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Donan Environmental Services, Inc.

SITE ASSESSMENT REPORT
Soil and Groundwater Investigation
Third Quarter 2014

Geotracker ID# T10000000826
LUST Site Case# 80024

John Bodger & Sons, Co.
1851 West Olive Avenue
Lompoc, California

Prepared By:
DONAN ENVIRONMENTAL SERVICES, INC.

April 27, 2015

Copy 1 of 4

John Bodger & Sons, Co.

Geotracker ID#T1000000826, LUST Site Case #80024

1851 West Olive Avenue, Lompoc, California

SITE ASSESSMENT REPORT, SOIL AND GROUNDWATER INVESTIGATION

THIRD QUARTER 2014

REPORT DATE: April 27, 2015

EXECUTIVE SUMMARY

SITE ASSESSMENT ACTIVITIES

SITE INFORMATION

Location/Address:	John Bodger & Sons, Co.
Owner/RP:	John Bodger & Sons, Co.
Address:	1851 West Olive Avenue, Lompoc, California
Consultant:	Donan Environmental Services, Inc. / Greg Delson, P.G.
Consultant Phone/Fax/email:	(760) 639-3600 / (760) 639-3603 / gd@desxyz.com

PROJECT INFORMATION

GW Monitoring Start Date:	2008
Nature of GW Impact:	UST release of gasoline to soil and groundwater
Number of onsite wells:	11 GW Monitoring (MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, MW7p, DW8, DW9, DW10, and DW12) 1 Dual-Phase Extraction (DPE) Well - DE1 1 Soil-Vapor Extraction (SVE) Well - DV1
Number of offsite wells:	1 GW Monitoring (DW11)
Site Well Identification:	MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, MW7p, DW8, DW9, DW10, DW11, DW12, DE1, and DV1
Previous Remediation Activities:	Remedial Excavation in 1992, Groundwater Assessment
Current Remedial Phase:	Groundwater assessment
Site Access Information:	Commercial Agricultural Operations

SOIL ASSESSMENT ACTIVITY 3Q14

Date of Drilling:	August 18-21, 2014 and September 26, 2014
Number of Wells Installed:	7 (DW8, DW9, DW10, DW11, DW12, DE1, and DV1)
Soil Samples Collected:	38
Chemical Analysis:	EPA 8015M TPHg and EPA 8260B Full-Scan VOCs for selected soil samples
Laboratory Used:	CHEMTEK Environmental Laboratories, Inc.

SOIL CHEMICALS OF CONCERN AND CONCENTRATIONS, 3Q14, (parts per million [ppm])

TPHg No. of samples detected:	13 out of 38: 800 ppm (DE1-50) - 0.60 ppm (DE1-40)
Benzene No. of samples detected:	1 out of 6: 2,230 parts per billion (ppb) in sample DE1-50
MTBE: No. of samples detected:	0 out of 6

GROUNDWATER ASSESSMENT ACTIVITY, 3Q14

Well Development:	On August 26, 2014, DES developed all the new wells except DW11 and DV1. Well DW11 was installed later and was dry. SVE Well DV1 was installed in the vadose zone.
Date of 3Q14 Monitoring Activities:	September 16, 2014
Number of Wells Gauged Q3:	12 - MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, MW7p, DW8, DW9, DW10, DW12, and DE1
Number of Wells With Free Product Q3:	6 - 0.60 feet in MW-5p and 0.46 feet in MW1p. Sheen in MW6p, DE1, MW3p, and MW4p
Wells Sampled Q3:	12 - MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, MW7p, DW8, DW9, DW10, DW12, and DE1
Chemical Analyses :	EPA 8015M TPHg and EPA 8260B BTEX, MTBE and Oxygenates, and Santa Barbara County LUFT Program Target VOCs
Laboratory Used:	CHEMTEK Environmental Laboratories, Inc.
Purge Method:	Bailer
Sample Method:	Disposable polyethylene bailer
Storage/Disposal Method:	55-Gallon DOT Drums/transported offsite for proper disposal

HYDROGEOLOGIC CONDITIONS, 2Q14

GW Depth Range (feet TOC):	59.80 (MW7p) - 63.45 (MW6p)
GW Elevation Range (feet amsl):	30.03 feet (DW8) - 33.41 feet (MW4p)
Product thickness (feet):	7 - 0.60 feet in MW5p, 0.46 feet in MW1p, and sheen in MW3p, MW4p, MW6p, and DE1.
Groundwater Gradient/Direction:	0.014 ft/ft to the Northeast from DW10 to DW8

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SITE ASSESSMENT REPORT, SOIL AND GROUNDWATER INVESTIGATION

THIRD QUARTER 2014

REPORT DATE: April 27, 2015

EXECUTIVE SUMMARY

SITE ASSESSMENT ACTIVITIES

GROUNDWATER CHEMICALS OF CONCERN AND CONCENTRATIONS, 2Q14 (parts per billion [ppb])

TPHg: No. of wells detected/Range: 10/12: 88,100 ppb (MW1p) - 170 ppb (DW10)

Benzene: No. of wells detected/Range: 8/12: 16,400 ppb (MW1p) - 2 ppb (DW12)

MTBE: No. of wells detected/Range: 0/12: All ND

LOW-THREAT CLOSURE POLICY (LTCP) STATUS

Is this site suitable for closure based on the LTCP checklist?

NO (refer to enclosed LTCP Checklist (June 12, 2014) from GeoTracker)

PROPOSED FUTURE WORK/RECOMMENDATIONS

Based on the conclusions in Section 6 of this Report, the following activities are recommended:

- 1) Treat the product in the Site well network by implementing the DPE approach in the DES IRAP (May 6, 2014), as approved in the enclosed EHS Letter (June 11, 2014). In November 2013 to April 2015, DES refined the SVE permit application and, as of the date of this Report, the APCD is in the process of reviewing updates to the SVE permit application. Upon the APCD completing the School notification process for the nearby Miguelito Elementary School, it is anticipated that the permit for the SVE System will be issued. Upon issuance of the APCD permit, the DPE pilot test can be implemented.
- 2) Assess the southwestward lateral extent of product and dissolved benzene impacts in the groundwater by installing and sampling proposed well DW13 (refer to Figure 11).
- 3) Assess the southeastward lateral extent of product and dissolved benzene impacts in the groundwater by installing and sampling proposed well DW14 (refer to Figure 11). Should product impacts be found in DW14, determine whether further assessment is required between the Site and the Miguelito Elementary School which is within 1,000 feet southeast of the Site (Figure 1).
- 4) Assess the northeastward downgradient lateral extent of product and dissolved benzene impacts in groundwater by installing and sampling proposed well DW15 (Figure 11).
- 5) Upon characterizing the lateral extent of the dissolved-phase plume and completing the remedial response, determine the soil-gas risk assessment needs.



STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER

BODGER SEEDS (T1000000826) - (MAP)

SIGN UP FOR EMAIL ALERTS

1851 OLIVE ST W
LOMPOC, CA 93436
SANTA BARBARA COUNTY
LUST CLEANUP SITE
[PRINTABLE CASE SUMMARY / CSM REPORT](#)

CLEANUP OVERSIGHT AGENCIES
SANTA BARBARA COUNTY LOP ([LEAD](#)) - CASE #. 80024
CASEWORKER: [E. Steven Nailor](#)
CENTRAL COAST RWQCB (REGION 3)
CUF Claim #: 19439
CUF Priority Assigned: C
CUF Amount Paid:

LTCP CHECKLIST AS OF 6/12/2014

[VIEW PATH TO CLOSURE PLAN](#)

[BACK TO CASE SUMMARY](#)

General Criteria - The site satisfies the policy general criteria

NO

a. Is the unauthorized release located within the service area of a public water system?

YES

Name of Water System : City of Lompoc Water

b. The unauthorized release consists only of petroleum ([info](#)).

YES

c. The unauthorized ("primary") release from the UST system has been stopped.

YES

d. Free product has been removed to the maximum extent practicable ([info](#)).

FP Not Encountered

e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed ([info](#)).

YES

f. Secondary source has been removed to the extent practicable ([info](#)).

Impediment to Removing Secondary Source:

- Remediation Has Not Been Attempted
- Other -

NO

Will compare residual to LTCP to see if it meets the closure criteria.

g. Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15.

YES

h. Does a nuisance exist, as defined by [Water Code section 13050](#).

NO

1. Media-Specific Criteria: Groundwater - The contaminant plume that exceeds water quality objectives is stable or decreasing in areal extent, and meets all of the additional characteristics of one of the five classes of sites listed below.

NO

EXEMPTION - Soil Only Case (Release has not Affected Groundwater - [Info](#))

NO

Does the site meet any of the Groundwater specific criteria scenarios?

NO

ADDITIONAL QUESTIONS - The following conditions exist that do not meet the policy criteria:

Plume Length (That Exceeds Water Quality Objectives) :

- Unknown

Plume Is Stable or Decreasing in AREAL Extent :

- Unknown

Free Product in Groundwater :

- No

Free Product Has Been Removed to the Maximum Extent Practicable :

- Unknown

For sites with free product, the Plume Has Been Stable or Decreasing for 5-Years ([info](#)) :

- Unknown

For sites with free product, owner Willing to Accept a Land Use Restriction (if required) :

- No

Free Product Extends Offsite :

- Unknown

Benzene Concentration :

- ≥ 3,000 µg/l

MTBE Concentration :

- Unknown

Nearest Supply Well (From Plume Boundary) :

- > 250 Feet and ≤ 1,000 Feet

Nearest Surface Water Body (From Plume Boundary) :

- > 250 Feet and ≤ 1,000 Feet

2. Media Specific Criteria: Petroleum Vapor Intrusion to Indoor Air - The site is considered low-threat for the vapor-intrusion-to-air pathway if site-specific conditions satisfy items 2a, 2b, or 2c

NO**EXEMPTION - Active Commercial Petroleum Fueling Facility****NO****Does the site meet any of the Petroleum Vapor Intrusion to Indoor Air specific criteria scenarios?****NO****ADDITIONAL QUESTIONS - The following conditions exist that do not meet the policy criteria:****Soil Gas Samples :**

- No Soil Gas Samples

Exposure Type :

- Residential

Free Product :

- Unknown

TPH in the Bioattenuation Zone :

- Soil samples not taken at two depths within 5 ft. zone (only for Scenario 4 with BioZone)

Bioattenuation Zone Thickness :

- ≥ 10 Feet and < 30 Feet

O₂ Data in Bioattenuation Zone :

- No O₂ Data

Benzene in Groundwater :

- ≥ 1,000 µg/l

Soil Gas Benzene :

- Unknown

Soil Gas EthylBenzene :

- Unknown

Soil Gas Naphthalene :

- Unknown

3. Media Specific Criteria: Direct Contact and Outdoor Air Exposure - The site is considered low-threat for direct contact and outdoor air exposure if it meets 1, 2, or 3 below.

YES**EXEMPTION - The upper 10 feet of soil is free of petroleum contamination****YES****Additional Information****Should this case be closed in spite of NOT meeting policy criteria?****NO**



STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER

BODGER SEEDS (T10000000826) - (MAP)

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CLEANUP OVERSIGHT AGENCIES
SANTA BARBARA COUNTY LOP ([LEAD](#)) - CASE # 80024
CASEWORKER: [E. Steven Nailor](#)
CENTRAL COAST RWQCB (REGION 3)
CUF Claim #: [19439](#)
CUF Priority Assigned:
CUF Amount Paid:

PATH TO CLOSURE PLAN FY 12/13 AS OF 6/12/2014

[BACK TO LTCP CHECKLIST](#)

IMPEDIMENT 1:

General Criteria F: Secondary source has NOT been removed to the extent practicable

Step to Resolve Impediment 1 - Step 1:

Meeting with RP & consultant in June 27, 2013, and follow-up letter identified need for some secondary source remediation.

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
6/30/2013	6/24/2013

Step to Resolve Impediment 1 - Step 2:

Submit additional groundwater monitoring results and updated site conceptual model.

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
9/30/2013	12/20/2013

Step to Resolve Impediment 1 - Step 3:

Submit additional site assessment work plan by 4/25/2014 & an interim corrective action plan for secondary source removal by 4/25/2014.

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
4/25/2014	5/5/2014

Step to Resolve Impediment 1 - Step 4:

Implement CAP ~ 1/2-year for APCD permitting approvals, and 1-year operation.

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
12/30/2015	

Step to Resolve Impediment 1 - Step 5:

Confirmation sampling and vapor intrusion soil gas & O2 sampling, and post remedial GWM.

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
6/30/2016	

Step to Resolve Impediment 1 - Step 6:

Public notice and 60-day comment period.

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
12/30/2016	

Step to Resolve Impediment 1 - Step 7:

Proper abandonment of all wells, removal of treatment system and removal of all wastes.

COMPLETION DATE	
PROJECTED DATE	ACTUAL DATE
6/30/2017	

IMPEDIMENT 2:

Media-Specific Criteria: Groundwater: The contaminant plume that exceeds water quality objectives is NOT stable or decreasing in areal extent, and does NOT meet all of the additional characteristics of one of the five classes of sites.

Conditions that do not meet the policy criteria:

- Plume Length (That Exceeds Water Quality Objectives): Unknown
- Plume is Stable or Decreasing in AREAL Extent: Unknown
- Free Product in Groundwater: No
- Free Product Has Been Removed to the Maximum Extent Practicable: Unknown
- For sites with free product, the Plume Has Been Stable or Decreasing for 5-Years (info): Unknown
- For sites with free product, owner Willing to Accept a Land Use Restriction (if required): No
- Free Product Extends Offsite: Unknown
- Benzene Concentration: $\geq 3,000 \mu\text{g/l}$
- MTBE Concentration: Unknown
- Nearest Supply Well (From Plume Boundary): $> 250 \text{ Feet}$ and $\leq 1,000 \text{ Feet}$
- Nearest Surface Water Body (From Plume Boundary): $> 250 \text{ Feet}$ and $\leq 1,000 \text{ Feet}$

Step to Resolve Impediment 2 - Step 1:

COMPLETION DATE

Submit a Interim Remedial Action Plan for secondary source removal.

PROJECTED DATE	ACTUAL DATE
4/25/2014	5/5/2014

Step to Resolve Impediment 2 - Step 2:

Implement CAP ~ 1/2-year for APCD permitting approvals, and 1-year operation.

COMPLETION DATE	
PROJECTED DATE 12/30/2015	ACTUAL DATE

Step to Resolve Impediment 2 - Step 3:

Confirmation sampling and vapor intrusion soil gas & O2 sampling, and post remedial GWM.

COMPLETION DATE	
PROJECTED DATE 6/30/2016	ACTUAL DATE

Step to Resolve Impediment 2 - Step 4:

Public notice and 60-day comment period.

COMPLETION DATE	
PROJECTED DATE 12/30/2016	ACTUAL DATE

Step to Resolve Impediment 2 - Step 5:

Proper abandonment of all wells, removal of treatment system and removal of all wastes.

COMPLETION DATE	
PROJECTED DATE 6/30/2017	ACTUAL DATE

IMPEDIMENT 3:

Media Specific Criteria: Petroleum Vapor Intrusion to Indoor Air: The site is NOT considered low-threat for the vapor-intrusion-to-air pathway and site-specific conditions do NOT satisfy items 2a, 2b, or 2c .

Conditions that do not meet the policy criteria:

- Soil Gas Samples: No Soil Gas Samples
- Exposure Type: Residential
- Free Product: Unknown
- TPH in the Bioattenuation Zone: Soil samples not taken at two depths within 5 ft. zone (only for Scenario 4 with BioZone)
- Bioattenuation Zone Thickness: ≥ 10 Feet and < 30 Feet
- O2 Data in Bioattenuation Zone: No O2 Data
- Benzene in Groundwater: ≥ 1,000 µg/l
- Soil Gas Benzene: Unknown
- Soil Gas EthylBenzene: Unknown
- Soil Gas Naphthalene: Unknown

Step to Resolve Impediment 3 - Step 1:

Vapor intrusion testing and soil gas & O2 sampling should occur after implementation of AS/SVE remediation.

COMPLETION DATE	
PROJECTED DATE 9/30/2016	ACTUAL DATE

Step to Resolve Impediment 3 - Step 2:

Review results and evaluate for LTC

COMPLETION DATE	
PROJECTED DATE 12/30/2016	ACTUAL DATE

REQUIREMENTS ALONG PATH TO CLOSURE

DATE IDENTIFIED FOR CLOSURE	CLOSURE INITIATED	RP NOTIFICATION DATE	PUBLIC PARTICIPATION COMPLETION DATE	WELL DESTRUCTION LETTER DATE	WELL DESTRUCTION DATE	WASTE DISPOSAL DATE	LAND USE RESTRICTION DATE	SITE CLOSURE DATE

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SIGNATORY PAGE

Designation:

DES Project Number 13E4167
Site Assessment Report for
Soil and Groundwater Investigation - Third Quarter 2014
Geotracker ID# T10000000826
LUST Site Case# 80024

Report Prepared For:

John Bodger & Sons, Co.
1851 West Olive Avenue
Lompoc, California 93436

Submitted By:

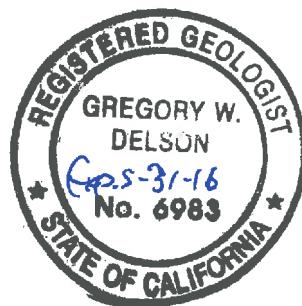
DONAN ENVIRONMENTAL SERVICES, INC.



Greg Delson, PG#6983
Senior Vice President/
Technical Operations



Anderson M. Donan
General Manager



cc: Mr. E. Steven Nailor, County of Santa Barbara Public Health Department

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LOGS

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- DW9 Borehole Log (DES)
- DW10 Borehole Log (DES)
- DW11 Borehole Log (DES)
- DW12 Borehole Log (DES)
- DE1 Borehole Log (DES)
- DV1 Borehole Log (DES)

SUPPORT DOCUMENTS

- Santa Barbara County EHS Letter (June 11, 2014) - Work Plan Approval
- Santa Barbara County EHS monitoring well permits (17358, 17359, 17360, 17361, 17362, 17363, 17364)
- EHS Letter (March 31, 2014)
- DEH SAM Manual Table 5-8
- EHS Email (August 27, 2014)
- DES Email (August 26, 2014)
- Well Development Logs (August 26, 2014)
- Well Purging/Sampling Logs (September 16, 2014)
- J.B. Dixon Land Surveying, Inc. - GEO_XY and GEO_Z Geotracker Survey Files
- Santa Barbara County Fire Department LUFT Manual page F-5
- Soil-Safe Non-Hazardous Waste Manifest No. 44256
- Groundwater Non-Hazardous Waste Manifest No. 710600
- Geotracker Upload Confirmations

LABORATORY REPORTS

- Chemtek Report (September 3, 2014)
- Chemtek Report (September 29, 2014)
- Chemtek Report (October 2, 2014)
- Testing Engineers - Vertical V Report (September 24, 2014)



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Donan Environmental Services, Inc.

April 27, 2015

Project Number: 13E1467

Report Delivered To:

John Bodger & Sons, Inc.
1851 West Olive Avenue
Lompoc, California 93436

RE: SITE ASSESSMENT REPORT for
Soil and Groundwater Investigation - Third Quarter 2014
Geotracker ID# T10000000826
LUST Site Case# 80024
John Bodger & Sons, Co (aka Bodger Seeds)
at 1851 West Olive Avenue in Lompoc, California (Site)

Donan Environmental Services, Inc. (DES) has prepared this Site Assessment Report (Report) for the above-referenced Site in response to the Santa Barbara County, Public Health Department, Environmental Health Services Division (EHS) letter dated June 11, 2014 (enclosed), and the Donan Environmental Services (DES) Work Plan of May 5, 2014.

The site assessment work performed in this investigation was conducted in general accordance with the current Santa Barbara County and California Leaking Underground Fuel Tank (LUFT) Guidelines.

1.0 INTRODUCTION

1.1 Site Use, Location, and Description

The Site is located in an agriculturally-developed property in Lompoc, California. Refer to the enclosed site location map (Figure 1).

The Site is a commercial operation that supplies seeds for agricultural purposes. The Site is part of larger property that includes warehouses and seed processing facilities. Portions of the Site are paved for parking. The Site formerly operated gasoline and diesel fueling systems to support the agricultural equipment on the Site. No fueling systems are currently in-use at the Site. Residential land use is south of the Site. The Miguelito Elementary School is within 1,000 feet to the southeast of the Site (Figure 1).

1.2 Water Use Basin

The Site's groundwater quality objectives are subject to the beneficial water uses designated by the Regional Water Quality Control Board - Central Coast Basin Plan (1994) for the Santa Ynez Hydrologic Unit (14.00), Lompoc Hydrologic Area (14.10). The groundwater basin is designated for beneficial uses for municipal,

domestic, agricultural, and industrial service supply. The groundwater basin is designated as having beneficial uses for drinking water supply. As indicated on Figure 1 a groundwater supply well is located within 2,000 feet of the Site to the northwest.

1.3 Background

The previous assessment activities conducted at the Site are summarized below:

- December 1986** According to an EHS Report, on December 10, 1986, one 1,000-gallon waste oil UST was removed at the Site (refer to Figure 2). According to the EHS Report (December 10, 1986), the UST was in good condition and “no obvious soil contamination” was observed.
- July 1988** According to Santa Barbara Health Care Services (HCS) records, on July 26, 1988, one 4,000-gallon UST and one 500-gallon UST were removed (refer to Figure 2). The USTs were reported to have contained gasoline. According to the 1988 HCS records, release impacts were not reported in the analytical results from the soil samples collected during the UST removal. However, it has not been determined if the soil samples were collected under the dispensers or product piping. The HCS determined that no further action was required.
- 1992** According to a personal communication with Mr. Jack Bodger, two aboveground storage tanks were used to store diesel at the Site from approximately 1962 to 1989. In 1992, the aboveground storage tanks were transported off the Site.
- March 2007** As part of a Phase I Environmental Site Assessment (ESA) for the City of Lompoc, for a 270-acre parcel, including the Site, prepared by Rincon Consultants Inc., Rincon identified portions of the Site as recognized environmental conditions.
- September 2007** In response to the recommendations in the Rincon Phase I ESA Report (March 30, 2007), Petra conducted a soil and groundwater investigation. On September 7, 2007, Petra advanced and sampled soil borings SB-1 through SB-19. On September 21, 2007 Petra advanced soil borings HP-1, HP-2, HP-5 and HP-6 and collected groundwater grab samples using hydropunch methods. Dissolved benzene impacts in the grab groundwater samples indicated that further groundwater investigation was required by well installation.
- June 2008** In response to the County of Santa Barbara Fire Department (SBFD) requirements, on June 9, 2008, Petra submitted a Work Plan to the SBFD. The Petra Work Plan (June 9, 2008) provided guidance for installing and sampling four groundwater monitoring wells.
- December 2008** According to a Petra Report (April 22, 2009), on December 16 through 19, 2008, Petra advanced and sampled groundwater monitoring wells MW1, MW2, MW3, and MW4. The Petra report indicated soil impacts in the vicinity of the former tank pit and

elevated benzene impacts in the groundwater (refer to enclosed Table 2). The methyl-tertiary-butyl-ether (MTBE) results in the groundwater were reported as non-detect (ND) (Table 4).

- 2008 - 2009 Petra conducted groundwater monitoring events in the four wells in December 2008, March 2009, June 2009, and October 2009. Elevated benzene impacts were reported in the groundwater samples. In the groundwater monitoring reports, Petra recommended installing 3 soil-vapor extraction (SVE) wells and performing SVE to treat soil impacts.
- December 2010 On December 16, 2010, the SBFD issued a letter that provided a review of the 2007 to 2009 investigation activities at the Site. The SBFD Letter (December 16, 2010) indicated that further investigation of the Site was required. The SBFD Letter (December 16, 2010) also identified a concern that the four wells installed in 2008 were too deep and penetrated or crossed a clay layer that separated the upper "younger alluvium" from deeper "older alluvium." The SBFD Letter (December 16, 2010) also indicated that in addition to the benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH) evaluated in the previous reports, the following additional analytes need to be addressed in the assessment:
- 1) 1,2 - dibromoethane (EDB)
 - 2) 1,2 - dichloroethane (EDC)
 - 3) 1,2,4 - trimethylbenzene
 - 4) 1,3,5 - trimethylbenzene
 - 5) n-butylbenzene
 - 6) sec-butylbenzene
 - 7) tert-butylbenzene
 - 8) isopropylbenzene
 - 9) isopropyltoluene (reported as 4-isopropyltoluene in this Report)
 - 10) n-propylbenzene
 - 11) naphthalene
- The SBFD also noted that if SVE is performed at the Site, thermal oxidation will not be appropriate because of potential EDC in the release. Treatment of the SVE influent by carbon canisters would likely be required.
- March 2011 In response to the SBFD Letter (December 16, 2010), on March 10, 2011, Petra submitted a Work Plan to the SBFD. The Petra Work Plan (March 10, 2011) provided guidance for installing and sampling seven groundwater monitoring wells and destroying wells MW1, MW2, MW3, and MW4.
- May 2012 In May 2012, Petra conducted the well installation and destruction activities in the Petra Work Plan (March 10, 2011) and the associated SBFD Work Plan Approval Letter (February 15, 2012). On May 7 through 10, 2012, Petra destroyed wells MW1,

MW2, MW3, and MW4 under permit. On May 7 and 8, 2012, Petra installed wells MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, and MW7p. The results of the soil and groundwater investigation were presented in a Petra Report (September 13, 2012). The Petra Report (September 13, 2012) concluded that the lateral and vertical extent of soil contamination in the vicinity of the USTs was assessed. Impacts below 50 feet below grade (fbg) in MW6p and MW4p were determined to be associated with impacts caused by the fluctuating groundwater table. The Petra Report (September 13, 2012) found that groundwater impacts are not assessed to the north, south, east, and west. The Petra Report (September 13, 2012) recommended semi-annual monitoring for one hydrologic cycle, then evaluating further investigation and remediation needs.

