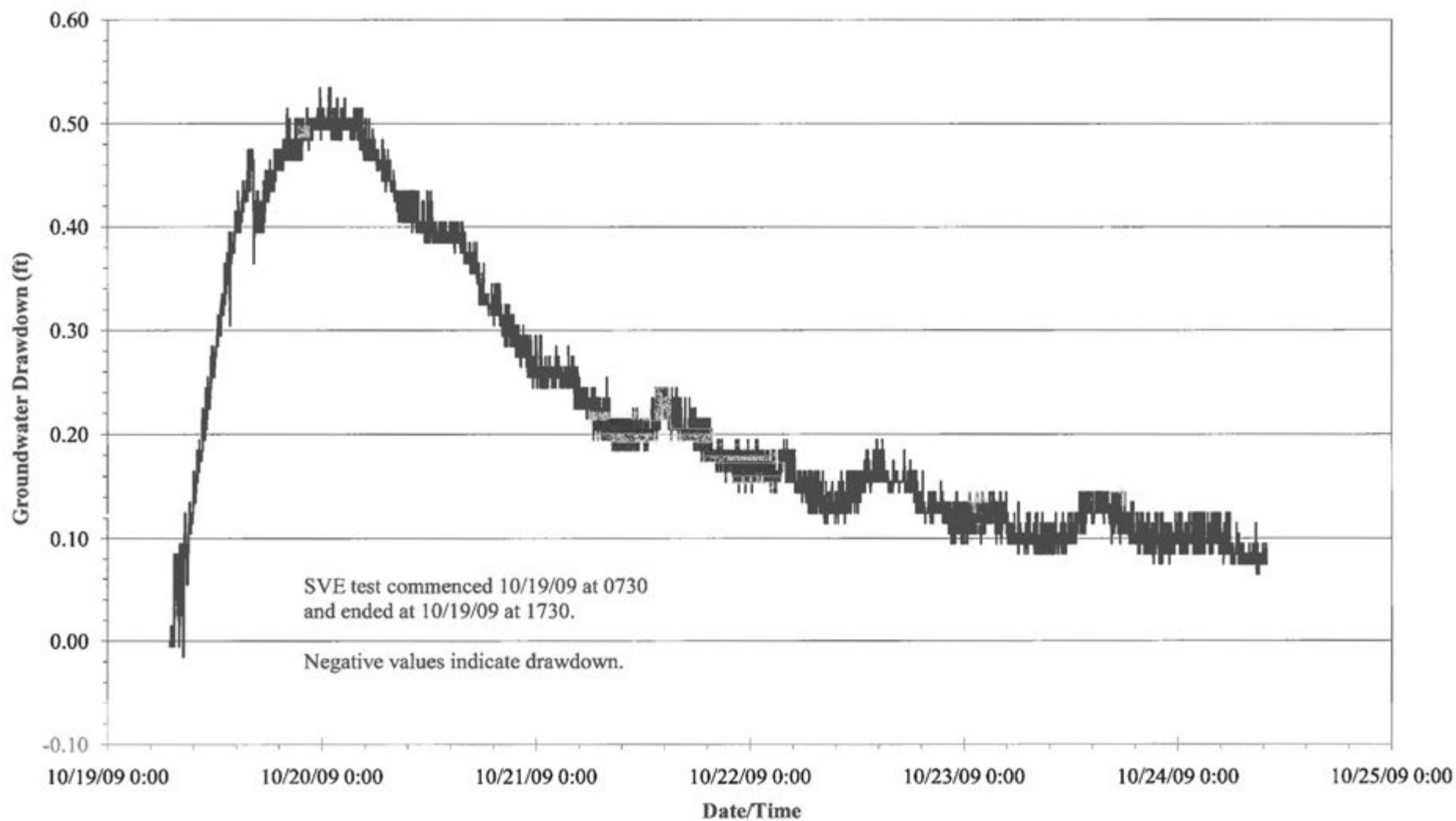
### GRAPH 7. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL OB-5

Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California



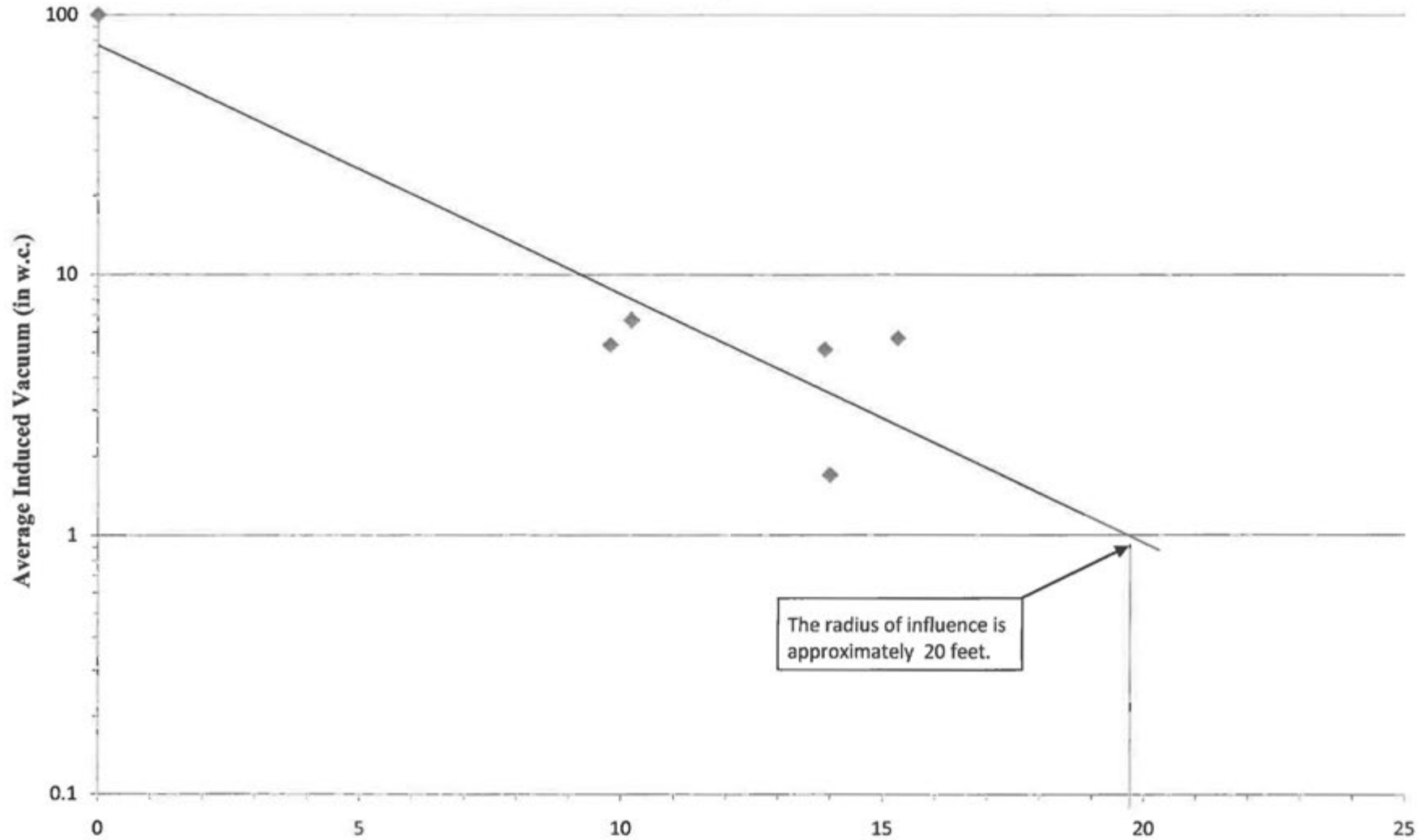
### GRAPH 8. GROUNDWATER DRAWDOWN FOR OBSERVATION WELL OB-6

Former Shell Service Station  
406 North Gaffey Street (@ O'Farrell)  
San Pedro, California



### GRAPH 9. VAPOR RADIUS OF INFLUENCE FOR EXTRACTION WELL MW-2

Former Shell Service Station  
406 North Gaffey (@ O'Farrell)  
San Pedro, California



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# FIGURES

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NOT TO SCALE



DATE	
REVISED	
CAD FILE	09517LM

SITE LOCATION MAP

FORMER SHELL SERVICE STATION  
 406 N. GAFFEY ST.  
 SAN PEDRO, CA

FIGURE NO.	<b>1</b>
PROJECT NO.	09.517



PED. OVERPASS

Alley

Alley

N. Gaffey Street

Oliver St.

O'Farrell Street

**LEGEND**

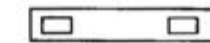
- ◆ GROUNDWATER MONITORING WELL
- ⊕ SOIL BORING
- SOIL SAMPLE
- ⊙ VAPOR POINT
- ⊕ OBSERVATION WELL
- ⊗ PROPOSED SPARGE WELL



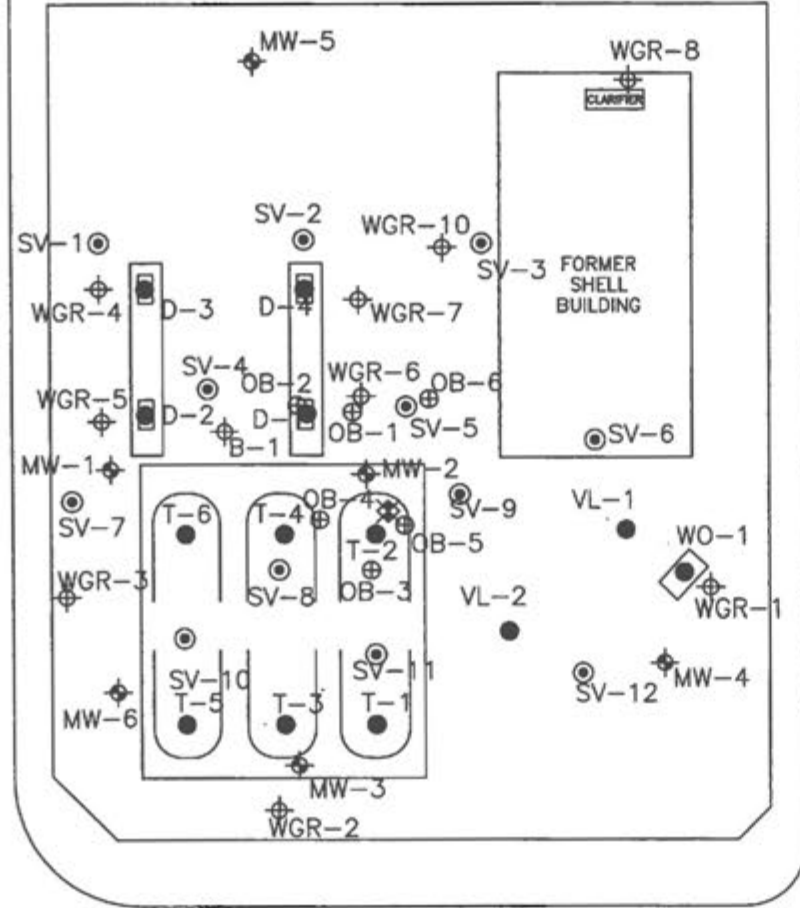
FORMER UNDERGROUND STORAGE TANK



FORMER UNDERGROUND WASTE-OIL TANK



FORMER DISPENSER ISLAND



DATE DRAWN  
DRAWN BY  
CAD FILE  
09517PP30

PLOT PLAN  
FORMER SHELL SERVICE STATION  
406 N. GAFFEY ST.  
SAN PEDRO, CA

FIGURE NO.  
**2**  
PROJECT NO.  
09.517

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# **APPENDIX A**

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**WELL INSTALLATION PERMIT**

WELL PERMIT APPLICATION - NON PRODUCTION WELLS  
WATER QUALITY PROGRAM - ENVIRONMENTAL HEALTH DIVISION  
5050 COMMERCE DRIVE, BALDWIN PARK, CA 91706 TELE (626) 430-5420 FAX (626) 813-3016

DATE 6/26/09

<input checked="" type="checkbox"/> NEW WELL CONSTRUCTION	<input type="checkbox"/> RECONSTRUCTION OR RENOVATION	<input type="checkbox"/> DECOMMISSIONING	<input type="checkbox"/> OTHER: _____
<input type="checkbox"/> MONITORING	<input type="checkbox"/> CATHODIC	<input type="checkbox"/> INJECTION	<input type="checkbox"/> EXTRACTION
<input type="checkbox"/> HYDROPUNCH	<input type="checkbox"/> C.P.T. (For Ground Water Sampling)	<input type="checkbox"/> OTHER: _____	<input type="checkbox"/> HEAT EXCHANGE

**WELL LOCATION**

Site Address 406 N Gaffney Street City San Pedro Zip Code 90731

Nearest Intersection of Parrell Thomas Guide Map Book Page/Grid \_\_\_\_\_ Number of Wells in Each Parcel 1

**WELL STRUCTURE**

Total Depth of Well 50-55 feet Depth of Well Casing \_\_\_\_\_ Sanitary Annular Sealing Material hydrated bentonite chip

Depth of Sanitary / Annular Seal 20-23 feet Conductor Casing Seal \_\_\_\_\_

**OWNER INFORMATION**

Owner's Name Shell Oil products US Telephone Number 323 291-9595

Address 20945 S Wilmington Carson 90810 City \_\_\_\_\_ Zip Code \_\_\_\_\_

**DRILLER INFORMATION**

Driller's Name BC2 Environmental Corporation Telephone Number (714) C-57 License Number 686255

Address 1150 W. Trenton Ave Orange City Orange Zip Code 92867

**WELL DECOMMISSIONING INFORMATION**

Well Depth \_\_\_\_\_ Method of Well Assessment \_\_\_\_\_ Depth and Number of Perforations \_\_\_\_\_

Type and Amount of Sealant \_\_\_\_\_ Type of Perforator \_\_\_\_\_ Size of Perforations \_\_\_\_\_ Method of Upper Seal Pressure Application \_\_\_\_\_

**CONSULTANT INFORMATION**

Company Wayne Perry Inc

Address 8281 Commonwealth Ave Buena Park 90621 City Buena Park State CA Zip Code \_\_\_\_\_

Project Manager Cristi Farrell Telephone Number 714 826 0352 Fax Number 714 523 7880

**ATTENTION: WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THIS DEPARTMENT.**

I hereby agree to comply in every respect with all the regulations of the County Environmental Health Division and with all ordinances and laws of the County of Los Angeles and the State of California pertaining to well construction, reconstruction, and decommissioning data deemed necessary by the County Environmental Health Division Of Los Angeles County

Signature of Applicant: [Signature] Printed Name: Cristi Farrell

**THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED OFF BY THE DEPUTY HEALTH OFFICER. WELL CONSTRUCTION OR DECOMMISSIONING CANNOT BE INITIATED WITHOUT A WORK PLAN APPROVAL FROM THIS DEPARTMENT.**

\*\*\*\*\* (DEPARTMENT USE ONLY) \*\*\*\*\*

<b>WORK PLAN APPROVAL</b>	REHS <u>Tom Perry</u> DATE <u>6/30/09</u>
Conditions:	<u>ON 6/30/09 \$211.00 WAS PAID FOR 11 migrating wells PERMIT # 9622</u>
<b>FINAL INSPECTION</b>	REHS _____ DATE _____

**NOTICE**  
This well permit approval is limited to compliance with the California Well Standards and the Los Angeles County Code and does not grant any rights to construct, reconstruct, or decommission any well. The applicant is responsible for securing all other necessary permits.

FAX ✓

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# **APPENDIX B**

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**BORING/WELL CONSTRUCTION LOGS**



**WAYNE PERRY, INC.**  
 8281 Commonwealth Avenue  
 Buena Park, California 90621  
 (714) 826-0352  
 www.wpinc.com

# Log of Boring/Well OB-1

PROJECT: <i>Shell Service Station</i>		SURFACE ELEVATION: <i>Not Measured</i>	
LOCATION: <i>406 N. Gaffey Ave. San Pedro, Ca</i>		TOTAL DEPTH: <i>50 feet</i>	BORING DIAMETER: <i>8 inches</i>
PROJECT NO.: <i>09.517</i>		DEPTH TO FIRST SATURATION: <i>40 feet</i>	
DATE BEGAN: <i>10/6/09</i>	FINISHED: <i>10/6/09</i>	TOP OF WELL CASING ELEVATION: <i>N/A</i>	
DRILLING COMPANY: <i>BC2 Environmental Corp.</i>		STATIC GW ELEVATION: <i>N/A</i>	DATE: <i>N/A</i>
DRILLING METHOD: <i>Hollow-Stem Auger</i>		LOGGED BY: <i>C. Farrell</i> CHECKED BY: <i>D. Henry</i>	

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location, there may be consequential changes in conditions.

DEPTH (feet)	Samples	Sample I.D.	Time	Blow Counts (per 6 inches)	PID/LEL (ppm/%)	Geologic Description	Soil Class	Graphic Log	DEPTH (feet)	Well Diagram
0-5						AIRKNIFED TO 5 FEET.			0-5	well encased in concrete
5-10						SILTSTONE with Sand - mottled pale yellow [5Y 8/2], and light olive gray [5Y 6/2], soft to moderately hard, damp; sand is fine-grained; iron oxide staining;	ss		5-10	blank 2 inch dia. SCH 40 PVC from 0.5-25 feet
10-15		OB-1d10	0809	8/12/16	1.4				10-15	neat cement from 1-19 feet
15-20		OB-1d15	0813	11/16/21	860	becomes dark greenish gray [5BG 4/1], trace clay at 15 feet; mottling;			15-20	bentonite chips from 19-23 feet
20-25		OB-1d20	0818	7/10/14	107	becomes greenish gray [10Y 5/1] at 20 feet; trace clay;			20-25	#2/12 sand filter pack from 23-50 feet
25-30		OB-1d25	0822	6/9/15	72	becomes greenish brown [2.5Y 5/2], moist at 25 feet; iron oxide staining in fractures; mottling; trace clay;			25-30	
30-35		OB-1d30	0826	5/7/9	254	becomes soft, damp at 30 feet; friable; trace fine-grained sand;			30-35	
35-40		OB-1d35	0830	5/8/10	395	becomes mottled dark olive brown [2.5Y 3/3], dark greenish gray [10Y 4/1], and pale yellow [5Y 7/4], moist; trace fine-grained sand and clay;			35-40	
40-45		OB-1d40	0835	6/8/11	184	becomes very moist; heavily oxidized; mottled; trace clay at 40 feet;			40-45	screened (0.02 inch slots) 2 inch dia. SCH 40 PVC from 25-50 feet
45-50		OB-1d45	0840	4/5/7	174	groundwater at 43 feet;			45-50	
50-55		OB-1d50	0845	3/5/6	51.7	becomes brown [10YR 5/3], slightly oxidized at 45 feet; mottled with black [10YR 2/1], trace gypsum crystals;			50-55	
						brown [10YR 5/3], with clay.				
						Bottom at 50 feet.				

Remarks/Notes: 1) PID Used:  
 1) Airknifed to 5 feet.





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# Log of Boring/Well OB-2

PROJECT: <i>Shell Service Station</i>		SURFACE ELEVATION: <i>Not Measured</i>	
LOCATION: <i>406 N. Gaffey Ave. San Pedro, Ca</i>		TOTAL DEPTH: <i>50 feet</i>	BORING DIAMETER: <i>8 inches</i>
PROJECT NO.: <i>09.517</i>		DEPTH TO FIRST SATURATION: <i>40 feet</i>	
DATE BEGAN: <i>10/6/09</i>	FINISHED: <i>10/6/09</i>	TOP OF WELL CASING ELEVATION: <i>N/A</i>	
DRILLING COMPANY: <i>BC2 Environmental Corp.</i>		STATIC GW ELEVATION: <i>N/A</i>	DATE: <i>N/A</i>
DRILLING METHOD: <i>Hollow-Stem Auger</i>		LOGGED BY: <i>C. Farrell</i> CHECKED BY: <i>D. Henry</i>	

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location, there may be consequential changes in conditions.

DEPTH (feet)	Samples	Sample I.D.	Time	Blow Counts (per 6 inches)	PID/LEL (ppm/%)	Geologic Description	Soil Class	Graphic Log	DEPTH (feet)	Well Diagram
0-5						AIRKNIFED TO 5 FEET.			0-5	well encased in concrete
5-10		OB-2d10	1050	11/16/23	2.7	SILTSTONE with Sand - dark greenish gray [10G 4/1], hard, damp; indurated siltstone fragments; sand is fine-grained;	ss		5-10	blank 2 inch dia. SCH 40 PVC from 0.5-25 feet
10-15		OB-2d15	1054	9/13/18	4.6	becomes mottled with greenish black [10G 2.5/1], very stiff, indurated siltstone fragments;			10-15	neat cement from 1-19 feet
15-20		OB-2d20	1059	7/9/11	2.6	becomes greenish gray [10Y 5/1], damp; trace clay;			20-23	bentonite chips from 19-23 feet
20-25		OB-2d25	1104	7/10/11	2.3	mottled, iron oxide staining; trace fine-grained sand at 25 feet;			23-25	#2/12 sand filter pack from 23-50 feet
25-30		OB-2d30	1106	5/6/8	2.7	becomes greenish gray [10Y 6/1], soft to moderately hard, moist at 30 feet; iron oxide staining in fractures;			25-30	
30-35		OB-2d35	1110	4/5/6	9999	mottled yellow [2.5Y 7/8], and light olive brown [2.5Y 5/3], heavily oxidized, very moist; trace yellow [2.5Y 8/8], lithoclasts;			30-40	
35-40		OB-2d40	1115	4/5/5	2.1	becomes brown [10YR 5/3], saturated;			40-50	screened (0.02 inch slots) 2 inch dia. SCH 40 PVC from 25-50 feet
40-45		OB-2d45	1120	3/4/6	2.1	becomes brown [10YR 5/3], with yellow [10YR 7/6] concretions, heavily iron oxide staining; saturated; trace gypsum crystals;				
45-50		OB-2d50	1125	2/5/5	1.2	becomes brown [10YR 4/3], saturated; moderately plastic; trace clay. Bottom at 50 feet.				

Remarks/Notes: 1) PID Used:  
 1) Airknifed to 5 feet.



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# Log of Boring/Well OB-3

PROJECT: <i>Shell Service Station</i>		SURFACE ELEVATION: <i>Not Measured</i>	
LOCATION: <i>406 N. Gaffey Ave. San Pedro, Ca</i>		TOTAL DEPTH: <i>50 feet</i>	BORING DIAMETER: <i>8 inches</i>
PROJECT NO.: <i>09.517</i>		DEPTH TO FIRST SATURATION:	
DATE BEGAN: <i>10/7/09</i>	FINISHED: <i>10/7/09</i>	TOP OF WELL CASING ELEVATION: <i>N/A</i>	
DRILLING COMPANY: <i>BC2 Environmental Corp.</i>		STATIC GW ELEVATION: <i>N/A</i>	DATE: <i>N/A</i>
DRILLING METHOD: <i>Hollow-Stem Auger</i>		LOGGED BY: <i>C. Farrell</i> CHECKED BY: <i>D. Henry</i>	

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location, there may be consequential changes in conditions.

DEPTH (feet)	Samples	Sample I.D.	Time	Blow Counts (per 6 inches)	PID/LEL (ppm/%)	Geologic Description	Soil Class	Graphic Log	DEPTH (feet)	Well Diagram
0-5						AIRKNIFED TO 5 FEET;			0-5	well encased in concrete
10	OB-3d10	0825	8/12/17	0.1		PEA GRAVEL, (fill).			10	blank 2 inch dia. SCH 40 PVC from 0.5-25 feet
15	OB-3d15	0830	9/13/15	1.2		Silty SAND - fine-grained, brown [7.5YR 4/3], medium dense, damp.	sm		15	neat cement from 1-19 feet
20	OB-3d20	0833	7/9/11	1113		SILTSTONE - greenish gray [5BG 5/1], soft to moderately hard, moist, trace clay;	ss		20	bentonite chips from 19-23 feet
25	OB-3d25	0835	4/5/7	1971		becomes dark greenish gray [5BG 4/1], stiff, trace carbon inclusions, mottling;			25	
30	OB-3d30	0840	4/5/6	789		becomes moist; iron oxide staining and black [N2.5], mottling along fractures;			30	#2/12 sand filter pack from 23-50 feet
35	OB-3d35	0845	6/7/8	7281					35	
40	OB-3d40		7/8/12	294		becomes mottled with light yellowish brown [2.5Y 6/3], and yellow [2.5Y 7/6], heavily iron oxide staining, very stiff, very moist; trace clay;			40	screened (0.02 inch slots) 2 inch dia. SCH 40 PVC from 25-50 feet
45	OB-3d45	0850	6/7/8	10.8		becomes light olive brown [2.5Y 5/3], very stiff, very moist; iron oxide staining; trace gypsum crystals;			45	
50	OB-3d50	0900	6/7/9	13.1		becomes clayey, trace iron oxide staining.			50	
55						Bottom at 50 feet.			55	

Remarks/Notes: 1) PID Used:  
 1) Airknifed to 5 feet.





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# Log of Boring/Well OB-4

PROJECT: <i>Shell Service Station</i>		SURFACE ELEVATION: <i>Not Measured</i>	
LOCATION: <i>406 N. Gaffey Ave. San Pedro, Ca</i>		TOTAL DEPTH: <i>50 feet</i>	BORING DIAMETER: <i>8 inches</i>
PROJECT NO.: <i>09.517</i>		DEPTH TO FIRST SATURATION:	
DATE BEGAN: <i>10/7/09</i>	FINISHED: <i>10/7/09</i>	TOP OF WELL CASING ELEVATION: <i>N/A</i>	
DRILLING COMPANY: <i>BC2 Environmental Corp.</i>		STATIC GW ELEVATION: <i>N/A</i>	DATE: <i>N/A</i>
DRILLING METHOD: <i>Hollow-Stem Auger</i>		LOGGED BY: <i>C. Farrell</i> CHECKED BY: <i>D. Henry</i>	

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location, there may be consequential changes in conditions.

DEPTH (feet)	Samples	Sample I.D.	Time	Blow Counts (per 6 inches)	PID/LEL (ppm%)	Geologic Description	Soil Class	Graphic Log	DEPTH (feet)	Well Diagram
0-5						PEA GRAVEL, (fill).  AIRKNIFED TO 5 FEET.			0-5	well encased in concrete
10	OB-4d10	OB-4d10	1050	8/12/17	0.2				10	blank 2 inch dia. SCH 40 PVC from 0.5-25 feet
15	OB-4d15	OB-4d15	1055	7/10/15	1.2				15	neat cement from 1-19 feet
20	OB-4d20	OB-4d20	1058	5/7/10	13.0	SILTSTONE - greenish gray [10Y 5/1], soft to moderately hard, moist; black [N 2.5] mottling; thinly interbedded with 5mm fine- to medium-grained sand layer;	ss		20	bentonite chips from 19-23 feet
25	OB-4d25	OB-4d25	1100	4/5/7	3169	becomes mottled with greenish gray [5GY 6/1] and black [N 2.5]; iron oxide staining along fractures; moist;			25	#2/12 sand filter pack from 23-50 feet
30	OB-4d30	OB-4d30	1105	3/5/7	2013	becomes mottled greenish gray [10Y 5/1] with black [N 2.5] mottling; trace clay and changes at 29 feet to greenish gray [10Y 4/1]; mottled; heavy iron oxide staining along fractures;			30	
35	OB-4d35	OB-4d35	1110	3/4/6	1671				35	
40	OB-4d40	OB-4d40	1115	5/8/10	28.1	becomes light olive brown [2.5Y 5/3], very stiff, very moist; water found in fractures and thinly bedded fine- to medium-grained sand layers;			40	screened (0.02 inch slots) 2 inch dia. SCH 40 PVC from 25-50 feet
45	OB-4d45	OB-4d45	1120	4/5/8	13.6	becomes clayey, brown [10YR 5/3], saturated; trace gypsum crystals;			45	
50	OB-4d50	OB-4d50	1125	6/7/9		becomes very stiff. Bottom at 50 feet.			50	
55									55	
60									60	

Remarks/Notes: 1) PID Used:



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# Log of Boring/Well OB-5

PROJECT: <i>Shell Service Station</i>	SURFACE ELEVATION: <i>Not Measured</i>	
LOCATION: <i>406 N. Gaffey Ave. San Pedro, Ca</i>	TOTAL DEPTH: <i>50 feet</i>	BORING DIAMETER: <i>8 inches</i>
PROJECT NO.: <i>09.517</i>	DEPTH TO FIRST SATURATION:	
DATE BEGAN: <i>10/8/09</i> FINISHED: <i>10/8/09</i>	TOP OF WELL CASING ELEVATION: <i>N/A</i>	
DRILLING COMPANY: <i>BC2 Environmental Corp.</i>	STATIC GW ELEVATION: <i>N/A</i>	DATE: <i>N/A</i>
DRILLING METHOD: <i>Hollow-Stem Auger</i>	LOGGED BY: <i>C. Farrell</i> CHECKED BY: <i>D. Henry</i>	

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location, there may be consequential changes in conditions.

DEPTH (feet)	Samples	Sample I.D.	Time	Blow Counts (per 6 inches)	PID/LEL (ppm/%)	Geologic Description	Soil Class	Graphic Log	DEPTH (feet)	Well Diagram
0-5						AIRKNIFED TO 5 FEET;			0-5	well encased in concrete
5-10						Silty SAND - fine-grained, pale brown [10YR 6/3], medium dense, damp; trace clay.	sm		5-10	blank 2 inch dia. SCH 40 PVC from 0.5-25 feet
10	X	OB-5d10	0800	8/11/15	0.3				10	
10-15						SILTSTONE - light brownish gray [2.5Y 6/2], soft to moderately hard, damp; iron oxide in fractures;	ss		10-15	neat cement from 1-19 feet
15	X	OB-5d15	0805	9/11/13	0.1				15	
15-20						becomes greenish gray 10Y 5/1], stiff, moist;			15-20	bentonite chips from 19-23 feet
20	X	OB-5d20	0810	5/6/8	1425				20	
20-25						becomes light brownish gray [2.5Y 6/2], heavy iron oxide staining;			20-25	
25	X	OB-5d25	0815	4/5/7	928				25	
25-30						becomes dark greenish gray [10GY 4/1], mottled with black [N 2.5];			25-30	#2/12 sand filter pack from 23-50 feet
30	X	OB-5d30	0820	16/18/23	2645				30	
30-35						becomes stiff, very moist; heavy iron oxide staining in fractures;			30-35	
35	X	OB-5d35	0825	4/5/6	3206				35	
35-40						trace clay;			35-40	
40	X	OB-5d40	0830	3/4/6	10.7				40	screened (0.02 inch slots) 2 inch dia. SCH 40 PVC from 25-50 feet
40-45						becomes grayish brown [2.5Y 5/2], and yellow [2.5Y 8/8], medium stiff, saturated; trace yellow [2.5Y 8/8] lithoclasts; trace gypsum crystals;			40-45	
45	X	OB-5d45							45	
45-50						becomes clayey, brown [10YR 5/3], saturated.			45-50	
50	X	OB-5d50				Bottom at 50 feet.			50	

Remarks/Notes: 1) PID Used:  
 1) Airknifed to 5 feet.



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# Log of Boring/Well OB-6

PROJECT: <i>Shell Service Station</i>	SURFACE ELEVATION: <i>Not Measured</i>	
LOCATION: <i>406 N. Gaffey Ave. San Pedro, Ca</i>	TOTAL DEPTH: <i>50 feet</i>	BORING DIAMETER: <i>8 inches</i>
PROJECT NO.: <i>09.517</i>	DEPTH TO FIRST SATURATION:	
DATE BEGAN: <i>10/8/09</i> FINISHED: <i>10/8/09</i>	TOP OF WELL CASING ELEVATION: <i>N/A</i>	
DRILLING COMPANY: <i>BC2 Environmental Corp.</i>	STATIC GW ELEVATION: <i>N/A</i>	DATE: <i>N/A</i>
DRILLING METHOD: <i>Hollow-Stem Auger</i>	LOGGED BY: <i>C. Farrell</i> CHECKED BY: <i>D. Henry</i>	

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location, there may be consequential changes in conditions.

DEPTH (feet)	Samples	Sample I.D.	Time	Blow Counts (per 6 inches)	PID/LEL (ppm%)	Geologic Description	Soil Class	Graphic Log	DEPTH (feet)	Well Diagram
0-5						AIRKNIFED TO 5 FEET;			0-5	well encased in concrete
5-10						Silty SAND - fine-grained, pale yellow [2.5Y 8/3, medium dense, damp.	sm		5-10	blank 2 inch dia. SCH 40 PVC from 0.5-25 feet
10	X	OB-6d10	1040	5/13/17	0.2				10	
10-15						SILTSTONE - greenish gray [10Y 5/1], soft to moderately hard, damp; mottled; trace fine-grained silty sand;	ss		15	neat cement from 1-19 feet
15	X	OB-6d15	1042	7/10/14	1.3				15	
15-20						mottled with yellow [2.5Y 7/6], trace clay;			20	bentonite chips from 19-23 feet
20	X	OB-6d20	1045	5/7/10	8.1				20	
20-25						mottled greenish gray [5GY 5/1], and yellow [2.5Y 7/6], iron oxide staining along fractures;			25	
25	X	OB-6d25	1047	3/8/8	18.7				25	
25-30						becomes greenish gray [5GY 5/1], stiff, moist;			30	#2/12 sand filter pack from 23-50 feet
30	X	OB-6d30	1050	4/4/6	21.5				30	
30-35						mottled dark greenish gray [5GY 4/1], and black [N 2.5], very moist;			35	
35	X	OB-6d35	1055	3/5/7	131				35	
35-40						becomes light yellowish brown [2.5Y 6/3], mottling, iron oxide staining along fractures, very moist; trace clay;			40	screened (0.02 inch slots) 2 inch dia. SCH 40 PVC from 25-50 feet
40	X	OB-6d40	1058	6/6/6	2.5				40	
40-45						becomes clayey, brown [10YR 5/3], with a mottled yellow [2.5Y 7/6] layer, and gypsum crystals;			45	
45	X	OB-6d45	1103	4/4/5	1.4				45	
45-50						saturated; heavily iron oxide staining; gypsum crystals.			50	
50	X	OB-6d50	1110	3/6/6	0.1				50	
50-55						Bottom at 50 feet.			55	

Remarks/Notes: 1) PID Used:  
 1) Airknifed to 5 feet.

