

Xtra OIL COMPANY

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ALAMEDA, CA 94501
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August 11, 2016

Ms. Barbara Sieminski
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

SUBJECT: FEASIBILITY STUDY/ CORRECTIVE ACTION PLAN
(AT REDWOOD COURT)
RWQCB Case No. 01-1359
Xtra Oil Company
3495 Castro Valley Blvd.
Castro Valley, California

Dear Ms. Sieminski:

You will find enclosed one copy of the following document prepared by P&D Environmental, Inc. for the subject site

- Feasibility Study/ Corrective Action Plan (At Redwood Court) dated August 11, 2016 (document 0014.W15).

I declare under penalty of perjury that the contents and conclusions in the document are true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to contact me at (510) 865-9506.

Sincerely,

Xtra Oil Company



Keith Simas

Enclosure

0014.L208

P&D ENVIRONMENTAL, INC.

55 Santa Clara Ave, Suite 240
Oakland, CA 94610
(510) 658-6916

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Work Plan 0014.W15

Ms. Barbara Sieminski
San Francisco Bay Regional Water Quality Control Board
1515 Clay St., Suite 1400
Oakland, CA 94612

**SUBJECT: FEASIBILITY STUDY/ CORRECTIVE ACTION PLAN
(AT REDWOOD COURT)
RWQCB File No. 01-1359
Xtra Oil Company
3495 Castro Valley Blvd.
Castro Valley, California**

Dear Ms. Sieminski:

P&D Environmental, Inc. (P&D) has prepared this Feasibility Study/ Corrective Action Plan (SF/CAP) for remediation of floating petroleum and dissolved petroleum in groundwater at Redwood Court in Castro Valley, California. The objective of the FS/CAP is to verify the feasibility of a remedial solution to reduce subsurface petroleum concentrations in the vicinity of Redwood Court so that current vapor intrusion mitigation measures can be discontinued. This FS/CAP is prepared in response to a letter dated March 23, 2016 from the San Francisco Bay Regional Water Quality Control Board (RWQCB). The submittal date of the FS/CAP was extended in response to a request for resolution of authorization for site access prior to submittal of the FS/CAP.

The scope of the FS/CAP includes the construction of three horizontal wells for extraction of groundwater and floating petroleum (free product). The wells will be sloped and will drain to a downgradient liquid collection sump. Fluids removed from the liquid collection sump will be gravity separated for removal of free product, with groundwater filtered using granular activated carbon (GAC) and discharged to the sanitary sewer. Free product will be collected in a holding tank located upstream of the GAC and periodically removed for offsite disposal. Additionally, once the horizontal wells have been effectively demonstrated to drain liquids to the downslope liquid collection sump, soil vapor extraction (SVE) feasibility testing will be performed using the unsaturated portion of the horizontal wells for removal of petroleum vapors in the vicinity of the horizontal wells. Monitoring of liquid extraction and SVE feasibility will be performed using existing remediation wells IW1 and IOW1 through IOW5, and existing observation wells OW5 through OW7. Following verification of remedial feasibility, the remedial solution will be expanded to additional areas of Redwood Court to remediate areas of potential vapor intrusion concern.

A Site Location Map is attached with this work plan as Figure 1, a Site Vicinity Aerial Photograph showing the subject site and offsite property locations is attached as Figures 2, and a Site Vicinity Aerial Photograph Detail showing the locations of remediation wells IW1 and

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IOW1 through IOW5 and proposed horizontal extraction wells is attached as Figure 6. All work will be performed under the direct supervision of a professional geologist.

BACKGROUND

The subject site is an active gasoline station located at the southwest corner of the intersection of Castro Valley Boulevard and Redwood Road. A shopping center is located to the southwest of the gasoline station, and residential multifamily housing is located to the south of the shopping center at Redwood Court.

Following the installation of ozone injection wells in 2015 for remediation of petroleum-impacted groundwater at properties located adjacent to Redwood Court, free product was encountered in the wells. Free product removal was performed using sorbent socks until free product stopped entering the wells in October 2015. Routine monitoring of the wells was performed for the presence of free product until free product was observed in the wells again in May 2016, at which time routine removal of free product from the wells was resumed in conjunction with the routine monitoring of the wells.

In a letter dated March 23, 2016 the RWQCB requested that a FS/CAP be provided for petroleum remediation because the previously proposed remedial solution of ozone injection is not feasible due to the presence of free product. The submittal date of the FS/CAP was extended in response to a request for resolution of authorization for site access prior to submittal of the FS/CAP.

The site history has been discussed in P&D's January 31, 2014 Conceptual Site Model Report (document 0014.R73). The results of the most recent subsurface investigation activities which augment the Conceptual Site Model are provided in the following documents prepared by P&D:

- June 12, 2014 Subsurface Investigation Report (document 0014.R86) documenting investigation of soil gas and the vertical extent of impacted groundwater,
- September 17, 2014 Preferential Pathway Utility Conduit Study Report (document 0014.R56),
- September 22, 2014 Soil Gas Investigation Report (document 0014.R87),
- December 2, 2014 Soil Gas, Crawlspace, and Ambient Air Investigation Report (document 0014.R89),
- May 7, 2015 Groundwater Remediation Feasibility Test Work Plan (document 0014.W13) proposing the installation of one ozone injection well (IW1) and five observation wells (IOW1 through IOW5) at the offsite property located at 3436 Redwood Court, and a ozone injection remediation feasibility test
- June 24, 2015 Subsurface Investigation Report (document 0014.R91) documenting investigation of groundwater quality in the vicinity of Redwood Court at locations P57 through P80,

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- July 13, 2015 Quarterly Groundwater Treatment System and Free Product Monitoring Report (document 0014.R92) documenting groundwater monitoring and sampling and groundwater remediation efforts at the subject site gasoline station for the period of May through June 2015,
- October 30, 2015 Quarterly Monitoring and Annual Groundwater Monitoring and Sampling Report (document 0014.R95) documenting groundwater monitoring and sampling and groundwater remediation efforts at the subject site gasoline station for the period of July through September 2015,
- November 20, 2015 Free Product Observation Well Installation Report (document 0014.R94) documenting the installation of onsite wells OW3 and OW4 in an effort to define the extent of free product historically encountered in well MW4 at the subject site gasoline station,
- December 23, 2015 Ozone Well Installation, Free Product Removal, Vapor Barrier Installation, and Air Sampling Report (document 0014.R93) documenting drilling and installation of well IW1 and IOW1 through IOW5 at offsite properties located at 3436 Redwood Court; monitoring and sampling groundwater quality for the ozone injection well IW1 and observation wells IOW1 through IOW5; removal of free product encountered in ozone injection well IW1 and observation wells IOW1 through IOW5; installation of vapor barrier crawl space air mitigation systems at 3436, 3440, 3444, and 3448 Redwood Court; and collection of crawl space and ambient air samples at 3436, 3440, 3444, 3448, and 3452 Redwood Court and collection of indoor and ambient air samples at 3439 Redwood Court,
- January 11, 2016 Quarterly Monitoring Report (document 0014.R96) documenting groundwater monitoring and remediation activities at the subject site gasoline station during October through December 2015,
- January 11, 2016 Waste Oil UST Removal Documentation Report (document 0014.R97) provided available documentation related to removal of the waste oil UST from the subject site in 1988.
- March 7, 2016 Air Sampling Report (document 0014.R98) documenting collection of indoor and ambient air samples at 3435(Unit A) and 3439 (Units A and B) Redwood Court,
- April 30, 2016 Quarterly Monitoring Report (document 0014.R99) documenting groundwater monitoring and remediation activities at the subject site gasoline station and at the residential properties located on Redwood Court during January through March, 2016,
- June 17, 2016 Free Product Observation Well Installation and Air Sampling Report (document 0014.R100) documenting the installation of offsite wells OW5 through OW7 in an effort to define the extent of free product encountered in wells IW1 and IOW1 through IOW5 located at 3436 and 3440 Redwood Court, and also documenting indoor air quality following the installation of air filtration units in the ground floor apartments at 3435 and 3439 Redwood Court,

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- August 1, 2016 Quarterly Monitoring Report (document 0014.R101) documenting groundwater monitoring and remediation activities at the subject site gasoline station and at the residential properties located on Redwood Court during April through June, 2016.