- June 2013 DES was engaged by the Responsible Party to provide consulting services for the Case. On June 11, 2013, DES gauged, purged, and sampled MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, and MW7p to provide the required semi-annual monitoring data for Second Quarter 2013. The results of the June 2013 monitoring were presented in the DES Report (December 20, 2013). The DES Report (December 20, 2013) evaluated the data gaps at the Site and provided a conceptual impact model and evaluation of analytical laboratory chromatograms to determine if diesel impacts reported by previous investigators were diesel or degraded gasoline. The DES Report concluded and provided Charts to show that the previously-reported diesel impacts were actually the heavier end of the carbon range for degraded gasoline.
- December 2013 On December 18, 2013, DES gauged, purged, and sampled MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, and MW7p to provide the required semi-annual monitoring data for Fourth Quarter 2013. The results of the December 2013 monitoring were presented in the DES Report (February 18, 2014).
- March 2014 The EHS reviewed the two DES reports and provided review comments in the enclosed EHS Letter (March 31, 2014). The EHS concurred that further groundwater investigation was required and that an approach for a dual-phase extraction (DPE) pilot test be presented in a Interim Remedial Action Plan (IRAP).
- May 2014 DES submitted a Site Assessment Work Plan (May 5, 2014) and an IRAP (May 6, 2014) in response to the EHS Letter (March 31, 2014). The DES Work Plan (May 5, 2014) presented guidance for installation of 5 new wells discussed in this Report. The DES IRAP (May 6, 2014) presented an approach to perform an 8-day DPE Pilot Test, then provided criteria to continue DPE, as appropriate.
- June 2014 The EHS reviewed the DES Work Plan (May 5, 2014) and the DES IRAP (May 6, 2014) and provided review comments in the enclosed EHS Letter (June 11, 2014). The EHS Letter (June 11, 2014) concurred with the well locations proposed in the DES Work Plan (May 5, 2014). The EHS Letter (June 11, 2014) also approved the DPE approach in the DES IRAP (May 6, 2014) and provided guidance on the required

public notification and the need for a permit from the Santa Barbara County Air Pollution Control District (APCD).

- July-Aug. 2014 DES coordinated with the offsite property owner at DW11 to get access and started the EHS well permit process. On August 12, 2014, the EHS issued the well permits for the wells proposed in the DES Work Plan (May 5, 2014) and the DES IRAP (May 6, 2014).
- August 2014 In response to the DES Work Plan (May 5, 2014), DES installed groundwater monitoring wells DW8, DW9, DW10, and DW12 (Figure 2). DES also installed extraction wells wells DV1 and DE1 from the DES IRAP (May 6, 2014). The newly-installed wells were also developed.
- September 2014 DES conducted the 3rd Quarter 2014 groundwater monitoring event by collecting groundwater samples from the existing wells and the 5 newly-installed groundwater wells DW8, DW9, DW10, DW12, and DE1 (Figure 2).
- September 2014 Upon obtaining access for drilling on the residential land use property south of the Site, DES installed offsite groundwater monitoring well DW11 (Figure 2).
- November 2014 In response to the directive in the enclosed EHS Letter (June 11, 2014), DES submitted a permit application to the APCD for operation of a temporary SVE System. The permit is needed in order to implement the DES IRAP (May 6, 2014).
- December 2014 The existing well network and the newly-installed wells were surveyed for compliance with Geotracker reporting standards.
- December 2014 The APCD identified that the Miguelito Elementary School is within 1,000 feet of the Site (Figure 1) and requires a specific notification process that will be accomplished by the APCD. Other items were also identified that were required to complete the SVE permit process.
- April 2015 DES prepared this Report. DES submitted the updated SVE permit application to the APCD and provided the APCD with the mailing labels that the APCD requested to support the school notification process.

1.4 General Chronology

The activities leading up to this Report are as follows:

- Aug. 2014 Obtained EHS drilling permits.
Air-knifed 6 borehole locations.
Drilled 5 boreholes (DW8, DW9, DW10, DW12, and DE1) to approximately 65 fbg and collected soil samples (Figure 2).

Drilled 1 borehole (DV1) to approximately 45 fbg and collected soil samples (Figure 2).

Constructed Groundwater monitoring wells DW8, DW9, DW10, and DW12.

Constructed DPE Well DE1.

Constructed SVE Well DV1.

Developed wells DW8, DW9, DW10, DW12 and DE1

Soil samples were analytically tested by a State-certified laboratory.

In response to the EHS Case Manager's directive from the EHS visit during the drilling operation, analyzed one soil sample for geotechnical characteristics at a State-certified laboratory.

Drummed soil waste was inventoried, labeled, and stored onsite pending proper disposal.

Sept. 2014

Gauged the Site well network and newly installed wells DW8, DW9, DW10, DW12, DE1, and DV1, and evaluated the wells for presence of product

Purged and sampled wells MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, MW7p, DW8, DW9, DW10, DW12, and DE1 on September 16, 2014.

Groundwater samples were analytically tested by a State-certified laboratory.

Groundwater samples were analytically tested by a State-certified laboratory. Drummed groundwater waste was inventoried, labeled, and stored onsite pending proper disposal.

Upon obtaining the property owner consent to install a well on the offsite residential property to the south of the Site, DES installed offsite well DW11 and collected soil samples for laboratory analysis on September 26, 2014 (Figure 2). DES attempted development of DW11 but the well was dry.

Soil samples from DW11 were analytically tested by a State-certified laboratory.

Soil samples from DWTF were analytically tested by a State-certified lab. Drummed soil waste was inventoried, labeled, and stored onsite pending proper disposal.

Conducted proper disposal of drummed soil and groundwater wastes.

April 2015 Prepared this Report

2.0 OBJECTIVE

The objective was to assess soil and groundwater contamination associated with LUST Site Case# 80024.

3.0 WORK DESCRIPTION

The soil and groundwater investigation scope of services was performed in general accordance with the Santa Barbara County and California LUFT Program Guidelines.

The completed scope of services, which was used to meet the project objective, is presented in the description of the following tasks:

3.1 Project Set-Up

3.1.1 Work Plan Approval

The DES Work Plan of May 5, 2014 was conditionally approved by the enclosed EHS Letter (June 11, 2014).

3.1.2 Permit

On August 12, 2014 , DES obtained the enclosed Santa Barbara County EHS drilling permits for wells DW8, DW9, DW10, DW11, DW12, DE1, and DV1. Upon receipt of the enclosed EHS drilling permits (17358, 17359, 17360, 17361, 17362, 17363, 17364), a drilling date was scheduled.

3.1.3 Utility Clearance

The proposed drilling locations were marked out at the Site. Underground public utilities at the Site drilling locations were cleared by Underground Service Alert. A private utility locating service, David McNabb Construction Geophysical Services, was also used to locate utility lines on the private properties on August 17, 2014. Prior to drilling, SG Drilling Company extracted the upper 5 feet of soil in each hole using an air knife -vacuum unit on August 18, 2014. The many underground utilities that serve the buildings on the private properties necessitated use of the air knife methods (refer to Figure 2).

3.2 Drilling Activities

3.2.1 Drilling Operations

On August 18-21, 2014, SG Drilling Company provided and operated a CME 75 drill rig, equipped with hollow- stem augers, to sample soil and install wells DW8, DW9, DW10, DW12, DE1, and DV1 (Figure 2). On September 26, 2014 offsite well DW11 was installed. The pilot borings for the wells were soil sampled at 5-foot depth intervals in accordance with the DES Work Plan (May 5, 2014). In selected borings, continuous splitspoon soil sampling was conducted from 50 to 60 fbg to evaluate impacts and the soil types in the capillary fringe. Selected samples were shipped to a fixed-facility State-certified laboratory for chemical analysis (refer to Section 4.1 of this Report). Monitoring wells were then installed in the soil borings.

A DES PG oversaw the onsite drilling activities. The DES PG logged the soil borings in accordance with the Unified Soil Classification System (USCS) protocols (refer to the enclosed Borehole Logs in Appendices -Logs).

On August 20, 2014, the EHS Case Manager, Mr. E. Steven Nailor, visited the drilling operation and requested that a representative soil sample be collected and analyzed for geotechnical characteristics in order to verify visual findings noted by the Site geologist. The enclosed EHS Email (August 27, 2014) and the August 26, 2014 DES Email provide details on the selected geotechnical parameters. Further information on the selected geotechnical parameters are presented in Section 4.2 of this Report.

3.2.2 Soil Sampling

Soil samples were collected at intervals of five feet in each soil boring , beneath the pre-cut air knife hole, with the use of a split-spoon sampler. In selected borings, continuous split spoon soil sampling was conducted from 50 to 60 fbg to evaluate impacts and soil types in the capillary fringe (refer to the enclosed Borehole Logs in the Appendices - Logs). Three 6-inch-long metal rings were placed inside the split-spoon sampler, per sampling interval. Upon breaking open the spent sampler, the lower ring was capped, labeled, and placed into an ice-

chilled cooler for analytical testing. The soil in the upper two rings was typically extruded into a re-sealable plastic bag and inspected for lithologic characteristics and contaminant indicators. The bagged soil sample was later tested with a photo-ionization detector (PID) for hydrocarbon soil vapor concentrations, per an isobutylene calibration standard. Blow counts were recorded by the driller per soil sample and are listed on the applicable Borehole Logs (enclosed).

The soil samples were submitted to the State-certified laboratory for chemical analysis. The selected soil sampling locations and depths are presented in enclosed Table 1 and Figure 4.

3.2.3 Monitoring Well Construction Phase

Monitoring wells DW8, DW9, DW10, DW11, and DW12 were installed in the pilot borings. The wells consisted of a 2-inch diameter blank casing (grade to 45 fbg), 2-inch diameter 0.02-inch slotted casing (45 fbg to 65 fbg), a traffic box, concrete seal (grade to 3 fbg), bentonite grout seal (3 fbg to 40 fbg), bentonite chip seal (43 fbg to 40 fbg), and a number 3 sand pack (43 fbg to 66.5 fbg) (refer to Table 2).

After the well casing and the sand pack were installed, the wells with water were surged with a surge block, to develop the sand pack. As the sand settled, additional sand was added. After the development was completed, dehydrated bentonite pellets were placed in the outer well annulus and hydrated with water. Bentonite grout was then placed to 3 fbg. Upon completion of construction, the wells were capped with screw-on lids and padlocked. The construction details for Wells DW8, DW9, DW10, DW11, and DW12 are shown on the enclosed Borehole Logs and summarized on Table 2. During installation of DW11, moist soils logged at 55 to 60 fbg (refer to the enclosed Borehole Log) provided an indication of the water table or a perched water-bearing zone. However, upon installing well screen, no water entered the well. Therefore, DW11 was not developed by surge block during sand pack installation.

3.2.4 Extraction Well Construction Phase

Extraction wells DE1 and DV1 were installed in the pilot borings. The DPE Well DE1 consisted of a 4-inch diameter blank casing (grade to 45 fbg), 4-inch diameter 0.02-inch slotted casing (45 fbg to 65 fbg), a traffic box, concrete seal (grade to 3 fbg), bentonite grout seal (3 fbg to 40 fbg), bentonite chip seal (43 fbg to 40 fbg), and a number 3 sand pack (43 fbg to 66.5 fbg) (refer to Table 2).

After the well casing and the sand pack were installed in DE1, the well was surged with a surge block, to develop the sand pack. As the sand settled, additional sand was added. After the development was completed, dehydrated bentonite pellets were placed in the outer well annulus and hydrated with water. Bentonite grout was then placed to 3 fbg. Upon completion of construction, DE1 was capped with a screw-on lid and padlocked. The construction details for DE1 are shown on the enclosed Borehole Log and summarized on Table 2.

The SVE Well DV1 consisted of a 4-inch diameter blank casing (grade to 25 fbg), 4-inch diameter 0.02-inch slotted casing (25 fbg to 45 fbg), a traffic box, concrete seal (grade to 3 fbg), bentonite grout seal (3 to 21 fbg), bentonite chip seal (21 fbg to 24 fbg), and a number 3 sand pack (24 fbg to 46.5 fbg) (refer to Table 2). Well development on DV1 was not performed because the well was installed in the vadose zone to be used as an SVE well. Upon completion of construction, DV1 was capped with a screw-on lid and padlocked. The construction details for DV1 are shown on the enclosed Borehole Log and summarized on Table 2.

3.2.5 Well Development

After constructing the wellhead, Wells DW8, DW9, DW10, DW12, and DE1 were developed by purging (refer to the enclosed Well Development Logs (August 26, 2014) in Appendices - Support Documents). When DW11 was installed on September 26, 2014, moist soils logged at 55 to 60 fbg provided an indication of the water table or a perched water-bearing zone. However, upon installation of the well screen, no water accumulated in the well. Upon later visits to the Site, Well DW11 remained dry. The well was not advanced deeper due to the Site history of having to re-install wells MW1, MW2, MW3, and MW4 due to crossing the deep water bearing zone. Well DW11 will be further evaluated during future monitoring events to determine if a deeper well should be installed at that location.

3.2.6 Drilling Waste Management

The soil cuttings and waste generated by the drilling activities were placed into labeled drums. The soil analytical results were transmitted to a treatment facility for classification of the waste. On April 10, 2015 the drummed soil wastes were transported offsite for proper disposal (refer to enclosed Soil-Safe Non-Hazardous Waste Manifest No. 44256).

3.3 Groundwater Activities

3.3.1 Groundwater Monitoring, Purging, and Sampling

On September 16, 2014, existing Wells MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, and MW7p, and the newly installed wells DW8, DW9, DW10, DW12, and DE1 were gauged and evaluated for the presence of free product. The interface probe detected measurable free product in MW5p (0.60 feet thick) and MW1p (0.46 feet thick). A product sheen was observed in the purge water from MW6p, DE1, MW3p, and MW4p (Figure 7). In order to evaluate the water quality in the product-bearing wells relative to the California State Water Resources Control Board (SWRCB) Low Threat Underground Storage Tank Case Closure Policy (LTCP), non-purge groundwater grab samples were collected from the water below the product. The non-purge groundwater grab samples were collected from product-bearing wells MW1p, MW3p, MW4p, MW5p, MW6p, and DE1 (Figure 7). The non-product bearing wells MW2p, MW7p, DW8, DW9, DW10, and DW12 were purged and sampled, as indicated on the enclosed Well Purging/Sampling Logs (Appendices - Support Documents).

Purged and non-purged groundwater samples were collected with a single-use disposable bailer. The extracted water was decanted into multiple 40 ml glass vials preserved with hydrochloric acid. The water-filled sample containers were capped, labeled, and placed into an ice-chilled cooler. Single-use disposable gloves were used throughout the water sampling activities. The twelve groundwater samples were delivered to a State-certified laboratory for analytical testing.

3.3.2 Groundwater Waste Management

The water waste generated by the groundwater activities was placed into labeled drums. The groundwater analytical results were transmitted to a treatment facility for classification of the waste. On April 10, 2015, the drummed groundwater wastes were transported offsite for proper disposal (refer to enclosed groundwater Non-Hazardous Waste Manifest No. 710600).

3.4 Survey Activities

On December 28, 2014, State-certified land surveyor, J.B. Dixon Engineering, Inc. surveyed the existing Site wells and the newly-installed wells per the State-mandated GeoTracker compliance standards. The wells were surveyed to horizontal coordinates based on the North American Datum (NAD) 83 datum and to vertical elevation based on the National Geodetic Vertical Datum (NGVD) 29 datum. The associated Geotracker GEO_XY and GEO_Z survey data files are presented in the Appendices - Support Documents.

4.0 FINDINGS

4.1 Soil Sample Analytical Results

The August and September 2014 drilling activities resulted in the collection of 38 soil samples that were submitted to Chemtek Environmental Laboratories, Inc. (Chemtek), a State-certified laboratory, for analytical testing. The soil sample analytical results are listed in Table 1 and in the enclosed Chemtek Reports (September 3, 2014 and October 2, 2014).

The soil samples were tested by EPA Method 8015-modified for total petroleum hydrocarbons (TPH) using a gasoline standard (TPHg). These analytical results were reported by the Chemtek Reports (September 3, 2014 and October 2, 2014) in parts per million (ppm) or in milligrams per kilogram (mg/kg). The concentration unit of ppm was used in this Report for the TPHg impacts to soil. In the onsite soil borings, DW8, DW9, DW10, DW12, and DE1, the one soil sample that exhibited the highest TPHg concentration was also analyzed for full-scan volatile organic compounds (VOCs) by EPA Method 8260B (Table 1). The five soil samples collected from offsite soil boring DW11 were all analyzed for full-scan VOCs by EPA Method 8260B (Table 1).

4.1.1 TPH-Gasoline Analytical Results

In the 35 fbg to 65 fbg soil samples for DPE well DE1, the laboratory reported TPHg concentrations ranging from a high of 800 ppm (DE1-50) to a low of 0.60 ppm (DE1-40) (Table 1). The laboratory reported ND results for TPHg in soil samples collected from 5 fbg to 30 fbg in DE1 (Table 1). In the outward wells DW8, DW9, and DW10, the laboratory reported low TPHg concentrations ranging from a high of 16.9 ppm (DW10-60) to a low of 0.23 ppm (DW8-55 ppm). The laboratory reported ND results for the 50 fbg to 65 fbg soil samples collected from DW11 and DW12 (Table 1). As approved in the DES Work Plan (May 5, 2014), no soil samples were analyzed from surface to 50 fbg in the soil borings for DW8, DW9, DW10, and DW12.

4.1.2 Benzene Analytical Results

The soil samples that exhibited the highest TPHg concentrations in DW8, DW9, DW10, DW12, and DE1 were selected for full-scan VOC analysis. In DW12, the laboratory reported ND results for TPHg in the 5 soil samples analyzed, therefore, the soil sample from the capillary fringe at 55 fbg was selected for full-scan VOC analysis. Of the 5 samples analyzed for full-scan VOCs from DW8, DW9, DW10, DW12, and DE1, benzene was reported at a concentration of 2,230 ppb in DE1-50 (Table 1). The laboratory reported ND results for benzene in the soil samples DW8-50, DW9-55, DW10-60, DW12-55, and in the five soil samples collected from DW11 (Table 1).

4.1.3 Other VOC Results

The laboratory reported various other VOCs in soil sample DE1-50 (refer to Table 1 and the enclosed Chemtek Report (September 3, 2014)). The laboratory reported low VOC concentrations less than 10 ppb in DW8-50

and DW10-60 (refer to the enclosed Table 1 and Chemtek Report (September 3, 2014)). The laboratory reported ND results for all VOCs in DW9-55 and DW12-55 (Chemtek Report (September 3, 2014)) and ND results for all VOCs in the five soil samples collected from DW11 (Chemtek Report October 2, 2014).

The laboratory reported ND results for lead-scavenging compounds 1,2-dibromoethane (EDB) and 1,2,-dichloroethane (EDC) in all the soil samples analyzed for full-scan VOCs in September and October 2014 (refer to the enclosed Chemtek Reports (September 3, 2014 and October 2, 2014)). As part of the full-scan VOC analysis, the enclosed Chemtek Reports (September 3, 2014 and October 2, 2014) also present the analytical results for the following Santa Barbara County LUFT program analytes: n-butylbenzene, sec-butylbenzene, tert-butylbenzene, naphthalene, isopropylbenzene, 4-isopropyltoluene, n-propylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.

4.2 Soil Sample Geotechnical Results

On August 20, 2014, the EHS Case Manager, Mr. E. Steven Nailor, visited the drilling operation and requested that a representative soil sample be collected and analyzed for geotechnical characteristics in order to verify visual findings noted by the Site geologist. The enclosed EHS Email (August 27, 2014) and the August 26, 2014 DES Email provide details on the selected geotechnical parameters. A soil sample from 45 to 50 fbg in DW10 was submitted to the State-certified geotechnical laboratory Testing Engineers - Vertical V for sieve analysis by ASTM Method D422, for specific gravity analysis by ASTM Method T100, and for total organic carbon (TOC) reported as weight fraction of organic carbon analysis by ASTM Method D2974.

The sieve analysis confirmed that the soil is classified by the USCS as silt/clay. The TOC result was 5.78%. Refer to the enclosed Testing Engineers - Vertical V Report (September 24, 2014). The TOC result of 5.78% indicates that TOC in the formation has the capacity to arrest lateral migration of hydrocarbons in soil-gas and is anticipated to be a useful component for soil-gas risk modeling, if a soil-gas survey is needed at the Site.

4.3 Groundwater Levels, Gradient, and Flow Direction

On September 16, 2014, wells MW1p, MW2p, MW3p, MW4p, MW5p, MW6p, MW7p, DW8, DW9, DW10, DW12, and DE1 were gauged with an oil-water interface probe. Well DW11 was installed on September 26, 2014 and was later found to be dry. Therefore, well DW11 is not included in the groundwater levels evaluation. Using the September 16, 2014 data, the Site wells' depth-to-water (DTW) measurements were adjusted for free product corrections, based on DTP measurements, then compared to surveyed top of casing elevation (TOCE) measurements to calculate the respective groundwater elevations (GWEs). Refer to the enclosed Table 3. In September 2014, the deepest indication of the water table was a DTW of 63.45 feet in MW6p. The shallowest indication of the water table was a DTW of 59.80 feet measured in MW7p.

The GWEs ranged in elevation from a high of 33.41 feet (MW4p) to a low GWE of 30.03 feet (DW8) (Figure 3). In September 2014, the primary hydraulic gradient was calculated to be 0.014 feet per feet to the northeast from DW10 to DW8 (Figure 3).

4.4 Groundwater Sample Analytical Results

In September 2014, the twelve groundwater samples were analytically tested by Chemtek. The groundwater samples were tested by EPA Method 8015-modified for TPHg. The groundwater samples were also tested by EPA Method 8260B for BTEX, MTBE, ETBE, DIPE, TAME, TBA, 1,2-dibromoethane (EDB),

1,2-dichloroethane (EDC), n-butylbenzene, sec-butylbenzene, tert-butylbenzene, naphthalene, isopropylbenzene, 4-isopropyltoluene, n-propylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. The laboratory-reported analytical concentrations were converted into equivalent parts per billion (ppb) units for this Report. The groundwater analytical results are summarized on Table 4.

4.4.1 TPH-Gasoline Analytical Results

In the September 2014 groundwater samples, the laboratory reported TPHg concentrations ranging from a high of 88,100 ppb (MW1p) to a low of 170 ppb (DW10) (Table 4). The laboratory reported ND TPHg results in groundwater samples from MW7p and DW8.

4.4.2 Benzene Analytical Results

In the September 2014 groundwater samples, the laboratory reported benzene concentrations ranging from a high of 16,400 ppb (MW1p) to a low of 2 ppb (DW12) (Table 4). The laboratory reported ND benzene results in groundwater samples from MW7p, DW8, DW9, and DW10 (Table 4). Benzene impacts in MW1p (16,400 ppb), MW5p (11,700 ppb), MW3p (6,000 ppb), MW4p (5,440 ppb), DE1 (5,240 ppb), and MW6p (3,380 ppb) exceeded the LTCP cleanup level for benzene of 3,000 ppb (Table 4).

4.4.3 MTBE Analytical Results

In the September 2014 groundwater samples, the laboratory reported ND results for MTBE in the 12 wells tested (Table 4).

4.4.4 Lead Scavenger Compound EDC and EDB Results

In the September 2014 groundwater samples, the laboratory reported 1,2-dichloroethane (EDC) concentrations ranging from a high of 5,880 ppb (MW1p) to a low of 6 ppb (DW10) (Table 5). The laboratory reported ND EDC results in groundwater samples from MW7p, DW8, DW9, and DW12 (Table 5). The reported EDC concentrations all exceeded the Santa Barbara County LUFT Manual Investigation Level of 0.5 ppb for EDC (refer to the enclosed Santa Barbara County Fire Department LUFT Manual page F-5).

The laboratory reported ND results for 1,2-dibromoethane (EDB) in all the groundwater samples analyzed in September 2014.

4.4.5 Other Analytical Results

Wells with elevated benzene concentrations that exceeded the LTCP cleanup level of 3,000 ppb (MW1p, MW3p, MW4p, MW5p, MW6p, and DE1) also exhibited reportable concentrations of toluene, ethylbenzene, total xylenes, DIPE, TBA, n-butylbenzene, sec-butylbenzene, naphthalene, isopropylbenzene, 4-isopropyltoluene, -propylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene in September 2014 (refer to Table 4 and Table 5). The other VOCs detected were reported in wells with elevated benzene, therefore, evaluating the lateral and vertical extent of product, TPHg, and benzene impacts will be sufficient to address the assessment of other VOCs.

4.5 Free Product Measurements

On September 16, 2014, free product thicknesses of 0.60 feet (MW5p) and 0.46 feet (MW1p) were measured in the well network. On September 16, 2014, a product sheen was observed in MW3p, MW4p, MW6p, and

DE1 (Figure 7). No product was measured or observed in MW2p, MW7p, DW8, DW9, DW10, and DW12 (Table 3).

5.0 UPDATED ASSESSMENT

5.1 Updated Assessment of Petroleum Hydrocarbon Impacts to Soil

The 2014 soil data are discussed below along with soil data from previous reports. Figure 4 presents the soil data for TPHg and is the basis for the evaluation of the lateral extent of soil impacts discussed below. Figure 4 also shows the locations of Geologic Cross-Section A-A' (Figure 5) and Geologic Cross-Section B-B' (Figure 6).