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# **APPENDIX C**

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**BLAINE TECH SERVICES, INC. WELL DEVELOPMENT LOGS**

# SHELL WELLHEAD INSPECTION FORM

(FOR SAMPLE TECHNICIAN)

Site Address 406 N. Gaffey Street, San Pedro Date 10/13/09  
 Job Number 09103-PL Technician B. Lantagne Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Well Box Meets Compliance Requirements *See Below	Water Bailed From Wellbox	Cap Replaced	Lock Replaced	Well Not Inspected (explain in notes)	New Deficiency Identified	Previously Identified Deficiency Persists	Notes
OB-1	X	X							
OB-2	X	X							
OB-3	X	X							
OB-4	X	X							
OB-5	X	X							
OB-6	X	X							
		B							

\*Well box must meet all three criteria to be compliant: 1) WELL IS SECURABLE BY DESIGN (12" or less) 2) WELL IS MARKED WITH THE WORDS "MONITORING WELL" (12" or less) 3) WELL TAG IS PRESENT, SECURE, AND CORRECT

Notes: \_\_\_\_\_  
 \_\_\_\_\_

## WELL GAUGING DATA

Project # 091013-BLI Date 10/13/2009 Client Shell

Site 406. N. Gaffey, Street San Pedro

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <del>TOE</del>	Notes
OB-1	0650	2					37.50	49.89	↓	
OB-2	0654	2				37.73	50.25			
OB-3	0659	2				37.10	50.14			
OB-4	0703 <del>06</del>	2				37.67	49.78			
OB-5	0708	2				37.01	50.18			
OB-6	0712	2				37.68	49.93			

## WELL DEVELOPMENT DATA SHEET

Project #: 091013-SLI	Client: Shell
Developer: <i>SL</i>	Date Developed: 10/13/2007
Well I.D. 03-1	Well Diameter: (circle one) <input checked="" type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 6
Total Well Depth: Before 49.89 After 49.91	Depth to Water: <i>2.6</i> Before 37.50 After 48.04
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF): $(12 \times (d^2/4) \times \pi) / 231$ where 12 = in / foot d = diameter (in.) $\pi = 3.1416$ 231 = in <sup>3</sup> /gal	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Well dia</th> <th>VCF</th> </tr> <tr> <td>2"</td> <td>0.16</td> </tr> <tr> <td>3"</td> <td>0.37</td> </tr> <tr> <td>4"</td> <td>0.65</td> </tr> <tr> <td>6"</td> <td>1.47</td> </tr> <tr> <td>10"</td> <td>4.08</td> </tr> <tr> <td>12"</td> <td>6.87</td> </tr> </table>	Well dia	VCF	2"	0.16	3"	0.37	4"	0.65	6"	1.47	10"	4.08	12"	6.87
Well dia	VCF														
2"	0.16														
3"	0.37														
4"	0.65														
6"	1.47														
10"	4.08														
12"	6.87														

<u>20</u>	X	<u>10</u>	=	<u>200</u>
1 Case Volume		Specified Volumes		gallons

Purging Device:       Bailer       Electric Submersible  
 Suction Pump       Positive Air Displacement

Type of Installed Pump \_\_\_\_\_  
 Other equipment used 2" Sump

TIME	TEMP (F)	pH	Cond. (mS or $\mu$ S)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0725	Swabbed well		for 15 min			Started purge w/ PAO pump @ 0741
0745	71.4	6.1	10.5 mS	71000	2	hand button; assisted bilge w/ pump
0749	72.7	6.0	10.3 mS	71000	4	less silty
0753	72.0	6.3	10.3 mS	71000	6	
0757	71.4	5.9	9778	71000	8	
0801	72.1	6.1	10.2 mS	71000	10	DTW - 49.90
—	Well Dewatered @ 10 gal.					DTW - 48.03
1133	Swabbed well for 15 min					
1137	71.0	6.2	9416	71000	12	Started purge @ 1137
1141	72.0	6.2	9275	71000	14	
1144	71.6	6.1	9327	71000	16	
1147	72.4	5.9	9217	71000	18	
1151	72.2	5.9	9281	71000	20	DTW - 49.91 DTW - 48.01
Did Well Dewater? <i>yes</i>		If yes, note above.		Gallons Actually Evacuated:		20



## WELL DEVELOPMENT DATA SHEET

Project #: <u>091013-BL1</u>	Client: <u>Shell</u>
Developer: <u>BL</u>	Date Developed: <u>10/13/2009</u>
Well I.D. <u>08-2</u>	Well Diameter: (circle one) <u>2</u> 3 4 6
Total Well Depth: Before <u>50.25</u> After <u>50.27</u>	Depth to Water: Before <u>3773</u> After <u>44.74</u>
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF): (12 x (d <sup>2</sup> /4) x π) / 231	Well dia.	VCF
where	2" =	0.16
12 = in / foot	3" =	0.37
d = diameter (in.)	4" =	0.65
π = 3.1416	6" =	1.47
231 = in <sup>3</sup> /gal	10" =	4.08
	12" =	6.87

<u>2.0</u>	X	<u>10</u>	=	<u>20.0</u>	gallons
1 Case Volume		Specified Volumes			

Purging Device:       Bailer       Electric Submersible  
 Suction Pump       Positive Air Displacement

Type of Installed Pump \_\_\_\_\_  
 Other equipment used 2" Swab

TIME	TEMP (F)	pH	Cond. (mS or <u>µS</u> )	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0808	Swabbed well for 15 min					Started pump w/ PAO Pump @ 0824
0827	70.6	6.2	3542	71000	2	hard bottom; agitated bottom
0831	70.8	6.1	3387	71000	4	becoming less silty
0835	71.5	5.8	9038	71000	6	
0839	71.1	5.6	8809	71000	8	
0842	71.4	5.6	8684	71000	10	
0845	71.8	5.5	8466	71000	12	DTW-50.27
—	Well Dewatered @ 12 gal					DTW-48.27
1158	Swabbed Well for 15 min					Started pump @ 12:45
1218	72.7	5.2	8315	71000	14	
1222	73.0	5.1	8340	71000	16	
1226	72.9	5.0	8344	71000	18	
1230	72.3	5.0	8224	71000	20	DTW-50.27 DTW-44.74
Did Well Dewater? <u>YES</u>	If yes, note above.			Gallons Actually Evacuated:		<u>20</u>



## WELL DEVELOPMENT DATA SHEET

Project #: 09101309BL1	Client: Shell
Developer: BL	Date Developed: 10/17/2009
Well I.D. 03-3	Well Diameter: (circle one) ② 3 4 6
Total Well Depth: Before 50.14 After 50.18	Depth to Water: Before 37.10 After 47.80
Reason not developed:	If Free Product, thickness:

**Additional Notations:**

Volume Conversion Factor (VCF): $(12 \times (d^2/4) \times \pi) / 231$ where 12 = in / foot d = diameter (in.) $\pi = 3.1416$ 231 = in <sup>3</sup> /gal	Well dia.	VCF
	2" =	0.16
	3" =	0.37
	4" =	0.63
	6" =	1.47
	10" =	4.08
	12" =	6.87

<u>2.1</u>	X	<u>10</u>	=	<u>21.0</u>
1 Case Volume		Specified Volumes		gallons

Purging Device:       Bailer       Electric Submersible  
                                   Suction Pump       Positive Air Displacement

Type of Installed Pump \_\_\_\_\_  
 Other equipment used 2" Swabs

TIME	TEMP (F)	pH	Cond. (mS or $\mu$ S)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0852						Started purge w/ PADS pump @ 0900/AGITATED BOTTOM w/ Pur
0911	71.4	5.9	9478	71000	3	hand bottom
0914	72.6	5.8	9086	71000	5	
0917	72.8	5.6	8993	71000	7	Decom-ly to silty
0920	72.8	5.7	9095	71000	9	
0924	72.2	5.8	8889	71000	11	DTB - 50.17
	Well Devented @ 11 gal					DTW - 47.80
1241						
	Swabbed well for 15 min.					
1250 1300	72.4	5.0	8176	71000	13	static purge 1202
1258 1300	73.7	4.9	7989	71000	15	
1259 1303	73.8	5.4	8103	71000	17	
1259 1307	73.6	5.2	8065	71000	19	
1259 1311	73.7	5.2	8013	71000	21	DTB - 50.18 DTW - 47.80
Did Well Dewater? YES	If yes, note above.			Gallons Actually Evacuated:		21

## WELL DEVELOPMENT DATA SHEET

Project #: <u>091013-3L1</u>	Client: <u>Shell</u>
Developer: <u>BL</u>	Date Developed: <u>10/13/09</u>
Well I.D. <u>03-4</u>	Well Diameter: (circle one) <u>3</u> 4 6
Total Well Depth: Before <u>49.78</u> After <u>49.79</u>	Depth to Water: Before <u>37.67</u> After <u>46.88</u>
Reason not developed:	If Free Product, thickness:

**Additional Notations:**

<p>Volume Conversion Factor (VCF):  <math>(12 \times (d^2/4) \times \pi) / 231</math>                  where                  12 = in / foot                  d = diameter (in.)  <math>\pi = 3.1416</math>                  231 = in<sup>3</sup>/gal</p>	<p>Well dia.      VCF</p> <p>2"      =      0.16</p> <p>3"      =      0.37</p> <p>4"      =      0.65</p> <p>6"      =      1.47</p> <p>10"     =      4.08</p> <p>12"     =      6.87</p>	
---	---	--

<u>20</u>	X	<u>10</u>	=	<u>20</u>	gallons
1 Case Volume		Specified Volumes			

Purging Device:       Bailer       Electric Submersible  
 Suction Pump       Positive Air Displacement

Type of Installed Pump \_\_\_\_\_  
 Other equipment used 2" Sub

TIME	TEMP (F)	pH	Cond. (mS or <u>µS</u> )	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
<u>0930</u>						<u>Started purge w/ PTD pump @ 0946/ALTIMATED BOTTOM 7 min</u>
<u>0950</u>	<u>72.1</u>	<u>5.8</u>	<u>8561</u>	<u>71000</u>	<u>2</u>	<u>hand bottom</u>
<u>0954</u>	<u>73.4</u>	<u>5.7</u>	<u>8697</u>	<u>71000</u>	<u>4</u>	<u>becoming soft silty</u>
<u>0957</u>	<u>73.4</u>	<u>5.6</u>	<u>8205</u>	<u>71000</u>	<u>6</u>	
<u>0951000</u>	<u>73.0</u>	<u>5.0</u>	<u>8011</u>	<u>71000</u>	<u>8</u>	
<u>1004</u>	<u>73.1</u>	<u>5.1</u>	<u>8239</u>	<u>71000</u>	<u>10</u>	<u>DTB - 49.79</u>
<u>—</u>	<u>Dewatered @</u>	<u>10 gal</u>				<u>DTW - 47.94</u>
<u>1315</u>						<u>started</u>
<u>1330</u>	<u>74.2</u>	<u>5.0</u>	<u>7797</u>	<u>71000</u>	<u>12</u>	<u>started purge @ 1327</u>
<u>1323</u>	<u>74.5</u>	<u>5.1</u>	<u>7840</u>	<u>71000</u>	<u>14</u>	
<u>1326</u>	<u>74.4</u>	<u>4.8</u>	<u>7778</u>	<u>71000</u>	<u>16</u>	
<u>1340</u>	<u>74.6</u>	<u>4.7</u>	<u>7883</u>	<u>71000</u>	<u>18</u>	
<u>1343</u>	<u>74.5</u>	<u>4.7</u>	<u>7698</u>	<u>71000</u>	<u>20</u>	<u>DTW - 46.88 ESTB - 49.79</u>
Did Well Dewater? <u>YES</u>		If yes, note above.		Gallons Actually Evacuated:		<u>20</u>

## WELL DEVELOPMENT DATA SHEET

Project #: 091013-84	Client: Shell
Developer: BL	Date Developed: 10/13/2009
Well I.D. 08-8	Well Diameter: (circle one) ② 3 4 6
Total Well Depth: Before 50.18 After 50.28	Depth to Water: Before 37.01 After 46.63
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF): $(12 \times (d^2/4) \times \pi) / 231$ where 12 = in / foot d = diameter (in.) $\pi = 3.1416$ 231 = in <sup>3</sup> /gal	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well dia.</th> <th>VCF</th> </tr> </thead> <tbody> <tr><td>2"</td><td>0.16</td></tr> <tr><td>3"</td><td>0.37</td></tr> <tr><td>4"</td><td>0.65</td></tr> <tr><td>6"</td><td>1.47</td></tr> <tr><td>10"</td><td>4.08</td></tr> <tr><td>12"</td><td>6.87</td></tr> </tbody> </table>	Well dia.	VCF	2"	0.16	3"	0.37	4"	0.65	6"	1.47	10"	4.08	12"	6.87
Well dia.	VCF														
2"	0.16														
3"	0.37														
4"	0.65														
6"	1.47														
10"	4.08														
12"	6.87														

<u>21</u>	X	<u>10</u>	=	<u>210</u>	gallons
1 Case Volume		Specified Volumes			

- Purging Device:
- |                                       |   |
|---------------------------------------|---|
| <input type="checkbox"/> Bailer       | <input type="checkbox"/> Electric Submersible                 |
| <input type="checkbox"/> Suction Pump | <input checked="" type="checkbox"/> Positive Air Displacement |

Type of Installed Pump \_\_\_\_\_  
 Other equipment used 2" Sub

TIME	TEMP (F)	pH	Cond. (mS or <u>µS</u> )	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1011						Started purge w/ PAD pump @ 1027 / ABITATED BOTTOM 4' / MIN
1030	71.0	5.9	8824	71000	3	hand bottom
1034	71.3	5.9	8466	71000	5	
1038	72.0	5.7	8921	71000	7	
1041	71.6	5.8	8940	71000	9	
1045	72.0	5.8	9009	71000	11	DTB-50.28
—	Dewatered @ 11 gal					DTW-46.63
1348						Started purge @ 1403
1406	72.9	5.3	8710	71000	13	
1409	73.3	5.3	8812	71000	15	
1414	73.1	5.2	8808	71000	17	
1417	73.5	5.2	8924	71000	19	
1420	73.4	5.2	8847	71000	21	DTW-46.63 DTB-50.28
Did Well Dewater? YES	If yes, note above.		Gallons Actually Evacuated:		21	

## WELL DEVELOPMENT DATA SHEET

Project #: <u>091013-BU</u>	Client: <u>Shell</u>
Developer: <u>RL</u>	Date Developed: <u>10/13/2009</u>
Well I.D. <u>08-6</u>	Well Diameter: (circle one) <u>3</u> 4 6
Total Well Depth: Before <u>49.93</u> After <u>49.96</u>	Depth to Water: Before <u>37.68</u> After <u>46.94</u>
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF): $(12 \times (d^2/4) \times \pi) / 231$ where 12 = in / foot d = diameter (in.) $\pi = 3.1416$ 231 = in <sup>3</sup> /gal	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Well dia.</th> <th style="text-align: left;">VCF</th> </tr> <tr><td>2"</td><td>0.16</td></tr> <tr><td>3"</td><td>0.37</td></tr> <tr><td>4"</td><td>0.65</td></tr> <tr><td>6"</td><td>1.47</td></tr> <tr><td>10"</td><td>4.08</td></tr> <tr><td>12"</td><td>6.87</td></tr> </table>	Well dia.	VCF	2"	0.16	3"	0.37	4"	0.65	6"	1.47	10"	4.08	12"	6.87
Well dia.	VCF														
2"	0.16														
3"	0.37														
4"	0.65														
6"	1.47														
10"	4.08														
12"	6.87														

<u>20</u>	X	<u>10</u>	=	<u>20.0</u>
1 Case Volume		Specified Volumes		gallons

Purging Device:       Bailer       Electric Submersible  
                                   Suction Pump       Positive Air Displacement

Type of Installed Pump \_\_\_\_\_  
 Other equipment used 2" Swab

TIME	TEMP (F)	pH	Cond. (mS or <del>µS</del> )	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	
<u>1051</u>	<u>Swabbed well for 15 min</u>						<u>Started purge w/ PAD Pump @ 1107/ABIMED bottom of pump</u>
<u>1111</u>	<u>71.1</u>	<u>6.1</u>	<u>9773</u>	<u>71000</u>	<u>2</u>	<u>becoming less silty</u>	
<u>1115</u>	<u>72.2</u>	<u>6.0</u>	<u>9811</u>	<u>71000</u>	<u>4</u>		
<u>1118</u>	<u>72.1</u>	<u>6.3</u>	<u>9705</u>	<u>71000</u>	<u>6</u>		
<u>1122</u>	<u>72.4</u>	<u>6.0</u>	<u>9218</u>	<u>71000</u>	<u>8</u>		
<u>1126</u>	<u>72.3</u>	<u>6.1</u>	<u>9135</u>	<u>71000</u>	<u>10</u>	<u>DTB-49.95</u>	
<u>—</u>	<u>Dec. stand @ 10 gal</u>					<u>DTW-47.21</u>	
<u>1425</u>	<u>Swabbed well for 15 min</u>						
<u>1444</u>	<u>72.6</u>	<u>5.4</u>	<u>8985</u>	<u>71000</u>	<u>12</u>	<u>Started purge at 1441</u>	
<u>1447</u>	<u>73.0</u>	<u>5.6</u>	<u>9254</u>	<u>71000</u>	<u>14</u>		
<u>1451</u>	<u>73.1</u>	<u>5.5</u>	<u>9187</u>	<u>71000</u>	<u>16</u>		
<u>1454</u>	<u>73.3</u>	<u>5.4</u>	<u>9042</u>	<u>71000</u>	<u>18</u>		
<u>1458</u>	<u>73.0</u>	<u>5.4</u>	<u>8976</u>	<u>71000</u>	<u>20</u>	<u>DTW-<del>46.94</del> DTB-49.96</u>	
Did Well Dewater? <u>YES</u>		If yes, note above.		Gallons Actually Evacuated:		<u>20</u>	

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# **APPENDIX D**

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**FRONTIER ENVIRONMENTAL SERVICES, INC.  
DUAL-PHASE EXTRACTION PILOT TEST FIELD DATA SHEETS**





**Frontier**  
Environmental Services, Inc.

406 N. Gaffey<sup>th</sup>, San Pedro  
VAC

Our Service Makes The Difference

SVE Data																			
Dt #	Date	Time	Note	Oxidizer Temp (F)	Stack Temp (F)	Pump Temp (F)	Pump Vac "Hg	Stinger #1 Vac "Hg	water in site (cup)	Gallons in Perce	D.P. Total Flow	Line Size	D.P. Dilution Flow	Dilution Flow (SCFM)	Line Size	Well Flow (SCFM)	Influent Conc (ppmv)	Lbs/Hr VOC	
																			Initial Date & Start Time Of Event
1	10/19/09	0730					23.5	14.2	—		.35		2	.48	10	2	0	8000	0.00
2		0745		1879	1876	1752	26.2	19.5	—		.35		2	.48	15	2	0	10270	0.00
3		0800		18608	1850	1787	23.7	13.5	10.5	22	.35		2	1.3	250	2	0	6330	0.00
4		0830		1856	1851	1792	24.7	13.5	1.50	3.3/25.3	.35		2	1.5	350	2	0	6140	0.00
5		0900		1844	1842	1793	21.5	13.0	1.375	2.9/28.7	.36		2	2.8	400	2	0	1841	0.00
6		0930		1828	1821	1783	21.5	13.0	1.50	3.3/31.3	.36	0	2	3.0	400	2	0	1685	0.00
7		1030		1793	1780	1752	21.5	13.0	1.75	3.7/35.0	.36	0	2	2.9	400	2	0	1702	0.00
8		1130		1766	1761	1712	21.5	13.0	2.25	4.7/39.7	.36	0	2	3.0	400	2	0	1485	0.00
9		1230		1803	1801	1765	22.5	13.1	1.75	3.7/34.4	.36	0	2	2.4	300	2	0	1530	0.00
10		1330		1885	1884	1803	23.3	13.4	2.06	4.2/37.6	.36	0	2	1.4	200	2	0	1271	0.00
11		1430		1844	1841	1794	23.3	13.4	1.75	3.7/34.3	.36	0	2	1.4	200	2	0	4010	0.00
12		1530		1819	1811	1767	23.3	13.4	1.75	3.7/35.0	.36	0	2	1.4	200	2	0	3820	0.00
13		1630		1793	1781	1747	23.3	13.4	2.0	4.2/37.2	.36	0	2	1.2	200	2	0	3610	0.00
14		1730		1792	1780	1750	23.3	13.4	2.0	4.2/37.4	0.360	0	2	1.2	0	2	0	3600	0.00
15												0	2	0	2	0	0	0.00	
16												0	2	0	2	0	0	0.00	
17												0	2	0	2	0	0	0.00	
18												0	2	0	2	0	0	0.00	
19												0	2	0	2	0	0	0.00	
20												0	2	0	2	0	0	0.00	
21												0	2	0	2	0	0	0.00	
22												0	2	0	2	0	0	0.00	
23												0	2	0	2	0	0	0.00	
24												0	2	0	2	0	0	0.00	
25												0	2	0	2	0	0	0.00	



Plumbing vac

4000 N. Gaffey St, San Pedro

Our Service Makes The Difference!

#REF!

Monitoring Well Data

Inches W.C. Vacuum =

Well ID

10.00

= Depth Water 'bgs

Dt #	Date	Time	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID
			OB-2	OB-1	OB-10	MW-2	OB-5	OB-3	OB-4	MW-2	MW-1					
1	10/19/07	0200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05					
2	starting	0430	-	-	-	-	-	-	-	-	-					
3		0100	4.1	0.36	1.5	93	5.5	5.0	4.4	0.70	0.38					
4		0530	4.6	0.25	1.7	93	6.0	5.3	4.7	0.79	0.39					
5		0900	4.0	0.15	1.3	90	6.0	5.0	4.7	0.78	0.43					
6		0930	4.8	0.23	1.4	90	6.0	5.0	4.8	0.80	0.42					
7		1030	4.8	0.22	1.4	90	6.0	5.0	4.8	0.80	0.40					
8		1130	4.8	0.21	1.4	90	6.0	5.0	5.0	0.82	0.42	lowered	adjustment	fill box		
9		1230	5.0	0.22	1.5	93	6.5	5.5	5.2	0.80	0.47					
10		1330	5.0	0.22	1.65	93	6.5	5.5	5.2	0.75	0.42					
11		1430	5.0	0.22	1.75	94	6.5	5.5	5.2	0.75	0.40					
12		1530	5.0	0.22	1.75	95	6.5	5.5	5.2	0.75	0.42					
13		1630	5.0	0.22	1.75	95	6.5	5.5	5.2	0.75	0.42					
14		1730	5.0	0.22	1.75	95	6.5	5.5	5.2	0.75	0.42					
15																
16																
17																
18																
19																
20																
21																
22																
23																
24																
Dt #	Date	Time	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID

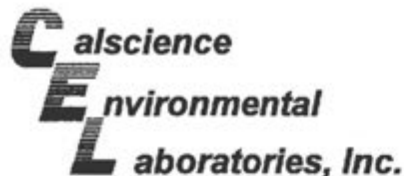
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# **APPENDIX E**

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**CALSCIENCE ENVIRONMENTAL LABORATORIES, INC. VAPOR  
ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS**





October 30, 2009

Truedi Balsitis  
Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621-2537

Subject: **Calscience Work Order No.: 09-10-1557**  
Client Reference: **406 N. Gaffey Street, San Pedro, CA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/20/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Xuan Dang", is written over a light blue horizontal line.

Calscience Environmental  
Laboratories, Inc.  
Xuan Dang  
Project Manager

A handwritten signature in black ink, appearing to read "Xuan Dang", is written over a light blue horizontal line.

**Analytical Report**



Wayne Perry, Inc.  
 8281 Commonwealth Avenue  
 Buena Park, CA 90621-2537

Date Received: 10/20/09  
 Work Order No: 09-10-1557  
 Preparation: N/A  
 Method: ASTM D-1946  
 Units: %v

Project: 406 N. Gaffey Street, San Pedro, CA

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID				
MW-2	09-10-1557-1-B	10/19/09 08:00	Air	GC 36	N/A	10/20/09 00:00	091020L01				
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>		
Methane	ND	0.500	1		Oxygen + Argon	12.9	0.500	1			
Carbon Dioxide	13.3	0.500	1		Nitrogen	73.8	0.500	1			
Carbon Monoxide	ND	0.500	1								
MW-2	09-10-1557-2-B	10/19/09 12:30	Air	GC 36	N/A	10/20/09 00:00	091020L01				
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>		
Methane	ND	0.500	1		Oxygen + Argon	19.4	0.500	1			
Carbon Dioxide	4.50	0.500	1		Nitrogen	76.1	0.500	1			
Carbon Monoxide	ND	0.500	1								
MW-2	09-10-1557-3-A	10/19/09 14:30	Air	GC 36	N/A	10/20/09 00:00	091020L01				
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>		
Methane	ND	0.500	1		Oxygen + Argon	13.8	0.500	1			
Carbon Dioxide	11.5	0.500	1		Nitrogen	74.7	0.500	1			
Carbon Monoxide	ND	0.500	1								
MW-2	09-10-1557-4-B	10/19/09 17:00	Air	GC 36	N/A	10/20/09 00:00	091020L01				
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>		
Methane	ND	0.500	1		Oxygen + Argon	13.4	0.500	1			
Carbon Dioxide	11.8	0.500	1		Nitrogen	74.8	0.500	1			
Carbon Monoxide	ND	0.500	1								
Method Blank	099-03-002-920	N/A	Air	GC 36	N/A	10/20/09 00:00	091020L01				
<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>		
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1			
Carbon Dioxide	ND	0.500	1		Nitrogen	ND	0.500	1			
Carbon Monoxide	ND	0.500	1								

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621-2537

Date Received: 10/20/09  
Work Order No: 09-10-1557  
Preparation: N/A  
Method: EPA TO-3M

Project: 406 N. Gaffey Street, San Pedro, CA

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-1-A	10/19/09 08:00	Air	GC 13	N/A	10/20/09 10:35	091020L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	7200	30	20		ppm (w/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-2-A	10/19/09 12:30	Air	GC 13	N/A	10/20/09 10:59	091020L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	2100	30	20		ppm (w/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-3-A	10/19/09 14:30	Air	GC 13	N/A	10/20/09 11:10	091020L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	4800	30	20		ppm (w/v)

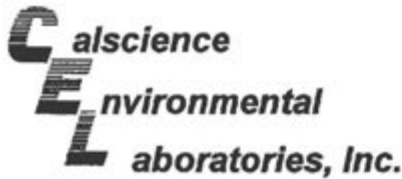
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-4-A	10/19/09 17:00	Air	GC 13	N/A	10/20/09 11:21	091020L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	3900	30	20		ppm (w/v)

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	098-01-005-1,999	N/A	Air	GC 13	N/A	10/20/09 09:06	091020L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	1.5	1		ppm (w/v)

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621-2537

Date Received: 10/20/09  
Work Order No: 09-10-1557  
Preparation: N/A  
Method: EPA TO-15M  
Units: ppb (v/v)

Project: 406 N. Gaffey Street, San Pedro, CA

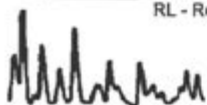
Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-1-A	10/19/09 08:00	Air	GC/MS II	N/A	10/20/09 14:08	091020L01

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	10000	2000		t-1,3-Dichloropropene	ND	2000	2000	
Benzene	1600	1000	2000		Ethanol	ND	10000	2000	
Benzyl Chloride	ND	3000	2000		Ethyl-t-Butyl Ether (ETBE)	ND	4000	2000	
Bromodichloromethane	ND	1000	2000		Ethylbenzene	21000	1000	2000	
Bromoform	ND	1000	2000		4-Ethyltoluene	ND	1000	2000	
Bromomethane	ND	1000	2000		Hexachloro-1,3-Butadiene	ND	3000	2000	
2-Butanone	ND	3000	2000		2-Hexanone	ND	3000	2000	
Carbon Disulfide	ND	20000	2000		Methyl-t-Butyl Ether (MTBE)	66000	4000	2000	
Carbon Tetrachloride	ND	1000	2000		Methylene Chloride	ND	10000	2000	
Chlorobenzene	ND	1000	2000		4-Methyl-2-Pentanone	ND	3000	2000	
Chloroethane	ND	1000	2000		Xylenes (total)	ND	4000	2000	
Chloroform	ND	1000	2000		Styrene	ND	3000	2000	
Chloromethane	ND	1000	2000		Tert-Amyl-Methyl Ether (TAME)	ND	4000	2000	
Dibromochloromethane	ND	1000	2000		Tert-Butyl Alcohol (TBA)	ND	10000	2000	
Dichlorodifluoromethane	ND	1000	2000		Tetrachloroethene	ND	1000	2000	
Diisopropyl Ether (DIPE)	ND	4000	2000		Toluene	ND	10000	2000	
1,1-Dichloroethane	ND	1000	2000		Trichloroethene	ND	1000	2000	
1,1-Dichloroethene	ND	1000	2000		Trichlorofluoromethane	ND	2000	2000	
1,2-Dibromoethane	ND	1000	2000		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	3000	2000	
Dichlorotetrafluoroethane	ND	4000	2000		1,1,1-Trichloroethane	ND	1000	2000	
1,2-Dichlorobenzene	ND	1000	2000		1,1,2-Trichloroethane	ND	1000	2000	
1,2-Dichloroethane	ND	1000	2000		1,3,5-Trimethylbenzene	ND	1000	2000	
1,2-Dichloropropane	ND	1000	2000		1,1,2,2-Tetrachloroethane	ND	2000	2000	
1,3-Dichlorobenzene	ND	1000	2000		1,2,4-Trimethylbenzene	ND	3000	2000	
1,4-Dichlorobenzene	ND	1000	2000		1,2,4-Trichlorobenzene	ND	4000	2000	
c-1,3-Dichloropropene	ND	1000	2000		Vinyl Acetate	ND	4000	2000	
c-1,2-Dichloroethene	ND	1000	2000		Vinyl Chloride	ND	1000	2000	
t-1,2-Dichloroethene	ND	1000	2000						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	104	57-129			1,2-Dichloroethane-d4	107	47-137		
Toluene-d8	67	78-156		2					

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



**Analytical Report**



Wayne Perry, Inc.  
 8281 Commonwealth Avenue  
 Buena Park, CA 90621-2537

Date Received: 10/20/09  
 Work Order No: 09-10-1557  
 Preparation: N/A  
 Method: EPA TO-15M  
 Units: ppb (v/v)

Project: 406 N. Gaffey Street, San Pedro, CA

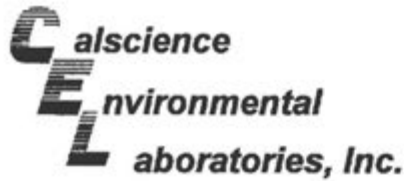
Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-2-A	10/19/09 12:30	Air	GC/MS II	N/A	10/20/09 14:55	091020L01

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	25000	500		t-1,3-Dichloropropene	ND	500	500	
Benzene	920	250	500		Ethanol	ND	25000	500	
Benzyl Chloride	ND	750	500		Ethyl-t-Butyl Ether (ETBE)	ND	1000	500	
Bromodichloromethane	ND	250	500		Ethylbenzene	11000	250	500	
Bromofom	ND	250	500		4-Ethyltoluene	ND	250	500	
Bromomethane	ND	250	500		Hexachloro-1,3-Butadiene	ND	750	500	
2-Butanone	ND	750	500		2-Hexanone	ND	750	500	
Carbon Disulfide	ND	5000	500		Methyl-t-Butyl Ether (MTBE)	28000	1000	500	
Carbon Tetrachloride	ND	250	500		Methylene Chloride	ND	2500	500	
Chlorobenzene	ND	250	500		4-Methyl-2-Pentanone	ND	750	500	
Chloroethane	ND	250	500		Xylenes (total)	ND	1000	500	
Chloroform	ND	250	500		Styrene	ND	750	500	
Chloromethane	ND	250	500		Tert-Amyl-Methyl Ether (TAME)	ND	1000	500	
Dibromochloromethane	ND	250	500		Tert-Butyl Alcohol (TBA)	ND	2500	500	
Dichlorodifluoromethane	ND	250	500		Tetrachloroethene	ND	250	500	
Diisopropyl Ether (DIPE)	ND	1000	500		Toluene	ND	2500	500	
1,1-Dichloroethane	ND	250	500		Trichloroethene	ND	250	500	
1,1-Dichloroethene	ND	250	500		Trichlorofluoromethane	ND	500	500	
1,2-Dibromoethane	ND	250	500		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	750	500	
Dichlorotetrafluoroethane	ND	1000	500		1,1,1-Trichloroethane	ND	250	500	
1,2-Dichlorobenzene	ND	250	500		1,1,2-Trichloroethane	ND	250	500	
1,2-Dichloroethane	ND	250	500		1,3,5-Trimethylbenzene	ND	250	500	
1,2-Dichloropropane	ND	250	500		1,1,2,2-Tetrachloroethane	ND	500	500	
1,3-Dichlorobenzene	ND	250	500		1,2,4-Trimethylbenzene	ND	750	500	
1,4-Dichlorobenzene	ND	250	500		1,2,4-Trichlorobenzene	ND	1000	500	
c-1,3-Dichloropropene	ND	250	500		Vinyl Acetate	ND	1000	500	
c-1,2-Dichloroethene	ND	250	500		Vinyl Chloride	ND	250	500	
t-1,2-Dichloroethene	ND	250	500						
Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual		
1,4-Bromofluorobenzene	101	57-129		1,2-Dichloroethane-d4	107	47-137			
Toluene-d8	64	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621-2537

Date Received: 10/20/09  
Work Order No: 09-10-1557  
Preparation: N/A  
Method: EPA TO-15M  
Units: ppb (v/v)

Project: 406 N. Gaffey Street, San Pedro, CA

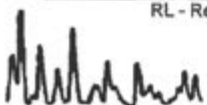
Page 3 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-3-A	10/19/09 14:30	Air	GC/MS II	N/A	10/20/09 15:42	091020L01

