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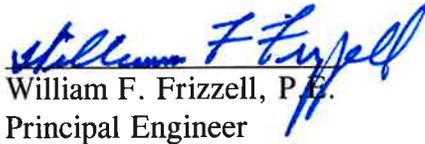
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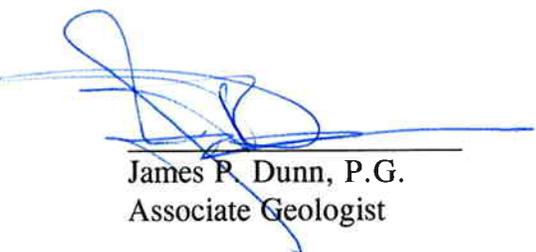
Attention: Mr. Tim Steele

**SUMMARY OF ENVIRONMENTAL CONDITIONS  
10-ACRE PARCEL  
MOWRY AVENUE  
NEWARK, CALIFORNIA**

**NOVEMBER 20, 2006**

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## **1.0 INTRODUCTION**

This report presents the results of PES Environmental Inc.'s (PES) environmental assessment activities that have been performed on behalf of Sobrato Development Companies (Sobrato) at the 10-acre site located at the southwestern terminus of Mowry Avenue in Newark, California. Sobrato is considering purchase of the site from the current owner, Mr. Marlowe Tolbertson.

PES conducted historical research of the subject property and performed site characterization of subsurface conditions including a few phases of soil and groundwater sampling and analysis activities. Previous results of groundwater investigations were transmitted to the Alameda County Water District (ACWD) in accordance with soil boring permit requirements. Upon review of the groundwater data, the ACWD issued a letter dated August 17, 2006 to the property owner informing him that the site has been placed on the Spills, Leaks, Investigation and Cleanup (SLIC) Case list. The ACWD letter also includes directives to the property owner to conduct further investigation to assess the degree and extent of impacts to soil and groundwater and, if warranted by the results of the investigative work, to prepare a Corrective Action Plan.

This report addresses the ACWD's request to the property owner for a quarterly progress report and is being submitted to the ACWD for review and comment. Sobrato's interest in the site at this time is a prospective purchaser to evaluate potential liabilities associated with the site. It is PES' understanding that future plans for the site, should Sobrato decide to purchase the property, include open space or park-related use.

This report presents a summary of PES' historical research of the site and site characterization activities.

## **2.0 SITE DESCRIPTION**

The site is located at the southwestern terminus of Mowry Avenue within the City of Newark. The site location map is presented as Plate 1. The site is bounded on the northeast by an automobile wrecking/salvage yard, on the southeast and southwest by sloughs that are connected to Mowry Slough that drains to San Francisco Bay, and on the northwest by Mowry Avenue. There are extensive salt evaporation ponds located across Mowry Road. The site ranges in elevation from approximately 10 feet above sea level throughout most of the property to 2 feet above sea level along the southern portion of the site. The site is primarily vacant and no permanent structures are present. The upper portion of the site is largely covered with grasses and shrubs with evidence of tires and miscellaneous debris appearing on the surface at many locations.

### 3.0 REGIONAL HYDROGEOLOGY

The Site is in the Niles Cone Groundwater Basin (Niles Cone), which is comprised of Quaternary alluvium consisting of unconsolidated gravels, sands, silts, and clays. These water-bearing materials form a series of groundwater aquifers and aquicludes. The Hayward Fault traverses the Nile Cone alluvial aquifer basin along a northwest-southeast trend, impeding the natural westward flow of groundwater on the eastern side of the fault and separating Niles Cone into two sub-basins: Below Hayward Fault (BHF) and Above Hayward Fault (AHF). The subject site is in the BHF sub-basin. In BHF basin, relatively flat-lying aquifers are separated by extensive clay aquitards, characterized by decreasing grain sizes and aquifer thicknesses as the aquitards thicken to the west. Recharge in the BHF sub-basin is supplied by percolation of rainwater, from applied water at recharge ponds, and percolation of water from Alameda Creek

The uppermost Newark Aquiclude is composed of discontinuous lenses of sands, silts, and clays. The Aquiclude is absent in portions of the forebay area, allowing direct recharge to underlying aquifers. The Newark Aquiclude is underlain by the Newark Aquifer, an extensive permeable layer of sand and gravel ranging from 20 feet thick at the western edge of the basin to 140 feet thick at the Hayward Fault. An extensive, unnamed clay aquitard underlies the Newark Aquifer; underlying this unnamed aquitard is the Centerville Aquifer, with an uppermost portion found 180 to 200 feet below ground surface (bgs). The Centerville Aquifer overlies a thick clay aquitard, which in turn overlies the Fremont Aquifer, found from 300 to 390 feet bgs. The Centerville and Fremont aquifers are known to be in hydrogeologic connection within several portions of the Niles Cone. Underlying the Fremont Aquifer is a clay aquitard, which is itself underlain by two Deep Aquifers from approximately 400 to at least 500 feet bgs.

In general, groundwater quality in the area above the Hayward fault and Forebay area is acceptable for potable use, however groundwater quality in vast areas of aquifers below the Hayward fault have been severely degraded by salt water intrusion. In the greater inland region to the Forebay area, salt water from San Francisco Bay and adjacent salt evaporation ponds has intruded the aquifer system. Salt water intrusion was first identified in the early 1920s when groundwater levels in the Newark aquifer dropped below seal level as groundwater extraction began to exceed recharge (DWR, 1975). This relative elevation difference caused a landward direction of groundwater flow through the Newark aquifer and intrusion of saltwater into the groundwater basin. Several decades of salt water intrusion occurred, and saline groundwater migrated over 7 miles inland from the Bay. Because the potentiometric levels in the deeper aquifers are generally lower than the Newark aquifer and aquitards are thinner or absent in the Forebay area, saline groundwater also migrated downward from the Newark aquifer and into the lower aquifers.

## **4.0 SUMMARY OF HISTORIC RESEARCH**

### **4.1 Historic Photograph Review**

PES reviewed historic aerial photographs from the following years: 1954, 1957, 1959, 1963, 1966, 1969, 1975, 1979, 1983, 1987, 1992, 1999, and 2002. Copies of these photographs are included in Appendix A.

June 1954: The site appears vacant with no evidence of structures or any obvious activities occurring on the property. The properties across Mowry Avenue to the west appear to be in use salt evaporation ponds. Properties to the northeast of the site appear to be in use for dry farming or hay production. Properties to the south of the site appear undeveloped. The sloughs that currently exist along the eastern and southern boundaries of the site did not exist in 1954

May 1957: Approximately 30 to 40 percent of the northeastern portion of the subject property appears to have been graded. The resolution of the 1957 photograph does not allow a definitive description of the grading activity as to whether there is any filling of the site. The surrounding properties appear to be generally the same as the 1954 photograph.

July 1959: The entire subject property surface has been graded and there appears to be evidence of filling activities in the central portion of the site. The sloughs forming the eastern and southern boundaries of the site, which were not present in the 1957 photograph, are present in this photograph. The surrounding properties appear to be generally the same as the 1957 photograph.

July 1963: The filling activities observed in the 1959 photograph are no longer present in 1963. There are no obvious subject property site uses at this time. The property southwest of the site across the slough appears to have been graded and the surrounding properties appear to be still in use as salt evaporation ponds across Mowry Avenue to the west and agricultural use to the northeast, east and southeast.

April 1966: There is evidence of surface disturbance or some form of site grading that has occurred within the northwestern and western portions of the subject property as compared with the 1963 photograph. There do not appear to be any significant changes to the use of the surrounding properties since 1963 with the exception that grading and or filling activities appear to be occurring on the property to the southwest immediately across the slough from the subject property.

This off-site property is the location of the 34-acre site that was operated by Oakland Scavenger Company referred to as the Mowry Road Landfill. The site was reportedly used as a sanitary landfill accepting municipal garbage between 1964 and 1967. It appears that the limits of the refuse fill border the slough that separates the subject property from the Mowry Road landfill.

May 1969: This photograph shows the subject property as being vacant with no obvious site use. The auto dismantling operations are now present on the property to the northeast of the subject property. The entire northeastern property line of the subject site is bordered by rows of automobiles. The auto dismantling operations appear to cover approximately 10 to 12 acres. There are no significant changes to the other surrounding properties.

May 1975: The subject property still appears to be largely vacant with no obvious site use. The auto dismantling activities to the northeast appear to have been expanded to cover approximately 18 to 20 acres. There are no other significant changes to the surrounding properties.

September 1979: There do not appear to be any significant changes to the subject property or the surrounding properties. There is evidence of what was referred to as the Peterbuilt Motors test track on the now closed Mowry Road Landfill property to the southwest. There are no other significant changes to the surrounding properties.

June 1983 and May 1987: The auto dismantling operations are now present across the entire subject property. The site is completely covered with what appears to be unpaved access roads and rows of automobiles. There are no other significant changes to the surrounding properties.

July 1992: The subject property appears to have been cleared of the rows of automobiles and is now mostly vacant with evidence of the previous unpaved access roads still visible. There are no significant changes to the surrounding property use.

October 1996: The northwestern portion of the subject site contains numerous vehicles that appear to be stored by the adjacent auto dismantling business. There are no other significant changes to the subject or surrounding properties from the 1992 photograph.

May 1999: In this photograph, there is a high density of automobiles throughout the central and southeastern portion of the subject property. It appears that about 6 acres of the site are covered with stored vehicles. The former Mowry Road Landfill appears to be used for truck storage with various small sheds or buildings present in the vicinity of the former Peterbuilt Test track.

June 2002: The subject site is now largely cleared of vehicles with only a few vehicles present at the north corner of the site along Mowry Avenue. There are no other significant changes to the surrounding properties from the 1999 photograph.

#### **4.2 Overview of Historic Site Information**

Based on a review of aerial photographs and available historic information, it appears that the 10-acre subject site was used in the late 1950s for debris disposal purposes. The landfilling may have been conducted by a former entity referred to as the East Bay Disposal Company

(EBDC). There is also evidence that vehicle storage/dismantling activities, similar to the existing adjacent site use to the northeast, have occurred on the subject property in the past.

Filling/disposal activities appeared to have occurred only for a few years and were probably completed by the early 1960s. PES requested file information for this site from the ACWD, the California Regional Water Quality Control Board (RWQCB) and the Alameda County Office of Solid and Medical Waste Management. There were no regulatory information or files associated with this site. A review on an October 2005 Environmental Data Resources (EDR) database compilation also revealed no listing for the subject property.

PES found documentation that the adjacent auto dismantling operation has been the subject of soil and groundwater investigations to evaluate the impact to soil and groundwater. Based on PES' review of available regulatory file information, the adjacent property has been found to contain cyanide in groundwater and heavy-fraction petroleum hydrocarbons in soils. Groundwater at that site was reported to flow to the southwest, toward the subject property.

PES reviewed a *Phase II Environmental Assessment, Peterbuilt Motors Company Test Track, 8100 Mowry Road, Newark, California* by Law Environmental dated November 13, 1991 (Law Phase II Report). PES understands that report was submitted to the RWQCB and the ACWD. Additionally, the Alameda County Environmental Health Solid/Medical Waste Department conducts routine inspections of that site (Mowry Road Landfill) as a closed landfill. It appears that the landfill also extends onto property owned by the Alameda County Flood Control District located east of the 34-acre site. PES found no documentation that the portion of the landfill on the County property has been investigated or characterized.

According to the Law Phase II Report, it was concluded that soil and groundwater samples from within the Mowry Road Landfill contain low concentrations of total petroleum hydrocarbons as gasoline, volatile organic compounds, semi-volatile organic compounds and pesticides. Law reported that the groundwater contained high concentrations of chlorides and total dissolved solids. They also stated that the shallow groundwater from the Newark aquifer underlying the bay mud in the vicinity of the site does not qualify as a municipal or domestic water source and that it is unlikely that the groundwater underlying the Mowry Road Landfill will migrate into deeper aquifers because soils underlying the property have very low permeabilities and deeper aquifers are separated from the Newark Aquifer by low permeability layers.

Based on the site use history of the subject 10 acre parcel, potential hazardous materials impacts to the subject site were determined to be from: (1) the on-site historical filling operations in the late 1950s to early 1960s and (2) use of the site and adjacent property to the northeast for auto dismantling and/or storage activities. Nearby use of properties, including the former Mowry Road Landfill and the extensive salt evaporation ponds have likely impacted the shallow groundwater in the surrounding areas.

## **5.0 SOIL AND GROUNDWATER INVESTIGATIONS**

To verify the historic disposal/filling operations and evaluate its significance to the subject site, PES conducted an investigation of the site in March 2006 that included excavating nine test pits with a backhoe to expose and sample subsurface soils, and drilling six borings to obtain groundwater samples across the site. A second phase of investigation was conducted in May 2006 and included drilling an additional eight borings and excavating seven test pits to further characterize subsurface conditions and to assess potential impacts to the site from the adjacent auto dismantling activities. Subsequently, PES installed and sampled six groundwater monitoring wells in October 2006.

All site activities were conducted in accordance with PES' Site Specific Health and Safety Plan and under the direction of a California Registered Engineer and/or Geologist. The groundwater investigation activities were conducted in accordance with approved workplans and under permits issued by the ACWD. Prior to commencement of field activities, a private utility locator service was retained to survey the proposed boring and trenching locations for the presence of underground utilities. Underground Service Alert was contacted a minimum of 48 hours prior to the beginning of work to allow for marking of utilities by public and private utility companies.

The test pit excavations and the groundwater sampling locations are presented on Plate 2. The following describes the methodology for the soil and groundwater sampling

### **5.1 Test Pit Sampling Methodology**

PES retained a subcontractor to excavate test trenches at the locations shown on Plate 2. The trenches were excavated to between 6 to 12 feet below ground surface and were approximately 10 to 12 feet long. After recording soil conditions and collecting soil samples for analysis, the test pits were backfilled to the ground surface. Excavated materials were placed back into the excavation and covered with the original cleaner surface soils

During trenching, PES collected soil samples to conduct chemical analysis for a variety of contaminant indicators. Soil samples were screened for organic vapors using a photoionization detector (PID). Four composite soil samples were collected including one sample representative of the shallow fill material from test pits TP-1 through TP-5, one sample representative of the shallow fill material from test pits TP-6 through TP-9, one sample representative of the deeper fill material from test pits TP-1 through TP-5, and one sample representative of the deeper fill material from test pits TP-6 through TP-9. Additionally, one discrete soil sample (TP-1-4.5) was collected from a layer of white silty soil that appeared at shallow depths at various locations on the site.

Trenches TP-10 through TP-16 were subsequently excavated to better define the extent of the debris within the fill. No samples were collected from these trenches. As discussed below, additional soil samples were collected for chemical analysis at the request of the ACWD during

the monitoring well installation in October 2006. Test pit logs for TP-1 through TP-16 are presented in Appendix B.

Soil samples from the test trenches were submitted to Entech Analytical Laboratory in Santa Clara, California (Entech) for analysis of total extractable petroleum hydrocarbons, volatile organic compounds (VOCs) and total petroleum hydrocarbons quantified as gasoline (TPHg), California Title 22 metals, organo-chlorine pesticides and PCBs, and semi-volatile organic compounds (SVOCs). The results of the soil analyses are compiled on the attached Tables 1 and 2 and discussed in Section 6.2.1.

## **5.2 Grab Groundwater Sampling Methodology**

Drilling activities were conducted by ResonantSonic International (RSI) Drilling, using a track-mounted direct-push drilling rig, under the supervision of a PES Geologist. Groundwater samples were collected by drilling to depth, placing a 1-inch diameter PVC with a 5-foot screened interval in the open 2-inch boreholes, and collecting groundwater samples using ¾-inch diameter disposable bailers.

The grab groundwater samples were submitted to Entech for analysis of total extractable petroleum hydrocarbons, volatile organic compounds and TPHg, California Title 22 metals, organo-chlorine pesticides, PCBs, and cyanide. The results of the analyses are compiled on the attached Tables 3 and 4.

Upon completion of the grab groundwater sample collection activities, the borings were filled to near surface with bentonite/cement grout.

## **5.3 Monitoring Well Installation, Development and Sampling Methodology**

### **5.3.1 Groundwater Monitoring Well Installation and Development**

The locations of the monitoring wells are presented on Plate 3. A PES geologist supervised the drilling and well construction activities. Soil samples were collected every 2.5 feet for lithologic description and recorded by a PES engineer or geologist in accordance with the Unified Soil Classification System (USCS) and Munsell Color Index.

Six 8-inch borings were advanced to approximately 10 feet below first-encountered water using a hollow-stem auger drill rig. Groundwater monitoring wells were constructed within the boreholes at MW-1 through MW-6. The groundwater monitoring wells were constructed of 2-inch diameter Schedule 40 PVC well casing and included a minimum 10-foot length of .010-inch factory-slotted well screen across the first-encountered groundwater at the site. Final design specifications for construction of the groundwater monitoring wells (i.e., depth of well, well screen interval, and depths of annular materials) are included on the well construction details on the boring logs presented in Appendix C. A filter pack of RMC No. 2/12 water-washed sand was placed in the annular space of the borehole adjacent to the

entire screened interval of each well. The filter packs extend a minimum of 6 inches above the top of each well screen. Following placement of the filter pack, each well was swabbed to facilitate filter pack settlement. A bentonite pellet seal was placed above the filter pack. The annular space above the bentonite pellet seal was then sealed with cement grout to the ground surface.

### **5.3.2 Groundwater Monitoring Well Development and Surveying**

Following a minimum 72-hour period after placement of the sanitary seals, the monitoring wells were developed to remove fine-grained materials inside the filter pack and to sort and stabilize the filter pack around each well screen. Development included a combination of swabbing and pumping and bailing. During well development purging, water quality parameters including temperature, pH, specific conductance, and turbidity were monitored. Well development continued until the discharge water was visually clear of sediment and water quality parameters had stabilized. The top of each well casing was surveyed by a registered land surveyor to obtain vertical and horizontal control at each monitoring well location for data correlation.

### **5.3.3 Groundwater Monitoring Well Sampling**

Following completion of monitoring well development and a minimum 72-hour stabilization period, a sample was obtained from each of the groundwater monitoring wells. Prior to sample collection, water levels were measured in the monitoring wells. Depth-to-groundwater measurements were rounded to the nearest 0.01-foot using an electronic sounding probe. Depth-to-groundwater measurements were converted to water-level elevations referenced to mean sea level (MSL). To reduce the potential for cross-contamination between groundwater monitoring wells, the sounding probe was cleaned with an Alconox/deionized water solution and double-rinsed with deionized water between measurements.

Following collection of depth-to-groundwater measurements, each well was purged until at least three well-casing volumes were removed. During purging, field water quality parameters of pH, turbidity, temperature, and specific conductance were monitored until parameters indicated that stabilization had been achieved.

Groundwater samples were collected from each well using standard groundwater collection methods and decanted into laboratory supplied sample containers. Filled sample containers were labeled and immediately placed in a chilled, thermally-insulated cooler for delivery under chain-of-custody protocol to Entech Analytical Laboratory.

Groundwater samples were analyzed for VOCs and TPHg using U.S. EPA Test Method 8260B, total extractable petroleum hydrocarbons (TEPH) using U.S. EPA Test Method 8015M, and dissolved Title 22 metals. For the metals analysis, the samples were filtered and preserved in the laboratory.

At the request of the ACWD, one soil sample was collected from each soil boring drilled during the construction of monitoring wells. These soil samples were analyzed for VOCs, TEPH, TPHg, and Title 22 Metals.

#### **5.4 Management of Investigation Derived Wastes**

Materials generated during the drilling processes, equipment decontamination, and well development and sampling are contained in 55-gallon drums pending proper disposal arrangements based on the results of waste characterization and analyses. Offsite disposal of site investigation derived wastes will be performed in accordance with applicable State and Federal laws and regulations.

### **6.0 RESULTS OF INVESTIGATIONS**

#### **6.1 Subsurface Conditions**

PES' trenching activities encountered evidence of what appears to be predominantly non-hazardous debris including tires, paper, glass, metal, cardboard, aluminum, toys, plastic, and wood mixed with various percentages of soil. Newspapers dating within 1959 were noted which is consistent with the previously described historic aerial photograph research of apparent filling activities on the property. The refuse was found to range from about 2 to 10 feet in thickness and was roughly approximated to range from about 5 to 90% by volume in mixtures of predominantly clayey and silty soils with a lesser degree of sandy soil. Groundwater was encountered at between 4.5 and 8.5 feet below ground surface. The fill overlies natural marsh deposits of low permeability bay mud.

Based on groundwater elevations measured in the monitoring wells, the groundwater flow direction appears to be to the south toward the adjacent sloughs bordering the site. The groundwater elevations and flow direction from the October 2006 monitoring are presented on Plate 4.

The lateral distribution of the fill containing debris is estimated to encompass about 7 acres of the western and central portions of the property. Plate 2 presents a summary of the test pit locations and thickness of debris encountered at each location.

#### **6.2 Soil and Groundwater Chemistry**

##### **6.2.1 Soil Analysis Results**

The laboratory reports for all soil samples are presented in Appendix D. The soils analysis results are summarized on Tables 1 and 2. Analysis of soil samples collected from the test pit excavations revealed no detectable concentrations of pesticides, VOCs or SVOCs. The analysis did indicate that petroleum hydrocarbons were detected in relatively low

concentrations in soil at the site. Petroleum hydrocarbons detected in soil samples include TPHg up to 0.6 milligrams per kilogram (mg/kg), TPH quantified as motor oil (TPHmo) up to 440 mg/kg, and TPH quantified as diesel (TPHd) up to 58 mg/kg. This indicates that the petroleum hydrocarbons that are likely due to contaminants within the debris fill. The concentrations of detected petroleum hydrocarbons are below the corresponding California Regional Water Quality Control Board's (RWQCB) Environmental Screening Levels (ESLs) for soils in residential and commercial sites. For comparison, corresponding ESLs are listed on the attached Tables.

Eleven soil samples were submitted for chemical analysis of Title 22 Metals. As shown on Table 1, the results of the analyses were compared to published ESLs for residential and commercial soils where groundwater is not a potential source of drinking water. There was one exceedance of the residential ESL for antimony; six exceedances for cobalt; one exceedance for copper; two exceedances for lead; one exceedance for nickel; and one exceedance for zinc. All of the reported arsenic concentrations exceeded the residential ESL but these appear to be representative of background concentrations that are typical of soils in this area. The total concentrations of metals are all well below the state's Total Threshold Limit Concentration for hazardous waste classification. Generally, the data does not indicate significant impacts due to heavy metal contamination.

### **6.2.2 Methane Monitoring**

In addition to the PID field monitoring during trenching and soil boring activities discussed above, methane was monitored in the field using a Landtech Gem 500 gas meter at selected test pits and soil boring locations and at all monitoring well boring locations. The results of the methane monitoring are shown on Plate 2. Methane was detected at a concentration of 8% (at GMP-2) within the approximate center of the debris fill and was not detected at any significant concentration at other locations including location MW-6 that was located in the approximate location of GMP-2. Based on the characteristics of the debris within the fill and the results of the field monitoring, it is not likely that the presence of methane is a significant environmental concern at this site. However, any future plan for the site needs to consider the possible presence of methane and additional confirmatory monitoring would be prudent.

### **6.2.3 Groundwater Analysis Results**

#### **6.2.3.1 Grab Groundwater Analysis Results**

PES conducted two rounds of grab groundwater sampling and analysis at the site. Investigation results, including laboratory analytical results and boring logs, were previously submitted to the ACWD in PES' "Grab Groundwater Sampling" report dated March 14-15, 2006 and "Results of Investigation-Supplemented Subsurface Investigation" report dated June 30, 2006. A total of ten groundwater samples were collected from ten locations, as shown in Plate 3. Samples were analyzed for the following:

- Volatile Organic Compounds (VOCs), by EPA 8260B;
- Total Petroleum Hydrocarbons quantified as gasoline (TPHg), by EPA 8260B;
- Pesticides, by EPA 8081A;
- Total Extractable Petroleum Hydrocarbons, by EPA 8015M;
- California Title 22 metals; and
- Total Cyanide, by EPA Method 335.2.

Investigations by PES detected acetone, benzene, ethylbenzene, toluene, xylenes, 1,2-dichlorobenzene, 1,4-dichlorobenzene (1,4-DCB), carbon disulfide, chlorobenzene, cis-1,2-dichloroethylene, isopropylbenzene, tert-Butanol (TBA), TPHg, TPHd, TPHmo, and total petroleum hydrocarbons quantified as kerosene (TPHk) in grab groundwater samples. Detected compounds and ranges of concentration are summarized below.