Geologic Cross-Sections A-A' and B-B' are included in this Report to show the vertical assessment of reported Site impacts and to evaluate product migration pathways at depth. Based on the historical and current findings, the petroleum hydrocarbon impact to the soil was assessed as follows:

5.1.1 Vertical Assessment of Soil Impacts

Enclosed Figure 4 shows the available TPHg soil data for the Site and the location of Geologic Cross-Sections A-A' (Figure 5) and B-B' (Figure 6). The vertical extent of the release impacts in the soil is related to the downward migration of product from the former USTs down to the water table. Evidence of this vertical migration includes the high TPHg concentrations at the water table product smear zone reported in soil samples collected from MW1p. Figure 5 shows the following vertical assessment of the highly-elevated TPHg concentrations in soil samples collected in the product smear zone under the tank pit at MW1p:

- 1) 3,730 ppm TPHg at 55 fbg in MW1p.
- 2) 2,610 ppm TPHg at 60 fbg in MW1p.
- 3) 3,770 ppm TPHg at 65 fbg in MW1p.
- 4) The TPHg highs from 55 to 65 fbg in MW1p are vertically assessed by two sequential sample results of ND TPHg (70 fbg) and 1.3 ppm TPHg (75 fbg) (Figure 5).

The highly-elevated TPHg impacts below the tank pit in MW1p are related to product impacts from the former USTs migrating downward and accumulating on the fluctuating water table. This accumulation of product is confirmed by a product thickness of 0.46 feet which was reported in MW1p on September 16, 2014 (Figure 7).

Further evidence of the downward migration of product are TPHg impacts in MW1 reported at 25 fbg (21 ppm) to 45 fbg (690 ppm), and at 55 fbg (278 ppm) (Figure 5). There are some depth gaps in the TPHg migration pathway at MW1 and MW1p which indicates, that in the vicinity of the USTs, it is probable that there are interbeds of much higher-impacted soils and reservoirs of product. There is a concern that these reservoirs of product need to be remediated to mitigate the potential for the mobile product in the vadose zone to recontaminate the groundwater.

Figure 5 shows that the TPHg high of 3,770 ppm in MW1p at 65 fbg, is vertically assessed by TPHg lows in MW1p at 70 fbg (ND) and 75 fbg (1.3 ppm). In outward well MW4p, TPHg impacts are vertically assessed by TPHg lows at 70 fbg (ND) and 80 fbg (ND) (Figure 5).

5.1.2 Lateral Assessment of Soil Impacts

The lateral assessment of product-impacted soils is related to the migration of product on the fluctuating water table. Figure 4 shows that upon reaching the water table under the USTs, the product impacts then migrated on the water table toward the outward well locations MW1p, MW3p, and MW4p. Figures 5 and 6 show that different lateral product migration patterns occurred when the water table accumulated product at 55 fbg versus 60 fbg. Figure 6 indicates the following elevated product impacts associated with the 55 fbg water table depth:

- 1) 3,730 ppm TPHg in MW1p at 55 fbg at the water below the UST tank pit.
- 2) 2,550 ppm TPHg in MW4p at 55 fbg, southwestward of the UST tank pit.

The TPHg results at 55 fbg in MW1p (3,730 ppm) and MW4p (2,550 ppm) indicate a southwestward product migration direction from MW1p to MW4p when the water table was at 55 fbg (Figure 4, 6, and 7). Figure 6 also shows that when the water table is at 60 fbg, a northeastward product migration direction is indicated by the following data:

- 1) 2,610 ppm TPHg in MW1p at 60 fbg at the water below the UST tank pit.
- 2) 6,260 ppm TPHg in MW3p at 60 fbg, northeastward, downgradient of the UST tank pit.

The northeastward product contamination migration direction is considered the primary product migration direction because the highest TPHg concentration in the soil data for the Site was reported in MW3p at 6,260 ppm at 60 fbg (Figure 6). The TPHg concentration of 6,260 ppm in MW3p exceeds the residual saturation for product in silty sands of 5,600 ppm (refer to the enclosed Table 5-8 - Petroleum Residual NAPL Saturation Based on Soil Type in Sedimentary Environments from the County of San Diego, Department of Environmental Health, Site Assessment and Mitigation Manual of January-2002 (hereinafter referred to as "DEH SAM Manual Table 5-8").

Exceedance of the product residual saturation threshold for TPHg indicates that the soil is saturated with product and has no further adsorption capacity to arrest product migration. Residual product that cannot be adsorbed to the soil is then mobile and can migrate laterally and vertically. Such a condition is indicated by the TPHg high of 6,260 ppm in MW3p (Figure 4). The TPHg high in MW3p of 6,260 ppm, and the associated mobile product impacts, indicate that MW3p is at the leading edge of the product migration plume. The northeastward groundwater flow direction finding shown on Figure 3 also supports the indicated northeastward product migration direction shown on Figure 7.

The varying product migration directions at the 55 fbg and 60 fbg water table depths provide a source of product that results in a wide lateral extent of TPHg and product impacts. This wide lateral extent of TPHg and product impacts is also confirmed by the September 2014 product measurements in MW5p (0.60 feet), MW1p (0.46 feet), MW3p (sheen), MW4p (sheen), MW6p (sheen), and DE1 (sheen) (Figure 7).

The wide lateral extent of elevated TPHg and product impacts indicates varying groundwater flow directions that spread the contamination. The wide lateral extent of TPHg impacts also indicates a probable source of accumulated product in the vadose zone that was not encountered during previous well installation efforts at the Site.

The ND TPHg soil results in the newly-installed wells DW8, DW9, DW11, and DW12 assess the TPHg soil impacts to the east and southeast (Figure 4). The TPHg lows in DW10, MW2p, and MW7p assess the TPHg soil impacts to the west (Figure 4). Figure 4 shows that the elevated TPHg impacts in soil are distributed in a southwest-northeast alignment. Along this southwest-northeast alignment, data gaps for TPHg and product migration are indicated as follows (Figure 4 and Figure 7):

- 1) Northeast and north of 6,260 ppm TPHg (at 60 fbg) and a product sheen in MW3p.
- 2) Southwest of 2,550 ppm TPHg (at 55 fbg) and a product sheen in MW4p.

5.1.3 Benzene-Impacted Soil

There is very little benzene data for soils at the Site. Historical soil data are shown in the enclosed Table 1. The historical data show that benzene impacts are associated with the TPHg impacts discussed in Sections 5.1.1 and 5.1.2 of this Report. Therefore, the assessment findings for TPHg discussed in Sections 5.1.1 and 5.1.2 of this Report also represent the benzene impact concerns.

5.1.4 MTBE Assessment in Soil

There is very little MTBE data for soils at the Site. The ND results in the available MTBE soil data (Table 1) and ND results for MTBE in groundwater at the Site (Table 4) indicate that MTBE is not a part of the release.

5.2 Updated Assessment of Petroleum Hydrocarbon Impacts to Groundwater

The Site's groundwater quality objectives are subject to the beneficial water uses designated by the RWQCB-CC Basin Plan (1994) for the Lompoc Hydrologic Area (14.10). The RWQCB Basin Plan (2007) uses Title 22 of the California Code of Regulations' (March 10, 2010) MCLs for organic chemicals, as a standard for evaluating groundwater impacts at a site having beneficial groundwater uses. The MCL for the assessed petroleum hydrocarbons include benzene at 1 ppb, ethylbenzene at 300 ppb, toluene at 150 ppb, total xylenes at 1,750 ppb, and MTBE at 13 ppb. A site-specific MCL has not been established for TPHg in the groundwater. Other criteria used in evaluating municipal supply beneficial uses include the secondary MCL for MTBE of 5 ppb, and the CDPH California Notification Level (December 14, 2007) for TBA of 12 ppb. Refer to Table 4. The LTCP also provides guidance for groundwater assessment.

Based on the current findings, the petroleum hydrocarbon impact to the groundwater was assessed as follows:

5.2.1 Updated Product Impact

5.2.1.1 September 2014 Product Findings and Composition

On September 16, 2014, free product thicknesses of 0.60 feet (MW5p) and 0.46 feet (MW1p) were measured in the well network and a product sheen was observed in the purge water from wells MW3p, MW4p, MW6p, and DE1. In June 2014, a product thickness of 0.01 feet was measured in MW3p and MW5p (Table 3). Prior to June 2014, no product had been reported in the Site wells, but high dissolved concentrations indicated groundwater in contact with product-bearing soils.

The historical reports for the Site did not closely evaluate the presence of product sheen during previous groundwater sampling events. In June 2013, product sheen was observed in the purge water in wells MW1p, MW3p, and MW5p (Table 3). In December 2013, product sheen was observed in the purge water in wells

MW1p, MW3p, MW5p, and MW6p (Table 3). Since the product sheen did not occur until purging with a bailer started, it has not been determined if wells have been properly developed to allow product to enter the wells.

The presence of product sheen in the purge water indicates that product impacts are in the vicinity of wells MW1p, MW3p, MW4p, MW5p, and MW6p. Figure 7 shows that measurable product is centered around MW1p and MW5p. These product findings are consistent with the release occurring from the UST tank pit at MW1p, then migrating along the multiple groundwater flow direction components to the northeast to MW3p, to the east to MW5p, and to the south to MW6p.

The presence of product, as gasoline, is also indicated by a high TPHg concentration of 6,260 ppm at 60 fbg in MW3p (Figure 4). The TPHg concentration of 6,260 ppm exceeds the residual free product threshold of 5,600 ppm for gasoline in Silty Sand as referenced on enclosed DEH SAM Manual Table 5-8. Therefore, the residual saturation findings also support that the product consists of gasoline.

5.2.1.2 Product Migration Pathways and Connection to Source

The frequent facies interbeds of silty sand units within the clays below the Site provide a product migration pathway through the vadose zone and within the water-saturated zone. The widely different lithologic descriptions between closely placed replacement wells MW1p, MW2p, MW3p, and MW4p with the original wells MW1, MW2, MW3, and MW4, as indicated on the Petra Borehole Logs (presented as support documents in the DES Report (December 20, 2013), indicates lithologically variable changes within a short distance. The updated conceptual model of pathway migration vertically from the leaking gasoline tanks (1988 tank pit) is included the consideration of these lithologic pathways in Figures 5 and 6.

Outward from the alignment of Cross-Section A-A' (Figure 5), the gasoline migrated northeastward down the groundwater gradient, and where the lithology changed to a silty sand, then product ponded at MW3 and produced TPHg concentrations (6,260 ppm at 60fbg) which exceeded the residual saturation threshold of 5,600 ppm for gasoline (Table 5-8). The gasoline concentration in MW3 at 6,260 ppm below the June 2013 water table indicates probable lateral migration of submerged product in a downgradient outward direction from the leaking gasoline tanks (Figure 5).

Since the data indicate there are sufficient conditions for product to accumulate and TPHg concentrations that exceeded the residual saturation threshold were reported in MW3p downgradient of the release source, it follows that product is at the release area source, within the sand interbeds. The historical data indicate there were no soil samples collected from the sand interbeds below 55 fbg, therefore, data from the overlying and underlying silts need to be evaluated to determine the probable product impacts in the sand interbeds.

The available TPHg data for MW1p on Figures 5 and 6 indicate TPHg highs in silts reported at 55 fbg (3,730 ppm) and 65 fbg (3,770 ppm). Those TPHg concentrations exceed the residual saturation value of 2,900 ppm (DEH SAM Manual Table 5-8) for the silty and probable fine sands that were reported in the 2008 boring MW1 at 57-60 fbg and 62.5 to 65 fbg (refer to Figures 5 and 6). The TPHg highs in the silts that overlie and underlie the sand interbeds, reported in the 2012 boring MW1p, indicate product in the sand interbeds (Figures 5 and 6). Product at MW1p is also confirmed by the measurable product thickness of 0.46 feet in MW1p in September 2014 (Figure 7). Figure 6 shows a pathway between the TPHg highs and product at MW1p and the TPHg highs

and product at downgradient MW3p. It appears that when the water table is at 60 fbg, northeastward flow from MW1p to MW3p is evident (Figure 6).

It is probable that the appearance of a product sheen in MW3p in September 2014 is due to the depth to water of 61.35 fbg (Table 1) causing an intersection of the water table and the impacted soils at 60 fbg in MW3p (where TPHg of 6,280 ppm was reported in the soil sample from 60 fbg) (Figure 6). Table 1 shows a decrease in the water table from 2009 to 2014 in most of the Site wells. It is anticipated that more submerged product will become measurable in the Site wells as the water table decreases.

5.2.1.3 Varying Historical Product Migration Directions

Multiple product migration directions are indicated by the TPHg soil data and the September 2014 product findings. Figure 7 shows that product migrates from the release source area at MW1p to outward wells MW3p, MW4p, MW5p, and MW6p. The 60 fbg northeastward (MW1p to MW3p) product migration evidence is discussed in Section 5.2.1.2 above and is depicted on Figure 6. Figure 6 also shows a southwestward product migration pathway when the water table is at 55 fbg. The TPHg highs at 55 fbg in MW1p (3,730 ppm) and the southwestward well MW4p (2,550 ppm) indicate migration of product from MW1p to MW4p. The TPHg low of 170 ppm at 55 fbg in northeastward MW3p further indicates southwestward product migration when the water table is at 55 fbg (Figure 6). The remnants of the former southwestward groundwater flow direction is indicated by the product sheen results in MW4p and MW6p in September 2014 (Figure 7).

Cross-Section B-B' (Figure 6) and the soil data from MW6p and MW4p indicate a there is a southwestward contamination migration pathway that requires further assessment.

5.2.1.4 Submerged Product Smear Zone

The TPHg data in MW1p indicate a product smear zone from 55 fbg to 65 fbg (Figure 6). The September 2014 water table at 61.35 fbg in MW1p submerges the product at 65 fbg, as indicated by the TPHg concentration of 3,770 ppm at 65 fbg. There is a concern that the submerged product at MW1p will provide a continued source of product and dissolved-phase impacts. The submerged product causes elevated dissolved concentrations such as the 16,400 ppb benzene groundwater concentration reported in MW1p in September 2014 (Table 4).

5.2.1.5 Lateral Assessment of Product Impacts

Figure 7 shows that the available product data assess the product impacts to the west and to the east of the former UST tank pit. The no product (NP) findings in DW8, DW9, and DW12 assess the product impacts to the east. The NP findings in MW2p, MW7p, and DW10 assess the product impacts to the west. There are product data gaps along the southwest-northeast trending alignment from MW6p to the former UST tank pit to MW3p (Figure 6 and Figure 7). Based on this alignment of product migration, there are product data gaps to the northeast of MW3p and to the southwest of MW6p (Figure 7).

5.2.2 Dissolved Gasoline-Impacted Groundwater

In September 2014, the TPHg high of 88,100 ppb in MW1p confirmed that the former UST tank pit is the source of dissolved gasoline impacts at the Site (Figure 8). As discussed for the lateral extent of product in Section 5.2.1 of this Report, the dissolved gasoline migration follows a southwest to northeast alignment (Figure 8). Along this alignment, there are data gaps to the southwest of MW6p (where TPHg was reported at 52,200 ppb) and there is a data gap to the northeast of MW3p (where TPHg was reported at 55,100 ppb) (Figure 8).

A TPHg concentration of 5,800 ppb in MW2p also indicates a contamination migration to the northwest, although the lack of product in MW2p, MW7p, and DW10 indicates that the dissolved-phase plume is sufficiently assessed to the northwest. Figure 8 shows the dissolved gasoline plume is partially assessed laterally as follows:

- 1) Eastward by a TPHg low of 250 ppb in DW9 and ND TPHg in DW8.
- 2) Southeastward by a decreasing lateral trend in TPHg concentrations from the former UST tank pit to DW12.
- 3) Westward by a TPHg low of 170 ppb in DW10 and by ND TPHg in MW7p (Figure 8).

5.2.3 Dissolved Benzene-Impacted Groundwater

In September 2014, the benzene high of 16,400 ppb in MW1p confirmed that the former UST tank pit is the source of dissolved benzene impacts at the Site (Figure 9). As discussed for the lateral extent of product in Section 5.2.1 of this Report, dissolved benzene migration follows a southwest to northeast alignment (Figure 9). Along this alignment there are data gaps to the southwest of MW6p (where benzene was reported at 3,380 ppb) and there is a data gap to the northeast of MW3p (where benzene was reported at 6,000 ppb) (Figure 9).

A benzene concentration of 41 ppb in MW2p also indicates a contamination migration to the northwest, although the lack of product in MW2p, MW7p, and DW10 indicates that the dissolved-phase plume is sufficiently assessed to the northwest.

Figure 9 shows the dissolved benzene plume is partially assessed laterally as follows:

- 1) Eastward by ND benzene in DW8 and DW9.
- 2) Southeastward by a decreasing lateral trend in benzene concentrations from the former UST tank pit to DW12 (where benzene was reported at 2 ppb).
- 3) Westward by ND benzene in MW7p and DW10 (Figure 9).

5.2.4 Dissolved MTBE-Impacted Groundwater

Table 1 indicates few reported concentrations of MTBE in the Site well network. In September 2014, the laboratory reported ND MTBE results in the groundwater from all wells tested (Figure 10). The data indicate that MTBE is not a component of the product plume. It is probable that the product plume is old gasoline that was released after MTBE was subject to widespread introduction in the California gasoline supply in 1995.

5.2.5 Dissolved EDC in Groundwater

In the September 2014 groundwater samples, the laboratory reported 1,2-dichloroethane (EDC) concentrations ranging from a high of 5,880 ppb (MW1p) to a low of 6 ppb (DW10) (Table 5). The reported EDC concentrations all exceeded the Santa Barbara County LUFT Manual Investigation Level of 0.5 ppb for EDC (refer to the enclosed Santa Barbara County Fire Department LUFT Manual page F-5). Table 5 shows that elevated EDC was reported in the same wells with elevated benzene impacts. The data show a correlation between the presence of elevated EDC and the presence of elevated benzene. Therefore, the assessment of benzene impacts discussed in Section 5.2.3 of this Report is also applicable to the assessment of EDC (Figure 9).

6.0 CONCLUSIONS

Based on the above-presented findings, we conclude the following:

- 1) The vertical extent of soil contamination is adequately assessed.
- 2) The lateral extent of soil contamination is partially assessed for product, TPHg, and benzene, with similar data gaps for each (Figure 4 and Figure 7).
- 3) In September 2014, measurable product was reported in MW5p (0.60 feet thick) and in MW1p (0.46 feet thick). The measurable product in the Site well network indicates the Case is not suitable for closure under the LTCP.
- 4) The product impacts in the well network indicate a southwest-northeast trending contamination migration pathway outward from the former UST tank pit (Figure 7).
- 5) There are data gaps for product southwest of MW6p (where a product sheen was reported) and northeast of MW3p (where a sheen was reported).
- 6) The northeastward groundwater flow direction shown on Figure 3, the TPHg highs in soils collected from MW3p (Figure 4), and the product sheen observed in MW3p (Figure 7) indicate that MW3p is at the leading edge of the product plume at the Site.
- 7) Benzene groundwater impacts in MW1p (16,400 ppb), MW5p (11,700 ppb), MW3p (6,000 ppb), MW4p (5,440 ppb), DE1 (5,240 ppb), and MW6p (3,380 ppb) exceeded the LTCP cleanup level for benzene of 3,000 ppb (Table 4). The Case is not suitable for closure under the LTCP.
- 8) Benzene-impacted groundwater is partially assessed laterally to the northwest, west, north, and east, with data gaps to the northeast and southwest (Figure 9).
- 9) Upon surveying the top of casing for DW11, it was determined that the bottom of the well (36.72 feet elevation in feet above the survey datum (ASD)) is approximately 3-4 feet above the September 2014 water table of 32.72 feet ASD (DW12) and 32.97 feet ASD (DW10) (Table 3). Well DW11 was not advanced deeper during drilling due to moist-wet soils logged at 55 fbg and 60 fbg which indicated possible water-bearing soils. There was also a concern that deeper drilling would contact the deep water-bearing zone that required the previous consultant to re-drill the excessively deep well network in 2012. There was a concern that the new well should be surveyed first before determining if a deeper depth should be targeted. Upon evaluating the elevation data from the December 2014 survey, it has been determined that the TOCE of 101.72 feet ASD in DW11 is approximately 7 feet higher than the TOCEs for DW12 (93.24 feet ASD) and DW10 (94.62 feet ASD) (Table 3). Further monitoring should be conducted in DW11 to determine if dry conditions persist.

7.0 RECOMMENDATIONS

Based on these conclusions, the following activities are recommended:

- 1) Treat the product in the Site well network by implementing the DPE approach in the DES IRAP (May 6, 2014), as approved in the enclosed EHS Letter (June 11, 2014). In November 2013 to April 2015, DES refined the SVE permit application and, as of the date of this Report, the APCD is in the process of reviewing updates to the SVE permit application. Upon the APCD completing the School notification process for the nearby Miguelito Elementary School, it is anticipated that the permit for the SVE System will be issued. Upon issuance of the APCD permit, the DPE pilot test can be implemented.
- 2) Assess the southwestward lateral extent of product and dissolved benzene impacts in the groundwater by installing and sampling proposed well DW13 (refer to Figure 11).
- 3) Assess the southeastward lateral extent of product and dissolved benzene impacts in the groundwater by installing and sampling proposed well DW14 (refer to Figure 11). Should product impacts be found in DW14, determine whether further assessment is required between the Site and the Miguelito Elementary School which is within 1,000 feet southeast of the Site (Figure 1).
- 4) Assess the northeastward downgradient lateral extent of product and dissolved benzene impacts in groundwater by installing and sampling proposed well DW15 (Figure 11).
- 5) Upon characterizing the lateral extent of the dissolved-phase plume and completing the remedial response, determine the soil-gas risk assessment needs.

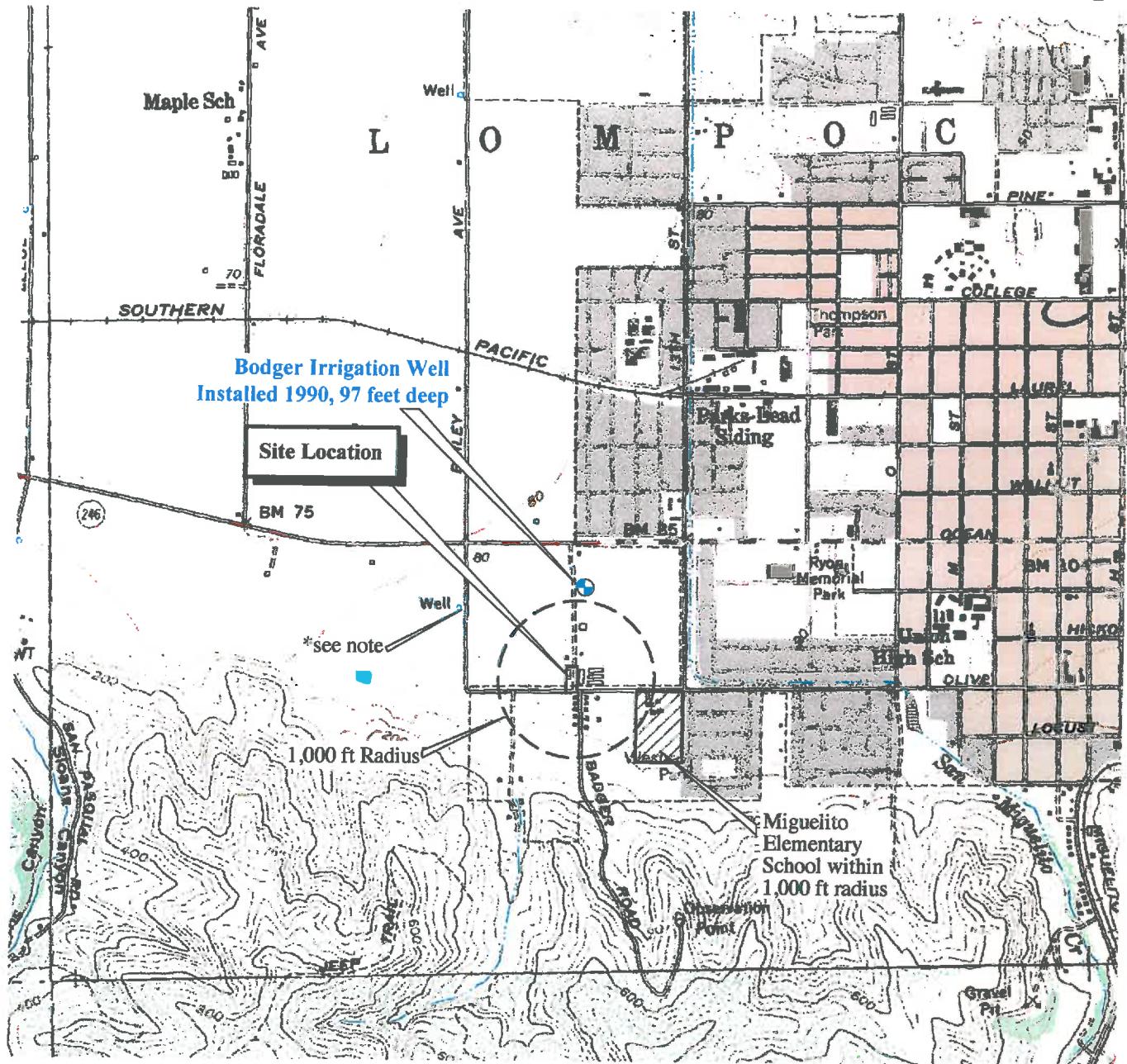
8.0 LIMITATIONS

This Technical Report (Report) is intended for the sole usage of John Bodger & Sons, Co. (the Client). The use of this Report is subject to the fully-executed Contract between Donan Environmental Services, Inc. (DES) and the Client. Any unauthorized third party usage of this Report shall be subject to the provisions of the Contract and any unauthorized misuse of or reliance upon this Report shall be without risk or liability to DES.