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	62000	1250		t-1,3-Dichloropropene	ND	1200	1250	
Benzene	3100	620	1250		Ethanol	ND	62000	1250	
Benzyl Chloride	ND	1900	1250		Ethyl-t-Butyl Ether (ETBE)	ND	2500	1250	
Bromodichloromethane	ND	620	1250		Ethylbenzene	39000	620	1250	
Bromoform	ND	620	1250		4-Ethyltoluene	ND	620	1250	
Bromomethane	ND	620	1250		Hexachloro-1,3-Butadiene	ND	1900	1250	
2-Butanone	ND	1900	1250		2-Hexanone	ND	1900	1250	
Carbon Disulfide	ND	12000	1250		Methyl-t-Butyl Ether (MTBE)	74000	2500	1250	
Carbon Tetrachloride	ND	620	1250		Methylene Chloride	ND	6200	1250	
Chlorobenzene	ND	620	1250		4-Methyl-2-Pentanone	ND	1900	1250	
Chloroethane	ND	620	1250		Xylenes (total)	3500	2500	1250	
Chloroform	ND	620	1250		Styrene	ND	1900	1250	
Chloromethane	ND	620	1250		Tert-Amyl-Methyl Ether (TAME)	ND	2500	1250	
Dibromochloromethane	ND	620	1250		Tert-Butyl Alcohol (TBA)	ND	6200	1250	
Dichlorodifluoromethane	ND	620	1250		Tetrachloroethene	ND	620	1250	
Dilsopropyl Ether (DIPE)	ND	2500	1250		Toluene	ND	6200	1250	
1,1-Dichloroethane	ND	620	1250		Trichloroethene	ND	620	1250	
1,1-Dichloroethene	ND	620	1250		Trichlorofluoromethane	ND	1200	1250	
1,2-Dibromoethane	ND	620	1250		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1900	1250	
Dichlorotetrafluoroethane	ND	2500	1250		1,1,1-Trichloroethane	ND	620	1250	
1,2-Dichlorobenzene	ND	620	1250		1,1,2-Trichloroethane	ND	620	1250	
1,2-Dichloroethane	ND	620	1250		1,3,5-Trimethylbenzene	1100	620	1250	
1,2-Dichloropropane	ND	620	1250		1,1,2,2-Tetrachloroethane	ND	1200	1250	
1,3-Dichlorobenzene	ND	620	1250		1,2,4-Trimethylbenzene	ND	1900	1250	
1,4-Dichlorobenzene	ND	620	1250		1,2,4-Trichlorobenzene	ND	2500	1250	
c-1,3-Dichloropropene	ND	620	1250		Vinyl Acetate	ND	2500	1250	
c-1,2-Dichloroethene	ND	620	1250		Vinyl Chloride	ND	620	1250	
t-1,2-Dichloroethene	ND	620	1250						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,4-Bromofluorobenzene	102	57-129			1,2-Dichloroethane-d4	107	47-137		
Toluene-d8	65	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



Wayne Perry, Inc.  
 8281 Commonwealth Avenue  
 Buena Park, CA 90621-2537

Date Received: 10/20/09  
 Work Order No: 09-10-1557  
 Preparation: N/A  
 Method: EPA TO-15M  
 Units: ppb (v/v)

Project: 406 N. Gaffey Street, San Pedro, CA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-10-1557-4-A	10/19/09 17:00	Air	GC/MS II	N/A	10/20/09 16:28	091020L01

Comment(s): -The method has been modified to use Tedlar bags instead of Summa Canisters.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50000	1000		t-1,3-Dichloropropene	ND	1000	1000	
Benzene	3600	500	1000		Ethanol	ND	50000	1000	
Benzyl Chloride	ND	1500	1000		Ethyl-t-Butyl Ether (ETBE)	ND	2000	1000	
Bromodichloromethane	ND	500	1000		Ethylbenzene	33000	500	1000	
Bromoform	ND	500	1000		4-Ethyltoluene	ND	500	1000	
Bromomethane	ND	500	1000		Hexachloro-1,3-Butadiene	ND	1500	1000	
2-Butanone	ND	1500	1000		2-Hexanone	ND	1500	1000	
Carbon Disulfide	ND	10000	1000		Methyl-t-Butyl Ether (MTBE)	74000	2000	1000	
Carbon Tetrachloride	ND	500	1000		Methylene Chloride	ND	5000	1000	
Chlorobenzene	ND	500	1000		4-Methyl-2-Pentanone	ND	1500	1000	
Chloroethane	ND	500	1000		Xylenes (total)	3800	2000	1000	
Chloroform	ND	500	1000		Styrene	ND	1500	1000	
Chloromethane	ND	500	1000		Tert-Amyl-Methyl Ether (TAME)	ND	2000	1000	
Dibromochloromethane	ND	500	1000		Tert-Butyl Alcohol (TBA)	ND	5000	1000	
Dichlorodifluoromethane	ND	500	1000		Tetrachloroethene	ND	500	1000	
Dilisopropyl Ether (DIPE)	ND	2000	1000		Toluene	ND	5000	1000	
1,1-Dichloroethane	ND	500	1000		Trichloroethene	ND	500	1000	
1,1-Dichloroethene	ND	500	1000		Trichlorofluoromethane	ND	1000	1000	
1,2-Dibromoethane	ND	500	1000		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1500	1000	
Dichlorotetrafluoroethane	ND	2000	1000		1,1,1-Trichloroethane	ND	500	1000	
1,2-Dichlorobenzene	ND	500	1000		1,1,2-Trichloroethane	ND	500	1000	
1,2-Dichloroethane	ND	500	1000		1,3,5-Trimethylbenzene	890	500	1000	
1,2-Dichloropropane	ND	500	1000		1,1,2,2-Tetrachloroethane	ND	1000	1000	
1,3-Dichlorobenzene	ND	500	1000		1,2,4-Trimethylbenzene	ND	1500	1000	
1,4-Dichlorobenzene	ND	500	1000		1,2,4-Trichlorobenzene	ND	2000	1000	
c-1,3-Dichloropropene	ND	500	1000		Vinyl Acetate	ND	2000	1000	
c-1,2-Dichloroethene	ND	500	1000		Vinyl Chloride	ND	500	1000	
t-1,2-Dichloroethene	ND	500	1000						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	104	57-129			1,2-Dichloroethane-d4	106	47-137		
Toluene-d8	60	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





**Analytical Report**



Wayne Perry, Inc.  
 8281 Commonwealth Avenue  
 Buena Park, CA 90621-2537

Date Received: 10/20/09  
 Work Order No: 09-10-1557  
 Preparation: N/A  
 Method: EPA TO-15M  
 Units: ppb (v/v)

Project: 406 N. Gaffey Street, San Pedro, CA

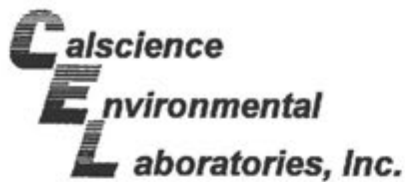
Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-981-84	N/A	Air	GC/MS II	N/A	10/20/09 11:55	091020L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		t-1,3-Dichloropropene	ND	1.0	1	
Benzene	ND	0.50	1		Ethanol	ND	50	1	
Benzyl Chloride	ND	1.5	1		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	1	
Bromodichloromethane	ND	0.50	1		Ethylbenzene	ND	0.50	1	
Bromoform	ND	0.50	1		4-Ethyltoluene	ND	0.50	1	
Bromomethane	ND	0.50	1		Hexachloro-1,3-Butadiene	ND	1.5	1	
2-Butanone	ND	1.5	1		2-Hexanone	ND	1.5	1	
Carbon Disulfide	ND	10	1		Methyl-t-Butyl Ether (MTBE)	ND	2.0	1	
Carbon Tetrachloride	ND	0.50	1		Methylene Chloride	ND	5.0	1	
Chlorobenzene	ND	0.50	1		4-Methyl-2-Pentanone	ND	1.5	1	
Chloroethane	ND	0.50	1		Xylenes (total)	ND	2.0	1	
Chloroform	ND	0.50	1		Styrene	ND	1.5	1	
Chloromethane	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	1	
Dibromochloromethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	5.0	1	
Dichlorodifluoromethane	ND	0.50	1		Tetrachloroethene	ND	0.50	1	
Diisopropyl Ether (DIPE)	ND	2.0	1		Toluene	ND	5.0	1	
1,1-Dichloroethane	ND	0.50	1		Trichloroethene	ND	0.50	1	
1,1-Dichloroethene	ND	0.50	1		Trichlorofluoromethane	ND	1.0	1	
1,2-Dibromoethane	ND	0.50	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.5	1	
Dichlorotetrafluoroethane	ND	2.0	1		1,1,1-Trichloroethane	ND	0.50	1	
1,2-Dichlorobenzene	ND	0.50	1		1,1,2-Trichloroethane	ND	0.50	1	
1,2-Dichloroethane	ND	0.50	1		1,3,5-Trimethylbenzene	ND	0.50	1	
1,2-Dichloropropane	ND	0.50	1		1,1,2,2-Tetrachloroethane	ND	1.0	1	
1,3-Dichlorobenzene	ND	0.50	1		1,2,4-Trimethylbenzene	ND	1.5	1	
1,4-Dichlorobenzene	ND	0.50	1		1,2,4-Trichlorobenzene	ND	2.0	1	
c-1,3-Dichloropropene	ND	0.50	1		Vinyl Acetate	ND	2.0	1	
c-1,2-Dichloroethene	ND	0.50	1		Vinyl Chloride	ND	0.50	1	
t-1,2-Dichloroethene	ND	0.50	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,4-Bromofluorobenzene	93	57-129			1,2-Dichloroethane-d4	103	47-137		
Toluene-d8	99	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





## Quality Control - Duplicate



Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621-2537

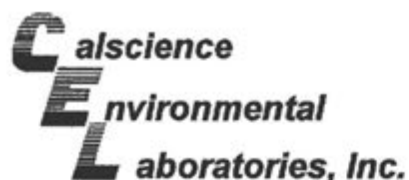
Date Received: 10/20/09  
Work Order No: 09-10-1557  
Preparation: N/A  
Method: EPA TO-3M

Project: 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
<b>MW-2</b>	<b>Air</b>	<b>GC 13</b>	<b>N/A</b>	<b>10/20/09</b>	<b>091020D01</b>

Parameter	Sample Conc.	DUP Conc	RPD	RPD CL	Qualifiers
TPH as Gasoline	7200	7300	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate



Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621-2537

Date Received: N/A  
Work Order No: 09-10-1557  
Preparation: N/A  
Method: ASTM D-1946

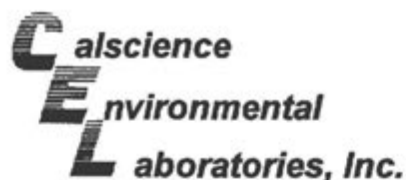
Project: 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-920	Air	GC 36	N/A	10/20/09	091020L01

Parameter	LCS Conc	LCSD Conc	RPD	RPD CL	Qualifiers
Carbon Dioxide	5.400	5.370	1	0-30	
Oxygen + Argon	19.93	19.79	1	0-30	
Nitrogen	70.84	70.40	1	0-30	

RPD - Relative Percent Difference, CL - Control Limit

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate



Wayne Perry, Inc.  
8281 Commonwealth Avenue  
Buena Park, CA 90621-2537

Date Received: N/A  
Work Order No: 09-10-1557  
Preparation: N/A  
Method: EPA TO-15M

Project: 406 N. Gaffey Street, San Pedro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
<b>099-12-981-84</b>	<b>Air</b>	<b>GC/MS II</b>	<b>N/A</b>	<b>10/20/09</b>	<b>091020L01</b>		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD_CL	Qualifiers
Benzene	113	114	60-156	44-172	1	0-40	
Carbon Tetrachloride	114	115	64-154	49-169	0	0-32	
1,2-Dibromoethane	116	119	54-144	39-159	2	0-36	
1,2-Dichlorobenzene	120	123	34-160	13-181	2	0-47	
1,2-Dichloroethane	114	115	69-153	55-167	1	0-30	
1,2-Dichloropropane	114	116	67-157	52-172	2	0-35	
1,4-Dichlorobenzene	117	120	36-156	16-176	2	0-47	
c-1,3-Dichloropropene	119	120	61-157	45-173	1	0-35	
Ethylbenzene	109	112	52-154	35-171	3	0-38	
o-Xylene	110	114	52-148	36-164	4	0-38	
p/m-Xylene	121	126	42-156	23-175	4	0-41	
Tetrachloroethene	112	112	56-152	40-168	0	0-40	
Toluene	118	121	56-146	41-161	3	0-43	
Trichloroethene	117	115	63-159	47-175	1	0-34	
1,1,2-Trichloroethane	113	114	65-149	51-163	1	0-37	
Vinyl Chloride	129	129	45-177	23-199	0	0-36	

Total number of LCS compounds : 16

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Work Order Number: 09-10-1557

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution; therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.  Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.



Calscience  
Environmental Labs  
7440 Lincoln Way  
Garden Grove, Ca.  
Tel. (714) 895-5494  
Fax (714) 894-7601

**WAYNE PERRY, INC Chain of Custody for Shell Oil Products**

Please Check Appropriate Box:

<input checked="" type="checkbox"/> ENV. SERVICES	<input type="checkbox"/> NOTVIA RETAIL	<input type="checkbox"/> SHELL RETAIL
<input type="checkbox"/> NOTVIA SOLCH	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUMES
<input type="checkbox"/> SHELL PIPELINE	<input type="checkbox"/> OTHER _____	



Bill To:  
Wayne Perry, Inc.  
8281 Commonwealth Ave.  
Buena Park, Ca 90621

DATE: 10/19/09  
PAGE: 1 of 1

Wayne Perry, Inc. WPBP 404. North Graffey St, San Pedro CA TOL03717723

8281 Commonwealth Ave., Buena Park, CA 90621  
Trudi Baisittis 714-826-0352 tbaisittis@wpinc.com CONSULTANT PROJECT NO.: 09517

Chris McDonald 714-826-0352 714-523-7880 cmcdonald@wpinc.com SIEM OU LAB USE ONLY 09-10-1557

TURNAROUND TIME (CALENDAR DAYS):  
 STANDARD (14 DAY)  5 DAYS  3 DAYS  2 DAYS  24 HOURS  RESULTS NEEDED ON WEEKEND

LA - RWQCS REPORT FORMAT UST Agency: CRWQCB

SPECIAL INSTRUCTIONS OR NOTES:  
\*Please e-mail to SIEMOU@WPINC.COM

SHELL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 EDO NOT NEEDED  
 RECEIPT VERIFICATION REQUESTED

LAP USE ONLY	Field Sample Identification	SAMPLED		MATRIX	PRESERVATIVE					NO. OF CONT.	REQUESTED ANALYSIS			TEMPERATURE ON RECEIPT °C _____	Container PID Readings or Laboratory Notes
		DATE	TIME		HCL	HNO3	H2SO4	NONE	OTHER						
1	MW-2	10/19/09	0800	vapor					X	2	X	X	X		
2	MW-2	10/19/09	1230	vapor					X	2	X	X	X		
3	MW-2	10/19/09	1430	vapor					X	2	X	X	X		
4	MW-2	10/19/09	1700	vapor					X	2	X	X	X		

Subscribed by (Signature) Received by (Signature) Wcbath CE Date 10/20/09 Time 0835



WORK ORDER #: 09-10-1557

**SAMPLE RECEIPT FORM**

Cooler 0 of 0

CLIENT: WPC

DATE: 10/20/09

**TEMPERATURE:** (Criteria: 0.0°C – 6.0°C, not frozen)

Temperature \_\_\_\_\_ °C - 0.2°C (CF) = \_\_\_\_\_ °C     Blank     Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_).

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air     Filter     Metals Only     PCBs Only    Initial: WB

**CUSTODY SEALS INTACT:**

Cooler     \_\_\_\_\_     No (Not Intact)     Not Present     N/A    Initial: WB

Sample     \_\_\_\_\_     No (Not Intact)     Not Present    Initial: WB

**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> COC not relinquished. <input type="checkbox"/> No date relinquished. <input type="checkbox"/> No time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CONTAINER TYPE:**

**Solid:**  4ozCGJ     8ozCGJ     16ozCGJ     Sleeve     EnCores®     TerraCores®     \_\_\_\_\_

**Water:**  VOA     VOAh     VOAna<sub>2</sub>     125AGB     125AGBh     125AGBp     1AGB     1AGBna<sub>2</sub>     1AGBs

500AGB     500AGJ     500AGJs     250AGB     250CGB     250CGBs     1PB     500PB     500PBna

250PB     250PBn     125PB     125PBzanna     100PJ     100PJna<sub>2</sub>     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

**Air:**  Tedlar®     Summa®    **Other:**  \_\_\_\_\_    **Trip Blank Lot#:** \_\_\_\_\_    **Checked by:** WB

**Container:** C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelop    **Reviewed by:** PS

**Preservative:** h: HCL    n: HNO<sub>3</sub>    na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>    Na: NaOH    p: H<sub>3</sub>PO<sub>4</sub>    s: H<sub>2</sub>SO<sub>4</sub>    zanna: ZnAc<sub>2</sub>+NaOH    f: Field-filtered    **Scanned by:** WB

---

# **APPENDIX F**

---

**WASTE DISPOSAL DOCUMENTS**

OC.856599

# NON-HAZARDOUS WASTE DATA FORM

1. BESI #

2. Generator's Name and Mailing Address  
 SHELL OIL PRODUCTS US  
 20945 S. WILMINGTON  
 CARSON, CA 90810  
 ATTN: *Deborah Pryor*

Generator's Site Address (if different than mailing address)  
 SHELL OIL #:  
*406 N. Gaffney Street*  
*San Pedro, CA*

Generator's Phone: (281) 874-2238  
 24-HOUR EMERGENCY PHONE: (800) 424-9300

3. Transporter 1 Company Name  
 Blaine Tech Services, Inc. Phone # (310) 885-4455

4. Transporter 2 Company Name  
 Nieto & Sons Trucking, Inc. Phone # (714) 880-8855

5. Designated Facility Name and Site Address  
 DEMENNO/ KERDOON  
 2000 N. ALAMEDA ST  
 COMPTON, CA 90222  
 Phone # (310) 537-7100

GENERATOR

6. Waste Shipping Name and Description	7. Containers		8. Total Quantity	9. Unit Wt/Vol	10. Profile No.
	No.	Type			
A. NON-HAZARDOUS WATER	1	TT	135	G	
B.					
C.					
D.					

11. Special Handling Instructions and Additional Information  
 WEAR ALL APPROPRIATE PROTECTIVE CLOTHING      SAP #:  
 WELL PURGING / DECON WATER      INCIDENT #: *97617581*

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this data form are non-hazardous.

Generator's/Officer's Printed/Typed Name: *B. Lantagne*  
 Signature: *[Signature]* (ON BEHALF OF SOPUS)  
 Month Day Year: *10 | 13 | 09*

TRANSPORTER

13. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: *B. Lantagne*  
 Signature: *[Signature]*      Month Day Year: *10 | 13 | 09*

Transporter 2 Printed/Typed Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_      Month Day Year: \_\_\_\_\_

14. Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Printed/Typed Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_      Month Day Year: \_\_\_\_\_



NON-HAZARDOUS WASTE DATA FORM

16

TO BE COMPLETED BY GENERATOR

**GENERATING SITE:** EPA I.D. NO. [REDACTED]

NAME SHELL OIL PRODUCTS US SHELL 136042

ADDRESS 20945 S. WILMINGTON AVE. 406 N. GAFFEY ST. PROFILE NO. [REDACTED]

CITY, STATE, ZIP CARSON, CA 90810 SAN PEDRO, CA 90731 PHONE NO. 713,241 7011

ATTN: DEBORAH PRYOR

CONTAINERS: No. 1 VOLUME 110 gallons WEIGHT \_\_\_\_\_

TYPE:  TANK TRUCK  DUMP TRUCK  DRUMS  CARTONS  OTHER 2 drums removed from site

WASTE DESCRIPTION NON-HAZARDOUS WASTE LIQUIDS GENERATING PROCESS GROUNDWATER

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. <u>WATER</u>		<u>99-100%</u>	<u>Transported by vacuum truck to receiving facility</u>		
2. <u>TPH</u>		<u>&lt;1%</u>	6. <u>INCIDENT: 97617681</u>		
3. _____			7. <u>RIPR: 80707</u>		
4. _____			8. <u>BESI: 173213</u>		

PROPERTIES: pH 7-10  SOLID  LIQUID  SLUDGE  SLURRY  OTHER \_\_\_\_\_

HANDLING INSTRUCTIONS: 24-HOUR EMERGENCY PHONE: 800-424-8300

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

Larry Moorhart of BESI on behalf of Shell OPUS 11/2/09  
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TRANSPORTER

NAME BELSHIRE NIETO & SONS EPA I.D. NO. [REDACTED]

ADDRESS 25971 TOWNE CENTRE DRIVE 1281 BREA CANYON ROAD SERVICE ORDER NO. \_\_\_\_\_

CITY, STATE, ZIP FOOTHILL RANCH, CA 92610 BREA, CA 92821 PICK UP DATE 11/2/09

PHONE NO. 949-480-6200 (714) 990-6855

TRUCK, UNIT, LD. NO. 251-367 Lupe Flores 11/5/09  
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TSD FACILITY

NAME DEMENNO KERDOON EPA I.D. NO. [REDACTED]

ADDRESS 2000 N. ALAMEDA ST. DISPOSAL METHOD  LANDFILL  OTHER \_\_\_\_\_

CITY, STATE, ZIP COMPTON, CA 90222

PHONE NO. 310-637-7100

Fernando Marques 11-5-09  
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

GEN	OLD/NEW	L	A	TONS
Reconciled quantity	89s			
RT/CD				
HWDF				NONE
DISCREPANCY				

with Steve of Nieto + Sons on 11/11/09

**Manifest**

**TPST Soil Recyclers of CA  
Non-Hazardous Soils**

↓ Manifest # ↓

Date of Shipment: **11.16.09** Responsible for Payment: \_\_\_\_\_ Transporter Truck #: **243 1976** Facility #: **ACT** Given by TPST: **343341001** Load #: \_\_\_\_\_

Generator's Name and Billing Address: **SHELL OIL PRODUCTS US  
20945 S. WILMINGTON AVE.  
CARSON, CA 90810** Generator's Phone #: **715-241-7011** Generator's US EPA ID No.: \_\_\_\_\_  
Person to Contact: **Deborah Fryor**  
FAX#: \_\_\_\_\_ Customer Account Number with TPST: \_\_\_\_\_

Consultant's Name and Billing Address: \_\_\_\_\_ Consultant's Phone #: \_\_\_\_\_  
Person to Contact: \_\_\_\_\_  
FAX#: \_\_\_\_\_ Customer Account Number with TPST: \_\_\_\_\_

Generation Site (transport from): (name & address) **SHELL 138042  
406 N. GAFFEY ST.  
SAN PEDRO, CA 90731** Site Phone #: \_\_\_\_\_ BTEX Levels: **INCIDENT: 97817581**  
Person to Contact: \_\_\_\_\_ TPH Levels: **SAP: 42**  
FAX#: \_\_\_\_\_ AVG. Levels: **408**  
**RIPR: 90428**

Designated Facility (transport to): (name & address) **TPST SOIL RECYCLERS OF CALIFORNIA  
12326 HIBISCUS AVENUE  
ADELANTO, CA 92301** Facility Phone #: **(800) 862-8001** Facility Permit Numbers: \_\_\_\_\_  
Person to Contact: **DELLENA JEFFREY**  
FAX#: **(780) 248-8004**

Transporter Name and Mailing Address: **BELSHIRE  
25971 TOWNE CENTRE DRIVE  
FOOTHILL RANCH, CA 92610** Transporter's Phone #: **949-480-5200** Transporter's US EPA ID No.: **CAR000189813**  
Person to Contact: **LARRY MOOTHART** Transporter's DOT No.: **450847**  
FAX#: \_\_\_\_\_ Customer Account Number with TPST: \_\_\_\_\_  
**SESI: 173213** **949-480-5210**

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0-10% <input type="checkbox"/> 10-20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>	<b>13 dms</b>		<b>14740</b>	<b>7920</b>	<b>6820</b>
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0-10% <input type="checkbox"/> 10-20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>					<b>341</b>

List any exception to items listed above: \_\_\_\_\_

Scale Ticket#: **75675**

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: \_\_\_\_\_ Generator  Consultant  Signature and date: **[Signature]** Month: **11** Day: **12** Year: **09**  
**Larry Moothart of SESI on behalf of Shell OPUS**

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: **[Signature]** Signature and date: **[Signature]** Month: **11** Day: **12** Year: **09**

Discrepancies: \_\_\_\_\_

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: **D. JEFFREY/J. PROVANSAL** Signature and date: **[Signature]** **11-16-09**

Please print or type.

# Manifest

## TPST Soil Recyclers of CA Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment: 11.4.09 Responsible for Payment: \_\_\_\_\_ Transporter Truck #: 393/476 Facility #: AD7 Given by TPST: 3434110011 Load #: \_\_\_\_\_

Generator's Name and Billing Address: **SHELL OIL PRODUCTS US  
20846 S. WILMINGTON AVE  
CARSON, CA 90810**

Generator's Phone #: **713-241-7011**

Person to Contact: **Deborah Pryor**

FAX#: \_\_\_\_\_

Generator's US EPA ID No.: \_\_\_\_\_

Customer Account Number with TPST: \_\_\_\_\_

Consultant's Name and Billing Address: \_\_\_\_\_

Consultant's Phone #: \_\_\_\_\_

Person to Contact: **Shannon Jewell**

FAX#: \_\_\_\_\_

Customer Account Number with TPST: \_\_\_\_\_

Generation Site (Transport from): (name & address)  
**SHELL 130042  
406 N. GAFFEY ST.  
SAN PEDRO, CA 90731**

Site Phone #: \_\_\_\_\_

Person to Contact: \_\_\_\_\_

FAX#: \_\_\_\_\_

STEX Levels: **INCIDENT 97617581**

TPH Levels: **SAP: 42**

AVG: **400**

Le. els: **RIPR: 80301**

Designated Facility (Transport to): (name & address)  
**TPST SOIL RECYCLERS OF CALIFORNIA  
12328 HIBISCUS AVENUE  
ADELANTO, CA 92301**

Facility Phone #: **(800) 862-8001**

Person to Contact: **DELLENA JEFFREY**

FAX#: **(760) 246-8004**

Facility Permit Numbers: \_\_\_\_\_

Transporter Name and Mailing Address:  
**BELSHIRE  
25971 TOWNE CENTRE DRIVE  
FOOTHILL RANCH, CA 92610**

BESI: 173231

Transporter's Phone #: **949-400-5200**

Person to Contact: **LARRY MOOTHART**

FAX#: **949-400-5210**

Transporter's US EPA ID No.: **CAR000183913**

Transporter's DOT No.: **450847**

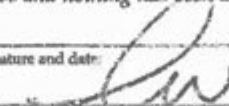
Customer Account Number with TPST: \_\_\_\_\_

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>			<b>54250</b>	<b>37900</b>	<b>16350</b>
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>	0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>					<b>8.22</b>

Let and describe to items listed above: **Blatt 57 ct** Scale Ticket# **75110**


Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: **Larry Moothart of BESI on behalf of generator** Generator  Consultant

Signature and date:  Month 11 Day 4 Year 09

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: **FRANK SALAZAR**

Signature and date:  Month 11 Day 4 Year 09

Discrepancies: \_\_\_\_\_

Recycling Facility certifies the receipt of the soil covered by this manifest (except as noted above):

Print or Type Name: **D. JEFFREY/J PROVANSAL**

Signature and date:  11/4/09

Please print or type: \_\_\_\_\_

**APPENDIX E**  
**CITY DIRECTORY SEARCH**

**City Search (Standard Report)**  
406 N Gaffey St, San Pedro, CA 90731

Haines Directory  
South Coast Los  
Angeles

2008

**N Gaffey St**

312 Office building (7 Occupants)  
335 Chun Lee  
336 No Return  
351 Boettcher Engineering & Contracting  
403 Silvestre Salazar  
405 No Return  
**406 Charlie Quezada**  
407 Mayra Angula  
409 No Return  
415 Gilberto Carrion  
427 Alan Williams  
502 Nader's Furniture Stores Inc

Haines Directory  
South Coast Los  
Angeles

2002

**N Gaffey St**

312 Office building (6 Occupants)  
335 Chun Lee  
336 No Return  
351 Boettinger Engineering & Contracting  
403 Silvestre Salazar  
405 No Return  
**406 Charlie Quezada**  
407 Mayra Angulo  
409 No Return  
415 No Return  
427 Alan Williams  
502 Nader's Furniture Stores Inc

Haines Directory  
South Coast Los  
Angeles

1996

**N Gaffey St**

335 Lee's Service Station  
336 Tru Valu Inns  
351 Boettcher Engineering  
403 Francisco Noyola  
405 No Return  
**406 Shell Service Station**  
407 No Return  
409 No Return  
415 No Return  
427 Alan L Williams  
502 Nader's Furniture



2705 Bee Caves Rd, Suite 330 · Austin, Texas 78746 · phone: 1-866-396-0042 · fax: 512-472-9967

**City Search (Standard Report)**  
406 N Gaffey St, San Pedro, CA 90731

Haines Directory

South Coast Los Angeles 1991

**N Gaffey St**

335 Lee's Service Station  
336 Tru Value Inns  
351 Boettcher Engineering  
403 Francisco Noyola  
405 No Return  
**406 Shell Service Station**  
407 No Return  
409 No Return  
415 No Return  
427 Alan Williams  
502 Nader's Furniture

Haines Directory

Los Angeles South Suburban 1986

**N Gaffey St**

335 Auto Mat Oil Co  
336 S&S Oil Co  
351 Boettcher Engineering  
403 James Parsons  
**406 Shell Service Station**  
407 No Return  
409 Marie Smith  
427 Alan Williams  
502 Naders Furniture

Haines Directory

Los Angeles South Suburban 1981

**N Gaffey St**

335 Auto Mat Oil Co  
336 S&S Oil Co  
351 Boettcher Engineering  
403 James Parsons  
**406 Shell Service Station**  
407 No Return  
409 Marie Smith  
427 Alan L Williams  
502 Naders Furniture



2705 Bee Caves Rd, Suite 330 · Austin, Texas 78746 · phone: 1-866-396-0042 · fax: 512-472-9967

**City Search (Standard Report)**  
406 N Gaffey St, San Pedro, CA 90731

Haines Directory  
Los Angeles South  
Suburban

1976

**N Gaffey St**

335 Auto Mat Oil Inc  
336 San Pedro Club Tow  
351 M Giacoletti  
403 Fred McCoy  
405 Jas E Parsons  
**406 Yung Kims Shell Service**  
407 No Return  
427 William Hallet Plumbing  
502 Bertel's Furniture & Carpets

Haines Directory  
Los Angeles South  
Suburban

1971

**N Gaffey St**

335 No Return  
336 No Return  
351 M Giacoletti  
403 Fred McCoy  
405 Jas E Parsons  
**406 Yung Kim's Shell Service**  
407 No Return  
427 William Hallet Plumbing  
502 Bertel's Furniture & Carpets

Comments:

**City Search (Target Property Address)**  
**406 N Gaffey St, San Pedro, CA 90731**

406 N Gaffey St

2008	Charlie Quezada	Haines Directory	South Coast Los Angeles
2002	Charlie Quezada	Haines Directory	South Coast Los Angeles
1996	Shell Service Station	Haines Directory	South Coast Los Angeles
1991	Shell Service Station	Haines Directory	South Coast Los Angeles
1986	Shell Service Station	Haines Directory	Los Angeles South Suburban
1981	Shell Service Station	Haines Directory	Los Angeles South Suburban
1976	Yung Kims Shell Service	Haines Directory	Los Angeles South Suburban
1971	Yung Kim's Shell Service	Haines Directory	Los Angeles South Suburban

312 N Gaffey St

2008	Office building (7 Occupants)	Haines Directory	South Coast Los Angeles
2002	Office building (6 Occupants)	Haines Directory	South Coast Los Angeles

335 N Gaffey St

2008	Chun Lee	Haines Directory	South Coast Los Angeles
2002	Chun Lee	Haines Directory	South Coast Los Angeles
1996	Lee's Service Station	Haines Directory	South Coast Los Angeles
1991	Lee's Service Station	Haines Directory	South Coast Los Angeles
1986	Auto Mat Oil Co	Haines Directory	Los Angeles South Suburban
1981	Auto Mat Oil Co	Haines Directory	Los Angeles South Suburban
1976	Auto Mat Oil Inc	Haines Directory	Los Angeles South Suburban
1971	No Return	Haines Directory	Los Angeles South Suburban



**City Search (Target Property Address)**  
**406 N Gaffey St, San Pedro, CA 90731**

336 N Gaffey St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles
1996	Tru Valu Inns	Haines Directory	South Coast Los Angeles
1991	Tru Value Inns	Haines Directory	South Coast Los Angeles
1986	S&S Oil Co	Haines Directory	Los Angeles South Suburban
1981	S&S Oil Co	Haines Directory	Los Angeles South Suburban
1976	San Pedro Club Tow	Haines Directory	Los Angeles South Suburban
1971	No Return	Haines Directory	Los Angeles South Suburban

351 N Gaffey St

2008	Boettcher Engineering & Contracting	Haines Directory	South Coast Los Angeles
2002	Boettinger Engineering & Contracting	Haines Directory	South Coast Los Angeles
1996	Boettcher Engineering	Haines Directory	South Coast Los Angeles
1991	Boettcher Engineering	Haines Directory	South Coast Los Angeles
1986	Boettcher Engineering	Haines Directory	Los Angeles South Suburban
1981	Boettcher Engineering	Haines Directory	Los Angeles South Suburban
1976	M Giacoletti	Haines Directory	Los Angeles South Suburban
1971	M Giacoletti	Haines Directory	Los Angeles South Suburban

403 N Gaffey St

2008	Silvestre Salazar	Haines Directory	South Coast Los Angeles
2002	Silvestre Salazar	Haines Directory	South Coast Los Angeles
1996	Francisco Noyola	Haines Directory	South Coast Los Angeles
1991	Francisco Noyola	Haines Directory	South Coast Los Angeles
1986	James Parsons	Haines Directory	Los Angeles South Suburban
1981	James Parsons	Haines Directory	Los Angeles South Suburban
1976	Fred McCoy	Haines Directory	Los Angeles South Suburban
1971	Fred McCoy	Haines Directory	Los Angeles South Suburban



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**City Search (Target Property Address)**  
**406 N Gaffey St, San Pedro, CA 90731**

405 N Gaffey St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles
1996	No Return	Haines Directory	South Coast Los Angeles
1991	No Return	Haines Directory	South Coast Los Angeles
1976	Jas E Parsons	Haines Directory	Los Angeles South Suburban
1971	Jas E Parsons	Haines Directory	Los Angeles South Suburban

