

**RECEIVED**

By Alameda County Environmental Health 2:04 pm, May 16, 2017

May 10, 2017

Mr. DeLong Liu  
DeLong Petroleum, Inc.  
2501 North Main Street  
Walnut Creek, California 94597

RE: Off-Site Diesel Fuel Investigation Work Plan

76 Gas Station/Circle K  
1716 Webster Street  
Alameda, California  
ACEH Case # RO0003235

“I have read and acknowledged the content, recommendations and/or conclusions in the attached document or report submitted on my behalf to ACDEH’s FTP server and the SWRCB’s Geotracker Website.”

Submitted by;

A handwritten signature in red ink, appearing to be 'DeLong Liu', written over the typed name and title.

DeLong Liu  
President



May 10, 2017

Alameda County Environmental Health Services  
Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Attention: Mr. Mark Detterman

RE: Off-Site Diesel Fuel Investigation Work Plan  
Delong Oil, Inc.  
1716 Webster Street, Alameda, California 94501  
Fuel Leak Case No. RO0003235; (Global ID No. T10000009940)  
(CCI Project No. 12214-3)

Dear Mr. Detterman:

Compliance & Closure, Inc. (CCI) is pleased to present this Off-Site Diesel Fuel Investigation Work Plan for the Delong Oil site located at 1716 Webster Street, Alameda, California. The Work Plan was requested from the Alameda County Environmental Health (ACEH) in its letter dated March 17, 2017.

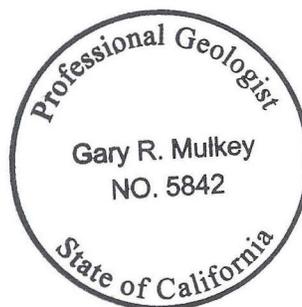
CCI appreciates your comments and if you have any questions, please contact our office at 925-648-2008 or e-mail [gary@cci-envr.com](mailto:gary@cci-envr.com).

Sincerely,  
Compliance & Closure, Inc.

A handwritten signature in blue ink that reads "Gary R. Mulkey".

Gary R. Mulkey, P.G. 5842

Cc: Mr. Delong Liu, Delong Oil, Inc.



# **Off-Site Diesel Fuel Investigation Work Plan**

**For**

**Delong Oil, Inc.  
1716 Webster Street, Alameda County, California**

## **Introduction**

Compliance & Closure, Inc. (CCI) has prepared this Off-site Diesel Fuel Investigation Work Plan on behalf of Delong Oil, Inc., owner of the property located at 1716 Webster, Alameda, California (Figure 1). The work plan was requested by the Alameda County Environmental Health (ACEH) in its letter dated March 17, 2017.

On October 19, 2016, The ACEH requested a new work plan that addresses the residential foundations of the homes to the east of the site, on site soil vapor sampling and further delineation of the groundwater diesel plume to the northwest of the site. CCI submitted the work plan to ACEH on December 5, 2016. In its March 17, 2017 letter, the ACEH stated that the sites diesel underground storage tank (UST) release and the waste oil UST release would be investigated as separate environmental cases. The diesel UST investigation will be conducted as Fuel Leak Case No. RO0003235, (Global ID # T10000009940). ACEH has requested a work plan be prepared by May 19, 2017 to investigate the extent of off-site diesel fuel.

## **Site Setting**

The site is currently an operating 76 gas station with a Circle K convenience store located on the southeast corner of Webster Street and Buena Vista Avenue in the City and County of Alameda, California. Adjacent to the property on the east side are residences, across Buena Vista Avenue to the north is an operating Chevron gas station and commercial properties are located south and west of the site.

## **Background Information**

In 1983, three single-walled, fiberglass gasoline fuel tanks (12,000-gallon, 10,000-gallon and 6,000-gallon) and one waste oil tank were installed underground (USTs) at the site. In 1987, Mobil Oil Corporation replaced the waste oil tank with a 1,000-gallon tank. The site was later sold to British Petroleum, which operated the site until 1994. In 1994, the site was sold to

ConocoPhillips, which operated the site until 2009. Between 1990 and 2009, several environmental site investigations and monitoring activities were conducted by several environmental consulting firms including Kaprealian Engineering, Inc., Hydro-Environmental Technologies, Inc., Fugro West and TRC Alton Geoscience.