The conclusions of this Report are judged to be relevant at the time the work described in this Report was conducted. Future conditions may differ and this Report should not be relied upon to represent future site conditions. Although this Report has attempted to update the assessment of the petroleum hydrocarbon impacted soil and groundwater at the site and off-site, the full assessment of the petroleum hydrocarbon impact may have escaped detection for reasons which include, but are not limited to: 1) our reliance on inadequate or inaccurate information rightly provided to DES by the Client or third parties, such as the laboratory, surveyor, public agencies, etc.; 2) the limited scope of the assessment; 3) the presence of undetected, unknown or unreported petroleum releases, chemical spills, tanks, and/or environmental issues; and/or 4) the dynamic migration of the petroleum hydrocarbons through the subsurface since the historical sampling was conducted and reported.

FIGURES

- Figure 1 - Site Location Map
- Figure 2 - Site Plan
- Figure 3 - Groundwater Plan - September 2014
- Figure 4 - Gasoline - Impacted Soil Plan - 2007 - 2014 Data
- Figure 5 - Geologic Cross-Section A-A', Conceptual Model, Gasoline-Impacted Soil
- Figure 6 - Geologic Cross-Section B-B', Conceptual Model, Gasoline-Impacted Soil
- Figure 7 - Product Thickness Plan - September 2014
- Figure 8 - Gasoline-Impacted Groundwater Plan - September 2014
- Figure 9 - Benzene-Impacted Groundwater Plan - September 2014
- Figure 10 - MTBE Assessment Groundwater Plan - September 2014
- Figure 11 - Proposed Groundwater Monitoring Well Locations



KEY

- Irrigation Well on Bodger Property
- * County of Santa Barbara does not have records of this well, location not determined

0' 1,800' 3,600'

(Approximate Scale in Feet)



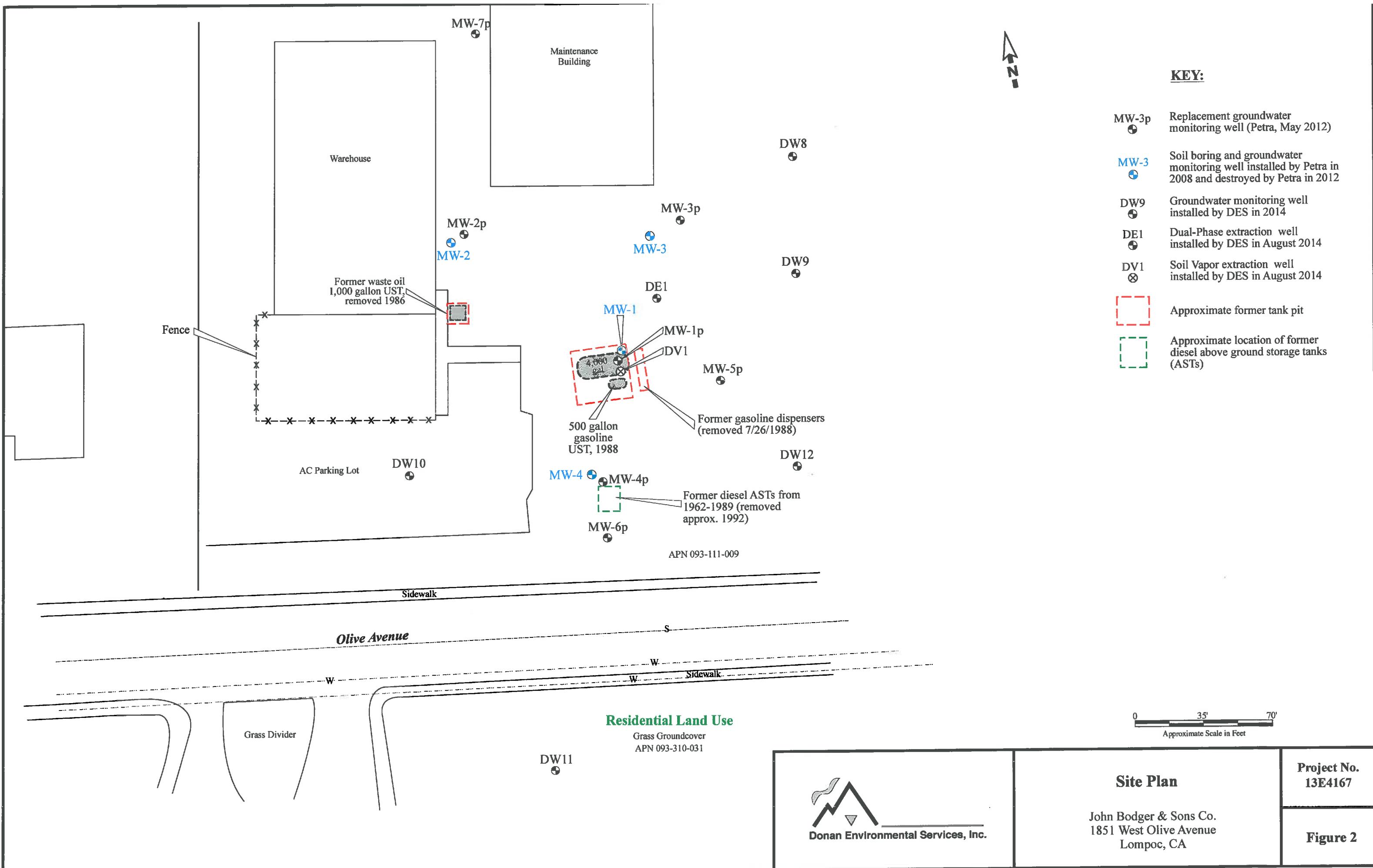
Donan Environmental Services, Inc.

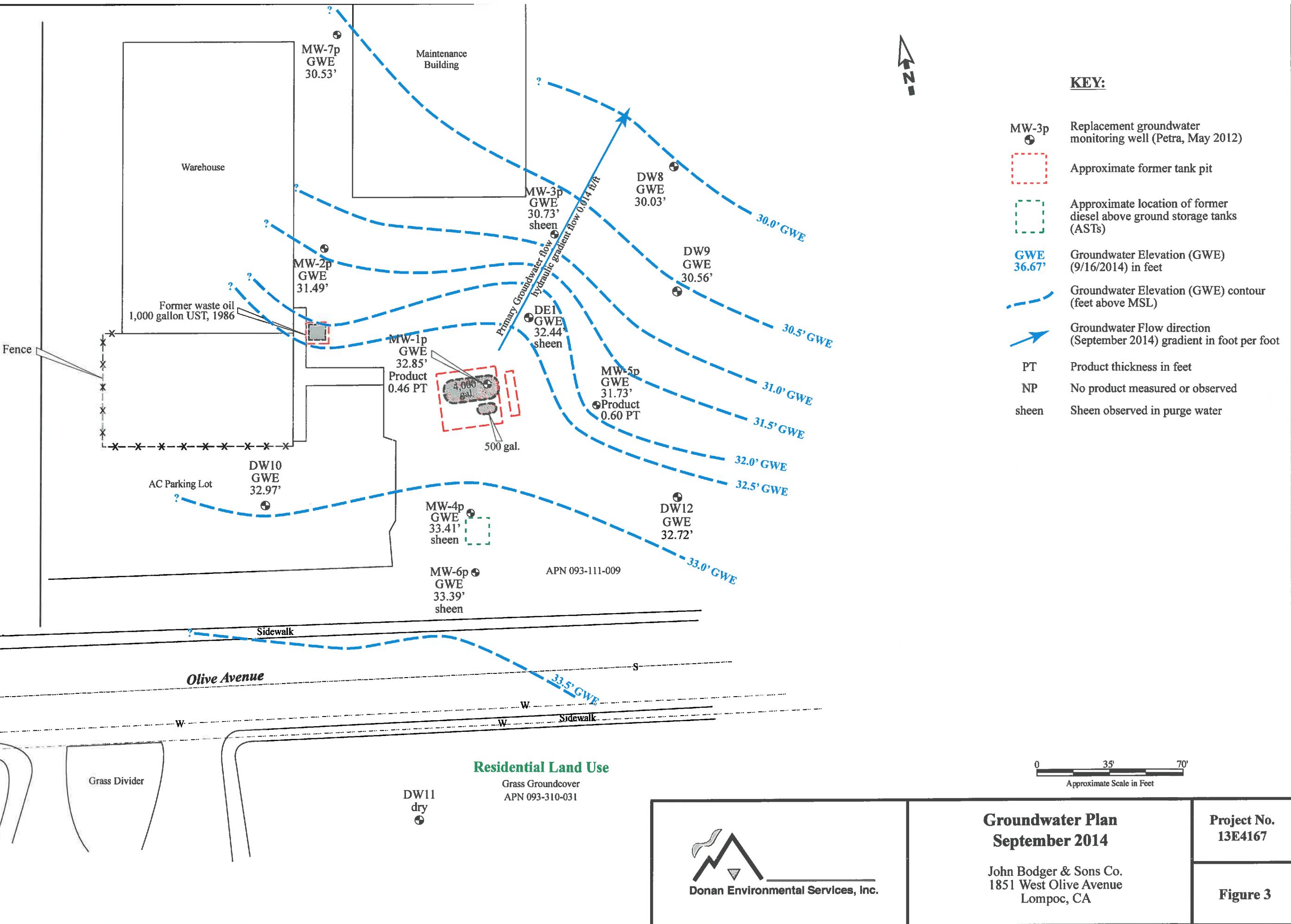
Site Location Map

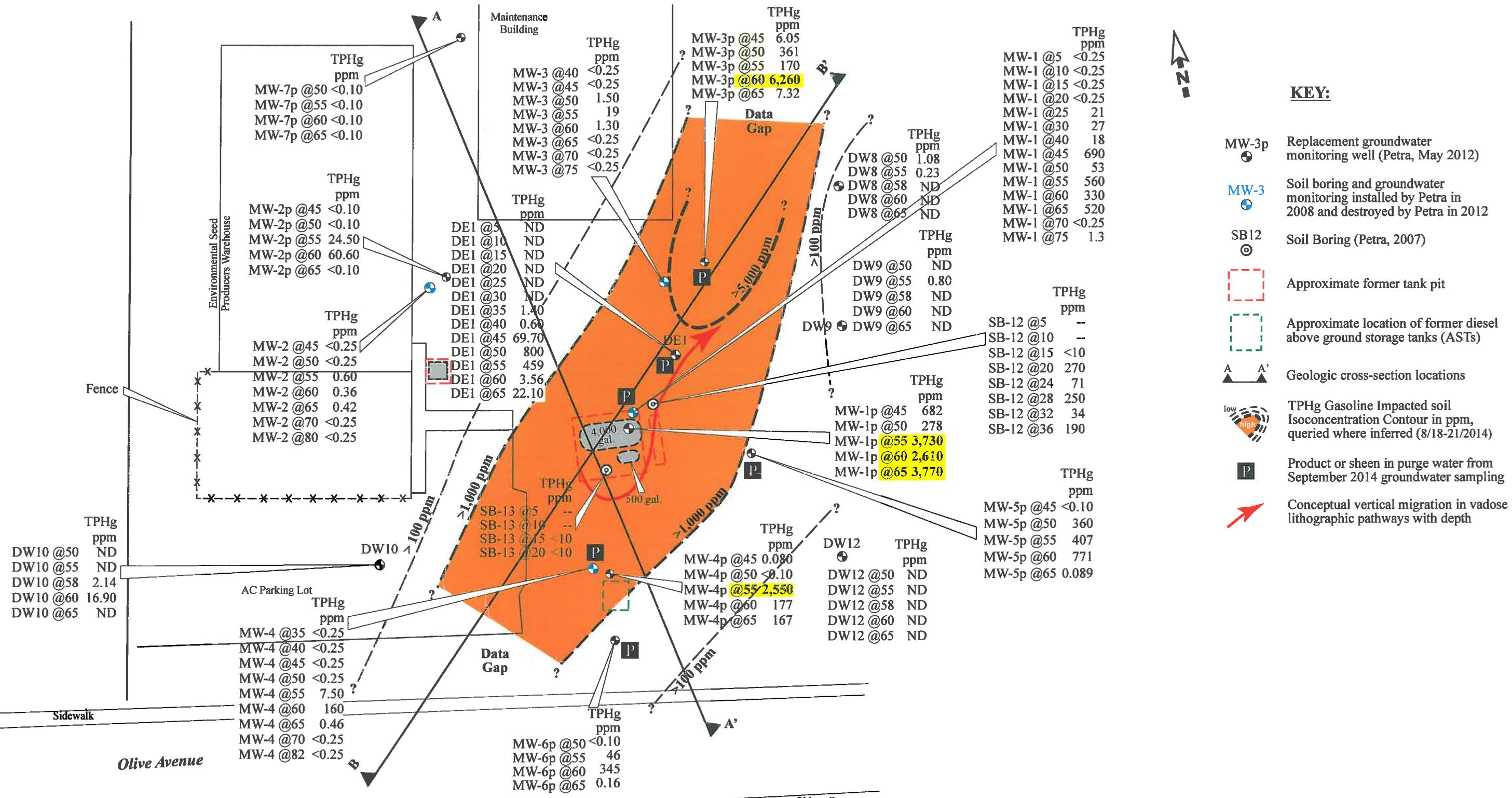
Bodger Seeds
1851 West Olive Avenue
Lompoc, CA

Project No.
13E4167

Figure 1







Residential Land Use
Grass Groundcover
APN 093-310-031

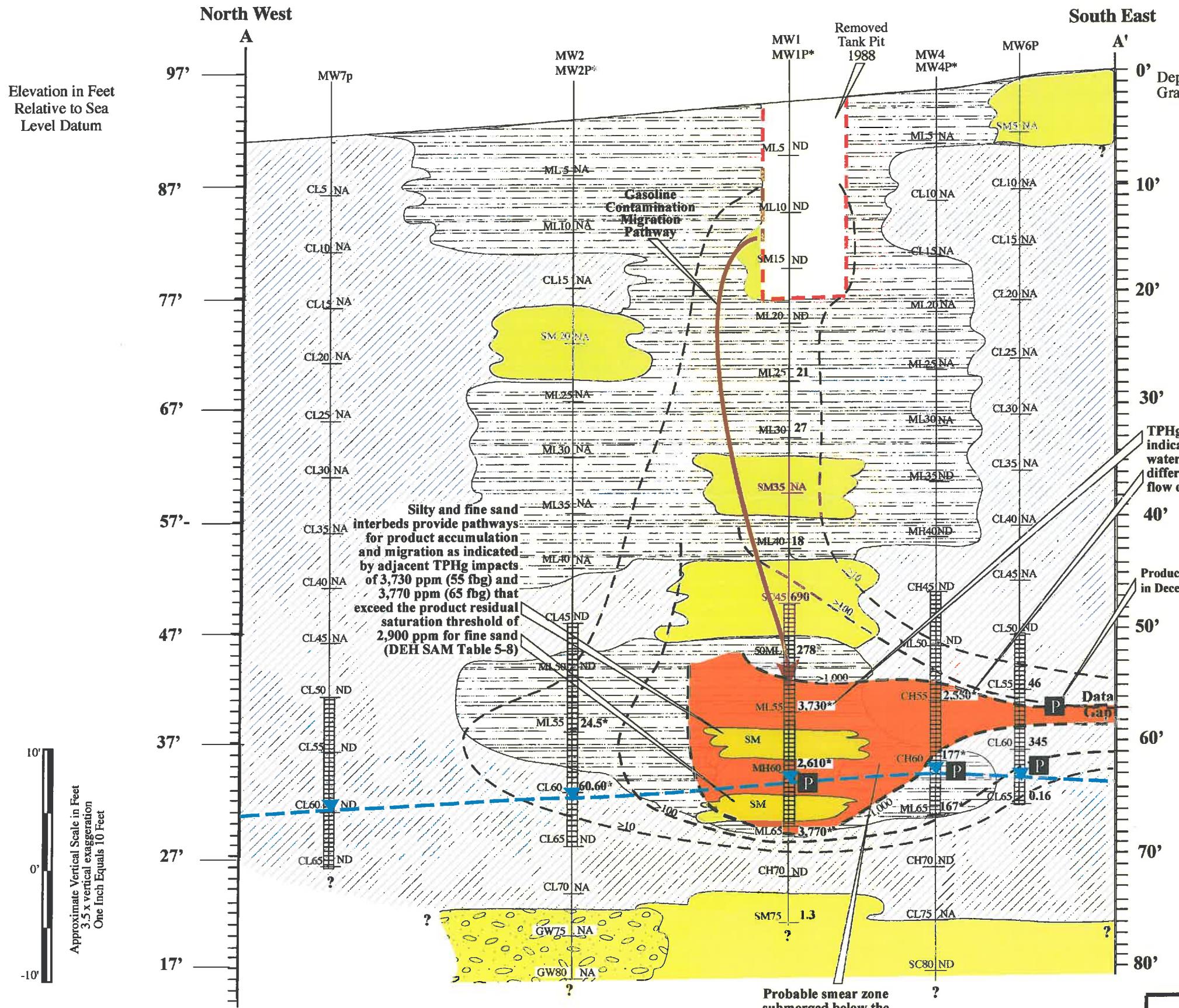


**Gasoline-Impacted Soil Plan
2007-2014 Data**

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Figure 4



**Probable smear zone
submerged below the
water table with
remnant product and
sheen observed in
MW3P, MW4P,
MW6P and DE1.**

Disclaimer: Actual site conditions may differ.
All locations and dimensions are approximate.



Cross-Section A-A' Conceptual Model Gasoline Impacted Soil

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Figure 5

KEY:

Sample depth
low grade (feet)

MW4

Soil Boring or Well

Soil USCS Code

SM 5 20

Soil Sampling and Analysis
Information TPHg concentration
in parts per million (ppm) by EPA
8015 (from boring composite
cuttings sample)

Existing Well screen interval

Lithology	USCS Soil Codes
	GP/GW/SW
	SW/SP/SM/SC
	ML
	CL

Tank Pit Backfill and Approximate Tank Pit Location

>1,000 ppm
>100 ppm
>10 ppm TPHg Impacted soil Iso-concentration contour in ppm

*

Analytical data and well screen interval from 2012
“P” wells, soil USCS Codes from 2008 wells

23.25' GWE, Groundwater Elevation (9/16/14)

Product or sheen in purge water from
September 2014 groundwater sampling

fbg feet below grade

Site Chronology

1986 One 1,000 Gallon waste oil UST removed

1988 One 4,000 Gallon gasoline UST and one 500
gallon UST removed (shown on cross section A-A')

1992 Two diesel above ground storage tanks transported offsite

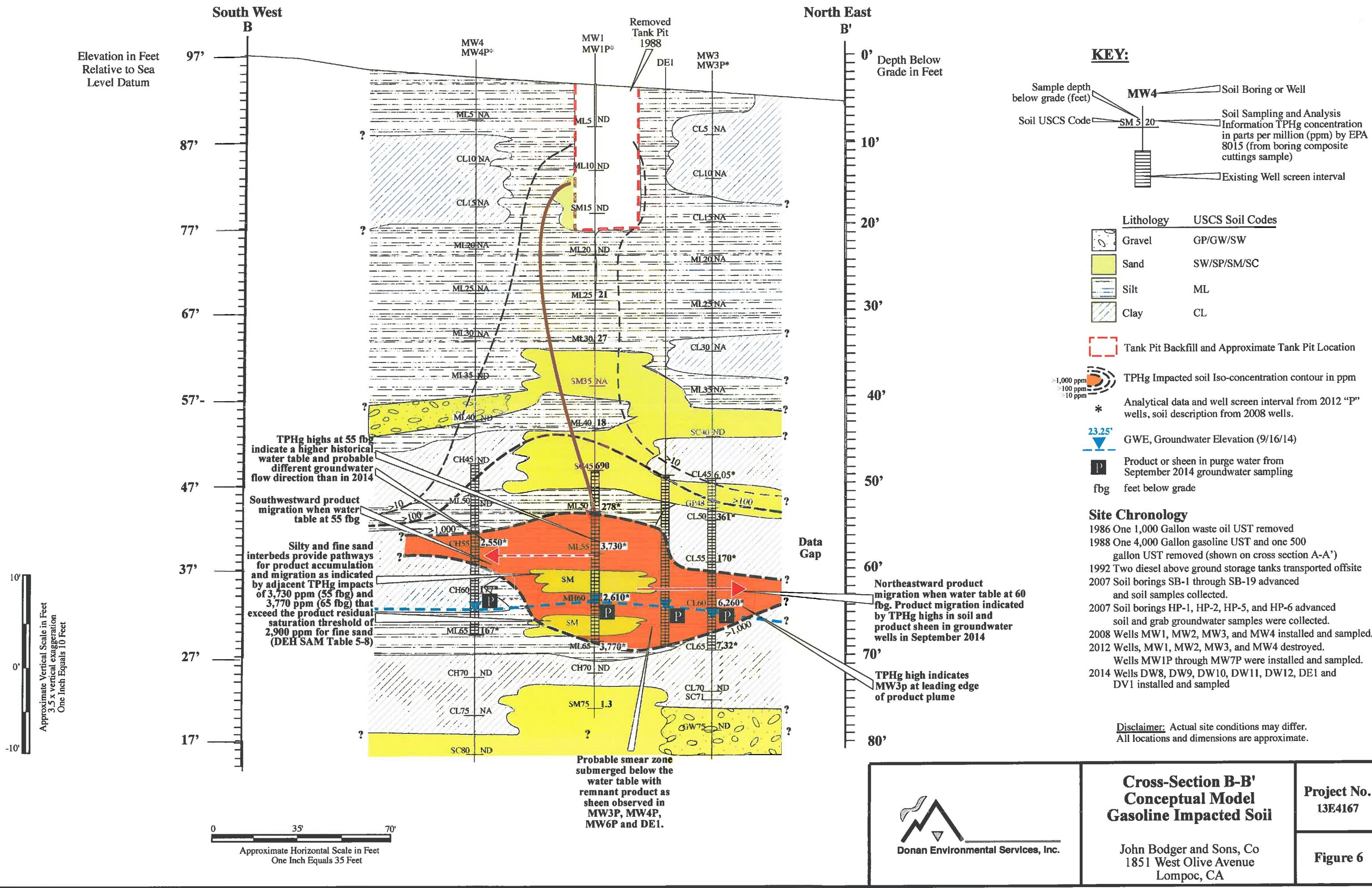
2007 Soil borings SB-1 through SB-19 advanced
and soil samples collected.

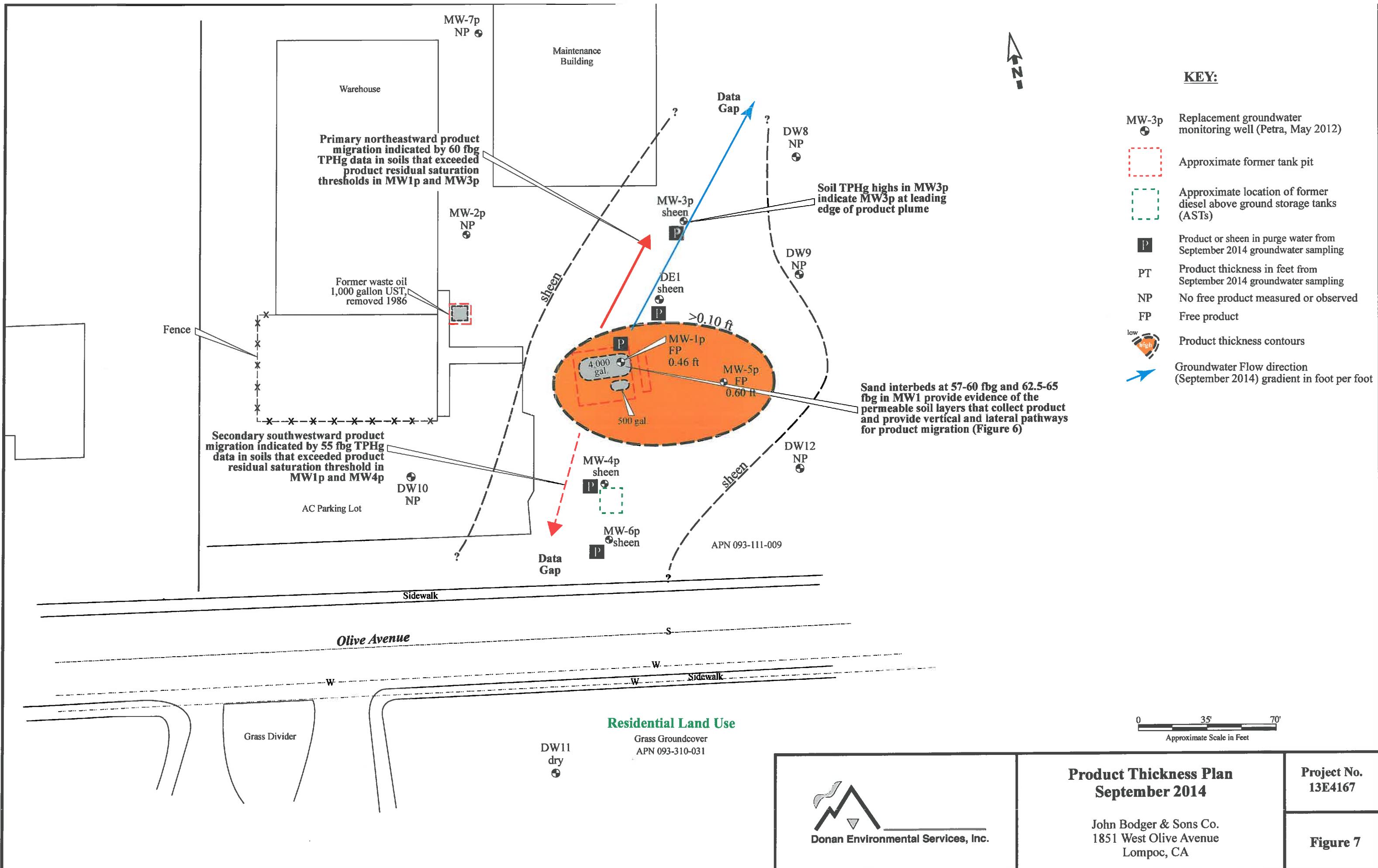
2007 Soil borings HP-1, HP-2, HP-5, and HP-6 advanced
soil and grab groundwater samples were collected.