407 N Gaffey St

2008	Mayra Angula	Haines Directory	South Coast Los Angeles
2002	Mayra Angulo	Haines Directory	South Coast Los Angeles
1996	No Return	Haines Directory	South Coast Los Angeles
1991	No Return	Haines Directory	South Coast Los Angeles
1986	No Return	Haines Directory	Los Angeles South Suburban
1981	No Return	Haines Directory	Los Angeles South Suburban
1976	No Return	Haines Directory	Los Angeles South Suburban
1971	No Return	Haines Directory	Los Angeles South Suburban

409 N Gaffey St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles
1996	No Return	Haines Directory	South Coast Los Angeles
1991	No Return	Haines Directory	South Coast Los Angeles
1986	Marie Smith	Haines Directory	Los Angeles South Suburban
1981	Marie Smith	Haines Directory	Los Angeles South Suburban

**City Search (Target Property Address)**  
**406 N Gaffey St, San Pedro, CA 90731**

415 N Gaffey St

2008	Gilberto Carrion	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles
1996	No Return	Haines Directory	South Coast Los Angeles
1991	No Return	Haines Directory	South Coast Los Angeles

427 N Gaffey St

2008	Alan Williams	Haines Directory	South Coast Los Angeles
2002	Alan Williams	Haines Directory	South Coast Los Angeles
1996	Alan L Williams	Haines Directory	South Coast Los Angeles
1991	Alan Williams	Haines Directory	South Coast Los Angeles
1986	Alan Williams	Haines Directory	Los Angeles South Suburban
1981	Alan L Williams	Haines Directory	Los Angeles South Suburban
1976	William Hallet Plumbing	Haines Directory	Los Angeles South Suburban
1971	William Hallet Plumbing	Haines Directory	Los Angeles South Suburban

502 N Gaffey St

2008	Nader's Furniture Stores Inc	Haines Directory	South Coast Los Angeles
2002	Nader's Furniture Stores Inc	Haines Directory	South Coast Los Angeles
1996	Nader's Furniture	Haines Directory	South Coast Los Angeles
1991	Nader's Furniture	Haines Directory	South Coast Los Angeles
1986	Naders Furniture	Haines Directory	Los Angeles South Suburban
1981	Naders Furniture	Haines Directory	Los Angeles South Suburban
1976	Bertel's Furniture & Carpets	Haines Directory	Los Angeles South Suburban
1971	Bertel's Furniture & Carpets	Haines Directory	Los Angeles South Suburban

Comments:



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**City Search (Standard Report)**  
600 Blk W Ofarrell St, San Pedro, CA 90731

Haines Directory  
South Coast Los  
Angeles

2008

**W Ofarrell St**

608	Lupe Hernandez
616	Edward & Richard Bonney
622	John Vigil
623	Rosendo Veliz
625	No Return
628	Rudy Yanes
631	Cesar Carmona, N Z Ortiz
636	Salvador Mota
637	Carlos Jimenez
639	No Return
642	No Return
643	L Temblador
650	Jesus Ruelas
657	Jose Zavala
659	No Return
663	Delifino Meraz, Ralph Rodriguez
664	Lucia Sanchez
666	No Return
669	Jaime Gonzales, Fernando Vega
675	Walter Groves
679	No Return



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**City Search (Standard Report)**  
600 Blk W Ofarrell St, San Pedro, CA 90731

Haines Directory  
South Coast Los  
Angeles

2002

**W Ofarrell St**

608 Lupe Hernandez  
616 Edward & Richard Bonney  
622 John Vigil  
623 Rosendo Veliz  
628 Rudy Yanes  
631 Cesar Carmona, N Z Ortiz  
636 Salvador Mota  
637 Carlos Jimenez  
639 No Return  
642 No Return  
643 L Temblador  
650 Jesus Ruelas  
657 Jose Zavala  
659 No Return  
663 Delfino Meraz, Ralph Rodriguez  
664 Lucia Sanchez  
666 No Return  
669 Jaime Gonzalez, Fernando Vega  
675 Walter Groves  
679 No Return

Haines Directory  
South Coast Los  
Angeles

1996

**W Ofarrell St**

600 x [There are residential properties only for the  
entire 600 block]

Haines Directory  
South Coast Los  
Angeles

1991

**W Ofarrell St**

600 x [Only residential property listings for entire 600  
block]

Haines Directory  
Los Angeles South  
Suburban

1985

**W Ofarrell St**

600 x [Only residential property listings for entire 600  
block]

Haines Directory  
Los Angeles South  
Suburban

1980

**W Ofarrell St**

600 x [Only residential property listings for entire 600  
block]



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**City Search (Standard Report)**  
600 Blk W Ofarrell St, San Pedro, CA 90731

Haines Directory  
Los Angeles South  
Suburban

1976

**W Ofarrell St**

600 x [Only residential property listings for entire 600  
block]

Haines Directory  
Los Angeles South  
Suburban

1971

**W Ofarrell St**

600 x [Only residential property listings for entire 600  
block]

Comments:



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**City Search (Target Property Address)**  
**600 Blk W Ofarrell St, San Pedro, CA 90731**

600 W Ofarrell St

1996	x [There are residential properties only for the entire 600 block]	Haines Directory	South Coast Los Angeles
1991	x [Only residential property listings for entire 600 block]	Haines Directory	South Coast Los Angeles
1985	x [Only residential property listings for entire 600 block]	Haines Directory	Los Angeles South Suburban
1980	x [Only residential property listings for entire 600 block]	Haines Directory	Los Angeles South Suburban
1976	x [Only residential property listings for entire 600 block]	Haines Directory	Los Angeles South Suburban
1971	x [Only residential property listings for entire 600 block]	Haines Directory	Los Angeles South Suburban

608 W Ofarrell St

2008	Lupe Hernandez	Haines Directory	South Coast Los Angeles
2002	Lupe Hernandez	Haines Directory	South Coast Los Angeles

616 W Ofarrell St

2008	Edward & Richard Bonney	Haines Directory	South Coast Los Angeles
2002	Edward & Richard Bonney	Haines Directory	South Coast Los Angeles

622 W Ofarrell St

2008	John Vigil	Haines Directory	South Coast Los Angeles
2002	John Vigil	Haines Directory	South Coast Los Angeles

623 W Ofarrell St

2008	Rosendo Veliz	Haines Directory	South Coast Los Angeles
2002	Rosendo Veliz	Haines Directory	South Coast Los Angeles

625 W Ofarrell St

2008	No Return	Haines Directory	South Coast Los Angeles
------	-----------	------------------	-------------------------

628 W Ofarrell St

2008	Rudy Yanes	Haines Directory	South Coast Los Angeles
2002	Rudy Yanes	Haines Directory	South Coast Los Angeles



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**City Search (Target Property Address)**  
600 Blk W Ofarrell St, San Pedro, CA 90731

631 W Ofarrell St

2008	Cesar Carmona, N Z Ortiz	Haines Directory	South Coast Los Angeles
2002	Cesar Carmona, N Z Ortiz	Haines Directory	South Coast Los Angeles

636 W Ofarrell St

2008	Salvador Mota	Haines Directory	South Coast Los Angeles
2002	Salvador Mota	Haines Directory	South Coast Los Angeles

637 W Ofarrell St

2008	Carlos Jimenez	Haines Directory	South Coast Los Angeles
2002	Carlos Jimenez	Haines Directory	South Coast Los Angeles

639 W Ofarrell St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles

642 W Ofarrell St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles

643 W Ofarrell St

2008	L Temblador	Haines Directory	South Coast Los Angeles
2002	L Temblador	Haines Directory	South Coast Los Angeles

650 W Ofarrell St

2008	Jesus Ruelas	Haines Directory	South Coast Los Angeles
2002	Jesus Ruelas	Haines Directory	South Coast Los Angeles

657 W Ofarrell St

2008	Jose Zavala	Haines Directory	South Coast Los Angeles
2002	Jose Zavala	Haines Directory	South Coast Los Angeles



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**City Search (Target Property Address)**  
600 Blk W Ofarrell St, San Pedro, CA 90731

659 W Ofarrell St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles

663 W Ofarrell St

2008	Delifino Meraz, Ralph Rodriguez	Haines Directory	South Coast Los Angeles
2002	Delfino Meraz, Ralph Rodriguez	Haines Directory	South Coast Los Angeles

664 W Ofarrell St

2008	Lucia Sanchez	Haines Directory	South Coast Los Angeles
2002	Lucia Sanchez	Haines Directory	South Coast Los Angeles

666 W Ofarrell St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles

669 W Ofarrell St

2008	Jaime Gonzales, Fernando Vega	Haines Directory	South Coast Los Angeles
2002	Jaime Gonzalez, Fernando Vega	Haines Directory	South Coast Los Angeles

675 W Ofarrell St

2008	Walter Groves	Haines Directory	South Coast Los Angeles
2002	Walter Groves	Haines Directory	South Coast Los Angeles

679 W Ofarrell St

2008	No Return	Haines Directory	South Coast Los Angeles
2002	No Return	Haines Directory	South Coast Los Angeles

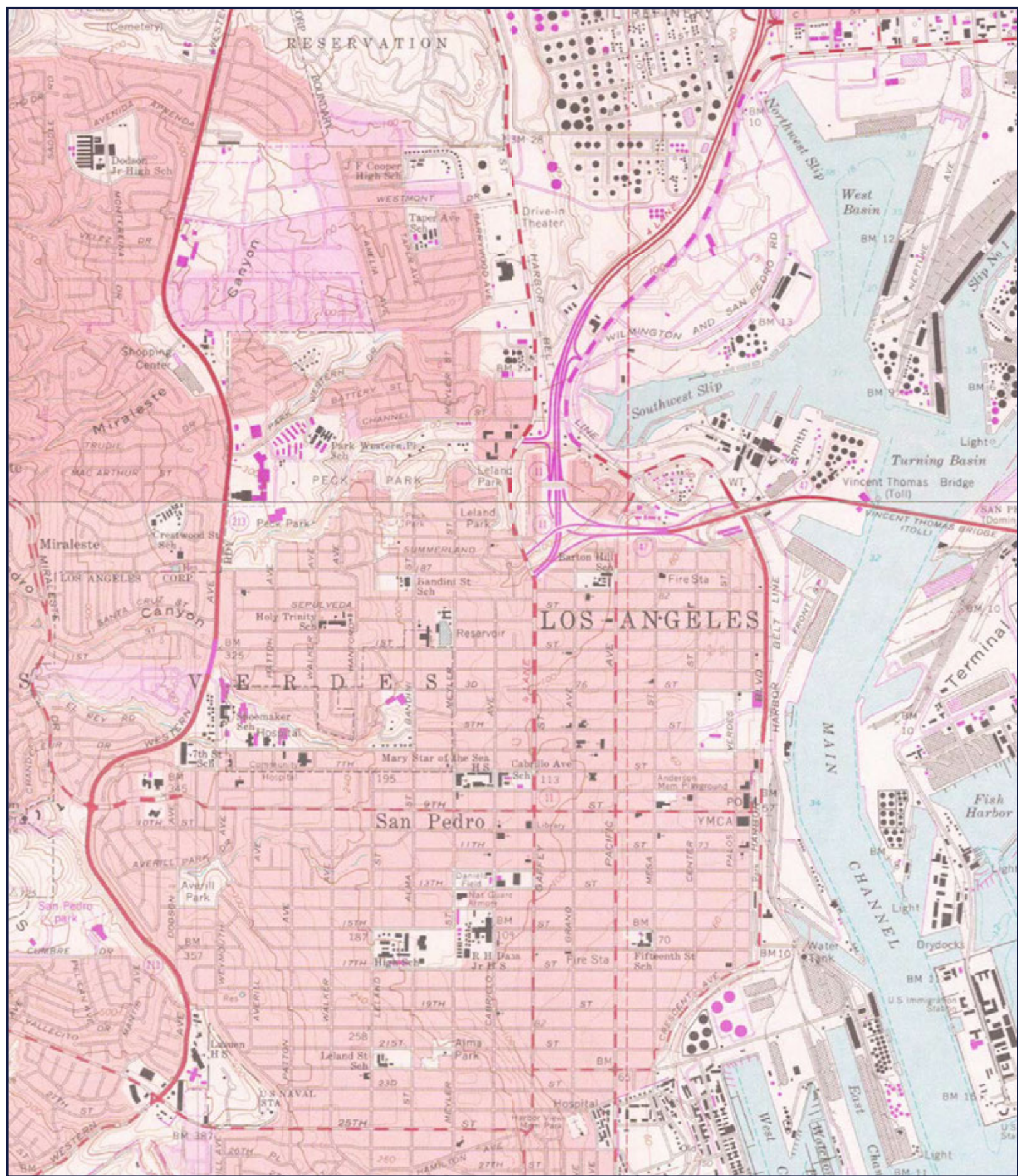
Comments:



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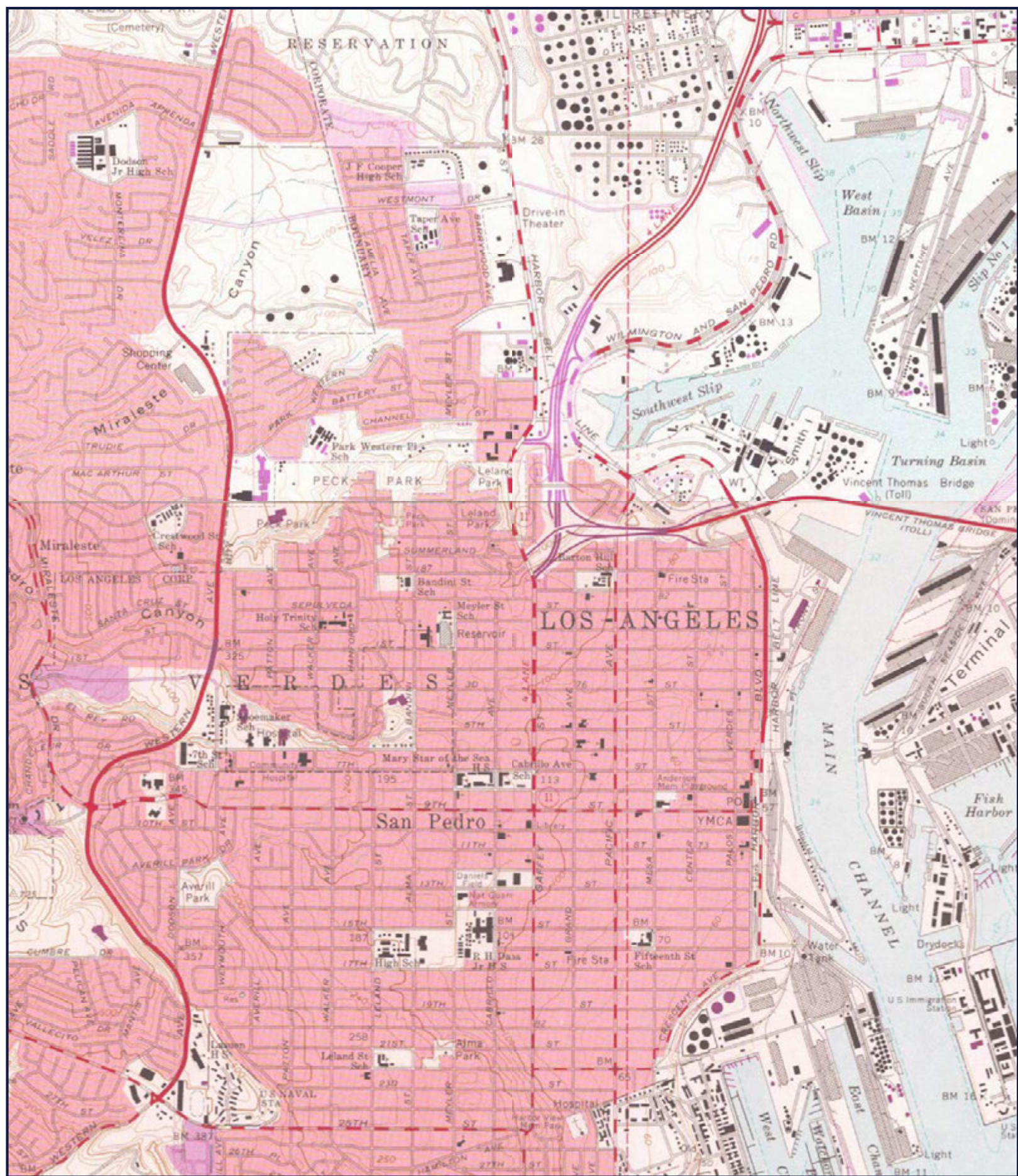
**APPENDIX F**  
**HISTORICAL TOPOGRAPHIC MAPS**





**SITE: 04-CRA-008**  
**QUAD: SAN PEDRO, CA**  
**DATE: 1964 PHOTOREVISED 1981**  
**SCALE: 1 - 24,000**

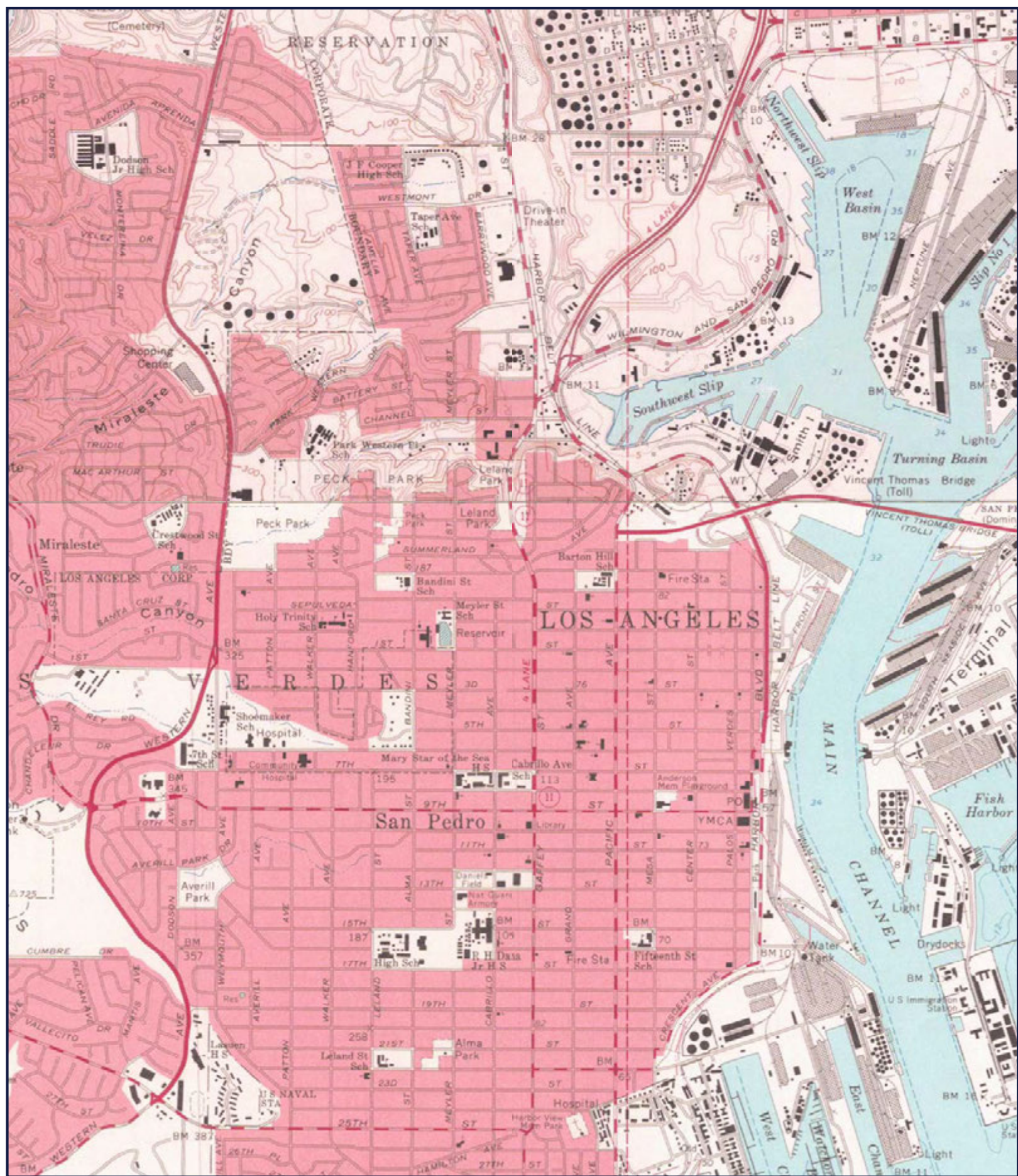




**SITE:** 04-CRA-008  
**QUAD:** SAN PEDRO, CA  
**DATE:** 1964 PHOTOREVISED 1972  
**SCALE:** 1 - 24,000



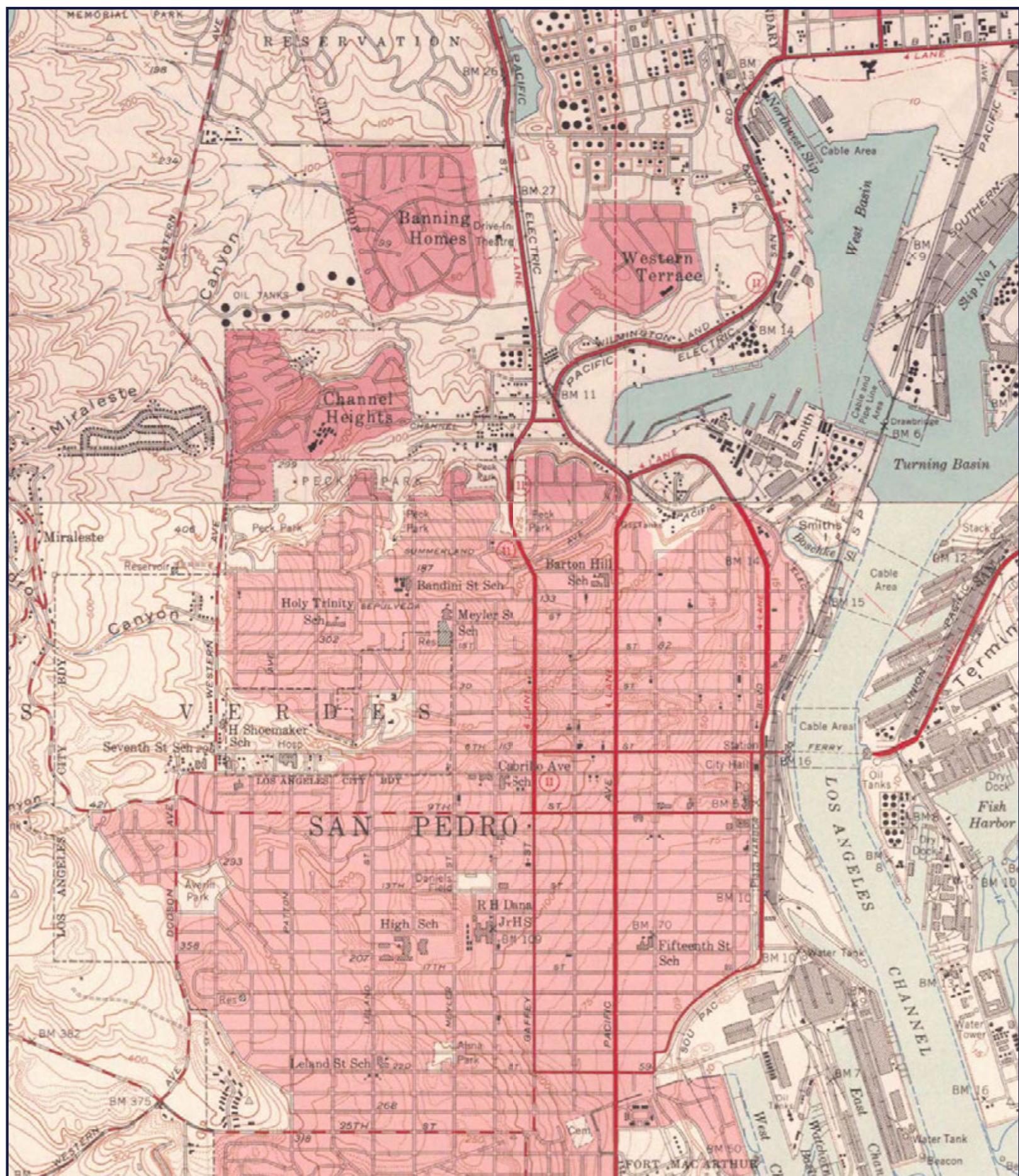




**SITE: 04-CRA-008**  
**QUAD: SAN PEDRO, CA**  
**DATE: 1964**  
**SCALE: 1 - 24,000**







**SITE:** 04-CRA-008  
**QUAD:** SAN PEDRO, CA  
**DATE:** 1951  
**SCALE:** 1 - 24,000







**SITE: 04-CRA-008**  
**QUAD: SAN PEDRO, CA**  
**DATE: 1944**  
**SCALE: 1 - 62,500**

**GeoSearch**





SITE: 04-CRA-008  
 QUAD: WILMINGTON, CA  
 DATE: 1925  
 SCALE: 1 - 24,000



(Redondo)

20°

40°

(Linn Bolson)



P A L O S V E D E S

I C O C E A N



SITE: 04-CRA-008  
 QUAD: SAN PEDRO, CA  
 DATE: 1892  
 SCALE: 1 - 62,500



**APPENDIX G**  
**AERIAL PHOTOGRAPHS**





**Site:** 04-CRA-008  
**Source:** USGS  
**Date:** 2005  
**County:** LOS ANGELES. CA  
**Scale:** 1" = 700'





Site: 04-CRA-008  
Source: USGS  
Date: 05-31-94  
County: LOS ANGELES. CA  
Scale: 1" = 700'





Site: 04-CRA-008  
Source: AMI  
Date: 01-23-82  
County: LOS ANGELES, CA  
Scale: 1" = 700'





Site: 04-CRA-008  
Source: TELEDYNE  
Date: 03-22-76  
County: LOS ANGELES. CA  
Scale: 1" = 700'





Site: 04-CRA-008  
Source: TELEDYNE  
Date: 08-22-68  
County: LOS ANGELES. CA  
Scale: 1" = 700'





Site: 04-CRA-008  
Source: ASCS  
Date: 06-01-53  
County: LOS ANGELES. CA  
Scale: 1" = 700'





Site: 04-CRA-008  
Source: FAIRCHILD  
Date: 06-17-47  
County: LOS ANGELES. CA  
Scale: 1" = 700'





Site: 04-CRA-008  
Source: ASCS  
Date: 12-31-28  
County: LOS ANGELES. CA  
Scale: 1" = 700'

**APPENDIX H**  
**OIL, GAS, AND WATERWELL REPORTS**



---

## **GeoPlus Oil & Gas Report**

---

<http://www.geo-search.net/QuickMap/index.htm?DataID=Standard0000015588>

*Click on link above to access the map and satellite view of current property*

*Target Property:*

**04-CRA-008**

**406 N GAFFEY ST**

**SAN PEDRO, Los Angeles County, California**

**90731**

*Prepared For:*

**The Source Group**

**Order #: 6718**

**Job #: 15588**

**Project #: 04-CRA-008**

**PO #: 04-CRA-008**

**Date: 03/19/2010**

## TARGET PROPERTY SUMMARY

**04-CRA-008**

**406 N GAFFEY ST**

**SAN PEDRO, Los Angeles County, California 90731**

USGS Quadrangle: **San Pedro, CA**

Target Property Geometry: **Point**

Target Property Longitude(s)/Latitude(s):

**(-118.292140, 33.746087)**

County/Parish Covered:

**Los Angeles (CA)**

Zipcode(s) Covered:

**San Pedro CA: 90731, 90732**

State(s) Covered:

**CA**

**\*Target property is located in Radon Zone 2.**

**Zone 2 areas have a predicted average indoor radon screening level between 2 and 4 pCi/L.**

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## DATABASE FINDINGS SUMMARY (SOURCE)

DATABASE	ACRONYM	LOCA- TABLE	UNLOCA- TABLE	SEARCH RADIUS (miles)
<b>STATE (CA)</b>				
OIL AND GAS	OG	0	0	0.5000
<b>SUB-TOTAL</b>		<b>0</b>	<b>0</b>	

TOTAL

0 0



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## DATABASE FINDINGS SUMMARY (DETAIL)

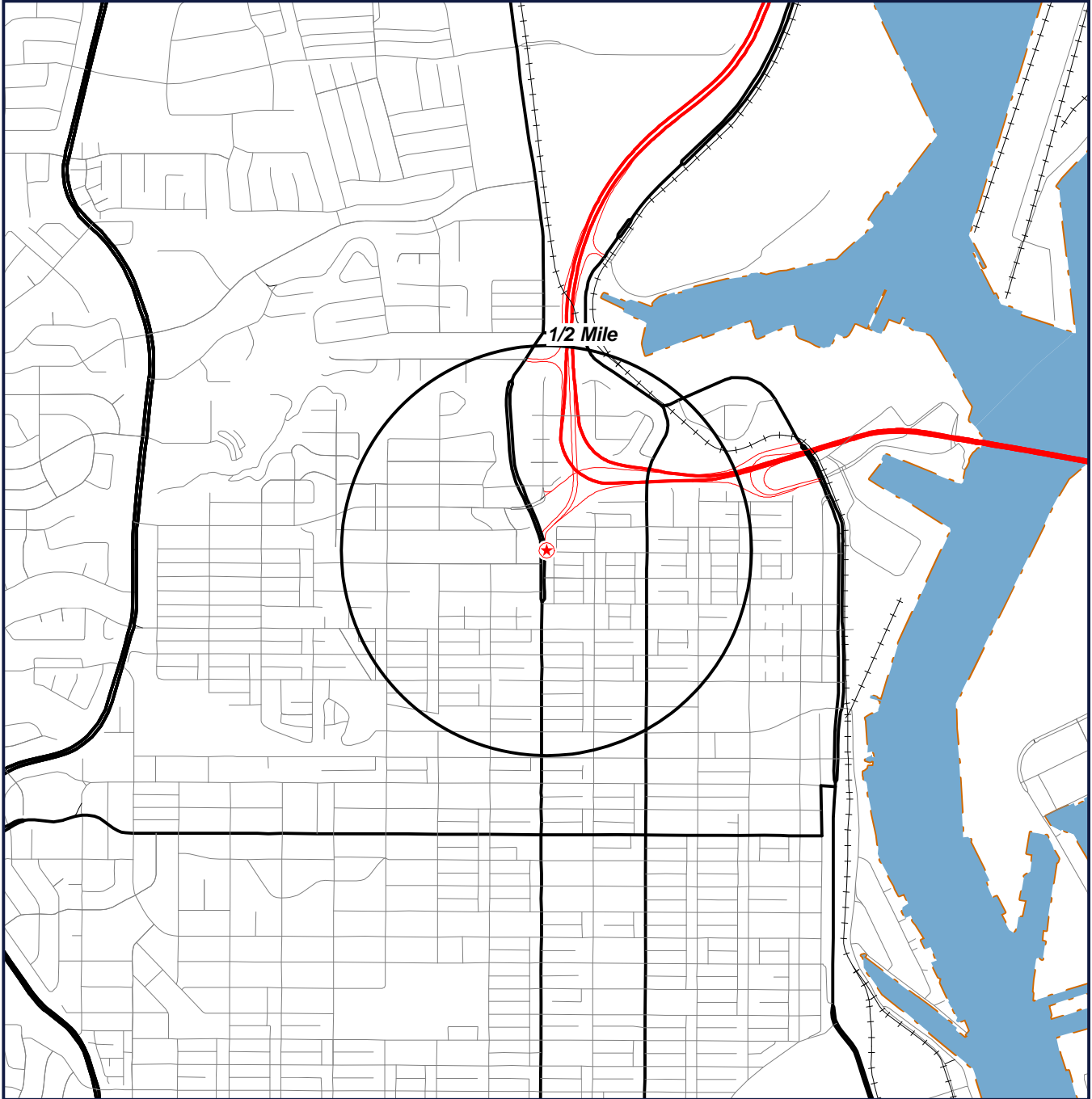
ACRONYM	Target Property	SEARCH RADIUS (miles)	1/8 Mile (> TP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
<b>STATE (CA)</b>								
OG		.5000	0	0	0	0	0	0
<b>SUB-TOTAL</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

TOTAL			0	0	0	0	0	0
-------	--	--	---	---	---	---	---	---



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**OIL / GAS WELL MAP**



- ★ Target Property (TP)
- Well Location

**04-CRA-008**  
**406 N GAFFEY ST**  
**SAN PEDRO, California**  
**90731**



0' 1000' 2000' 3000'  
SCALE: 1" = 2000'



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## ENVIRONMENTAL RECORDS DEFINITIONS - STATE (CA)

**OG** Oil and Gas

**VERSION DATE: 1/2009**

This oil and gas well database is maintained by the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources. The database information may change without notice. The Department of Conservation makes no warranties, whether expressed or implied, as to the suitability of the product for any particular purpose. Any use of this information is at the user's own risk.