In 2009, ConocoPhillips sold the site to United Brothers Enterprises, Inc., also doing business as Delong Oil, Inc., the current owner of the property. In early November 2009, Delong Oil converted the 6,000-gallon gasoline tank to a diesel tank. In July 2011, free-phase product was discovered in well RW-1, located adjacent to the converted diesel tank. Fingerprint analysis later identified the liquid as diesel fuel. Since Delong Oil was the only operator to sell diesel fuel at the site, the ACEH named it as a responsible party for the unauthorized release of the fuel. On September 6, 2013, the 1,000-gallon waste oil tank was removed from the site. Two soil samples and one grab water sample were collected from the excavation. The laboratory reported the soil samples contained detectable total petroleum hydrocarbons as diesel (TPHd) at 30.9 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as motor oil (TPHmo) at 231 mg/kg. The groundwater sample was also reported to contain detectable TPHd at 18,200 micrograms per liter (ug/L) and TPHmo at 46,200 ug/L. Based on these results, Delong Oil was again named a responsible party for an unauthorized release of product in the vicinity of the former waste oil tank.

On June 10, 2014, ACEH issued a letter directing Delong Oil to prepare a scope of work to characterize the downgradient and lateral extent of the free-phase product and groundwater contamination associated with the waste oil tank. ACEH also directed Delong Oil to evaluate potential impacts from the waste oil tank release to adjacent down-gradient residential buildings.

On January 25, 2016, CCI conducted a soil and groundwater investigation in the vicinity of the former waste oil and hydraulic lift area of the former gas station building. CCI was following the scope of work in the approved work plan from June 2014.

Results from the investigation showed that the soil and groundwater samples collected from the area just north and west of the former waste oil tank and the area of the former hydraulic lifts were reported by the laboratory to contain detectable concentrations of TPHd. Soil sample SB-6-5, collected from a depth of 5 feet was reported by the laboratory to contain the highest TPHd concentration, at 32.1 mg/kg. This soil sample was also reported to contain TPHmo at 178 mg/kg and total petroleum hydrocarbons as hydraulic oil (THPho) at 34.7 mg/kg. The concentration of TPHd in the other 11 soil samples were much lower. No other compounds were detected in the soil samples.

Six groundwater samples collected from the borings were reported to contain relatively low concentrations of TPHd. All the TPHd samples were below the ESLs for groundwater where groundwater is a current or potential drinking water source. Four of the water samples, however,

were reported to contain TPHmo ranging from 0.221 mg/L at SB-5-W to 0.493 mg/L at SB-6-W. All four of these water samples (SB-1-W, SB-2-W, SB-5-W and SB-6-W) exceeded the 100 ug/L ESLs for TPHmo where groundwater is a current or potential drinking water resource. The extent of the TPHmo in the groundwater to the east was not defined. The current and past groundwater gradient at the site indicates the groundwater flow direction is generally toward the north. PID readings recorded during the investigation generally ranged from 15 to 1440 ppm in several of the soil borings. These PID readings did not correlate with results from the laboratory analysis.

On October 19, 2016, The ACEH has requested a new work plan that addresses the residential foundations of the homes to the east of the site, on site soil vapor sampling and further delineation of the groundwater diesel plume to the northwest of the site. CCI submitted the work plan to ACEH on December 5, 2016. However, in its March 17, 2017, the ACEH issued a letter indicated that the sites diesel underground storage tank (UST) release and the waste oil UST release would be investigated as separate environmental cases. ACEH has requested a work plan be prepared to investigate the extent of off-site diesel fuel to the north and northwest and west of the subject site. Base on that request, CCI provides the following scope of work.

### **Scope of Work**

In response to the ACEH directive, CCI proposes to do the following;

- 1) CCI will further delineate the diesel groundwater plume on the north, northwest and west side of the subject site. The proposed boring locations will be located on Webster Street and Buena Vista Avenue (Figure 2). CCI proposes to use a CPT rig to collect off-site lithology and groundwater samples to determine the extent of contamination. Prior to the start of field work, CCI will obtain an encroachment permit from the City of Alameda and boring permits from the ACDEH. Underground Service Alert (USA) will also be notified;
- 2) CCI will contact the Alameda County Public Works Department (ACDEH) to determine if monitoring wells MW-4 and MW-5 were destroyed under permit with the ACDEH;
- 3) Presented the results of the investigation in a report. Based on the laboratory results, CCI will propose additional off-site monitoring wells be installed. The monitoring well installation will be installed under a separate scope of work;

### **Off-Site CPT Groundwater Investigation**

CCI will further investigation of the diesel groundwater plume off-site to the north, northwest and west side of the site in an attempt to defining the extent of diesel groundwater

contamination. CCI proposes to conduct this investigation using a CPT rig as a reconnaissance tool to collect grab water samples from various locations at cross-gradient and down-gradient locations. CCI proposes to direct push six CPT borings. Five of the borings will be to the west, northwest, and northeast of the site on Buena Vista Avenue and Webster Street (Figure 2). One boring will also be drilled on the northeast side of the parking lot.