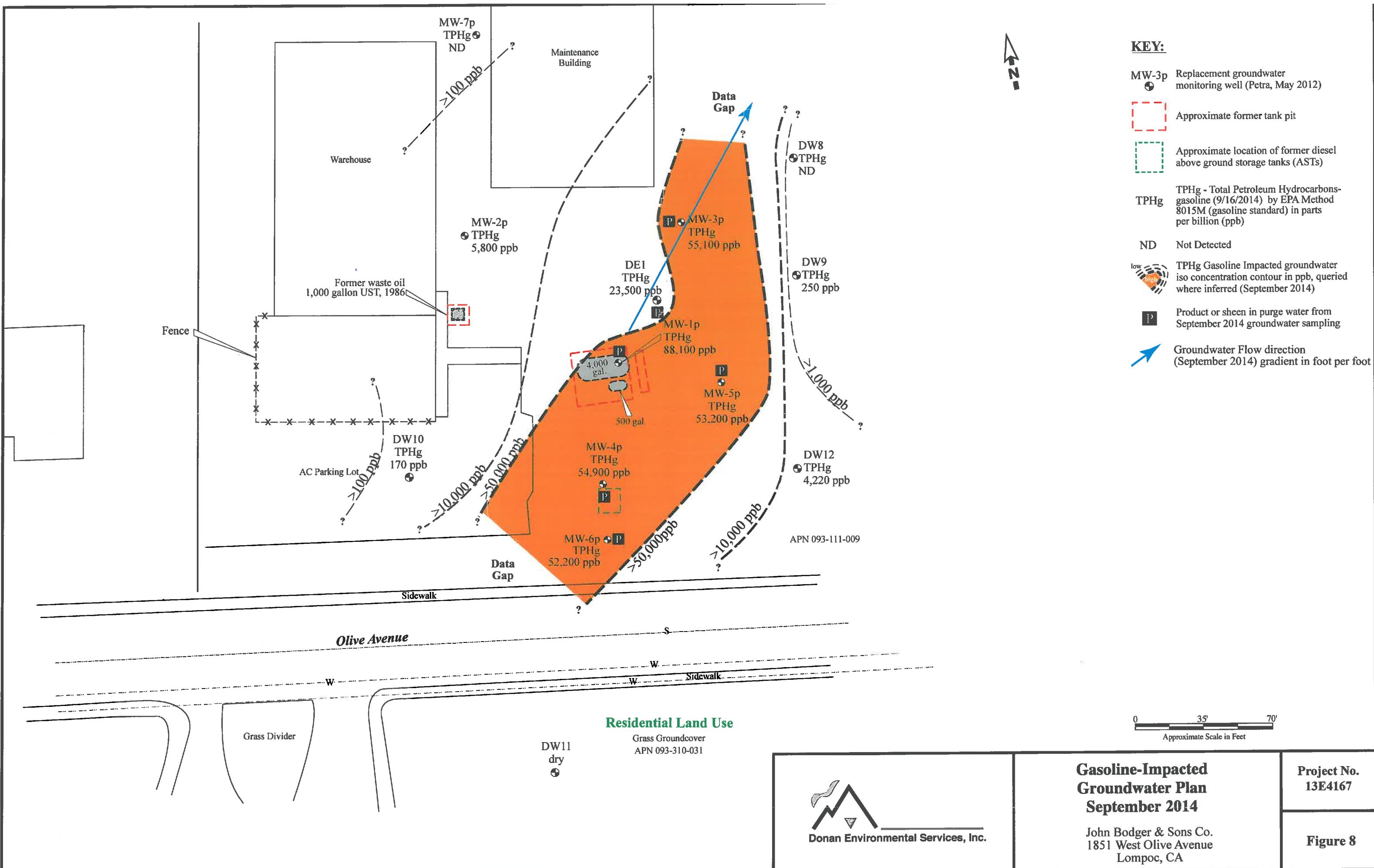
2008 Wells MW1, MW2, MW3, and MW4 installed and sampled.

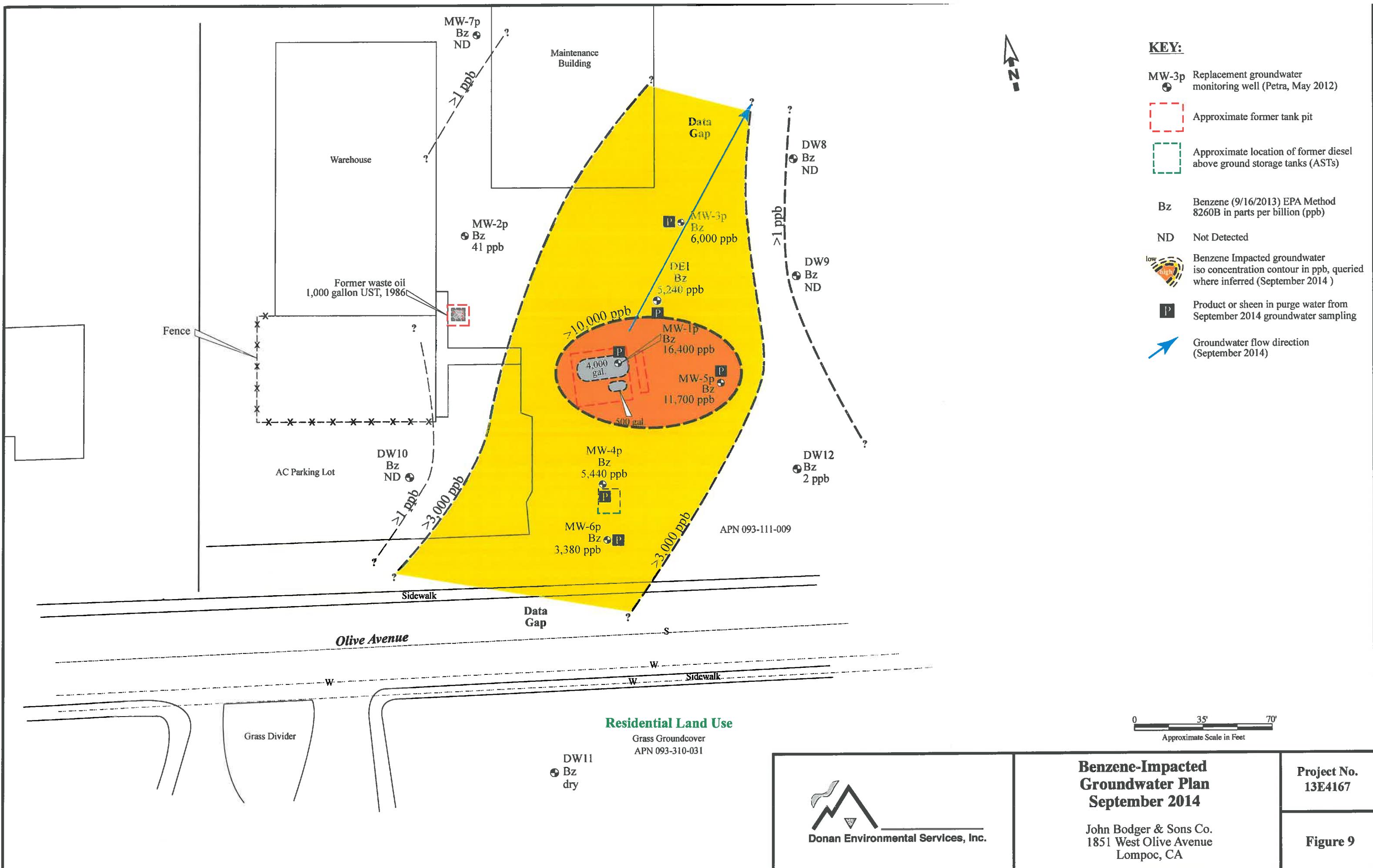
2012 Wells, MW1, MW2, MW3, and MW4 destroyed.
Wells MW1P through MW7P were installed and sampled.

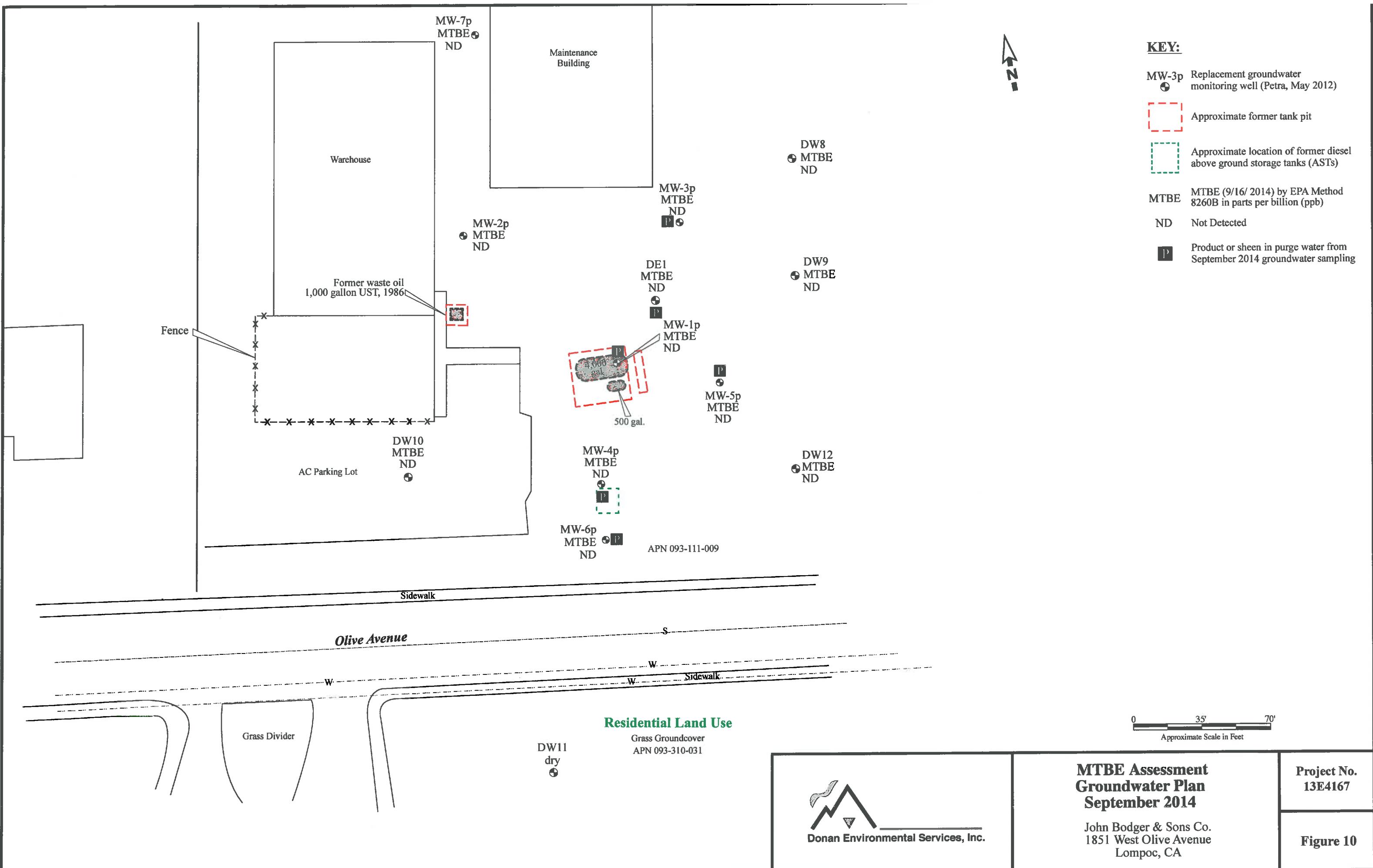
2014 Wells DW8, DW9, DW10, DW11, DW12, DE1 and
DV1 installed and sampled











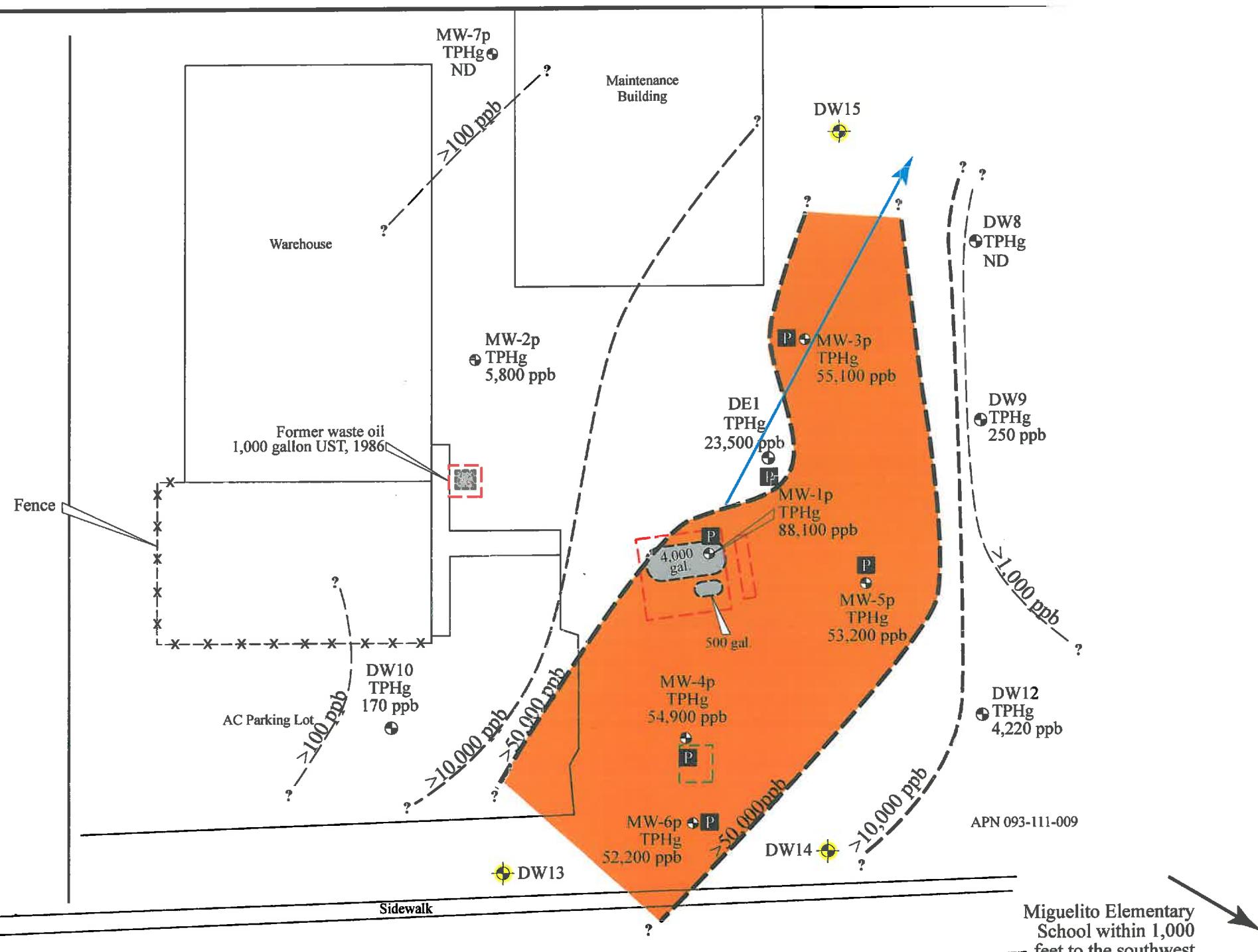
**MTBE Assessment
Groundwater Plan
September 2014**

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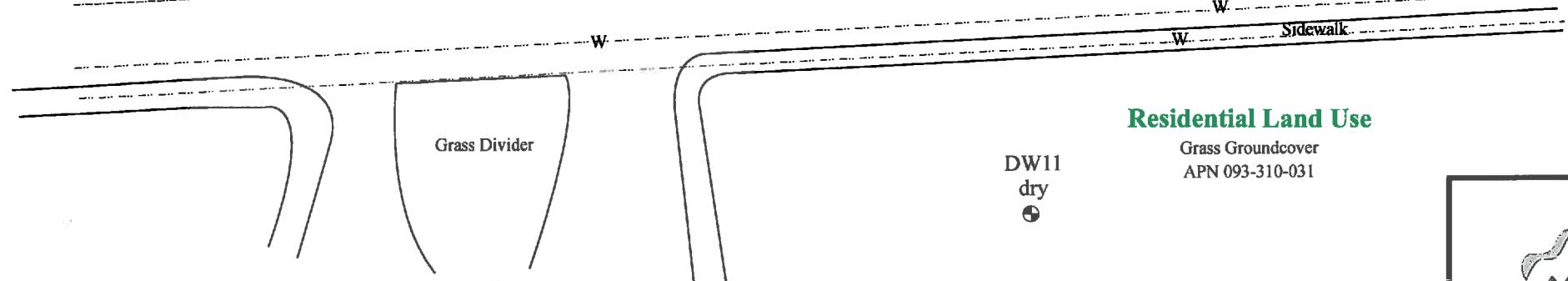
Project No.
13E4167

Figure 10





- KEY:**
- MW-3p** Replacement groundwater monitoring well (Petra, May 2012)
 - DW** Proposed groundwater monitoring well location
 - ?** Approximate former tank pit
 - ?** Approximate location of former diesel above ground storage tanks (ASTs)
 - TPHg** Total Petroleum Hydrocarbons-gasoline (9/16/2014) by EPA Method 8015M (gasoline standard) in parts per billion (ppb)
 - ND** Not Detected
 - low** TPHg Gasoline Impacted groundwater iso concentration contour in ppb, queried where inferred (September 2014)
 - P** Product or sheen in purge water from September 2014 groundwater sampling
 - Groundwater Flow direction (September 2014) gradient in foot per foot



0 35' 70'
Approximate Scale in Feet



TABLES

- Table 1 - Summary of Soil Sample and Analytical Data
- Table 2 - Summary of Monitoring and Extraction Well Construction Details
- Table 3 - Summary of Groundwater Levels
- Table 4 - Summary of Groundwater Analytical Data
- Table 5 - Summary of Groundwater Analytical Data, Other Volatile Organic Compounds

TABLE 1
Summary of Soil Sample and Analytical Data

TABLE 1
Summary of Soil Sample and Analytical Data
John Bodger & Sons Co.
GeoTracker I.D. T10000000826
1851 West Olive Avenue, Lompoc, CA

Sample Location	Sample ID	Date Sampled	Depth (feet)	Sample Data			Volatile Organic Compounds												Lab	CARs/ Refs
				TPH ⁽¹⁾ ppm	TPH-g ⁽²⁾ ppm	TPH-d ⁽³⁾ ppm	B ⁽⁴⁾ ppb	T ⁽⁴⁾ ppb	E ⁽⁴⁾ ppb	X ⁽⁴⁾ ppb	MTBE ⁽⁴⁾ ppb	ETBE ⁽⁴⁾ ppb	TAME ⁽⁴⁾ ppb	DIPE ⁽⁴⁾ ppb	TBA ⁽⁴⁾ ppb	NAP ⁽⁴⁾ ppb				
PETRA Well Installation, December 16-18, 2007																				
MW-1	MW-1-5	12/17/08	5	--	<0.25	22	0.001	<0.0005	<0.0020	<0.010	<0.010	<0.0004	<0.003	<0.0004	<0.030	<0.0004	NA	A		
	MW-1-10	12/17/08	10	--	<0.25	<10	0.002	<0.0005	<0.0020	<0.010	<0.010	<0.0004	<0.003	<0.0004	<0.030	<0.0004	NA	A		
	MW-1-15	12/17/08	15	--	<0.25	<10	0.002	<0.0005	<0.0020	<0.010	<0.010	<0.0004	<0.003	<0.0004	<0.030	<0.0004	NA	A		
	MW-1-20	12/17/08	20	--	<0.25	27	<0.0024	0.01	0.02	0.24	<0.0040	<0.0016	<0.0012	<0.0016	<0.120	0.02	NA	A		
	MW-1-25	12/17/08	25	--	21	330	<0.060	0.48	3.30	21.00	<0.100	<0.040	<0.030	<0.040	<3.000	5.3	NA	A		
	MW-1-30	12/17/08	30	--	27	23	<0.060	1.40	4.80	30.00	<0.100	<0.040	<0.030	<0.040	<3.000	3.9	NA	A		
	MW-1-40	12/17/08	40	--	18	60	0.074	0.01	1.10	4.20	<0.020	<0.0080	<0.0060	<0.0080	<0.600	2.4	NA	A		
	MW-1-45	12/17/08	45	--	690	80	0.310	0.12	3.30	14.00	<0.200	<0.080	<0.060	<0.080	<6.000	2.8	NA	A		
	MW-1-50	12/17/08	50	--	53	47	0.150	<0.040	1.20	4.80	<0.080	<0.032	<0.024	<0.032	<2.400	3.2	NA	A		
	MW-1-55	12/17/08	55	--	560	220	2.400	0.99	10.00	44.00	<0.400	<0.160	<0.120	<0.160	<12.000	4.5	NA	A		
	MW-1-60	12/17/08	60	--	330	55	0.360	0.31	0.84	3.74	<0.200	<0.080	<0.060	<0.080	<6.000	0.43	NA	A		
	MW-1-65	12/17/08	65	--	520	190	0.053	0.01	0.26	0.45	<0.020	<0.0080	<0.0060	<0.0080	<0.600	0.79	NA	A		
	MW-1-70	12/17/08	70	--	<0.25	<10	0.012	0.002	<0.0020	0.01	<0.0010	<0.004	<0.0003	<0.004	<0.030	<0.0004	NA	A		
	MW-1-75	12/17/08	75	--	1.3	<10	0.031	0.01	0.04	<0.0020	<0.0008	<0.0006	<0.0008	<0.060	0.002	NA	A			
MW-2	MW-2-5	12/16/08	5	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-10	12/16/08	10	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-15	12/16/08	15	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-20	12/16/08	20	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-25	12/16/08	25	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-30	12/16/08	30	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-35	12/16/08	35	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-40	12/16/08	40	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-45	12/16/08	45	--	<0.25	<10	<0.0006	<0.0005	<0.0020	<0.0010	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	<0.0004	NA	A		
	MW-2-50	12/16/08	50	--	<0.25	<10	<0.0006	<0.0005	<0.0020	<0.0010	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	<0.0004	NA	A		
	MW-2-55	12/16/08	55	--	0.6	<10	<0.0012	<0.0010	0.01	0.01	<0.0020	<0.0008	<0.0006	<0.0008	<0.060	0.005	NA	A		
	MW-2-60	12/16/08	60	--	0.36	<10	0.008	<0.0005	0.03	0.02	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	0.002	NA	A		
	MW-2-65	12/16/08	65	--	0.42	<10	0.007	<0.0005	0.01	0.01	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	<0.0004	NA	A		
	MW-2-70	12/16/08	70	--	<0.25	<10	<0.0006	<0.0005	<0.0020	<0.0010	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	<0.0004	NA	A		
	MW-2-75	12/16/08	75	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-2-80	12/16/08	80	--	<0.25	<10	<0.0006	<0.0005	<0.0020	<0.0010	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	<0.0004	NA	A		
MW-3	MW-3-5	12/16/08	5	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-3-10	12/16/08	10	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-3-15	12/16/08	15	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-3-20	12/16/08	20	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-3-30	12/16/08	30	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-3-35	12/16/08	35	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	A		
	MW-3-40	12/16/08	40	<0.25	<10	0.006	<0.0005	<0.0020	<0.0010	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	<0.0004	NA	A			
	MW-3-45	12/16/08	45	<0.25	<10	0.001	<0.0005	<0.0020	<0.0010	<0.0010	<0.0004	<0.0003	<0.0004	<0.030	<0.0004	NA	A			
	MW-3-50	12/16/08	50	--	1.5	10	0.002	<0.0005	0.03	0.02	<0.0010	<0.0004	<0.000							