- Total petroleum hydrocarbons quantified as gas, diesel, motor oil, or kerosene were detected in six grab groundwater samples at concentrations between 26 micrograms per liter ( $\mu\text{g/L}$ ) (GW-6-8.0-13) and 2,000  $\mu\text{g/L}$  (GW-5-8.0-13);
- VOCs, including 1,4-dichlorobenzene, 1,2-dichlorobenzene, ethylbenzene, and chlorobenzene were detected in four grab groundwater samples at concentrations between 0.55  $\mu\text{g/L}$  (ethylbenzene, GW-1-5.0-10) and 3.9  $\mu\text{g/L}$  (1,4-dichlorobenzene, GW-5-8.0-13);
- Tert butyl acid (TBA) and methyl tert-butyl ether (MTBE) were detected in seven grab groundwater samples at concentrations between 1.7  $\mu\text{g/L}$  (MTBE, GW-8-10-15) and 170  $\mu\text{g/L}$  (TBA, GW-3-10-15);
- Carbon disulfide was detected four grab groundwater samples at concentrations between 0.57  $\mu\text{g/L}$  (GW-6-8.0-13) and 12  $\mu\text{g/L}$  (GW-5-8.0-13);
- BTEX compounds were detected in ten grab groundwater samples at concentrations between 0.52  $\mu\text{g/L}$  (xylenes, GW-4-10-15) and 6.3  $\mu\text{g/L}$  (benzene, GW-4-10-15); and
- Acetone was detected in one grab groundwater sample at a concentration of 29  $\mu\text{g/L}$  (GW-2-5-10).

The laboratory reports for all groundwater samples are included in Appendix E. The results of the grab groundwater analyses are presented on Plate 3 and on Tables 3 and 4. The detected constituents were found in relatively low concentrations and were generally below the RWQCB's ESLs for protection of Estaurine Surface Water Bodies (i.e. the adjacent sloughs next to the site). There are a few contaminants that exceeded their respective ESLs, including

TPHmo detected at concentrations up to 2,000 µg/L, TPHd detected at concentrations up to 730 µg/L, and TPHk detected at concentrations up to 760 µg/L.

### 6.2.3.2 Monitoring Well Groundwater Analysis Results

The monitoring wells installed by PES were located around the perimeter of the site (MW-1 through MW-5) to assess groundwater conditions in the assumed upgradient and downgradient locations and to evaluate potential off site migration of contaminants to the nearby estuarine sloughs leading to San Francisco Bay. MW-6 was located within the approximate center of the debris fill area to assess conditions within the assumed “worst case” area of potential groundwater impact.

The groundwater samples from the monitoring wells were analyzed for VOCs, dissolved Title 22 Metals, TPHg, Total Extractable Petroleum Hydrocarbons, chloride, and specific conductance. The results of the analyses are presented on Tables 3 and 4. The analytical results of detectable concentrations of TPH and VOCs are also graphically presented on Plate 3. Generally, the results correlate fairly well with the grab groundwater sampling results in terms of types and concentrations of contaminants.

- Chloride concentrations ranged from 5,400 to 11,000 mg/L indicating that the groundwater is non potable;
- Nine of the Title 22 metals were detected in groundwater including arsenic in one well at 0.017 mg/L; barium in five wells from 0.029 to 2.6 mg/L; chromium in one well at 0.0077 mg/L; cobalt in two wells at 0.013 to .0094 mg/L; copper in five wells from 0.0093 to 0.017 mg/L; molybdenum in one well at 0.0076 mg/L; nickel in three wells from 0.0087 to 0.05 mg/L; thallium in one well at 0.020 mg/L and zinc in five wells from 0.014 to 0.22 mg/L;
- TPHg was detected in two wells at concentrations of 26 to 33 µg/L. TPHmo was detected in two wells at 230 and 1100 µg/L. TPHd was detected in one well at 810 µg/L; and
- Benzene was detected in three wells between 1.6 to 3.2 µg/L. Ethylbenzene was detected in three wells between 0.54 to 0.90 µg/L. Toluene was detected in two wells at 0.56 and 3.4 µg/L. Xylenes were detected in two wells at 0.53 and 3.4 µg/L. 1,4-DCB was detected in two wells at 3.2 and 4.1 µg/L. Carbon disulfide was detected in one well at 0.58 µg/L. cis-1,2 DCE was detected in three wells between 0.53 to 2.8 µg/L. TBA was detected in one well at 32 µg/L and TCE was detected in one well at 0.60 µg/L. MTBE was detected in one well at 3.4 µg/L.

As shown on Table 3, five of the metals (barium, cobalt, copper, nickel and zinc) were detected at concentrations that exceeded their respective ESLs. Since these are all naturally occurring metals, it is not conclusively indicated as to whether these are from the fill soils or from the historic use of the property from automobile dismantling activities or debris within

the fill. For comparison, Table 3 also includes ranges of naturally occurring dissolved metals from various locations throughout California. Most of the reported concentrations of metals in groundwater encountered at the subject property are within these background ranges.

As presented on Table 4, all of the organic contaminant indicators from the monitoring wells were below their respective ESLs with the exception of one of the TPHmo results (1100  $\mu\text{g/L}$  in MW-6) and TPHd (810  $\mu\text{g/L}$  in MW-3). The likely sources of these contaminants are the historic automobile dismantling activities and/or the debris fill.

As can be seen by the data, the groundwater under the property appears to be impacted by two sources: (1) the debris within the fill as evidenced by the detection of compounds such as carbon disulfide; cis-1,2 dichloroethylene; 1,4 dichlorobenzene; isopropylbenzene detected in GW-3, -4, -5, and -6 within the refuse disposal area and (2) the adjacent auto dismantling activities as evidenced by the presence of MTBE and fuel related compounds including total petroleum hydrocarbons reported as motor oil (TPHmo), xylenes and toluene along the northern property line in samples collected in GW-7, -8, -9 and -11. In addition to the compounds mentioned above, there are also fuel related compounds (but no MTBE) found in the fill area that may be independent from the adjacent auto dismantling activities and due to the contaminants within the debris.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

The 10-acre subject site has been investigated and has been found to contain what appears to be largely non-hazardous debris in fill soils that was apparently placed at the site between the late 1950s and early 1960s. Evidence of the debris or soil mixed with debris was encountered in approximately 7 acres of the site ranging from about 2 to 10 feet thick. Additionally, automobile and vehicle dismantling and storage activities have occurred on the property periodically between the 1980s and the present. In summary:

- The historic activities have resulted in the presence of contaminants including relatively low levels of heavy fraction petroleum hydrocarbons, and some evidence of slightly elevated metals in the site's soil. There was no detected evidence of VOCs, pesticides or SVOCs in site soils;
- Groundwater was found to contain relatively low concentrations of light and heavy fraction petroleum hydrocarbons, dissolved heavy metals, and VOCs; and
- Vertical migration of contaminants to underlying aquifers is unlikely due to the presence of the underlying low-permeability bay mud.

Because of the highly variable nature of the subsurface fill materials in terms of debris and soil characteristics, additional investigation does not appear to be necessary to further characterize environmental conditions of the fill.

Additional groundwater monitoring of the existing well network should be conducted to develop concentration trends of the contaminant indicators over time. Three to four quarters of additional monitoring would establish a reasonable database for future groundwater monitoring decisions regarding frequency and analytical parameters.

PES understands that Sobrato's future plans, if they decide to purchase this site, would be open space or park related use. We understand that Sobrato has no intention for any residential, commercial or industrial redevelopment of the site.

PES proposes that monitoring of the six groundwater wells be conducted in January, April, July and October 2007. The chemical analysis program should consist of TPHg, total extractable petroleum hydrocarbons, and VOCs. The sampling methodology and analytical procedures should follow those outlined for the first round of sampling that was conducted in October 2006 and as described in this report. The quarterly reports should be submitted to the ACWD and include a summary of all data with measured groundwater flow direction from the six wells.

It is recommended that this report be submitted to the ACWD for their review and comment so that Sobrato can obtain input from the ACWD, prior to purchasing the property, regarding the likely long term regulatory requirements that may be imposed on the site.

**TABLES**

**Table 1**  
**Laboratory Analytical Results for Title 22 Metals in Soil Samples**  
**Mowry Avenue 10-Acre Parcel**  
**Newark, California**

Sample ID	Sample Composited From:	Date Sampled	Sample Depth (ft bgs)	Analytical Results																
				Antimony (mg/Kg)	Arsenic (mg/Kg)	Barium (mg/Kg)	Beryllium (mg/Kg)	Cadmium (mg/Kg)	Chromium (mg/Kg)	Cobalt (mg/Kg)	Copper (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Molybdenum (mg/Kg)	Nickel (mg/Kg)	Selenium (mg/Kg)	Silver (mg/Kg)	Thallium (mg/Kg)	Vanadium (mg/Kg)	Zinc (mg/Kg)
TP-2-1.0	Discrete	2/16/2006	1.0	<1.0	7.0	39	<1.0	<1.0	11	2.0	6.9	18	0.064	<1.0	10	<2.0	<1.0	<2.0	5.7	<2.0
Comp-1-1.5	TP-1-1.5 TP-2-1.5 TP-3-1.5 TP-4-1.5 TP-5-1.5	2/16/2006	1.5	<1.0	11	250	<1.0	1.2	110	14	89	120	0.12	1.0	86	<2.0	<1.0	<2.0	31	260
Comp-1-5.0	TP-1-4.5 TP-2-5.0 TP-3-5.0 TP-4-5.0 TP-5-5.0	2/16/2006	4.5-5.0	<1.0	9.5	190	<1.0	<1.0	52	14	98	170	0.21	1.0	61	<2.0	<1.0	<2.0	27	290
Comp-2-1.5	TP-6-1.5 TP-7-1.5 TP-8-1.5 TP-9-1.5	2/16/2006	1.5	<1.0	11	200	<1.0	<1.0	51	13	65	56	0.28	<1.0	61	<2.0	<1.0	<2.0	28	110
Comp-2-4.5	TP-6-4.0 TP-7-5.0 TP-8-5.0 TP-9-5.0	2/16/2006	4.0-5.0	<1.0	8.1	260	<1.0	<1.0	59	15	29	11	0.076	<1.0	73	<2.0	<1.0	<2.0	33	62
MW-1-4.0	Discrete	10/17/2006	4.0	1.2	5.6	260	<1	<1	63	13	56	44	0.58	<1	74	<2	<1	<2	36	130
MW-2-2.5-3.0	Discrete	10/18/2006	2.5-3.0	<1	13	340	<1	<1	32	7.4	25	27	0.055	<1	35	<2	<1	<2	21	53
MW-3-3.0-3.5	Discrete	10/18/2006	3.0-3.5	7.3	22	150	<1	<1	100	27	490	170	0.085	6.4	180	<2	<1	<2	26	850
MW-4-2.5-3.0	Discrete	10/18/2006	2.5-3.0	<1	8.8	200	<1	<1	56	12	44	36	0.082	<1	71	<2	<1	<2	35	100
MW-5-2.0	Discrete	10/17/2006	2.0	1.8	6.6	240	<1	<1	63	13	49	60	0.29	<1	77	<2	<1	<2	38	140
MW-6-2.0-2.5	Discrete	10/19/2006	2.0-2.5	<1	11	170	<1	1.6	38	7.8	83	130	0.17	<1	80	<2	<1	<2	27	270
ESL's Residential				6.1	5.5	750	4.0	1.7	58	10	230	150	3.7	40	150	10	20	1.0	110	600
Commercial				40	5.5	1500	8.0	7.4	58	10	230	750	10	40	150	10	40	13	200	600

**Notes**

ft bgs : Feet below ground surface  
 mg/Kg : Milligrams per kilogram  
 <1.0 : Not detected at or above the respective laboratory reporting limit  
 ESL's: SFBRWQCB; Shallow Soils; Groundwater is not a Current or Potential Source of Drinking Water, Table B

**Table 2**  
**Laboratory Analytical Results for Hydrocarbons, Pesticides, VOCs, and SVOCs in Soil Samples**  
**Mowry Avenue 10-Acre Parcel**  
**Newark, California**

Sample ID	Sample Compositd From:	Date Sampled	Sample Depth (ft bgs)	Analytical Results							
				TPHg (mg/kg)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHms (mg/kg)	TPHk (mg/kg)	Pesticides (mg/kg)	VOCs (µg/kg)	SVOCs (mg/kg)
TP-2-1.0	NA	2/16/2006	1.0	0.059	21	<2.5	<2.5	<2.5	All ND	All ND	All ND
Comp-1-1.5	TP-1-1.5 TP-2-1.5 TP-3-1.5 TP-4-1.5 TP-5-1.5	2/16/2006	1.5	0.056	66	<10	<10	<10	All ND	All ND	All ND
Comp-1-5.0	TP-1-4.5 TP-2-5.0 TP-3-5.0 TP-4-5.0 TP-5-5.0	2/16/2006	4.5-5.0	0.600	440	58	<50	<50	All ND	All ND	All ND
Comp-2-1.5	TP-6-1.5 TP-7-1.5 TP-8-1.5 TP-9-1.5	2/16/2006	1.5	<0.050	65	<10	<10	<10	All ND	All ND	All ND
Comp-2-4.5	TP-6-4.0 TP-7-5.0 TP-8-5.0 TP-9-5.0	2/16/2006	4.0-5.0	<0.050	<10	<2.5	<2.5	<2.5	All ND	All ND	All ND
MW-1-4.0	NA	10/17/2006	4.0	<0.087	<40	<2.5	<2.5	<2.5	NA	All ND	NA
MW-2-2.5-3.0	NA	10/18/2006	2.5-3.0	<0.120	28	<2.5	<2.5	<2.5	NA	All ND	NA
MW-3-3.0-3.5	NA	10/18/2006	3.0-3.5	<0.097	<10	<2.5	<2.5	<2.5	NA	All ND	NA
MW-4-2.5-3.0	NA	10/18/2006	2.5-3.0	<0.086	12	<2.5	<2.5	<2.5	NA	All ND	NA
MW-5-2.0	NA	10/17/2006	2.0	<0.099	120	<10	<10	<10	NA	All ND	NA
MW-6-2.0-2.5	NA	10/19/2006	2.0-2.5	<0.140	110	<12	<12	<12	NA	All ND	NA
ESL's:		Residential		100	500	100	100	100	VARIES	VARIES	VARIES
		Commercial		400	1000	500	500	500	VARIES	VARIES	VARIES

**Notes**

ft bgs : Feet below ground surface

TPHg : Total petroleum hydrocarbons quantified as gasoline

TPHmo : Total petroleum hydrocarbons quantified as motor oil

TPHd: Total petroleum hydrocarbons quantified as diesel

TPHms : Total petroleum hydrocarbons quantified as mineral spirits

TPHk : Total petroleum hydrocarbons quantified as kerosene

VOCs : Volatile organic compounds

SVOCs : Semi-volatile organic compounds

mg/kg : Milligrams per kilogram

µg/kg : Micrograms per kilogram

NA : Not analyzed

&lt;2.5 : Not detected at or above the respective laboratory reporting limit

ND : Non-detect

ESL's: SFBRWQCB; Shallow Soils; Groundwater is not a Current or Potential Source of Drinking Water, Table B

**Table 3**  
**Laboratory Analytical Results for Detectable Title 22 Metals, and Cyanide in Groundwater Samples**  
**Mowry Avenue 10-Acre Parcel**  
**Newark, California**

Sample ID	Date Sampled	Screened Intereval (ft bgs)	Arsenic (mg/L)	Analytical Results										
				Barium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Lead (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Cyanide (mg/L)	Zinc (mg/L)
<b>GW-1-5.0-10</b>	3/14/2006	5.0-10.0	<0.010	<b>0.049</b>	<b>0.0070</b>	<b>0.017</b>	<0.0050	<b>0.046</b>	<0.0050	<b>0.031</b>	<0.020	<0.0050	<0.020	<0.020
<b>GW-3-10-15</b>	3/14/2006	10.0-15.0	<0.010	<b>0.75</b>	<b>0.030</b>	<0.0050	<b>0.065</b>	<b>0.15</b>	<0.0050	<b>0.0070</b>	<b>0.024</b>	<b>0.0060</b>	<0.020	<0.020
<b>GW-5-8.0-13</b>	3/14/2006	8.0-13.0	<0.010	<b>0.92</b>	<b>0.015</b>	<0.0050	<0.0050	<b>0.055</b>	<0.0050	<0.0050	<0.020	<0.0050	<0.020	<0.020
<b>MW-1</b>	10/30/2006	4.0 - 14.0	<b>0.017</b>	<b>0.033</b>	<0.0050	<0.0050	<b>0.0093</b>	<0.0050	<b>0.025</b>	<b>0.0087</b>	<0.020	<0.0050	NA	<b>0.22</b>
<b>MW-2</b>	10/30/2006	5.0 - 15.0	<0.0050	<b>0.029</b>	<0.0050	<b>0.013</b>	<b>0.012</b>	<0.0050	<0.0050	<b>0.050</b>	<0.020	<0.0050	NA	<b>0.014</b>
<b>MW-3</b>	10/30/2006	4.0 - 14.0	<0.010	<b>2.6</b>	<0.0050	<0.0050	<b>0.015</b>	<0.0050	<b>0.0076</b>	<b>0.005</b>	<0.020	<0.0050	NA	<b>0.015</b>
<b>MW-4</b>	10/30/2006	5.0 - 15.0	<0.010	<b>0.068</b>	<0.0050	<b>0.0094</b>	<b>0.017</b>	<0.0050	<0.0050	<b>0.026</b>	<0.020	<0.0050	NA	<b>0.021</b>
<b>MW-5</b>	10/30/2006	4.0 - 14.0	<b>0.018</b>	<b>1.1</b>	<0.0050	<0.0050	<b>0.0085</b>	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	NA	<b>0.025</b>
<b>MW-6</b>	10/30/2006	5.0 - 15.0	<0.010	<b>2.1</b>	<b>0.0077</b>	<0.0050	<b>0.0097</b>	<0.0050	<0.0050	<0.0050	<b>0.020</b>	<0.0050	NA	<b>0.014</b>
<b>ESL</b>			0.036	1.0	0.180	0.0030	0.0031	0.0025	0.240	0.0082	0.020	0.019	0.001	0.081
<b>Naturally Occurring Concentrations</b> <sup>1</sup>	50 <sup>th</sup> Percentile		<0.005	0.1	0.010	<0.011	<0.012	<0.004	0.01	<0.022	<0.1	0.02	<0.01	0.02
	95 <sup>th</sup> Percentile		0.05	0.063	0.62	0.03	0.07	0.1	0.1	0.43	0.2	0.12	<0.01	0.40

**Notes**

ESL = Aquatic Habitat Goal, SFBRWQCB, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, February 2005, Table F-1b (Estuarine)

ft bgs = Feet below ground surface

mg/L = Milligrams per liter

<0.0050 = Not detected at or above the respective laboratory reporting limit

All compounds not listed were not detected in any samples

<sup>1</sup>Naturally Occurring Concentrations of Inorganic Chemicals in Groundwater and Soil at California Air Force Installations, Philip Hunter, P.G., U.S. Air Force and Brian Davis, Ph.D., California Department of Toxic Substances Control, Sacramento. March 2005.

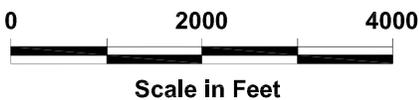
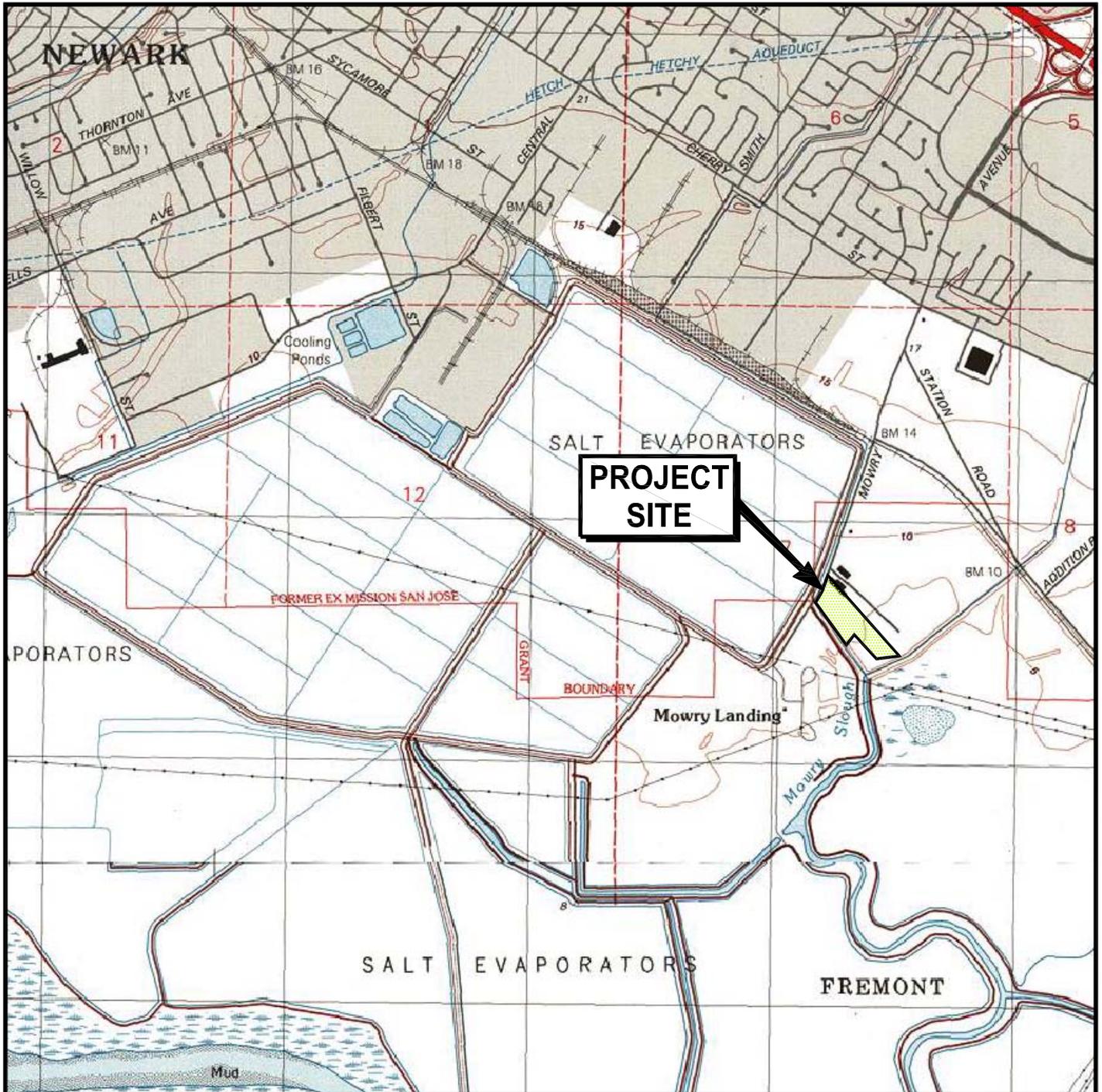
**Table 4**  
**Laboratory Analytical Results for Hydrocarbons, VOCs, and Pesticides in Groundwater Samples**  
**Mowry Ave. 10-Acre Parcel**  
**Newark, California**