### **CPT Data Collection**

Subsurface data gather from the 1716 Webster Street site indicate the primary water bearing zone is found at approximately 10 to 15 feet below the ground surface. In order to obtain lithological data and grab water samples from various depths, CCI proposes to use a CPT rig to collect sounding data and grab water samples from selected depths from a total of 6 CPT boring locations. It is anticipated these borings will extend to approximately 30 to 35 feet. The final depth will depend on the lithology provided in the sounding logs.

Prior to starting the field work, CCI will obtain the proper permits from the Alameda County Public Works Department (ACDEH). Encroachment permits will also be obtained from the City of Alameda for the boring locations on Webster Street and Buena Vista Avenue. CCI will retain Traffic Management, Inc. to provide traffic control while working in the street. Prior to starting field work, Underground Service Alert (USA) will be notified of the drilling operation and the boring locations will be marked with white paint so that this area can be "cleared" for utility lines.

At the location of the CPT borings, a two-step process will be used, which includes "sounding" the hole to collect lithology information and pore pressure data, followed by "direct-pushing" to a targeted sand lens and using a hydropunch sampling device to collect a "grab" groundwater sample from the zone of interest.

During the sounding phase, a cone-tipped, pressure-sensitive probe will be attached to a string of steel rods and advanced into the ground with heavy hydraulic rams. The rams, as well as the rest of the CPT equipment, will be contained in a 30-ton truck. The weight of the truck will provide the reactive force. As the rods and probe are pushed into the ground, two strain-gauge load cells contained within the probe will measure the bearing and shear resistance at the tip and sides of the probe, respectively, from the soil encountered. Analog signals generated by the cells in the probe will be transmitted via cable to an on-board computer, where conversion into digital data will occur. As the probe is advanced, the data generated by the probe will be simultaneously displayed on a monitor and printed as a hard copy inside the CPT rig. These logs will then be used to select zones of interest to collect groundwater samples.

### **CPT Groundwater Sampling**

After a second “direct-push” boring is extended to the target depth, a groundwater sample will be collected using a push-in PVC Piezometer, which is similar to a "Hydropunch" sampling device. The PVC Piezometer sampling system consists of two principal components: steel, outer protective casing with a 2-inch outside diameter (O.D.), and an inner 1-inch O.D. PVC slotted screen. The PVC Piezometer will be attached to a string of steel rods and advanced with the CPT rig to the desired sampling depth. An expendable stainless steel tip will be attached to the end of the outer casing to prevent soil or groundwater from entering the PVC Piezometer as it is being advanced into the ground. After reaching the desired sampling depth, the steel protective casing will be retracted and the PVC casing will be exposed.

Groundwater samples will then be collected using a pre-cleaned, stainless steel bailer, which will be lowered through the center of the steel rods and into the open screen. Upon retrieval of the bailer, the water sample will be transferred to the appropriate laboratory-supplied bottles, labeled, logged on chain-of-custody forms and stored in a chilled chest containing water ice for preservation in the field and during transport to the analytical laboratory.