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Sample Location	Sample ID	Sample Data		TPH ⁽¹⁾ ppm	TPH-g ⁽²⁾ ppm	TPH-d ⁽³⁾ ppm	Volatile Organic Compounds										Lab	CARs/ Refs
		Date Sampled	Depth (feet)				B ⁽⁴⁾ ppb	T ⁽⁴⁾ ppb	E ⁽⁴⁾ ppb	X ⁽⁴⁾ ppb	MTBE ⁽⁴⁾ ppb	ETBE ⁽⁴⁾ ppb	TAME ⁽⁴⁾ ppb	DIPE ⁽⁴⁾ ppb	TBA ⁽⁴⁾ ppb	NAP ⁽⁴⁾ ppb		
PETRA Well Installation and Soil Investigation, May 7-10, 2012																		
MW-1p	MW-1p@45	05/09/12	45	--	682	17.9	1.97	<0.250	3.07	9.47	<0.250	ND	ND	<0.50	<0.250	--	NA	B
	MW-1p@50	05/09/12	50	--	278	<10	0.421	<0.125	1.07	1.755	<0.125	<0.250	<0.250	<0.250	<0.125	--	NA	B
	MW-1p@55	05/10/12	55	--	3730	34.3	6.34	<1.25	12.9	28.95	<1.25	<2.50	<2.50	<2.50	<12.5	--	NA	B
	MW-1p@60	05/10/12	60	--	2610	<10	6.13	0.745 J	12.4	44.04 J	<1.25	<2.50	<2.50	<2.50	<12.5	--	NA	B
	MW-1p@65	41039	65	--	3770	9.69 J	5.46	4.98	13.9	60.9	<1.25	<2.50	<2.50	<2.50	<12.5	--	NA	B
MW-2p	MW-2p@45	05/09/12	45	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-2p@50	05/09/12	50	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-2p@55	05/09/12	55	--	24.50	<10	<0.005	<0.005	0.016	0.018	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-2p@60	05/09/12	60	--	60.60	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-2p@65	05/09/12	65	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
MW-3p	MW-3p@45	05/08/12	45	--	6.05	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-3p@50	05/08/12	50	--	361	18.1	<1.25	<1.25	1.19	1.475	<0.125	<0.250	<0.250	<1.25	--	NA	B	
	MW-3p@55	05/08/12	55	--	170	6.23 J	0.0049 J	<0.005	0.303	0.433	<0.05	<0.1	<0.1	<0.50	--	NA	B	
	MW-3p@60	05/08/12	60	--	6260	12.4	2.20 J	<2.50	14.6	27.5	<2.50	<5.0	<5.0	<250	--	NA	B	
	MW-3p@65	05/08/12	65	--	7.32	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
MW-4p	MW-4p@45	05/09/12	45	--	0.080 J	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.015	--	NA	B	
	MW-4p@50	05/09/12	50	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.015	--	NA	B	
	MW-4p@55	05/09/12	55	--	2550	21.9	0.633 J	<1.25	6.12	6.95	<1.25	<2.50	<2.50	<12.5	--	NA	B	
	MW-4p@60	05/09/12	60	--	177	<10	0.831	<2.50	1.03	1.203	<2.50	<0.50	<0.50	<2.50	--	NA	B	
	MW-4p@65	05/09/12	65	--	167	6.04 J	0.332	<2.50	0.884	0.851	<2.50	<0.50	<0.50	<2.50	--	NA	B	
MW-5p	MW-5p@45	05/08/12	45	--	<0.1	<10	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.01	<0.01	--	NA	B	
	MW-5p@50	05/08/12	50	--	360	<10	0.327	<0.250	1.81	2.14	<0.250	<0.50	<0.50	<2.50	--	NA	B	
	MW-5p@55	05/08/12	55	--	407	<10	1.850	<0.250	2.67	4.16	<0.250	<0.50	<0.50	<2.50	--	NA	B	
	MW-5p@60	05/08/12	60	--	771	17.4	1.760	<1.25	4.54	15.05	<1.25	<2.50	<2.50	<12.50	--	NA	B	
	MW-5p@65	05/08/12	65	--	0.089 J	<10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	<0.05	--	NA	B	
MW-6p	MW-6p@50	05/07/12	50	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-6p@55	05/07/12	55	--	46	<10	<0.005	<0.005	0.004 J	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-6p@60	05/07/12	60	--	345	<10	1.03	<0.250	2.53	2.59	<0.250	<0.05	<0.05	<2.50	--	NA	B	
	MW-6p@65	05/07/12	65	--	0.16	<10	0.015	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
MW-7p	MW-7p@50	05/07/12	50	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-7p@55	05/07/12	55	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-7p@60	05/07/12	60	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	MW-7p@65	05/07/12	65	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
SB-20	SB-20@20	05/07/12	20	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	SB-20@25	05/07/12	25	--	1.22	<10	0.018	0.1	0.018	0.131	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	SB-20@30	05/07/12	30	--	2.05	<10	0.071	0.143	0.027	0.158	<0.005	<0.01	<0.01	<0.05	--	NA	B	
	SB-20@35	05/07/12	35	--	0.63	<												

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		Date Sampled	Depth (feet)				B ⁽⁴⁾ ppb	T ⁽⁴⁾ ppb	E ⁽⁴⁾ ppb	X ⁽⁴⁾ ppb	MTBE ⁽⁴⁾ ppb	ETBE ⁽⁴⁾ ppb	TAME ⁽⁴⁾ ppb	DIPE ⁽⁴⁾ ppb	TBA ⁽⁴⁾ ppb	NAP ⁽⁴⁾ ppb				
SB-22	SB-22@20	05/08/12	20	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.01	<0.50	--	NA	B		
	SB-22@25	05/08/12	25	--	<0.1	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.01	<0.50	--	NA	B		
	SB-22@30	05/08/12	30	--	0.56	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.01	<0.50	--	NA	B		
	SB-22@35	05/08/12	35	--	0.14	<10	<0.005	<0.005	<0.005	<0.015	<0.005	<0.01	<0.01	<0.01	<0.50	--	NA	B		
	SB-22@40	05/08/12	40	--	0.084 J	<10	0.004 J	<0.005	0.003 J	<0.015	<0.005	<0.01	<0.01	<0.01	<0.50	--	NA	B		
	SB-22@45	05/08/12	45	--	6.51	<10	0.040	<0.005	0.012	0.013 J	<0.005	<0.01	<0.01	<0.01	<0.50	--	NA	B		
	SB-22@50	05/08/12	50	--	137	5.31 J	<0.050	<0.050	0.083	0.149 J	<0.050	<0.10	<0.10	<0.10	<0.50	--	NA	B		
	SB-22@55	05/08/12	55	--	576	16.1	1.87	<2.50	3.17	3.309	<0.250	<0.50	<0.50	<0.50	<2.50	--	NA	B		
	SB-22@60	05/08/12	60	--	316	29.9	1.81	<0.125	1.59	1.615	<0.125	<0.250	<0.250	<0.250	<0.125	--	NA	B		
	SB-22@65	05/08/12	65	--	4.62	<10	0.068	<0.005	0.042	<0.015	<0.005	<0.01	<0.01	<0.01	<0.50	--	NA	B		
DES Well Installation, August 18-21, 2014																				
DW-8	DW-8@50	08/18/14	50	--	1.08	NS	ND	ND	2	3	ND	ND	ND	ND	ND	ND	5	CTEK	C	
	DW-8@55	08/18/14	55	--	0.23	NS	ND	ND			ND	ND	ND	ND	ND	ND				
	DW-8@58	08/18/14	58	--	ND	NS	ND	ND			ND	ND	ND	ND	ND	ND				
	DW-8@60	08/18/14	60	--	ND	NS	ND	ND			ND	ND	ND	ND	ND	ND				
	DW-8@65	08/18/14	65	--	ND	NS	ND	ND			ND	ND	ND	ND	ND	ND				
DW-9	DW-9@50	08/19/14	50	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CTEK	C	
	DW-9@55	08/19/14	55	--	0.80	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-9@58	08/19/14	58	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-9@60	08/19/14	60	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-9@65	08/19/14	65	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
DW-10	DW-10@50	08/21/14	50	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	CTEK	C
	DW-10@55	08/21/14	55	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-10@58	08/21/14	58	--	2.14	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-10@60	08/21/14	60	--	16.9	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-10@65	08/21/14	65	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
DW-12	DW-12@50	08/19/14	50	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CTEK	C
	DW-12@55	08/19/14	55	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	DW-12@58	08/19/14	58	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-12@60	08/19/14	60	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DW-12@65	08/19/14	65	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
DE-1	DE-1@5	08/20/14	5	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@10	08/20/14	10	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@15	08/20/14	15	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@20	08/20/14	20	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@25	08/20/14	25	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@30	08/20/14	30	--	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@35	08/20/14	35	--	1.40	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@40	08/20/14	40	--	0.60	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@45	08/20/14	45	--	69.7	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@50	08/20/14	50	--	800	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,040	CTEK	C
	DE-1@55	08/20/14	55	--	459	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@60	08/21/14	60	--	3.56	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	DE-1@65	08/21/14</td																		

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E	Ethylbenzene	TPH-d	Total Petroleum Hydrocarbons-Diesel
B	Benzene		
T	Toluene	NAP	Naphthalene
X	Total Xylenes	CARs	Certified Analytical Reports
MTBE	Methyl Tertiary Butyl Ether	Refs	Reference where chemical data are first reported
ETBE	Ethyl Tertiary Butyl Ether	ppb	Parts per billion or Micrograms per kilogram (ug/kg)
TAME	Tertiary Amyl Methyl Ether	ppm	Parts per million or Milligrams per kilogram (mg/kg)
DIPE	Diisopropyl Ether	ND	Not detected
TBA	Tertiary Butyl Alcohol	NA	Not Available
TPH-g	Total Petroleum Hydrocarbons-Gasoline	--	Not tested or not available

Footnotes:

- (1) Total Petroleum Hydrocarbons (TPH) - Analyzed using EPA Method 8015-modified and reported based on C10-C36 carbon range, which compromises extractable diesel and oil.
- (2) Total Petroleum Hydrocarbons (TPH-gasoline) - Analyzed using EPA Method 8015-modified using gasoline as a standard.
- (3) Total Petroleum Hydrocarbons (TPH-diesel) - Analyzed using EPA Method 8015-modified using diesel as a standard.
- (4) Volatile Organic Compounds - VOCS - Analyzed using EPA Method 8260B.

- (A) PETRA Historical Soil Analytical Results (September - December, 2006)
- (B) PETRA Soil Analytical Results (May 7-10, 2012)
- (C) CHEMTEK Environmental Laboratories, Inc. Report No. 408079 (September 03, 2014)
- (D) CHEMTEK Environmental Laboratories, Inc. Report No. 409083 (October 02, 2014)

TABLE 2

Summary of Monitoring and Extraction Well Construction Details

John Bodger & Sons Co.

Geo Tracker I.D. T10000000826

1851 West Olive Avenue, Lompoc, CA

Monitor Well ID	Casing Type	Casing Diameter inches	Total Well Depth feet	Construction Details		
				Screen Length feet	Depth to Top of Screen feet	16-Sep-2014 DTW feet
MW-1p	PVC	2	65	20	45	61.35
MW-2p	PVC	2	65	20	45	60.98
MW-3p	PVC	2	65	20	45	61.35
MW-4p	PVC	2	65	20	45	62.09
MW-5p	PVC	2	65	20	45	62.00
MW-6p	PVC	2	65	15	50	63.45
MW-7p	PVC	2	65	15	50	59.80
DW8	PVC	2	65	20	45	61.15
DW9	PVC	2	65	20	45	61.32
DW10	PVC	2	65	20	45	61.65
DW11	PVC	2	65	20	45	Dry*
DW12	PVC	2	65	20	45	60.52
DE1	PVC	4	65	20	45	59.98
DV1	PVC	4	45	20	25	Soil Vapor Only

Abbreviations:

- ID Identification
 - PVC Poly Vinyl Chloride - Plastic casing
 - DTW Depth to water (9/16/2014)
 - *
- Well DW11 was dry upon well installation and during an attempt to develop the well on 9/26/2014.

TABLE 3
Summary of Groundwater Levels
 John Bodger & Sons Co.
 GeoTracker I.D. T10000000826
 1851 West Olive Avenue, Lompoc, CA

Field Measurements								
Well	Sampler	Date Measured	TOCE ASD (ft)	DFP (ft)	Product Thickness (ft)	DTW (ft)	GWE ASD (ft)	Adjusted GWE ASD (ft)
MW-1 Screen 55'-75'	Petra	12/22/08	93.25	np		50.87	42.38	
	Petra	3/24/09		np		50.85	42.40	
	Petra	6/24/09		np		54.76	38.49	
	Petra	10/14/09		np		57.44	35.81	
	Destroyed 2012							
MW-2 Screen 60'-80'	Petra	12/22/08	92.56	np		50.41	42.15	
	Petra	3/25/09		np		51.07	41.49	
	Petra	6/24/09		np		55.38	37.18	
	Petra	10/14/09		np		57.63	34.93	
	Destroyed 2012							
MW-3 Screen 55'-75'	Petra	12/23/08	91.97	np		49.89	42.08	
	Petra	3/25/09		np		50.41	41.56	
	Petra	6/24/09		np		54.37	37.60	
	Petra	10/15/09		np		57.08	34.89	
	Destroyed 2012							
MW-4 Screen 61.5'-81.5'	Petra	12/23/08	95.27	np		53.00	42.27	
	Petra	3/25/09		np		52.65	42.62	
	Petra	6/24/09		np		56.15	39.12	
	Petra	10/14/09		np		59.44	35.83	
	Destroyed 2012							
MW-1p Screen 45'-65'	Petra	5/14/12	93.85	np		51.99	41.86	
	DES	06/11/13		np		55.85	38.00	
	DES	12/18/13		sheen		56.40	37.45	
	DES	06/19/14		sheen		58.51	35.34	
	DES	09/16/14		60.87	0.46	61.35	32.50	32.85
MW-2p Screen 45'-65'	Petra	5/16/12	92.46	np		49.36	43.10	
	DES	06/11/13		np		55.26	37.20	
	DES	12/18/13		np		54.82	37.64	
	DES	06/19/14		np		57.83	34.63	
	DES	09/16/14		np		60.98	31.49	
MW-3p Screen 45'-65'	Petra	5/14/12	92.07	np		52.26	39.81	
	DES	06/11/13		np		55.40	36.67	
	DES	12/18/13		sheen		55.00	37.07	
	DES	06/19/14		58.61	0.01	58.62	33.45	
	DES	09/16/14		sheen		61.35	30.73	33.46

TABLE 3
Summary of Groundwater Levels
 John Bodger & Sons Co.
 GeoTracker I.D. T10000000826
 1851 West Olive Avenue, Lompoc, CA

Field Measurements								
Well	Sampler	Date Measured	TOCE ASD (ft)	DFP (ft)	Product Thickness (ft)	DTW (ft)	GWE ASD (ft)	Adjusted GWE ASD (ft)
MW-4p Screen 45'-65'	Petra	5/15/12	95.50	np		50.25	45.25	
	DES	06/11/13		np		53.27	42.23	
	DES	12/18/13		np		58.02	37.48	
	DES	06/19/14		sheen		60.02	35.48	
	DES	09/16/14		sheen		62.09	33.41	
MW-5p Screen 45'-65'	Petra	5/15/12	93.28	np		52.02	41.26	
	DES	06/11/13		np		56.80	36.48	
	DES	12/18/13		sheen		56.09	37.19	
	DES	06/19/14		58.78	0.01	58.79	34.49	34.50
	DES	09/16/14		61.40	0.60	62.00	31.27	31.73
MW-6p Screen 50'-65'	Petra	5/15/12	96.84	np		48.51	48.33	
	DES	06/11/13		np		58.30	38.54	
	DES	12/18/13		sheen		59.45	37.39	
	DES	06/19/14		sheen		61.29	35.55	
	DES	09/16/14		sheen		63.45	33.39	
MW-7p Screen 50'-65'	Petra	5/16/12	90.34	np		50.86	39.48	
	DES	06/11/13		np		54.45	35.89	
	DES	12/18/13		np		53.41	36.93	
	DES	06/19/14		np		57.31	33.03	
	DES	09/16/14		np		59.80	30.53	
DW8 Screen 45'-65'	DES	09/16/14	91.18	np		61.15	30.03	
DW9 Screen 45'-65'	DES	09/16/14	91.88	np		61.32	30.56	
DW10 Screen 45'-65'	DES	09/16/14	94.62	np		61.65	32.97	

TABLE 3
Summary of Groundwater Levels
John Bodger & Sons Co.
GeoTracker I.D. T10000000826
1851 West Olive Avenue, Lompoc, CA

Field Measurements								
Well	Sampler	Date Measured	TOCE ASD (ft)	DFP (ft)	Product Thickness (ft)	DTW (ft)	GWE ASD (ft)	Adjusted GWE ASD (ft)
DW11 Screen 45'-65'	DES	09/26/14	101.72	np		dry	dry	
DW12 Screen 45'-65'	DES	09/16/14	93.24	np		60.52	32.72	
DE1 Screen 45'-65'	DES	09/16/14	92.42	sheen		59.98	32.44	

Abbreviations:

ASD Above survey datum

TOCE Reference elevation on top of PVC casing (north side)

DTW Depth to Water in feet below TOCE

GWE Groundwater Elevation in feet above NAVD 88 datum

DFP Depth to Free Product in feet. Product assumed to be gasoline. Gasoline is less dense than water, therefore, the adjusted GWE is calculated as follows: Calculation: [PT x 0.76] + GWE = Adjusted GWE

np no product

NOTE: 2012 Historical land survey provided by J.B. Dixon Engineering. Survey updated by J.B. Dixon on December 28, 2014 to NGVD29 datum.

TABLE 4
Summary of Groundwater Analytical Data
John Bodger & Sons Co.
GeoTracker I.D. T10000000826
1851 West Olive Avenue, Lompoc, CA

Location	Sample Date	TPH												Volatile Organic Compounds												CARs/Refs	
		Gasoline ⁽¹⁾	Diesel ⁽²⁾	B ⁽³⁾	E ⁽³⁾	X ⁽³⁾	MTBE ⁽³⁾	DIPE ⁽³⁾	ETBE ⁽³⁾	TAME ⁽³⁾	TBA ⁽³⁾	DF	Lab														
MW-1	Sampler Sampled																										
	Petra	12/22/08	2,900	<500	170	33	29	99	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<100						
	Petra	3/24/09	2,900	<500	340	47	42	98	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50						
	Petra	6/24/09	16,000	<500	1,500	54	260	76	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<200	<200						
	Petra	10/14/09	71,000	3,000	5,700	2,000	1,400	5,200	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1,000	<1,000						
MW-2	Petra	12/22/08	260	<500	8	<0.5	1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
	Petra	3/25/09	860	<500	31	<0.5	39	15	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
	Petra	6/24/09	360	<500	12	<0.5	5	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
	Petra	10/14/09	410	<500	4	<0.5	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
	Petra	12/23/08	350	<500	23	<0.5	9	9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
MW-3	Petra	3/25/09	3,700	<500	610	<5	190	21	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<100						
	Petra	6/24/09	1,700	<500	22	<0.5	31	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
	Petra	10/15/09	760	<500	11	<1	6	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<20					
	Petra	12/23/08	1,200	<500	91	<0.5	43	21	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
	Petra	3/25/09	430	<500	27	<0.5	10	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
MW-4	Petra	6/24/09	2,500	<500	57	<0.5	47	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10					
	Petra	10/14/09	3,300	<500	110	<1	78	20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<20					
	Petra	5/14/12	33,000	7,600	14,000	2,900	1,400	5,900	<100	120	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1,000	<1,000						
	DES	06/11/13	37,700	ND	100/1	11,600	595	1,370	4,370	ND	ND	207	ND	ND	ND	ND	ND	ND	ND	ND	1	CTEK	(A)				
	DES	12/18/13	90,700	530	50/5	15,000	1,000	2,900	6,100	ND	ND	350	ND	ND	ND	ND	ND	ND	ND	ND	100	CTEK	(B)				
MW-1p	DES	06/19/14	177,000	NA	50	15,000	9,300	130,000	450,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000	CTEK	(C)				
	DES	09/16/14	88,100	NA	20	16,400	1,260	2,020	7,080	ND	ND	263	ND	ND	ND	ND	ND	ND	ND	ND	660	20	CTEK	(D)			
	Petra	05/16/12	6,000	1,200	220	<5	500	220	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<100						
	DES	06/11/13	4,300	ND	1/1	117	ND	240	206	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	1	CTEK	(A)				
	DES	12/18/13	21,400	280	20/1	350	ND	970	710	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	5	CTEK	(B)				
MW-2p	DES	06/19/14	7,530	NA	5	110	ND	380	350	ND	ND	9.8	ND	ND	ND	ND	ND	ND	ND	ND	5	CTEK	(C)				
	DES	09/16/14	5,800	NA	1	41	ND	209	195	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	1	CTEK	(D)				

TABLE 4
Summary of Groundwater Analytical Data

John Bodger & Sons Co.
GeoTracker I.D. T10000000826
1851 West Olive Avenue, Lompoc, CA

Location	Sample Data	TPH	Volatile Organic Compounds												DF	Lab	CARS/Refs	
			Diesel ^(a)	B ^(a)	T ^(a)	E ^(a)	X ^(a)	MTBE ^(a)	DIPE ^(a)	ETBE ^(a)	TAME ^(a)	TBA ^(a)	ppb	ppb				
MW-3p	Sampler	Date	Gasoline ^(a)	DF	B ^(a)	T ^(a)	E ^(a)	X ^(a)	MTBE ^(a)	DIPE ^(a)	ETBE ^(a)	TAME ^(a)	TBA ^(a)	ppb	ppb			
	Sampled	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb			
	Petra	05/14/12	13,000	2,100	5,000	<50	1,100	1,100	<100	<100	<100	<100	<100	<1,000	<1,000			
	DES	06/11/13	22,400	ND	50/1	5,460	10	1,110	1,650	ND	ND	32	ND	ND	ND	1	CTEK	
	DES	12/18/13	43,700	1,500	20/5	5,900	ND	1,300	2,100	ND	ND	ND	ND	ND	ND	100	Assoc (A)	
	DES	06/19/14	33,500	NA	20	6,100	ND	1,400	2,400	ND	ND	ND	ND	ND	ND	100	Assoc (B)	
	DES	09/16/14	55,100	NA	500	6,000	12	1,160	2,000	ND	45	ND	ND	ND	ND	134	Assoc (C)	
MW-4p	Petra	05/15/12	17,000	2,100	5,100	<50	1,200	480	<100	<100	<100	<100	<100	<1,000	<1,000			
	DES	06/11/13	15,300	ND	20/1	3,150	3	960	585	ND	ND	30	ND	ND	ND	1	CTEK	
	DES	12/18/13	31,700	810	20/1	5,200	ND	1,200	900	ND	46	ND	ND	ND	ND	100	Assoc (B)	
	DES	06/19/14	26,800	NA	20	4,400	ND	1,100	840	ND	ND	ND	ND	ND	ND	100	Assoc (C)	
	DES	09/16/14	54,900	NA	100	5,440	4	1,370	1,870	ND	35	ND	ND	ND	ND	90	CTEK	
																2		
MW-5p	Petra	05/15/12	40,000	3,700	9,200	<50	1,600	3,500	<100	<100	<100	<100	<100	<1,000	<1,000			
	DES	06/11/13	29,100	ND	50/1	6,730	10	1,280	2,300	ND	ND	55	ND	ND	ND	1	CTEK	
	DES	12/18/13	64,000	1,500	50/5	8,200	ND	1,700	3,300	ND	ND	ND	ND	ND	ND	100	Assoc (A)	
	DES	06/19/14	41,800	NA	50	8,700	ND	2,600	6,500	ND	ND	ND	ND	ND	ND	100	Assoc (B)	
	DES	09/16/14	Product thickness 0.60 feet	NA	100	11,700	15	1,610	4,200	ND	80	ND	ND	ND	ND	250	Assoc (C)	
	DES	09/16/14														5	CTEK	
MW-6p	Petra	05/15/12	18,000	2,200	2,800	<50	1,000	560	<100	<100	<100	<100	<100	<1,000	<1,000			
	DES	06/11/13	10,600	ND	20/1	1,960	2	850	405	ND	ND	11	ND	ND	ND	1	CTEK	
	DES	12/18/13	31,100	250	20/1	3,300	ND	1,200	860	ND	22	ND	ND	ND	ND	56	Assoc (A)	
	DES	06/19/14	23,000	NA	20	3,200	ND	1,200	940	ND	ND	ND	ND	ND	ND	20	Assoc (B)	
	DES	09/16/14	52,200	NA	100	3,380	3	1,180	860	ND	16	ND	ND	ND	ND	87	Assoc (C)	
																2	CTEK	
MW-7p	Petra	05/16/12	<50	500	ND	ND	ND	ND	ND	ND	ND	<1	<1	<1	<10			
	DES	06/11/13	ND	1/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	CTEK	
	DES	12/18/13	ND	1/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	56	Assoc (B)	
	DES	06/19/14	ND	NA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	Assoc (C)	
	DES	09/16/14	ND	NA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	CTEK	
																1		
DE1	DES	09/16/14	23,500	NA	100	5,240	31	650	287	ND	94	ND	ND	ND	ND	380	2	CTEK
DW8	DES	09/16/14	ND	NA	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	CTEK	

TABLE 4
Summary of Groundwater Analytical Data
 John Bodger & Sons Co.
 GeoTracker I.D. T10000000826
 1851 West Olive Avenue, Lompoc, CA

Location	Sample Data	Volatile Organic Compounds														
		TPH	Gasoline ⁽¹⁾	Diesel ⁽²⁾	DF	B ⁽³⁾	T ⁽³⁾	E ⁽³⁾	MTBE ⁽³⁾	DIPE ⁽³⁾	ETBE ⁽³⁾	TAME ⁽³⁾	TBA ⁽³⁾	DF	Lab	CARS/Refs
DW9	DES 09/16/14	250	NA	1	ND	ND	ND	ND	ppb	ppb	ppb	ND	ND	1	CTEK	(D)
DW10	DES 09/16/14	170	NA	1	ND	ND	ND	ND	ppb	ppb	ppb	ND	ND	1	CTEK	(D)
DW11	DES 09/16/14	dry	dry		dry	dry	dry	dry	dry	dry	dry	dry	dry	1	CTEK	(D)
DW12	DES 09/16/14	4,220	NA	1	2	ND	14	7	ND	ND	ND	ND	ND	1	CTEK	(D)
Criteria	Primary MCLs				1	150	300	1,750	13							
	Notification Levels															
L1CPC Cleanup		no product		<3,000		<1,000						12				
CTEK Detection Limits		100	500	1	1	1	1	2	1	1	1	1	10			

Notes:

- B Benzene TBA Tertiary Butyl Alcohol
- T Toluene TPPhg Total Petroleum Hydrocarbons-gasoline
- E Ethylbenzene TPPhd Total Petroleum Hydrocarbons-diesel
- X Total Xylenes g/d gasoline/diesel/dilution factors (DF)
- DF Dilution Factor CARS Certified Analytical Reports
- MTBE Refs Reference where chemical data are first reported
- Methyl Tertiary Butyl Ether ND Not detected at or above the reporting limit (detection limit X DF)
- Ethyl Tertiary Butyl Ether ND
- Diisopropyl Ether ppb Parts per billion or micrograms per liter (ug/L)
- Tertiary Amyl Methyl Ether NA Not Applicable, Analyzed, or Available
- * Dilution factors in MW-4p reported as 10 for xylenes and ethylbenzene, and 100 for benzene, the rest being 1. Dilution factors in MW-6p reported as 20 for benzene, ethylbenzene and xylenes.