Sample ID	Date Sampled	Screened Interval (ft bgs)	Analytical Results																			
			TPHg (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHms (µg/L)	TPHk (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	1,2-DCB (µg/L)	1,4-DCB (µg/L)	Carbon Disulfide (µg/L)	Chlorobenzene (µg/L)	cis-1,2-DCE (µg/L)	Isopropylbenzene (µg/L)	TBA (µg/L)	TCE (µg/L)	MTBE (µg/L)	Pesticides (µg/L)
GW-1-5.0-10	3/14/2006	5.0-10.0	40	<200	<50	<50	<50	<20	0.78	0.55	3.0	3.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<1	All ND
GW-2-5.0-10	3/14/2006	5.0 - 10.0	<25	<290	<72	<72	<72	29	<0.50	<0.50	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<1	NA
GW-3-10-15	3/14/2006	10.0 - 15.0	26	400	700	<50	<50	<20	2.1	<0.50	0.93	0.62	0.92	2.3	0.73	<0.50	0.57	<1.0	170	<0.50	<1	All ND
GW-4-10-15	3/14/2006	10.0 - 15.0	32	1,600	730	<250	<250	<20	6.3	0.65	<0.50	0.52	<0.50	6.0	2.1	<0.50	<0.50	<1.0	130	<0.50	<1	NA
GW-5-8.0-13	3/14/2006	8.0 - 13.0	82	2,000	<200	<200	760	<20	3.2	<0.50	<0.50	<0.50	2.8	3.9	12	2.0	<0.50	3.4	40	<0.50	<1	All ND
GW-6-8.0-13	3/14/2006	8.0 - 13.0	26	470	700	<62	<62	<20	2.8	<0.50	<0.50	<0.50	<0.50	<0.50	0.57	<0.50	<0.50	<1.0	43	<0.50	<1	NA
GW-7-4.0-9	5/15/2006	4.0 - 9.0	NA	890	<59	<59	<59	<20	<0.50	<0.50	2.8	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	76	NA
GW-8-10.0-15	5/15/2006	10.0 - 15.0	NA	<240	<59	<59	<59	<20	<0.50	<0.50	2.4	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	1.7	NA
GW-9-10.0-15	5/15/2006	10.0 - 15.0	NA	<220	<56	<56	<56	<20	<0.50	<0.50	2.8	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	2.4	NA
GW-11-10.0-15	5/15/2006	10.0 - 15.0	NA	<220	<56	<56	<56	<20	<0.50	<0.50	1.3	0.67	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<1	NA
MW-1	10/30/2006	4.0 - 14.0	<25	<200	<50	<50	<50	<20	3.2	0.76	3.4	1.7	<0.50	<0.50	<0.50	<0.50	0.79	<1.0	<10	<0.50	3.4	NA
MW-2	10/30/2006	5.0 - 15.0	<25	<190	<48	<48	<48	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<1	NA
MW-3	10/30/2006	4.0 - 14.0	33	230	810 <sup>1</sup>	<48	<48	<20	1.6	0.90	<0.50	0.53	<0.50	4.1	<0.50	<0.50	<0.50	<1.0	<10	<0.50	<1	NA
MW-4	10/30/2006	5.0 - 15.0	<25	<190	<48 <sup>2</sup>	<48	<48	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.8	<1.0	<10	0.69	<1	NA
MW-5	10/30/2006	4.0 - 14.0	<25	<190	<48 <sup>3</sup>	<48	<48	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	<1.0	<10	<0.50	<1	NA
MW-6	10/30/2006	5.0 - 15.0	26	1100	<51	<51	<51	<20	2.6	0.54	0.56	<0.50	<0.50	3.2	0.58	<0.50	<0.50	<1.0	32	<0.50	<1	NA
ESL			500	640	640	640	640	1,500	46	290	130	100	14	15	NA	25	590	NA	18,000	360	8,000	varies

**Notes**

VOCs : Volatile organic compounds  
 ESL: Aquatic Habitat Goal, SFBRWQCB, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, February 2005, Table F-1b (Estuarine)  
 ft bgs : Feet below ground surface  
 TPHg : Total petroleum hydrocarbons quantified as gasoline  
 TPHmo : Total petroleum hydrocarbons quantified as motor oil  
 TPHd: Total petroleum hydrocarbons quantified as diesel  
 TPHms : Total petroleum hydrocarbons quantified as mineral spirits  
 TPHk : Total petroleum hydrocarbons quantified as kerosene  
 1,2-DCB : 1,2-dichlorobenzene  
 1,4-DCB : 1,4-dichlorobenzene  
 cis-1,2-DCE : cis-1,2-dichloroethylene  
 TBA : tert-Butanol  
 TCE: Tetrachloroethene  
 MTBE: Methyl-T-Butyl Ether  
 µg/L : Micrograms per liter  
 NA : Not analyzed  
 <200 : Not detected at or above the respective laboratory reporting limit  
 ND : Non-detect  
 All compounds not listed were not detected in any samples  
<sup>1</sup>Atypical diesel pattern  
<sup>2</sup>130 ppb hydrocarbon (C10-C36). No diesel pattern present.  
<sup>3</sup>140 ppb hydrocarbon (C10-C36). No diesel pattern present.

## **ILLUSTRATIONS**



U.S.G.S. Topo Map - Newark, California, 7.5-minute quadrangle.1997.



**Site Location Map**  
Mowry Avenue 10-Acre Parcel  
Newark, California

PLATE  
**1**





**Explanation**

- ⊕ Grab-Groundwater Sampling Location (3/14/06 and 5/15/06)
- ⊕ Groundwater Monitoring Well Location (10/30/06)
- MW-1
- Property Boundary
- Approximate boundary of paved/unpaved road

TPHg = Total Petroleum Hydrocarbons quantified as gasoline  
 TPHmo = Total Petroleum Hydrocarbons quantified as motor oil  
 TPHk = Total Petroleum Hydrocarbons quantified as kerosene  
 1,2-DCB = 1,2-Dichlorobenzene  
 1,4-DCB = 1,4-Dichlorobenzene  
 TBA = Tert Butyl Alcohol  
 MTBE = Methyl tert-butyl ether  
 cis-1,2-DCE = cis-1,2-Dichloroethylene

0 200  
 APPROXIMATE SCALE IN FEET



**Explanation**

- MW-1
- Property Boundary
- 5.63
- 3.5
- \*
- 

Groundwater Monitoring Well Location (10/30/06)

Property Boundary

Groundwater-Level Elevation in feet above Mean Sea Level October, 2006

Generalized Groundwater-Level Elevation Contour (dashed where inferred)

Datum not used for contouring purposes

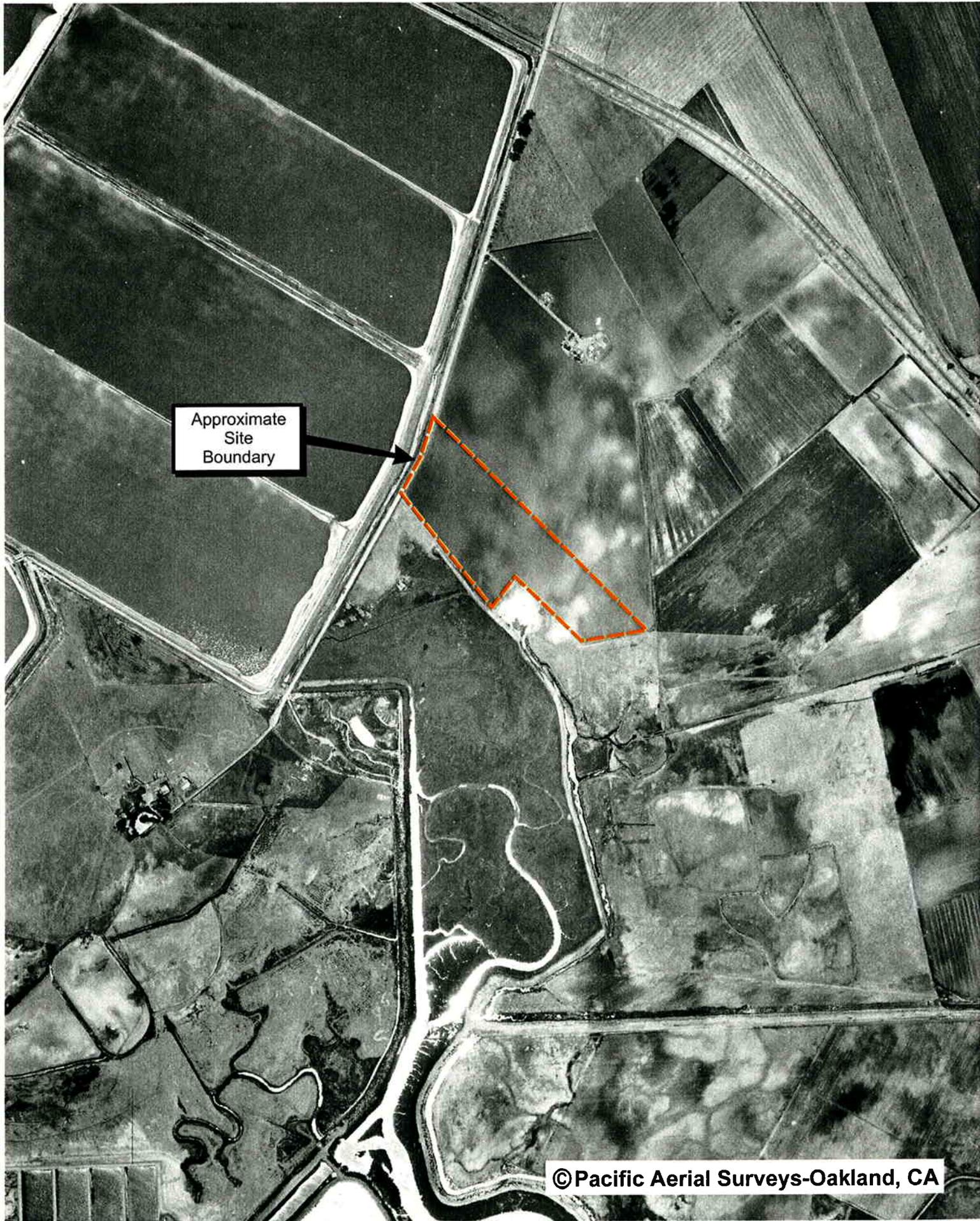
Approximate Direction of Groundwater Flow

0 200

APPROXIMATE SCALE IN FEET

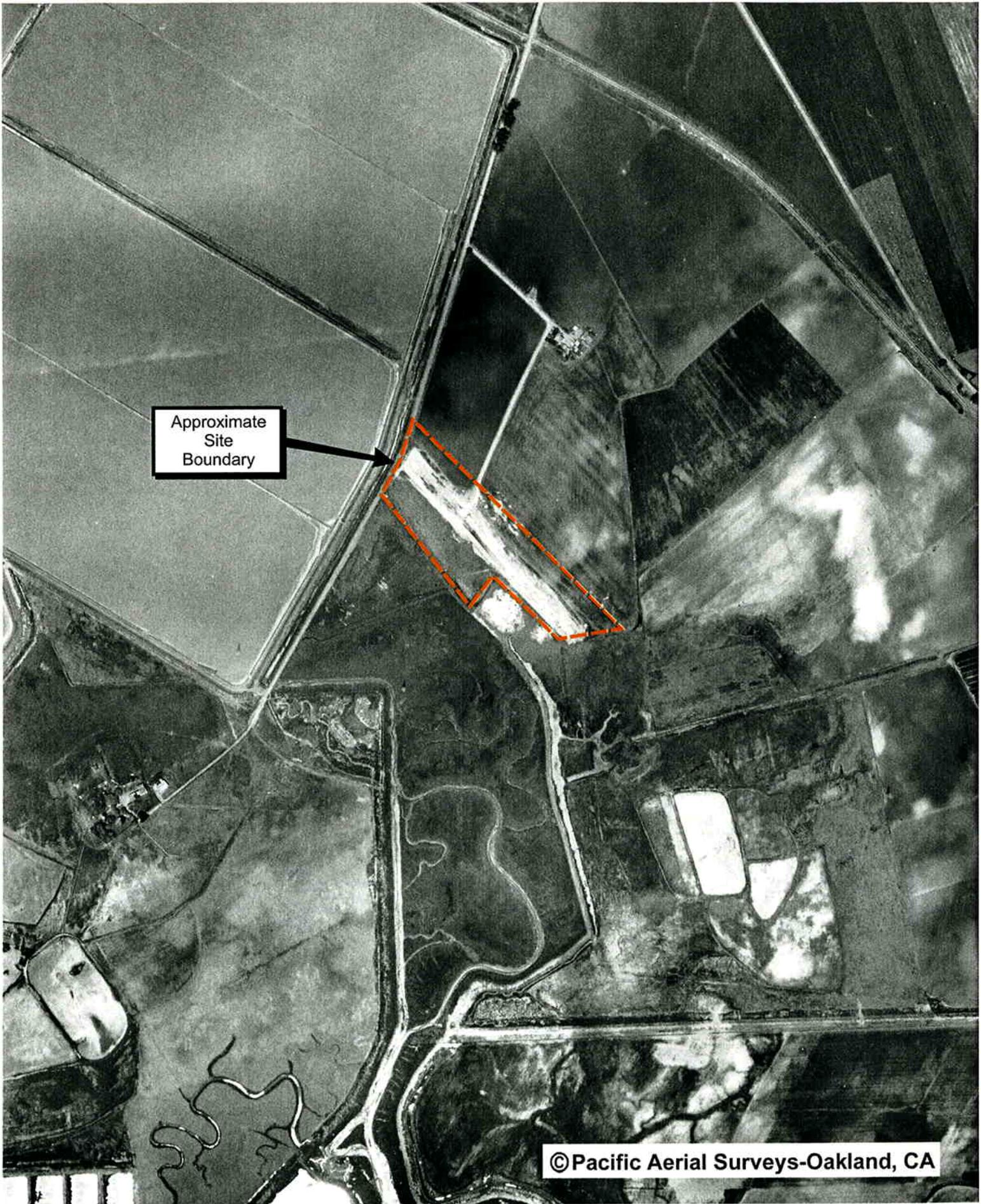
**APPENDIX A**

**HISTORIC AERIAL PHOTOGRAPHS**



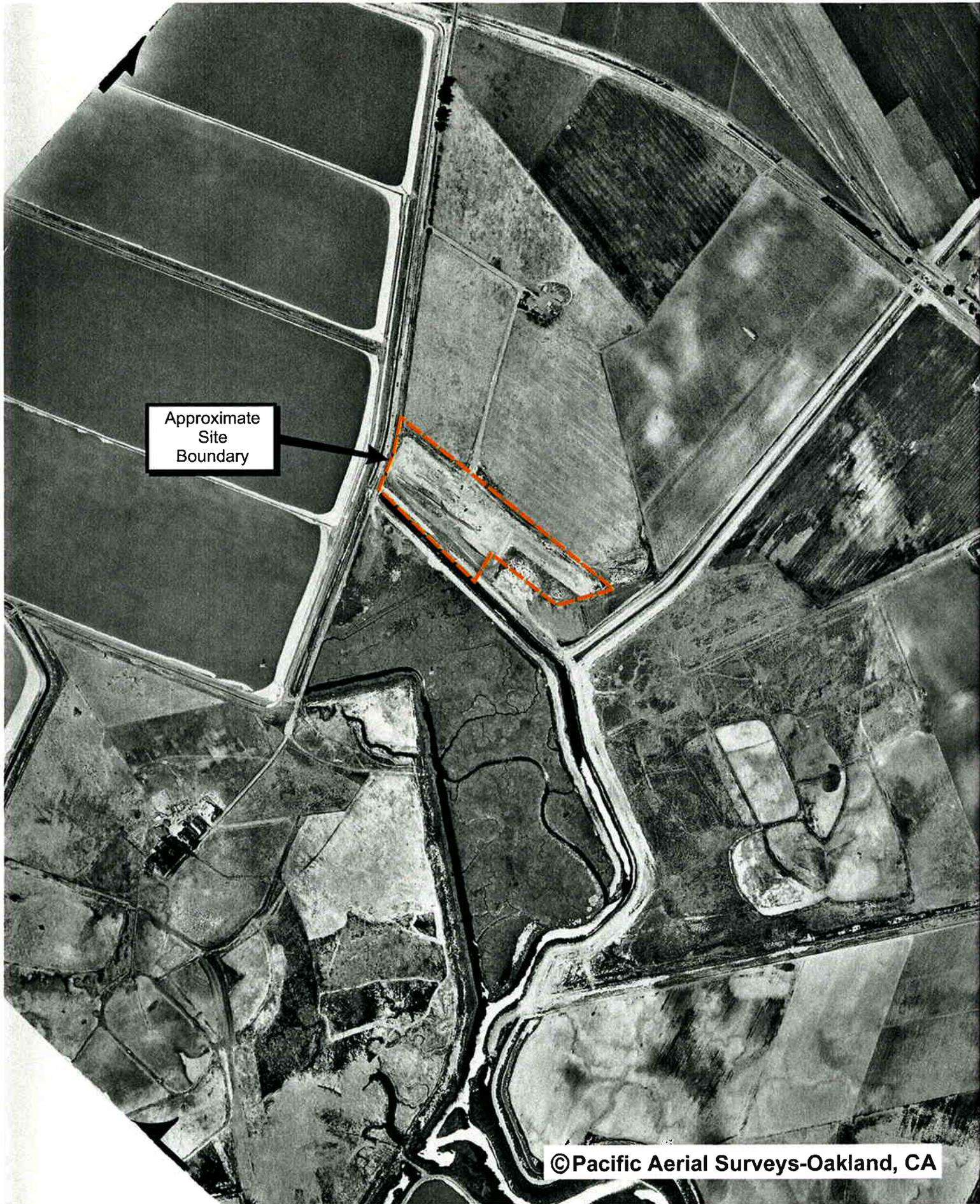
Approximate  
Site  
Boundary

© Pacific Aerial Surveys-Oakland, CA



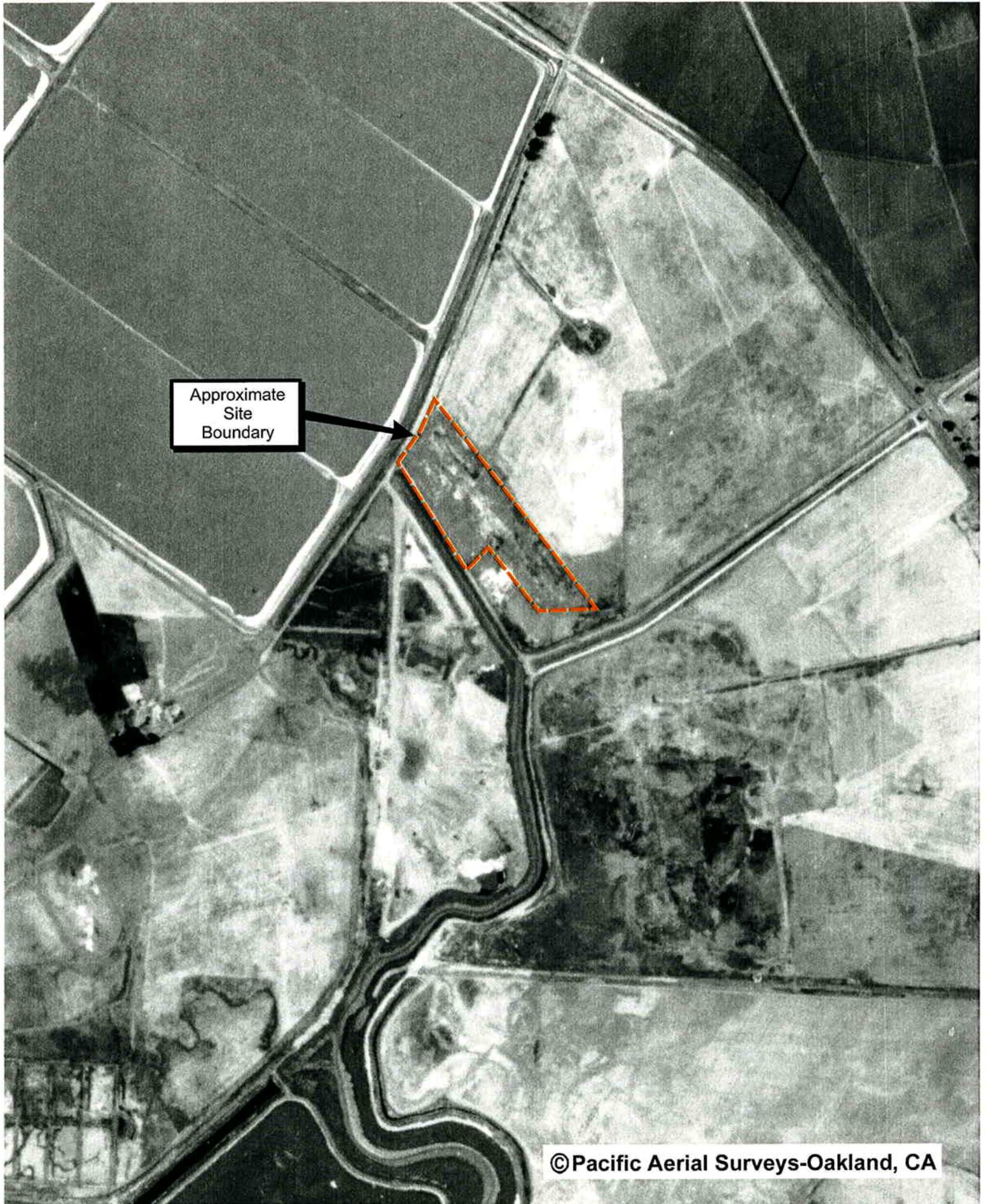
Approximate  
Site  
Boundary

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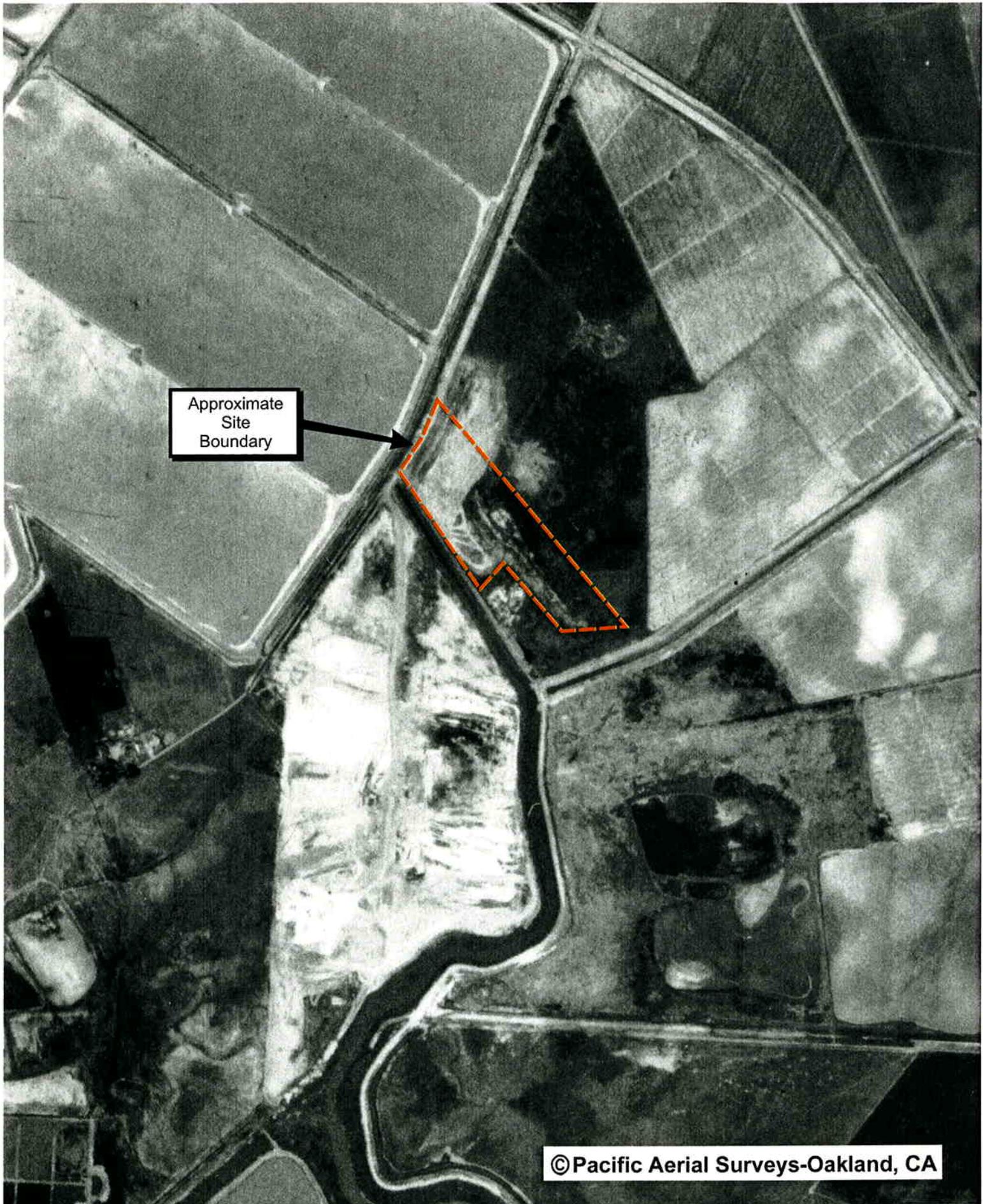
Approximate  
Site  
Boundary

