Roya C. Kambin
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Marketing Business Unit

Chevron Environmental Management Company
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March 16, 2012

Alameda County Health Care Services Agency
Environmental Health Department
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Tosco 76 #3737/Chevron
Union Oil Company of California Site 351780
1400 Powell Street
Emeryville, CA
Fuel Leak Case RO0067

I have reviewed the attached **Work Plan for Additional Delineation** dated March 16, 2012.

I agree with the conclusions and recommendations presented in this document. The information included is accurate to the best of my knowledge, and appears to meet local agency and Regional Board guidelines. This **Work Plan for Additional Delineation** was prepared by Conestoga Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

Roya Kambin
Union Oil of California – Project Manager

Attachment: Work Plan for Additional Delineation

CONESTOGA-ROVERS & ASSOCIATES

10969 Trade Center Drive, Suite 107
Rancho Cordova, California 95670
Telephone: (916) 889-8900 Fax: (916) 889-8999
www.CRAworld.com

TRANSMITTAL

DATE: March 16, 2012

REFERENCE NO.: RO0067, 060716

PROJECT NAME: 351780, Emeryville, CA

TO: Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Please find enclosed:

- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☐ Final
- ☒ Other electronic copy

Sent via:

- ☐ Mail
- ☐ Overnight Courier
- ☐ Same Day Courier
- ☒ Other upload to FTP site

QUANTITY	DESCRIPTION
1	Work Plan for Additional Delineation

- ☒ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:

Copy to: Ms. Roya Kambin
Mr. Najmeddin Revan

Completed by: Laura Heberle
[Please Print]

Signed:

Filing: **Correspondence File**

WORK PLAN FOR ADDITIONAL DELINEATION

Tosco 76 #3737/Chevron
Union Oil Company of California Site 351780
1400 Powell Street
Emeryville, California
Fuel Leak Case RO0067

Prepared For:

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Prepared by:
Conestoga-Rovers & Associates

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MARCH 16, 2012
REF. NO. 060716 (6)
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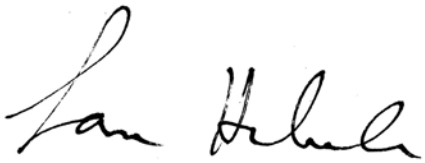
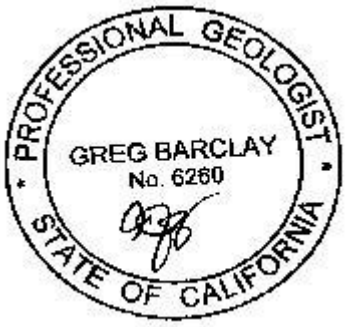
WORK PLAN FOR ADDITIONAL DELINEATION

Tosco 76 #3737/Chevron
Union Oil Company of California Site 351780
1400 Powell Street
Emeryville, California
Fuel Leak Case RO0067



Laura Heberle



Greg Barclay, PG 6260

Prepared by:
Conestoga-Rovers & Associates

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1.0 INTRODUCTION

On behalf of Chevron Environmental Management Company, for itself and as Attorney-in-Fact for Union Oil Company of California (hereinafter "EMC"), Conestoga-Rovers & Associates (CRA) is submitting this *Work Plan for Additional Delineation* for the site referenced above. In a letter dated January 12, 2012, Alameda County Environmental Health (ACEH) requested a work plan to provide downgradient and lateral delineation of dissolved hydrocarbons and oxygenates in the upper water-bearing zone, and requested results of a preferential pathway survey, utility survey, and well survey (Appendix A).

ACEH's requests were based on their review of the following reports submitted on behalf of EMC:

- Antea Group's *Soil and Groundwater Investigation Report* dated February 12, 2011
- CRA's *Third Quarter 2011 Groundwater Monitoring and Sampling Report* dated October 14, 2011

Additionally, the reports submitted on behalf of Wareham Property Group:

- Treadwell & Rollo's *Soil and Groundwater Investigation Letter Report* dated May 14, 2010
- Treadwell & Rollo's *Evaluation of Responsibility for Groundwater Characterization and Remediation* dated August 23, 2011

Presented below is a summary of the site background and our proposed work plan. Also presented are the results of a preferential pathway analysis.

1.1 SITE DESCRIPTION AND BACKGROUND

The site is currently an active Chevron-branded service station located on the north side of Powell Street between Hollis and Peladeau Streets in Emeryville, California (Figure 1). Between 1917 and 1964, Union Oil Company operated a distribution plant that was bound by Powell Street to the south, 59th Street to the north, Peladeau Street to the west, and Hollis Street to the east. This distribution facility contained numerous aboveground (ASTs) and underground storage tanks (USTs), a garage along Hollis Street and an auto repair shop along Peladeau Street (Treadwell & Rollo, 2007).

On the southern portion of the former distribution plant, which the site currently occupies, there were eight ASTs with a combined storage capacity of 624,000 gallons of

refined oil and gasoline products on the west portion of the site, and an oil warehouse and asphalt staging area on the east portion of the site (Figure 2). The current station facility includes three USTs, four dispenser islands, and a station building. The site is currently surrounded by commercial development, including the Emeryville Industrial Court redevelopment located north which was excavated to approximately 15 feet below grade (fbg).

Six onsite groundwater monitoring wells are currently included in the site monitoring and sampling program. Wells MW-1A through MW-3A are screened in a shallow water-bearing zone (between 3.5 and 10 fbg), and wells MW-1B through MW-3B are screened in a deeper water-bearing zone (between 17 and 25 fbg). Depth to groundwater in the upper water-bearing zone ranges from approximately 5 to 6 fbg with a gradient west. A summary of previous environmental work conducted at the site is presented in Appendix B.