EXTENT OF PETROLEUM IN GROUNDWATER

The subject site gasoline station, and sanitary sewer and storm drain pipes located in the vicinity of Redwood Court are shown in Figure 2. Petroleum in groundwater associated with the subject site includes both gasoline (TPH-G) and diesel (TPH-D). Petroleum in the vicinity of Redwood Court is predominantly TPH-G, and the extent of TPH-D coincides with the extent of TPH-G. For discussion of the extent of petroleum in the vicinity of the subject site, the extent of TPH-G is shown in figures in this FS/CAP.

The approximate extent of petroleum in groundwater (including free product) in the vicinity of the subject site is shown in Figure 3. A Site Vicinity Aerial Photograph Detail showing the extent of petroleum in groundwater in the vicinity of Redwood Court and associated historical groundwater concentrations is shown in Figures 4 and 5.

GEOLOGY AND HYDROGEOLOGY

Subsurface materials encountered in the vicinity of Redwood Court consist of clay and silty clay. The location of geologic cross section G-G' at Redwood Court is shown in Figure 6, and geologic cross section G-G' is shown in Figure 7. Review of Figure 7 shows the following:

- Hard clay is encountered at a depth of approximately 8 to 9 feet below the ground surface (bgs). The depth at which hard clay is encountered is consistent with the depth at which hard clay was also encountered in boreholes OW5, OW6 and OW7 (see Figure 6).
- The extent of odor and elevated photoionization (PID) values appears to be limited in depth by the hard clay.
- Measured water levels in the boreholes for the wells or in the wells shown on the cross section range from approximately 3 to 8 feet bgs.

The location of geophysical resistivity profile 3 is shown in Figure 2, and resistivity profile is shown in Figure 8 with a vertical scale of 0 to 80 feet and in Figure 9 with a vertical scale of 0 to 20 feet. Review of Figures 8 and 9 shows that the western extent of petroleum in groundwater is consistent with the finer grained soils identified in Figures 8 and 9 at the west side of 3436 Redwood Court (see also Figure 4).

The extent of petroleum in the vicinity of Redwood Court is interpreted to be confined to a segment of a buried stream channel and limited to depths of approximately 10 feet bgs or less, with the

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highest petroleum concentrations encountered between the depths of approximately 3 and 7 feet bgs. The higher resistivity values observed on Profile 3 in Figures 8 and 9 at 3436 Redwood Court are interpreted to identify the presence of free product based on the absence of coarse-grained materials in the boreholes IW1 and IOW1 through IOW5, and the presence of free product (as much as approximately one foot in thickness) in these wells.

The depths of sanitary sewer manhole inverts in the vicinity of Redwood Court are shown in Figure 10. Review of Figure 10 shows that the maximum sanitary sewer manhole invert depth is approximately 5.1 feet bgs. The location of the storm drain that is located at the west end of Redwood Court is shown in Figure 11 (see Line A), and a cross section of the storm drain is shown in Figure 12. Review of Figure 12 shows that the existing ground surface change in elevation is approximately 2 feet from the northern property boundary of 3436 Redwood Court to the sanitary sewer pipe shown on Figure 12, which is the southern boundary of 3436 Redwood Court (a horizontal distance of approximately 140 feet). Additionally, the maximum depth of burial of the storm drain pipe is shown to be approximately 4 feet bgs. A discussion of preferential movement of petroleum in utility trenches is provided in P&D's September 17, 2014 Preferential Pathway Utility Conduit Study Report (document 0014.R56), and also in P&D's June 24, 2015 Subsurface Investigation Report (document 0014.R91) documenting investigation of groundwater quality in the vicinity of Redwood Court at locations P57 through P80.

SCOPE OF WORK

P&D will perform the following tasks for groundwater extraction and remediation feasibility evaluation at the offsite residential properties located at 3436 and 3440 Redwood Court.

- Permitting and regulatory agency coordination.
- Health and safety plan preparation.
- Horizontal borehole drilling, well construction, and well development.
- Fluid collection sump and groundwater treatment system construction.
- Groundwater extraction feasibility testing.
- SVE feasibility testing.
- Arrange for analysis of groundwater samples.
- Report preparation.

Each of these is discussed below in detail.

Permitting and Regulatory Agency Coordination

Permits will be obtained from the Alameda County Public Works Agency (ACPWA) for construction of the three proposed horizontal wells. A permit will be obtained from the Castro Valley Sanitation District (CVSAN) for the discharge of extracted groundwater to the sanitary sewer. Notification will be provided to the RWQCB prior to the beginning of field activities,

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notification will be provided to the ACPWA prior to the beginning of drilling, and notification will be provided to CVSAN prior to discharge to the sanitary sewer.

Health and Safety Plan Preparation

A health and safety plan will be prepared for the scope of work identified in this work plan.

Horizontal Borehole Drilling, Well Construction, and Well Development

Horizontal directional drilling will be used to drill horizontal boreholes E1 through E3 at locations shown on Figure 5. The boreholes will be drilled from the downslope end of the boreholes to the upslope end of the boreholes, will be a nominal 8-inches in diameter, and will have a maximum horizontal depth of approximately 8 feet bgs (directly above the hard clay layer that is encountered at a depth of approximately 8 to 9 feet bgs). The approximate depths of E1 and E2 are shown on cross section G-G' (see Figure 7). Each borehole will be sloped to the south (consistent with surface topography) with a slope of approximately 1/8 inch per foot. A perforated 4-inch diameter HDPE EnviroFlex well screen will be pulled into the borehole from the upslope end to the downslope end of the borehole. The perforated HDPE pipe contains a 2.5-inch diameter slotted Schedule 40 PVC pipe with a non-woven polypropylene geofabric separating the HDPE pipe from the interior slotted PVC pipe.

At the upslope end of the well pipe, the HDPE well pipe will not be perforated from a depth of approximately 7 feet bgs to the ground surface, and a shale trap packer will be secured to the HDPE pipe exterior so that the shale trap packer is located at a depth of approximately 6 feet bgs in the annular space between the HDPE pipe and the borehole wall. The annular space surrounding the non-perforated HDPE pipe will be filled with neat cement grout from the shale trap packer to approximately one foot below the ground surface. The upslope ends of the pipes will be capped and covered with traffic-rated vaults. The downslope end of the pipes will terminate at a depth of approximately 8 feet bgs in a fluid collection sump so that liquids in the pipes can drain into the fluid collection sump.

At the time of well screen placement, municipal water will be introduced into the upslope portion of the borehole for well development to facilitate the flow of muddy drilling fluids in the borehole to the downslope end of the borehole and to minimize contact of muddy drilling fluids with the well screen geofabric. Following connection of the downslope end of the well pipe to the fluid collection sump, water drained from the horizontal extraction wells will be evaluated for turbidity. In the event that substantial suspended sediments are still present, additional municipal water will be added to the upslope end of the pipe to reduce turbidity.