© Pacific Aerial Surveys-Oakland, CA



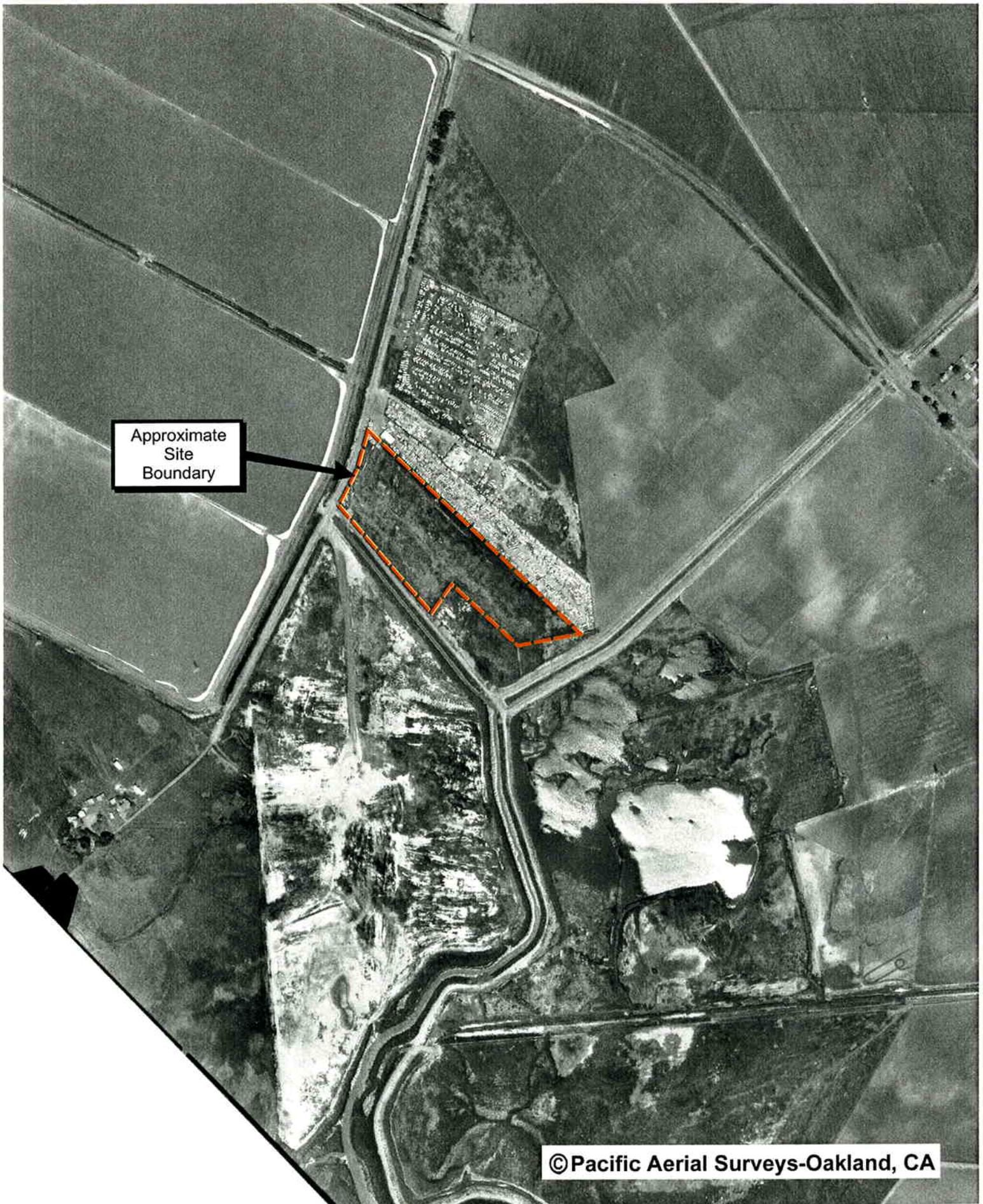
Approximate  
Site  
Boundary

© Pacific Aerial Surveys-Oakland, CA



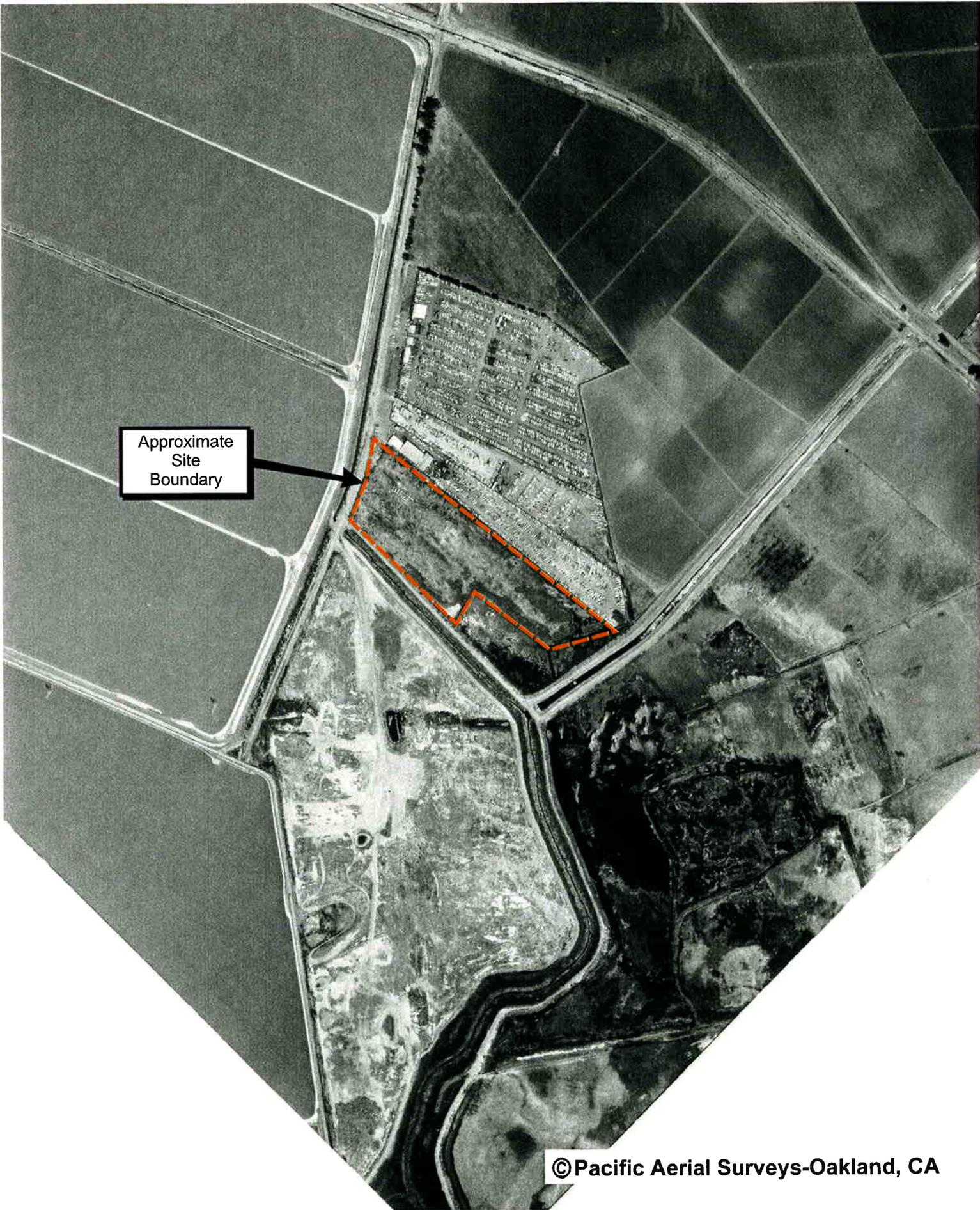
Approximate  
Site  
Boundary

© Pacific Aerial Surveys-Oakland, CA

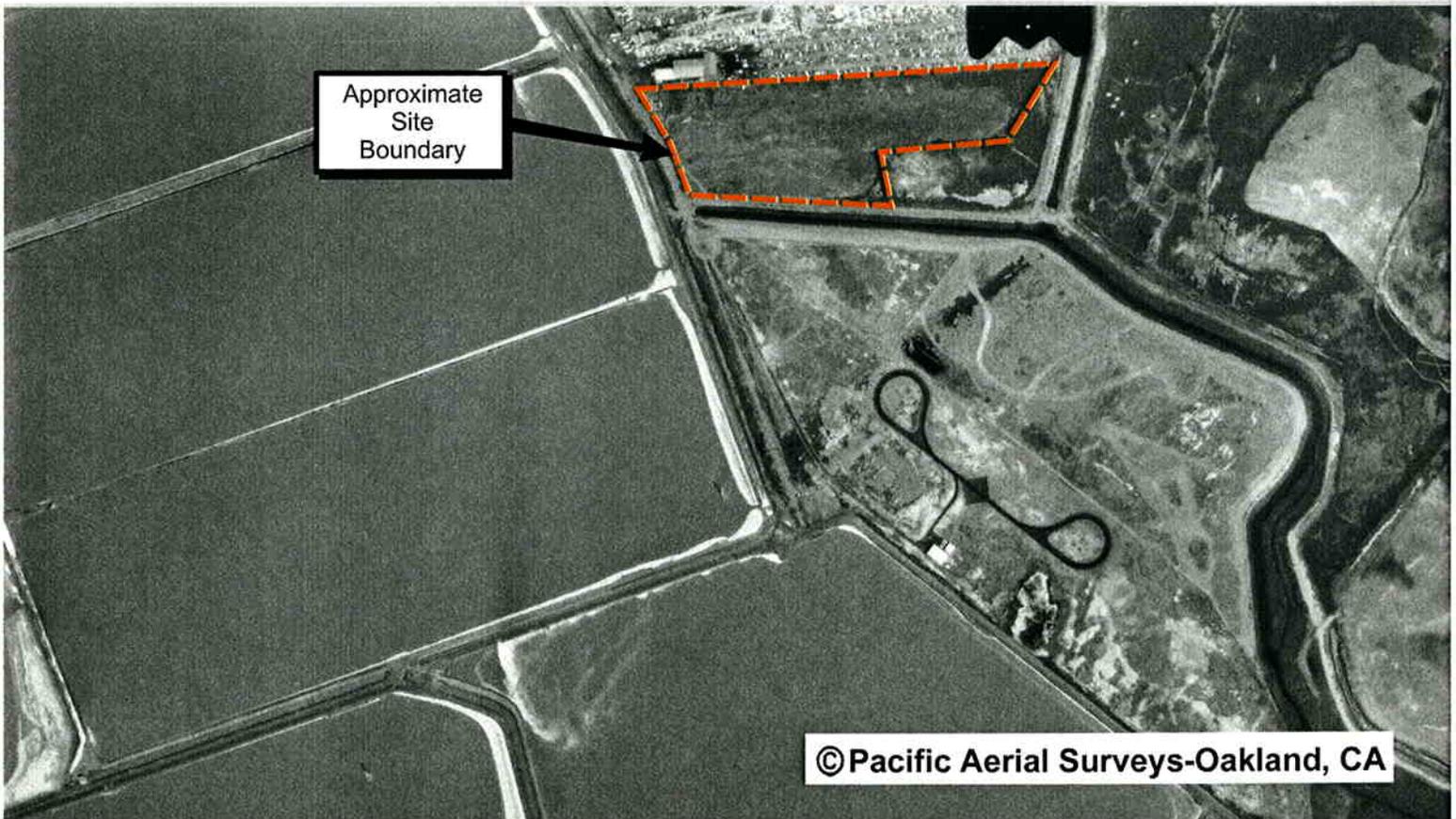


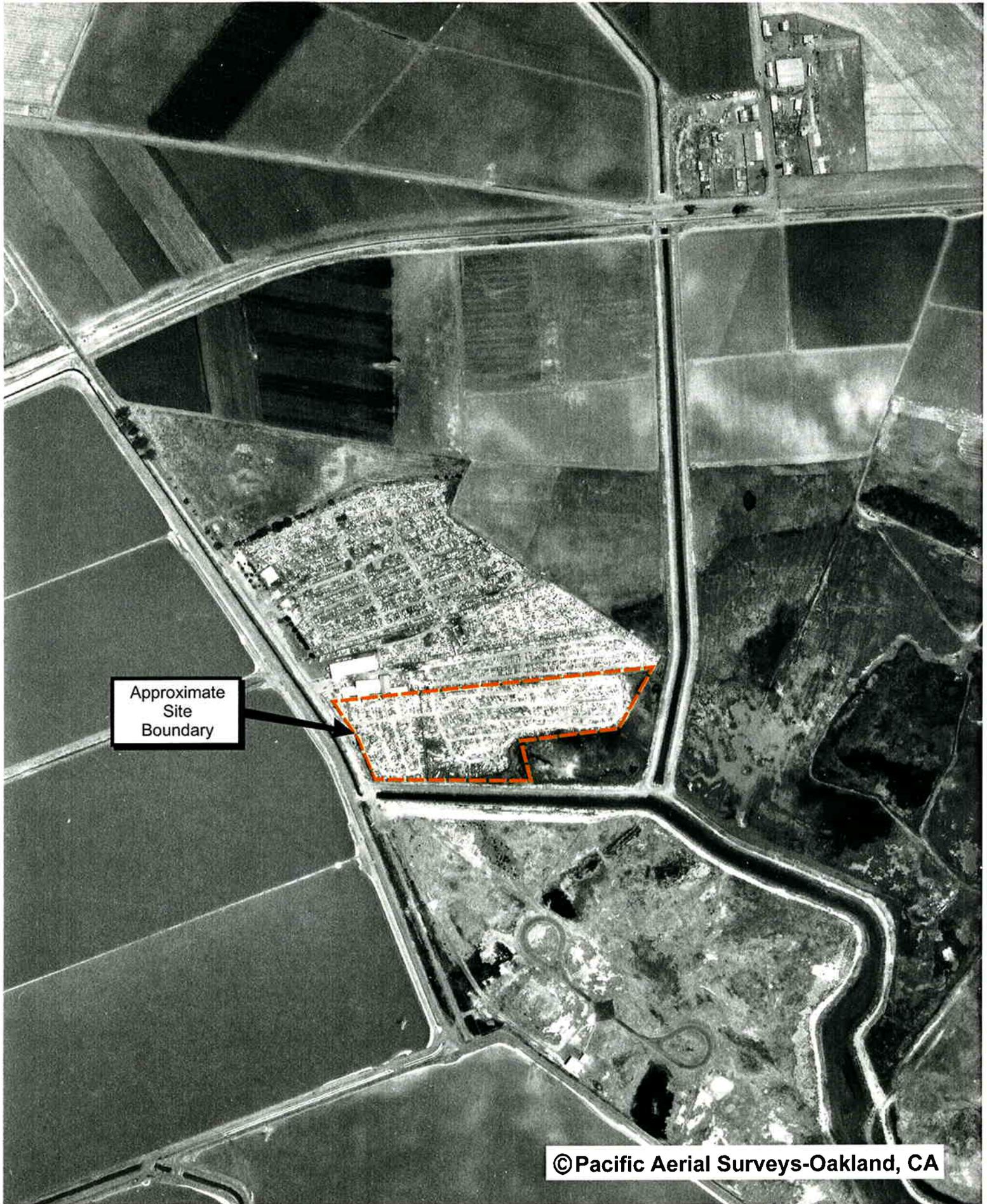
Approximate  
Site  
Boundary

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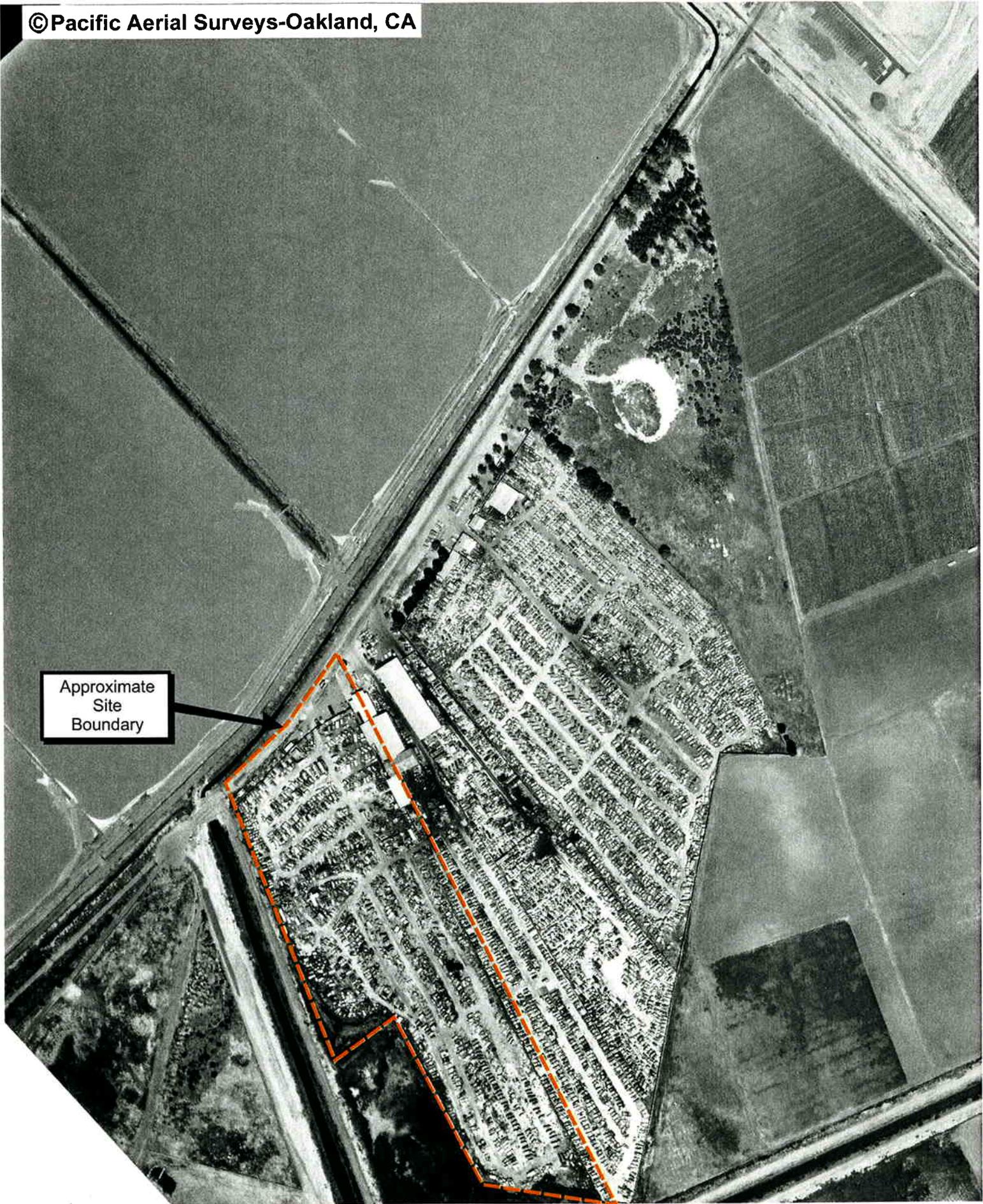
© Pacific Aerial Surveys-Oakland, CA



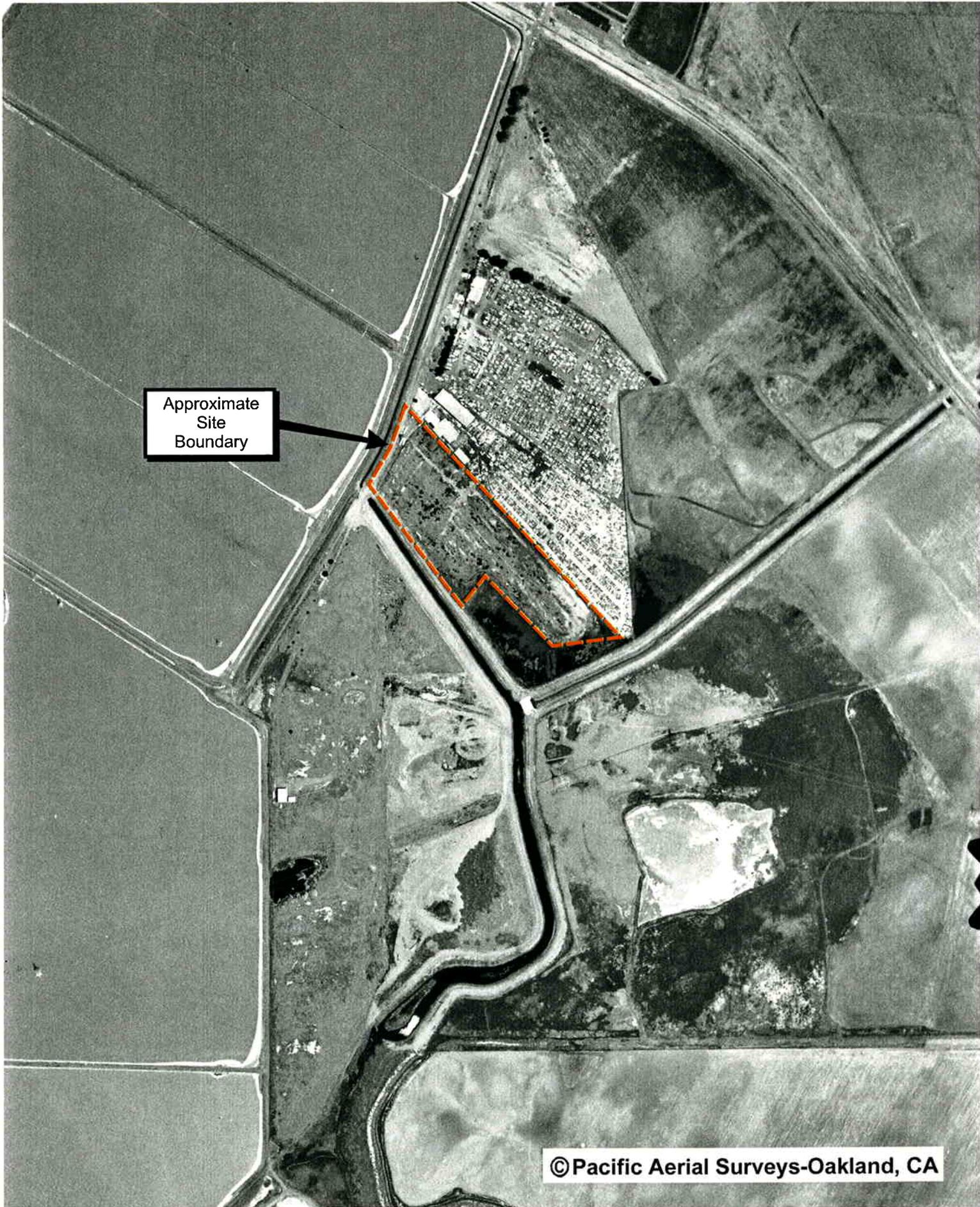


Approximate  
Site  
Boundary

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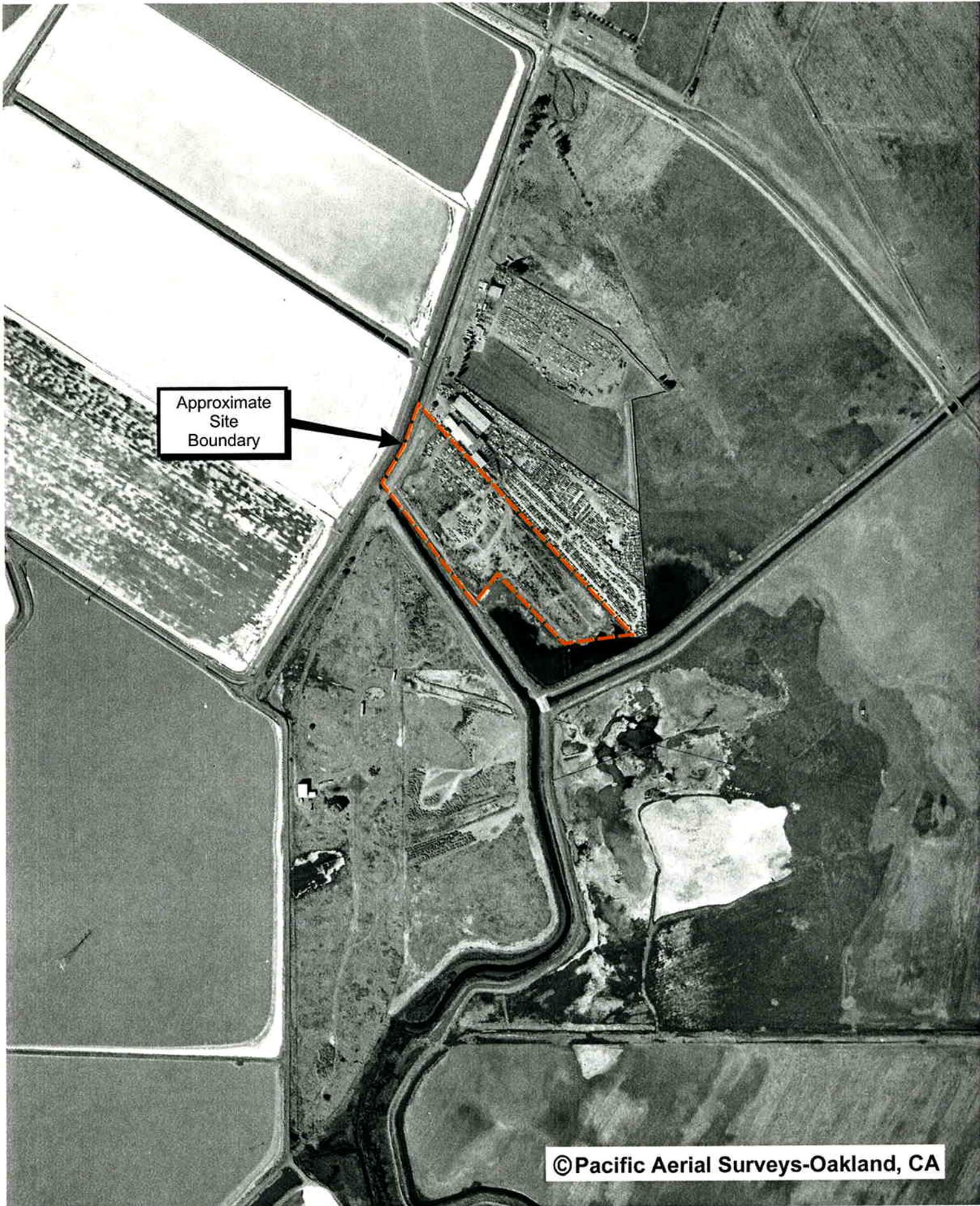