2.0 WORK PLAN

As indicated in ACEH's letter, the lower water-bearing zone wells (MW-1B through MW-3B) delineate the vertical extent of hydrocarbons and oxygenates onsite. In assessing groundwater conditions laterally and downgradient of the site, CRA reviewed groundwater data from environmental cases near the vicinity of the site, which help to define the extent of petroleum hydrocarbons and oxygenates in groundwater (Figure 3). Those cases include work completed for the former Union Oil Distribution Facility at 5885 Hollis Street by Emeryville Industrial Court redevelopment and the former Chevron Asphalt Plant located at 1520 Powell Street.

Site assessment work completed by Treadwell & Rollo for the former Union Oil Distribution Facility at 5885 Hollis Street provides data on constituents of concern (COCs) adjacent to the site. Their listed primary COCs include total petroleum hydrocarbons as diesel and gasoline (TPHd and TPHg), benzene, and methyl tertiary butyl ether (MTBE). However, as indicated by onsite upgradient well MW-3A and adjacent CPT borings TRCPT-8 and TRCPT-9 shown on Figure 3, the concentrations of TPHd, TPHg, and benzene are consistent with background levels associated with the former distribution facility. The only COC likely related solely to service station operations is MTBE (the bulk facility operations ceased in 1964, prior to the widespread use of MTBE in 1992). MTBE concentrations in borings TRCPT-6 and TRCPT-9 are below environmental screening levels, so additional assessment north of the site is not warranted. Additionally, within the footprint of the building located north of the site, soil was excavated to approximately 15 fbg and the area was dewatered during

construction resulting in the removal of residual hydrocarbons in soil and the shallow water-bearing zone.

A grab-groundwater sample collected from boring TRCPT-8 at approximately 10 fbg defines the downgradient extent of COCs in the shallow zone west of onsite well MW-1A. Groundwater monitoring wells MW-15, MW-17, and MW-18 associated with the former Chevron Asphalt Plant at 1520 Powell Street further define the downgradient extent of COCs in groundwater. Further evaluation of the shallow water-bearing zone west-southwest of the site is not warranted.

The highest MTBE concentration currently onsite is in MW-2A, located northeast of the current USTs, with a concentration of 160 micrograms per liter (µg/L) in November 2011. Downgradient of MW-2A is CPT boring TRCPT-7; this grab-groundwater sample had an MTBE concentration of 61 µg/L in April 2010, indicating that MTBE has migrated west offsite beneath Peladeau Street. Across Peladeau Street, the existing building has sub-grade parking, and excavation and construction of that building has likely removed the shallow water-bearing zone and/or created a barrier to shallow zone groundwater flow in that direction, limiting the extent of any COCs migrating downgradient of the site. To evaluate the extent of COCs in shallow groundwater west of boring TRCPT-7 and the lateral extent south, CRA proposes the following:

- Advance two borings to approximately 10 fbg adjacent to the building west of the site at the locations shown on Figure 3.
- Advance one boring to approximately 10 fbg in the planter area at the southwest corner of the site (Figure 3).
- Set temporary wells in each of the borings.
- Collect groundwater samples from each boring and analyze the samples for TPHg, TPHd, benzene, toluene, ethylbenzene, xylenes, and MTBE.

2.1 PERMITS AND ACCESS AGREEMENTS

CRA will obtain all necessary permits from Alameda County for the proposed soil borings prior to beginning field work. Encroachment permits will be obtained from the City of Emeryville for the proposed offsite borings. CRA will also ensure that valid access agreements are in place and that site owners have been notified of the proposed field schedule.

2.2 SITE HEALTH AND SAFETY PLAN

CRA will prepare a site- and activity-specific health and safety plan to inform site workers of known hazards and provide health and safety guidance. The plan will be reviewed and signed by all site workers and visitors and will be kept onsite during field activities.

2.3 UNDERGROUND UTILITY LOCATE

CRA will notify Underground Service Alert (USA) at least 48 hours prior to drilling, to clear the proposed boring locations with public utility companies. A private utility locator will also be retained to further minimize the risk of damaging any unidentified or unknown underground utilities.

2.4 SOIL BORINGS, SOIL SAMPLING, AND ANALYSIS

CRA will oversee the advancement of three borings in the approximate locations shown on Figure 3. The borings will be advanced to approximately 10 fbg. The borings will be advanced to this depth to allow for adequate groundwater in the boring for sampling purposes. Soil samples will be collected every 2 feet and will be screened with a photo-ionization detector (PID). The PID measurements will be documented on the boring logs and select soil samples will be retained for submittal to a laboratory for chemical analyses. Soil in each boring will be continuously logged by a CRA geologist in accordance with CRA's *Standard Procedures for Soil Borings* included in Appendix C.

Soil samples retained for chemical analysis will be stored in an ice-filled cooler and submitted to a State-certified laboratory for analysis under chain-of-custody for analysis of TPHg, TPHd, benzene, toluene, ethylbenzene, xylenes, and MTBE using EPA Method 8260B.

2.5 TEMPORARY WELL CONSTRUCTION DETAILS

The borings will be advanced using 6-inch or 8-inch diameter augers. The temporary wells will be constructed using 2-inch diameter schedule 40 polyvinyl chloride casing with a 0.010-inch machine slotted screen interval. The wells will be screened from 5 to 10 feet below grade. The filter pack will consist of Monterey sand #2/12 placed in the bottom of the screen interval to 3 feet below grade. The remaining annulus will be

sealed with a 2-foot bentonite seal and the wells will be secured at the surface. After the temporary wells have been sampled they will be destroyed per Alameda County Public Works guidelines.