Soil and water generated during well construction will be stored in drums or tanks in a secured area at 3436 Redwood Court pending characterization and appropriate disposal.

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Fluid Collection Sump and Groundwater Treatment System Construction

The downslope end of each horizontal pipe will terminate in a fluid collection sump. The bottom of the sump will be at an elevation that is approximately two feet below the bottom of the well pipe. Fluids that accumulate in the sump will be pumped with an explosion-proof pump to a gravity separation tank for the separation and removal of floating free product. Groundwater will be filtered using GAC and discharged to the sanitary sewer. The sanitary sewer lateral for the 3436 Redwood Court property is located in the southwest corner of the property adjacent to the proposed groundwater treatment system enclosure shown in Figure 6. Floating free product will be collected in a holding tank located upstream of the GAC that will be monitored on a weekly basis with periodic removal of free product from the holding tank for offsite disposal. The groundwater treatment system will be surrounded with a locking chain link fence or secured enclosure.

Groundwater Extraction Feasibility Testing

Groundwater extraction feasibility will be evaluated by measuring water levels in wells IW1, IOW1 through IOW5, and OW5 through OW7 with an electric water level indicator with an accuracy of 0.01 foot before and after the initiation of groundwater removal from the horizontal extraction wells. In addition, on-going monitoring of water levels in the wells will be performed on a weekly basis until water levels are determined to have stabilized, and the rate and volume of fluid removed from the fluid collection sumps will also be measured and recorded. Free product recovery rates in existing wells IW1, IOW1 through IOW5, and OW5 through OW7 will also be compared before and after the initiation of groundwater removal from the horizontal extraction wells.

Groundwater extraction feasibility will be identified with the following criteria:

- Lowering of water levels in monitored wells.
- Accumulation of free product in the groundwater extraction system free product recovery tank.
- Reductions in free product removal from existing vertical wells.
- SVE feasibility.

SVE Feasibility Testing

Following verification that water levels have been adequately lowered at the horizontal wells to allow SVE, a trailer-mounted liquid ring blower capable of generating 12 inches of Mercury vacuum and a flow rate of 250 cubic feet per minute will be used to evaluate vapor extraction feasibility at locations E1, E2, and E3. Carbon will be used as the air pollution control device.

Monitoring ports with valves will be installed at the top of each of wells IW1, IOW1 through IOW5, and OW5 through OW7, and E1, E2 and E3. Vacuum will be measured and recorded at

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vacuum monitoring locations surrounding each location where vacuum is applied to evaluate the radius of vacuum influence for the location where extraction is being performed.

Prior to the beginning of the application of vacuum at each SVE location for the SVE feasibility test, baseline vacuum conditions will be measured at the observation locations. A step test with two different vacuums will be performed at each extraction location, with the second vacuum applied being greater than the initial vacuum applied. Each SVE vacuum step will be performed for approximately 2 to 4 hours. During each SVE vacuum step, the following information and associated time of measurement will be periodically recorded for the blower.

- Air flow rate. Air flow rates will be measured using a hot wire anemometer.
- Air temperature. Ambient air temperature and air temperature at the blower inlet will be monitored at the beginning and end of each step.
- PID value. A field PID will be used to evaluate organic vapor concentrations at the beginning and end of each step at the blower inlet.
- Vacuum at the blower. The vacuum at the blower will be recorded at the beginning and end of each step using a vacuum gage.

During each SVE vacuum step, the following information and associated time of measurement will be periodically recorded at vacuum monitoring locations in the vicinity of the well or pipe riser where SVE is being performed.

- Vacuum will be measured using digital monometers or Magnehelic gages.

One air sample will be collected from a sampling port located at the inlet to the blower at the end of vapor extraction feasibility testing at each extraction location using a 1-liter Summa canister. The air flow rate during sample collection for each sample will be regulated using a new flow regulator that will result in a nominal air flow of 150 cubic centimeters per minute. Following air sample collection each Summa canister will be stored in a box pending delivery to the laboratory. Chain of custody procedures will be observed for all sample handling.

Once the two vacuum steps are completed at an extraction location, the application of vacuum will be removed from the extraction location and vacuum will be monitored at nearby vacuum monitoring locations in an effort to record the rate of vacuum decay.

Arrange for Sample Analysis

All of the SVE feasibility test air samples will be analyzed at Eurofins Air Toxics, Inc. for VOCs including naphthalene using EPA Method TO-15 and for TPH-G using EPA Method TO-3. The soil gas sample detection limits will be equal to or less than San Francisco Bay Regional Water Quality Control Board (SFRWQCB) February 2016 Revision 3 Table SG-1 Subslab/Soil Gas Vapor Intrusion Human Health Risk Screening Levels.

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Report Preparation

Upon completion of groundwater extraction and SVE feasibility testing, a report will be prepared. The report will document feasibility test procedures, and include copies of field data generated during feasibility testing, copies of the laboratory reports, tables summarizing the sample results, recommendations based on the feasibility test results, and the stamp of a professional geologist.

In the event that horizontal well drilling and or SVE are demonstrated to be feasible and based upon feasibility test results, additional remediation at Redwood Court will be recommended consistent with proposed extraction shown in Figure 13 as follows:

- Additional horizontal extraction wells at the north side of Redwood Court.
- A permeable reactive barrier or groundwater extraction trench immediately to the north of Redwood Court.
- Additional horizontal extraction wells at the south side of Redwood Court.

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Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.



Paul H. King
California Professional Geologist #5901
Expires: 12/31/17



Attachments:

- Figure 1 - Site Location Map
- Figure 2 - Site Vicinity Aerial Photograph Showing Subject Site and Redwood Court Property Locations
- Figure 3 - Site Vicinity Aerial Photograph Detail Showing Free Product on Groundwater Samples and Gasoline Groundwater Contours
- Figure 4 - Site Vicinity Aerial Photograph Detail Showing TPH-G Groundwater Concentrations
- Figure 5 - Site Vicinity Aerial Photograph Detail Showing Proposed Horizontal Wells E1 Through E3
- Figure 6 - Site Vicinity Map Detail Showing Proposed Horizontal Well and Geologic Cross Section G-G' Locations
- Figure 7 - Geologic Cross Section G-G'
- Figure 8 - Geophysical Resistivity Profile 3 With No Vertical Exaggeration
- Figure 9 - Geophysical Resistivity Profile 3 With Vertical Exaggeration
- Figure 10 - Site Vicinity Sanitary Sewer Map
- Figure 11 - Storm Drain Line A Detail
- Figure 12 - Storm Drain Line A Cross Section Detail
- Figure 13 - Site Vicinity Aerial Photograph Detail Showing Proposed Trench, Horizontal Well, and SVE Enclosure Locations