Approximate  
Site  
Boundary



Approximate  
Site  
Boundary

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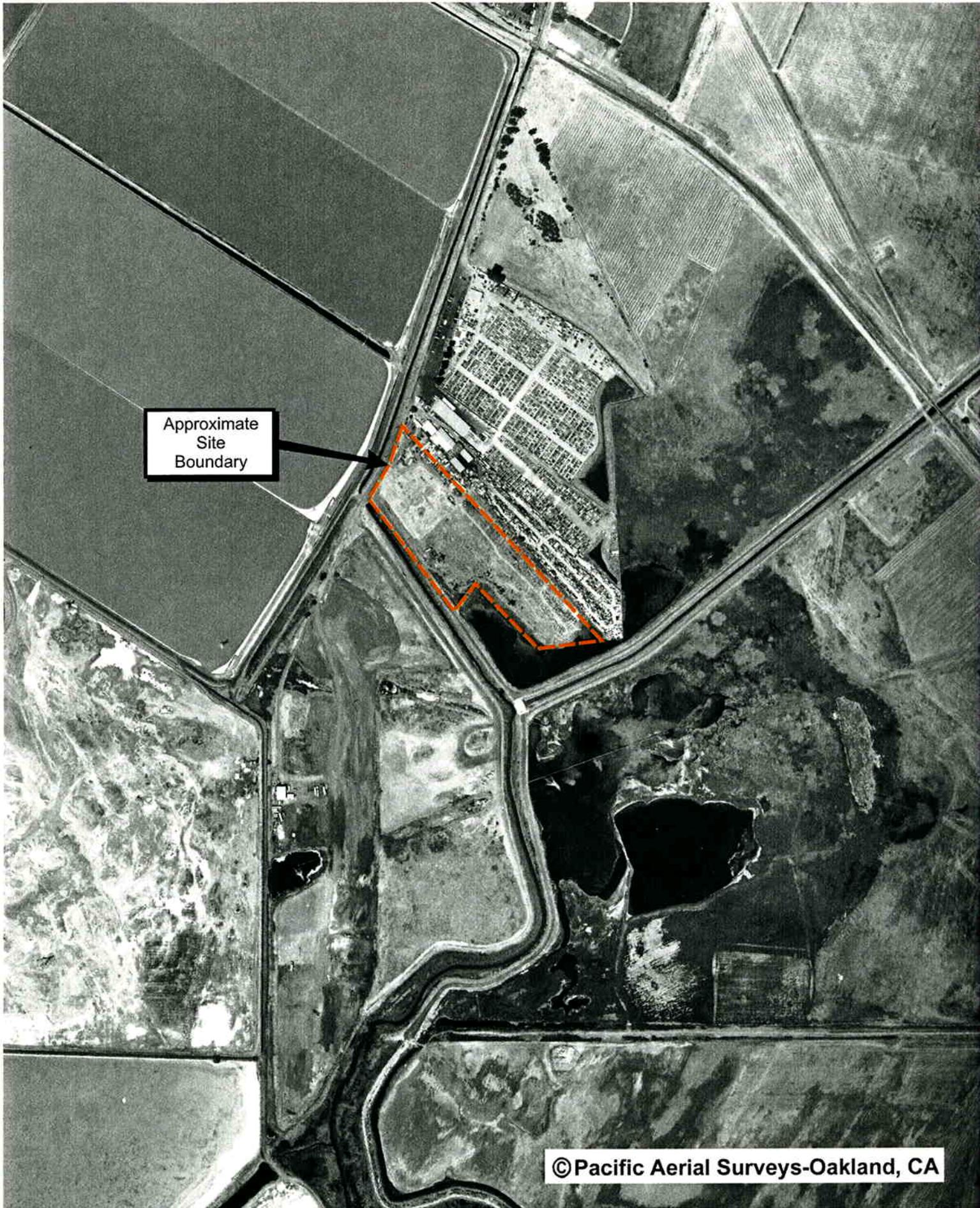


Approximate  
Site  
Boundary

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Approximate  
Site  
Boundary

© Pacific Aerial Surveys-Oakland, CA



Approximate  
Site  
Boundary

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**APPENDIX B**

**TEST PIT LOGS TP-1 THROUGH TP-16**

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

**Test Pit Number** TP-1

**Job Name** Mowry Ave 10-Acre Parcel

**Job Number** 126.050.02.004

**Date** 2/16/2006

**Start / Stop Time** 0850/0940

**Logged By** M. Buttress

**Test Pit Bearing** N45E

**Backfilled** Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width								Lithologic Description			
			2	4	6	8	10	12	14	16	18	20		
0		CL	BLACK CLAY (CL)											
1			Slightly moist, medium plasticity											
2	TP-1-1.5		debris encountered at approximately 2 ft bgs including: rope, clothing, fabric, cardboard (5-10% debris in soil).											
3														
4		ML	Hardened, calcified layers (1 cm thick) of white silt present in clay. Well compacted with secondary pores (20%)											
5	TP-1-4.5	CL	debris in Clay/Bay Mud. debris includes: glass bottles, newspaper, and cardboard. Newspapers indicate that debris is from late 1950s. (Up to 80% debris)											
6		▽												
7			Groundwater encountered at 6.5 ft bgs											
8			Total depth of excavation: 8 ft bgs											
9														
10														
11														
12														
13														
14														
15														

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-2
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	2/16/2006
<b>Start / Stop Time</b>	1000/1040
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	N50E
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		CL	BLACK CLAY (CL)										
			Slightly moist, medium plasticity										
1	TP-2-1.0		(TP-2-1.0 is sample of white calcified silt material)										
	TP-2-1.5												
2		ML	Clay contains about 20-30% debris including plastic bags, wood, glass bottles, and tires.										
3													
4			Hardened, calcified layers (1 cm thick) of white silt present in clay. Well compacted with secondary pores (20%)										
5	TP-2-5.0	CL	Clay/Bay Mud containing abundant debris (up to 80%). Same types of debris as listed above.										
6													
7													
8			CL	DARK GRAY CLAY (CL)									
		Slightly Moist, high plasticity. Native material, does not contain abundant debris.											
9			Total depth of excavation: 8.5 ft bgs										
10													
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-3
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	2/16/2006
<b>Start / Stop Time</b>	1050/1115
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	N40E
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		SW	BROWN CLAYEY SAND (SW)										
1			Loose, dry. Contains 20%-30% debris including: aluminum cans, toys, glass bottles, and plastic.										
2	TP-3-1.5												
3													
4													
5	TP-3-5.0												
6													
7													
8		CL ▽	Clay/Bay Mud containing 50%-70% wood debris.										
9			Groundwater encountered at 8.5 ft bgs.										
10		Total depth of excavation: 9 ft bgs.											
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-4
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	2/16/2006
<b>Start / Stop Time</b>	1125/1210
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	N37E
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		SW	BROWN CLAYEY SAND (SW)										
1			Dry, loose, contains distinct layers of white, calcified silt. Contains 50%-60% debris including plastic, wood, tires, glass bottles, paper, and cardboard.										
2	TP-4-1.5												
3													
4													
5	TP-4-5.0	CL	GRAY TO BLACK CLAY (CL)										
6			Slightly moist. At approximately 5 ft bgs there appears to be several tires stacked and partially exposed in the NE end wall of the test pit. Detected a slight hydrocarbon odor. Up to 80% debris, mainly the same as listed above. Also includes copper pipes, bundled cardboard, and a newspaper dated January, 1959.										
7													
8													
9		▽	Groundwater encountered at 8.5 ft bgs										
10			Total depth of excavation: 9 ft bgs										
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-5
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	2/16/2006
<b>Start / Stop Time</b>	1230/1300
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	N50E
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		CL	BROWN SANDY CLAY (CL)										
1	TP-5-1.5		Loosely compacted, contains 10% debris including bricks, concrete, and tires.										
2													
3		ML	Hardened, calcified layers (1 cm thick) of white silt present in clay. Well compacted with secondary pores (20%)										
4			Does not contain abundant debris.										
5	TP-5-5.0	CL	BROWN SANDY CLAY (CL)										
6			Contains 40%-50% debris including: tires, large pieces of concrete with rebar, cardboard, and glass.										
7		CL	BLACK CLAY/BAY MUD (CL)										
8			Very moist, homogenous. Does not contain abundant debris except for small area which contains up to 90% cardboard										
9		▽	Groundwater encountered at 8.5 ft bgs										
10			Total depth of excavation: 9 ft bgs										
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

**Test Pit Number** TP-6

**Job Name** Mowry Ave 10-Acre Parcel

**Job Number** 126.050.02.004

**Date** 2/16/2006

**Start / Stop Time** 1410/1500

**Logged By** M. Buttress

**Test Pit Bearing** \_\_\_\_\_

**Backfilled** Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		CL	GRAYISH BROWN SANDY CLAY (CL)										
1			Contains white, calcified silt layers. Contains up to 50% wood, as well as glass bottles and tires.										
2	TP-6-1.5		Encounter a buried 10-inch thick piece of concrete slab at about 2 ft bgs.										
3													
4	TP-6-4.0	▽ CL	DARK GRAY CLAY/BAY MUD (CL)										
5			Saturated, does not appear to contain abundant debris										
6		Groundwater encountered at 4.5 ft bgs											
7		Total depth of excavation: 6 ft bgs											
8													
9													
10													
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-7
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	2/16/2006
<b>Start / Stop Time</b>	1510/1530
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	N10W
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		CL	BROWNISH GRAY SANDY CLAY (CL)										
1			Slightly moist. Contains 5% debris including plastic and wood.										
2	TP-7-1.5												
3		CL	DARK GRAY CLAY/BAY MUD (CL)										
4			Saturated. Does not appear to contain any debris										
5	TP-7-5.0	▽	Groundwater encountered at 5 ft bgs										
6													
7			Total depth of excavation: 6 ft bgs										
8													
9													
10													
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

**Test Pit Number** TP-8

**Job Name** Mowry Ave 10-Acre Parcel

**Job Number** 126.050.02.004

**Date** 2/16/2006

**Start / Stop Time** 1535/1555

**Logged By** M. Buttress

**Test Pit Bearing** N12E

**Backfilled** Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width								Lithologic Description
			2	4	6	8	10	12	14	16	
0		CL	BROWNISH GRAY SANDY CLAY (CL)								Dry to slightly moist. Contains 5%-10% debris including plastic, bricks, glass, and wood
1	TP-8-1.5										
2											
3		CL	DARK GRAY CLAY/BAY MUD (CL)								Saturated. Does not appear to contain any debris (except for minor amount of plastic near top of layer)
4	TP-8-5.0										
5											
6											
7		▽	Groundwater encountered at 7 ft bgs								
8											
9			Total depth of excavation: 8 ft bgs								
10											
11											
12											
13											
14											
15											

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-9
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	2/16/2006
<b>Start / Stop Time</b>	1600/1630
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	N23E
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width									
			2	4	6	8	10	12	14	16	18	20
0			Lithologic Description									
1	TP-9-1.5	CL	BROWN SANDY CLAY (CL)									
2			Slightly moist, contains 1-cm thick layers of white calcified silt. Contains approximately 70% debris including: wood, glass bottles, and plastic									
3												
4												
5	TP-9-5.0	CL	GRAY AND BROWN CLAY (CL)									
6			Moist. Contains about 20% debris including: clothing, glass bottles, wood, and a tire.									
7		CL ▽	DARK GRAY CLAY/BAY MUD (CL)									
8	Very moist to saturated. Contains 5% debris including glass bottles and pieces of metal.											
9			Groundwater encountered at 7 ft bgs									
10			Total depth of excavation: 8 ft bgs									
11												
12												
13												
14												
15												

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-10
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	5/10/2006
<b>Start / Stop Time</b>	0830/0910
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	NE-SW Trending
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
0		ML	GRAYISH BROWN SANDY GRAVELLY SILT (ML)										
1			Possible fill. Dry to slightly moist, contains approximately 5% debris including: small glass bottles and pieces of metal, debris is evenly distributed throughout material.										
2													
3													
4													
5		CL ▽	DARK GRAY CLAY/BAY MUD (CL)										
6			Moist to saturated. Contains approximately 5% debris including glass bottles and pieces of metal.										
7		Groundwater encountered at 7 ft bgs											
8													
9		Total depth of excavation: 8 ft bgs											
10													
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-11
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	5/10/2006
<b>Start / Stop Time</b>	0910/0950
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	NE-SW Trending
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		ML	GRAYISH BROWN SANDY GRAVELLY SILT (ML)										
1			Possible fill. Dry to slightly moist, pocket of lt gray sandy silt at 0.5 ft bgs in SW portion of test pit.										
2			Contains approximately 20% debris including: tires, fabric, construction debris (wood, sheet rock), rubber, and glass bottles. debris most concentrated around 2-3 ft bgs.										
3													
4													
5		▽ CL	DARK GRAY CLAY/BAY MUD (CL)										
6			Moist to saturated. Contains approximately 25% debris from 5-6 ft bgs including: glass bottles, pieces wood, fabric, and pieces of thick glass.										
7			Groundwater encountered at 5.5 ft bgs										
8													
9			Total depth of excavation: 7 ft bgs										
10			Could not tell base of debris layer due to groundwater entering the test pit.										
11													
12													
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-12
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	5/10/2006
<b>Start / Stop Time</b>	1000/1030
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	NE-SW Trending
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		ML	LIGHT GRAY SANDY SILT (ML)										
1			No debris encountered, appears to be native material.										
2			2-3 ft thick layer of orangish-red sandy silt in white hardened, calcified material underlain by 1-2 ft thick layer of black organic material (coal-like). These layers are folded throughout the sandy silt matrix.										
3													
4													
5		CL	LIGHT GRAY CLAY (CL)										
6			Slightly moist to saturated, minor sand, very dense, medium plasticity, no odor.										
7			No debris encountered.										
8													
9													
10		▽	Groundwater encountered at 10.0 ft bgs										
11													
12			Total depth of excavation: 11 ft bgs										
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-13
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	5/10/2006
<b>Start / Stop Time</b>	1040/1125
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	NE-SW Trending
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		ML	BROWNISH GRAY SANDY GRAVELLY SILT (ML)										
1			Possible fill. Dry to slightly moist. Contains approximately 5% debris including: glass bottles and wood.										
2													
3													
4			2-3 ft thick layer of construction debris (stacked sheet rock)										
5													
6													
7		CL	LIGHT GRAY CLAY (CL)										
8			Slightly moist to moist, minor sand, very dense, medium plasticity, no odor.										
8		∇	Groundwater encountered at 8.5 ft bgs										
9			Grades to DARK GRAY CLAY/BAY MUD (CL)										
10			Moist to saturated. Contains approximately 10-15% debris (primarily at top of layer) including: glass bottles and wood debris.										
11		CL											
12													
13			Total depth of excavation: 12 ft bgs										
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-14
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	5/10/2006
<b>Start / Stop Time</b>	1135/1205
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	NE-SW Trending
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width	2	4	6	8	10	12	14	16	18	20
			Lithologic Description										
0		CL	GRAYISH BROWN CLAY WITH SAND AND GRAVEL (CL)										
1			Possible fill. Dry to slightly moist. No debris encountered.										
2													
3													
4													
5		CL	DARK GRAY TO BLACK CLAY (CL)										
6			Dry to slightly moist, contains minor gravel, dense, no odor.										
7													
8													
9			LIGHT GRAY CLAY (CL)										
10			Dry to moist, minor sand, very dense, medium plasticity, no odor.										
11			No debris encountered.										
11		▽	Groundwater encountered at 11 ft bgs										
12			Total depth of excavation: 11 ft bgs										
13													
14													
15													

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

**Test Pit Number** TP-15

**Job Name** Mowry Ave 10-Acre Parcel

**Job Number** 126.050.02.004

**Date** 5/10/2006

**Start / Stop Time** 1215/1235

**Logged By** M. Buttress

**Test Pit Bearing** NE-SW Trending

**Backfilled** Yes

Depth (Feet)	Sample Numbers	Graphic Log	Width								Lithologic Description
			2	4	6	8	10	12	14	16	
0											LIGHT GRAY SILTY SAND (SP)
1		SP									Contains 10-15% debris including: rubber, wire, cable.
2		CL									GRAYISH BROWN CLAY WITH SAND AND GRAVEL (CL)
3											Possible fill. Dry. No debris encountered.
4											
5		CL									DARK GRAY TO BLACK CLAY (CL)
6											Dry to slightly moist, contains minor gravel, dense, no odor.
7											Contains up to 5% debris including small pieces of rubber, glass, and metal.
8		▽									LIGHT GRAY CLAY (CL)
9											Slightly moist to saturated, minor sand, very dense, medium plasticity, no odor.
10											No debris encountered.
11											Groundwater encountered at 8 ft bgs
12											
13											
14											
15											Total depth of excavation: 10 ft bgs

**Location Sketch**



**PES Environmental, Inc.**  
Engineering & Environmental Services

<b>Test Pit Number</b>	TP-16
<b>Job Name</b>	Mowry Ave 10-Acre Parcel
<b>Job Number</b>	126.050.02.004
<b>Date</b>	5/10/2006
<b>Start / Stop Time</b>	1240/1310
<b>Logged By</b>	M. Buttress
<b>Test Pit Bearing</b>	NE-SW Trending
<b>Backfilled</b>	Yes

Depth (Feet)	Sample Numbers	Graphic Log	Lithologic Description
0			LIGHT GRAY SANDY SILT (ML)
1		ML	Contains 5% debris including: rubber and plastic.
2		CL	GRAYISH BROWN CLAY WITH SAND AND GRAVEL (CL) Moist to saturated. Water is entering test pit from base of this layer. Marsh plants along fence suggest possible perched groundwater along NE boundary of property. No debris encountered.
3		CL	DARK GRAY TO BLACK CLAY (CL) Dry to slightly moist, contains minor gravel, dense, no odor.
4			
5			LIGHT GRAY CLAY (CL) Moist to saturated, minor sand, very dense, medium plasticity, no odor.
6			No debris encountered.
7			
8		▽	Groundwater encountered at 8 ft bgs
9			
10			Total depth of excavation: 9 ft bgs
11			
12			
13			
14			
15			

**APPENDIX C**

**BORINGS LOGS AND WELL COMPLETION DETAILS**

USCS CHART 126.050.02.004V2.GPJ PES ENV.GDT 3/29/07

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LESS THAN 15% FINES	GW		WELL-GRADED GRAVELS WITH OR WITHOUT SAND
			GP		POORLY-GRADED GRAVELS WITH OR WITHOUT SAND
		GRAVELS WITH 15% OR MORE FINES	GM		SILTY GRAVELS WITH OR WITHOUT SAND
			GC		CLAYEY GRAVELS WITH OR WITHOUT SAND
	SANDS MORE THAN HALF COARSE FRACTION IS FINER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 15% FINES	SW		WELL-GRADED SANDS WITH OR WITHOUT GRAVEL
			SP		POORLY-GRADED SANDS WITH OR WITHOUT GRAVEL
		SANDS WITH 15% OR MORE FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS	ML		INORGANIC SILTS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		OL		ORGANIC SILTS OR CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%	MH		INORGANIC SILTS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		CH		INORGANIC CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		OH		ORGANIC SILTS OR CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS	

**ABBREVIATION KEY**

- PID (PPM) - Photo Ionization Detector readings in parts per million from field headspace sample screening.
- BLOWS/6IN - Blows required to drive sampler 6 inches as indicated on the logs using sample drive hammer weight of 140 pounds falling 30 inches.
- (10,60,30) - Percent gravel, percent sand, percent silt/clay
- 2.5YR 6/2 - Soil Color according to Munsell Soil Color Charts (1994 Revised Edition)
- feet MSL - feet above Mean Sea Level
- feet BGS - feet below ground surface

**SYMBOLS KEY**

- No Soil Sample Recovered
- Partial Soil Sample Recovered
- Undisturbed Soil Sample Recovered
- Soil Sample Submitted for Laboratory Analysis
- Hydropunch Sample
- First Encountered Groundwater Level
- Piezometric Groundwater level