2.6 GROUNDWATER SAMPLING AND ANALYSIS

Approximately 48 hours after the wells have been installed groundwater samples will be collected using low-flow sampling techniques. A pump will be lowered near the bottom of the well casing and groundwater will be purged at a low flow rate and monitored for temperature, pH, and conductivity. Once the groundwater parameters are stable or if the wells dewater, groundwater samples will be collected. Samples will be stored in an ice-filled cooler and transported under chain-of-custody protocol to a State-certified laboratory for chemical analysis of TPHg, TPHd, benzene, toluene, ethylbenzene, xylenes, and MTBE using EPA Method 8260B.

2.7 SOIL DISPOSAL / RECYCLING

Waste generated during field activities will be temporarily stored onsite in DOT-approved 55-gallon drums. Following review of laboratory analytical results, the waste will be transported to a Chevron approved facility for disposal/recycling.

2.8 REPORT PREPARATION

After the analytical results are received, CRA will prepare a report that will include:

- A site background and summary of previous investigations
- A description of the soil boring advancement methods
- Temporary well construction details
- A description of the soil and groundwater sampling methods
- A figure illustrating the soil boring locations
- Boring logs
- Tabulated soil and groundwater analytical data
- Analytical reports and chain-of-custody forms
- A description of soil disposal methods
- Data analysis and interpretation

- CRA's conclusions and recommendations

3.0 PREFERENTIAL PATHWAY SURVEY

The preferential pathway survey consists of a utility survey and well survey. The results of these surveys are presented in the following sub-sections.

3.1 UTILITY SURVEY

Due to the relatively shallow depth to groundwater, CRA evaluated potential pathways (underground utility lines) in the site vicinity that could contribute to the preferential migration of hydrocarbons and oxygenates in groundwater. Utility information was obtained from East Bay Municipal Utility District, City of Emeryville, and site observations. As shown on Figure 3, the majority of the utilities are located upgradient (east) of the site along Hollis Street. A 6-inch diameter sanitary sewer line is located downgradient of the site beneath Peladeau Street. A waterline is located east and south of the site. The depth of the sanitary sewer line, waterline and backfill material was not provided. CRA is in the process of obtaining additional information regarding the sanitary sewer and waterline construction details and will provide that information with results from the investigation proposed above. Site utility laterals for gas, communication and electrical are also shown on Figure 2 and extend generally east-west from the east side of the station building towards Hollis Street. Given that these laterals are not located near potential current source areas and are located in the area of the former distribution plant warehouse, it is unlikely that these are potential pathways.

