

Appendix H

**Phase I and Phase II Environmental
Site Assessments**

PHASE I ENVIRONMENTAL SITE ASSESSMENT
Open Land
Palm Avenue/Industrial Parkway
San Bernardino California

Prepared for:
On Palm and Industrial Partners LLC
C/O
IDS Real Estate Group
515 South Figueroa Street, Suite 1600
Los Angeles, CA 90071

Prepared by:



**PROFESSIONAL
PROPERTY
INSPECTIONS, LLC**

ENVIRONMENTAL SERVICES

**889 Sterling Oaks Ct.
Oak Park, CA 91377**

January 2007

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Ben Morris
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January 2007

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PHASE I ENVIRONMENTAL SITE ASSESSMENT
45 Acre Parcel at the Northeast Corner of
Palm Avenue and Industrial Parkway
San Bernardino, CA

1.0 INTRODUCTION

Professional Property Inspections, Inc. (PPI) is pleased to submit this Phase I Environmental Site Assessment (ESA) for the above-referenced Site in the City of San Bernardino, California (Site) (Figure 1). This ESA is intended to evaluate the Site for potential Recognized Environmental Conditions (REC) that may be present at the Site.

2.0 OBJECTIVE

The objective of the ESA described in this report is to assess the likelihood that RECs, as defined by ASTM, are present at the Site. A Recognized Environmental Condition “means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.” Performance of a Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property, within reasonable limits of time and cost.

3.0 SCOPE OF SERVICES, METHODOLOGY AND LIMITATIONS

The findings of the Phase I ESA as represented within this report, must be viewed in recognition of certain limiting conditions. The scope of work commissioned for this project does not represent an exhaustive study, but rather a reasonable inquiry, consistent with good commercial practice, in general accordance with ASTM Practice E-1527-05.

To meet the objective of this ESA, PPI performed the following activities:

- Conducted a site walk to document the current condition of the Site and neighboring facilities.
- Review of historic records and information related to uses of the site
- Review of a previous magnetometer investigation of the property to assess whether buried wastes may be present on the site
- Interviewed personnel familiar with the Site.
- Commissioned a regulatory database report.
- Reviewed selected local agency records.
- Prepared this report of findings.

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard of care exercised by environmental consultants performing similar work in the project area. No limitations or exceptions were encountered during this assessment. Based on the available information obtained during completion of this investigation, no significant data gaps were encountered. In the course of this assessment, PPI has relied on information provided by outside parties, such as regulatory agencies, previous reports and interview sources. For the purpose of this assessment, such third-party information is assumed to be accurate unless contradictory evidence is noted, and PPI does not express or imply any warranty regarding information provided by third-party sources.

This report has been prepared for the use and reliance of On Palm/Industrial Partners LLC, their lenders, partners and counsel. Any other third party use made without the express approval of PPI will be at such user's sole risk with no recourse to PPI.

4.0 SITE OVERVIEW

4.1 Site Setting

The site consists of an approximate 45 acre parcel of open land located at the northeast corner of Palm Avenue and Industrial Parkway in San Bernardino California (Figure 1). The site includes flat open space as well as low rises and relief.

4.2. Geology and Hydrogeology

The Geologic Map for the site indicates that the site contains alluvial fan material derived from the local mountains including alternative layers of sand and gravel as well as mica shist. Groundwater is reported to exist at a depth range of 50 feet below ground surface and flows in a southerly direction.

5.0 SITE USE AND HISTORY

The site was reported to have been open land until the construction of Camp Ono, an Army installation that operated during the World War II era. Camp Ono served multiple purposes including a depot, manufacturing facility, munitions storage and prisoner of war camp. The Site itself was reportedly used for tent manufacturing.

5.1 Previous Investigations

As will be discussed in more detail below, the site is located within the boundaries of a Federal Superfund site referred to as the Newmark Groundwater Contamination site. Suspicions were raised regarding Camp Ono serving as a source of solvents to the regional groundwater impacts. Specifically to the site, there were concerns that there may have been waste buried on site in a trench. In response, EPA directed a study that was conducted by EG&G Idaho, Inc. and included a magnetic field survey to assess the potential presence of buried materials. The conclusions of the study were that such buried materials are not present on site.

5.2 Aerial Photograph Review

Aerial photographs covering the Site were reviewed by PPI. Observations are as noted below.

Date	Source	Remarks
5/22/2002	USGS	The subject property appears undeveloped, although it appears that fill has been placed and grading has occurred on the subject property. The gasoline service station and restaurant currently adjoining the northwest corner of the subject property and fronting on Palm Ave. are present. The 215 Freeway is north and east of the subject property, with residential development on the north side of the Freeway. There is a water tank on the West side of Palm Ave. There are two railroad tracks south and west of the subject property. Several industrial facilities are located south and east of the subject property along Industrial Parkway. Historic Highway 66 is south of Industrial Parkway, with railroad tracks parallel to it.
10/3/1995	USGS	Same as above
8/15/1989	USGS	Same as above but the service station and restaurant are not present, and what appear to be tracks as would be made by off road vehicles are present on the hills and areas between the hills on the subject property.
7/12/1980	Aerial Map Industries	The same as above but it appears that there is a service station adjoining the northwest corner of the subject property and fronting on Palm Ave. and another one on the west side of Palm Ave. at the 215 Freeway (off site). There is what appears to be a single family home on the north side the 215 Freeway. The water tank(s) now on the west side of Palm Ave. are not present.
8/20/1972	USDA	The same as above. There are very few houses north of the 215 freeway, and an industrial facility off site on Industrial Parkway, which appears to have been a dirt road at that time, was observed.
9/9/1968	ASCSUSDA	No change observed
10/18/1966	Universe	No change observed
1/25/1953	ASCSUSDA	It appears that there is a building on the subject property in the approximate location where the remnant foundations were observed on the northeast side of the large hill during the site walk. There is a grid pattern on the ground north and east of the large hill on the subject property, perhaps from the previous military operations. There is an industrial facility / rail siding with multiple tracks south of the subject property on Industrial Pkwy. The railroad tracks are present west and south of the subject property.
7/9/1938	ASCSUSDA	The subject property is undeveloped, as is the entire area, save for farm fields north of Kendall Drive. Historic Highway 66 was observed south of Industrial Parkway, with railroad tracks running parallel to it. Palm Avenue is in place