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---

## ***GeoPlus Water Well Report***

---

<http://www.geo-search.net/QuickMap/index.htm?DataID=Standard0000015586>

*Click on link above to access the map and satellite view of current property*

*Target Property:*

**04-CRA-008**

**406 N GAFFEY ST**

**SAN PEDRO, Los Angeles County, California**

**90731**

*Prepared For:*

***The Source Group***

**Order #: 6718**

**Job #: 15586**

**Project #: 04-CRA-008**

**PO #: 04-CRA-008**

**Date: 03/19/2010**

## TARGET PROPERTY SUMMARY

**04-CRA-008**

**406 N GAFFEY ST**

**SAN PEDRO, Los Angeles County, California 90731**

USGS Quadrangle: **San Pedro, CA**

Target Property Geometry: **Point**

Target Property Longitude(s)/Latitude(s):

**(-118.292140, 33.746087)**

County/Parish Covered:

**Los Angeles (CA)**

Zipcode(s) Covered:

**San Pedro CA: 90731, 90732**

State(s) Covered:

**CA**

**\*Target property is located in Radon Zone 2.**

**Zone 2 areas have a predicted average indoor radon screening level between 2 and 4 pCi/L.**

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## DATABASE FINDINGS SUMMARY (SOURCE)

DATABASE	ACRONYM	LOCA- TABLE	UNLOCA- TABLE	SEARCH RADIUS (miles)
<b><u>FEDERAL</u></b>				
UNITED STATES GEOLOGICAL SURVEY NATIONAL WATER INFORMATION SYSTEM	NWIS	0	0	0.5000
<b>SUB-TOTAL</b>		<b>0</b>	<b>0</b>	
<b><u>STATE (CA)</u></b>				
CALIFORNIA DEPARTMENT OF WATER RESOURCES WATER WELLS	DWRWELLS	0	0	0.5000
<b>SUB-TOTAL</b>		<b>0</b>	<b>0</b>	

TOTAL

0      0



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## DATABASE FINDINGS SUMMARY (DETAIL)

ACRONYM	Target Property	SEARCH RADIUS (miles)	1/8 Mile (> TP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
<b><u>FEDERAL</u></b>								
NWIS		.5000	0	0	0	0	0	0
<b>SUB-TOTAL</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b><u>STATE (CA)</u></b>								
DWRWELLS		.5000	0	0	0	0	0	0
<b>SUB-TOTAL</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

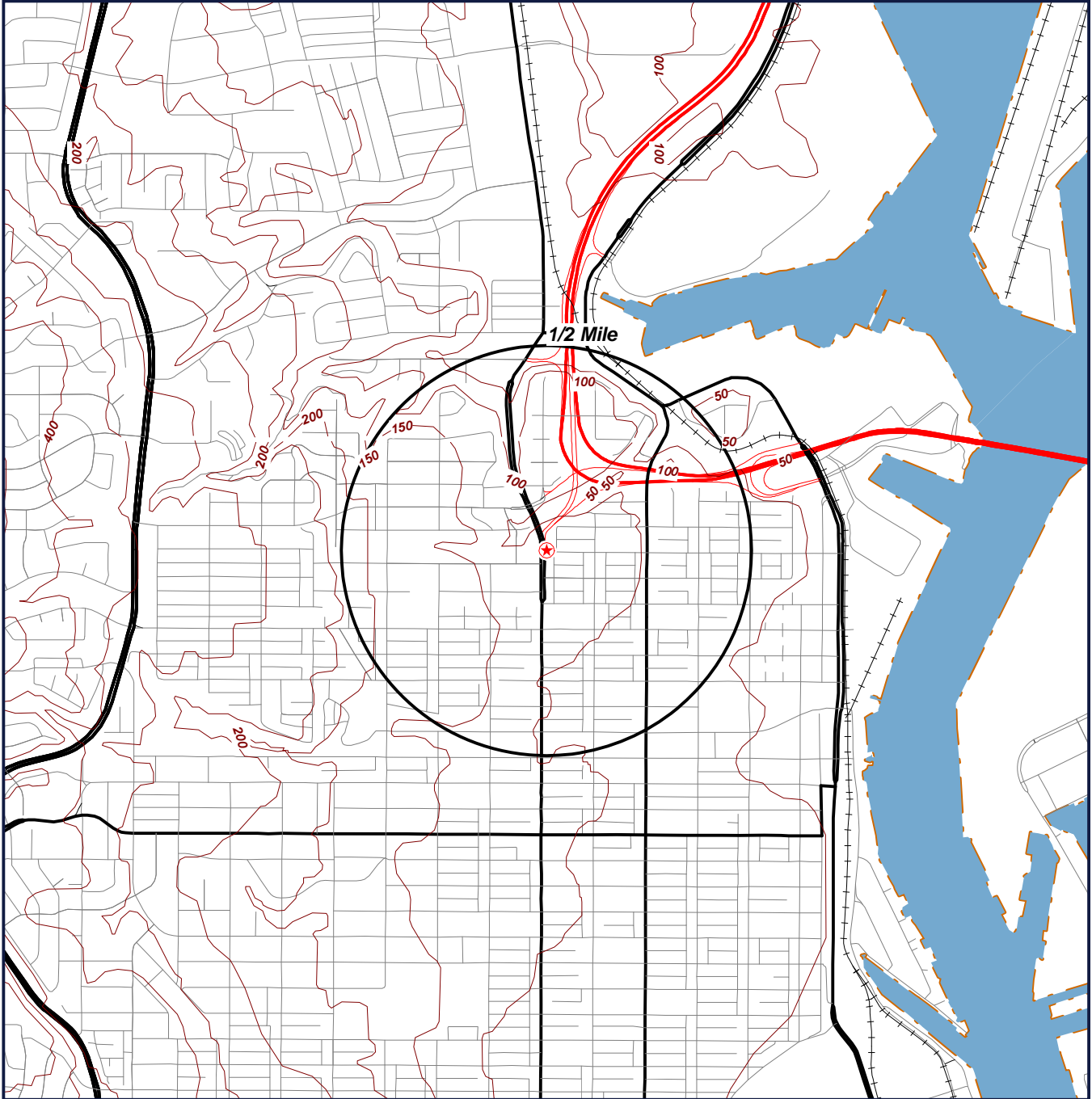
---

<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
--------------	----------	----------	----------	----------	----------	----------	----------



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# WATER WELL MAP



★ Target Property (TP)

**04-CRA-008**  
**406 N GAFFEY ST**  
**SAN PEDRO, California**  
**90731**

CONTOUR LINES REPRESENTED IN FEET



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## ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

**NWIS**

United States Geological Survey National Water Information System

**VERSION DATE: 8/2009**

The USGS National Water Information System includes water-resources data for approximately 1.5 million sites across the United States from 1857 to present. The USGS investigates the occurrence, quantity, quality, distribution, and movement of surface and underground waters and disseminates the data to the public, State and local governments, public and private utilities, and other Federal agencies involved with managing our water resources.



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## *ENVIRONMENTAL RECORDS DEFINITIONS - STATE (CA)*

**DWRWELLS** California Department of Water Resources Water Wells

**VERSION DATE: 9/2009**

The California Department of Water Resources (DWR) maintains this database of water wells. This hydrological data is collected by the DWR's Division of Planning and Local Assistance and other organizations inside and outside the Department.



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**APPENDIX I**  
**ENVIRONMENTAL LIEN SEARCH**



---

<b>Order Number</b>	GS#6718	<b>Effective Date</b>	12/20/2006		
<b>Last name</b>	H & M L.L.C.				
<b>First name</b>		<b>County</b>	LOS ANGELES		
<b>Street address</b>	406 N. GAFFEY STREET	<b>City</b>	SAN PEDRO	<b>State</b>	CA
<b>Mailing address</b>					
<b>Parcel number</b>	7448-009-029	<b>Alternate APN</b>			
<b>Legal Description</b>					

*Federal, state, and local environmental records have been researched, resulting in the following list of recorded environmental liens and AUL's (activity and usage limitations) for the subject property having been found:*

**ENVIRONMENTAL LIENS, IC s, LUC s, AUL s, & DEUR s**

- 1 NONE FOUND
- 2 NONE FOUND
- 3
- 4

**JUDGMENTS, LIENS**

- 1 NONE FOUND
- 2
- 3
- 4

**OTHER INFORMATION: NOTE:**  
**RESTRICTION, NO SERVICE**  
**STATION. BUYER MUST**  
**PERFORM DUE DILLIGENCE.**

**SHELL OIL COMPAMY CLEAN-  
UP IN PROGRESS.**

**APPENDIX J**

**FILE REVIEW DOCUMENTS FROM REGULATORY AGENCIES**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - LOS ANGELES FILES**

# Underground Tank Abandonment Report

at

**Shell Service Station**  
406 North Gaffey Street  
San Pedro, California

October 2, 2000

PREPARED FOR

**EQUIVA**  
SERVICES LLC

**Mr. Joe Lentini**  
Equiva Services LLC  
P. O. Box 7869  
Burbank, California 91510-7869

BY

**WGR**

Southwest, Inc.  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

2005 JUN 14 PM 2:03  
LOS ANGELES REGION

**Underground Tank Abandonment Report**  
**Shell Service Station**  
406 North Gaffey Street  
San Pedro, California

**Introduction**

The site is a Shell service station and garage owned by Equilon Enterprises LLC (Equilon). It is located on the northeast corner of the intersection of Gaffey Street and O'Farrell Street in San Pedro, California (Figure 1).

As part of potential site divestment activities, Equilon removed the existing underground piping and UST's. This report discusses the methods and documents the removal of the underground fueling system and waste oil UST.

**Site Setting**

The site is located in a commercial/residential district of San Pedro, California at an elevation of approximately 130 feet above mean sea level. A single-family residence and the entrance/exit ramp to the 110 Freeway are located north of the subject property. Oliver Street is located east of the subject property followed by single-family residences. O'Farrell Street is located south of the subject property followed by residences and a two-story commercial building. Gaffey Street is located west of the subject property followed by single-story commercial buildings and residences.

The property consists of a service station building with three service bays, two dispenser islands each equipped with two multi-product dispenser pumps, three 10,000-gallon fiberglass gasoline underground storage tanks (UST's) and associated underground product piping and one 550 gallon fiberglass waste oil UST.

**Site History**

In July 1988, routine UST removal and replacement operations were conducted at the subject property. Four gasoline USTs were removed: one 8,000 gallon, two 5,000 gallon, and one 10,000 gallon USTs were removed and replaced with three 10,000 gallon double walled fiberglass USTs. Impacted soil located beneath the former USTs was excavated and transported from the site to an appropriate disposal facility. Details of the UST removal operations and soil sampling are presented in a W. W. Irwin Tank Removal Report dated August 10, 1988.

In a letter dated March 12, 1990, following review of the UST removal report, the City of Los Angeles Fire Department granted site closure. \*

As part of potential Equilon site divestment activities, nine soil borings were advanced and sampled at the subject site on January 13, 2000 to ascertain whether detectable hydrocarbons existed beneath the site and if so, to what degree. Sediments encountered during the drilling investigation consisted mainly of brown and gray clay with minor amounts of silt and fine-grained sand. Groundwater was encountered at a depth of approximately 35 feet.

Analytical results of soil sample analyses indicate that detectable TPHg, BTEX, or MTBE was present in each soil boring drilled at the subject property. Additionally, TBA and DIPE were found to occur in several of the borings. Maximum TPHg and benzene concentrations of 49 mg/kg and 2.5 mg/kg occurred in samples collected at or below the groundwater interface, an indication that there may be impacted groundwater beneath the site. The results of the January 13, 2000 site assessment are contained in WGR's Phase 2 Site Assessment Report dated February 12, 2000.

groundwater

### **Regional and Local Hydrogeologic Setting**

The subject site is approximately two miles west of the Palos Verdes Hills, which border the Coastal Plain of Los Angeles County to the southwest. The site is bounded on the north by the Palo Verde Fault Zone and on the south by the Cabrillo Fault. The main channel of the Los Angeles Harbor lies approximately 1 mile east of the site. The Palos Verdes Hills highlands are almost entirely composed of rocks of pre-Tertiary and Tertiary age and are essentially non-water bearing. The Palos Verdes Hills are an uplifted fault block composed of Catalina schist basement and marine sediments of Tertiary (Miocene Monterey Formation) and Quaternary age that have been folded into a general anticlinal form.

The current depth to groundwater beneath the site is approximately 35 feet bgs. The site is located in the southeastern part of the West Coast Groundwater Basin, which is separated from the Central Basin to the north-northeast by the Newport-Inglewood uplift. Natural underflow recharge to the West Coast Basin is provided by the Central Basin, which is partially impeded by the Newport-Inglewood uplift zone.

The upper surface of the Gage Aquifer occurs beneath the site at a depth of approximately 35 feet. The Gage aquifer consists of fine to medium sand with variable amounts of gravel, sandy silt and clay. The thickness of the Gage ranges up to 160 feet and is estimated to be approximately 100 feet thick in the site vicinity based on data from wells within the immediate area installed by the Los Angeles County Flood Control District as part of the Dominguez Gap Barrier Project. The contact between the base of the Lakewood and the San Pedro Formations is an unconformity.

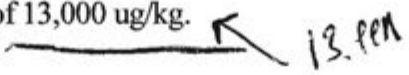
### Dispenser/Product Line/Vent Line Samples

A total of four soil samples were collected from below the fuel dispensers/product lines utilizing a backhoe. Compliance samples D-1 through D-4 were reported to contain detectable concentrations of TPHg ranging up to 14 mg/g in sample D-2. Sample D-1 contained 4.0 mg/kg TPHg, while TPHg was not detected in samples D-3 and D-4. Benzene and toluene were not detected in any of the dispenser/product line samples. Low levels of ethylbenzene (0.076 mg/kg) and total xylenes (0.18 mg/kg) were detected in sample D-2. Ethylbenzene and total xylenes were not detected in samples D-1, D-3, and D-4. Low levels of MTBE were detected in samples D-1 and D-2 and confirmed by EPA method 8260B (7.5 and 6.3 ug/kg, respectively).

Subsequent to UST removal and collection of compliance samples, two additional samples were collected approximately two feet beneath the vent lines (VL-1 and VL-2). The vent line samples were collected utilizing a track-mounted excavator. Analytical results for these samples reported no detectable concentrations of TRPH, TPH, or BTEX; however, a low concentration of MTBE was reported in sample VL-2 at a concentration of 0.093 mg/kg. Confirmation testing by EPA method 8260B indicated the presence of detectable MTBE in this sample at a concentration of 97 ug/kg. MTBE was not detected in sample VL-1.

Total lead was detected in each sample analyzed with the maximum concentration occurring in sample T-6 (34.9 mg/kg). The analytical results of the soil samples are summarized in **Table 1** of this report. Copies of the laboratory reports and chain-of-custody records for the soil samples are included in **Appendix C** of this report.

### Summary

- Three 10,000-gallon, fiberglass underground storage tanks (UST's), one 550-gallon, fiberglass waste oil tank, and associated product piping were removed during field operations conducted on June 16, 2000. Immediately after UST removal, soil samples were collected from below the UST inverts and fuel dispensers/product lines. Vent line samples were collected on June 20, 2000.
- TPH concentrations were present in all of the six UST soil samples collected from the tank pit area with the maximum concentration reported in sample T-1 (360 mg/kg). No detectable BTEX concentrations were reported in any of the UST samples. MTBE was reported in all of the six UST samples with the maximum concentration reported in sample T-1 (13 mg/kg by method 8021B). Confirmation testing by EPA method 8260B indicated the presence of detectable MTBE in this sample at a concentration of 13,000 ug/kg. 
- TRPH was not detected in the sample collected from below the waste oil UST (WO-1). No detectable concentrations of TPH, BTEX, or MTBE were reported in this sample.



- Compliance samples D-1 through D-4 were reported to contain detectable concentrations of TPHg ranging up to 14 mg/g in sample D-2. Sample D-1 contained 4.0 mg/kg TPHg, while TPHg was not detected in samples D-3 and D-4. Benzene and toluene were not detected in any of the dispenser/product line samples. Low levels of ethylbenzene (0.076 mg/kg) and total xylenes (0.18 mg/kg) were detected in sample D-2. Ethylbenzene and total xylenes were not detected in samples D-1, D-3, and D-4. Low levels of MTBE were detected in samples D-1 and D-2 and confirmed by EPA method 8260B (7.5 and 6.3 ug/kg, respectively).
- Analytical results for the vent line samples (VL-1 and VL-2) reported no detectable concentrations of TRPH, TPH, or BTEX; however, a low concentration of MTBE was reported in sample VL-2 at a concentration of 0.093 mg/kg. Confirmation testing by EPA method 8260B indicated the presence of detectable MTBE in this sample at a concentration of 97 ug/kg. MTBE was not detected in sample VL-1.
- Based on the analytical data generated during the UST removal field operation and from a previous site assessment, and the estimated depth to groundwater (35 feet), there is a probability that groundwater at the site may be impacted.
- An Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report is included in **Appendix D**.

WGR Southwest, Inc.



Kevin M. Clark  
Project Manager

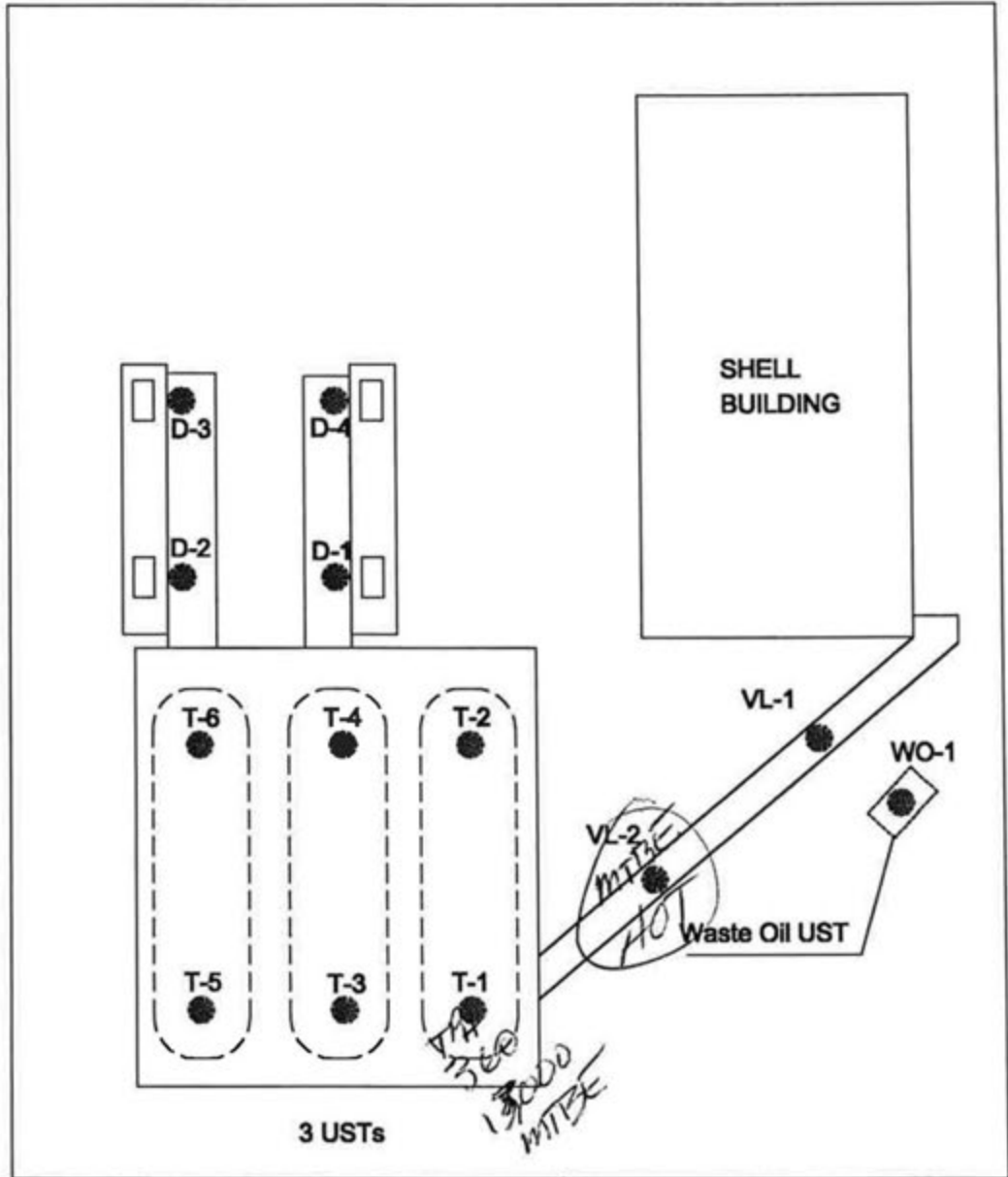


J Graydon Mertz, Project Manager  
California Registered Geologist No. 4841

Alley

N. Gaffey Street

Oliver Street



O'Farrell Street



Legend

**WGR**

Southwest, Inc.

11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

Equiva Services LLC

SITE PLAN

408 N. Gaffey Street

San Pedro, California

DATE  
9/26/00

PROJECT NUMBER  
142.EQL.00

DWN BY  
JRR

DWG #

Figure

2

**TABLE 1. SUMMARY OF SOIL SAMPLE ANALYSES  
UNDERGROUND TANK ABANDONMENT**

**SHELL STATION  
406 N. Gaffey Street  
San Pedro, California**

Sample Number	Date Sampled	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE 8021 (mg/kg)	MTBE 8260B (ug/kg)	Total Lead 7420 (mg/kg)	TRPH 418.1 (mg/kg)
T-1	6/16/00	360	ND<0.13	ND<0.13	ND<0.13	ND<0.25	13	13000	12.3	NA
T-2	6/16/00	4.9	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	5.1	6300	12.7	NA
T-3	6/16/00	5.5	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	6.5	7500	13.2	NA
T-4	6/16/00	3.3	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	5.8	8600	13.1	NA
T-5	6/16/00	3.9	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	2.8	4000	21.4	NA
T-6	6/16/00	1.9	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	1.7	7500	34.9	NA
D-1	6/16/00	4.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.080	7.5	13.9	NA
D-2	6/16/00	14	ND<0.0050	ND<0.0050	0.076	0.18	0.027	6.3	15.8	NA
D-3	6/16/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA	11.8	NA
D-4	6/16/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA	11.9	NA
WO-1	6/16/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA	17.8	ND<10
VL-1	6/20/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.025	NA	21.3	NA
VL-2	6/20/00	ND<0.50	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.093	97	13.7	NA

June 16, 2000

Los Angeles City Fire Department  
Bureau of Fire Prevention  
200 North Main Room 930  
Los Angeles, CA 90012  
Attn: Inspector Dean J. Stivason


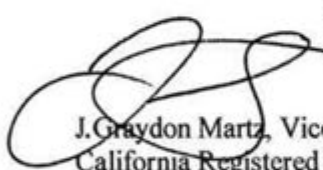
Subject: **Experience Verification**  
Mr. Kevin Clark

Dear Inspector Stivason:

This correspondence will serve as verification that Mr. Kevin Clark, WGR Southwest, Inc., is working under the supervision of a California Registered Geologist while employed by WGR Southwest, Inc. to collect samples from the UST removal located at 406 N. Gaffey, San Pedro, CA.

If you have any questions, please do not hesitate to contact me at (562) 799-8510.

Respectfully,  
WGR Southwest, Inc.



J. Graydon Martz, Vice President  
California Registered Geologist No. 4841

/JGM

# LA CITY FIRE DEPT. UNDERGROUND TANK ABANDONMENT REPORT

FACILITY ADDRESS: 406 N GAFFEY  
 PERMIT # 8991 DATE 6-16-00

- FULL REPORT DUE IN 30 DAYS CONSISTING OF THE FOLLOWING:
- A. SOIL ANALYSIS, FROM ALL SAMPLES TAKEN ON THE ABOVE DATE.
  - B. PLOT PLAN, CLEARLY ILLUSTRATING THE LOCATION SOIL SAMPLES WERE TAKEN FROM.
  - C. CHAIN OF CUSTODY.
  - D. UNIFORM MANIFEST FOR SOIL REMOVED FROM SITE.
  - E. CERTIFICATE OF DISPOSAL FOR TANKS AND PIPING.
  - F. MARINE CHEMIST TANK CERT, RINSE MANIFEST ANY PAPER WORK PERTAINING TO THIS ABANDONMENT SITE.
  - G. ALL REPORTS IN DUPLICATE, NO COMPOSITES. RESULTS IN PARTS PER MILLION, ALL SAMPLES TO BE TESTED FOR BTXE AND MTBE

GAS 8015 M 8020 BTXE-MTBE 7420 TOTAL LEAD	DIESEL 8015 M 8020 BTXE-MTBE 7420 TOTAL LEAD	WASTE OIL/OIL 418.1 8020 BTXE-MTBE 7420 TOTAL LEAD
--	---	---

PRODUCT	# OF SAMPLES	DISPENSER PITS	4
TANK 1 <u>GAS</u>	<u>2</u>	PIPE TRENCHES	_____
TANK 2 <u>GAS</u>	<u>2</u>	SOIL PILES	_____
TANK 3 <u>GAS</u>	<u>2</u>	BACKGROUND LEAD	_____
TANK 4 <u>W/OIL</u>	<u>1</u>	WATER SAMPLE	_____
TANK 5 _____	_____		
TANK 6 _____	_____		
TANK 7 _____	_____	TOTAL SAMPLES	<u>11</u>

MAIL TO INSPECTOR LISTED BELOW WITHIN 30 DAYS. IF SAMPLES EXCEED NON-DETECTION LEVELS INCLUDE A STATE UNAUTHORIZED RELEASE FORM, OR YOUR REPORT WILL NOT BE PROCESSED.



DEAN J. STIVASON  
 FIRE INSPECTOR  
 LOS ANGELES FIRE DEPARTMENT  
 ENVIRONMENTAL UNIT

**THIRD QUARTER 2006  
GROUNDWATER MONITORING REPORT**

at

**Former Shell Station  
406 North Gaffey Street  
San Pedro, California  
RWQCB Case # 907310543**

**September 22, 2006**

for

**Mr. Joseph Lentini  
Shell Oil Products US  
20945 South Wilmington Avenue  
Carson, California 90810**

prepared by

**WGR**

---

**Southwest, Inc.**

**11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720**

**WGR Southwest, Inc. Project No. 142.EQL.00**

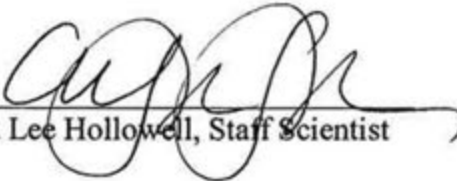
**THIRD QUARTER 2006  
GROUNDWATER MONITORING REPORT**

Former Shell Station  
200 Montara Road at Dill Road  
Barstow, California

**LIMITATIONS, WARRANTIES AND CERTIFICATION**

This report was prepared by WGR Southwest, Inc. for the exclusive use, in its entirety, by Shell Oil Products US and other authorized parties. The interpretations and conclusions presented in this report have been developed in accordance with generally accepted professional standards in the industry. The interpretations and conclusions provided in this report are based on information supplied by a third party service company, as such WGR Southwest, Inc. does not warrant information supplied by independent parties. No other warranty, either expressed or implied, is made.

Interpretations, conclusions and opinions provided by WGR Southwest, Inc. are based on specific information collected during a specific time interval, as documented in this report. Development of additional data or changes in site conditions due to chemical migration, mitigation or releases may render the interpretations, conclusions and opinions in this report invalid. WGR Southwest, Inc. assumes no responsibility for conditions resulting from a change in Federal, State or local regulations.

**WGR Southwest, Inc.****Prepared by:**  
Carla Lee Hollowell, Staff Scientist**Approved by:**  
Graydon Martz, Project Manager  
CA Professional Geologist No. 4841



## THIRD QUARTER 2006 GROUNDWATER MONITORING REPORT

Former Shell Station  
406 North Gaffey Street at O'Farrell Street  
San Pedro, California

### INTRODUCTION

The site is a former Shell station located on the northeast corner of the intersection of North Gaffey Street and O'Farrell Street in San Pedro, California (Site Location Map, **Figure 1**). The site is a vacant lot. Four groundwater monitoring wells were installed at the site in June 2006 (**Figure 2**). The wells were gauged and developed on July 20, 2006. Groundwater monitoring and sampling for the third quarter 2006 monitoring period was conducted by Blaine Tech Services, Inc. on July 28, 2006. This report documents the methods and presents the findings of this event.

### GROUNDWATER MONITORING PROCEDURES AND RESULTS

Prior to purging and sampling each well, the depth to groundwater and/or liquid phase hydrocarbons were measured for the groundwater monitoring wells using an oil/water interface probe. A copy of the gauging/well purge field data sheet is attached as **Appendix A**.

Based on the depth to groundwater data, water flow across the site is primarily to the north, with an average gradient of 0.016 ft/ft. Liquid phase petroleum hydrocarbon (free product) was not observed in any of the wells. Results of the groundwater monitoring data collected on July 28, 2006, are presented in **Table 1**. The relative groundwater elevations are plotted and contoured on **Figure 3**.

### GROUNDWATER SAMPLING PROCEDURES

On July 28, 2006, groundwater samples were collected from wells MW-1 through MW-4. The wells were purged prior to sampling until pH, temperature, and conductivity measurements stabilized. A copy of the gauging/well purge field data sheet is attached in **Appendix A**. The wells were allowed to recharge to at least 80% of the static head prior to sampling. The samples were collected using a bailer for each well. The samples were chilled and shipped to a California state certified laboratory for analysis. Each of the samples was analyzed for total



petroleum hydrocarbons as gasoline (TPH-g) by GC/MS, and for benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE) and other fuel oxygenates by EPA Method 8260B.

### **ANALYTICAL RESULTS OF GROUNDWATER SAMPLES**

The analytical results for the groundwater samples collected during the third quarter of 2006 are summarized in **Table 1**. TPH-g concentrations were detected in all four of the samples collected during this quarterly event. The maximum TPH-g concentrations were detected in the sample collected from well MW-3, at a concentration of 70,000 ug/L. Benzene concentrations were detected in each of the well sampled this quarter. The maximum benzene concentration (11,000 ug/L) was detected in the sample collected from well MW-3. MTBE concentrations were detected in three of the four wells sampled. The maximum MTBE concentration was detected in the sample collected from well MW-2, at a concentration of 580 ug/L. TBA concentrations were detected in two wells, with the maximum concentration (1,400 ug/L) detected in the sample collected from well MW-2. The dissolved TPH-g, benzene, and MTBE concentrations detected in the wells on July 28, 2006, are plotted on **Figures 4, 5, and 6** respectively. The dissolved TBA concentrations are shown on **Figure 7**. The laboratory reports and chain of custody records for the groundwater samples are included in **Appendix A**.

### **GROUNDWATER DISPOSAL**

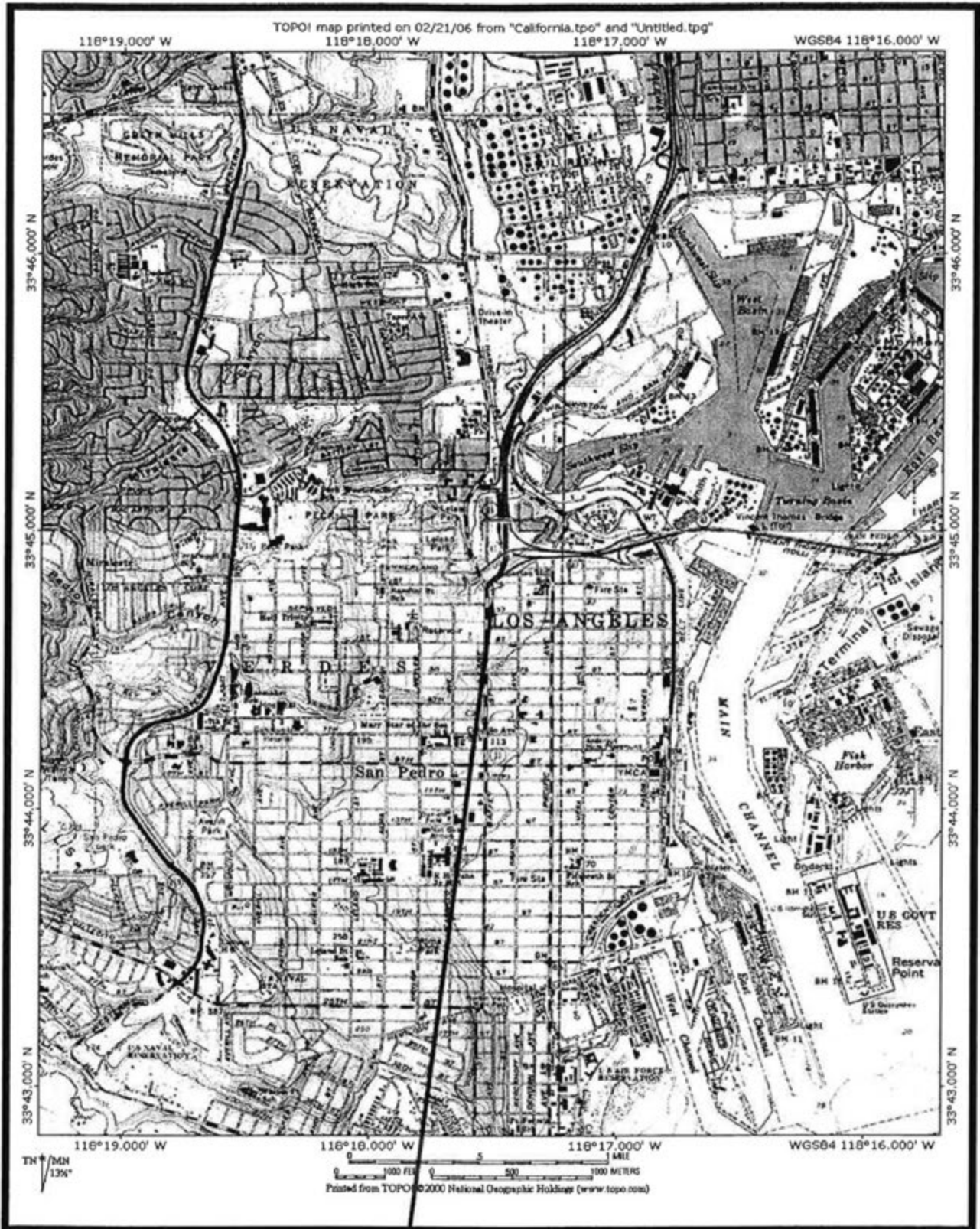
The wastewater generated by developing the wells in July (approximately 220 gallons) and by purging the wells on July 28, 2006, (approximately 122 gallons) was transported, as non-hazardous waste, to the Crosby and Overton disposal facility in Long Beach, California. A copy of the disposal documentation is included in **Appendix B**.

### **SUMMARY**

- During the third quarter of 2006, depth to groundwater was monitored and groundwater samples were collected from four monitoring wells at the site.
- The maximum TPH-g concentrations were detected in the sample collected from well MW-3, at a concentration of 70,000 ug/L.
- The maximum benzene concentration (11,000 ug/L) was detected in the sample collected from well MW-3.

- The maximum MTBE concentration was detected in the sample collected from well MW-2, at a concentration of 580 ug/L.
- TBA concentrations were detected in two wells, with the maximum concentration (1,400 ug/L) detected in the sample collected from well MW-2.
- Based on the depth to groundwater data, water flow across the site is primarily to the north, with an average gradient of 0.016 ft/ft.