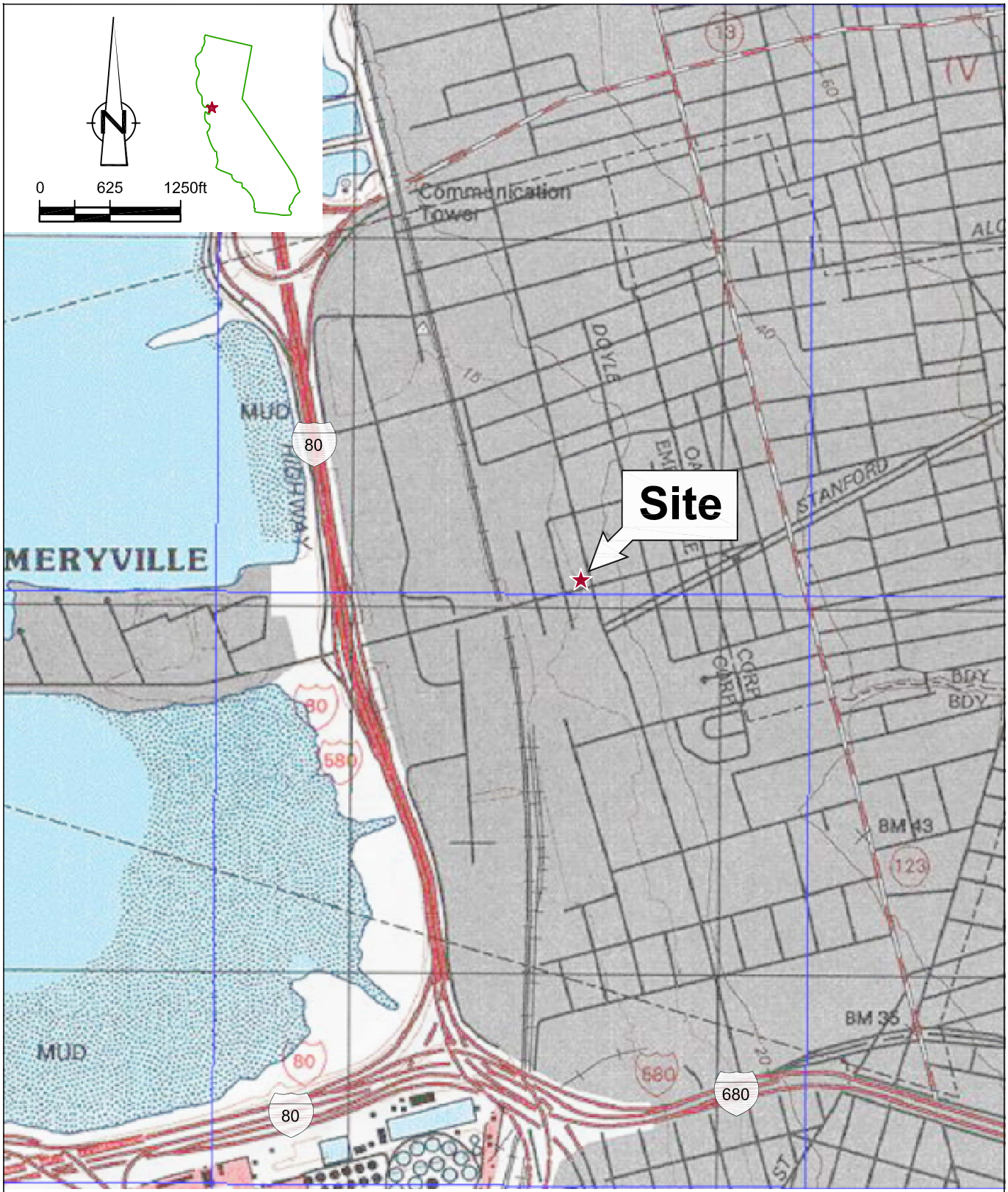
3.2 WELL SURVEY

CRA reviewed California Department of Water Resources (DWR) and Alameda County Public Works Agency (ACPWA) files to identify any wells within ¼-mile of the site. No water supply wells were identified within ¼-mile. Fifty-two wells were identified within ¼-mile. These identified wells consisted of monitoring wells, test wells, piezometers, and destroyed wells. The well information, distance and direction from the site are summarized in Table 1 and presented on Figure 4.

4.0 SCHEDULE

CRA will proceed with the proposed scope of work once approved by the ACEH, and field work will commence following receipt of all necessary offsite access and/or encroachment agreements and boring permit. We anticipate submitting a report approximately 60 days after receiving all data necessary to prepare the report.

FIGURES

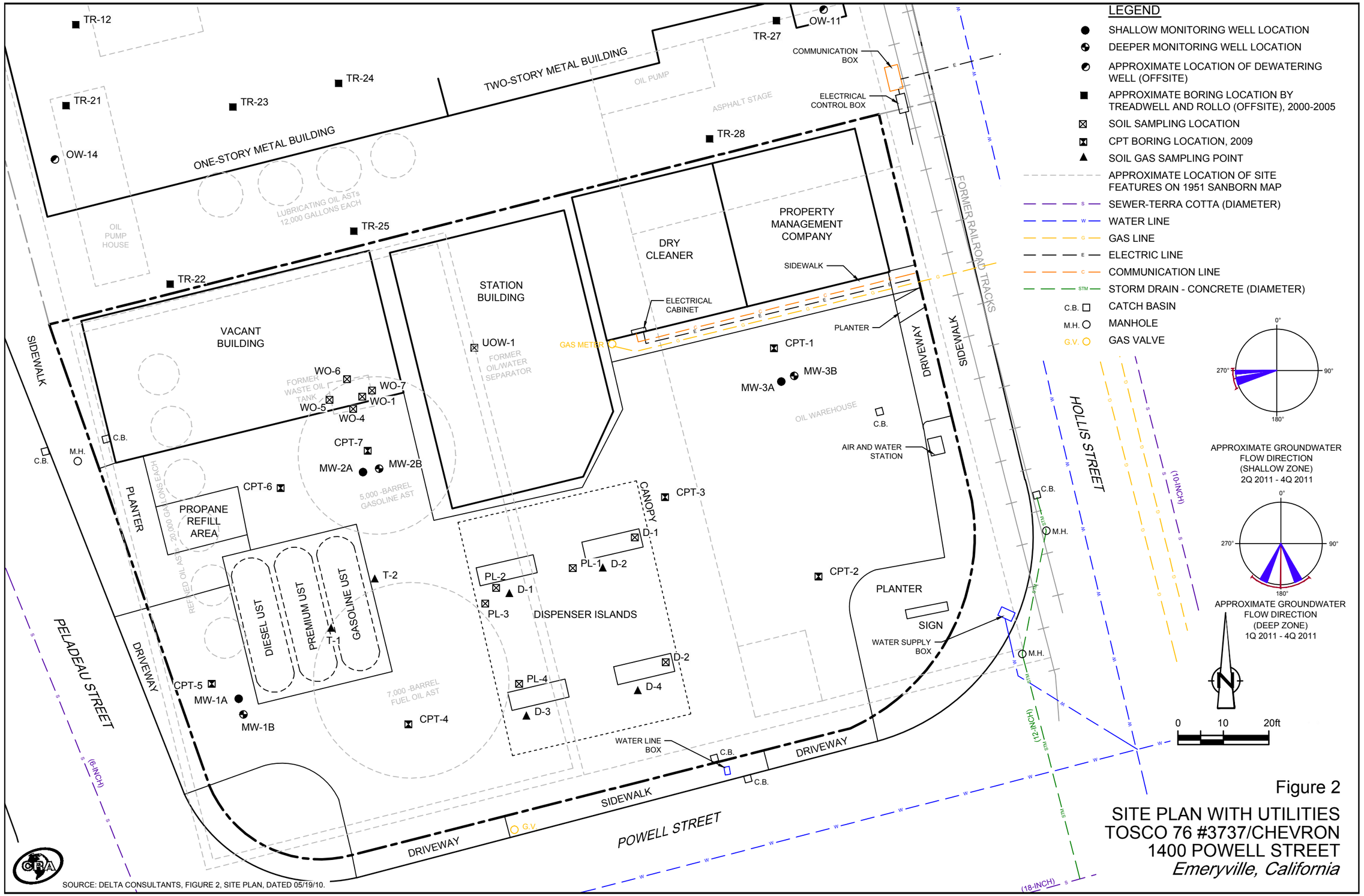


SOURCE: USGS QUADRANGLE MAP: OAKLAND WEST, CA.