MCLs Maximum Contaminant Levels for Organic Chemicals specified in Table 64444-A - Section 64444 of Title 22 (California Code of Regulations) as amended March 10, 2010.

Notification Non-enforceable notification levels (also known as California Action Levels) developed by the California Department of Public Health (CDPH) for contaminants not having MCLs. Applicable to Drinking water suppliers to protect their consumers. Published in "Drinking Water Notification Levels and Response Levels: An Overview" (CDPH, December 14, 2007).

Bold Concentration exceeds MCL or Notification level

Footnotes:

- (1) Total Petroleum Hydrocarbons - Analyzed using EPA Method 8015-modified with a gasoline standard
- (2) Total Petroleum Hydrocarbons - Analyzed using EPA Method 8015-modified with a diesel standard
- (3) Analyzed using EPA Method 8260B

Symbols:

- (A) CHEMTEK Environmental Laboratories, Inc. report dated June 24, 2013
- (B) Associated Laboratories report date January 8, 2014
- (C) Associated Laboratories report date July 3, 2014
- (D) CHEMTEK Environmental Laboratories, Inc. report dated September 29, 2014

TABLE 5
Summary of Groundwater Analytical Data
Other Volatile Organic Compounds
John Bodger & Sons Co.
GeoTracker I.D. T1000000826
1851 West Olive Avenue, Lompoc, CA

Sample Data	Volatile Organic Compounds ⁽¹⁾												Lab	CARS/ Refs
	Date Sampled	Benzene	1,2 - Dibromoethane (EDB)	1,2 - Dichloroethane (EDC)	1,3,5-Trimethylbenzene	n-Propylbenzene	1,2,4-Tri methylbenzene	sec-Butylbenzene	t-Buylbenzene	Isopropylbenzene	4-Iso propyltoluene	Naphthalene		
Sample Location	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
MW1P	09/16/14	16,400	ND	5,880	340	1,300	200	ND	26	ND	101	20	476	CTEK (A)
MW2P	09/16/14	41	ND	80	19	17	34	3	3	ND	20	5	8	CTEK (A)
MW3P	09/16/14	6,000	ND	317	227	1,320	129	6	11	ND	74	11	732	CTEK (A)
MW4P	09/16/14	5,440	ND	413	246	1,180	147	10	17	ND	73	17	650	CTEK (A)
MW5P	09/16/14	11,700	ND	1,490	281	1,100	169	8	15	ND	93	14	580	CTEK (A)
MW6P	09/16/14	3,380	ND	128	203	653	121	6	10	ND	66	11	361	CTEK (A)
Primary MCLs	1	0.05	0.5											
FPD Investigation Levels ⁽²⁾	1	0.05	0.5											
CTEK Detection Limits	1	1	1	1	1	1	1	1	1	1	1	1	1	17

TABLE 5
Summary of Groundwater Analytical Data
Other Volatile Organic Compounds
John Bodger & Sons Co.
GeoTracker I.D. T10000000826
1851 West Olive Avenue, Lompoc, CA

Sample Data		Volatile Organic Compounds ⁽¹⁾										Naphthalene		
Sample Location	Date Sampled	Benzene	1,2 - Dibromoethane (EDB)	1,2 - Dichloroethane (EDC)	1,3,5 - Trimethylbenzene	n-Propylbenzene	1,2,4 - Trimethylbenzene	sec-Butylbenzene	t-Butylbenzene	Isopropylbenzene	4-Isopropyltoluene	Naphthalene	Lab	CARS/ Refs
MW7P	09/16/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CTEK (A)
DW8	09/16/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CTEK (A)
DW9	09/16/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CTEK (A)
DW10	09/16/14	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	CTEK (A)
DW12	09/16/14	2	ND	ND	ND	15	9	3	ND	3	7	12	6	CTEK (A)
DE1	09/16/14	5,240	ND	3,080	113	72	70	4	6	ND	37	7	153	CTEK (A)
Primary MCLs	1	0.05	0.5											
FPD Investigation Levels ⁽²⁾	1	0.05	0.5	330		330	260	260	260	770		17		
CTEK Detection Limits	1	1	1	1	1	1	1	1	1	1	1	1	1	

TABLE 5
Summary of Groundwater Analytical Data
Other Volatile Organic Compounds
John Bodger & Sons Co.
GeoTracker I.D. T10000000826
1851 West Olive Avenue, Lompoc, CA

Sample Data	Volatile Organic Compounds (1)															
	Sample Location	Date Sampled	Benzene	1,2 - Dibromoethane (EDB)	1,2 - Dichloroethane (EDC)	1,3,5-Triisopropylbenzene	1,2,4-Triisopropylbenzene	n-Propylbenzene	sec-Butylbenzene	t-Butylbenzene	Isopropylbenzene	4-Isopropyltoluene	Naphthalene	Lab	CARs/ Refs	

Abbreviations:

- CARs Certified Analytical Reports
- Refs Reference where chemical data are first reported
- CTEK CHEMTEK Environmental Laboratories, Inc.
- ppb Parts per billion (ppb) or micrograms per liter
- ND Not detected above detection limit in lab report
- NT Not taken or not tested
- NA Not Applicable, Analyzed or Available

MCL Maximum Contaminant Levels for Organic Chemicals specified in Table 64444-A - Section 64444 of Title 22 (California Code of Regulations), as amended March 10, 2010.

(1) VOC's Analyzed using EPA Method 8260.

(2) Fire Prevention Division (FPD) Investigation Levels from page F-5 of Santa Barbara County Fire Department Fire Prevention Division LUFT Manual, June 2010.

Note: **Bold** results are above applicable MCL or FPD Investigation Level.

(A) Chemtek Environmental Laboratories, Inc. Report dated September 29, 2014

LOGS

DW8 Borehole Log (DES)
DW9 Borehole Log (DES)
DW10 Borehole Log (DES)
DW11 Borehole Log (DES)
DW12 Borehole Log (DES)
DE1 Borehole Log (DES)
DV1 Borehole Log (DES)

BOREHOLE LOG								Number: DW8
Client: John Bodger and Sons, Co.				Job No: 13E4167		Sheet: 1 of 3		
Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358				Drilling Company/Driller: SG Drilling Co. Tim Blakeboro				
Date Drilled: 8/18/14	Time: Start End	Drill Rig/ Sampling Method: CME 75 Auger California Split Spoon		Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 91.18 ft		
SAMPLE LOG				BOREHOLE LOG				Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	sample	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)
DW8-5	NA	0.0	0					0-6" Gravel 6"-5' Native: Silt, dark brown (7.5YR 3/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
DW8-10	NA	0.0	5	4		ML		5' Native: Silt, dark brown (7.5YR 3/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
DW8-15	NA	0.0	10	5		ML		10' Native: Silt, dark brown (7.5YR 3/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
DW8-20	NA	0.0	15	3		ML		15' Native: Silt, dark brown (7.5YR 3/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
DW8-25	NA	0.0	20	3		ML		20' Native: Silt, very pale brown (10YR 7/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
			25	4		ML		25' Native: Silt, very pale brown (10YR 7/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
			26	5				
			27	8				
			28					
DES.BWL								

Concrete

Blank PVC Sch 40

Bentonite Grout



BOREHOLE LOG

Number:

Donan Environmental Services, Inc.

DES Rep: Brandon Ginos

Client: John Bodger and Sons, Co.
Location: 1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

Job No: 13E4167 Sheet: 2 of 3

Drilling Company/Driller:
SG Drilling Co.
Tim Blakeboro

Date Drilled:
8/18/14

Time:

Start

Drill Rig/
Sampling Method: CME 7
Califor

Borehole Dia:	Casing Dia:
8"	2"

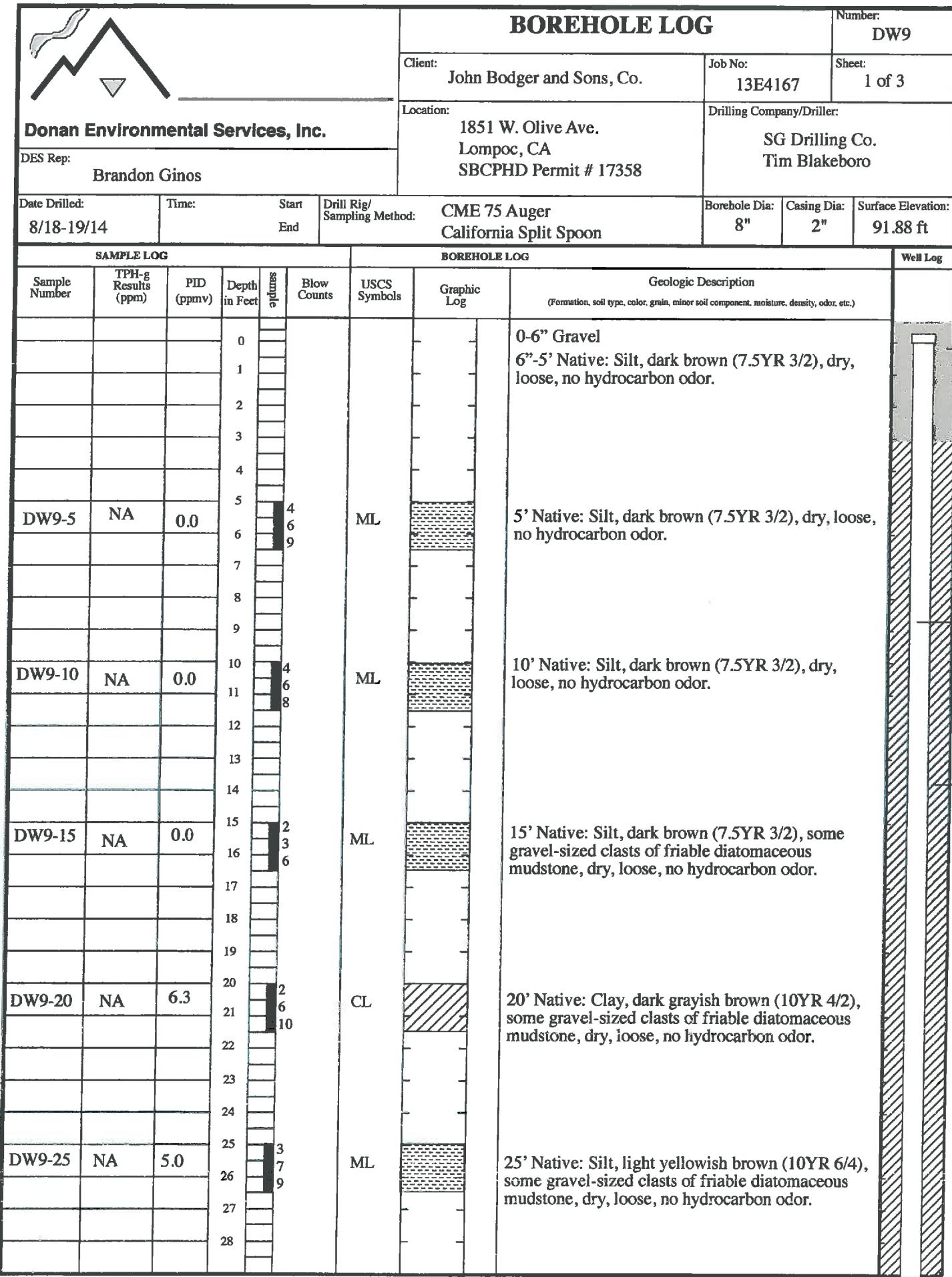
2 of 3

8" **2"** **91.18 ft**

91.18 ft

SAMPLE LOG			BOREHOLE LOG					Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
DW8-30	NA	0.7			ML		30' Native: Silt, grayish brown (10YR 5/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	
DW8-35	NA	4.6			ML		35' Native: Silt, dark gray (10YR 4/1), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	
DW8-40	NA	125.1			ML		40' Native: Silt, dark gray (10YR 4/1), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, strong hydrocarbon odor.	
DW8-45	NA	115.7			ML		45' Native: Silt, dark gray (10YR 4/1), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, strong hydrocarbon odor.	
DW8-50	1.08	9.0			CL		50' Native: Clay, dark gray (10YR 4/1), same clasts as above, dry, loose, slight hydrocarbon odor.	
DW8-52	NA	23.6			CL		52' Native: Clay, dark gray (10YR 4/1), same clasts as above, dry, loose, slight hydrocarbon odor.	
DW8-54	NA	69.1			CL		54' Native: Clay, dark gray (10YR 4/1), same clasts as above, dry, loose, slight hydrocarbon odor.	
DW8-55	0.23	81.2			CL		55' Native: Clay, grayish brown (10YR 5/2), same clasts as above, dry, loose, slight hydrocarbon odor.	
DW8-58	ND	99.9			CL		58' Native: Clay, grayish brown (10YR 5/2), same clasts as above, dry, loose, slight hydrocarbon odor.	

BOREHOLE LOG							Number: DW8	
Client: John Bodger and Sons, Co.				Job No: 13E4167			Sheet: 3 of 3	
Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358				Drilling Company/Driller: SG Drilling Co. Tim Blakeboro				
Date Drilled: 8/18/14	Time: Start End	Drill Rig/ Sampling Method: CME 75 Auger California Split Spoon		Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 91.18 ft		
SAMPLE LOG				BOREHOLE LOG				Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
DW8-60	ND	22.1	60 61 62 63 64 65	2 4 3 7 1 2 3	CL		<p>60' Native: Clay, brown (10YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, some hydrocarbon odor.</p> <p>65' Native: Clay, dark grayish brown (10YR 4/2), some gravel-sized clasts of friable diatomaceous mudstone, moist, loose, no hydrocarbon odor.</p> <p>Groundwater at about 60' bgs Termination Depth =66.5' bgs</p> <p>Well Construction: 2-inch diameter PVC 20 feet Screen 0.02" slot - 45 ft to 65 ft below grade 45 feet Blank - grade to 45 ft bg 2-inch diameter PVC Bottom Cap #3 Sand - 43 ft to 66.5 ft bg (7.68 cu. ft.) Bentonite Chips - 43ft - 40ft bg (1.63cu. ft.) Bentonite Grout - 40 ft to 3ft bg (12.1 cu. ft.) Traffic box with concrete pad - grade to 3 ft bg (4.92 cu.ft.) </p>	
								DES.BWL





Donan Environmental Services, Inc.

DES Rep: Brandon Ginos

BOREHOLE LOG

Number:

Client: John Bodger and Sons, Co.

Job No:

2 of 3

Location: 1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

Drilling Company/Driller:
SG Drilling Co.
Tim Blakehorn

Date Drilled:
8/18-19/14

Time:

Start
End

**Drill Rig/
Sampling Method:**

CME 75 Auger California Split Spoon

Borehole D

13E4167

2 of 3

— 1 —

California Spiny Lobster

SA

SAMPLE LOG

1

BOREHOLE LOG

BOREHOLE LOG

hole D

Casin

Surface Elevat

SAMPLE LOG

BOREHOLE LOG

Well Log

Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
DW9-30	NA	3.7			ML		30' Native: Silt, dark grayish brown (10YR 4/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	
DW9-35	NA	7.2			ML		35' Native: Silt clasts, dark gray (2.5YR 4/1), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	
DW9-40	NA	71.5			ML		40' Native: Silt clasts, dark gray (2.5YR 4/1), some clay, some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, slight hydrocarbon odor.	
DW9-45	NA	23.7			CL		45' Native: Clay, very dark gray (2.5YR 3/1), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	
DW9-50	ND	10.7			CL		50' Native: Clay, gray (2.5YR 5/1), some silt clasts like above, dry, loose, no hydrocarbon odor.	
DW9-52	NA	11.6			CL		52' Native: Clay, gray (2.5YR 5/1), some silt clasts like above, dry, loose, no hydrocarbon odor.	
DW9-54	NA	10.8			CL		54' Native: Clay, gray (2.5YR 5/1), some silt clasts like above, dry, loose, no hydrocarbon odor.	
DW9-55	0.80	5.0			ML		55' Native: Silt, grayish brown (2.5YR 5/2), some silt clasts like above, dry, loose, no hydrocarbon odor.	
DW9-58	ND	5.4			ML		58' Native: Silt, grayish brown (2.5YR 5/2), some silt clasts like above, dry, loose, no hydrocarbon odor.	



BOREHOLE LOG

Number:

Donan Environmental Services, Inc.

DES Rep: Brandon Ginos

Client: John Bodger and Sons, Co.
Location: 1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

Job No:	Sheet:
13E4167	3 of 3

13E4167 3 of 3

Date Drilled: 8/18-19/14	Time:	Start End	Drill Rig/ Sampling Method: CME 75 Auger California Split Spoon	Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 91.88 ft
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BOREHOLE LOG

Number:
DW10

Client:
John Bodger and Sons, Co.

Job No:
13E4167

Sheet:
1 of 3

Location:
1851 W. Olive Ave.

Lompoc, CA

SBCPHD Permit # 17358

Drilling Company/Driller:

SG Drilling Co.
Tim Blakeboro

Donan Environmental Services, Inc.

DES Rep:

Brandon Ginos

Date Drilled:
8/21/14

Time:

Start
End

Drill Rig/
Sampling Method:

CME 75 Auger
California Split Spoon

Borehole Dia: 8"
Casing Dia: 2"
Surface Elevation: 94.62 ft

SAMPLE LOG							BOREHOLE LOG		Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)		
			0				0-6' Asphalt		
			1				6'-5' Native: Silt, very dark brown (10YR 2/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.		
			2						
			3						
			4						
DW10-5	NA	0.9	5	3	ML		5' Native: Silt, very dark brown (10YR 2/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.		Concrete
			6	5					
			7	7					
DW10-10	NA	0.7	10	4	ML		10' Native: Silt, very dark grayish brown (10YR 3/2), some gravel-sized clasts of friable diatomaceous mudstone, some gravel, dry, loose, no hydrocarbon odor.		Blank PVC Sch 40
			11	7					
			12	7					
DW10-15	NA	0.4	15	3	ML		15' Native: Silt, dark brown (10YR 3/3), some clay, dry, loose, no hydrocarbon odor.		Bentonite Grout
			16	4					
			17						
DW10-20	NA	0.4	20	9	CL		20' Native: Clay, dark grayish brown (10YR 4/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.		
			21	14					
			22	15					
DW10-25	NA	0.6	25	3	CL		25' Native: Clay, light grayish brown (10YR 6/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.		
			26	5					
			27	9					
			28						

DES.BWL



BOREHOLE LOG

Number: DW10

Donan Environmental Services, Inc.

DES Rep: Brandon Ginos

Client: John Bodger and Sons, Co.

Job No:

2 of 3

Location: 1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

Drilling Company/Driller

SG Drilling Co.
Tim Blakeboro

Date Drilled:

Time:

St

Will Rig/ Sampling Method:

CME 75 Auger California Split Spoon

Borehole Dia.

Fasing Dia: Sun

3"

94-62

California split spoon

Bore

Case

Surface Elevation

Date Drilled:	Time:	Start End	Drill Rig/Sampling Method:	CME 75 Auger California Split Spoon	Borehole Dia:	Casing Dia:	Surface Elevation:	
SAMPLE LOG				BOREHOLE LOG				Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
DW10-30	NA	5.7	30 31 32 33 34	7 13 16	CL		30' Native: Clay, dark brown (10YR 3/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	
DW10-35	NA	4.4	35 36 37 38 39	6 7 9	CL		35' Native: Clay, light olive brown (2.5YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	Blank PVC Sch 40 Bentonite Group
DW10-40	NA	4.5	40 41 42 43 44	3 5 7	CL		40' Native: Clay, light olive brown (2.5YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	Bentonite Chunks
DW10-45	NA	6.1	45 46 47 48	4 8 8	CL		45' Native: Clay, olive brown (2.5YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	#3 Sand
DW10-50	ND	7.4	49 50 51 52 53 54 55	5 6 5 7 2 3 4 3 6 4	CL		50' Native: Clay, very dark grayish brown (10YR 2/2), some gravel-sized clasts of friable diatomaceous mudstone, moist, loose, no hydrocarbon odor.	Schedule 40 PVC 0.02" Slot Screen
DW10-52	NA	8.8	56 57 58	7 7 6 7 2 6 7 7	CL		52' Native: Clay, very dark grayish brown (10YR 2/2), same clasts as above, moist, loose, no hydrocarbon odor.	
DW10-54	NA	8.8			CL		54' Native: Clay, very dark grayish brown (10YR 2/2), same clasts as above, moist, loose, no hydrocarbon odor.	
DW10-55	ND	6.0			CL		55' Native: Clay, dark gray (10YR 4/1), moist, loose, no hydrocarbon odor.	
DW10-58	2.14	16.9			CL		58' Native: Clay, dark gray (10YR 4/1), moist, loose, no hydrocarbon odor.	

BOREHOLE LOG								Number: DW10				
Client: John Bodger and Sons, Co.				Job No: 13E4167		Sheet: 3 of 3						
Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358				Drilling Company/Driller: SG Drilling Co. Tim Blakeboro								
Date Drilled: 8/21/14	Time:	Start End	Drill Rig/ Sampling Method:	CME 75 Auger California Split Spoon				Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 94.62 ft		
SAMPLE LOG				BOREHOLE LOG							Well Log	
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	sample	Blow Counts	USCS Symbols	Graphic Log		Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)			
DW10-60	16.9	5.0	60 61 62 63 64 65	2 4 6 12 2 3 6		CL			60' Native: Clay, dark gray (10YR 4/1), moist, loose, slight hydrocarbon odor.			
DW10-65	ND	8.8				CL			65' Native: Clay, grayish brown (10YR 5/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.			
Groundwater at about 60' bgs Termination Depth =66.5' bgs												
Well Construction: 2-inch diameter PVC 20 feet Screen 0.02" slot - 45 ft to 65 ft below grade 45 feet Blank - grade to 45 ft bg 2-inch diameter PVC Bottom Cap #3 Sand - 43 ft to 66.5 ft bg (7.68 cu. ft.) Bentonite Chips - 43ft - 40ft bg (1.63cu. ft.) Bentonite Grout - 40 ft to 3ft bg (12.1 cu. ft.) Traffic box with concrete pad - grade to 3 ft bg (4.92 cu.ft.)												
DES.BWL												
Schedule 40 PVC 0.02" Slot Screen #3 Sand												

BOREHOLE LOG								Number: DW11	
Client: John Bodger and Sons, Co.				Job No: 13E4167		Sheet: 1 of 3			
Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358				Drilling Company/Driller: SG Drilling Co. Tim Blakeboro					
Date Drilled: 9/26/14	Time:	Start End	Drill Rig/ Sampling Method: CME 75 Auger California Split Spoon	Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 101.72 ft			
SAMPLE LOG				BOREHOLE LOG					Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)		
DW11-5	NA	0.1	0		ML		0-6' Grass 6"-5' Fill: Silt, black (10YR 2/1), dry, loose, no hydrocarbon odor.		
DW11-10	NA	0.1	10		CL		5' Fill: Silt, black (10YR 2/1), dry, loose, no hydrocarbon odor.		
DW11-15	NA	0.1	15		CL		10' Native: Clay, black (10YR 2/1), dry, loose, no hydrocarbon odor.		
DW11-20	NA	0.0	20		CL		15' Native: Clay, very dark brown (10YR 5/3), dry, loose, no hydrocarbon odor.		
DW11-25	NA	0.0	25		CL		20' Native: Clay, brown (10YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.		
			26				25' Native: Clay, brown (10YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.		
			27						
			28						

DES.BWL



Donan Environmental Services, Inc.

DES Rep: Brandon Ginos

BOREHOLE LOG

Number:

Client: John Bodger and Sons, Co.

Job No:

Sheet:
2 of 3

Location:
1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

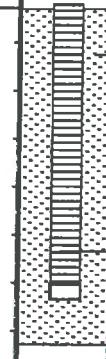
Drilling Company/Driller:

SG Drilling Co.
Tim Blakeboro

Date Drilled:	Time:	Start	Drill Rig/ Sampling Method:	Borehole Dia:	Casing Dia:	Surface Elevation:
		End				
9/26/14			CME 75 Auger California Split Spoon	8"	2"	101.72 ft

SAMPLE LOG			BOREHOLE LOG					Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
DW11-30	NA	0.0	30 31 32 33 34 35 36	4 7 10 5 6 14 3 4 4	CL		30' Native: Clay, brown (10YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	
DW11-35	NA	1.7	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58		CL		35' Native: Clay, brown (10YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	Bentonite Grout
DW11-40	NA	0.7			CL		40' Native: Clay, brown (10YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	Bentonite Chips
DW11-45	NA	1.3			CL		45' Native: Clay, brown (10YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.	#3 Sand
DW11-50	ND	0.1			CL		50' Native: Clay, dark yellowish brown (10YR 4/4), same clasts as above, dry, loose, no hydrocarbon odor.	Schedule 40 PVC 0.02" Slot Screen
DW11-52	NA	0.3			CL		52' Native: Clay, dark yellowish brown (10YR 4/4), same clasts as above, dry, loose, no hydrocarbon odor.	
DW11-54	NA	0.0			CL		54' Native: Clay, brown (10YR 4/3), moist, loose, no hydrocarbon odor.	
DW11-55	ND	0.0			CL		55' Native: Clay, brown (10YR 4/3), same clasts as above, moist, loose, no hydrocarbon odor.	
DW11-58	NA	0.0			CL		58' Native: Clay, brown (10YR 4/3), same clasts as above, moist, loose, no hydrocarbon odor.	