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FIGURES

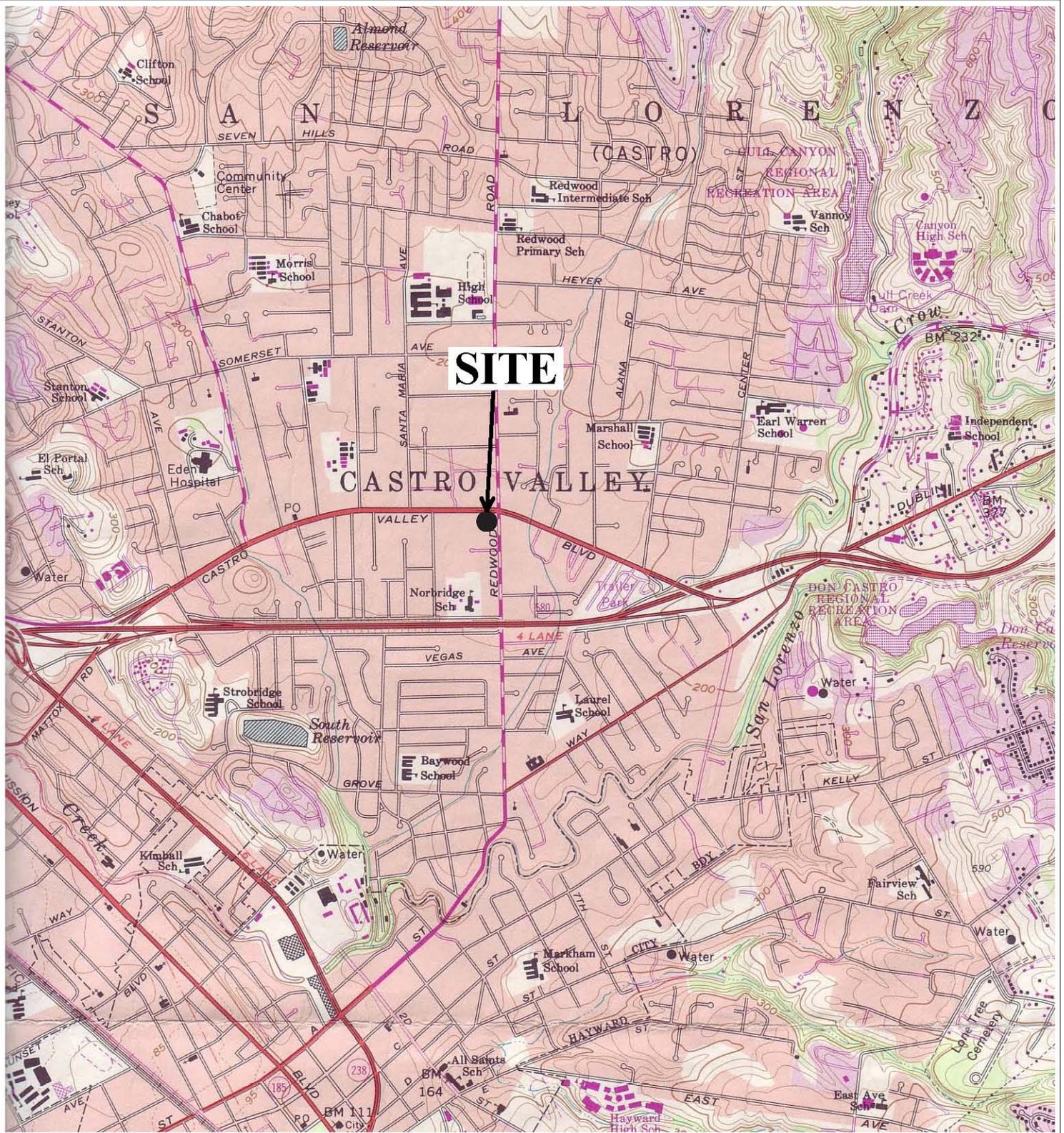
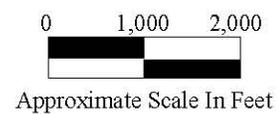


Figure 1
 Site Location Map
 Xtra Oil Company
 3495 Castro Valley Blvd.
 Castro Valley, California

Base Map From:
 U.S. Geological Survey
 Hayward, California
 7.5 Minute Quadrangle
 Photorevised 1980

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610



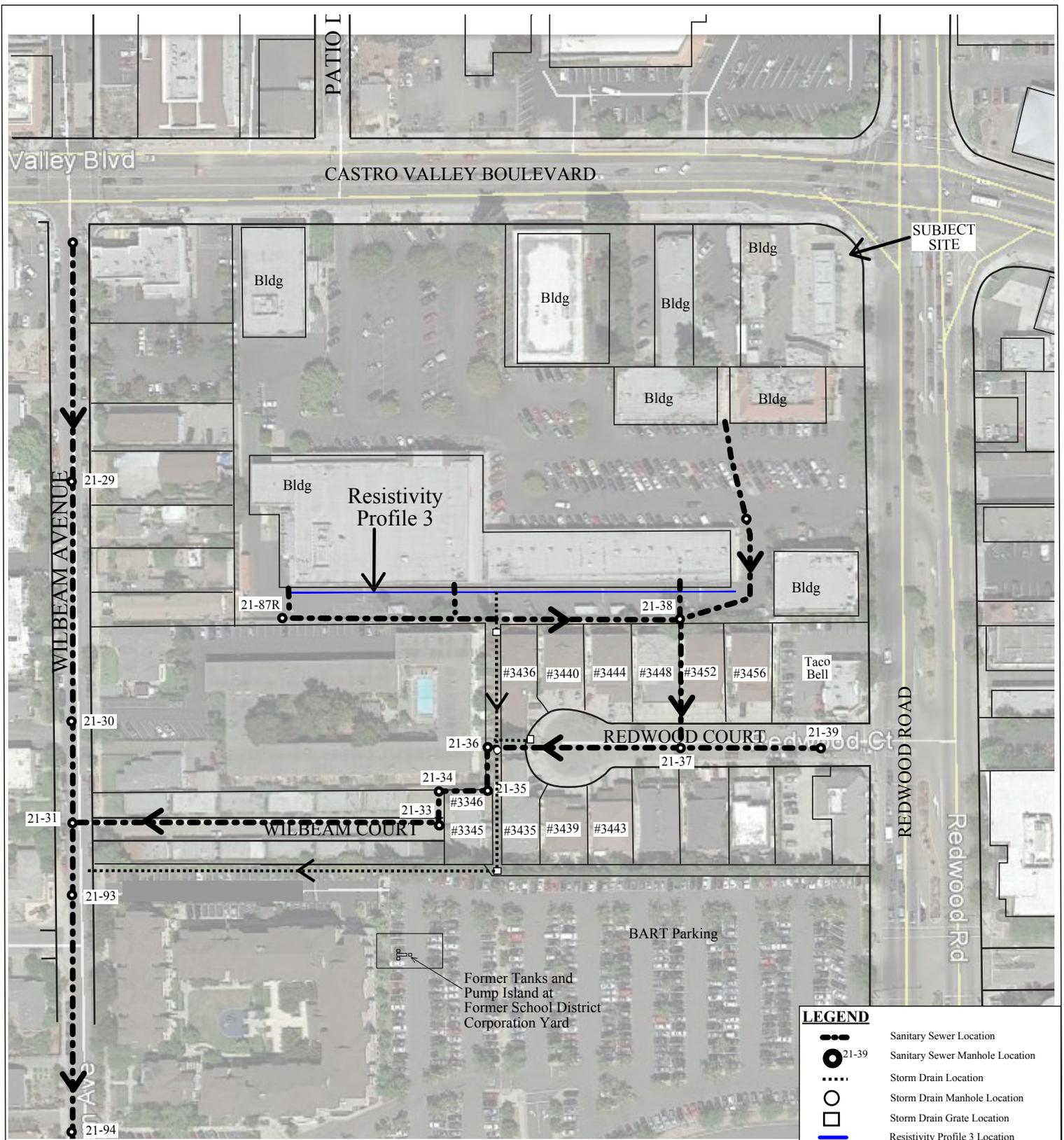


Figure 2
 Site Vicinity Aerial Photograph Showing Subject Site and Redwood Court Property Locations
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map From:
 Castro Valley Sanitation
 District, undated,
 and Google Earth, dated August 2012