Figure 1

VICINITY MAP
TOSCO 76 #3737/CHEVRON
1400 POWELL STREET
Emeryville, California

060716-95(004)GN-EM001 DEC 22/2011



SOURCE: DELTA CONSULTANTS, FIGURE 2, SITE PLAN, DATED 05/19/10.

Figure 2

SITE PLAN WITH UTILITIES
TOSCO 76 #3737/CHEVRON
1400 POWELL STREET
Emeryville, California

60716-2011(005)GN-WA001 MAR 2/2012

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
TRCPT-9	4/1/2010	<600	<100	830Y	24	0.6

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
TRCPT-6	4/2/2010	1,700	240	300Y	0.6	0.8

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
TRCPT-7	4/1/2010	<3,000	<500	460Y	<0.5	61

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
MW-3A	11/20/201	<100	330	1,200	25	<0.50

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
MW-2A	11/20/2011	**<500**	**1,200**	**1,800**	**440**	**160**

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
MW-1A	11/20/2011	**<100**	**460**	**1,300**	**20**	**40**

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
TRCPT-8	4/1/2010	<600	<100	<50	<0.5	<0.5

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
MW-15	4/13/2000	NA	NA	<50	<0.5	<2.5

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
MW-17	10/17/2008	NA	NA	<50	<0.5	<0.5

Sample Location	Sample Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
MW-18	10/17/2008	NA	NA	<50	<0.5	<0.5

LEGEND

- ● ONSITE MONITORING WELL LOCATION
- ⊕ FORMER CHEVRON ASPHALT PLANT MONITORING WELL LOCATION
- ▲ OFFSITE CPT BORING LOCATION
- APPROXIMATE LOCATION OF SITE
- ▣ PROPOSED BORING LOCATION

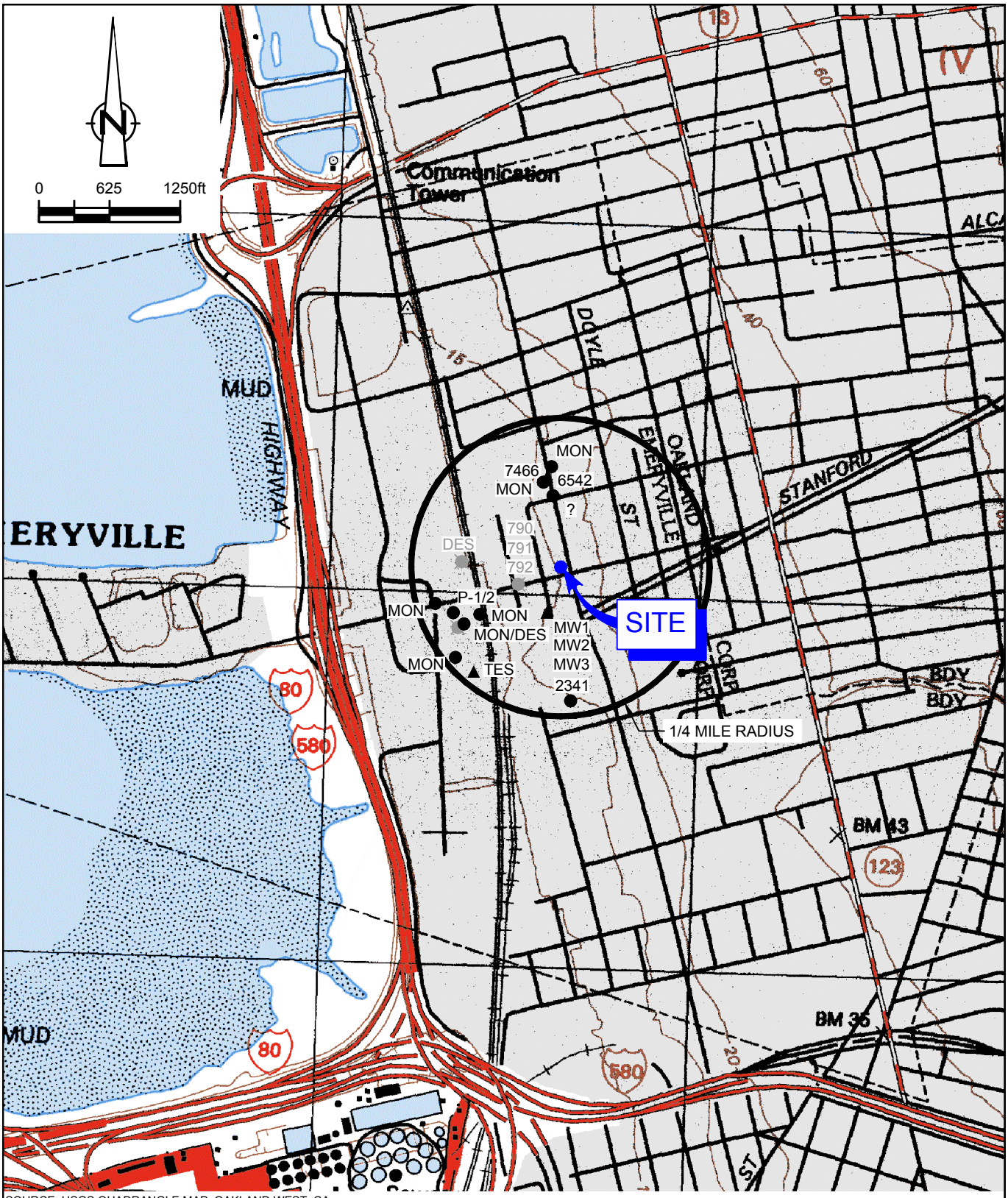
SOURCE: TERRA SERVER, 2010.