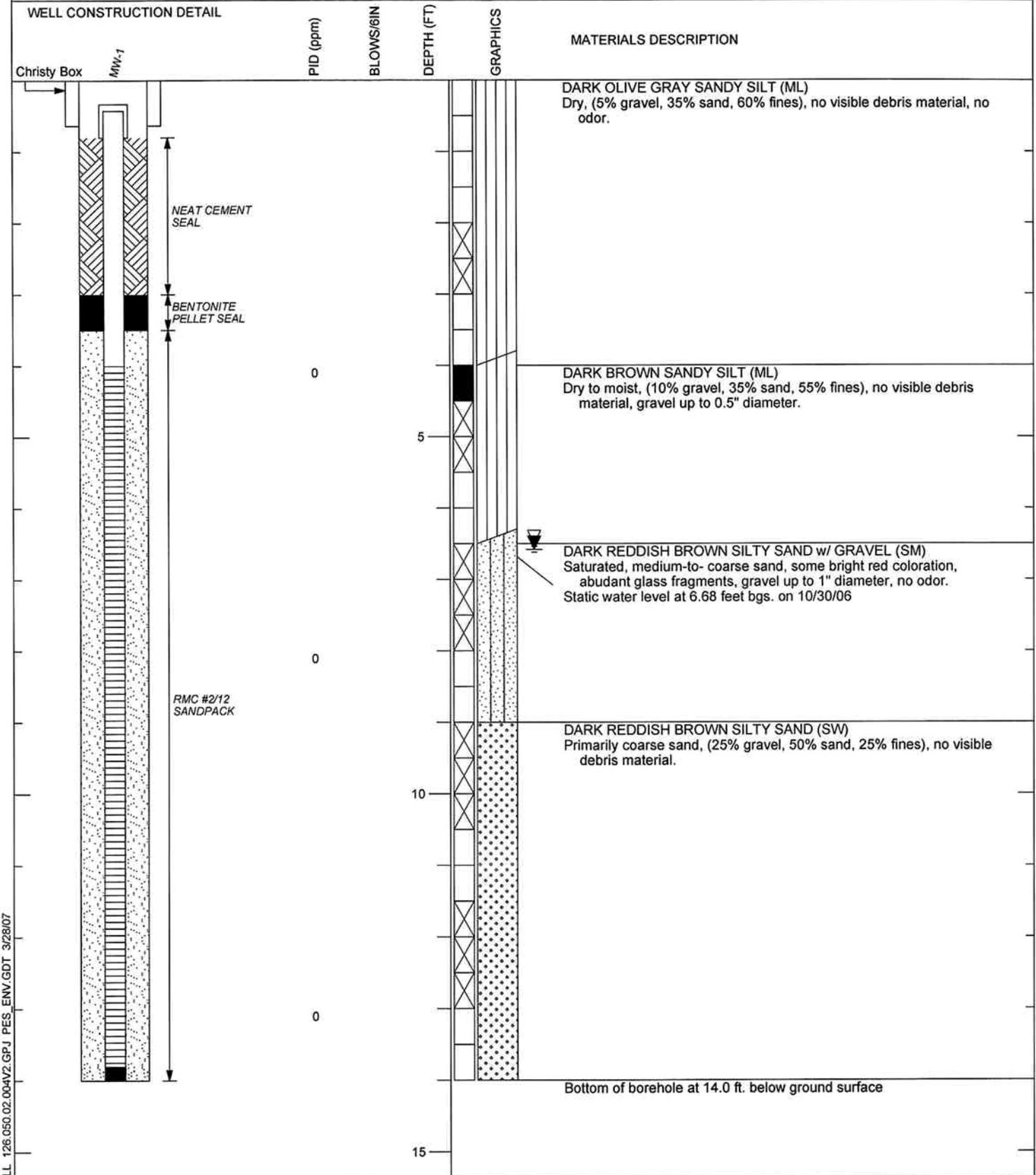


**PES Environmental, Inc.**  
Engineering & Environmental Services

**Unified Soil Classification System Chart**  
Sobrato  
Mowry 10-Acre Parcel

PLATE

**B-0**

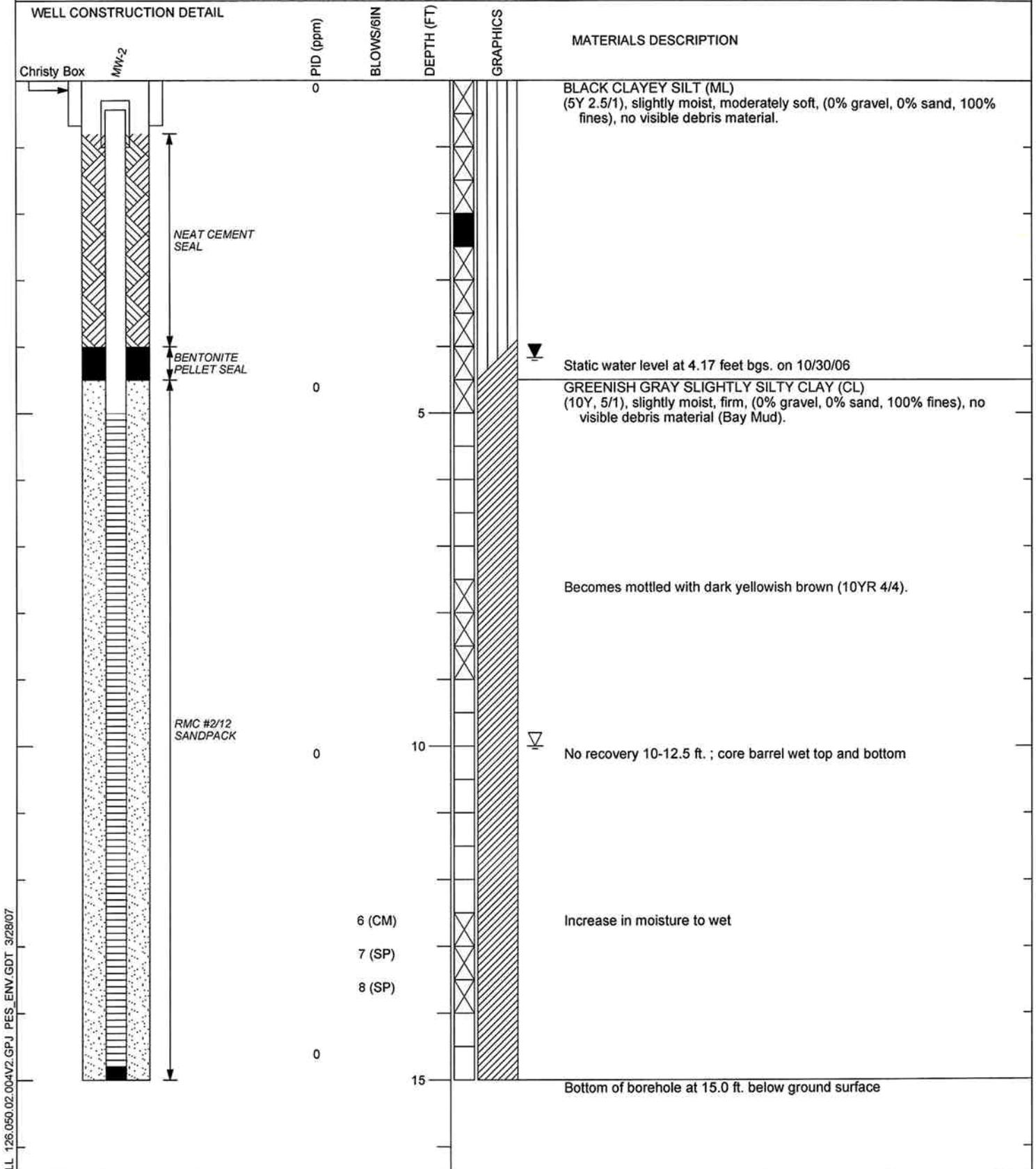


LOG OF BORING/WELL: 126.050.02.004V2.GPJ PES\_ENV\_GDT\_3/28/07

PROJECT: Sobrato  
 LOCATION: Mowry 10-Acre Parcel  
 JOB NUMBER: 126.050.02.004  
 GEOLOGIST/ENGINEER: Mitch Buttress  
 DRILL RIG: CME 75

DIAMETER OF HOLE: 8 in.  
 REVIEWED BY:  
 TOTAL DEPTH OF HOLE: 14 feet  
 DATE STARTED: 10/17/06  
 DATE COMPLETED: 10/17/06

PLATE  
**C-1**

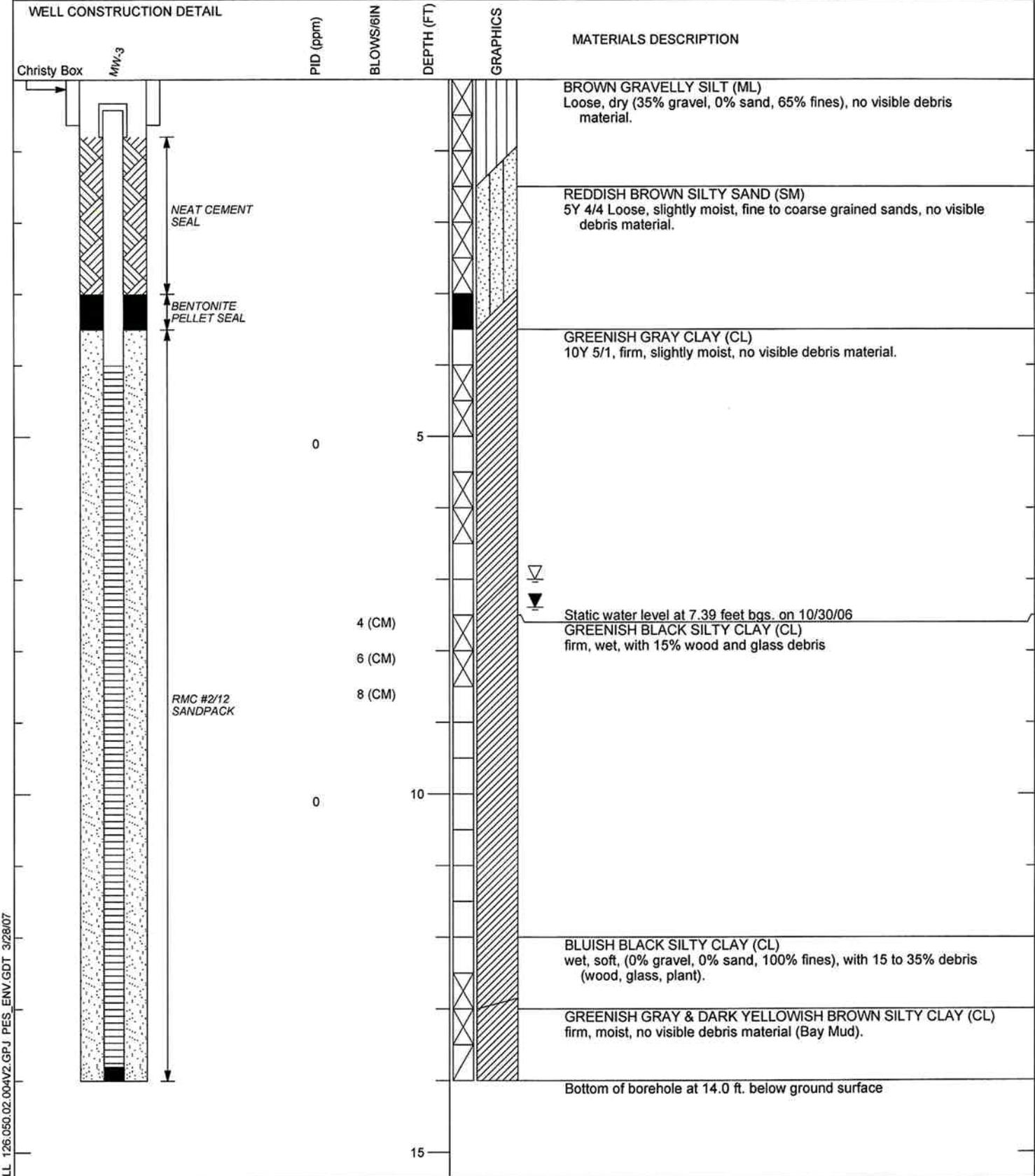


LOG OF BORING/WELL 126.050.02.004V2.GPJ PES\_ENV.GDT 3/28/07

PROJECT Sobrato  
 LOCATION Mowry 10-Acre Parcel  
 JOB NUMBER 126.050.02.004  
 GEOLOGIST/ENGINEER C Baldassari  
 DRILL RIG CME LAR

DIAMETER OF HOLE 8 in.  
 REVIEWED BY  
 TOTAL DEPTH OF HOLE 15 feet  
 DATE STARTED 10/18/06  
 DATE COMPLETED 10/18/06

PLATE  
**C-2**

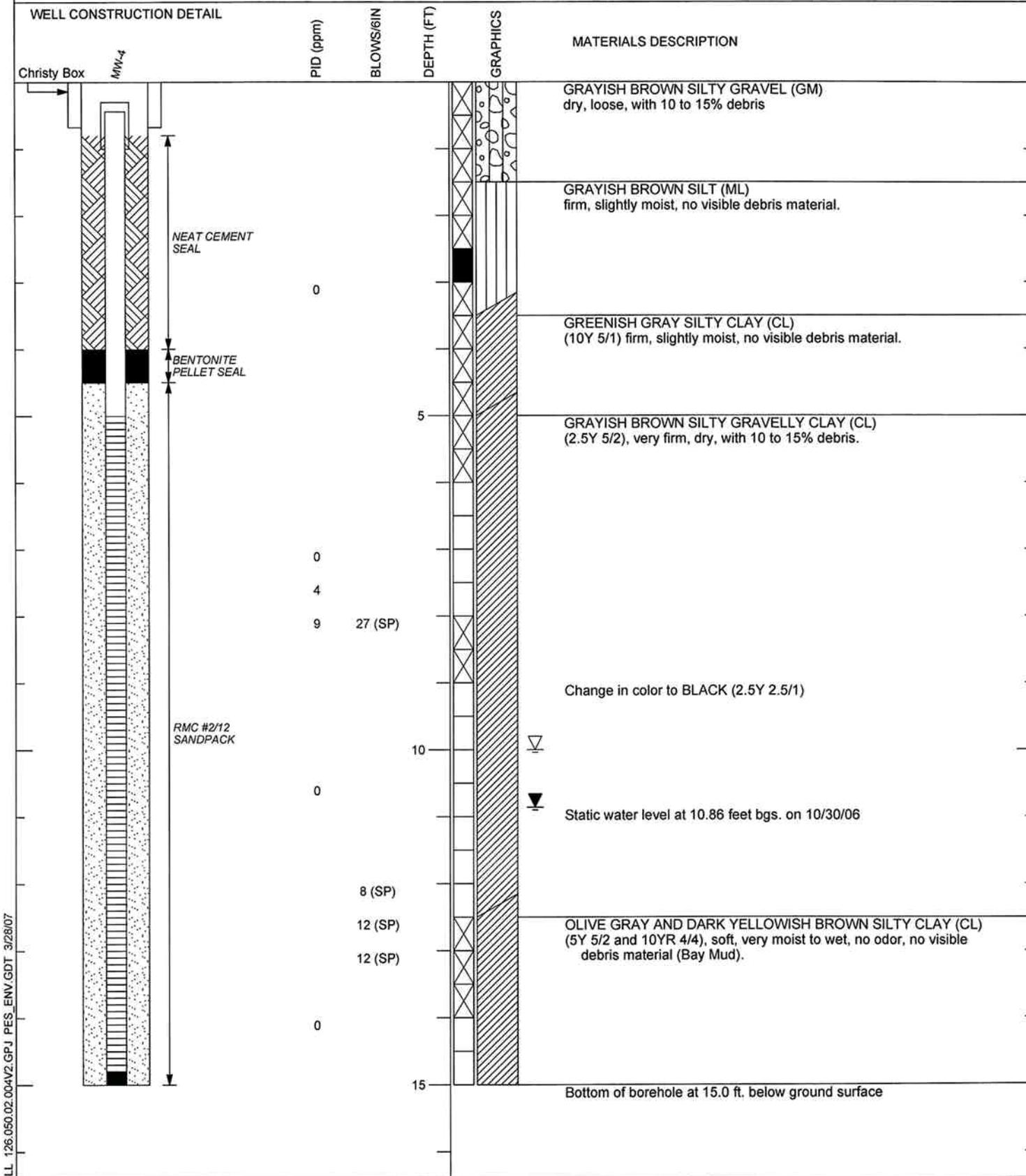


LOG OF BORING/WELL 126.050.02.004V2.GPJ PES\_ENV\_GDT 3/28/07

PROJECT Sobrato  
 LOCATION Mowry 10-Acre Parcel  
 JOB NUMBER 126.050.02.004  
 GEOLOGIST/ENGINEER C Baldassari  
 DRILL RIG CME LAR

DIAMETER OF HOLE 8 in.  
 REVIEWED BY  
 TOTAL DEPTH OF HOLE 14 feet  
 DATE STARTED 10/18/06  
 DATE COMPLETED 10/18/06

PLATE  
**C-3**

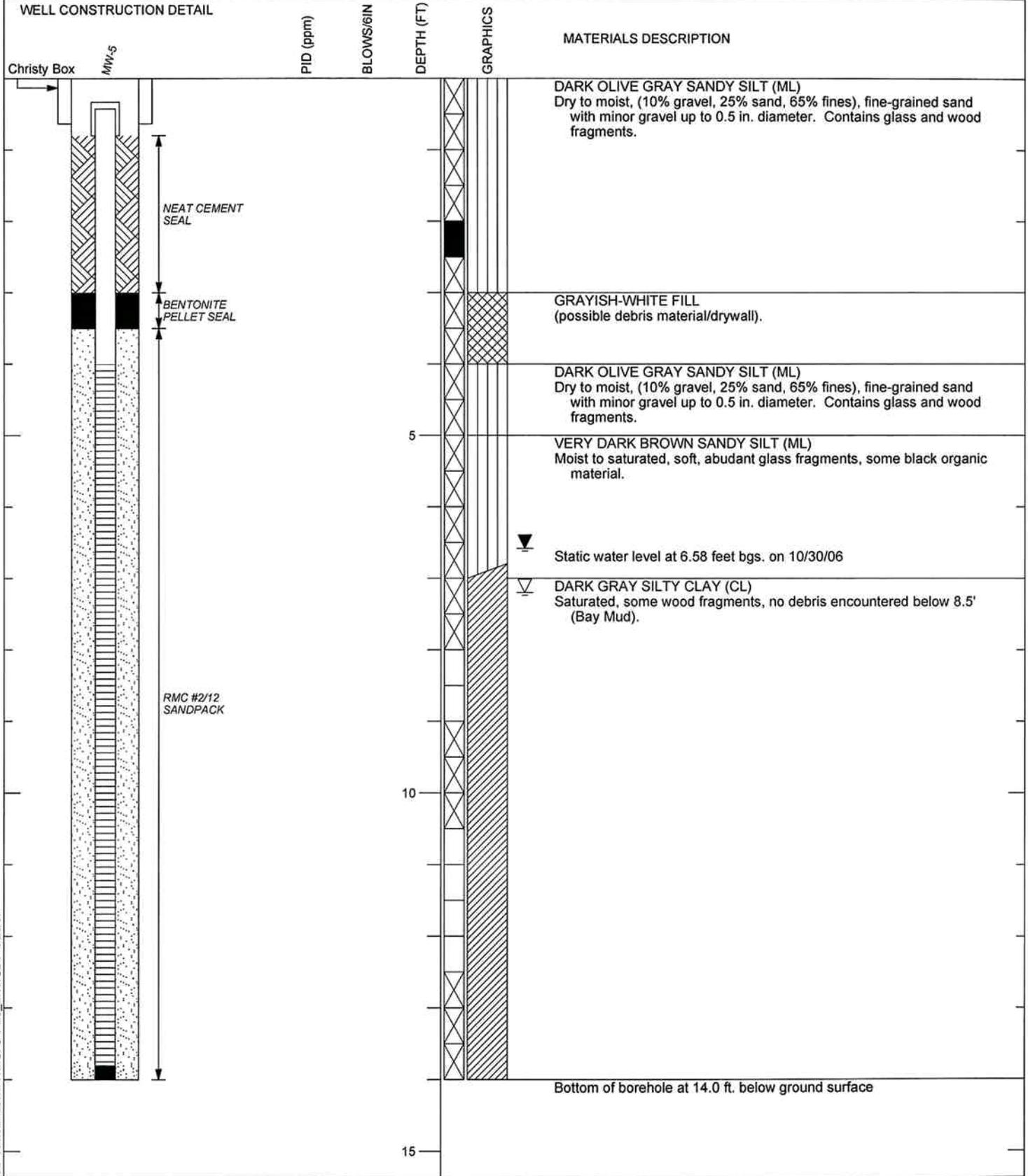


LOG OF BORING/WELL 126.050.02.004V2.GPJ PES\_ENV\_GDT 3/28/07

PROJECT: Sobrato  
 LOCATION: Mowry 10-Acre Parcel  
 JOB NUMBER: 126.050.02.004  
 GEOLOGIST/ENGINEER: C Baldassari  
 DRILL RIG: CME LAR

DIAMETER OF HOLE: 8 in.  
 REVIEWED BY:  
 TOTAL DEPTH OF HOLE: 15 feet  
 DATE STARTED: 10/18/06  
 DATE COMPLETED: 10/18/06

PLATE  
**C-4**



LOG OF BORING/WELL 126.050.02.004V2.GPJ PES\_ENV\_GDT 3/28/07

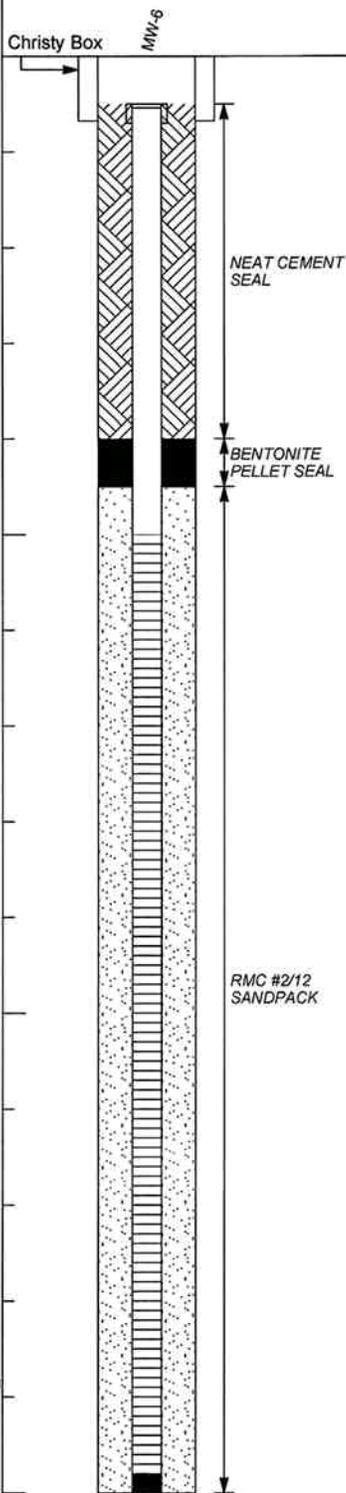
PROJECT: Sobrato  
 LOCATION: Mowry 10-Acre Parcel  
 JOB NUMBER: 126.050.02.004  
 GEOLOGIST/ENGINEER: Mitch Buttress  
 DRILL RIG: CME 75

DIAMETER OF HOLE: 8 in.  
 REVIEWED BY:  
 TOTAL DEPTH OF HOLE: 14 feet  
 DATE STARTED: 10/17/06  
 DATE COMPLETED: 10/17/06

PLATE  
**C-5**



WELL CONSTRUCTION DETAIL



PID (ppm)  
BLOWS/6IN  
DEPTH (FT)  
GRAPHICS

MATERIALS DESCRIPTION

GRAYISH BROWN GRAVELLY SILT (MLG) (2.5 Y 5/2), loose, dry, no visible debris material.

Increase in debris from 0% to 10 to 30% content

Woody debris with glass, very moist

Static water level at 9.28 feet bgs. on 10/30/06

Outside of core barrel wet; no recovery as barrel mouth clogged with debris

Methane = 0.2

Black Clay (CL) (N 2.5), wet, soft, 50% debris.