P&D Environmental, Inc.
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 Oakland CA 94610

0 75 150
 Approximate Scale in Feet



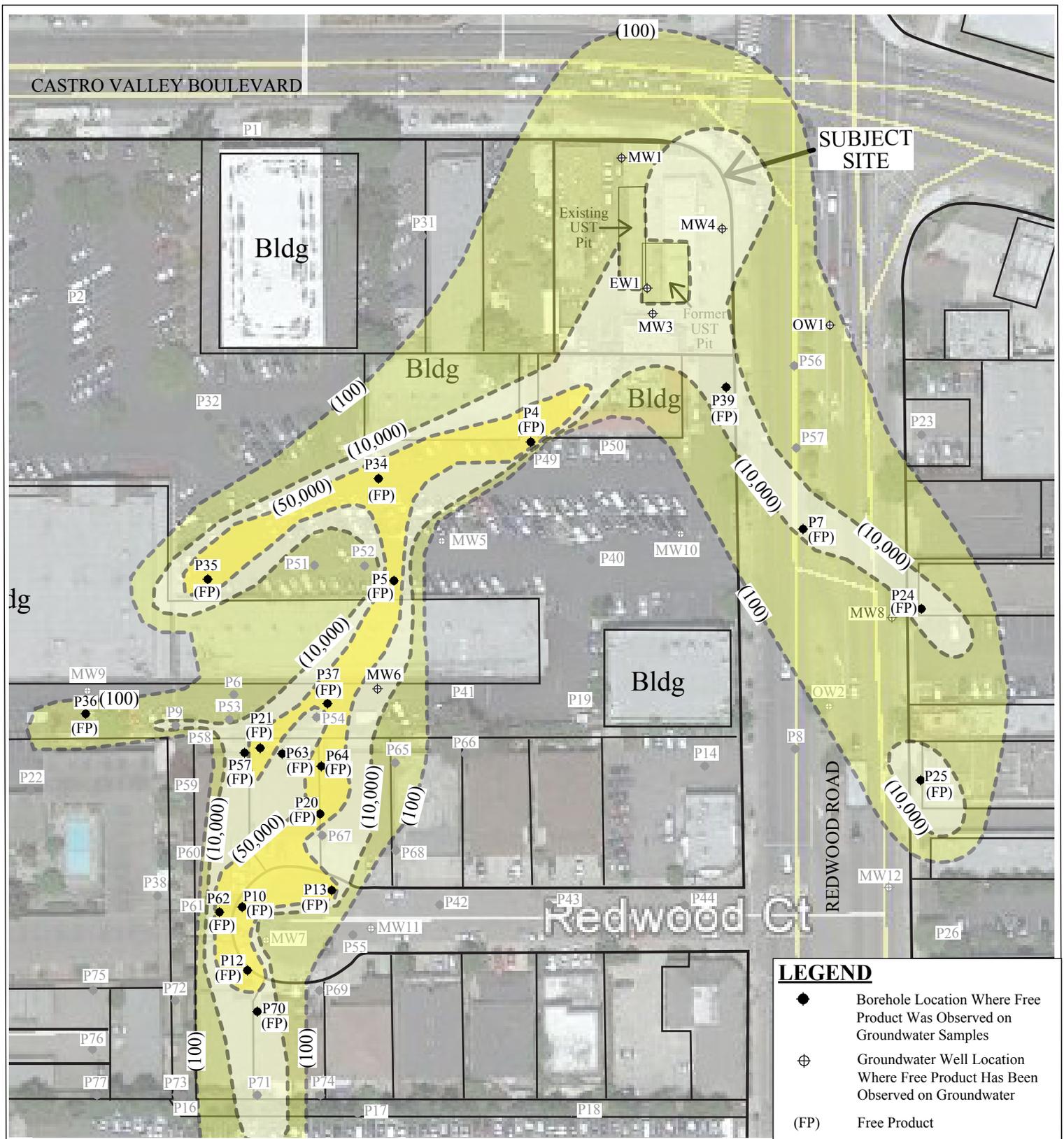


Figure 3
 Site Vicinity Aerial Photograph Detail Showing Free Product on Groundwater Samples and
 Gasoline Groundwater Contours
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map From:
 Castro Valley Sanitation
 District, undated,
 and Google Earth, dated August 2012

P&D Environmental, Inc.
 55 Santa Clara Avenue, Suite 240
 Oakland CA 94610

0 50 100
 Approximate Scale in Feet

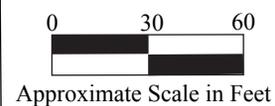




Figure 4
 Site Vicinity Aerial Photograph Detail Showing TPH-G Groundwater Concentrations
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map from:
 Castro Valley Sanitation District,
 and Google Earth, image dated June 2014