NOTES:
TPHmo = TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
TPHd = TOTAL PETROLEUM HYDROCARBONS AS DIESEL
TPHg = TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
MTBE = METHYL TERTIARY BUTYL ETHER
ug/L = MICROGRAMS PER LITER
NA = NOT ANALYZED
Y = LABORATORY FLAG INDICATES SAMPLE EXHIBITS CHANGE TO GRAPHIC PATTERN WHICH DOES NOT RESEMBLE STANDARD

Figure 3

GROUNDWATER HYDROCARBON CONCENTRATION MAP
TOSCO 76 #3737/CHEVRON
1400 POWELL STREET
Emeryville, California

60716-2011(005)GN-WA003 MAR 2/2012



SOURCE: USGS QUADRANGLE MAP: OAKLAND WEST, CA.

LEGEND

- ▲ TEST WELL
- DESTROYED WELL
- ● MONITORING/PIEZOMETER WELL
- ? UNKNOWN WELL TYPE

Figure 4

WELL SURVEY RESULTS
TOSCO 76 #3737/CHEVRON
1400 POWELL STREET
Emeryville, California

60716-2011(005)GN-WA002 MAR 2/2012

TABLES

TABLE 1

WELL SURVEY SUMMARY
TOSCO 76 #3737/CHEVRON
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

Type of Well	*Approximate Distance from Site (miles)*	*Owner*	*Address*	*Date Installed*	*Total Depth (feet)*
MON	0.15	Clementina Equipment MW1	1355 55th St	4/1993	17
MON	0.24	California Syrup and Extr	1355 55th St	9/1994	20
MON	0.24	California Syrup and Extr	1400-53RD ST	9/1994	20
MON	0.23	CETUS CORP	5745 Peladeau St.	12/1986	29
TES	0.09	Tulloch Const. Co. MW1	5745 Peladeau St.	2/1993	15
TES	0.09	Tulloch Const. Co. MW2	5745 Peladeau St.	2/1993	14
TES	0.09	Tulloch Const. Co. MW3	6707 Bay St	2/1993	15
TES	0.24	MRCP Realty Properties	6707 Bay St	1/4/1990	22
TES	0.24	MRCP Realty Properties	5813 Shellmound St	1/4/1990	21.5
MON	0.24	Not provided	5813 Shellmound St	12/1994	18
MON	0.24	Not provided	5813 Shellmound St	12/1994	15
MON	0.24	Not provided	5770 Shellmound St	12/1994	15
DES	0.19	City of Emeryville	5770 Shellmound St	4/30/2009	145
DES	0.19	City of Emeryville	5770 Shellmound St	1/15/2009	41
DES	0.19	City of Emeryville	5770 Shellmound St	6/22/2009	30
MON	0.19	City of Emeryville	5770 Shellmound St	2/8/2010	18
MON	0.19	City of Emeryville	1525 POWELL ST	2/9/2010	16
MON	0.16	City of Emeryville	1525 POWELL ST	12/21/2009	17
MON	0.16	City of Emeryville	1525 POWELL ST	2/8/2010	14
MON	0.16	City of Emeryville	1525 POWELL ST	2/8/2010	15
MON	0.16	City of Emeryville	1525 POWELL ST	2/9/2010	16
MON	0.16	City of Emeryville	1525 POWELL ST	2/9/2010	11.5
MON	0.16	City of Emeryville	1525 POWELL ST	2/10/2010	20
MON	0.16	City of Emeryville	1525 POWELL ST	2/12/2010	33
MON	0.16	City of Emeryville	Shellmound St. & Powell S	2/15/2010	34
PIE	0.2	EBMUD P-1	Shellmound St. & Powell S	10/1992	20
PIE	0.2	EBMUD P-2	Shellmound St. & Powell S	10/1992	20
PIE	0.2	EBMUD P-2	Shellmound St. & Powell S	10/1992	20
PIE	0.2	EBMUD P-2	1520 Powell St	10/1992	20
DES	0.08	Chevron USA	1520 Powell St	6/1990	0

TABLE 1

WELL SURVEY SUMMARY
TOSCO 76 #3737/CHEVRON
1400 POWELL STREET
EMERYVILLE, CALIFORNIA

Type of Well	*Approximate Distance from Site (miles)*	*Owner*	*Address*	*Date Installed*	*Total Depth (feet)*
DES	0.08	Chevron USA	1520 Powell St	6/1990	0
DES	0.08	Chevron USA	1603 Powell St	6/1990	0
MON	0.23	Emeryville Days/Days Inn	1603 Powell St	4/1996	15
MON	0.23	Emeryville Days/Days Inn	1603 Powell St	4/1996	15
MON	0.23	Emeryville Days/Days Inn	1603 Powell St	4/1996	15
MON	0.23	Emeryville Days/Days Inn	1603 Powell St	4/1996	15
MON	0.23	Emeryville Days/Days Inn	1603 Powell St	4/1996	15
MON	0.23	Emeryville Days/Days Inn	5800 Shellmound St	4/1996	20
DES	0.17	Hardage Construction Inc	5800 Shellmound St	8/8/2002	11.5
DES	0.17	Hardage Construction Inc	5800 Shellmound St	8/8/2002	11.5
DES	0.17	Hardage Construction Inc	5800 Shellmound St	8/8/2002	11.5
DES	0.17	Hardage Construction Inc	5800 Shellmound St	8/8/2002	10
DES	0.17	Hardage Construction Inc	5800 Shellmound St	8/8/2002	22
DES	0.17	Hardage Construction Inc	5800 Shellmound St	8/8/2002	10
DES	0.17	Hardage Construction Inc	6121 Hollis St	8/8/2002	10
MON	0.15	United States Postal Service	6121 Hollis St	6/1993	14
MON	0.15	United States Postal Service	6121 Hollis St	6/1993	11
MON	0.15	United States Postal Service	6121 Hollis St	6/1993	12
MON	0.15	United States Postal Service	6121 Hollis St	6/1993	11
TES	0.15	United States Postal Service	6000 Hollis St	1/1992	19
MON	0.17	BONTA COLLINS	HOLLIS ST. & 59TH	2/8/1989	20.5
Not provided	0.12	BONTA COLLINS	Not provided	Not provided	Not provided

