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2:20 pm, Dec 17, 2010

Alameda County
Environmental Health



TESORO

Tesoro Environmental Resource Company
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253 896 8863 Fax

16 December, 2010

Mr. Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

**Subject: Free Product Notification and
Work Plan for Membrane Interface Probe (MIP) Investigation
1619 1st Street, Livermore, California
Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0434**

Dear Mr. Wickham:

Enclosed please find a copy of the free product notification and MIP investigation work plan for the subject site located at 1619 1st Street in Livermore, California. This report is submitted by Arctos Environmental on behalf of Tesoro Environmental Resources Company.

Based on my inquiry of the person or persons directly responsible for gathering the information contained in this report, I believe the information was prepared by qualified personnel who properly gathered and evaluated the information, and that the information submitted is, to the best of my knowledge and belief, true, correct, and complete. Please feel free to call me at 253/896-8700 or Matthew Nelson of Arctos Environmental at 562/988-2755 with questions.

Sincerely,

Jeffrey M. Baker, P.E.
Supervisor, Environmental
Compliance & Remediation
Tesoro Companies, Inc.

Attachments

CC: Arctos – Matthew Nelson



Arctos Environmental
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Berkeley, CA 94702 510 525-2392 FAX

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15 December 2010
Project No. 01LV

Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

**Subject: Free Product Notification and
Work Plan for Membrane Interface Probe (MIP) Investigation
1619 1st Street, Livermore, California
Tesoro No. 67076 (Former Beacon 3604); ACEH Case No. RO0000434**

Dear Mr. Wickham:

Arctos Environmental (Arctos), on behalf of Tesoro Environmental Resources Company (Tesoro), is submitting this notification of free product discovery and work plan for a source area investigation using MIPs at the subject site (Figure 1).

Executive Summary

Arctos detected free product at the site on 25 October 2010 in injection well IP-8, which is located in the southwest portion of the site adjacent to the underground storage tanks (USTs, Figure 2). Free product was measured at an approximate thickness of 1 foot on 25 October 2010 before removal by manual bailing. Since the detection and initial removal of free product in IP-8 there has not been more than 0.02 foot of product detected in the well. Free product was not detected in any other wells in the area. Injection well IP-8 and adjacent injection well IP-9 contain the highest total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations at the site. Arctos is proposing to perform a membrane interface probe (MIP) investigation to evaluate the extent of the free product near the USTs. The MIP technology provides a continuous measurement of volatile organic compounds (VOCs) through the vadose and saturated zones. Based on the investigation results, Arctos will evaluate options for the source area hot zone remediation. The MIP investigation is scheduled for 3 January 2011.

Site Background

The site description and background are included in Arctos's IRAP dated 21 March 2008 (Arctos, 2008).

Free Product Notification

By this work plan, Tesoro is notifying Alameda County Environmental Health (ACEH) that free product was confirmed at the site on 25 October 2010. A free product removal program has been implemented in accordance with the regulations specified in 23 CCR section 2655. A second phase of the program will be designed to remove free product to the maximum extent practicable using a recovery technique selected based on the MIP investigation results. The following information is provided as required by 23 CCR Section 2655:

23 CCR 2655 Requirement	Response
<i>(1) Party implementing free product removal program</i>	Arctos Environmental
<i>(2) Estimated quantity, type, and thickness of free product</i>	The quantity of free product is unknown but is limited to the vicinity of injection well IP-8. Free product was measured at 1 foot in well IP-8 on 25 October 2010, and then at 0.01 foot on 27 October 2010.
<i>(3) Type of free product recovery system</i>	Manual bailing has been employed every 2 weeks, or as needed, to remove free product to an onsite storage drum. Following assessment, Arctos will evaluate options for additional free product removal, if required.
<i>(4) Location of free product discharge</i>	The free product will be stored on site and periodically transported off site for treatment, recycling or disposal at a licensed facility.
<i>(5) Type of onsite treatment and effluent quality</i>	Not applicable. The free product will not be treated or discharged on site.
<i>(6) Permits required for free product discharge</i>	Because the free product will be transported off site for recycling/disposal, no discharge permits will be required for the site
<i>(7) Means of disposal of recovered free product</i>	The free product will be transported off site for treatment, recycling or disposal at a licensed facility.