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610



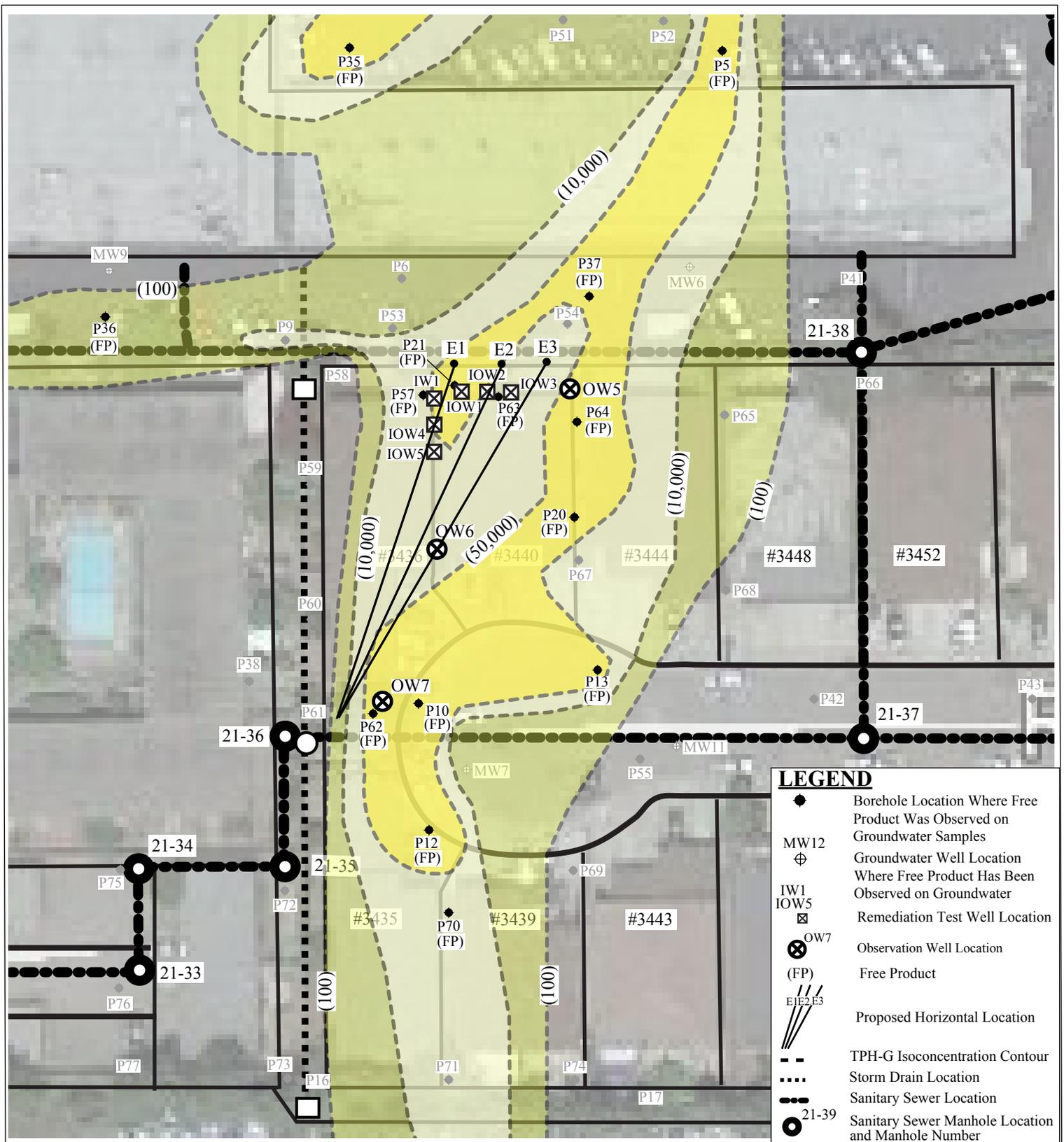


Figure 5
 Site Vicinity Aerial Photograph Detail Showing Proposed Horizontal Wells E1 Through E3
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map From:
 Castro Valley Sanitation
 District, undated,
 and Google Earth, dated August 2012

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 55 Santa Clara Avenue, Suite 240
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 Approximate Scale in Feet



3436 Redwood Ct.

3440 Redwood Ct.

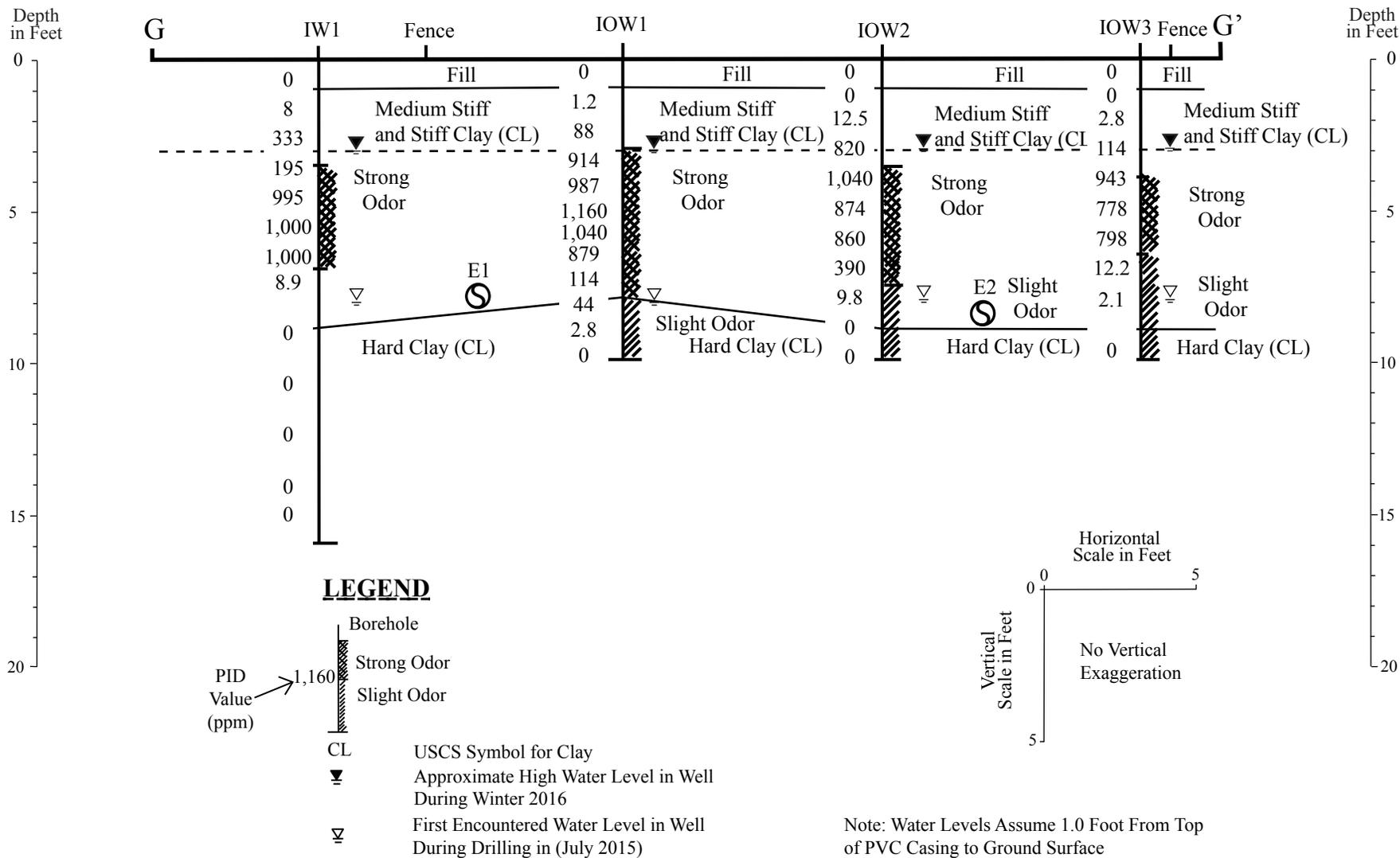


Figure 7
 Geologic Cross Section G-G'
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610