Notes:
MON = Monitoring well
TES = Test well
DES = Destroyed well
PIE = Piezometer

APPENDIX A

REGULATORY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

January 12, 2012

Ms. Roya Kambin
Chevron Environmental Management Co.
6101 Bollinger Canyon Road
San Ramon, CA 94583
(sent via electronic mail to:
RKLG@chevron.com)

Mr. Bill Borgh
ConocoPhillips
76 Broadway
Sacramento, CA 95818
(sent via electronic mail to:
Bill.Borgh@conocophillips.com)

Mr. Najmeddin Revan
Emeryville Chevron
1400 Powell Street
Emeryville, CA 94608

Subject: Request for a Work Plan; Fuel Leak Case No. RO0000067 and Geotracker Global ID T0601745736, Tosco 76 #3737 / Chevron, 1400 Powell Street, Emeryville, CA 94608

Dear Ms. Kambin, and Messrs. Borgh and Revan:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site, including the *Soil and Groundwater Investigation Report,* dated February 22, 2011, and prepared by the Antea Group (Antea), and the *Third Quarter 2011 Groundwater Monitoring and Sampling Report,* dated October 14, 2011, prepared by Conestoga-Rovers & Associates (CRA). ACEH has also reviewed the *Soil and Groundwater Investigation Letter Report,* dated May 14, 2010, and the *Evaluation of Responsibility for Groundwater Characterization and Remediation,* dated August 23, 2011, submitted on behalf of the Wareham Property Group, by Treadwell & Rollo, Inc, for the adjacent Emeryville Industrial Court redevelopment site (RO0002621). Both the Tosco 76 / Chevron service station on the south and Emeryville Industrial Court redevelopment on the north currently occupy a formerly larger parcel that previously contained a Unocal bulk oil facility.

Based on the review of the case file ACEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

1. **Request for a Work Plan** – Wells MW-1A, MW-2A, MW-3A, MW-1B, MW-2B, and MW-3B were installed approximately one year ago. Since that time the flow directions in both water-bearing zones appear to have generally stabilized and three quarterly sampling events have been conducted and reported on, and have generally established that groundwater concentrations in the lower water-bearing zone are below RWQCB ESLs. Groundwater concentrations in the upper water-bearing zone appear to have roughly stabilized (MW-1A and MW-2A) or decreased slightly (MW-3A). Concentrations up to 1,600 µg/l TPHd, 3,100 µg/l TPHg, 860 µg/l benzene, 320 µg/l MTBE, and 2,500 µg/l TBA are present in groundwater collected in the upper water-bearing zone beneath the site. As a consequence of these observations ACEH requests a work plan, by the date identified below, to provide downgradient and lateral delineation of contamination in the upper water-bearing zone at the site and vicinity.

2. **Request for a Preferential Pathway Survey** – As you are aware, the purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of a groundwater plume encountering preferential pathways and conduits that could spread contamination. Specifically ACEH requests the inclusion of utility laterals, an often overlooked potential conduit. Consequently, we request that you perform a preferential pathway study that details the potential migration pathways and potential conduits (utilities, utility laterals, pipelines, foundational, and etc.) for vertical and lateral migration that may be present in the vicinity of the site.

   Discuss your analysis and interpretation of the results of the preferential pathway study (including the well survey and utility survey requested below) and report your results in the work plan requested below. The

results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

a. **Utility Survey** - An evaluation of all utility lines, utility laterals, and trenches (including sewers, storm drains, pipelines, trench backfill, foundation backfill, etc.) within and near the site and plume area(s) is required as part of your study. Please reduce, and synthesize available information and maps, and generate appropriate (vicinity and / or site specific) maps and cross-sections (if appropriate) illustrating the location and depth of all utility lines and trenches within and near the site and plume areas(s) as part of your study.

b. **Well Survey** - The preferential pathway study is requested to include a well survey of all wells (monitoring and production wells: active, inactive, standby, decommissioned (sealed with concrete), abandoned (improperly decommissioned or lost); and dewatering, drainage, and cathodic protection wells) within a ¼ mile radius of the subject site.

3. **Request for Email Addresses** – If your email address is not listed on the first page of this letter, or in the list of cc's listed below, ACEH requests your email address to help expedite communications and to help lower overall costs. Please provide that information in your next submittal.

TECHNICAL REPORT REQUEST

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

- **March 16, 2012** – Work Plan (with Preferential Pathway Survey)
- **60 Days After ACEH Approval of Work Plan** – Soil & Groundwater Investigation Report

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

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email, c=US
Date: 2012.01.12 14:41:40 -08'00'

Mark E. Detterman, PG, CEG
Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: Jim Schneider, Conestoga-Rovers & Asociates, 5900 Hollis Street, Suite A, Emeryville, CA 94608
(sent via electronic mail to: JSchneider@craworld.com)

Geoffrey Sears, Wareham Development Corp, 1120 Nye St. Suite #400, San Rafael, CA 94901
(sent via electronic mail to: GSears@warehamproperties.com)

Phillip Smith, Treadwell & Rollo, Inc., 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
(sent via electronic mail to: PGSmith@treadwellrollo.com)

Donna Drogos, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml.