Following confirmation on 25 October 2010, Arctos removed the free product in injection well IP-8 by manual bailing. The free product depth in IP-8 was measured again on 27 October 2010, and 0.01 foot of product was recorded. Free product depth and amount removed, if needed, will be recorded every two weeks. Since the detection and initial removal of free product in IP-8 there has not been more than 0.02 foot of product detected in the well.

MIP Technology

The MIP is a direct-push tool that produces continuous chemical and physical logs of the vadose and saturated zones. It measures VOCs in situ and shows where they occur relative to the geologic and hydrologic units. The MIP is a downhole tool that heats the soils and groundwater adjacent to the probe to 120°C. The heat volatilizes VOCs, which diffuse across a membrane into a closed inert gas loop that carries these vapors to a series of detectors housed at the surface. For example, an electron capture detector (ECD) is used to detect chlorinated solvents, a photoionization detector (PID) is used to detect petroleum hydrocarbons, and a flame ionization detector (FID) is used to detect methane. The MIP preferentially detects VOCs that are sorbed to soil particles over those dissolved in groundwater. Continuous chemical logs or profiles are generated from each borehole. Soil conductivity is also measured and these logs can be compared to the chemical logs to better understand where the VOCs occur. The electronic conductivity (EC) of the soils is plotted to identify differences in grain size, salinity, and other parameters.

Objective and Scope of Work

The top of the well screen for injection well IP-8 is currently 25 feet below the top of the groundwater at the site. The presence of free product may indicate (1) the presence of product above the well screen that entered the well during purging or (2) the presence of submerged product. The objective of the planned MIP investigation is to evaluate the vertical and lateral extent of the free product adjacent to the USTs. To meet this objective, Arctos will perform the following scope of work:

1. Arctos will mobilize for the MIP investigation, which includes (1) marking for underground service alert (USA), (2) obtaining a boring permit from Zone 7 Water Agency, (3) obtaining an encroachment permit from the City of Livermore, and (4) preparing a site-specific health and safety plan (HSP).
2. A licensed drilling contractor will be retained to drill 6 soil borings, designated as MIP-1 to MIP-6 (Figure 2). A MIP will be advanced for each boring to produce continuous chemical and physical log of the vadose and saturated zones.
3. Borings will be backfilled with Portland grout and patched to match the existing grade.
4. A licensed surveyor will be contracted to survey the boring locations.

Field personnel may adjust the actual locations of the MIP borings based on data collected. Arctos will evaluate the field and analytical data and incorporate the results into the first quarter 2011 status report. The report will include the following:

- Field activities and procedures
- MIPs results presented in graphical form.

Schedule

Arctos is requesting approval to conduct the MIP investigation on 3 and 4 January 2011.

If you have any questions or comments, please call Mike Purchase at 510/525-2180 or Matthew Nelson at 562/988-2755.