**ATTACHMENTS**  
Figures and Table



**Site Location**

**Legend**

Source: TOPO 2000 CD-ROM

**WGR**

**Southwest, Inc.**

11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

**SHELL OIL PRODUCTS US**

**Site Vicinity Map**

406 N. Gaffey Street

San Pedro, CA

DATE  
2006

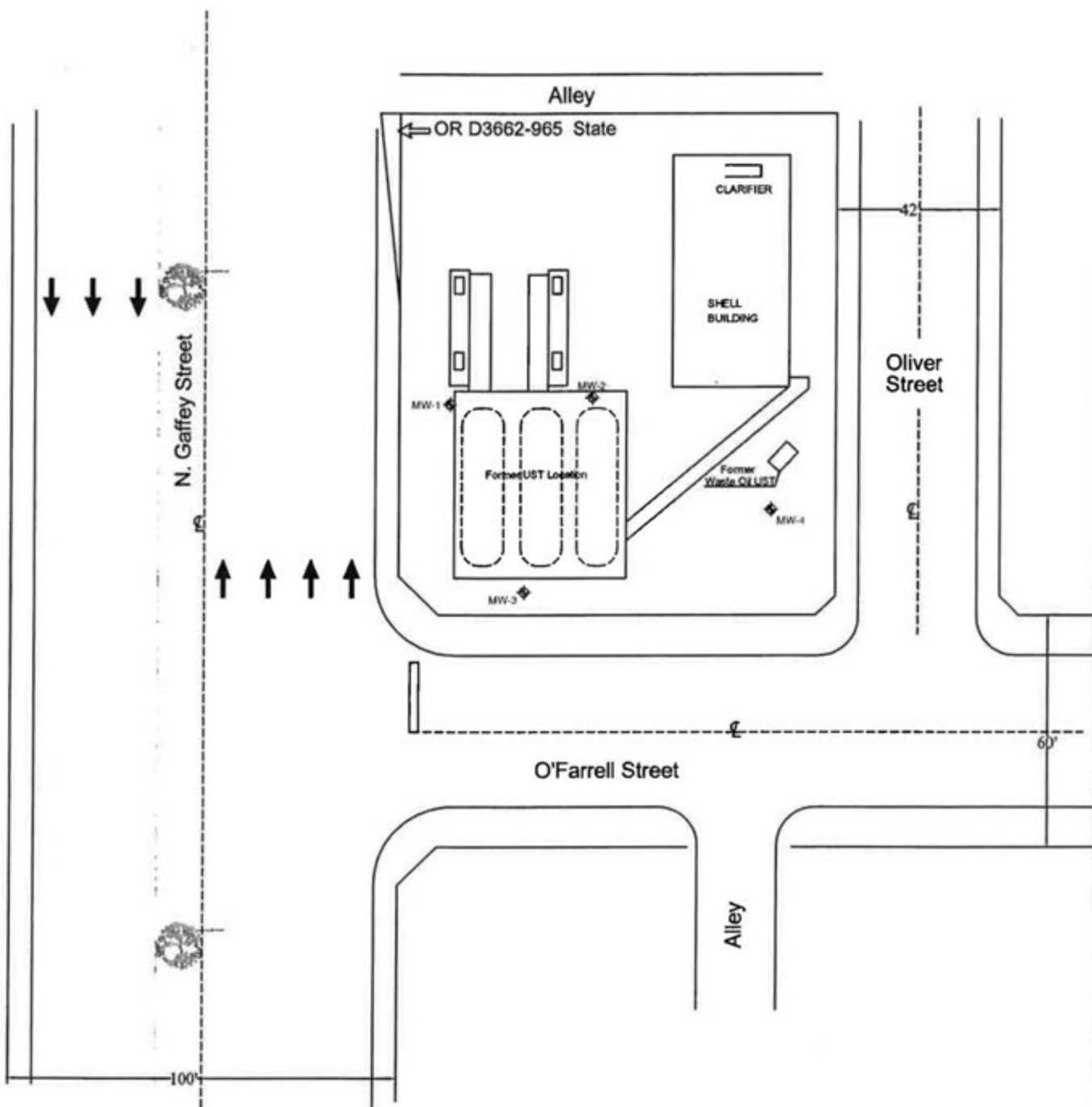
PROJECT NUMBER  
142.EQL.00

DWN BY  
JGM

DWG #

Figure

1

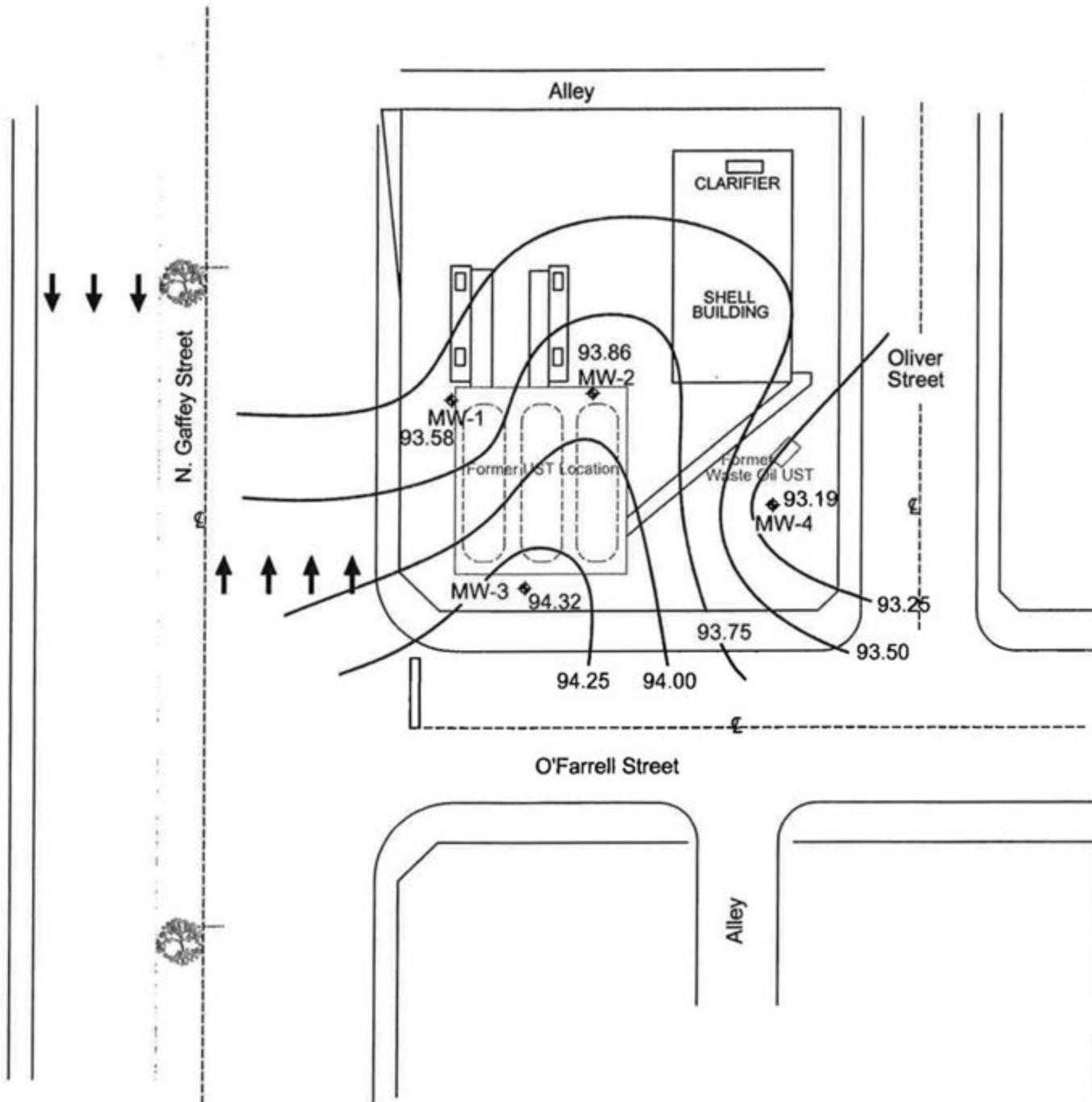


**LEGEND**  
 ◆ Groundwater Monitoring Wells 6-2006

**WGR**  
 Southwest, Inc.  
 11021 Winners Circle, Suite 101  
 Los Alamitos, CA 90720

SHELL OIL PRODUCTS US  
**SITE PLAN**  
 406 N. Gaffey Street San Pedro, California  
 DATE 2006 PROJECT NUMBER 142.EQL.00 DWN BY JRR DWG #

Figure  
**2**



**LEGEND**

- ◆ Groundwater Monitoring Wells

**WGR**

**Southwest, Inc.**  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

SHELL OIL PRODUCTS US

**Depth to Groundwater (Ft) 3Q06**

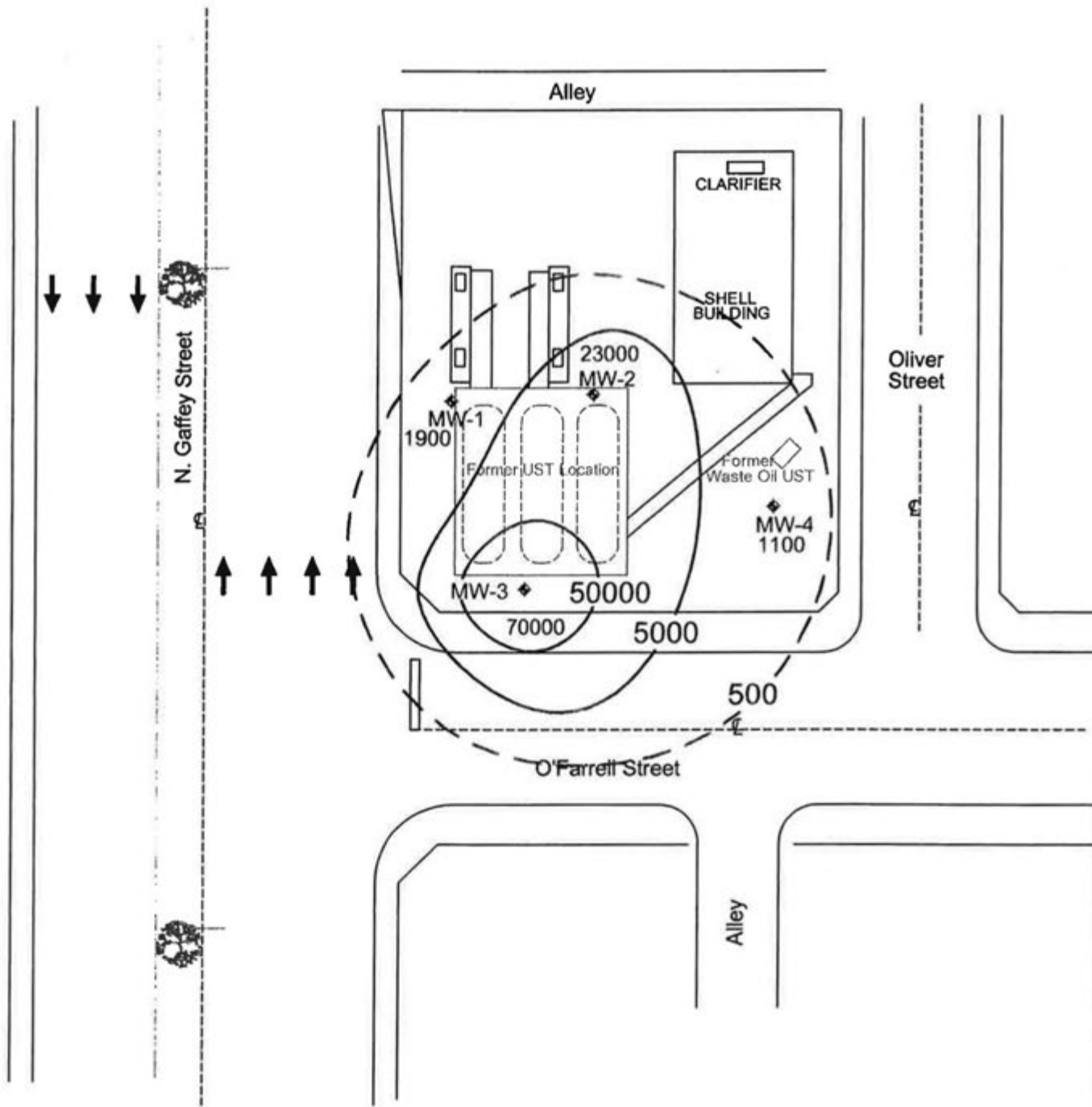
406 N. Gaffey Street San Pedro, California

DATE  
2006

PROJECT NUMBER  
142.EQL.00

DWN BY  
JRR

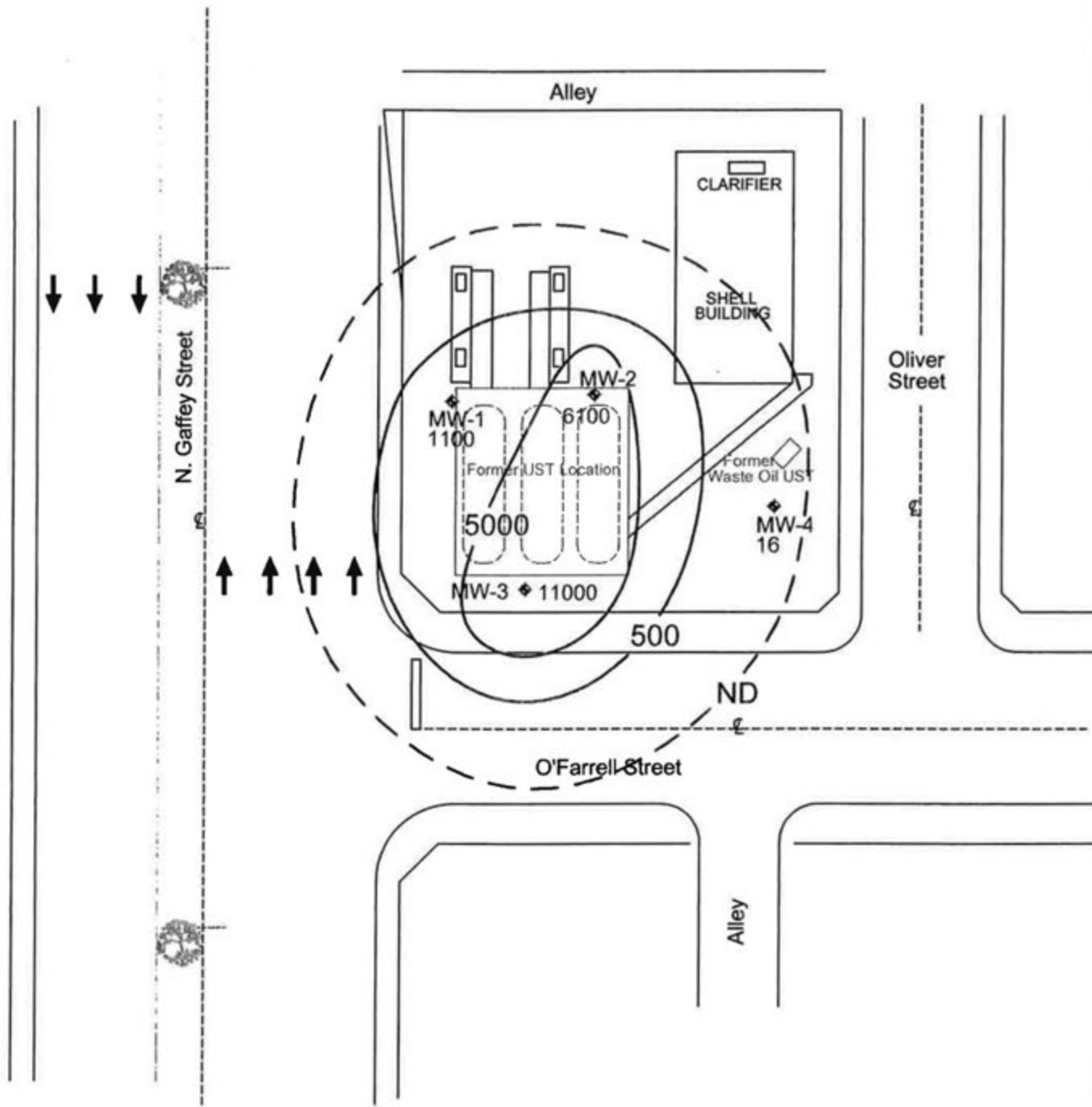
Figure  
**3**



**LEGEND**

- ◆ Groundwater Monitoring Wells

<p><b>WGR</b></p> <p>Southwest, Inc.</p> <p>11021 Winners Circle, Suite 101 Los Alamitos, CA 90720</p>	<p>SHELL OIL PRODUCTS US</p>		<p>Figure <b>4</b></p>
	<p>TPH-g CONCENTRATIONS (ug/L) 3Q06</p>		
<p>406 N. Gaffey Street</p>	<p>San Pedro, California</p>	<p>DWN BY JRR</p>	
<p>DATE 2006</p>	<p>PROJECT NUMBER 142.EQL.00</p>		

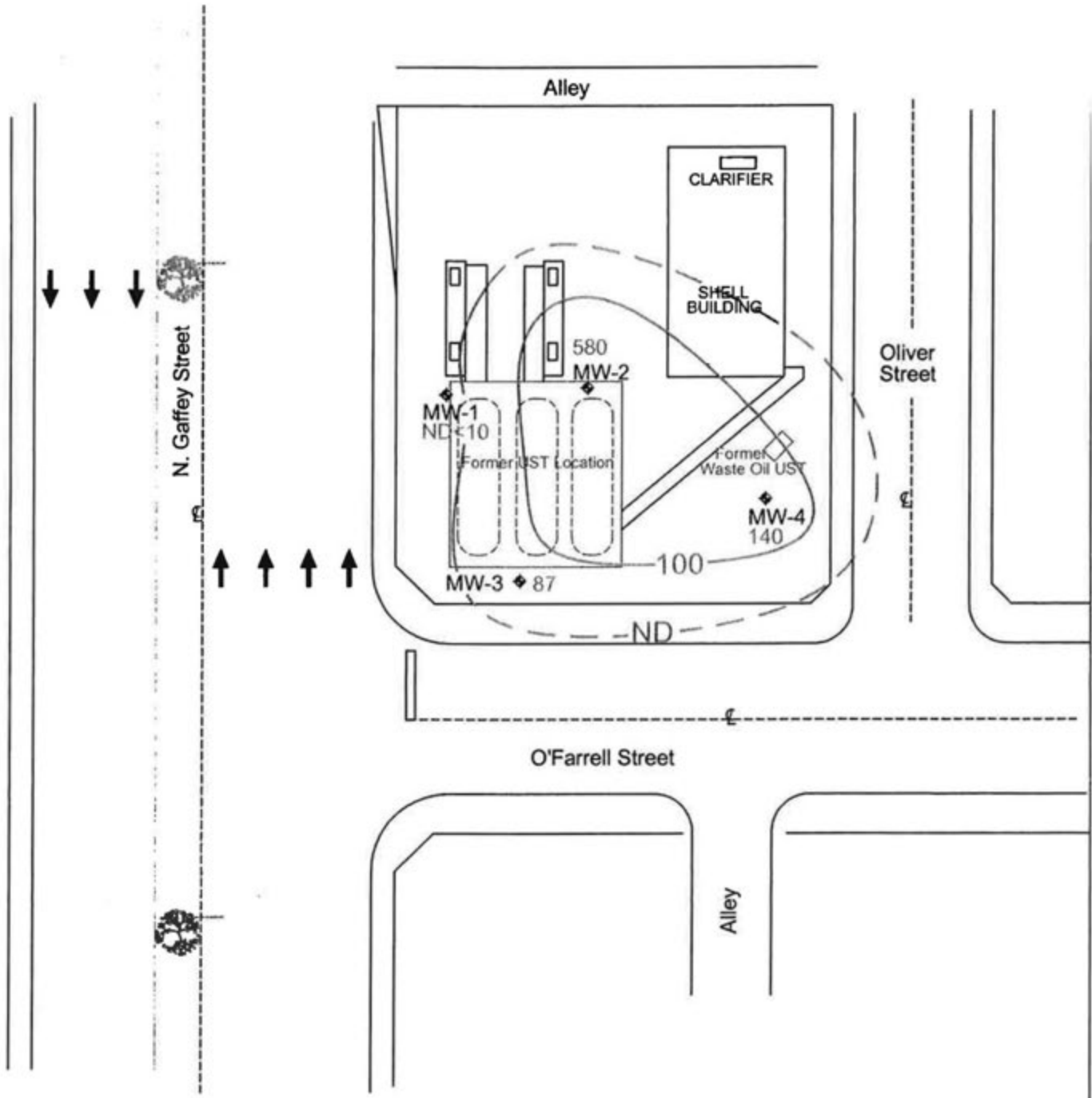


**LEGEND**

- ◆ Groundwater Monitoring Wells

<p><b>WGR</b></p> <p>Southwest, Inc.</p> <p>11021 Winners Circle, Suite 101 Los Alamitos, CA 90720</p>	<p>SHELL OIL PRODUCTS US</p>		<p>Figure <b>5</b></p>
	<p>BENZ CONCENTRATIONS (ug/L) 3Q06</p>		
<p>406 N. Gaffey Street</p>	<p>San Pedro, California</p>	<p>DWN BY JRR</p>	
<p>DATE 2006</p>	<p>PROJECT NUMBER 142.EQL.00</p>		





**LEGEND**

◆ Groundwater Monitoring Wells

**WGR**

**Southwest, Inc.**  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

**SHELL OIL PRODUCTS US**

MTBE CONCENTRATIONS (ug/L) 3Q06

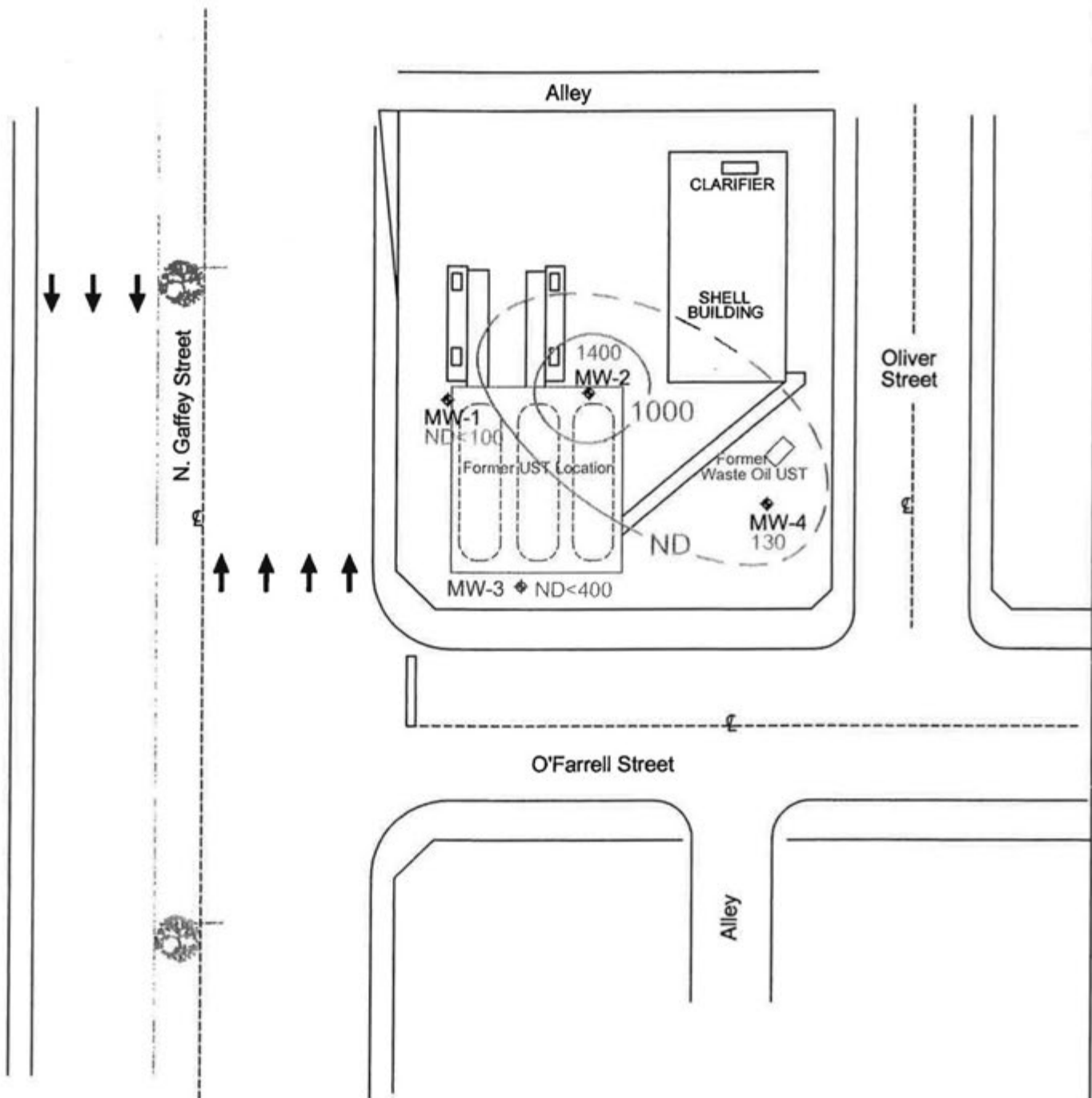
406 N. Gaffey Street San Pedro, California

DATE  
2006

PROJECT NUMBER  
142.EQL.00

DWN BY  
JRR

Figure  
**6**



**LEGEND**

◆ Groundwater Monitoring Wells

**WGR**

**Southwest, Inc.**  
11021 Winners Circle, Suite 101  
Los Alamitos, CA 90720

**SHELL OIL PRODUCTS US**

TBA CONCENTRATIONS (ug/L) 3Q06

406 N. Gaffey Street

San Pedro, California

DATE  
2006

PROJECT NUMBER  
142.EQL.00

DWN BY  
JRR

Figure

7

GROUNDWATER DATA														
FORMER SHELL SERVICE STATION														
406 North Gaffey Street, San Pedro, CA														
DATE	DEPTH TO GW (ft)	SPH THICKN. (ft)	GW ELEV. (ft rel. to MSL)	TPH-g (ug/L)	BENZ (ug/L)	ETHYL-BENZ (ug/L)	TOL (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS
<b>MW-1 Top of casing elevation (ft): 130.31</b>														
07/19/06	36.40	0.00	93.91											Well Development
08/28/06	36.73	0.00	93.58	1900	1100	120	150	230	ND<10	ND<100	ND<10	ND<10	ND<10	
<b>MW-2 Top of casing elevation (ft): 129.64</b>														
07/19/06	35.61	0.00	94.03											Well Development
08/28/06	35.78	0.00	93.86	23000	6100	1200	1600	5100	580	1400	46	ND<20	ND<20	
<b>MW-3 Top of casing elevation (ft): 128.99</b>														
07/19/06	34.98	0.00	94.01											Well Development
08/28/06	34.67	0.00	94.32	70000	11000	3200	22000	15000	87	ND<400	ND<40	ND<40	ND<40	
<b>MW-4 Top of casing elevation (ft): 127.89</b>														
07/19/06	34.46	0.00	93.43											Well Development
08/28/06	34.70	0.00	93.19	1100	16	130	3.0	5.0	140	130	48	ND<1.0	ND<1.0	

GROUNDWATER DATA														
FORMER SHELL SERVICE STATION														
406 North Gaffey Street, San Pedro, CA														
DATE	DEPTH TO GW (ft)	SPH THICKN. (ft)	GW ELEV. (ft rel. to MSL)	TPH-g (ug/L)	BENZ (ug/L)	ETHYL- BENZ (ug/L)	TOL (ug/L)	TOTAL XYLENES (ug/L)	MTBE 8260 (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	COMMENTS
<b>Notes:</b>														
GW - Groundwater														
SPH - Separate-phase hydrocarbons														
MSL - Mean sea level														
ND - Not detected														
ug/L - parts per billion; micrograms per Liter														
TPH-G - Total petroleum hydrocarbons as gasoline														
MTBE - Methyl-tert butyl ether														
TBA - Tert-butyl alcohol														
DIPE - Di-isopropyl ether														
ETBE - Ethyl tert-butyl ether														
TAME - Tert-amyl methyl ether														
TPH-g results obtained via GC/MS.														
Survey results were obtained by Dulin and Boynton Surveyors in July 2006.														

**LOS ANGELES FIRE DEPARTMENT - UST FILES**



# California Regional Water Quality Control Board

## Los Angeles Region



Linda S. Adams  
Agency Secretary

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Arnold Schwarzenegger  
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013  
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

RECEIVED

FEB 12 2007

November 9, 2006

Mr. Joe Lentini  
Shell Oil Products US  
20945 South Wilmington Avenue  
Carson, CA 90810

Underground Tank  
Site Assessment

**UNDERGROUND STORAGE TANK PROGRAM - NOTICE TO JOIN THE UNDERGROUND STORAGE TANK EXPEDITED AGENCY OVERSIGHT PROGRAM (EAOP)  
FORMER SAN PEDRO SHELL STATION  
406 NORTH GAFFEY STREET, SAN PEDRO (CASE NO. 907310543); (D-1 SITE)**

Dear Mr. Lentini:

In June 2005, the City of Los Angeles Fire Department referred the case to the Regional Board to pursue groundwater investigation. Based on local agency's case referral, the contamination at the subject site was confirmed. Therefore, you are required to take necessary corrective actions at the site, including site assessment and cleanup as needed.

Per our prioritization criteria, the subject site is classified as a lower priority case. However, this case is qualified under our UST program's Expedited Agency Oversight Program (EAOP) as you have experienced in working with us in the past. In EAOP, the responsible party (RP) implements a reduced regulatory oversight "self-directed" process to complete the necessary assessment and cleanup at the site. After using your own judgment and completing the soil and/or groundwater corrective actions and confirmation sample results, the responsible party may prepare a package requesting for case closure. At that time, we will make a determination on case closure.

If you have any questions on this matter, please contact Ms. Chandra Cansler at (213) 576-6701 or email her at [ccansler@waterboards.ca.gov](mailto:ccansler@waterboards.ca.gov).

Sincerely,

Yi Lu, Ph.D., R.G.  
Chief of Los Angeles River Watershed Unit  
Underground Storage Tank Section

cc: Yvonne Shanks, State Water Resources Control Board, UST Cleanup Fund  
Nancy Matsumoto, Water Replenishment District of Southern California  
Captain Frank Comfort, City of Los Angeles Fire Department, Underground Tanks  
Valerie Toney, City of Los Angeles Fire Department, Underground Tanks  
Charlie Quezada, Property Owner, 1317 North Natchez Place, San Pedro, CA 90731  
J. Graydon Martz, WGR Southwest

*California Environmental Protection Agency*



*Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.*



# CITY OF LOS ANGELES

CALIFORNIA



JAMES K. HAHN  
MAYOR

BOARD OF  
FIRE COMMISSIONERS

JAY H. GRODIN  
PRESIDENT

ROLAND L. COLEMAN  
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LOUISE L. FRANKEL  
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VERONICA GUTIERREZ

BLANCA GOMEZ-REVELLES  
EXECUTIVE ASSISTANT

DEPARTMENT OF FIRE

200 NORTH MAIN STREET  
LOS ANGELES, CA 90012

WILLIAM R. BAMATTRE  
FIRE CHIEF

(213) 976-3838  
<http://www.lafd.org>

May 25, 2005

Facility ID #25354  
RE: Permit #8991

Mr. Joe Lentini  
Equiva Services LLC  
P.O. Box 7869  
Burbank, CA 91510-7869

Shell Service Station  
406 North Gaffey Street  
San Pedro, California

Dear Mr. Lentini:

The Fire Department has reviewed the Tank Abandonment Report dated October 2, 2000, as submitted by WGR Southwest, Incorporated.

The report indicates the probability of groundwater contamination at this site. Pursuant to Section 25297(b), Health and Safety Code, we are referring the matter to the State Regional Water Quality Control Board for further action.

Subsequent questions or correspondence should be directed to the following:

Dr. Yue Rong  
State Regional Water Quality Control Board  
320 West 4<sup>th</sup> Street, Suite 200  
Los Angeles, CA 90013  
(213) 576-6600

If you require additional information from the Los Angeles Fire Department, please contact Inspector II Neal Reitzell of the Environmental Unit, at (213) 482-6528.

Very truly yours,

WILLIAM R. BAMATTRE  
Fire Chief

Frank K. Comfort, Captain I  
Commander, Environmental Unit

FKC:NR:amo:406NgaffeySt#8991srwqcb

cc: J. Grayton Martz, WGR Southwest, Incorporated

# ABANDONMENT info. sheet

UGTE UNIT

disk 2 ugt 10-30-92

## STATUS OF TANKS ON SITE

A. Have all tanks been abandoned on this site?  YES or NO - How many tanks left?

B. Are any tanks going to be installed on this site in the future? YES - How many?  or  NO

## ROUTING INSPECTORS - Insert ONE copy in each of the following:

1. Div 5 package (original) 2. Inspection blue book 3. Data entry 4. Haz Mat Box

F.S. 112 Fac. No. \_\_\_\_\_

Site address 406 N GAFFNEY Inspection District No. 423 Division 5 permit No. 8991  
 Inspector name STIVASON Inspector No. 423 Date of abandonment 6-16-00  
 Contractor L&M LOADERS Resp Person LES Phone no. \_\_\_\_\_

## TANK INFORMATION

Facility/Tank ID	Tank size Material or EED/size	Product	Soils test	No. of samples	Soil color of tank bed, pipe trench, or pit	Tank condition: Date	Final I/E
	12K M/E			2	XLAT BRN	—	0
	12K M/E			2	"	—	1
	12K M/E			2	"	—	1
	550 M/E	W/OIL		1	"	—	1
	M/E						
	M/E						
Soils pile						Destination of tanks:	
Piping trench							
Dispenser pit				4	"		
Describe excavation: Occur			Liquid in hole		Other		

## DOCUMENTS - NECESSARY FOR A COMPLETE PACKAGE

ABANDONMENT METHOD (CHECK)	WASH	HAZARD WASTE	FILL IN PLACE	Documents 30 days
Abandonment info sheet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Due date _____
Time log - Site specific sheet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Division 5 permit, application, and plot plans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cleaning certificates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Collect on-site
Uniform manifest: rinse liquid or tank	rinse <input checked="" type="checkbox"/>	tank <input type="checkbox"/>	rinse <input type="checkbox"/>	Collect on-site
Uniform manifest - Piping that is not flushed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Collect on-site
Certificate of disposal - Tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Certificate of disposal - Piping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Soil Analysis Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chain of custody	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Plot plan - showing locations of samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Division 4 fire permit registration - for tanks discovered on site, that have not been previously paid for.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## SOILS REPORT INFORMATION

Action level	mg/kg - per million	ug/kg - per billion	Enter highest reading in mg/kg	Exceeds Action level
TPH	100 PPM (mg/kg)		360 PPM	<input checked="" type="radio"/> YES <input type="radio"/> NO
Benzene	1 PPM (mg/kg)		PPM	<input type="radio"/> YES <input checked="" type="radio"/> NO
Toluene	50 PPM (mg/kg)		PPM	<input type="radio"/> YES <input checked="" type="radio"/> NO
Xylene	50 PPM (mg/kg)		PPM	<input type="radio"/> YES <input checked="" type="radio"/> NO
Ethyuene	50 PPM (mg/kg)		PPM	<input type="radio"/> YES <input checked="" type="radio"/> NO
Total lead	0-200 PPM above bkgnd		PPM	<input type="radio"/> YES <input checked="" type="radio"/> NO
Water samples anything detected			MTBE 13000 mg/kg	<input checked="" type="radio"/> YES <input type="radio"/> NO

Misc. comments

PLANT CR 10-21-00

Package completion & forwarding date:

Check here for comments on back



NOTIFICATION OF UNDERGROUND TANK ABANDONMENT

JULY 15, 1988  
(Date)

City of Los Angeles Fire Department  
Fire Prevention Bureau  
200 North Main Street, Room 920  
Los Angeles, California 90012

Attention: Records Office

Gentlemen:

This letter is to comply with Fire Department regulations regarding underground tank abandonment. (57.31.16).