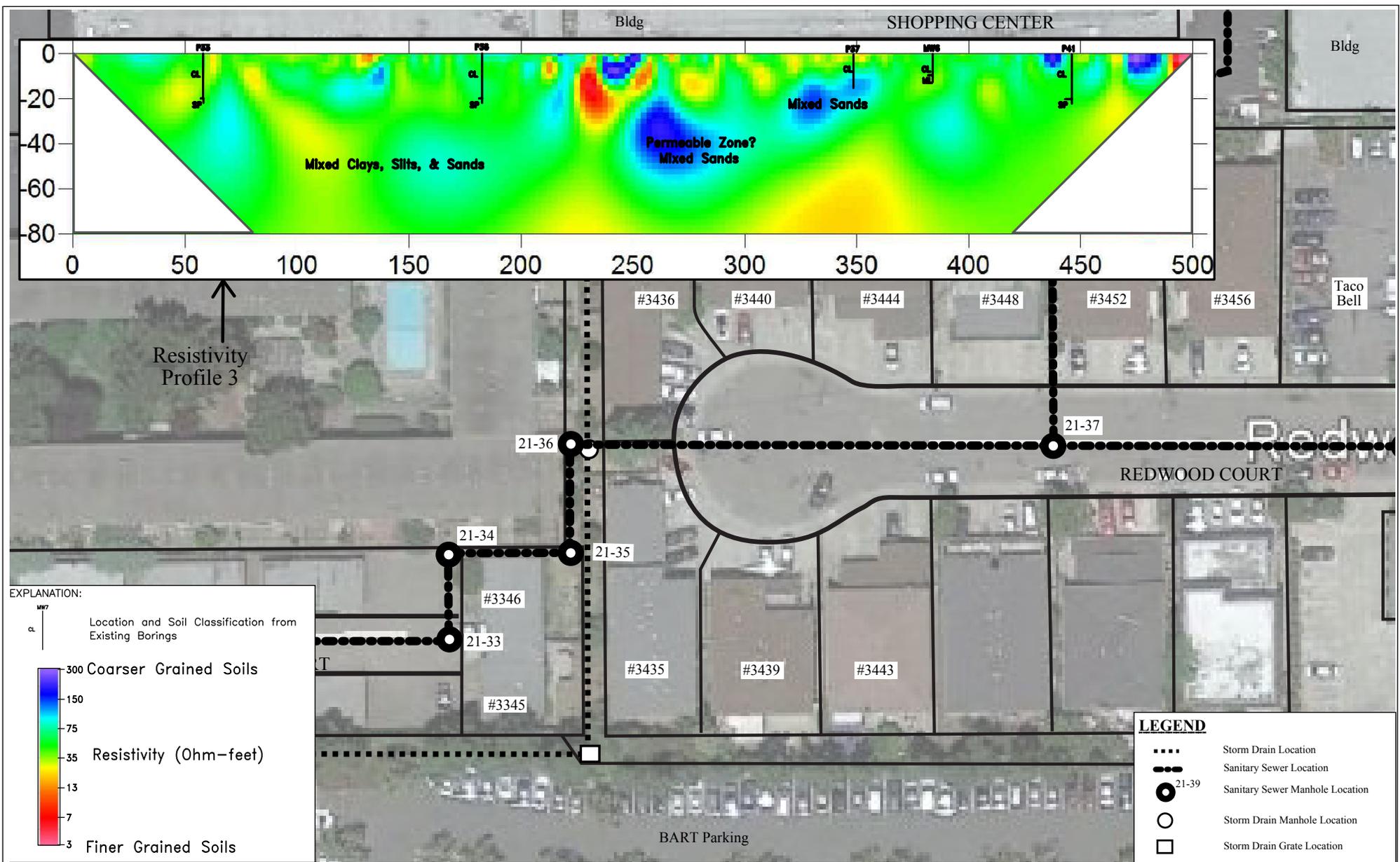


Figure 8
 Geophysical Resistivity Profile 3 With No Vertical Exaggeration
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map from:
 Castro Valley Sanitation District,
 and Google Earth, image dated June 2014

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610

0 30 60
 Approximate Scale in Feet



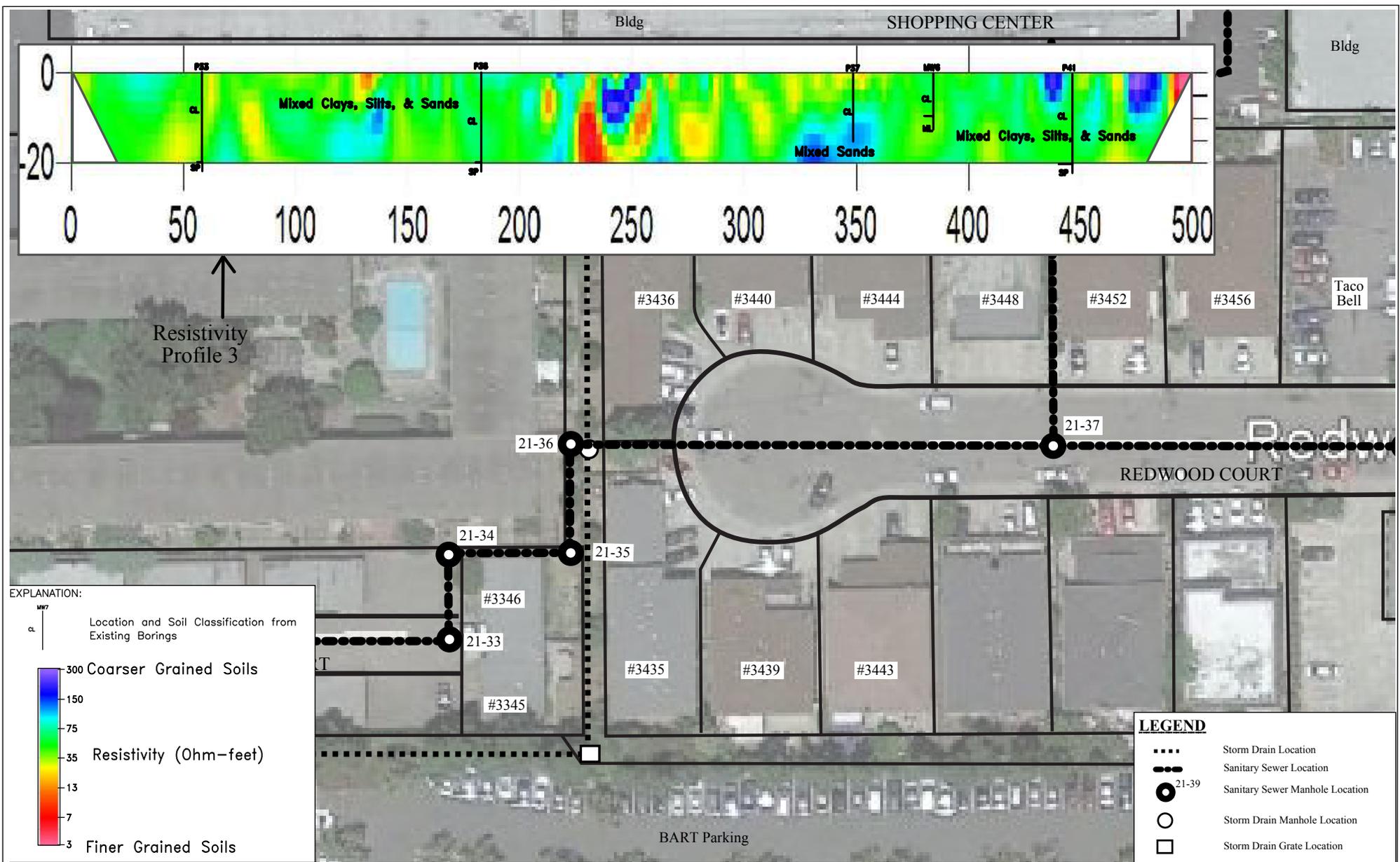
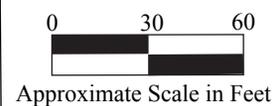


Figure 9
 Geophysical Resistivity Profile 3 With Vertical Exaggeration
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map from:
 Castro Valley Sanitation District,
 and Google Earth, image dated June 2014