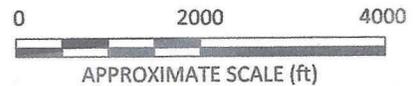
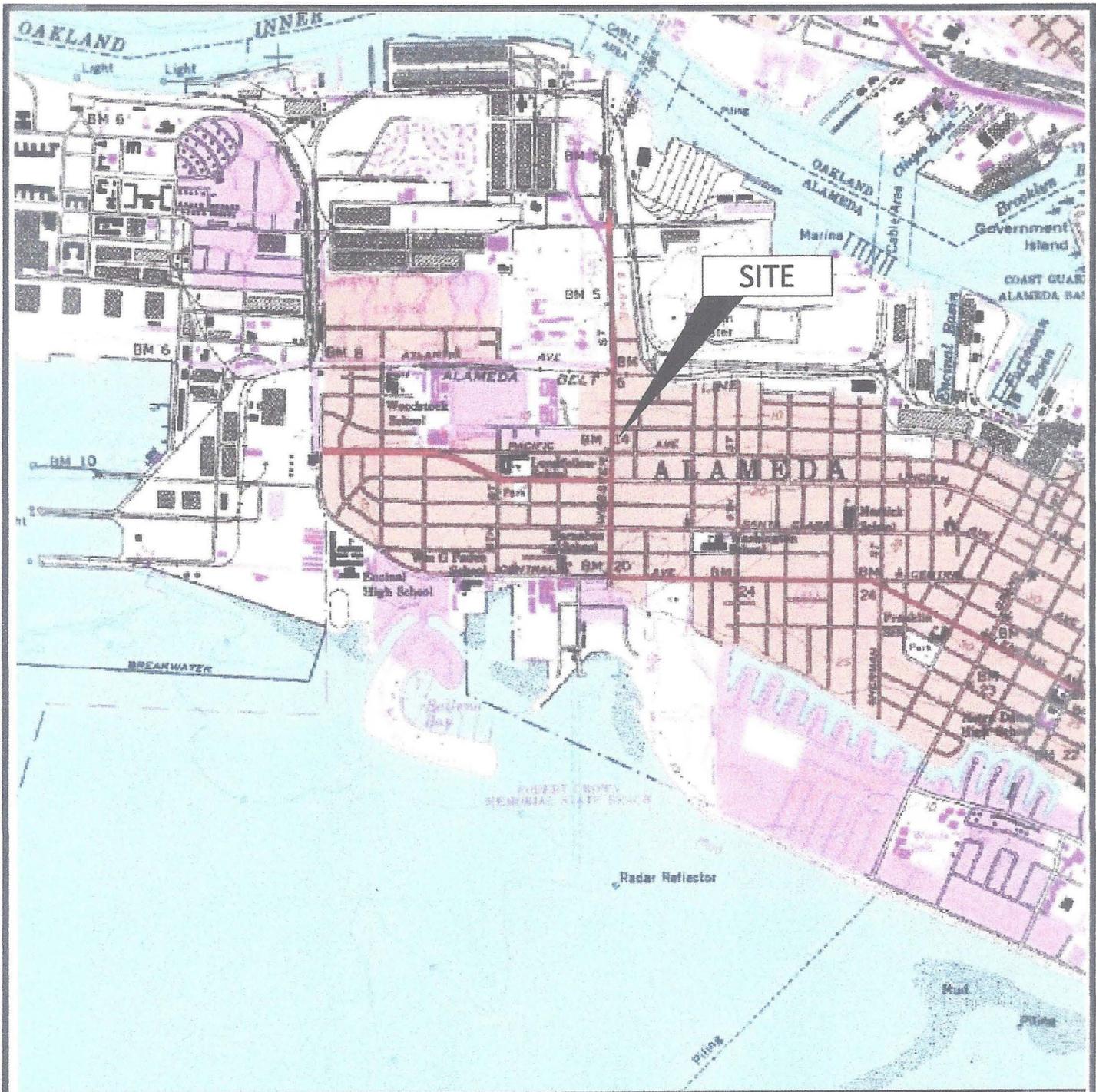
Upon completion of the groundwater sampling at each location, the hole will be sealed with bentonite grout in accordance with procedures approved by the County. The CPT bore hole will be sealed by pumping grout from an auto-grout system as the A-rod is removed from the hole. The top six inches of the hole will be filled with concrete to match the road surface.

### **Laboratory Analysis**

It is estimated that a total of 6 water samples will be collected during the investigation. The samples will be submitted to SGS Accutest Laboratories (Accutest), a state-certified laboratory located in San Jose, California, for chemical analysis. Accutest will employ methods approved by the California Regional Water Quality Control Board (CRWQCB) and the EPA. The samples will be analyzed for the presence of total petroleum hydrocarbons as Diesel (TPHd) using EPA Test Method 8015B. All of the water samples analyzed for TPHd and will be analyzed with silica gel cleanup.

### **Report**

At the conclusion of all field activity, a report of the findings of the investigation will be prepared. The report will include a summary of the investigation activities, including the results from the CPT groundwater investigation, a description of the nature and extent of groundwater contamination. CCI will propose installing additional groundwater monitoring wells based on the results of the investigation. The wells will be installed under a separate scope of work.