Bottom of borehole at 14.0 ft. below ground surface

LOG OF BORING/WELL: 126.050.02.004V2.GPJ PES\_ENV.GDT 3/28/07

PROJECT Sobrato  
LOCATION Mowry 10-Acre Parcel  
JOB NUMBER 126.050.02.004  
GEOLOGIST/ENGINEER C Baldassari  
DRILL RIG CME LAR

DIAMETER OF HOLE 8 in.  
REVIEWED BY  
TOTAL DEPTH OF HOLE 15 feet  
DATE STARTED 10/19/06  
DATE COMPLETED 10/19/06

PLATE

**C-6**

**APPENDIX D**

**ANALYTICAL LABORATORY REPORTS – SOIL**



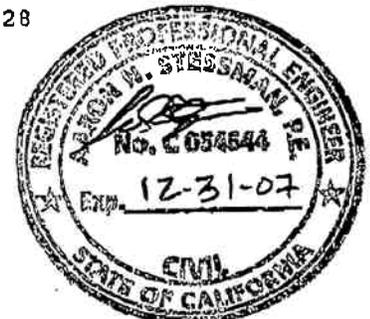
**CSS ENVIRONMENTAL SERVICES, INC.**  
 Managing Cost, Scope and Schedule  
 100 Gall Drive, Suite 1  
 Novato, CA 94949  
 Telephone: (415) 883-6203  
 Facsimile: (415) 883-6204

**Site Positions**

CSS Project 6436 - PES Environmental, Inc.  
 Mowry Ave. 10-Acre Parcel, Newark

Horizontal Coordinate System: North American 1983-CONUS      Survey Date: 11/7/06  
 Height System: North American Vertical Datum 1988-Ortho. Ht. (GEOID03)  
 Project file: 6436 PES Newark.spr  
 Desired Horizontal Accuracy: 0.100Ft + 1ppm  
 Desired Vertical Accuracy: 0.100Ft + 2ppm  
 Confidence Level: 95% Err.  
 Linear Units of Measure: Int. Feet

Site ID	Site Descriptor	Position	95% Error	Fix Status	Position Status
1 MW-4	THIS IS TRM-A N RIM WELL LOCATION N TOC	Lat. 37° 30' 32.24543" N	0.028		Adjusted
		Lon. 122° 00' 49.89291" W	0.027		
		Elv. 15.70	0.042		
		Elv. 15.46			
2 MW-3	NR WELL LOC N RIM WELL LOCATION N TOC	Lat. 37° 30' 29.08971" N	0.030		Adjusted
		Lon. 122° 00' 42.43206" W	0.029		
		Elv. 10.87			
		Elv. 10.49			
3 MW-6	NR WELL LOC N RIM WELL LOCATION N TOC	Lat. 37° 30' 32.85875" N	0.028		Adjusted
		Lon. 122° 00' 48.84516" W	0.027		
		Elv. 15.08			
		Elv. 14.80			
4 MW-5	NR WELL LOC N RIM WELL LOCATION N TOC	Lat. 37° 30' 35.44805" N	0.027		Adjusted
		Lon. 122° 00' 52.34372" W	0.026		
		Elv. 12.20			
		Elv. 11.94			
5 6883	MONUMENT DG6883	Lat. 37° 31' 16.19698" N	0.000	Fixed	Adjusted
		Lon. 122° 02' 03.94561" W	0.000	Fixed	
		Elv. 13.386	0.000	Fixed	
6 MW-2	NR WELL LOC N RIM WELL LOCATION N TOC	Lat. 37° 30' 30.90665" N	0.030		Adjusted
		Lon. 122° 00' 42.73940" W	0.028		
		Elv. 8.37			
		Elv. 8.06			





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 Managing Cost, Scope and Schedule  
 100 Gall Drive, Suite 1  
 Novato, CA 94949  
 Telephone: (415) 883-6203  
 Facsimile: (415) 883-6204

7	MW-1	THIS IS TEM-B	Lat. 37° 30' 35.51829" N	0.028		Adjusted
			Lon. 122° 00' 49.41853" W	0.027		
		N RIM WELL LOCATION	Elv. 12.95			
		N TOC	Elv. 12.31			
8	3812	MONUMENT AA3812	Lat. 37° 33' 11.26891" N	0.000	Fixed	Adjusted
			Lon. 122° 03' 13.70397" W	0.000	Fixed	
			Elv. 16.732	0.000	Fixed	



**APPENDIX E**

**ANALYTICAL LABORATORY REPORTS – GROUNDWATER**

**FIELD ACTIVITY REPORT  
FOR**

**OCTOBER 2006  
WELL DEVELOPMENT  
&  
GROUNDWATER SAMPLING**

**MOWRY AVENUE 10-ACRE PARCEL  
NEWARK, CALIFORNIA**

Prepared for: PES Environmental Inc.  
1682 Novato Blvd., Suite 100  
Novato, California 94947

Date Prepared: October 31, 2006



## **FIELD ACTIVITY REPORT FOR**

### **OCTOBER 2006 WELL DEVELOPMENT & GROUNDWATER SAMPLING**

#### **MOWRY AVENUE 10-ACRE PARCEL NEWARK, CALIFORNIA**

Tasks: Well Development and Groundwater Sampling  
ESS Personnel: Stephen Penman  
Well Development Date: October 25, 2006  
Groundwater Sampling Date: October 30, 2006

#### ***Decontamination Procedures***

For each task, all downhole equipment was cleaned with Liqui-Nox® laboratory-grade soap, potable water, and rinsed with distilled water prior to use and between each monitoring well.

#### ***Equipment Calibration***

For each task, all field water quality meters were calibrated prior to use. The pH meters were calibrated using pH buffer standard solutions 4, 7, and 10. Specific Conductivity/Temperature meters are factory calibrated and runs through a self-test when the meter is activated. The Turbidity meter was calibrated to 0.02 NTUs with a 0.02 NTU solution standard.

#### ***Well Development Procedures***

##### ***Groundwater and Well Depth Measurements***

Depth to groundwater level measurements for six monitoring wells were measured and recorded prior to any development activity. All readings were performed with a Solinst® Water Level Meter. Three successive readings that agreed to within one-hundredth of a foot determined depth to groundwater and well depth. All measurements were referenced to the north rim at the top of PVC well casing (Table 1). Well depths were re-measured after completion of development.

##### ***Well Development Procedures***

Each monitoring well was developed using a surge block, centrifugal pump, and new tubing. Mechanical surging for 10 minutes with a 2-inch PVC surge block was performed in the screen interval prior to pumping. The centrifugal pump was used to remove sediment until ten casing volumes were removed.

Standard field measurements (pH, Specific Conductance, Temperature and Turbidity) were recorded during development.



Monitoring wells MW-1, MW-3, and MW-4 were purged dry several times during development.

### ***Storage of Purged Groundwater after Well Development***

Approximately 82 gallons of purged groundwater and decontamination water generated during this task was transferred into two, new, labeled, 55-gallon drums.

## **GROUNDWATER PROCEDURES**

### ***Groundwater Level and Well Depth Measurements***

On October 30, 2006, depth to groundwater level measurements for six monitoring wells were measured and recorded prior to any purging activity. Each well was allowed to equilibrate to atmospheric pressure for at least 20 minutes. All readings were performed with a Solinst® Water Level Meter. Three successive readings that agreed to within one-hundredth of a foot determined depth to groundwater and well depth. All measurements were referenced to the north rim at the top of PVC well casing (Table 1).

### ***Well Purging & Sampling Procedures***

For each monitoring well, the removal of three well casing volumes and stabilization of water quality parameters were required prior to sampling. Purging was determined completed when pH, Specific Conductance, and Temperature stabilized within a 10% range for three successive readings. If, during the removal of three casing volumes, parameters did not stabilize, purging and monitoring continued until stabilization was achieved or until five casing volumes were removed.

A centrifugal pump and dedicated pump tubing was used for purging all wells. The pump intake was set just below the pumping water level. New disposable polyethylene bailers with bottom-emptying devices were used for sample collection.

### ***Chemical Analyses***

Groundwater samples were collected for: Volatile Organic Compounds (VOCs) and TPH as Gasoline by EPA Method 8260, TPH-Extractable with Silica Gel Clean-Up; and Title 22 Dissolved Metals.

### ***Sample Containers***

Entech Analytical Laboratories, Inc. of Santa Clara, California provided all sample kit containers.

Each VOC sample set was contained in three, 40-ml VOA clear glass containers preserved with Hydrochloric acid.

Each TPH-Extractable sample set was contained in two, non-preserved, one-liter amber glass containers.

Each Title 22 Metals sample was contained in a non-preserved, 250-ml plastic container. The metals samples were not filtered in the field.



### ***Sample Handling***

All sample labels were completed with waterproof ink and affixed to sample containers. Groundwater samples were collected and containerized in the order of decreasing volatilization sensitivity.

During decanting, 40-ml VOA sample containers were slightly tilted to avoid aeration or degassing. Each sample container was inverted and tapped lightly to check for air bubbles. The absence of air bubbles indicated a successful seal.

Preserved sample containers were not overfilled. Non-volatile sample containers were filled to maximum capacity.

All samples were sealed in Ziploc® storage bags and placed in chilled coolers. Bubble wrap material and wet ice was used. To further minimize the amount of melt water coming into contact with samples, the ice was also sealed in heavy-duty plastic bags.

### ***QA/QC***

The laboratory did not provide a Trip Blank set.

No other QA/QC samples were requested.

### ***Chain of Custody (COC) Forms***

All sampling and sample handling were conducted under strict chain of custody procedures. Each COC included: sampler's name and signature, sample identification, sample date and time, type and number of bottles submitted, and analysis request section.

The laboratory was directed to filter and preserve the metals samples.

ESS relinquished all samples to the laboratory October 30, 2006.

The completed COC was submitted to PES for verification October 31, 2006.

### ***Storage of Wastewater***

Throughout the monitoring and sampling event, 38 gallons of purged groundwater and decontamination water was temporarily stored in a portable 350-gallon holding tank. For maximum storage containment, approximately 28 gallons of wastewater was transferred into an existing 55-gallon drum that contains wastewater from well development. The remaining 10 gallons was placed into a second, labeled drum. A total of three drums containing groundwater and decontamination water are on-site.

### ***Comments***

Groundwater samples from MW-1 and MW-6 reacted effervescently with the hydrochloric acid. All wells are missing locks.



Jacqueline Lee  
Partner

Enclosure  
Table 1: Summary of Well Development & Groundwater Sampling  
Water Sample Log Sheets  
Chain of Custody



**Table 1: Summary of October 2006 Well Development and Groundwater Sampling**  
**Project Name: Mowry Avenue, 10-Acre Parcel**  
**Project Location: Newark, California**

**Well Development Data:**

Well I.D.	Date of Measurement (mm/dd/yr)	Depth to Groundwater (Feet, TOC)	Well Depth Before Development (Feet, TOC)	Well Depth After Development (Feet, TOC)	Total Gallons Removed	Equivalent Casing Volumes
MW-1	10/25/06	6.60	13.46	13.84	11	10
MW-2	10/25/06	3.96	14.86	14.86	18	10
MW-3	10/25/06	7.47	13.91	13.91	11	10
MW-4	10/25/06	10.34	15.36	15.36	8.5	10.4
MW-5	10/25/06	6.52	14.38	14.38	10	10
MW-6	10/25/06	9.27	15.25	15.25	10	10

**Groundwater Sampling Data:**

Well/Sample I.D.	Date of Measurement (mm/dd/yr)	Time of Measurement	Depth to Groundwater (Feet, TOC)	Sample Date	Sample Time	Total Gallons Removed	Equivalent Casing Volumes	QA/QC Type
MW-1	10/30/06	12:38	6.68	10/30/06	16:14	6	5	None
MW-2	10/30/06	12:58	4.17	10/30/06	16:48	6	3.33	None
MW-3	10/30/06	12:15	7.39	10/30/06	16:33	6	5.5	None
MW-4	10/30/06	12:52	10.86	10/30/06	17:05	4	5	None
MW-5	10/30/06	12:45	6.58	10/30/06	15:40	5	3.9	None
MW-6	10/30/06	12:50	9.28	10/30/06	14:35	5	5	None

Legend:  
 TOC = Top of Well Casing

**WELL DEVELOPMENT SHEETS**



**Environmental  
Sampling Services**

**WELL DEVELOPMENT WATER QUALITY LOG** WELL IDENTIFICATION MW-1 DATE 10/25/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark Project Contact: Chris Baldassari - PES Environmental  
 Laboratory: NA Weather Conditions: Clear, breezy & warm  
 Well Description: 1" 2" 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_  
 Is Well Secured? Yes / No Bolt Size: 9/16" Type of Lock / Lock number: No lock  
 Observations / Comments: Swabbed well for 10 mins.: Start 16:12 END 16:22  
 Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump  
 Pump Lines: NA New / Cleaned / Dedicated Bailer Line NA New / Cleaned / Dedicated  
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Sampling Method: NA Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump  
 pH Meter Serial No.: 217254 330089 Spec. Cond. Meter Serial No.: 96H0203AB AE  
 Date/Time Calibrated: 7/20/05 4 7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_  
 Method to Measure Water Level: Solins / Slope Serial No.: ESS#1 P.I.D. Reading: NA ppm  
 Water Level at Start (DTW): 6.60 Water Level Prior To Sampling: NA  
 TD = 13.46 - 6.60 (DTW) = 6.86 (ft. of water) x "K" = 1.1 (Gals./CV) x 10 (No. of CV) = 11 (Gals.)  
 "K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS <u>uS</u>	Turbidity (NTUs)	Color	Comments
<u>10/25/06</u>	<u>16:28</u>	<u>2</u>	<u>7.06</u>	<u>21.5</u>	<u>2960</u>	<u>71000</u>	<u>Reddish Brown</u>	<u>fine sand &amp; very thick mud</u>
	<u>16:31</u>	<u>3</u>	<u>6.93</u>	<u>20.0</u>	<u>1789</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 2 gallons</u>
	<u>16:36</u>	<u>4</u>	<u>6.98</u>	<u>19.9</u>	<u>2084</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 4.5 gals.</u>
	<u>16:41</u>	<u>5</u>	<u>6.92</u>	<u>19.8</u>	<u>1478</u>	<u>71000</u>	<u>"</u>	<u>clearing</u> <u>Dry @ 8.5 gals.</u>
	<u>16:46</u>	<u>6</u>	<u>6.94</u>	<u>20.4</u>	<u>1406</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 6.75 gals</u>
	<u>16:49</u>	<u>7</u>	<u>7.07</u>	<u>20.7</u>	<u>1597</u>	<u>71000</u>	<u>"</u>	<u>clearing</u>
	<u>16:51</u>	<u>8</u>	<u>7.04</u>	<u>19.5</u>	<u>1487</u>	<u>512</u>	<u>"</u>	<u>Dry @ 8.5 gals.</u>
	<u>16:54</u>	<u>9</u>	<u>7.02</u>	<u>19.3</u>	<u>1518</u>	<u>227</u>	<u>"</u>	<u>Dry @ 9.75 gals.</u>
	<u>16:56</u>	<u>10</u>	<u>7.02</u>	<u>19.3</u>	<u>1426</u>	<u>194</u>	<u>"</u>	<u>Dry @ 11 gals.</u>

Total Discharge: 11 Gallons Casing Volumes Removed: 10  
 Method of disposal of discharged water: 55 Gallon Drum Poly Tank Treatment System Other: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Recorded by: Stephen Penman / Jacki Lee Signature(s): [Signature]



**Environmental  
Sampling Services**

**WELL DEVELOPMENT WATER QUALITY LOG** WELL IDENTIFICATION MW-2 DATE 10/25/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark Project Contact: Chris Baldassari - PES Environmental  
 Laboratory: NA Weather Conditions: Clear, breezy + Warm  
 Well Description: 1" 2" 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_  
 Is Well Secured? Yes / No Bolt Size: 9/16 Type of Lock / Lock number: No lock  
 Observations / Comments: Swabbed for 10 mins: start 11:56 End 12:06  
 Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump  
 Pump Lines: NA New / Cleaned / Dedicated Bailer Line NA New / Cleaned / Dedicated  
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Sampling Method: NA Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump  
 pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AF / AE  
 Date/Time Calibrated: 10/25 10:45 4.7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_  
 Method to Measure Water Level: Solinst / Slope Serial No.: ESS #1 P.I.D. Reading: NA ppm  
 Water Level at Start (DTW): 3.96 (NR TOC) Water Level Prior To Sampling: NA  
 TD = 14.96 - 3.96 (DTW) = 10.9 (ft. of water) x "K" = 1.8 (Gals./CV) x 10 (No. of CV) = 18 (Gals.)  
 "K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS <u>US</u>	Turbidity (NTUs)	Color	Comments
<u>10/25/06</u>	<u>12:10</u>	<u>2</u>	<u>6.95</u>	<u>20.8</u>	<u>4247</u>	<u>&gt;1000</u>	<u>Brown</u>	<u>Fracture / Sit</u> ↓ <u>clearing</u>
	<u>12:12</u>	<u>4</u>	<u>6.64</u>	<u>20.7</u>	<u>3265</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>12:15</u>	<u>6</u>	<u>6.49</u>	<u>20.0</u>	<u>2665</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>12:18</u>	<u>8</u>	<u>6.43</u>	<u>19.5</u>	<u>3291</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>12:21</u>	<u>10</u>	<u>6.44</u>	<u>19.6</u>	<u>2358</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>12:25</u>	<u>12</u>	<u>6.45</u>	<u>20.3</u>	<u>2087</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>12:28</u>	<u>14</u>	<u>6.69</u>	<u>21.0</u>	<u>2066</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>12:30</u>	<u>16</u>	<u>6.40</u>	<u>20.8</u>	<u>2791</u>	<u>585</u>	<u>Cloudy Lt. Brown</u>	
<u>✓</u>	<u>12:36</u>	<u>18</u>	<u>6.49</u>	<u>21.1</u>	<u>9.40 mS</u>	<u>643</u>	<u>L</u>	

Total Discharge: 18 Gallons Casing Volumes Removed: 10  
 Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank Treatment System Other: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Recorded by: Stephen Penman Jacki Lee Signature(s): [Signature]



**WELL DEVELOPMENT WATER QUALITY LOG** WELL IDENTIFICATION MW-3 DATE 10/25/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark Project Contact: Chris Baldassari - PES Environmental  
 Laboratory: NA Weather Conditions: Clear, Warm and a light breeze  
 Well Description: 1" 2" 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_  
 Is Well Secured? Yes / No Bolt Size: 9/16" Type of Lock / Lock number: No Lock  
 Observations / Comments: Swabbed well for 10 mins; start 11:00 / End 11:10  
 Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump  
 Pump Lines: NA New / Cleaned / Dedicated Bailer Line NA New / Cleaned / Dedicated  
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Sampling Method: NA Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump  
 pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB / AE  
 Date/Time Calibrated: 10/25 @ 10:45 (4 7 10) @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_  
 Method to Measure Water Level: Solinst / Slope Serial No.: ES5#1 P.I.D. Reading: NA ppm  
 Water Level at Start (DTW): 7.47 (NR TO) Water Level Prior To Sampling: NA  
 TD = 13.91 - 7.47 (DTW) = 6.44 (ft. of water) x "K" = 1.1 (Gals./CV) x 10 (No. of CV) = 11 (Gals.)  
 "K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS <u>(µS)</u>	Turbidity (NTUs)	Color	Comments
<u>10/25/06</u>	<u>11:12</u>	<u>1</u>	<u>7.10</u>	<u>20.1</u>	<u>693</u>	<u>&gt;1000</u>	<u>PK Gray</u>	<u>Dry @ 1.5</u> <u>fine sand</u>
	<u>11:14</u>	<u>2</u>	<u>6.93</u>	<u>19.8</u>	<u>947</u>	<u>71000</u>	<u>"</u>	
	<u>11:16</u>	<u>3</u>	<u>7.37</u>	<u>19.6</u>	<u>1014</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 3.0</u>
	<u>11:18</u>	<u>4</u>	<u>6.78</u>	<u>20.5</u>	<u>1234</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 4.5</u>
	<u>11:20</u>	<u>5</u>	<u>6.88</u>	<u>19.5</u>	<u>1458</u>	<u>&gt;1000</u>	<u>"</u>	<u>Dry @ 5.5</u>
	<u>11:23</u>	<u>6</u>	<u>7.12</u>	<u>19.6</u>	<u>1425</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 6.5</u>
	<u>11:26</u>	<u>7</u>	<u>7.60</u>	<u>23.9</u>	<u>2125</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 7.5</u>
	<u>11:29</u>	<u>8</u>	<u>7.55</u>	<u>22.7</u>	<u>2131</u>	<u>71000</u>	<u>"</u>	<u>Dry @ 8.0</u>
	<u>11:31</u>	<u>9</u>	<u>7.59</u>	<u>21.1</u>	<u>3076</u>	<u>7000</u>	<u>"</u>	<u>Dry @ 9.0</u>
	<u>11:35</u>	<u>10</u>	<u>7.59</u>	<u>21.6</u>	<u>3053</u>	<u>388</u>	<u>brownish gray</u>	<u>Dry @ 10.0</u> <u>clearing</u>
	<u>11:40</u>	<u>11</u>	<u>7.71</u>	<u>23.9</u>	<u>3256</u>	<u>315</u>	<u>"</u>	<u>Dry @ 11.0</u>

Total Discharge: 11 Gallons Casing Volumes Removed: 10  
 Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank Treatment System Other: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Recorded by: Stephen Penman Jacki Lee Signature(s): [Signature]



**WELL DEVELOPMENT WATER QUALITY LOG** WELL IDENTIFICATION MW-4 DATE 10/25/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark Project Contact: Chris Baldassari - PES Environmental

Laboratory: NA Weather Conditions: Clear breezy + warm

Well Description: 1" 2" 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_

Is Well Secured? Yes / No Bolt Size: 9/16" Type of Lock / Lock number: No lock

Observations / Comments: Swabbed well for 10 mins: Start 12:50 END 13:00

Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump

Pump Lines: NA New Cleaned / Dedicated Bailer Line NA New / Cleaned / Dedicated

Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_

Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_

Sampling Method: NA Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump

pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB / AE

Date/Time Calibrated: 10/25 @ 10:45 4 7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_

Method to Measure Water Level: Solinst Slope Serial No.: ESS#1 P.I.D. Reading: NA ppm

Water Level at Start (DTW): 10.34 Water Level Prior To Sampling: NA

TD = 15.36 - 10.34 (DTW) = 5.02 (ft. of water) x "K" = 0.82 (Gals./CV) x 10 (No. of CV) = 8.2 (Gals.)