DES.BWL

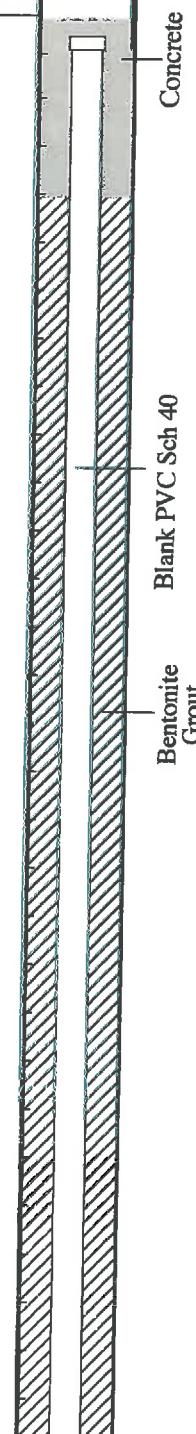
								BOREHOLE LOG			Number: DW11
Client: John Bodger and Sons, Co. Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358								Job No: 13E4167	Sheet: 3 of 3		
DES Rep: Brandon Ginos								Drilling Company/Driller: SG Drilling Co. Tim Blakeboro			
Date Drilled: 9/26/14		Time: Start End		Drill Rig/ Sampling Method:		CME 75 Auger California Split Spoon		Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 101.72 ft	
SAMPLE LOG								BOREHOLE LOG			Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)				
DW11-60	ND	0.0	60 5 3 5 4		CL		<p>59' Native: Clay, brown (10YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, wet, loose, no hydrocarbon odor.</p> <p>60' Native: Clay, brown (10YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, wet, loose, no hydrocarbon odor.</p>				
DW11-65	ND	0.0	65 2 14 6		CL		<p>65' Native: Clay, brown (10YR 4/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.</p>				
								<p>Groundwater at about 60' bgs Termination Depth = 66.5' bgs</p> <p>Well Construction: 2-inch diameter PVC 20 feet Screen 0.02" slot - 45 ft to 65 ft below grade 45 feet Blank - grade to 45 ft bg 2-inch diameter PVC Bottom Cap #3 Sand - 43 ft to 66.5 ft bg (7.68 cu. ft.) Bentonite Chips - 43ft - 40ft bg (1.63cu. ft.) Bentonite Grout - 40 ft to 3ft bg (12.1 cu. ft.) Traffic box with concrete pad - grade to 3 ft bg (4.92 cu.ft.) </p>			
DES.BWL											

#3 Sand
Schedule 40 PVC
0.02" Slot Screen



BOREHOLE LOG

		Client: John Bodger and Sons, Co.				Number: DW12	
		Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358		Job No: 13E4167	Sheet: 1 of 3		
DES Rep: Brandon Ginos				Drilling Company/Driller: SG Drilling Co. Tim Blakeboro			
Date Drilled: 8/19/14	Time: Start End	Drill Rig/ Sampling Method: CME 75 Auger California Split Spoon		Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 93.24 ft	
SAMPLE LOG			BOREHOLE LOG				Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)
DW12-5	NA	1.8	0 1 2 3 4 5 6 7		ML		0-6" Gravel 6"-5' Fill: Silt, very dark brown (7.5YR 5/3), some gravel, dry, loose, no hydrocarbon odor.
DW12-10	NA	5.1	8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28		ML		5' Native: Silt, very dark brown (7.5YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
DW12-15	NA	5.9	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28		ML		10' Native: Silt, very dark brown (7.5YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
DW12-20	NA	7.7	15 16 17 18 19 20 21 22 23 24 25 26 27 28		CL		15' Native: Silt, very dark brown (7.5YR 5/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
DW12-25	NA	9.0	20 21 22 23 24 25 26 27 28		CL		20' Native: Clay, dark grayish brown (10YR 4/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.
							25' Native: Clay, light yellowish brown (2.5YR 6/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, no hydrocarbon odor.



DES.BWL



Donan Environmental Services, Inc.

DES Rep:

Brandon Ginos

BOREHOLE LOG

Number:
DW12

Client: John Bodger and Sons, Co.

Job No:
13E4167

Sheet:
2 of 3

Location:
1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

Drilling Company/Driller:
SG Drilling Co.
Tim Blakeboro

Date Drilled:

8/19/14

Time:

Start

End

Drill Rig/
Sampling Method:
CME 75 Auger
California Split Spoon

Borehole Dia:

8"

Casing Dia:

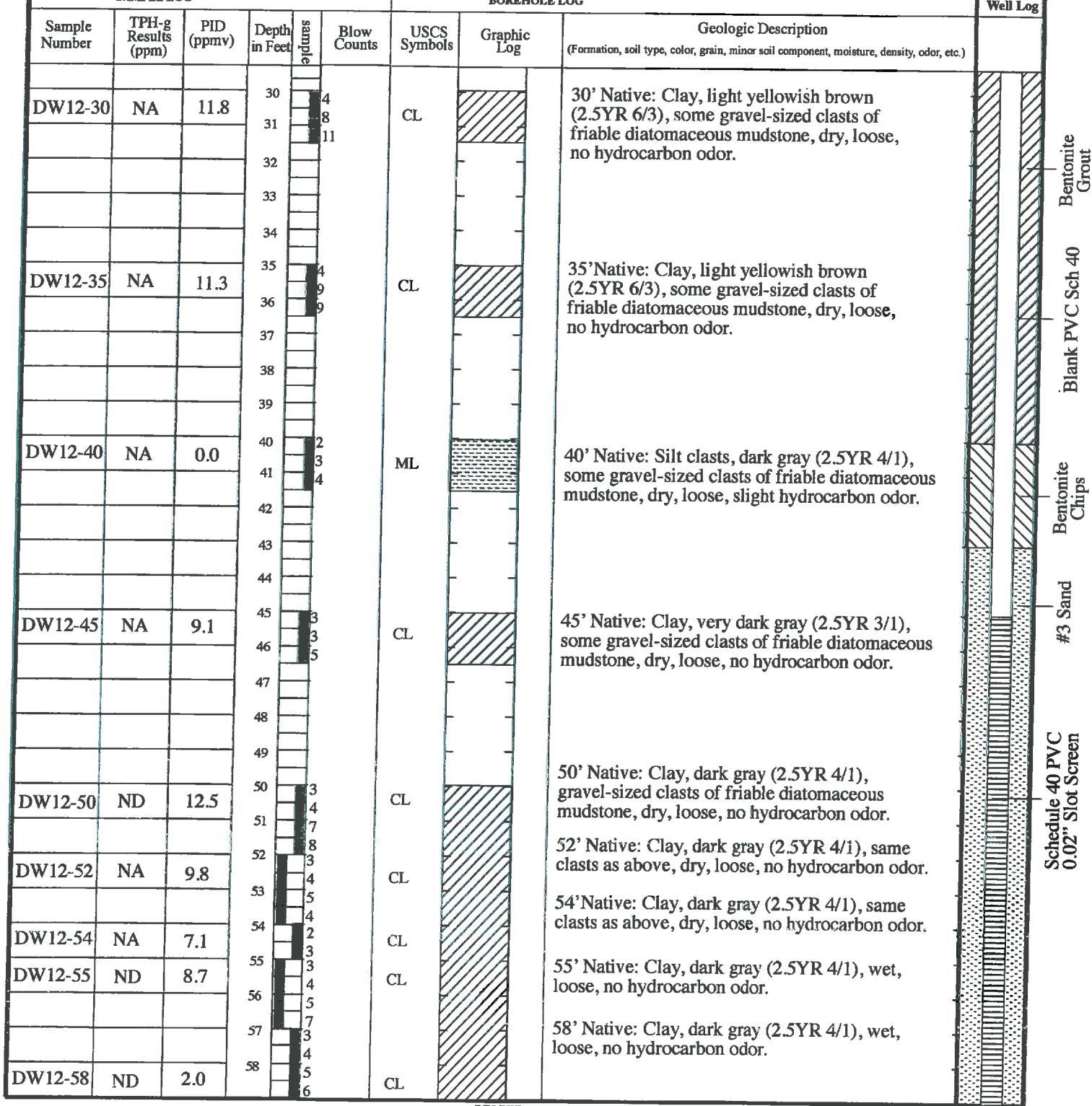
2"

Surface Elevation:
93.24 ft

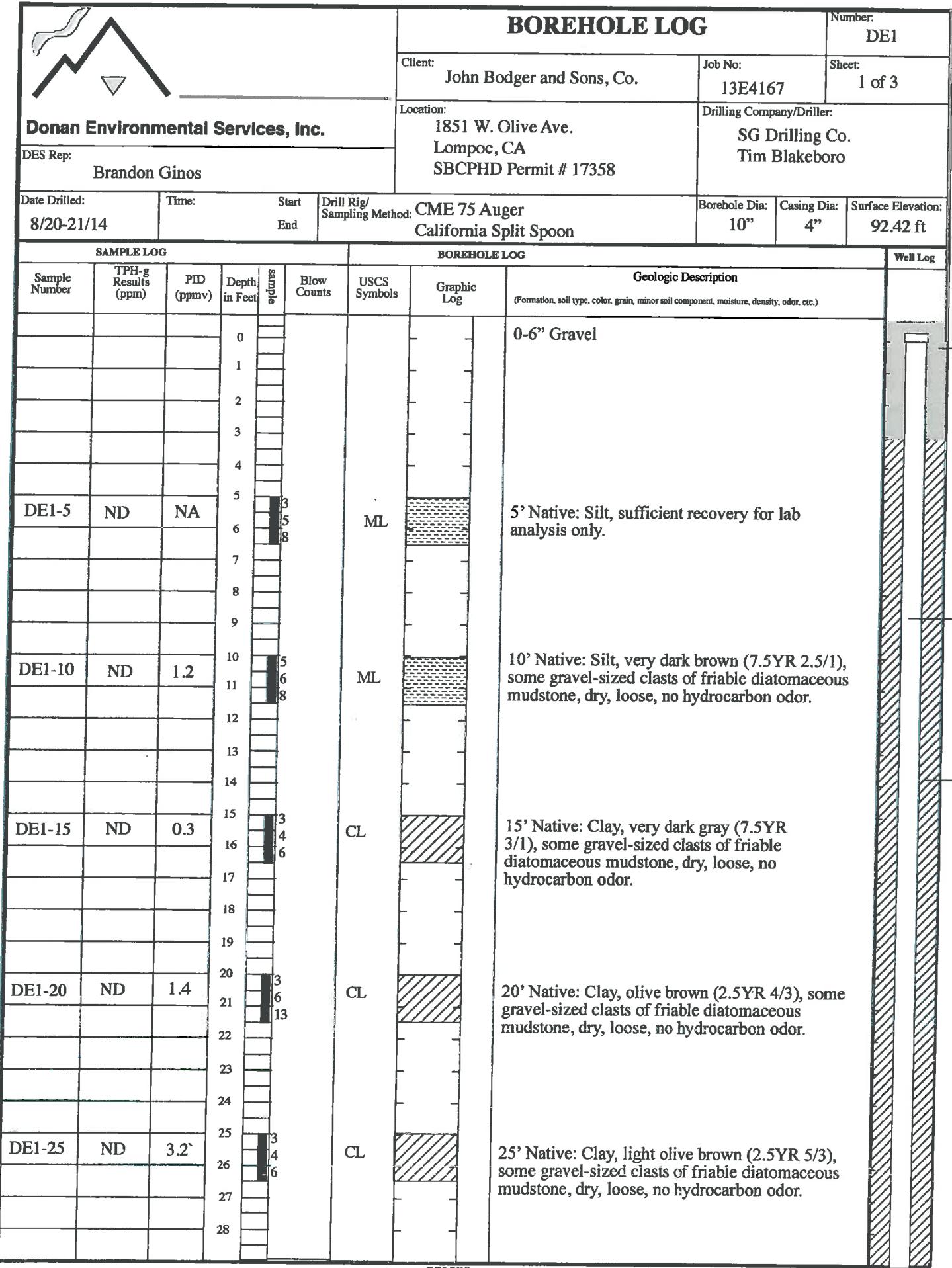
SAMPLE LOG

BOREHOLE LOG

Well Log



BOREHOLE LOG								Number: DW12	
Client: John Bodger and Sons, Co.				Job No: 13E4167		Sheet: 3 of 3			
Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358				Drilling Company/Driller: SG Drilling Co. Tim Blakeboro					
Date Drilled: 8/19/14	Time: Start End	Drill Rig/ Sampling Method: CME 75 Auger California Split Spoon			Borehole Dia: 8"	Casing Dia: 2"	Surface Elevation: 93.24 ft		
SAMPLE LOG				BOREHOLE LOG					Well Log
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	sample	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
DW12-60	ND	5.0		2 2 5 7		CL		60' Native: Clay, olive gray (SYR 5/2), some gravel-sized clasts of friable diatomaceous mudstone, moist, loose, no hydrocarbon odor.	
DW12-65	ND	8.8		5 2 2		CL		65' Native: Clay, very dark gray (SYR 3/1), some gravel-sized clasts of friable diatomaceous mudstone, moist, loose, no hydrocarbon odor.	
<p>Groundwater at about 60' bgs Termination Depth =66.5' bgs</p> <p>Well Construction: 2-inch diameter PVC 20 feet Screen 0.02" slot - 45 ft to 65 ft below grade 45 feet Blank - grade to 45 ft bg 2-inch diameter PVC Bottom Cap #3 Sand - 43 ft to 66.5 ft bg (7.68 cu. ft.) Bentonite Chips - 43ft - 40ft bg (1.63cu. ft.) Bentonite Grout - 40 ft to 3ft bg (12.1 cu. ft.) Traffic box with concrete pad - grade to 3 ft bg (4.92 cu.ft.) </p>									





Donan Environmental Services, Inc.

DES Rep:

Brandon Ginos

BOREHOLE LOG

Number:
DE1

Client:
John Bodger and Sons, Co.

Job No:
13E4167

Sheet:
2 of 3

Location:
1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

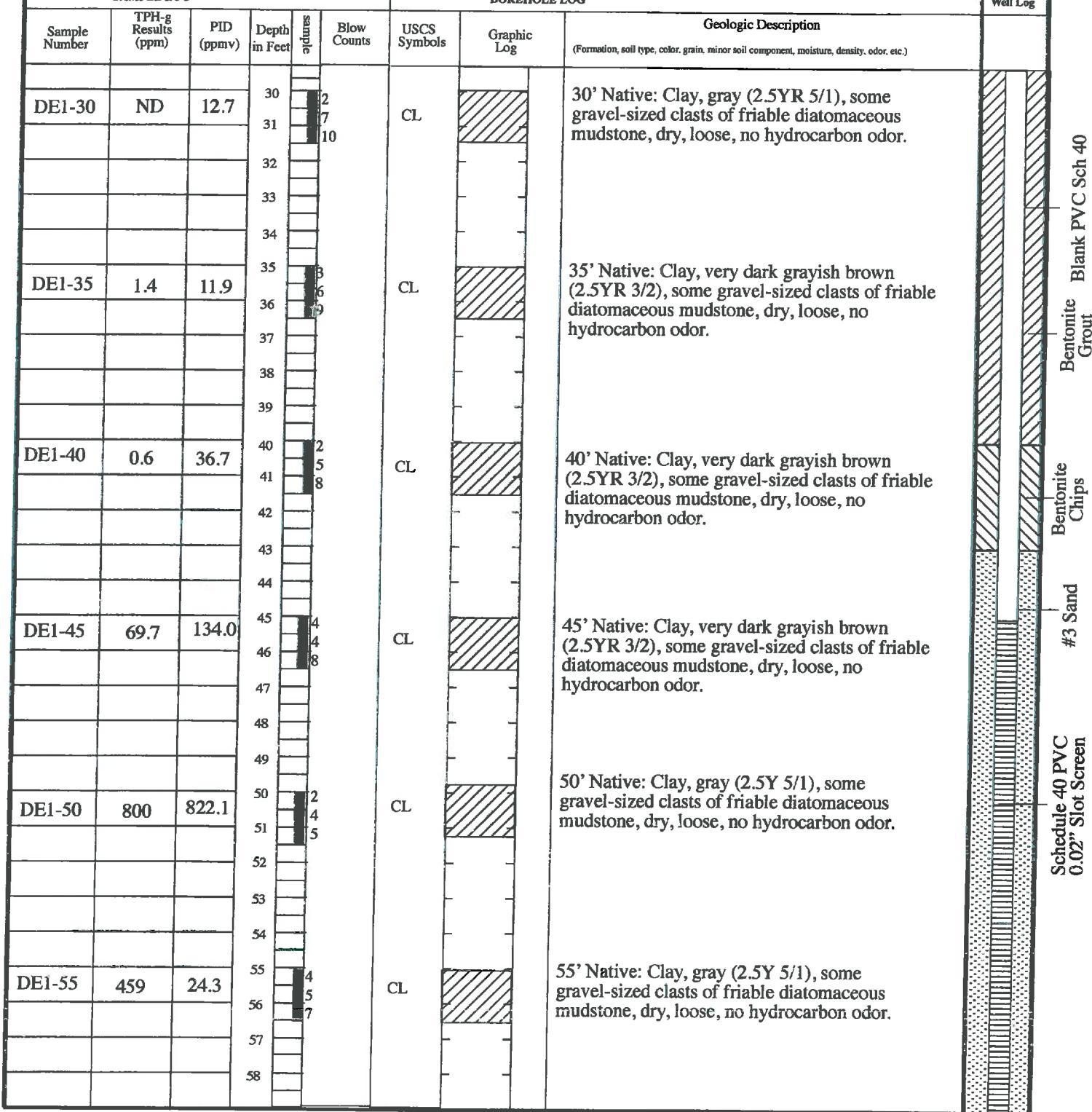
Drilling Company/Driller:
SG Drilling Co.
Tim Blakeboro

Date Drilled:	8/20-21/14	Time:	Start End	Drill Rig/ Sampling Method:	CME 75 Auger California Split Spoon	Borehole Dia:	10"	Casing Dia:	4"	Surface Elevation:	92.42 ft
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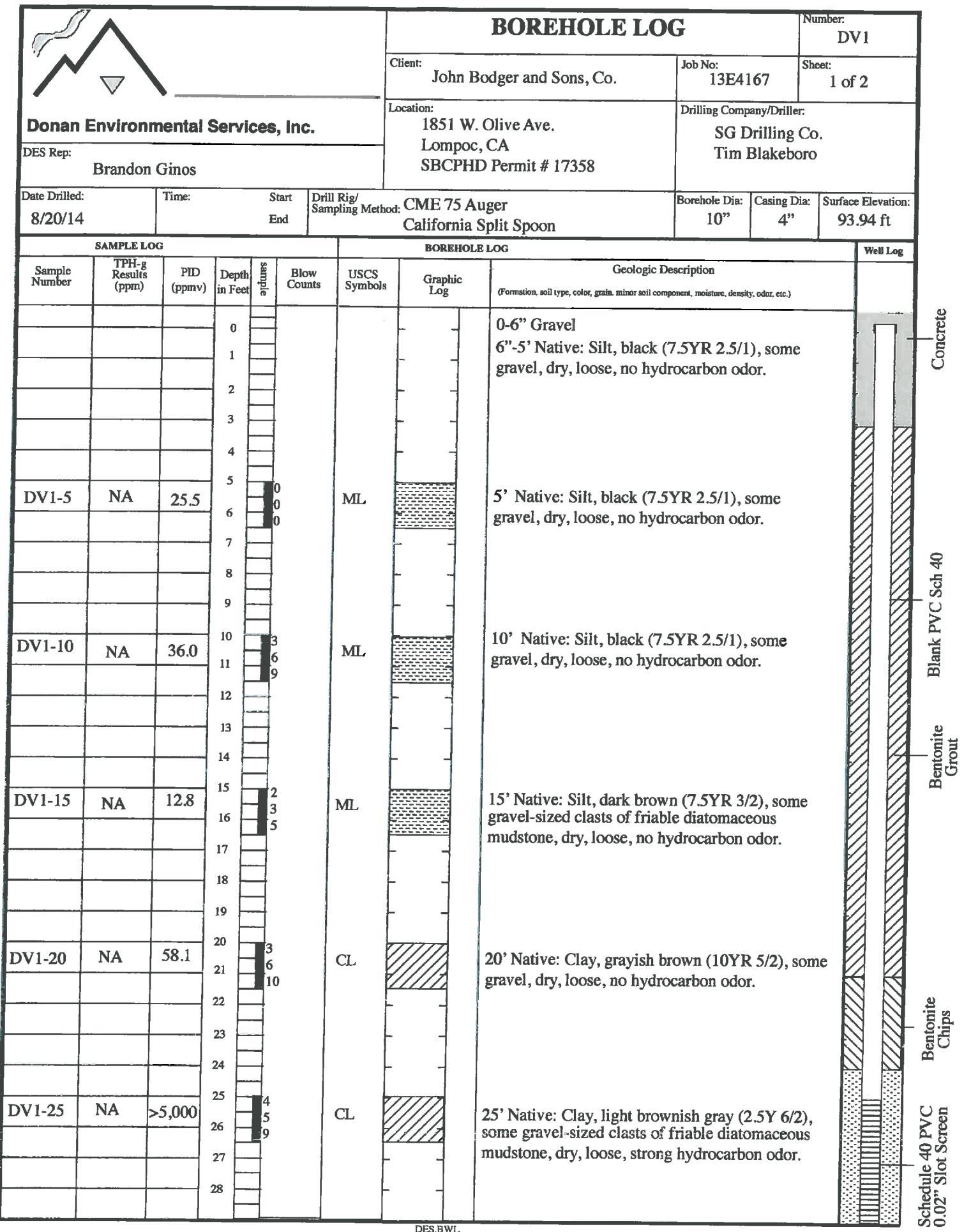
SAMPLE LOG

BOREHOLE LOG

Well Log



BOREHOLE LOG							Number: DE1		
Client: John Bodger and Sons, Co.				Job No: 13E4167			Sheet: 3 of 3		
Location: 1851 W. Olive Ave. Lompoc, CA SBCPHD Permit # 17358				Drilling Company/Driller: SG Drilling Co. Tim Blakeboro					
Date Drilled: 8/20-21/14	Time:	Start End	Drill Rig/ Sampling Method:	CME 75 Auger California Split Spoon			Borehole Dia: 10"	Casing Dia: 4"	Surface Elevation: 92.42 ft
SAMPLE LOG				BOREHOLE LOG				Well Log	
Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	sample	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
DE1-60	3.56	96.5		3 4 6		CL		60' Native: Clay, dark gray (5Y 4/1), some gravel-sized clasts of friable diatomaceous mudstone, trace sand, moist, loose, strong hydrocarbon odor.	
DE1-65	22.1	62.7		2 2 3		CL		65' Native: Clay, dark gray (5Y 4/1), some gravel-sized clasts of friable diatomaceous mudstone, moist, loose, strong hydrocarbon odor.	
<p>Groundwater at about 60' bgs Termination Depth =66.5' bgs</p> <p>Well Construction: 4-inch diameter PVC 20 feet Screen 0.02" slot - 45 ft to 65 ft below grade 45 feet Blank - grade to 45 ft bg 4-inch diameter PVC Bottom Cap #3 Sand - 43 ft to 66.5 ft bg (10.75 cu. ft.) Bentonite Chips - 43ft - 40ft bg (2.28 cu. ft.) Bentonite Grout - 40 ft to 3ft bg (16.94 cu. ft.) Traffic box with concrete pad - grade to 3 ft bg (5.57 cu.ft.) </p>									





Donan Environmental Services, Inc.

DES Rep:

Brandon Ginos

BOREHOLE LOG

Number:
DV1

Client:
John Bodger and Sons, Co.

Job No:
13E4167

Sheet:
2 of 2

Location:
1851 W. Olive Ave.
Lompoc, CA
SBCPHD Permit # 17358

Drilling Company/Driller:
SG Drilling Co.
Tim Blakeboro

Date Drilled: 8/20/14	Time: Start End	Drill Rig/ Sampling Method: CME 75 Auger California Split Spoon	Borehole Dia: 10"	Casing Dia: 4"	Surface Elevation: 93.94 ft
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SAMPLE LOG

BOREHOLE LOG

Well Log

Sample Number	TPH-g Results (ppm)	PID (ppmv)	Depth in Feet	Blow Counts	USCS Symbols	Graphic Log	Geologic Description (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	Well Log	
DV1-30	NA	>5,000	30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	6 11 14	CL			30' Native: Clay, dark brown (7.5Y 3/3), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, strong hydrocarbon odor.	
DV1-35	NA	>5,000		4 7 9	CL		35' Native: Clay, grayish brown (2.5Y 5/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, strong hydrocarbon odor.		
DV1-40	NA	288.1		4 7 8	CL		40' Native: Clay, grayish brown (2.5Y 5/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, strong hydrocarbon odor.		
DV1-45	NA	185.1		3 4 5	CL		45' Native: Clay, dark grayish brown (2.5Y 4/2), some gravel-sized clasts of friable diatomaceous mudstone, dry, loose, strong hydrocarbon odor.	#3 Sand	
							Groundwater Depth NA Termination Depth =46.5' bg	Schedule 40 PVC 0.02" Slot Screen	
							Well Construction: 4-inch diameter PVC 20 feet Screen 0.02" slot - 25 ft to 45 ft below grade 25 feet Blank - grade to 25 ft bg 4-inch diameter PVC Bottom Cap #3 Sand - 24 ft to 46.5 ft bg (10.35 cu. ft.) Bentonite Chips - 21 ft - 24 ft bg (9.2 cu. ft.) Bentonite Grout - 21 ft to 3ft bg (8.28 cu. ft.) Traffic box with concrete pad - grade to 3 ft bg (5.57 cu.ft.)		