Very truly yours,

ARCTOS ENVIRONMENTAL



Matthew Nelson, P.E.
Project Engineer



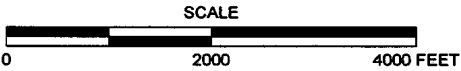
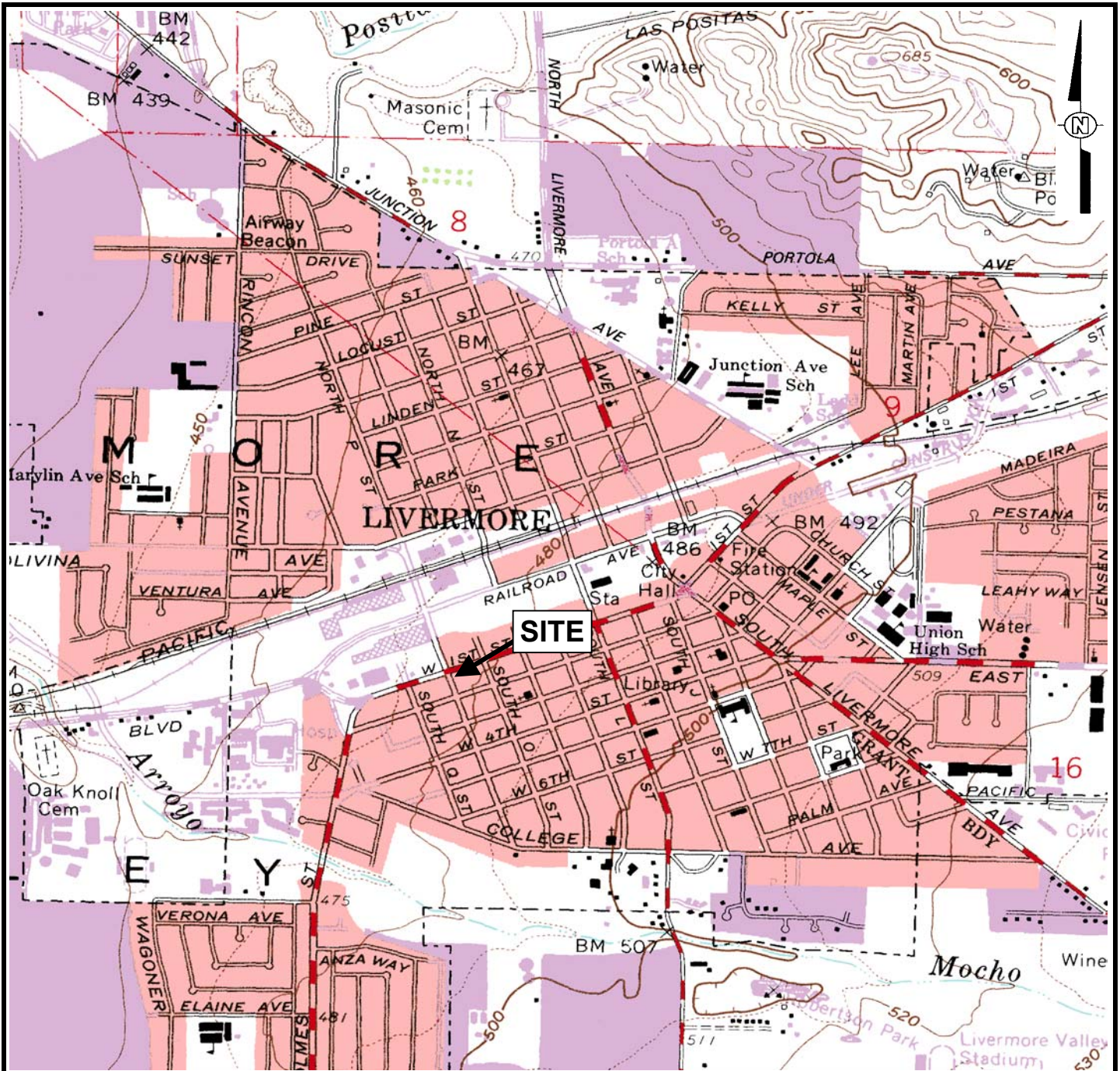
Michael P. Purchase, P.E.
Senior Project Manager

Copy: Jeffrey M. Baker, P.E. – Tesoro Companies, Inc.
Colleen Winey – Zone 7 Water Agency