"K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance <u>mS</u> uS	Turbidity (NTUs)	Color	Comments
<u>10/25/06</u>	<u>13:08</u>	<u>1</u>	<u>6.71</u>	<u>21.8</u>	<u>9.41</u>	<u>&gt;1000</u>	<u>Brown</u>	<u>fine sand - silt</u>
	<u>13:10</u>	<u>2</u>	<u>6.56</u>	<u>21.4</u>	<u>7.96</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>13:13</u>	<u>3</u>	<u>6.83</u>	<u>26.1</u>	<u>9.83</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>13:17</u>	<u>4</u>	<u>6.41</u>	<u>21.8</u>	<u>8.37</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>13:25</u>	<u>5</u>	<u>6.46</u>	<u>23.5</u>	<u>4787 uS</u>	<u>&gt;1000</u>	<u>"</u>	<u>dry @ 5 gals</u>
	<u>13:38</u>	<u>6</u>	<u>6.49</u>	<u>28.7</u>	<u>9.64 mS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>13:42</u>	<u>7</u>	<u>6.37</u>	<u>22.1</u>	<u>8.39 mS</u>	<u>570</u>	<u>light Brown</u>	
	<u>13:45</u>	<u>8</u>	<u>6.36</u>	<u>21.0</u>	<u>7.57 mS</u>	<u>277</u>	<u>"</u>	

Total Discharge: 8.5 Gallons Casing Volumes Removed: 10.4

Method of disposal of discharged water: 55 Gallon Drum Poly Tank Treatment System Other: \_\_\_\_\_

Comments: \_\_\_\_\_

Recorded by: Stephen Penman Jacki Lee Signature(s): [Signature]



**WELL DEVELOPMENT WATER QUALITY LOG** WELL IDENTIFICATION MW-5 DATE 10/25/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark Project Contact: Chris Baldassari - PES Environmental  
 Laboratory: NA Weather Conditions: Clear, breezy & warm  
 Well Description: 1" 2" 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_  
 Is Well Secured: Yes / No Bolt Size: 9/16" Type of Lock / Lock number: no lock  
 Observations / Comments: Swabbed well (omins.: start 15:17 End 15:27  
 Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump  
 Pump Lines: NA New / Cleaned / Dedicated Bailer Line NA / New / Cleaned / Dedicated  
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Sampling Method: NA Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump  
 pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB / AE  
 Date/Time Calibrated: 10/20/06 7:10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_  
 Method to Measure Water Level: Solinst / Slope Serial No.: ESS#1 P.I.D. Reading: NA ppm  
 Water Level at Start (DTW): 6.52 Water Level Prior To Sampling: NA  
 TD = 14.38 - 6.52 (DTW) = 7.86 (ft. of water) x "K" = 1.3 (Gals./CV) x 10 (No. of CV) = 13 (Gals.)  
 "K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance (mS) uS	Turbidity (NTUs)	Color	Comments
<u>10/25/06</u>	<u>15:32</u>	<u>2</u>	<u>6.77</u>	<u>21.4</u>	<u>9.48</u>	<u>71000</u>	<u>Brown</u>	<u>Fine sand, silt</u>
	<u>15:35</u>	<u>4</u>	<u>6.78</u>	<u>20.0</u>	<u>7.98</u>	<u>71000</u>	<u>"</u>	
	<u>15:36</u>	<u>6</u>	<u>6.71</u>	<u>20.0</u>	<u>4754 uS</u>	<u>71000</u>	<u>"</u>	
	<u>15:38</u>	<u>8</u>	<u>6.74</u>	<u>19.9</u>	<u>7.84 mS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>15:42</u>	<u>10</u>	<u>6.73</u>	<u>20.2</u>	<u>4515 uS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>15:49</u>	<u>12</u>	<u>6.72</u>	<u>20.0</u>	<u>4212 uS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>15:51</u>	<u>13</u>	<u>6.70</u>	<u>20.3</u>	<u>4258 uS</u>	<u>610</u>	<u>lt. Brown</u>	

Total Discharge: 10 Gallons Casing Volumes Removed: 10  
 Method of disposal of discharged water: 55 Gallon Drums Poly Tank Treatment System Other: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Recorded by: Stephen Penman / Jacki Lee Signature(s): [Signature]



**WELL DEVELOPMENT WATER QUALITY LOG** WELL IDENTIFICATION MW-6 DATE 10/25/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark Project Contact: Chris Baldassari - PES Environmental  
 Laboratory: NA Weather Conditions: Clear, breezy and warm  
 Well Description: 1" 2" 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_  
 Is Well Secured? Yes No Bolt Size: 9/16" Type of Lock / Lock number: No lock  
 Observations / Comments: Surbled for 10 mins.; Start 14:03 End 14:13  
 Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump  
 Pump Lines: NA New Cleaned / Dedicated Bailer Line NA New / Cleaned / Dedicated  
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Sampling Method: NA Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump  
 pH Meter Serial No.: 217254 330089 Spec. Cond. Meter Serial No.: 96H0203AB AE  
 Date/Time Calibrated: 10/25/06 10:45 (7:10) @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_  
 Method to Measure Water Level: Solinst Slope Serial No.: E55#1 P.I.D. Reading: NA ppm  
 Water Level at Start (DTW): 9.27 Water Level Prior To Sampling: NA  
 TD = 15.25 - 9.27 (DTW) = 5.98 (ft. of water) x "K" = 1.0 (Gals./CV) x 10 (No. of CV) = 10 (Gals.)  
 "K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS <u>uS</u>	Turbidity (NTUs)	Color	Comments
<u>10/25/06</u>	<u>14:25</u>	<u>1</u>	<u>6.74</u>	<u>23.2</u>	<u>3446</u>	<u>&gt;1000</u>	<u>Black</u>	<u>fine sand silt</u>
	<u>14:28</u>	<u>2</u>	<u>6.67</u>	<u>25.4</u>	<u>2512</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:30</u>	<u>3</u>	<u>6.99</u>	<u>25.1</u>	<u>3282</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:31</u>	<u>4</u>	<u>6.84</u>	<u>24.4</u>	<u>3161</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:32</u>	<u>5</u>	<u>6.76</u>	<u>24.1</u>	<u>3089</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:34</u>	<u>6</u>	<u>6.68</u>	<u>25.8</u>	<u>3510</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:36</u>	<u>7</u>	<u>6.71</u>	<u>24.9</u>	<u>5.96 mS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:38</u>	<u>8</u>	<u>6.74</u>	<u>25.3</u>	<u>6.10 mS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:41</u>	<u>9</u>	<u>6.70</u>	<u>24.1</u>	<u>8.47 mS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:44</u>	<u>10</u>	<u>6.74</u>	<u>22.9</u>	<u>4316 uS</u>	<u>&gt;1000</u>	<u>"</u>	

Total Discharge: 10 Gallons Casing Volumes Removed: 10  
 Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank Treatment System Other: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Recorded by: Stephen Penman Jacki Lee Signature(s): [Signature]

**GROUNDWATER SAMPLING SHEETS**



**Environmental  
Sampling Services**

**WATER QUALITY SAMPLE LOG SHEET** WELL IDENTIFICATION MW-1 DATE 10/30/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark, CA Project Contact: Chris Baldassri - PES Environmental

Laboratory: Entech Analytical Labs, Inc. (408) 588-0200 Weather Conditions: Partly Sunny, breezy + cool

Well Description: 1"  2"  4"  5"  6"  Other  Well Type:  PVC  Stainless Steel  Other:

Is Well Secured?  Yes  No Bolt Size: NA Type of Lock / Lock number: No Lock

Observations / Comments: \_\_\_\_\_

Purge Method: Teflon / PE Disposable Bailer  Centrifugal Pump  GrundFos Pump  Peristaltic Pump

Pump Lines: NA New / Cleaned /  Dedicated Bailer Line: NA  New  Cleaned / Dedicated

Method of Cleaning Pump:  NA  Alconox  Liqui-nox  Tap Water  DI Rinse  Other: \_\_\_\_\_

Method of Cleaning Bailer:  NA  Alconox  Liqui-nox  Tap Water  DI Rinse  Other: \_\_\_\_\_

Sampling Method: Disp. Teflon Bailer  Disp. PE Bailer  GrundFos Redi-flow Pump  Peristaltic Pump

pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB / AE

Date/Time Calibrated: 10/30/06 13:02 4 7 10 @ 25°C Spec. Cond. Meter Calibration:  Self Test  Other: \_\_\_\_\_

Method to Measure Water Level: Solinst / Slope Serial No.: 655781 P.I.D. Reading: NA ppm

Water Level at Start (DTW): 6.68 @ 12:38 Water Level Prior To Sampling: 6.71

TD = ~~13.84~~ - 6.63 (DTW) = 7.21 (ft. of water) x "K" = 1.2 (Gals./CV) x 3 (No. of CV) = 3.6 (Gals.)

"K" = 0.04 (1" well)  "K" = 0.163 (2" well)  "K" = 0.653 (4" well)  "K" = 1.02 (5" well)  "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance (mS) uS	Turbidity (NTUs)	Color	Comments
<u>10/30/06</u>	<u>16:02</u>	<u>1</u>	<u>7.08</u>	<u>17.7</u>	<u>6.91</u>	<u>&gt;1000</u>	<u>Reddish Brown</u>	<u>fine sand</u>
	<u>16:04</u>	<u>2</u>	<u>7.00</u>	<u>18.3</u>	<u>4139 uS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>16:06</u>	<u>3</u>	<u>7.00</u>	<u>18.5</u>	<u>3624 uS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>16:08</u>	<u>4</u>	<u>7.00</u>	<u>19.5</u>	<u>3299 uS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>16:10</u>	<u>5</u>	<u>7.01</u>	<u>18.3</u>	<u>3062 uS</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>16:12</u>	<u>6</u>	<u>7.01</u>	<u>18.5</u>	<u>2908 uS</u>	<u>&gt;1000</u>	<u>"</u>	

Total Discharge: 6 Gallons Casing Volumes Removed: 5

Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank  Treatment System  Other: \_\_\_\_\_

Date/Time Sampled: 10/30/06 @ 16:14 Analysis: VOC's by EPA 8260; TPH Extractables\*, Title 22 Metals - Filtered & Preserved in Lab

Number of Sample Containers: 6 Preservative: None HCl  \* with silica gel cleanup

QA/QC: None @ \_\_\_\_\_ as an Equipment Blank Duplicate  MS/MSD  Lab Split  Field Blank

Comments: TD=13.84' (BTOC)

Sample water became effervescent when mixed w/HCl + DPAS

Recorded by: Stephen Penman / Jacki Lee Signature(s): \_\_\_\_\_



**WATER QUALITY SAMPLE LOG SHEET** WELL IDENTIFICATION MW-2 DATE 10/30/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark, CA Project Contact: Chris Baldassri - PES Environmental  
 Laboratory: Entech Analytical Labs, Inc. (408) 588-0200 Weather Conditions: Partly Cloudy breezy + cool  
 Well Description: 1" (2") 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_  
 Is Well Secured? Yes / No Bolt Size: 9/16" Type of Lock / Lock number: No lock  
 Observations / Comments: \_\_\_\_\_  
 Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump  
 Pump Lines: NA New / Cleaned Dedicated Bailer Line NA New Cleaned / Dedicated  
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Sampling Method: Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump  
 pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB / AE  
 Date/Time Calibrated: 10/30/06 13:02 4 7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_  
 Method to Measure Water Level: Solinst / Slope Serial No.: ES541 P.I.D. Reading: NA ppm  
 Water Level at Start (DTW): 4.17 @ 12:58 Water Level Prior To Sampling: 3.97  
 TD = 14.86 - 3.97 (DTW) = 10.89 (ft. of water) x "K" = 1.8 (Gals./CV) x 3 (No. of CV) = 5.4 (Gals.)  
 "K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance (mS uS)	Turbidity (NTUs)	Color	Comments
<u>10/30/06</u>	<u>13:54</u>	<u>1</u>	<u>6.49</u>	<u>19.5</u>	<u>5.88</u>	<u>183</u>	<u>lt Brown</u>	
	<u>13:55</u>	<u>2</u>	<u>6.47</u>	<u>19.7</u>	<u>5.68</u>	<u>438</u>	<u>Brown</u>	
	<u>13:58</u>	<u>3</u>	<u>6.46</u>	<u>19.8</u>	<u>5.30</u>	<u>729</u>	<u>"</u>	
	<u>13:59</u>	<u>4</u>	<u>6.54</u>	<u>19.9</u>	<u>5.18</u>	<u>752</u>	<u>"</u>	
	<u>14:01</u>	<u>5</u>	<u>6.50</u>	<u>19.8</u>	<u>5.01</u>	<u>803</u>	<u>"</u>	
	<u>14:02</u>	<u>6</u>	<u>6.49</u>	<u>19.7</u>	<u>1917 uS</u>	<u>768</u>	<u>"</u>	

Total Discharge: 6 Gallons Casing Volumes Removed: 3.33  
 Method of disposal of discharged water: 55 Gallon Drum Poly Tank Treatment System Other: \_\_\_\_\_  
 Date/Time Sampled: 10/30/06 @ 16:48 Analysis: VOC's by EPA 8260; TPH Extractables\*, Title 22 Metals - Filtered & Preserved in Lab  
 Number of Sample Containers: 6 Preservative: None HCl \* with silica gel cleanup  
 QA/QC: None @ \_\_\_\_\_ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank  
 Comments: 80% Recovery = 8 6.15 (BTOC)

Recorded by: Stephen Penman Jacki Lee Signature(s): [Signature]



**Environmental  
Sampling Services**

**WATER QUALITY SAMPLE LOG SHEET** WELL IDENTIFICATION MW-3 DATE 10/30/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark, CA Project Contact: Chris Baldassri - PES Environmental

Laboratory: Entech Analytical Labs, Inc. (408) 588-0200 Weather Conditions: Partly Cloudy, breezy & Cool

Well Description: 1" 2" 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_

Is Well Secured? Yes / No Bolt Size: 9/16" Type of Lock / Lock number: No lock

Observations / Comments: \_\_\_\_\_

Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump

Pump Lines: NA New / Cleaned Dedicated Bailer Line NA New Cleaned / Dedicated

Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_

Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_

Sampling Method: Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump

pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB / AE

Date/Time Calibrated: 10/30/06 4 7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_

Method to Measure Water Level: Solinst / Slope Serial No.: ESS#1 P.I.D. Reading: NA ppm

Water Level at Start (DTW): 7.39 @ 12:15 Water Level Prior To Sampling: 7.97 @ 16:30

TD =  $13.91 - 7.39$  (DTW) =  $6.52$  (ft. of water) x "K" =  $1.1$  (Gals./CV) x  $3$  (No. of CV) =  $3.3$  (Gals.)

"K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS <u>(US)</u>	Turbidity (NTUs)	Color	Comments
<u>10/30/06</u>	<u>13:21</u>	<u>1</u>	<u>7.17</u>	<u>19.6</u>	<u>1091</u>	<u>238</u>	<u>lt Brown</u>	
	<u>13:22</u>	<u>2</u>	<u>7.42</u>	<u>19.5</u>	<u>1399</u>	<u>568</u>	<u>Brown</u>	
	<u>13:25</u>	<u>3</u>	<u>7.26</u>	<u>19.3</u>	<u>2392</u>	<u>401</u>	<u>"</u>	
	<u>13:26</u>	<u>4</u>	<u>6.84</u>	<u>18.8</u>	<u>2441</u>	<u>370</u>	<u>"</u>	
	<u>13:28</u>	<u>5</u>	<u>7.04</u>	<u>19.0</u>	<u>2806</u>	<u>580</u>	<u>dk Brown</u>	
	<u>13:31</u>	<u>6</u>	<u>6.89</u>	<u>19.4</u>	<u>2932</u>	<u>558</u>	<u>"</u>	

Total Discharge: 6 Gallons Casing Volumes Removed: 5.5

Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank Treatment System Other: \_\_\_\_\_

Date/Time Sampled: 10/30/06 @ 16:33 Analysis: VOC's by EPA 8260; TPH Extractables\*, Title 22

Metals - Filtered & Preserved in Lab

Number of Sample Containers: 6 Preservative: None (HCl) \* with silica gel cleanup

QA/QC: None @ \_\_\_\_\_ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank

Comments: 80% Recovery =  $\Sigma = 8.69$  ft. (B70c)

Recorded by Stephen Penman Jacki Lee Signature(s): Step Penman



**Environmental  
Sampling Services**

<b>WATER QUALITY SAMPLE LOG SHEET</b>	<b>WELL IDENTIFICATION MW-4 DATE 10/30/06</b>							
Project Name: <u>Mowry Ave., 10-Acre Parcel, Newark, CA</u> Project Contact: <u>Chris Baldassri - PES Environmental</u>								
Laboratory: <u>Entech Analytical Labs, Inc. (408) 588-0200</u> Weather Conditions: <u>Mostly sunny, breezy &amp; cool</u>								
Well Description: 1" <input checked="" type="radio"/> 2" <input checked="" type="radio"/> 4" <input type="radio"/> 5" <input type="radio"/> 6" <input type="radio"/> Other <input type="checkbox"/>	Well Type: <u>PVC</u> Stainless Steel <input type="checkbox"/> Other: <input type="checkbox"/>							
Is Well Secured? <u>Yes</u> No <input type="checkbox"/> Bolt Size: <u>9/16"</u>	Type of Lock / Lock number: <u>No lock</u>							
Observations / Comments: _____								
Purge Method: Teflon / PE Disposable Bailer <u>Centrifugal Pump</u> GrundFos Pump Peristaltic Pump								
Pump Lines: NA New / Cleaned <u>Dedicated</u> Bailer Line NA <u>New</u> Cleaned / Dedicated								
Method of Cleaning Pump: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: _____								
Method of Cleaning Bailer: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: _____								
Sampling Method: Disp. Teflon Bailer <u>Disp. PE Bailer</u> GrundFos Redi-flow Pump Peristaltic Pump								
pH Meter Serial No.: <u>217254 / 330089</u> Spec. Cond. Meter Serial No.: <u>96H0203AE</u> / AE								
Date/Time Calibrated: <u>10/30/06 @ 13:02</u> <u>4 7 10</u> @ 25°C Spec. Cond. Meter Calibration: <u>Self Test</u> Other: _____								
Method to Measure Water Level: <u>Solinst</u> Slope Serial No.: <u>655#1</u> P.I.D. Reading: <u>NA</u> ppm								
Water Level at Start (DTW): <u>10.86 @ 12:52</u> Water Level Prior To Sampling: <u>10.57 @ 17:04</u>								
TD = <u>15.36 - 10.58</u> (DTW) = <u>4.78</u> (ft. of water) x "K" = <u>0.8</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>2.4</u> (Gals.)								
"K" = 0.04 (1" well) <u>"K" = 0.163 (2" well)</u> "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)								
FIELD WATER QUALITY PARAMETERS								
Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS <u>µS</u>	Turbidity (NTUs)	Color	Comments
<u>10/30/06</u>	<u>15:03</u>	<u>1</u>	<u>6.45</u>	<u>18.5</u>	<u>3878</u>	<u>839</u>	<u>Brown</u>	
	<u>15:05</u>	<u>2</u>	<u>6.42</u>	<u>18.4</u>	<u>3722</u>	<u>280</u>	<u>"</u>	
	<u>15:08</u>	<u>3</u>	<u>6.41</u>	<u>18.4</u>	<u>3827</u>	<u>347</u>	<u>"</u>	
	<u>15:10</u>	<u>4</u>	<u>6.43</u>	<u>18.4</u>	<u>4208</u>	<u>446</u>	<u>"</u>	<u>Σ = 13.94 *</u>
Total Discharge: <u>4</u> Gallons		Casing Volumes Removed: <u>5</u>						
Method of disposal of discharged water: <u>55 Gallon Drum(s)</u> Poly Tank Treatment System Other: _____								
Date/Time Sampled: <u>10/30/06 @ 17:05</u>		Analysis: <u>VOC's by EPA 8260; TPH Extractables*, Title 22 Metals - Filtered &amp; Preserved in Lab</u>						
Number of Sample Containers: <u>6</u>		Preservative: <u>None (HCl)</u> * with silica gel cleanup						
QA/QC: <u>None</u> @ _____ as an Equipment Blank		Duplicate MS/MSD Lab Split Field Blank						
Comments: <u>*80% Recovery = 211.54' (BTOC)</u>								
Recorded by: <u>Stephen Penman</u> / Jacki Lee		Signature(s): <u>[Signature]</u>						



**WATER QUALITY SAMPLE LOG SHEET** WELL IDENTIFICATION MW-5 DATE 10/30/06

Project Name: Mowry Ave., 10-Acre Parcel, Newark, CA Project Contact: Chris Baldassri - PES Environmental  
 Laboratory: Entech Analytical Labs, Inc. (408) 588-0200 Weather Conditions: Mostly Sunny, breezy & warm  
 Well Description: 1" (2") 4" 5" 6" Other \_\_\_\_\_ Well Type: PVC Stainless Steel Other: \_\_\_\_\_  
 Is Well Secured? Yes / No Bolt Size: 9/16" Type of Lock / Lock number: No lock  
 Observations / Comments: \_\_\_\_\_  
 Purge Method: Teflon / PE Disposable Bailer Centrifugal Pump GrundFos Pump Peristaltic Pump  
 Pump Lines: NA New / Cleaned Dedicated Bailer Line NA New Cleaned / Dedicated  
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: \_\_\_\_\_  
 Sampling Method: Disp. Teflon Bailer Disp. PE Bailer GrundFos Redi-flow Pump Peristaltic Pump  
 pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB AE  
 Date/Time Calibrated: 10/30/06 13:02 4 7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: \_\_\_\_\_  
 Method to Measure Water Level: Solins Slope Serial No.: ES5#1 P.I.D. Reading: NA ppm  
 Water Level at Start (DTW): 6.58 @ 12:45 Water Level Prior To Sampling: \_\_\_\_\_  
 TD = 14.38 - 6.55 (DTW) = 7.83 (ft. of water) x "K" = 1.3 (Gals./CV) x 3 (No. of CV) = 3.9 (Gals.)  
 "K" = 0.04 (1" well) "K" = 0.163 (2" well) "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)

**FIELD WATER QUALITY PARAMETERS**

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS <u>(uS)</u>	Turbidity (NTUs)	Color	Comments
<u>10/30/06</u>	<u>15:29</u>	<u>1</u>	<u>6.78</u>	<u>19.6</u>	<u>4973</u>	<u>71000</u>	<u>Brown</u>	<u>fine sands/silt</u>
	<u>15:31</u>	<u>2</u>	<u>6.77</u>	<u>19.6</u>	<u>4942</u>	<u>71000</u>	<u>Brown</u>	
	<u>15:33</u>	<u>3</u>	<u>6.79</u>	<u>19.4</u>	<u>4889</u>	<u>71000</u>	<u>"</u>	
	<u>15:35</u>	<u>4</u>	<u>6.82</u>	<u>19.6</u>	<u>4818</u>	<u>71000</u>	<u>"</u>	
	<u>15:37</u>	<u>5</u>	<u>6.81</u>	<u>19.1</u>	<u>4690</u>	<u>71000</u>	<u>"</u>	

Total Discharge: 5 Gallons Casing Volumes Removed: 3.9  
 Method of disposal of discharged water: 55 Gallon Drums Poly Tank Treatment System Other: \_\_\_\_\_  
 Date/Time Sampled: 10/30/06 @ 15:40 Analysis: VOc's by EPA 8260; TPH Extractables\*, Title 22  
Metals - Filtered & Preserved in Lab  
 Number of Sample Containers: 6 Preservative: None HCl \* with silica gel cleanup  
 QA/QC: None @ \_\_\_\_\_ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank  
 Comments: \_\_\_\_\_

Recorded by: Stephen Penman / Jacki Lee Signature(s): [Signature]



**Environmental  
Sampling Services**

<b>WATER QUALITY SAMPLE LOG SHEET</b>	<b>WELL IDENTIFICATION MW-6 DATE 10/30/06</b>							
Project Name: <u>Mowry Ave., 10-Acre Parcel, Newark, CA</u> Project Contact: <u>Chris Baldassri - PES Environmental</u>								
Laboratory: <u>Entech Analytical Labs, Inc. (408) 588-0200</u> Weather Conditions: <u>Partly Cloudy, breezy + cool</u>								
Well Description: 1" <u>2"</u> 4" 5" 6" Other _____	Well Type: <u>PVC</u> Stainless Steel Other: _____							
Is Well Secured? <u>Yes</u> / No <u>Bolt Size: 9/16"</u>	Type of Lock / Lock number: <u>No lock</u>							
Observations / Comments: _____								
Purge Method: Teflon / PE Disposable Bailer <u>Centrifugal Pump</u> GrundFos Pump Peristaltic Pump								
Pump Lines: NA New / Cleaned <u>Dedicated</u> Bailer Line NA <u>New</u> / Cleaned / Dedicated								
Method of Cleaning Pump: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: _____								
Method of Cleaning Bailer: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: _____								
Sampling Method: Disp. Teflon Bailer <u>Disp. PE Bailer</u> GrundFos Redi-flow Pump Peristaltic Pump								
pH Meter Serial No.: <u>217254 / 330089</u> Spec. Cond. Meter Serial No.: <u>96H0203AB</u> / AE								
Date/Time Calibrated: <u>10/13/02 @ 7:10</u> @ 25°C Spec. Cond. Meter Calibration: <u>Self Test</u> Other: _____								
Method to Measure Water Level: <u>Solinst</u> Slope Serial No.: <u>ESJ #1</u> P.I.D. Reading: <u>NA</u> ppm								
Water Level at Start (DTW): <u>9.28 @ 12:50</u> Water Level Prior To Sampling: <u>9.44</u>								
TD = <u>15.25 - 9.28</u> (DTW) = <u>5.97</u> (ft. of water) x "K" = <u>1</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>3</u> (Gals.)								
"K" = 0.04 (1" well) <u>"K" = 0.163 (2" well)</u> "K" = 0.653 (4" well) "K" = 1.02 (5" well) "K" = 1.46 (6" well)								
FIELD WATER QUALITY PARAMETERS								
Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS uS	Turbidity (NTUs)	Color	Comments
<u>10/30/06</u>	<u>14:23</u>	<u>1</u>	<u>6.66</u>	<u>21.4</u>	<u>8.36</u>	<u>&gt;1000</u>	<u>Dark</u>	
	<u>14:25</u>	<u>2</u>	<u>6.69</u>	<u>21.7</u>	<u>7.85</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:27</u>	<u>3</u>	<u>6.71</u>	<u>21.8</u>	<u>5.33</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:29</u>	<u>4</u>	<u>6.72</u>	<u>21.7</u>	<u>5.37</u>	<u>&gt;1000</u>	<u>"</u>	
	<u>14:32</u>	<u>5</u>	<u>6.73</u>	<u>21.8</u>	<u>4635 uS</u>	<u>&gt;1000</u>	<u>"</u>	
Total Discharge: <u>5</u> Gallons		Casing Volumes Removed: <u>5</u>						
Method of disposal of discharged water: <u>55 Gallon Drums</u> Poly Tank Treatment System Other: _____								
Date/Time Sampled: <u>10/30/06 @ 14:35</u> Analysis: <u>VOC's by EPA 8260; TPH Extractables*, Title 22 Metals - Filtered &amp; Preserved in Lab</u>								
Number of Sample Containers: <u>6</u> Preservative: <u>None (HCl)</u> * with silica gel cleanup								
QA/QC: <u>None</u> @ _____ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank								
Comments: <u>sample water became effervescent when mixed w/HCl in vials.</u>								
Recorded by: <u>Stephen Penman</u> Jacki Lee Signature(s): <u>[Signature]</u>								



**DISTRIBUTION**

**SUMMARY OF ENVIRONMENTAL CONDITIONS  
10-ACRE PARCEL  
MOWRY ROAD  
NEWARK, CALIFORNIA**

**NOVEMBER 20, 2006**

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