Base Map USGS

Reviewed By:  
GM

Approved By:  
GM

**Vicinity Map**

**Delong Petroleum  
1716 Webster Street  
Alameda, California**

**Compliance & Closure, Inc.**

Job No.:  
12214-1

Date:  
2/3/2016

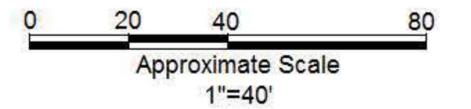
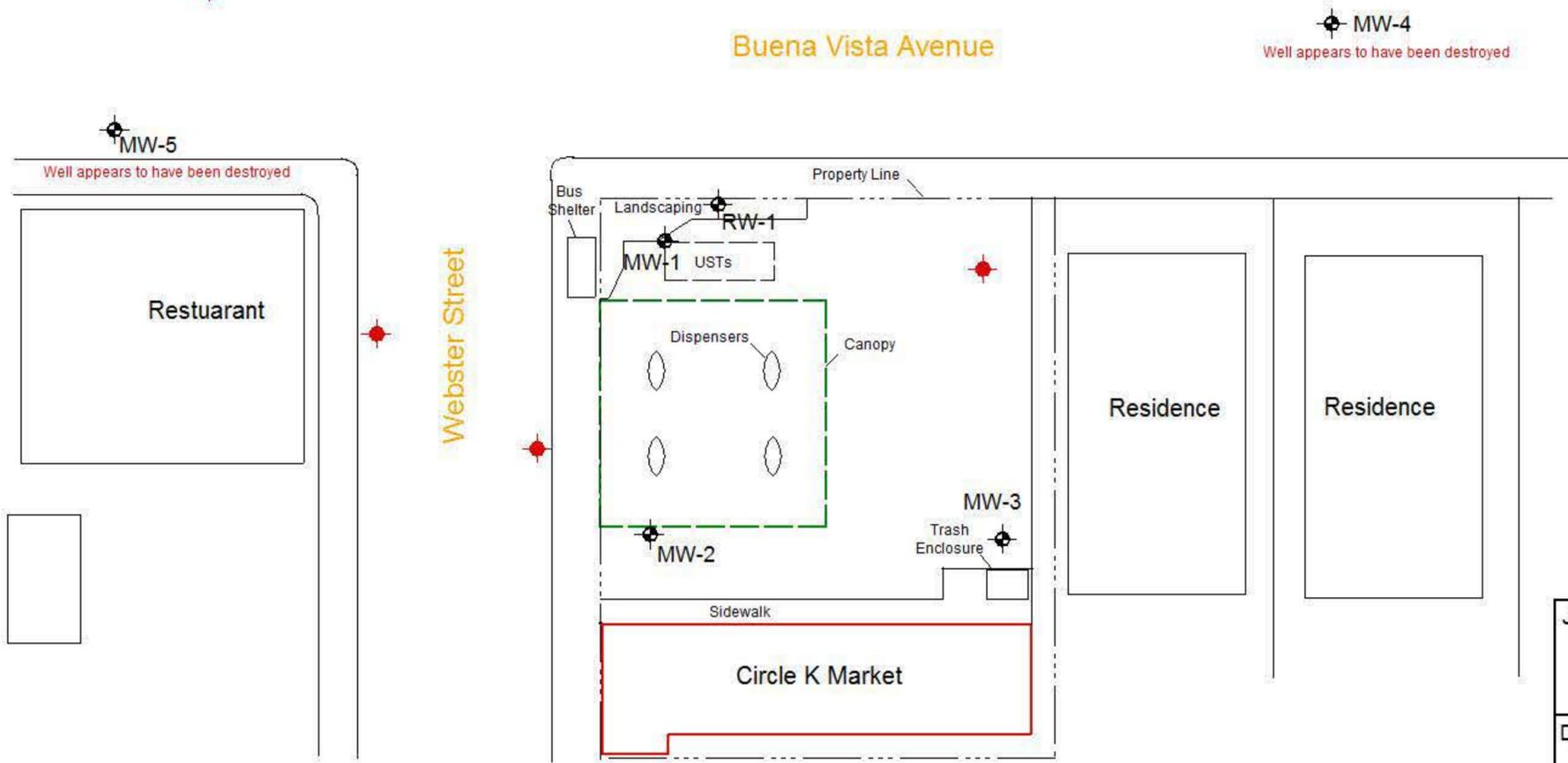