Attachments: Figure 1 – Site Location Map
Figure 2 – Proposed MIP Borings

References

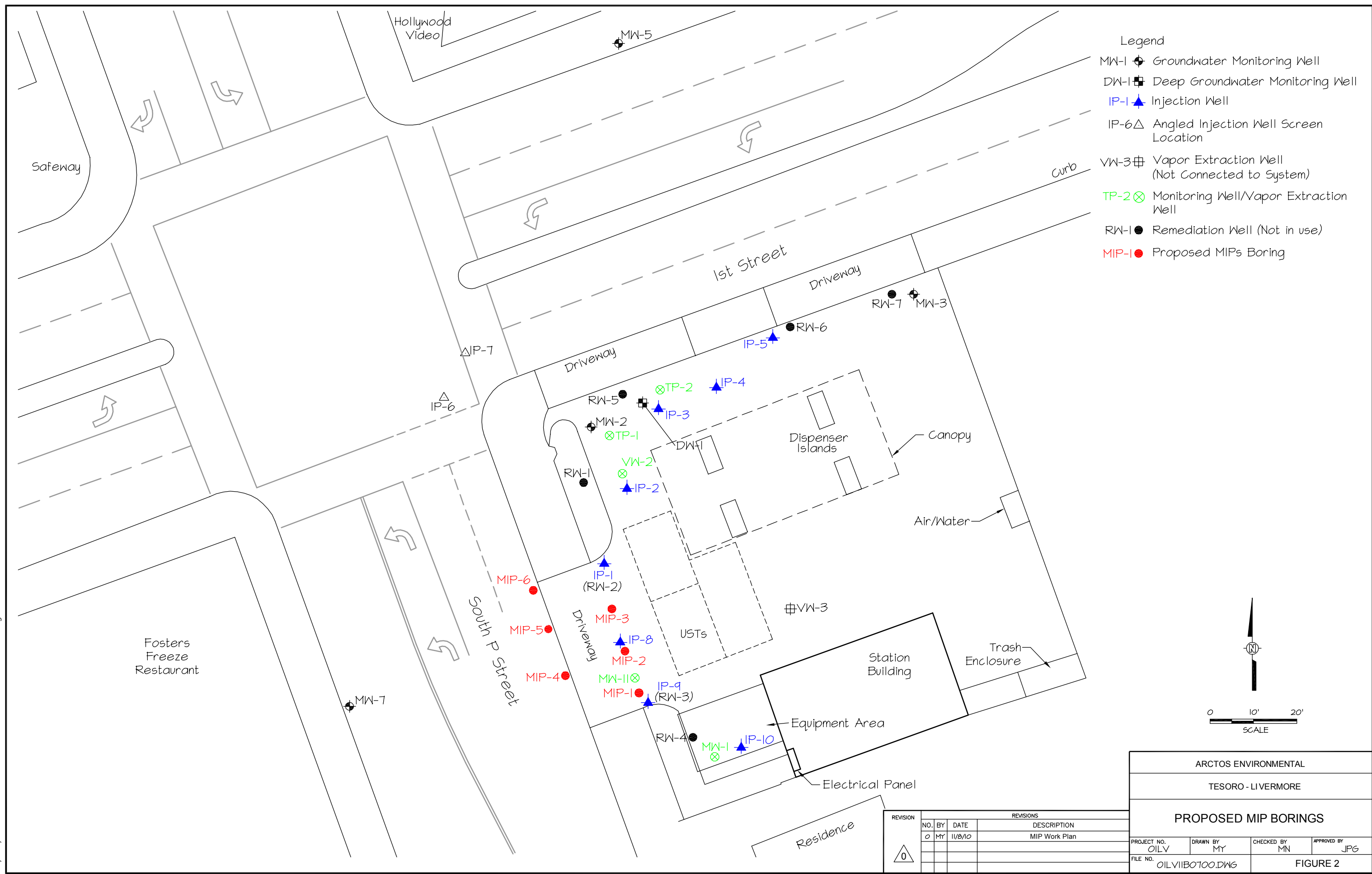
Arctos Environmental, 2008. *Interim Remedial Action Plan for Groundwater, 1619 1st Street, Livermore, California, Tesoro Station No. 67076, Former Beacon Station No. 3604, ACEH Case No. RO0434, 21 March.*



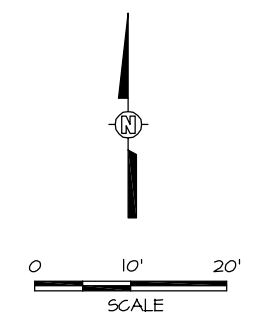
REFERENCE
 7.5 MINUTE USGS TOPOGRAPHIC MAP OF
 LIVERMORE, CALIFORNIA QUADRANGLE
 DATE: 1961, PHOTOREVISED 1980
 SCALE = 1:24,000

ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
SITE LOCATION MAP			
PROJECT NO. 01LV	DRAWN BY MP	CHECKED BY MP	APPROVED BY JG
FILE NO. Site Map.xls		FIGURE 1	

01LV11B0700.dwg
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- Legend
- MW-1 ● Groundwater Monitoring Well
 - DW-1 ■ Deep Groundwater Monitoring Well
 - IP-1 ▲ Injection Well
 - IP-6 △ Angled Injection Well Screen Location
 - VW-3 ⊞ Vapor Extraction Well (Not Connected to System)
 - TP-2 ⊗ Monitoring Well/Vapor Extraction Well
 - RW-1 ● Remediation Well (Not in use)
 - MIP-1 ● Proposed MIPs Boring



ARCTOS ENVIRONMENTAL			
TESORO - LIVERMORE			
PROPOSED MIP BORINGS			
PROJECT NO. OILV	DRAWN BY MY	CHECKED BY MN	APPROVED BY JPG
FILE NO. OILVII80700.DWG		FIGURE 2	

REVISION	REVISIONS			
	NO.	BY	DATE	DESCRIPTION
0	MY	11/8/10	MIP Work Plan	