The tank(s) are/were located from two property lines as follows:

406 No. Gaffey St.  
(Show sketch on reverse side).

The number of tank(s) 4 and total capacity in gallons each 1 - 10,000, 1 - 8,000, 2 - 5,000.

WHEN REMOVED:

The label numbers (or other tank designation numbers) were as follows: 1 - 10000 GAL FIREM... 2 - 5000 GAL LAFD 343  
1 - 5000 GAL U.L. # E-822571 No U.L. #

The tank(s), prior to transporting were degassed, using 15<sup>th</sup> per 1000 gal pounds of carbon dioxide (dry ice). (One pound CO<sub>2</sub> per hundred gallons capacity of tank).

The tank(s) were removed to: CROSBY OVERTON 1620 W. 16 ST  
Long Beach, CA

WHEN FILLED:

Approved mixture type \_\_\_\_\_, using \_\_\_\_\_ cu. yards total. The material was supplied by: \_\_\_\_\_.

The abandonment work was inspected by: FRANCE  
Fire Inspector

\_\_\_\_\_  
Signature of Responsible Person

1st CAPT  
2nd QAQC  
3rd DATA  
4th FILE

ABANDONMENT INFORMATION SHEET

Site Address: 406 N. GAFFEY Div. 5 No: \_\_\_\_\_

Insp. Name: \_\_\_\_\_ Insp. No.: \_\_\_\_\_ Date: 7/15/88

Contractor: PALS ASSOCIATES Responsible Person: \_\_\_\_\_

TANK INFORMATION=====

Tank ID # (UGT)	Size & Metal or FRP	Product	UL # and LAFD G.A.#	Abandonmt Method (Circle)
1. _____	<u>8,000 M/F</u>	<u>GAS/REG-UNL</u>	_____	<u>Wash</u> -HazWast-Fill
2. _____	<u>5,000 M/F</u>	<u>GAS/UNL-SUPER</u>	_____	<u>Wash</u> -HazWast-Fill
3. _____	<u>5,000 M/F</u>	<u>GAS/UNL-SUPER</u>	_____	<u>Wash</u> -HazWast-Fill
4. _____	<u>10,000 M/F</u>	<u>GAS/UNL-REG</u>	_____	<u>Wash</u> -HazWast-Fill
5. _____	_____ M/F	_____	_____	Wash-HazWast-Fill

Tank locations from property lines or sketch on plans ,	# lbs dry ice	Destination or location of tanks
1. <u>SEE PLANS</u>	_____	<u>WILMINGTON SALVAGE</u>
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

CHECK OFF LIST - WHEN FORWARDING A COMPLETED PACKAGE=====

Arrange the following items in the order that they are listed below.

- This form and a Xeroxed copy
- Underground Tank Time Log (site specific invoice)
- Permit Information (stamped application and lot plan)
- Cleaning Certificate
- Certificate of Disposal Form (for washed tank)
- Uniform Manifest for: rinse, tank (hazardous waste), or soil
- Chain of Custody (with site address printed on the form)
- Soil Results
  - a. Contamination above action levels, per soils analysis... (Yes/No)
  - b. Highest reported reading per soils analysis (in ppm)... 4440
- Number of tanks remaining onsite..... \_\_\_\_\_
- a. Are abandoned tanks being replaced (Yes/No), # of tanks. \_\_\_\_\_

**AIR QUALITY MANAGEMENT DISTRICT FILES**



**South Coast Air Quality Management District**  
 21865 Copley Drive, Diamond Bar, CA, 91765  
 Stationary Source Compliance - Rule 461 Inspection Report

Inspection Date: 10-2-98	Inspector ID: LB02	Sector: LK
Audit/Target	Project/Complaint No.	
Complaint		
NC	Notice No.	
X NOV	P11140	
W&M	Report No.	
Other	(3)	

**Facility Information**

Name: EQUILON DLR SHELL	Company ID: 102 392 117082
Address: 406 N. GAFFEY	
City: SAN PEDRO	Zip: 90731
Contact Person: MS. KIM	Phone: (310) 548-5618

**Permit Information**

Application No. 344156	Permit No. N6651			
Permit Status (check appropriate box)	Equipment Summary			
<input type="checkbox"/> Valid - No Problems Noted	Fuel	Gas	Diesel	Other
<input type="checkbox"/> Expired/Invalid Permit	Type			
<input type="checkbox"/> No Permit	Total			
X <input checked="" type="checkbox"/> No Permit Onsite	Tanks	3		
<input type="checkbox"/> Permit Condition Violation	Total			
<input type="checkbox"/> Incorrect Equipment Description	Nozzles	24		
Permit Discrepancies:				

**Self Compliance (check the appropriate box)**

300	Self Compliance - No Violations Noted
301	Failure to Conduct Daily Inspections.
302	Failure to Maintain Daily Inspection Log.
303	Failure to Maintain Daily Repair Log.
304	Failure to Conduct Periodic Inspections.
305	Failure to Provide Trained Personnel.

**Performance Testing (check the appropriate box)**

Last Date Performed	Test Code	Description of Test
	400	Recalibration (Red Jacket only)
	401	Dynamic Pressure (Back Pressure)
	402	Static Pressure (Leak Decay)
	403	Air-to-Liquid Ratio (A/L) Bellows-less only
	404	Liquid Removal Rate (if applicable)
	405	Other

**Phase I Defect Summary (enter the appropriate information below)**

Control Type:		<input type="checkbox"/> (1) Dual	<input type="checkbox"/> (2) Coaxial
All	100	No Phase I Defects Found.	
Minor Defect	Major Defect	Defect Code	Description of Defect
		101	Vent Pipes - Improper Height/Diameter
		102	Pressure Relief Valves - Missing/Defective
		103	Fill Pipes - Missing/Defective
		104	Fill Pipes - Improper Length
		105	Fill Caps - Defective/Missing
		106	Fill Cap Gasket - Defective/Missing
		107	Dry Break - Defective Seal/Poppet Spring
		108	Dry Break Cap/Gasket - Defective/Missing
		109	Spill Containers - Contains Liquid/Soil/Debris
		110	Spill Container Drain Valve - Defective/Missing
		111	No Phase I Vapor Recovery Installed
		112	Other

**Phase II Control Type Index (circle appropriate system)**

	System Description	Executive Order		System Description	Executive Order
	10 Gilbarco Vapor Vac	G-70-150xx	82	Red Jacket Retractor	G-70-14xx
X	11 Dresser Wayne Vac	G-70-153xx	84	Hirt Retractor	G-70-33xx
	12 Tokheim Max Vac	G-70-154xx	85	Hasstech	G-70-7xx
	13 OPW Vapor EZ	G-70-163xx	86	Healy	G-70-70xx
	14 Hasstech VCP-3A	G-70-164xx	87	Red Jacket H. Hose	G-70-14xx
	15 Healy 600	G-70-165xx	88	Hirt Hi Hose	G-70-33xx
			89	Healy Hi Hose	G-70-70xx
			91	Balance Retractor	G-70-52xx
70	Exempt	NA	92	Balance Hi Hose	G-70-52xx

**Phase II Defect Summary (enter the appropriate information below)**

All	200	No Phase II Defects Found	
Minor Defect	Major Defect	Defect Code	Description of Defect
<b>Nozzle</b>			
		201	Missing/Defective Latching Device
		202	Loose/Defective Spout
		203	Loose/Missing/Defective Bellows
		204	Missing/Defective Faceplate
		205	Missing Hold Open Latch (if applicable)
		206	Missing/Defective Vapor Check Valve
		207	Uncertified Nozzle/Component
		208	Obstructed Collection Holes (Bellows-less)
		209	Missing/Damaged Vapor Guard (Bellows-less)
		210	Leaking Nozzle   Nozzle Model
		211	Other
<b>Hose</b>			
		225	Improper Hose Configuration
		226	Missing/Defective Hose or Hose Component
		227	Missing/Defective Swivels
		228	Uncertified Hose or Hose Component
		229	Other
<b>Dispenser</b>			
		250	Missing/Improperly Installed Flow Restrictor
		251	Missing/Defective Dispenser Components
		252	Missing Signs
		253	Other
<b>Other (check the appropriate box)</b>			
	ALL	275	Non-operational Processor Unit
	ALL	276	Non-operational Vacuum/Collection Unit
		277	Other

**Compliance Action (check the appropriate box)**

<input checked="" type="checkbox"/> In Compliance - No Action Taken					
Notice to Comply Issued			Notice No.		
Notice of Violation Issued			Notice No.		
Tags Issued	Total	Locked Out**	Repaired During Inspection		

Inspected By LB02	Report Date 10-22-98
Supervisor Approval MS	Date of Review 11-5-98

\* Defects that substantially impair the effectiveness of the vapor recovery system.  
 \*\* Nozzles with major defects that were locked out-of-service prior to inspection.

**TIME SPENT ON FACILITY**

DATE	ACTIVITY	HOURS
10-20-98	Follow-up NOV. For Legal	0.25
10-22-98	REPORTS	0.25
<b>TOTAL HOURS</b>		0.50

List of Activities (Mark in 1/4 hour increments)

- Inspections
- Follow-up on NCNOV
- Records Search or AR inquiry
- Report writing
- Meetings (i.e. with supervisor, legal, contractors, etc.)
- Hearing Board/Variance

Notes:

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**South Coast Air Quality Management District**  
**21865 Copley Drive, Diamond Bar, CA, 91765**  
**Stationary Source Compliance - Rule 461 Inspection Report**

Inspection Date:	11-17-98	Inspector ID:	LAC 2	Sector:	L/L
<input checked="" type="checkbox"/> Audit/Target	Project/Complaint No.				
<input checked="" type="checkbox"/> Complaint	12001A				
<input type="checkbox"/> NC	Notice No.				
<input type="checkbox"/> NOV					
<input type="checkbox"/> W&M	Report No. 3				
<input type="checkbox"/> Other					

**Facility Information**

Name: EQUILON DLR SHELL Company ID: 117082  
 Address: 406 N. GARRETT ST  
 City: SAN PEDRO Zip: 90731  
 Contact Person: JIN KIM Phone: (562) 548-5618

**Permit Information**

Application No. 344156 Permit No. N6651

Permit Status (check appropriate box)	Equipment Summary			
<input type="checkbox"/> Valid - No Problems Noted	Fuel	Gas	Diesel	Other
<input type="checkbox"/> Expired/Invalid Permit	Type			
<input type="checkbox"/> No Permit	Total	3		
<input checked="" type="checkbox"/> No Permit Onsite	Tanks			
<input type="checkbox"/> Permit Condition Violation	Total			
<input type="checkbox"/> Incorrect Equipment Description	Nozzles	24		

Permit Discrepancies:

**Self Compliance (check the appropriate box)**

<input type="checkbox"/> 300	Self Compliance - No Violations Noted
<input type="checkbox"/> 301	Failure to Conduct Daily Inspections.
<input type="checkbox"/> 302	Failure to Maintain Daily Inspection Log.
<input type="checkbox"/> 303	Failure to Maintain Daily Repair Log.
<input type="checkbox"/> 304	Failure to Conduct Periodic Inspections.
<input type="checkbox"/> 305	Failure to Provide Trained Personnel.

**Performance Testing (check the appropriate box)**

Last Date Performed	Test Code	Description of Test
	400	Recalibration (Red Jacket only)
	401	Dynamic Pressure (Back Pressure)
	402	Static Pressure (Leak Decay)
	403	Air-to-Liquid Ratio (A/L) Bellows-less only
	404	Liquid Removal Rate (if applicable)
	405	Other

**Phase I Defect Summary (enter the appropriate information below)**

Control Type:		<input type="checkbox"/> (1) Dual	<input type="checkbox"/> (2) Coaxial
All	100	No Phase I Defects Found.	
Minor Defect	Major Defect	Defect Code	Description of Defect
		101	Vent Pipes - Improper Height/Diameter
		102	Pressure Relief Valves - Missing/Defective
		103	Fill Pipes - Missing/Defective
		104	Fill Pipes - Improper Length
		105	Fill Caps - Defective/Missing
		106	Fill Cap Gasket - Defective/Missing
		107	Dry Break - Defective Seal/Poppet Spring
		108	Dry Break Cap/Gasket - Defective/Missing
		109	Spill Containers - Contains Liquid/Soil/Debris
		110	Spill Container Drain Valve - Defective/Missing
		111	No Phase I Vapor Recovery Installed
		112	Other

**Phase II Control Type Index (circle appropriate system)**

System Description	Executive Order	System Description	Executive Order
10 Gilbarco Vapor Vac	G-70-150xx	82 Red Jacket Retractor	G-70-14xx
11 Dresser Wayne Vac	G-70-153xx	84 Hirt Retractor	G-70-33xx
12 Tokheim Max Vac	G-70-154xx	85 Hasstech	G-70-7xx
13 OPW Vapor EZ	G-70-163xx	86 Healy	G-70-70xx
14 Hasstech VCP-3A	G-70-164xx	87 Red Jacket Hi Hose	G-70-14xx
15 Healy 600	G-70-165xx	88 Hirt Hi Hose	G-70-33xx
		89 Healy Hi Hose	G-70-70xx
		91 Balance Retractor	G-70-52xx
70 Exempt	NA	92 Balance Hi Hose	G-70-52xx

**Phase II Defect Summary (enter the appropriate information below)**

All	200	No Phase II Defects Found	
Minor Defect	Major Defect	Defect Code	Description of Defect
<b>Nozzle</b>			
		201	Missing/Defective Latching Device
		202	Loose/Defective Spout
		203	Loose/Missing/Defective Bellows
		204	Missing/Defective Faceplate
		205	Missing Hold Open Latch (if applicable)
		206	Missing/Defective Vapor Check Valve
		207	Uncertified Nozzle/Component
		208	Obstructed Collection Holes (Bellows-less)
		209	Missing/Damaged Vapor Guard (Bellows-less)
		210	Leaking Nozzle   Nozzle Model
		211	Other
<b>Hose</b>			
		225	Improper Hose Configuration
		226	Missing/Defective Hose or Hose Component
		227	Missing/Defective Swivels
		228	Uncertified Hose or Hose Component
		229	Other
<b>Dispenser</b>			
		250	Missing/Improperly Installed Flow Restrictor
		251	Missing/Defective Dispenser Components
		252	Missing Signs
		253	Other

**Other (check the appropriate box)**

<input type="checkbox"/>	ALL	275	Non-operational Processor Unit
<input type="checkbox"/>	ALL	276	Non-operational Vacuum/Collection Unit
<input type="checkbox"/>		277	Other

**Compliance Action (check the appropriate box)**

<input type="checkbox"/>	In Compliance - No Action Taken			
<input checked="" type="checkbox"/>	Notice to Comply Issued		Notice No. H16444	
<input type="checkbox"/>	Notice of Violation Issued		Notice No.	
<input type="checkbox"/>	Tags Issued	Total	Locked Out**	Repaired During Inspection

Inspected By	LAC 2	Report Date	11-19-98
Supervisor Approval	MCS	Date of Review	12-4-98

\* Defects that substantially impair the effectiveness of the vapor recovery system.  
 \*\* Nozzles with major defects that were locked out-of-service prior to inspection.





**South Coast Air Quality Management District**  
 21865 Copley Drive, Diamond Bar, CA, 91765  
 Stationary Source Compliance - Rule 461 Inspection Report

Inspection Date: 1-12-98	Inspector ID: L802	Sector: LK
Audit/Target	Project/Complaint No.	
Complaint		
NC	Notice No.	
<input checked="" type="checkbox"/> NOV	P 11123, P11125	
W&M	Report No.	
Other	(3)	

**Facility Information**

Name: SHELL DLR Company ID: 102592  
 Address: 406 N. GAFFEY ST  
 City: SAN PEDRO Zip: 90751  
 Contact Person: JIN HONG KIM Phone: (310)548-5618

**Permit Information**

Application No. Permit No.  
 Permit Status (check appropriate box):  
 Valid - No Problems Noted  
 Expired/Invalid Permit  
 No Permit  
 No Permit Onsite  
 Permit Condition Violation  
 Incorrect Equipment Description  
 Equipment Summary:  

	Fuel Type	Gas	Diesel	Other
	Total			
	Tanks			
	Total			
	Nozzles			

 Permit Discrepancies:

**Self Compliance (check the appropriate box)**

<input type="checkbox"/>	300	Self Compliance - No Violations Noted
<input checked="" type="checkbox"/>	301	Failure to Conduct Daily Inspections.
<input checked="" type="checkbox"/>	302	Failure to Maintain Daily Inspection Log.
<input checked="" type="checkbox"/>	303	Failure to Maintain Daily Repair Log.
<input checked="" type="checkbox"/>	304	Failure to Conduct Periodic Inspections.
<input type="checkbox"/>	305	Failure to Provide Trained Personnel.

**Performance Testing (check the appropriate box)**

Last Date Performed	Test Code	Description of Test
	400	Recalibration (Red Jacket only)
	401	Dynamic Pressure (Back Pressure)
	402	Static Pressure (Leak Decay)
	403	Air-to-Liquid Ratio (A/L) Bellows-less only
	404	Liquid Removal Rate (if applicable)
	405	Other

**Phase I Defect Summary (enter the appropriate information below)**

Control Type:		(1) Dual	(2) Coaxial
Minor Defect	Major Defect	Defect Code	Description of Defect
		100	No Phase I Defects Found.
		101	Vent Pipes - Improper Height/Diameter
		102	Pressure Relief Valves - Missing/Defective
		103	Fill Pipes - Missing/Defective
		104	Fill Pipes - Improper Length
		105	Fill Caps - Defective/Missing
		106	Fill Cap Gasket - Defective/Missing
		107	Dry Break - Defective Seal/Poppet Spring
		108	Dry Break Cap/Gasket - Defective/Missing
		109	Spill Containers - Contains Liquid/Soil/Debris
		110	Spill Container Drain Valve - Defective/Missing
		111	No Phase I Vapor Recovery Installed
		112	Other

**Phase II Control Type Index (circle appropriate system)**

System Description	Executive Order	System Description	Executive Order
10 Gilbarco Vapor Vac	G-70-150xx	82 Red Jacket Retractor	G-70-14xx
<u>11 Dresser Wayne Vac</u>	G-70-153xx	84 Hirt Retractor	G-70-33xx
12 Tokheim Max Vac	G-70-154xx	85 Hasstech	G-70-7xx
13 OPW Vapor EZ	G-70-163xx	86 Heav	G-70-70xx
14 Hasstech VCP-3A	G-70-164xx	87 Red Jacket Hi Hose	G-70-14xx
15 Heav 600	G-70-165xx	88 Hirt Hi Hose	G-70-33xx
		89 Heav Hi Hose	G-70-70xx
		91 Balance Retractor	G-70-52xx
70 Exempt	N/A	92 Balance Hi Hose	G-70-52xx

**Phase II Defect Summary (enter the appropriate information below)**

Minor Defect	Major Defect	Defect Code	Description of Defect
		200	No Phase II Defects Found
<b>Nozzle</b>			
		201	Missing/Defective Latching Device
		202	Loose/Defective Spout
		203	Loose/Missing/Defective Bellows
		204	Missing/Defective Faceplate
		205	Missing Hold Open Latch (if applicable)
		206	Missing/Defective Vapor Check Valve
		207	Uncertified Nozzle/Component
		208	Obstructed Collection Holes (Bellows-less)
		209	Missing/Damaged Vapor Guard (Bellows-less)
		210	Leaking Nozzle Nozzle Model
		211	Other
<b>Hose</b>			
		225	Improper Hose Configuration
		226	Missing/Defective Hose or Hose Component
		227	Missing/Defective Swivels
		228	Uncertified Hose or Hose Component
		229	Other
<b>Dispenser</b>			
		250	Missing/Improperly Installed Flow Restrictor
		251	Missing/Defective Dispenser Components
		252	Missing Signs
		253	Other

**Other (check the appropriate box)**

	ALL	275	Non-operational Processor Unit
	ALL	276	Non-operational Vacuum/Collection Unit
		277	Other

**Compliance Action (check the appropriate box)**

<input type="checkbox"/> In Compliance - No Action Taken			
<input type="checkbox"/> Notice to Comply Issued		Notice No.	
<input checked="" type="checkbox"/> Notice of Violation Issued		Notice No. P11140	
<input type="checkbox"/> Tags Issued	Total	<input type="checkbox"/> Locked Out**	<input type="checkbox"/> Repaired During Inspection

Inspected By L802	Report Date 1-13-98
Supervisor Approval MCS	Date of Review 2-70-98

\* Defects that substantially impair the effectiveness of the vapor recovery system.  
 \*\* Nozzles with major defects that were locked out-of-service prior to inspection.







**South Coast Air Quality Management District**  
 21865 Copley Drive, Diamond Bar, CA, 91765  
 Stationary Source Compliance - Rule 461 Inspection Report

Inspection Date:	12-11-97	Inspector ID:	L802	Sector:	LT
<input checked="" type="checkbox"/> Audit/Target	Project/Complaint No.		R 203 (e)		
Complaint		None No.			
NC					
NOV					
W&M		Report No.			
Other		(2)			

**Facility Information**

Name: SHELL DLK Company ID: 102592  
 Address: 406 N. GAFFEY ST  
 City: SAN PEDRO Zip: 90731  
 Contact Person: JIN HONG KIM Phone: (310) 548-5618

**Permit Information**

Application No. Permit No.  
 Permit Status (check appropriate box):  
 Valid - No Problems Noted  
 Expired/Invalid Permit DENIED  
 No Permit  
 No Permit Onsite  
 Permit Condition Violation  
 Incorrect Equipment Description  
 Equipment Summary:  

Fuel Type	Gas	Diesel	Other
Total			
Tanks			
Total			
Nozzles			

 Permit Discrepancies:

**Self Compliance (check the appropriate box)**

<input type="checkbox"/> 300	Self Compliance - No Violations Noted
<input type="checkbox"/> 301	Failure to Conduct Daily Inspections.
<input type="checkbox"/> 302	Failure to Maintain Daily Inspection Log.
<input type="checkbox"/> 303	Failure to Maintain Daily Repair Log.
<input type="checkbox"/> 304	Failure to Conduct Periodic Inspections.
<input type="checkbox"/> 305	Failure to Provide Trained Personnel.

**Performance Testing (check the appropriate box)**

Last Date Performed	Test Code	Description of Test
	400	Recalibration (Red Jacket only)
	401	Dynamic Pressure (Back Pressure)
	402	Static Pressure (Leak Decay)
<input checked="" type="checkbox"/> NONE	403	Air-to-Liquid Ratio (A/L) Bellows-less only
	404	Liquid Removal Rate (if applicable)
	405	Other

**Phase I Defect Summary (enter the appropriate information below)**

Control Type:  (1) Dual  (2) Coaxial

All	100	No Phase I Defects Found.
Minor Defect	Major Defect	Description of Defect
	101	Vent Pipes - Improper Height/Diameter
	102	Pressure Relief Valves - Missing/Defective
	103	Fill Pipes - Missing/Defective
	104	Fill Pipes - Improper Length
	105	Fill Caps - Defective/Missing
	106	Fill Cap Gasket - Defective/Missing
	107	Dry Break - Defective Seal/Poppet Spring
	108	Dry Break Cap/Gasket - Defective/Missing
	109	Spill Containers - Contains Liquid/Soil/Debris
	110	Spill Container Drain Valve - Defective/Missing
	111	No Phase I Vapor Recovery Installed
	112	Other

**Phase II Control Type Index (circle appropriate system)**

System Description	Executive Order	System Description	Executive Order
10 Gilbarco Vapor Vac	G-70-150xx	82 Red Jacket Retractor	G-70-14xx
11 Dresser Wayne Vac	G-70-153xx	84 Hirt Retractor	G-70-33xx
12 Tokheim Max Vac	G-70-154xx	85 Hasstech	G-70-7xx
13 OPW Vapor EZ	G-70-163xx	86 Healy	G-70-70xx
14 Hasstech VCP-3A	G-70-164xx	87 Red Jacket Hi Hose	G-70-14xx
15 Healy 600	G-70-165xx	88 Hirt Hi Hose	G-70-33xx
		89 Healy Hi Hose	G-70-70xx
		91 Balance Retractor	G-70-52xx
70 Exempt	N/A	92 Balance Hi Hose	G-70-52xx

**Phase II Defect Summary (enter the appropriate information below)**

All	200	No Phase II Defects Found	
Minor Defect	Major Defect	Defect Code	Description of Defect
<b>Nozzle</b>			
		201	Missing/Defective Latching Device
		202	Loose/Defective Spout
		203	Loose/Missing/Defective Bellows
		204	Missing/Defective Faceplate
		205	Missing Hold Open Latch (if applicable)
		206	Missing/Defective Vapor Check Valve
		207	Uncertified Nozzle/Component
		208	Obstructed Collection Holes (Bellows-less)
		209	Missing/Damaged Vapor Guard (Bellows-less)
		210	Leaking Nozzle   Nozzle Model
		211	Other
<b>Hose</b>			
		225	Improper Hose Configuration
		226	Missing/Defective Hose or Hose Component
		227	Missing/Defective Swivels
		228	Uncertified Hose or Hose Component
		229	Other
<b>Dispenser</b>			
		250	Missing/Improperly Installed Flow Restrictor
		251	Missing/Defective Dispenser Components
		252	Missing Signs
		253	Other
<b>Other (check the appropriate box)</b>			
	ALL	275	Non-operational Processor Unit
	ALL	276	Non-operational Vacuum/Collection Unit
		277	Other

**Compliance Action (check the appropriate box)**

<input type="checkbox"/> In Compliance - No Action Taken			
<input type="checkbox"/> Notice to Comply Issued		Notice No.	
<input checked="" type="checkbox"/> Notice of Violation Issued		Notice No. P11125	
<input type="checkbox"/> Tags Issued	Total	Locked Out**	Repaired During Inspection

Inspected By	L802	Report Date	12-16-97
Supervisor Approval	MCS	Date of Review	2-10-98

\* Defects that substantially impair the effectiveness of the vapor recovery system.  
 \*\* Nozzles with major defects that were locked out-of-service prior to inspection.





**South Coast Air Quality Management District**  
 21865 Copley Drive, Diamond Bar, CA, 91765  
 Stationary Source Compliance - Rule 461 Inspection Report

Inspection Date: 12-03-97	Inspector ID: LAC2	Sector: LK
<input checked="" type="checkbox"/> Audit/Target	Project/Complaint No./PIC Cond/Instor	
Complaint		
NC	Nonce No.	
NOV		
W&M	Report No.	
Other	(1)	

**Facility Information**

Name: SHELL DLK	Company ID: 102592
Address: 406 N. GAFFEY ST	
City: SAN PEDRO	Zip: 90731
Contact Person: JIN HONG KIM	Phone: (310) 548-5618

**Permit Information**

Application No. 320386	Permit No.
Permit Status (check appropriate box)	
<input type="checkbox"/> Valid - No Problems Noted	Equipment Summary
<input type="checkbox"/> Expired/Invalid Permit	
<input type="checkbox"/> No Permit	Fuel Type
<input type="checkbox"/> No Permit Onsite	Total Tanks
<input checked="" type="checkbox"/> Permit Condition Violation	Total Nozzles
<input type="checkbox"/> Incorrect Equipment Description	
Permit Discrepancies:	

**Self Compliance (check the appropriate box)**

300	Self Compliance - No Violations Noted
301	Failure to Conduct Daily Inspections.
302	Failure to Maintain Daily Inspection Log.
303	Failure to Maintain Daily Repair Log.
304	Failure to Conduct Periodic Inspections.
305	Failure to Provide Trained Personnel.

**Performance Testing (check the appropriate box)**

Last Date Performed	Test Code	Description of Test
	400	Recalibration (Red Jacket only)
	401	Dynamic Pressure (Back Pressure)
	402	Static Pressure (Leak Decay)
<input checked="" type="checkbox"/> NO NE	403	Air-to-Liquid Ratio (A/L) Bellows-less only
	404	Liquid Removal Rate (if applicable)
	405	Other

**Phase I Defect Summary (enter the appropriate information below)**

Control Type:		(1) Dual	(2) Coaxial
All	100	No Phase I Defects Found.	
Minor Defect	Major Defect	Defect Code	Description of Defect
		101	Vent Pipes - Improper Height/Diameter
		102	Pressure Relief Valves -Missing/Defective
		103	Fill Pipes - Missing/Defective
		104	Fill Pipes - Improper Length
		105	Fill Caps - Defective/Missing
		106	Fill Cap Gasket - Defective/Missing
		107	Drv Break - Defective Seal/Poppet Spring
		108	Drv Break Cap/Gasket - Defective/Missing
		109	Spill Containers - Contains Liquid/Soil/Debris
		110	Spill Container Drain Valve - Defective/Missing
		111	No Phase I Vapor Recovery Installed
		112	Other

**Phase II Control Type Index (circle appropriate system)**

System Description	Executive Order	System Description	Executive Order
10 Gilbarco Vapor Vac	G-70-150xx	82 Red Jacket Retractor	G-70-14xx
11 Dresser Wayne Vac	G-70-153xx	84 Hirt Retractor	G-70-33xx
12 Tokheim Max Vac	G-70-154xx	85 Hasstech	G-70-7xx
13 OPW Vapor EZ	G-70-163xx	86 Healy	G-70-70xx
14 Hasstech VCP-3A	G-70-164xx	87 Red Jacket Hi Hose	G-70-14xx
15 Healy 600	G-70-165xx	88 Hirt Hi Hose	G-70-33xx
		89 Healy Hi Hose	G-70-70xx
		91 Balance Retractor	G-70-52xx
70 Exempt	NA	92 Balance Hi Hose	G-70-52xx

**Phase II Defect Summary (enter the appropriate information below)**

All	200	No Phase II Defects Found	
Minor Defect	Major Defect	Defect Code	Description of Defect
<b>Nozzle</b>			
		201	Missing/Defective Latching Device
		202	Loose/Defective Spout
		203	Loose/Missing/Defective Bellows
		204	Missing/Defective Faceplate
		205	Missing Hold Open Latch (if applicable)
		206	Missing/Defective Vapor Check Valve
		207	Uncertified Nozzle/Component
		208	Obstructed Collection Holes (Bellows-less)
		209	Missing/Damaged Vapor Guard (Bellows-less)
		210	Leaking Nozzle Nozzle Model
		211	Other
<b>Hose</b>			
		225	Improper Hose Configuration
		226	Missing/Defective Hose or Hose Component
		227	Missing/Defective Swivels
		228	Uncertified Hose or Hose Component
		229	Other
<b>Dispenser</b>			
		250	Missing/Improperly Installed Flow Restrictor
		251	Missing/Defective Dispenser Components
		252	Missing Signs
		253	Other
<b>Other (check the appropriate box)</b>			
	ALL	275	Non-operational Processor Unit
	ALL	276	Non-operational Vacuum/Collection Unit
		277	Other

**Compliance Action (check the appropriate box)**

<input type="checkbox"/> In Compliance - No Action Taken			
<input type="checkbox"/> Notice to Comply Issued		Notice No.	
<input checked="" type="checkbox"/> Notice of Violation Issued		Notice No. P11123	
<input type="checkbox"/> Tags Issued	Total Tags	Locked Out	Repaired During Inspection

Inspected By LBO2	Report Date 12-10-97
Supervisor Approval MCS	Date of Review 2-10-98

\* Defects that substantially impair the effectiveness of the vapor recovery system.  
 \*\* Nozzles with major defects that were locked out-of-service prior to inspection.

**TIME SPENT ON FACILITY**

DATE	ACTIVITY	HOURS
12-3-97	Inspection Cavity conditions # 6, 7, 8 on p/c# 320386	0.5
12- <del>10</del> -97	REPORTS, SEARCH	1.0
<b>TOTAL HOURS</b>		<b>1.5</b>

List of Activities (Mark in 1/4 hour increments)

- Inspections
- Follow-up on NC/NOV
- Records Search or AR inquiry
- Report writing
- Meetings (i.e. with supervisor, legal, contractors, etc.)
- Hearing Board/Variance

Notes:

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# South Coast Air Quality Management District

NC A16444

## Company

Facility: EQUILON DLR, SAN PEDRO SHELL, JIN H KIM (ID: 117082)  
Location Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731  
Mailing Address:  
Representative: DLR

## Violation

Notice Issued Date: 11/17/1998  
Violation Date: 11/17/1998  
Serve To: JIN HONG KIM  
Issue By: LALO A. BAKHOUM (Team: I)  
Assignment No.: 585527  
Compliance Acheived Date: 01/08/1999  
Equipment Description: FUEL DISPENSING

Compliance Required: POST PO GASOLINE EQUIPMENT

## Disposition

Final Action Code: 1/8/1999 00:00:00  
Due Date:  
Violation Days: 0

## Rule/Comment

206

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: 01/08/99 00:00 Number:

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_



**South Coast Air Quality Management District**  
 21865 Copley Drive, Diamond Bar, CA, 91765  
 Stationary Source Compliance - Rule 461 Inspection Report

Inspection Date: 1-8-99	Inspector ID: LBC	Sector: CR
Audit/Target	Project/Complaint No.	
Complaint		
X NC	Notice No. 216444	
NOV		
W&M	Report No.	
Other		

**Facility Information**

Name: EQUIVON DEL Company ID: 117082  
 Address: 406 N. GARDEN ST  
 City: SAN PEDRO, CA Zip: 90731  
 Contact Person: JIN H KIM Phone: (310) 548-5618

**Permit Information**

Application No. \_\_\_\_\_ Permit No. \_\_\_\_\_

Permit Status (check appropriate box)	Equipment Summary			
<input checked="" type="checkbox"/> Valid - No Problems Noted	Fuel	Gas	Diesel	Other
<input type="checkbox"/> Expired/Invalid Permit	Type			
<input type="checkbox"/> No Permit	Total	3		
<input type="checkbox"/> No Permit Onsite	Tanks			
<input type="checkbox"/> Permit Condition Violation	Total	24		
<input type="checkbox"/> Incorrect Equipment Description	Nozzles			

Permit Discrepancies:

**Self Compliance (check the appropriate box)**

<input type="checkbox"/>	300	Self Compliance - No Violations Noted
<input type="checkbox"/>	301	Failure to Conduct Daily Inspections.
<input type="checkbox"/>	302	Failure to Maintain Daily Inspection Log.
<input type="checkbox"/>	303	Failure to Maintain Daily Repair Log.
<input type="checkbox"/>	304	Failure to Conduct Periodic Inspections.
<input type="checkbox"/>	305	Failure to Provide Trained Personnel.