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** July 20, 2010
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to dehloptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for.**

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B

PREVIOUS ENVIRONMENTAL WORK

PREVIOUS ENVIRONMENTAL WORK

Tosco 76 #3737/Chevron
1400 Powell Street
Emeryville, California
Fuel Leak Case RO0067

July 1993 Oil-Water Separator Removal

GeoStrategies, Inc. (GSI) oversaw the removal of a 2 by 3 by 3 foot deep oil-water separator. The contents of the oil-water separator were transferred to a 55-gallon drum and the separator was cleaned with absorbent pads. After removal of the oil-water separator, GSI advanced one hand-auger boring to first encountered groundwater, approximately 2 feet below the bottom of the separator, or 5 feet below grade (fbg). Soil sample UOW-1 was collected just above groundwater at approximately 4 fbg. Total oil and grease (TOG) was detected at 67 milligrams per kilogram (mg/kg) and total lead was detected at 8 mg/kg. No total petroleum hydrocarbons as diesel (TPHd) or as gasoline (TPHg), or benzene, toluene, ethylbenzene, or total xylenes (BTEX) were detected in the sample. Details of this investigation are provided in GSI's August 11, 1993 *Oil/Water Separator Abandonment* report.

September 1997 Soil Gas Survey

Pacific Environmental Group, Inc. (PEG) oversaw the installation of six soil gas probes in the vicinity of the underground storage tanks (USTs) and dispenser islands. Soil gas samples T-1 and T-2 were collected from the UST area and samples D-1 through D-4 were collected adjacent to the dispenser islands. TPHg was detected near the USTs at a maximum concentration of 40,000 micrograms per liter (µg/L) and near the dispenser islands at a maximum concentration of 5,900 µg/L. Benzene was detected at a maximum concentration of 1,100 µg/L near the USTs and 43 µg/L near the dispenser islands. No methyl tertiary butyl ether (MTBE) was detected near the USTs; however, MTBE was detected at a maximum concentration of 1,000 µg/L near the dispenser islands. Details of this investigation are provided in PEG's October 29, 1997 report entitled *Soil Gas Survey Results*.

May 1999 Piping and Used-Oil Underground Storage Tank Removal

TRC/Alton Geoscience (TRC) oversaw the removal of product piping associated with the former fuel dispenser islands and one single-walled steel 550-gallon used-oil UST located west of the station building. Approximately six cubic yards of soil were excavated from below the former northwest dispenser and product piping and transported to an offsite landfill for disposal. Upon removal of the used-oil UST, two holes were observed on the top of the tank. The UST was transported offsite for disposal. No excavation of the used-oil UST pit was reported by PEG. Soil samples

collected from the former product piping excavation had maximum concentrations of 710 mg/kg TPHd, 1,200 mg/kg TPHg, 2.4 mg/kg benzene, and 1.1 mg/kg MTBE. One grab-groundwater sample was collected from the former product piping excavation having concentrations of 2,600 µg/L TPHd, 4,400 µg/L TPHg, 520 µg/L benzene, and 1,300/540[1] µg/L MTBE. Soil samples collected from the former used-oil UST pit had maximum concentrations of 1,100 mg/kg TPHd, 470 mg/kg TPHg, and 0.3 mg/kg benzene. No MTBE was detected in the former used-oil UST pit. Details of this investigation are provided in TRC's August 2, 1999 *Underground Storage Tank Closure Report*.

July 2009 Cone Penetration Testing Investigation

Delta advanced cone penetration testing (CPT) borings CPT-1 through CPT-7 to depths of approximately 60 fbg to determine the horizontal and vertical extent of hydrocarbons. Hydrocarbons detected in soil included up to 5.6 mg/kg TPHd, 4.7 mg/kg TPHg, 42 mg/kg benzene, and 1.1 mg/kg ethylbenzene. No benzene, toluene, total xylenes, or MTBE were detected in soil. Grab-groundwater samples contained up to 260 µg/L TPHd, 690 µg/L TPHg, and 42 µg/L benzene. No MTBE was detected in groundwater. Details of this investigation are presented in Delta's August 18, 2009 *Report of CPT Delineation of Fuel Hydrocarbon Affected Soil and Groundwater*.

January 2011 Groundwater Monitoring Well Installation

Antea Group oversaw the installation of groundwater monitoring wells MW-1A, MW-1B, MW-2A, MW-2B, MW-3A and MW-3B. The wells were constructed using 2-inch diameter polyvinyl chloride (PVC) casing having 0.010-inch slotted screen with screen intervals as follows: MW-1A and MW-2A from 5 to 10 fbg, well MW-3A from 3.5 to 9.5 fbg, well MW-1B from 17 to 22 fbg, MW-2B from 20 to 25 fbg, and well MW-3B from 19 to 24 fbg. Hydrocarbons detected in soil included up to 520 mg/kg TPHd, 460 mg/kg TPHg, 0.4 mg/kg benzene, and 0.059 mg/kg MTBE. Details of this investigation are provided in Antea Group's February 22, 2011 *Soil and Groundwater Investigation Report.*

[1] MTBE analyzed using EPA Methods 8020 and 8260B.

APPENDIX C

STANDARD OPERATING PROCEDURES

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Conestoga-Rovers & Associates, Inc. (CRA) standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category
- Color
- Approximate water or product saturation percentage
- Observed odor and/or discoloration
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy)
- Estimated permeability

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic push technologies. Prior to drilling, the first 8 ft of the boring are cleared using an air or water knife and vacuum extraction. This minimizes the potential for impacting utilities.

At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used

to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4oC on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4oC, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.