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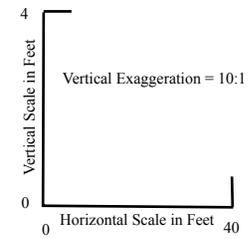
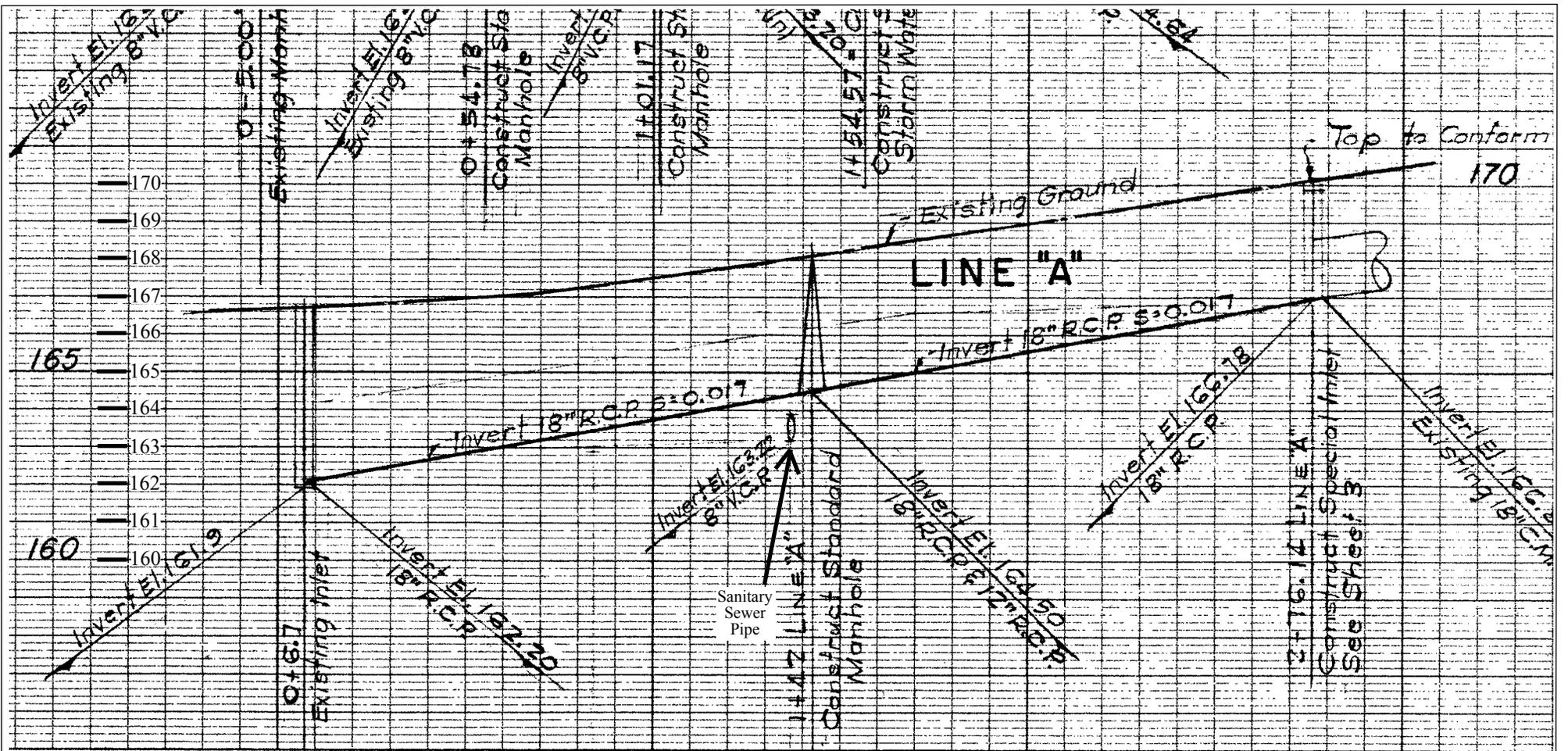


Figure 12
 Storm Drain Line A Cross Section Detail
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map from:
 John A. Mancini, P.E., Construction Plans Sheet 2 of 4,
 Faxon Court Redwood Road, Dated April 1964

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 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610

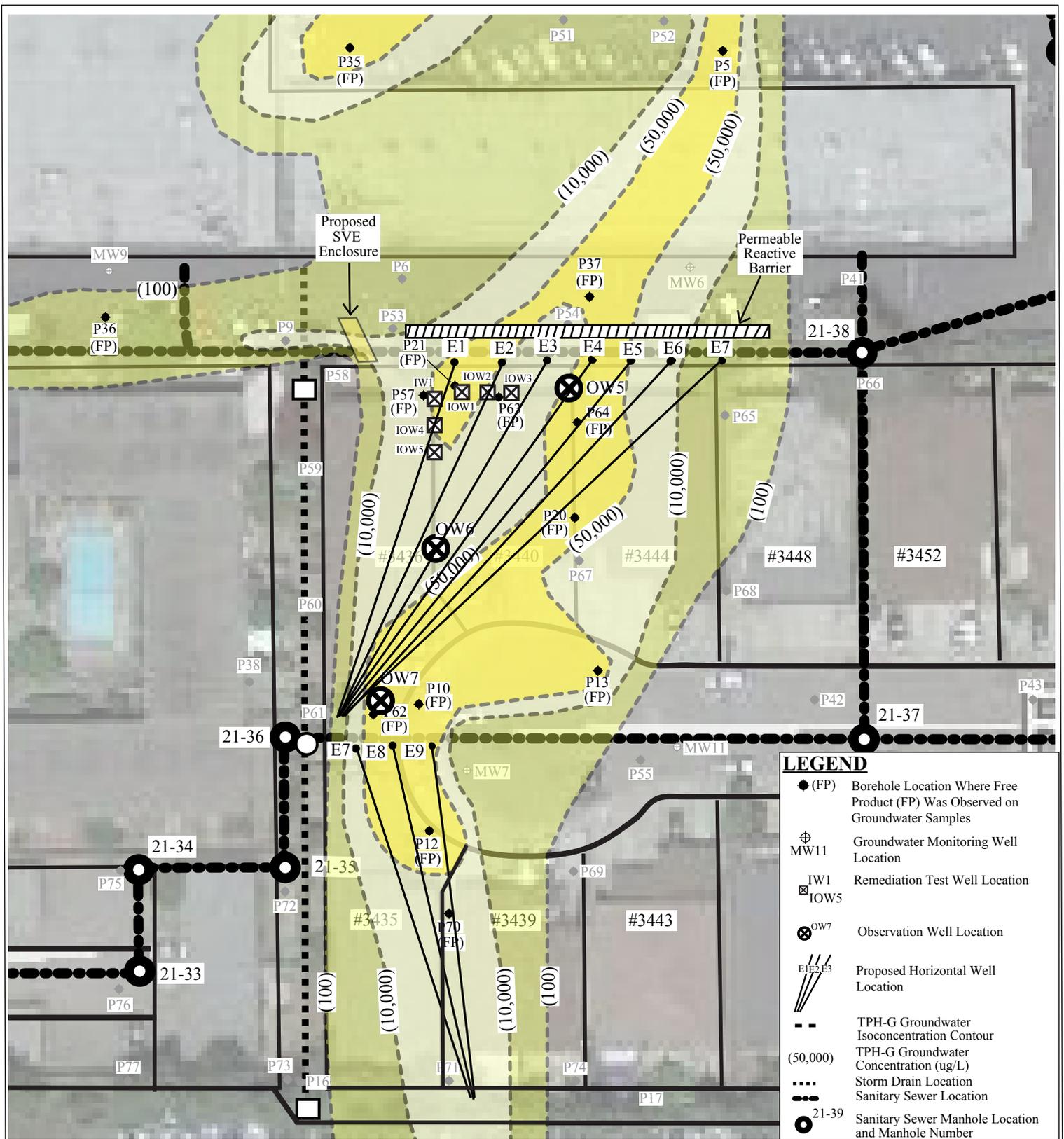


Figure 13
 Site Vicinity Aerial Photograph Detail Showing Proposed Trench, Horizontal Well, and SVE Enclosure Locations
 Xtra Oil Company
 3495 Castro Valley Boulevard
 Castro Valley, California

Base Map From:
 Castro Valley Sanitation
 District, undated,
 and Google Earth, dated August 2012

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