**Performance Testing (check the appropriate box)**

Last Date Performed	Test Code	Description of Test
	400	Recalibration (Red Jacket only)
	401	Dynamic Pressure (Back Pressure)
	402	Static Pressure (Leak Decay)
	403	Air-to-Liquid Ratio (A/L) Bellows-less only
	404	Liquid Removal Rate (if applicable)
	405	Other

**Phase I Defect Summary (enter the appropriate information below)**

Control Type:  (1) Dual  (2) Coaxial

Minor Defect	Major Defect	Defect Code	Description of Defect
		100	No Phase I Defects Found.
		101	Vent Pipes - Improper Height/Diameter
		102	Pressure Relief Valves - Missing/Defective
		103	Fill Pipes - Missing/Defective
		104	Fill Pipes - Improper Length
		105	Fill Caps - Defective/Missing
		106	Fill Cap Gasket - Defective/Missing
		107	Dry Break - Defective Seal/Poppet Spring
		108	Dry Break Cap/Gasket - Defective/Missing
		109	Spill Containers - Contains Liquid/Soil/Debris
		110	Spill Container Drain Valve - Defective/Missing
		111	No Phase I Vapor Recovery Installed
		112	Other

**Phase II Control Type Index (circle appropriate system)**

	System Description	Executive Order		System Description	Executive Order
	10 Gilbarco Vapor Vac	G-70-150xx	82	Red Jacket Retractor	G-70-14xx
	11 Dresser Wayne Vac	G-70-153xx	84	Hirt Retractor	G-70-33xx
	12 Tokheim Max Vac	G-70-154xx	85	Hasstech	G-70-7xx
	13 OPW Vapor EZ	G-70-163xx	86	Healy	G-70-70xx
	14 Hasstech VCP-3A	G-70-164xx	87	Red Jacket Hi Hose	G-70-14xx
	15 Healy 600	G-70-165xx	88	Hirt Hi Hose	G-70-33xx
			89	Healy Hi Hose	G-70-70xx
			91	Balance Retractor	G-70-52xx
70	Exempt	N/A	92	Balance Hi Hose	G-70-52xx

**Phase II Defect Summary (enter the appropriate information below)**

All	200	No Phase II Defects Found	
Minor Defect	Major Defect	Defect Code	Description of Defect
<b>Nozzle</b>			
		201	Missing/Defective Latching Device
		202	Loose/Defective Spout
		203	Loose/Missing/Defective Bellows
		204	Missing/Defective Faceplate
		205	Missing Hold Open Latch (if applicable)
		206	Missing/Defective Vapor Check Valve
		207	Uncertified Nozzle/Component
		208	Obstructed Collection Holes (Bellows-less)
		209	Missing/Damaged Vapor Guard (Bellows-less)
		210	Leaking Nozzle
			Nozzle Model
		211	Other
<b>Hose</b>			
		225	Improper Hose Configuration
		226	Missing/Defective Hose or Hose Component
		227	Missing/Defective Swivels
		228	Uncertified Hose or Hose Component
		229	Other
<b>Dispenser</b>			
		250	Missing/Improperly Installed Flow Restrictor
		251	Missing/Defective Dispenser Components
		252	Missing Signs
		253	Other
<b>Other (check the appropriate box)</b>			
	ALL	275	Non-operational Processor Unit
	ALL	276	Non-operational Vacuum/Collection Unit
		277	Other

**Compliance Action (check the appropriate box)**

In Compliance - No Action Taken

Notice to Comply Issued Notice No. \_\_\_\_\_

Notice of Violation Issued Notice No. \_\_\_\_\_

Tags Issued	Total	Locked Out**	Repaired During Inspection

Inspected By: LBC Report Date: 1-12-99  
 Supervisor Approval: MCS Date of Review: 12-29-98

\* Defects that substantially impair the effectiveness of the vapor recovery system.  
 \*\* Nozzles with major defects that were locked out-of-service prior to inspection.





# South Coast Air Quality Management District

NOV Z26568

## Company

Facility: SHELL DLR, PYUNG SUN KIM DBA KIM'S SHELL (ID: 30226)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731-000  
Representative: KIM

## Violation

Notice Issued Date: 4/28/1986  
Violation Date: 4/28/1986  
Serve To:  
Issue By:  
Assignment No.: 529750  
Equipment: GASOLINE DISPENSING EQUIP  
Description

Violation:

## Disposition

Final Action Code: CLO 8/22/1986 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

461 FAILURE TO MAINTAIN

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NOV Z26804

## Company

Facility: SHELL DLR, PYUNG SUN KIM DBA KIM'S SHELL (ID: 30226)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731-000  
Representative: DAVID CHONG

## Violation

Notice Issued Date: 5/6/1986  
Violation Date: 5/6/1986  
Serve To:  
Issue By:  
Assignment No.: 529973  
Equipment: GASOLINE DISPENSING EQUIP  
Description  
Violation:

## Disposition

Final Action Code: CLO 10/16/1986 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

461 FAILURE TO MAINTAIN

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NOV Z27502

## Company

Facility: SHELL DLR, PYUNG SUN KIM DBA KIM'S SHELL (ID: 30226)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731-000  
Representative: KWAN WOOK LEE

## Violation

Notice Issued Date: 6/22/1986  
Violation Date: 6/22/1986  
Serve To:  
Issue By:  
Assignment No.: 530612  
Equipment: GASOLINE DISPENSING EQUIP  
Description  
Violation:

## Disposition

Final Action Code: CLO 10/29/1986 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

461 FAILURE TO MAINTAIN

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NOV Z36366

## Company

Facility: SHELL DEALER, KIM'S-PYUNG SUN KIM (ID: 30226)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731-000  
Representative: SEONG WHAM KIM

## Violation

Notice Issued Date: 2/24/1988  
Violation Date: 2/24/1988  
Serve To:  
Issue By:  
Assignment No.: 538370  
Equipment: DEFECT FIL TUBE SEAL, LOOSE SPT  
Description:  
Violation:

## Disposition

Final Action Code: CLO 7/25/1988 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

461 FAILURE TO MAINTAIN RECOVERY SYSTEM

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NOV Z38913

## Company

Facility: SHELL DLR, PYUNG SUN KIM DBA KIM'S SHELL (ID: 30226)  
Location Address: 511 N BROOKHURST SAN PEDRO  
Mailing Address: 511 N BROOKHURST ANAHEIM, CA 92801  
Representative: TOM MAHER

## Violation

Notice Issued Date: 8/18/1988  
Violation Date: 8/18/1988  
Serve To:  
Issue By:  
Assignment No.: 540646  
Equipment: GASOLINE DISPENSING EQUIP  
Description:  
Violation:

## Disposition

Final Action Code: CLO 3/10/1989 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

461 FAILURE TO MAINTAIN RECOVERY SYSTEM

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

Run Date : 04/02/2010 04:30 PM

## Facility Equipment List Report

Facility: 30226 SHELL DLR, PYUNG SUN KIM  
Last Inspection: 05/24/1988  
SIC: 5541  
Inspector:  
Inspection Date:  
Location Address: 406 N GAFFEY ST, SAN PEDRO 90731 Sector:LK  
Mailing Address: 406 N GAFFEY ST, SAN PEDRO 90731-1809 Sector:LK  
Instruction:

MR:  
TS:  
Facility Status: Out of Business  
Assignment No.  
Disposition:

Contact: UNKNOWN UNKNOWN (213) 5485618  
Quarter: none - do not inspect  
On Hold:  
Suspended:  
Facility Team:

RECLAIM: N	TITLE V: N	SIP:	AIR:						
Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status		
_____ 157686	M89102	11/05/1987	INACTIVE	92 CCAT	FLARE SYSTEM, REFINERY	06/04/1987	PERMIT TO OPERATE GRANTED		
_____ 157686	M89102	11/05/1987	INACTIVE	248915 BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	06/04/1987	PERMIT TO OPERATE GRANTED		
_____ 169189	M90532	09/30/1988	INACTIVE	248915 BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	05/05/1988	PERMIT TO OPERATE GRANTED		
_____ 169189	M90532	09/30/1988	INACTIVE	92 CCAT	FLARE SYSTEM, REFINERY	05/05/1988	PERMIT TO OPERATE GRANTED		
_____ Z00171	905603	06/01/1982	INACTIVE	90 CCAT	AMINE (OR DEA) REGENERATION	01/01/1900	PERMIT TO OPERATE GRANTED		
_____ Z00171	905603	06/01/1982	INACTIVE	248915 BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	01/01/1900	PERMIT TO OPERATE GRANTED		

Report:

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_ Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

# South Coast Air Quality Management District

Run Date : 04/02/2010 04:30 PM

## Facility Equipment List Report

Facility: 63486 SHELL DLR

Last Inspection: 05/24/1988

SIC: 5541

Inspector:

Inspection Date:

Location Address: 406 N GAFFEY ST, SAN PEDRO 90731 Sector:LK

Mailing Address: ATTN CAREY WEHRLI ENV ANALYST, WOODLAND HILLS 91365-4218 Sector:PA

Instruction:

MR:

TS:

Facility Status: Sold

Assignment No.

Disposition:

Contact: SUN KYUNG KIM (213) 5485618

Quarter: none - do not inspect

On Hold:

Facility Team: N4

Suspended:

RECLAIM: N

TITLE V: N

SIP:

AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
176915	M91735	06/14/1989	INACTIVE	248915 BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	11/04/1988	PERMIT TO OPERATE GRANTED
176915	M91735	06/14/1989	INACTIVE	92 CCAT	FLARE SYSTEM, REFINERY	11/04/1988	PERMIT TO OPERATE GRANTED
271913	D60332	08/19/1992	INACTIVE	482622 BCAT	CFC-12 RECOVERY/RECYCLING (RULE 1411)	08/17/1992	PERMIT TO OPERATE GRANTED

Report:

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_ Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

# South Coast Air Quality Management District

Run Date : 04/02/2010 04:31 PM

## Facility Equipment List Report

Facility: 102592 SHELL DLR, JIN HONG KIM DBA

Last Inspection: 05/24/1988

SIC: 5541

Inspector:

Inspection Date:

Location Address: 406 N GAFFEY ST, SAN PEDRO 90731 Sector:LK

Mailing Address: P O BOX 25370, SANTA ANA 92799 Sector:RD

Instruction:

MR:

TS:

Facility Status: Sold

Assignment No.

Disposition:

Contact: JIN HONG KIM (818) 8423644

Quarter: none - do not inspect

On Hold: N

Facility Team: H

Suspended: N

RECLAIM: N

TITLE V: N

SIP:

AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
296148	N01645	09/13/1994	INACTIVE	248900 BCAT	STORAGE TANK GASOLINE	08/24/1994	PERMIT TO OPERATE GRANTED
320386				248915 BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	09/18/1996	APPLICATION DENIED
336554	N5640	02/20/1998	INACTIVE	248915 BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	12/17/1997	PERMIT TO OPERATE GRANTED

Report:

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_ Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



# South Coast Air Quality Management District

Run Date : 04/02/2010 04:31 PM

## Facility Equipment List Report

Facility: 117082 EQUILON DLR, SAN PEDRO SHELL, JIN H KIM

MR:

Contact: JIN HONG KIM (310) 5485618

Last Inspection: 06/28/2000

TS:

Quarter: none - do not inspect

SIC: 5541

Facility Status: Inactive

On Hold: N

Suspended: N

Inspector: JA02 JASON ASPELL

Assignment No. 618160

Facility Team: H

Inspection Date:

Disposition:

Location Address: 406 N GAFFEY ST, SAN PEDRO 90731 Sector:LK

Mailing Address: 2255 N ONTARIO ST, BURBANK 91504 Sector:PC

Instruction:

RECLAIM: N

TITLE V: N

SIP:

AIR:

Application No.	Permit No.	Permit Issue Date	Permit Status	Equipment Category	BCAT/CCAT Description	Application Date	Application Status
344156	N6651	09/18/1998	INACTIVE	248915 BCAT	SERV STAT STORAGE & DISPENSING GASOLINE	07/17/1998	PERMIT TO OPERATE GRANTED

Report: O/B.

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_ Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

# South Coast Air Quality Management District

NC C29070

## Company

Facility: SHELL DLR DBA CHAN SHELL (ID: 63486)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST, CA 90731  
Representative:

## Violation

Notice Issued Date: 8/5/1992  
Violation Date: 8/5/1992  
Serve To: SHELL DLR DBA CHAN SHELL  
Issue By:  
Assignment No.: 502575  
Compliance  
Achieved Date:  
Equipment AS GIVEN  
Description:

Compliance Required: REPAIR/REPLACE: #1RUL,5SUL,6RUL LOOSE SPOUTS #1SUL,3SUL,7SUL8SR,3SR MISSING SWIVEL ON COAXIAL HOSE AT DISPENSER #3SR LEAKING SWIVEL AT COAXIAL HOSE TO NOZ #2RUL LEAKING AT BOOT

## Disposition

Final Action Code:

Due Date:

Violation Days: 0

## Rule/Comment

41960.2 H&S: GASOLINE NOZZLE SYSTEM COMPONENTS

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NC C29071

## Company

Facility: SHELL DLR DBA CHAN SHELL (ID: 63486)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST, CA 90731  
Representative:

## Violation

Notice Issued Date: 8/5/1992  
Violation Date: 8/5/1992  
Serve To: SHELL DLR DBA CHAN SHELL  
Issue By:  
Assignment No.: 502576  
Compliance  
Acheived Date:  
Equipment AS GIVEN  
Description:

Compliance Required: APPLY FOR A PERMIT TO OPERATE A/C RECOVERY/RECYCLING EQUIP MAINTAIN RECORDS

## Disposition

Final Action Code:

Due Date:

Violation Days: 0

## Rule/Comment

1411 RECOVER/RECYCLE REFRIGERANTS FROM MV AIR CONDITIONERS  
203 PERMIT OPERATE OR CONDITIONS

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NC C31007

## Company

Facility: SHELL DLR DBA CHAN SHELL (ID: 63486)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST, CA 90731  
Representative:

## Violation

Notice Issued Date: 8/6/1993  
Violation Date: 8/6/1993  
Serve To: SHELL DLR DBA CHAN SHELL  
Issue By: FORTUNE CHEN (Team: R)  
Assignment No.: 504000  
Compliance  
Achieved Date:  
Equipment 1411  
Description:

Compliance Required: MAINTAIN MAINTENANCE LOG PER 1411

## Disposition

Final Action Code:

Due Date:

Violation Days: 0

## Rule/Comment

1411 RECOVER/RECYCLE REFRIGERANTS FROM MV AIR CONDITIONERS

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NC C33860

## Company

Facility: SHELL DLR DBA CHAN SHELL (ID: 63486)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST, CA 90731  
Representative:

## Violation

Notice Issued Date: 8/14/1991  
Violation Date: 8/14/1991  
Serve To: SHELL DLR DBA CHAN SHELL  
Issue By:  
Assignment No.: 506040  
Compliance  
Achieved Date:  
Equipment Description: GASOLINE FUELING EQUIPMENT

Compliance Required: REPAIR/REPLACE LOOSE SPOUT

REMOVE TAPE ON VAPOR HOSE

## Disposition

Final Action Code:

Due Date:

Violation Days: 0

## Rule/Comment

41960.2 H&S: GASOLINE NOZZLE SYSTEM COMPONENTS

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NOV P11123

## Company

Facility: SHELL DLR, JIN HONG KIM DBA (ID: 102592)  
Location Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731  
Mailing Address: P O BOX 25370 SANTA ANA, CA 92799  
Representative: H & S ENVRN REP

## Violation

Notice Issued Date: 12/10/1997  
Violation Date: 12/3/1997  
Serve To: FRANCISCO BERNAL  
Issue By: LALO A. BAKHOUM (Team: I)  
Assignment No.: 566840  
Equipment: FUEL DISPENSING  
Description:

Violation: FAILURE TO COMPLY WITH CONDITIONS #6 ,7 & 8 OF P/C NO. 320386

## Disposition

Final Action Code: CLO 7/30/1998 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

202 a

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NOV P11125

## Company

Facility: SHELL DLR, JIN HONG KIM DBA (ID: 102592)  
Location Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731  
Mailing Address: P O BOX 25370 SANTA ANA, CA 92799  
Representative: DEALER

## Violation

Notice Issued Date: 12/11/1997  
Violation Date: 12/11/1997  
Serve To: JIN KIM  
Issue By: LALO A. BAKHOUM (Team: I)  
Assignment No.: 566847  
Equipment: FUEL DISPENSING  
Description:

Violation: OPERATING GAS DISPENSING BELLOWS-LESS NOZZ'S EQUIPPED W/PHASE II VRS, DRESSER WAYNE--WAYNE VAC (G-70-53-AA) & (3) STOR. TNKS. W/O P/O--P/C NO. 320386 WAS DENIED.

## Disposition

Final Action Code: CLO 7/30/1998 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

203 a

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

# South Coast Air Quality Management District

NOV P11140

## Company

Facility: SHELL DLR, JIN HONG KIM DBA (ID: 102592)  
Location Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731  
Mailing Address: P O BOX 25370 SANTA ANA, CA 92799  
Representative: DLR

## Violation

Notice Issued Date: 1/12/1998  
Violation Date: 1/12/1998  
Serve To: JIN HONG KIM  
Issue By: LALO A. BAKHOUM (Team: I)  
Assignment No.: 567045  
Equipment: FUEL DISPENSING  
Description:

Violation: NO SELF COMPL INSPECTIONS CONDUCTED AND INSPECTION, REPAIR, RECORDS NOT BEING KEPT

## Disposition

Final Action Code: CLO 12/22/1998 00:00:00  
Achieved Date:  
Due Date:  
Violation Days: 0

## Rule/Comment

461 c5A, c7A

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_



# South Coast Air Quality Management District

NOV P12970

## Company

Facility: SHELL DLR, JIN HONG KIM DBA (ID: 102592)  
Location Address: 406 N GAFFEY, ST SAN PEDRO  
Mailing Address: 406 N GAFFEY, ST SAN PEDRO, CA 90731  
Representative: JIN HONG KIM

## Violation

Notice Issued Date: 11/2/1994  
Violation Date: 11/2/1994

Serve To:

Issue By:

Assignment No.: 519335

Equipment: NOZZLES,SPOUT,SWIVELS

Description:

Violation:

## Disposition

Final Action Code: CLO 3/22/1995 00:00:00

Achieved Date:

Due Date:

Violation Days: 0

## Rule/Comment

461 FAILURE TO MAINTAIN VAPOR RECOVERY SYSTEM

## Emittent

## Follow-Up

Status: Inspector ID: Inspection Date: Number:

## Lab Sample Numbers

## Device IDs.

## Inspector Comment

INSPECTOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_

SUPERVISOR: \_\_\_\_\_  
signature

DATE: \_\_\_\_\_



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

Information Management  
Public Records Unit

Direct Dial: (909) 396-3700  
Fax: (909) 396-3330

## ACKNOWLEDGEMENT LETTER

April 02, 2010

ANGELA CZUBA  
THE SOURCE GROUP, INC.  
1962 FREEMAN AVE.  
SIGNAL HILL, CA 90755

Re: Request for Records  
Control # 62010  
Request: APPLS, P/O'S, EQL'S, NOV'S, N/C'S, I/R'S, SOURCE TEST REPS, ASBESTOS RECS, PTE & HRA AT 406 N. GAFFEY ST., SAN PEDRO, CA 90731.

Your request for records has been received by the Public Records Unit and has been assigned for processing. When a thorough search for the requested records is complete, the records found will be provided to you in one of the following manners:

- electronically by email or by an accessible link on line at no charge.
- on CD and mailed to you along with an invoice for \$10.00 per CD.
- photocopied and mailed to you along with an invoice for the direct cost of duplication at \$.15 per page over 10 pages.

If review of the requested records is preferred, Public Records staff will contact you once the records are gathered, to make an appointment for a mutually agreeable time for inspection of the documents.

Records requested which contain confidential or trade secret information, may require legal review and could delay the release of requested records.

Should you have any questions or need additional information, please do not hesitate to contact me, Tuesday through Friday, 8:00 a.m. to 4:30 p.m. Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

RAFAEL VILLA x2049  
For Colleen Paine  
Public Records Coordinator



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

Information Management  
Public Records Unit

Direct Dial (909) 396-3700  
Fax:(909) 396-3330

## COMPLETION LETTER

April 06, 2010

ANGELA CZUBA  
THE SOURCE GROUP, INC.  
1962 FREEMAN AVE.  
SIGNAL HILL, CA 90755

**Ref.: CONTROL NO. 62010**  
Received 4/1/2010

Re: APPLS, P/O'S, EQL'S, NOV'S, N/C'S, I/R'S, SOURCE TEST REPS, ASBESTOS RECS,  
PTE & HRA AT 406 N. GAFFEY ST., SAN PEDRO, CA 90731.

After a thorough search of this agency's records, the following records were found:  
EQL'S, I/R'S, N/C'S & NOV PRINTOUTS FOR FAC ID #30226, 63486, 102592 AND 117082.  
PLEASE REFER TO SCAQMD WEB SITE FOR APPLICATION INFORMATION & P/O  
RETRIEVAL.

The following records were not found:

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 04/06/2010

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m. to 4:30 p.m.**

Sincerely,

RAFAEL VILLA x2049  
For Colleen Paine  
Public Records Coordinator

**APPENDIX K**

**STANDARD PHASE I ESA QUESTIONNAIRES- COMPLETED BY SITE OWNER AND SGI**

Attn: Frank Luro

Site Name: 406 N. Gaffey Street, San Pedro, CASGI Project No: 04-CRA-008

4 pages

Please Fax filled out  
form to Dan Weissman

at (213) 687-9546

## STANDARD PHASE I ESA QUESTIONNAIRE

406 N. Gaffey Street  
San Pedro, CA 90731

(Please circle your answer)

	Owner / Site Manager			Site Visit		
1a) Is the property used for industrial purposes?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
1b) Is the adjoining property used for industrial purposes?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
2a) Was the property used for industrial Purposes in the past?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
2b) Was the adjoining property used for industrial purposes in the past?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
3a) Is the property currently a gas station? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
3b) Is the adjoining property currently a gas station? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
4a) Was the property a gas station in the past? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	<input checked="" type="radio"/> Yes	No	Unknown	Yes	No	Unknown
4b) Was the adjoining property a gas station in the past? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
5a) Are there currently any discarded automobiles, batteries, pesticides, paints, or other chemicals over 5 gal on the property?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
5b) Have there been any discarded Automobiles, batteries, pesticides, paints, or Other chemicals over 5 gal on the property?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
6a) Are there currently any industrial 55gal drums or sacks of chemicals at facility?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
6b) Were there any industrial 55gal drums or sacks of chemicals at facility in the past?	<input checked="" type="radio"/> Yes	No	Unknown	Yes	No	Unknown
7a) Have you observed fill dirt brought in?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown
7b) Evidence of past fill dirt brought in?	Yes	<input checked="" type="radio"/> No	Unknown	Yes	No	Unknown

Site Name: 406 N. Gaffey Street, San Pedro, CASGI Project No: 04-CRA-008

- 8a) Current pits, ponds, or lagoons used for waste treatment? Yes  No Unknown Yes No Unknown
- 8b) Past pits, ponds, or lagoons used for waste treatment? Yes  No Unknown Yes No Unknown
- 9a) Current stained soil? Yes  No Unknown Yes No Unknown
- 9b) Past stained soil? Yes  No Unknown Yes No Unknown
- 10a) Are there currently any storage tanks? Yes  No Unknown Yes No Unknown
- 10b) Were there storage tanks in the past? Yes  No Unknown Yes No Unknown
- 11a) Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on property? Yes  No Unknown Yes No Unknown
- 11b) Have there been any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on property? Yes  No Unknown Yes No Unknown
- 12a) Evidence of current leaks, spills or staining by substances other than water, or foul odors associated with any flooring, drains, walls or exposed ground? Yes  No Unknown Yes No Unknown
- 12b) Evidence of past leaks, spills or staining by substances other than water, or foul odors associated with any flooring, drains, walls or exposed ground? Yes  No Unknown Yes No Unknown
- 13a) Is there a well on the property? Yes  No Unknown Yes No Unknown
- 14) Does the owner or occupant have knowledge of environmental liens or governmental notifications relating to past or recurring violations of environmental laws with respect to the property? Yes  No Unknown
- 15a) Has the owner or occupant been informed of past existence of hazardous substances or petroleum products with respect to the property? Yes  No Unknown
- 15b) Has the owner or occupant been informed of existing hazardous substances or petroleum products with respect to the property? Yes  No Unknown
- 15c) Has the owner or occupant been informed of past existence of environmental violations with respect to the property? Yes  No Unknown

Site Name: 406 N. Gaffey Street, San Pedro, CASGI Project No: 04-CRA-008

15d) Has the owner or occupant been informed of existing environmental violations with respect to the property? Yes  No  Unknown

16) Has the owner or occupant been informed of any environmental assessments of the property indicating the presence of hazardous substances or petroleum products? Yes  No  Unknown

17) Does the owner of property know of any past threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance involving the property? Yes  No  Unknown

18a) Does property discharge waste water (not including sanitary or storm sewer) onto or adjacent to the property? Yes  No  Unknown  Yes No Unknown

18b) has the property discharge waste water (not including sanitary or storm sewer) onto or adjacent to the property? Yes  No  Unknown  Yes No Unknown

19) Did you observe evidence of or do you have any prior knowledge that any hazardous substance or petroleum product, unidentified waste, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade on the property? Yes  No  Unknown  Yes No Unknown

20) Is there a transformer, capacitor, or hydraulic equipment for which there are any records indicating the presence of PCBs? Yes  No  Unknown  Yes No Unknown

Site Name: 406 N. Gaffey Street, San Pedro, CA

SGI Project No: 04-CRA-006

The Owner/Site Manager questionnaire was completed by:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Address: \_\_\_\_\_

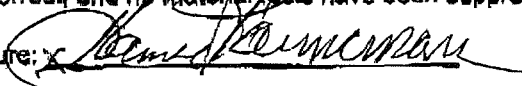
Phone: \_\_\_\_\_  
Date: \_\_\_\_\_  
Relationship to site  
\_\_\_\_\_

The Site Visit questionnaire was completed by:

Name: Hemid Bournamari  
Title: \_\_\_\_\_  
Firm: The Source Group, Inc.  
Address: 1962 Freeman Avenue, Signal Hill CA 90755

Phone: (562)-597-1055  
Date: \_\_\_\_\_  
Relationship to site  
Consultant

Preparer represents that to the best of the preparer's knowledge the above statements and facts are true and correct, and no material facts have been suppressed or misstated.

Owner Signature:   
Consultant Signature: \_\_\_\_\_

Date: 4-15-10  
Date: \_\_\_\_\_



STANDARD PHASE I ESA QUESTIONNAIRE  
 406 N. Gaffey Street  
 San Pedro, CA 90731

(Please circle your answer)

	<u>Owner / Site Manager</u>			<u>Site Visit</u>	
1a) Is the property used for industrial purposes?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
1b) Is the adjoining property used for industrial purposes?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
2a) Was the property used for industrial Purposes in the past?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
2b) Was the adjoining property used for industrial purposes in the past?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
3a) Is the property currently a gas station? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
3b) Is the adjoining property currently a gas station? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
4a) Was the property a gas station in the past? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	Yes	No	Unknown	<input checked="" type="radio"/> Yes No	Unknown
4b) Was the adjoining property a gas station in the past? Motor repair, printing, plating, dry cleaner, laboratory, junkyard, landfill, recycling, or waste treatment?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
5a) Are there currently any discarded automobiles, batteries, pesticides, paints, or other chemicals over 5 gal on the property?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
5b) Have there been any discarded Automobiles, batteries, pesticides, paints, or Other chemicals over 5 gal on the property?	Yes	No	Unknown	Yes No <input checked="" type="radio"/> Unknown	
6a) Are there currently any industrial 55gal drums or sacks of chemicals at facility?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
6b) Were there any industrial 55gal drums or sacks of chemicals at facility in the past?	Yes	No	Unknown	Yes No <input checked="" type="radio"/> Unknown	
7a) Have you observed fill dirt brought in?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown
7b) Evidence of past fill dirt brought in?	Yes	No	Unknown	Yes <input checked="" type="radio"/> No	Unknown

- 8a) Current pits, ponds, or lagoons used for waste treatment? *oil water separator and Clarifier on site* Yes No Unknown  Yes No Unknown
- 8b) Past pits, ponds, or lagoons used for waste treatment? *oil water separator and clarifier on site* Yes No Unknown  Yes No Unknown
- 9a) Current stained soil? *Black staining on asphalt and soil.* Yes No Unknown  Yes No Unknown
- 9b) Past stained soil? Yes No Unknown  Yes No Unknown
- 10a) Are there currently any storage tanks? Yes No Unknown Yes  No Unknown
- 10b) Were there storage tanks in the past? *Underground Storage Tanks* Yes No Unknown  Yes No Unknown
- 11a) Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on property? Yes No Unknown Yes  No Unknown
- 11b) Have there been any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on property? Yes No Unknown Yes No  Unknown
- 12a) Evidence of current leaks, spills or staining by substances other than water, or foul odors associated with any flooring, drains, walls or exposed ground? *Black oil stains near Clarifier and on some areas of asphalt.* Yes No Unknown  Yes No Unknown
- 12b) Evidence of past leaks, spills or staining by substances other than water, or foul odors associated with any flooring, drains, walls or exposed ground? Yes No Unknown  Yes No Unknown
- 13a) Is there a well on the property? *Groundwater monitoring wells* Yes No Unknown  Yes No Unknown
- 14) Does the owner or occupant have knowledge of environmental liens or governmental notifications relating to past or recurring violations of environmental laws with respect to the property? Yes No Unknown
- 15a) Has the owner or occupant been informed of past existence of hazardous substances or petroleum products with respect to the property? Yes No Unknown
- 15b) Has the owner or occupant been informed of existing hazardous substances or petroleum products with respect to the property? Yes No Unknown
- 15c) Has the owner or occupant been informed of past existence of environmental violations with respect to the property? Yes No Unknown

15d) Has the owner or occupant been informed of existing environmental violations with respect to the property? Yes No Unknown

16) Has the owner or occupant been informed of any environmental assessments of the property indicating the presence of hazardous substances or petroleum products? Yes No Unknown

17) Does the owner of property know of any past threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance involving the property? Yes No Unknown

18a) Does property discharge waste water (not including sanitary or storm sewer) onto or adjacent to the property? Yes No Unknown Yes No Unknown

18b) has the property discharge waste water (not including sanitary or storm sewer) onto or adjacent to the property? Yes No Unknown Yes No Unknown

19) Did you observe evidence of or do you have any prior knowledge that any hazardous substance or petroleum product, unidentified waste, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade on the property? Yes No Unknown Yes No Unknown

*19 tires, trash, 5-gal bucket w/unknown oily substance.*

20) Is there a transformer, capacitor, or hydraulic equipment for which there are any records indicating the presence of PCBs? Yes No Unknown Yes No Unknown

*Hists are still on site on former station building's concrete pad in NE corner of site.*



Site Name: 406 N. Gaffey Street, San Pedro, CA

SGL Project No: 04-CRA-008

The Owner/Site Manager questionnaire was completed by:

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Firm: \_\_\_\_\_

Relationship to site

Address: \_\_\_\_\_

\_\_\_\_\_

The Site Visit questionnaire was completed by:

Name: Angela Czuba

Phone: (562)-597-1055

Title: Staff Env. Scientist

Date: 4-9-10

Firm: The Source Group, Inc.

Relationship to site

Address: 1962 Freeman Avenue, Signal Hill CA 90755

Consultant

Preparer represents that to the best of the preparer's knowledge the above statements and facts are true and correct, and no material facts have been suppressed or misstated.

Owner Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Consultant Signature: Angela Czuba

Date: 4-9-10

**APPENDIX L**

**AAI USER QUESTIONNAIRE- COMPLETED BY DANIEL WEISSMAN (CRA/LA)**

**USER QUESTIONNAIRE  
406 N. Gaffey Street  
San Pedro, CA 90731**

In accordance with the requirements of the AAI (ASTM E 1527-05), the *user* (or party seeking to complete and subsequently use the environmental site assessment of the property), must provide the following information, if available. Failure to provide this information could result in a determination that “*all appropriate inquiry*” is not complete.

**(1.) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).**

Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law?

*An agreement in which Shell Oil company promised to clean up the property is recorded on title.*

**(2.) Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).**

Are you aware of any land use limitations, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

*No.*

**(3.) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).**

As the *user* of this *ESA* do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

*No.*

**(4.) Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).**

Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?

*The price offered is based on fair market value with deductions for environmental costs subject to future negotiation.*

**(5.) Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).**

**Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,**

**(a.) Do you know the past uses of the property? If so, list the past use or uses of the property to the best of your knowledge**

**(b.) Do you know of specific chemicals that are present or once were present at the property? If so, please list them.**

**(c.) Do you know of spills or other chemical releases that have taken place at the property?**

**(d.) Do you know of any environmental cleanups that have taken place at the property? If so, please provide additional information.**

*Site is a former gas station presently being investigated by Shell Oil Company, under oversight of the Los Angeles Water Board.*

**(6.) The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).**

**As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?**

*No.*

**The User Questionnaire (Appendix X-3 of ASTM 1527-05) was completed by:**

**Name:** Daniel Weissman  
**Phone:** (323) 977 2687; (323) 788 5028  
**Title:** Principal Engineer  
**Date:** 4/1/10  
**Company Name:** CRA/LA  
**Address:**  
**Relationship to site:**