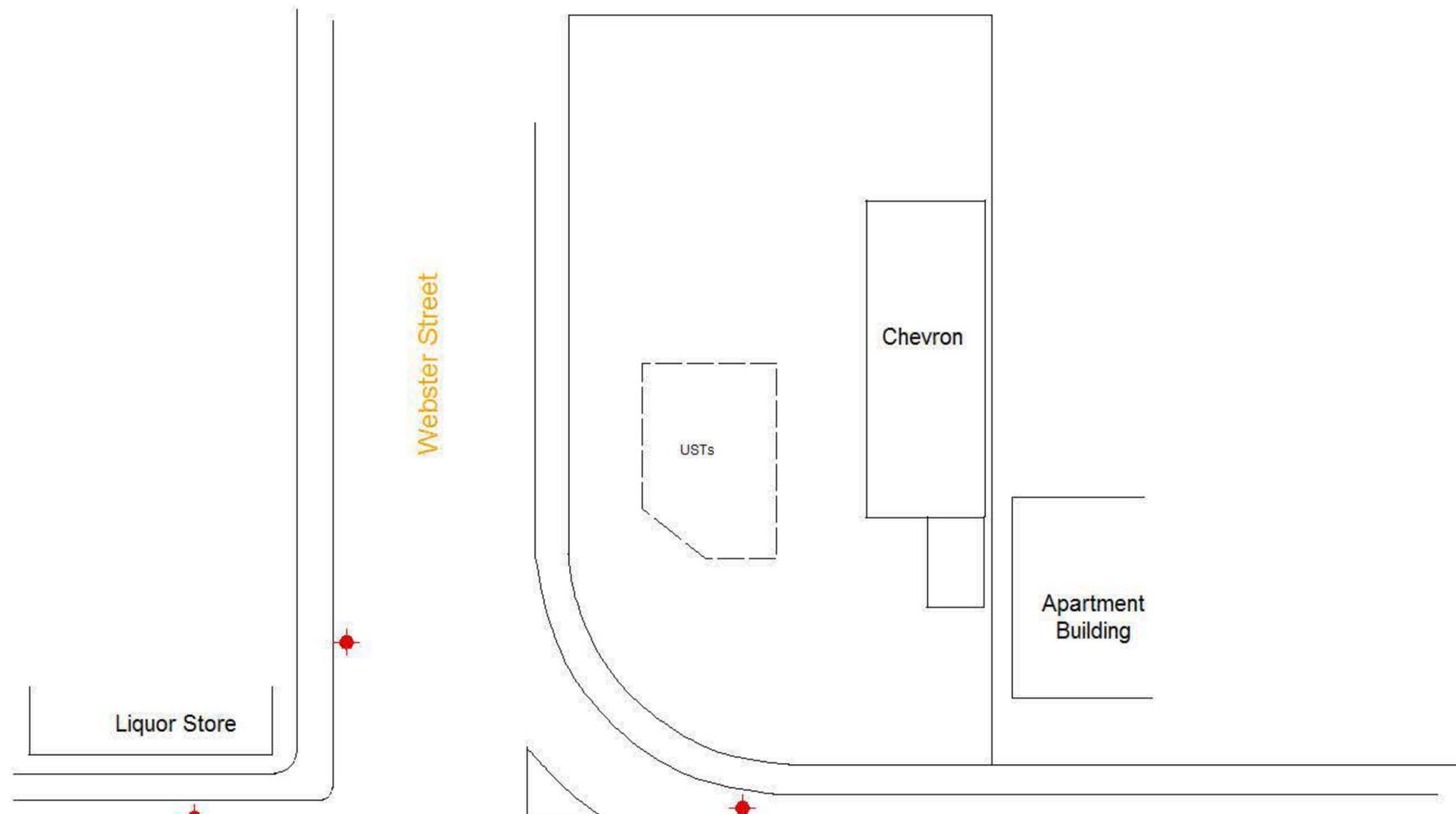
Drawn By:  
GM

Fig. No.:  
1



Legend

-  MW-1 Monitoring Well
-  RW-1 Recovery Well
-  Proposed CPT Boring



Job No.: 12218-1	Site Plan Delong Oil 1716 Webster Street Alameda, California	Compliance & Closure, Inc.	
Date: 4/26/2017		Drawn by: NLN	Figure No.: 2