5.3 Historical Topographic Map Review

Historical topographic maps covering the Site were reviewed as presented by GeoSearch. No unique or differing information than described in the aerial photograph review were noted

5.4 Historical Map Review

The National Archive in Laguna Niguel, CA had a map on file, which shows that the subject property was part of the Camp Ono military installation. It appears that the Site itself was part of the tent manufacturing operations that took place at Camp Ono.

6.0 SITE AND VICINITY RECONNAISSANCE

6.1 Site Reconnaissance

PPI conducted a Site reconnaissance of the property on December 4, 2006. The walk-through inspection was conducted at the Site to identify visible evidence of RECs of concern. Selected photographs illustrating the property conditions are included in Appendix A.

Summaries of the Site and observations are detailed below.

<i>Use and Description of Facility:</i>	The site is currently vacant land.
<i>Underground and Above Ground Storage Tanks:</i>	No underground storage tanks (USTs) were reported or observed at this Site. No above ground storage tanks (ASTs) were present.
<i>Hazardous Materials, Hazardous Wastes or Petroleum Products:</i>	No significant quantities of hazardous materials or petroleum products were reported or observed at the Site. However, what appeared to be indiscriminate dumping onto the subject property of trash, drums and other debris was observed There are large areas of what appears to be fill dirt of unknown origin on the subject property. This fill dirt may be contain hazardous materials.
<i>Drains, Drain lines and Sumps:</i>	Storm water drains from the 215 Freeway onto the subject property. It has been shown elsewhere that stormwater runoff from freeways can contain hydrocarbons, metals and other contaminants
<i>Pits, Ponds, Lagoons</i>	No pits, ponds, or lagoons were observed at the Site.
<i>Industrial Wastewater:</i>	The site is vacant land and does not include processes that generate industrial wastewater.
<i>Stains:</i>	We observed one area of soil staining around dumped automobile parts.
<i>Wells:</i>	No groundwater monitoring wells were observed to be present at the Site.

***Litigation,
Administrative
Action, Violation
Notices***

An interview was conducted with Mr. Mark Cousineau. Mr. Cousineau reported that to his knowledge, there were no pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site. He did not know of any notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products. The only information that Mr. Cousineau was aware of was the previous magnetic survey conducted at the direction of EPA.

In summary, the only conditions of concern that were noted during the Site walk were:

- Areas of indiscriminate dumping of debris that could contain hazardous materials
- Storm water runoff from the adjacent 215 Freeway.

6.2 Site Vicinity

Land use in the immediate vicinity of the Site was noted to be a mixed use of commercial and industrial with residential farther away and open space beyond that. Specifically, the adjacent properties are as follows:

- A gasoline service and restaurant abut the northeast corner of the subject property.
- The site is bound to the north and east by the 215 Freeway
- A machine shop is located south of the site
- The property is bound to the west by Industrial Parkway.

In summary, no conditions were observed in the vicinity that would constitute an REC for the Site.

7.0 REGULATORY AGENCY DATABASE RESEARCH

Regulatory agency database information was obtained from a standard radius Site Assessment (ASTM) report by GeoSearch, Inc. The summary below includes only those properties within the search radii specified by the ASTM Standard Practice for Environmental Site Assessments (ASTM E 1527) for each database search. A discussion of selected findings of the GeoSearch report is presented below. A copy of this report is included in Appendix B.

- No indication of the presence of tanks was found in the government database report.
- The government database report shows that the subject property is located very near or at the origin of the groundwater contamination plume which caused the creation of the Newmark Groundwater Contamination Superfund Site. The source of that release has not been discerned to date and the responsible parties have not been identified. It is our understanding that a settlement has been reached between the Federal

government, the Army and the State of California to fund the remedy to remediate the groundwater.

- The report shows that the American National Can Company at 5715 Industrial Parkway 0.11 of a mile southeast (not southwest as listed in the report) of the subject property had a leaking underground gasoline tank case which was closed 10/23/1991. Given the down gradient location topographically as well as the groundwater flow direction shown by the Superfund Site plume to the south and east, and the closed status, that site is not of concern.

7.1 Local Agency and other Records Review

County of San Bernardino Building Department

- Construction of a 600 Square foot cabin was completed on the site in 1961.

City of San Bernardino Building Department

- No records for the site prior to 1994 were available for inspection.
- August 1999- An application for phase grading was submitted and approved.
- September 2004- A permit application was submitted for vacant land fences.

7.2 EPA Records

Environmental Protection Agency Interviews

PPI contacted EPA Newmark Groundwater Contamination project manager Mr. Christopher Lechens who provided additional information regarding the Newmark Groundwater Contamination. In our telephone conversation Mr. Lechens stated that that the contamination source and Potentially Responsible Party investigation was ongoing. To date, a couple of potential sources had been discovered including a waste landfill site and the United States Army. Mr. Lechens stated that the Army has settled with the City of San Bernardino with no admission of guilt. Currently the remediation effort includes two pump and treatment systems with the closest treatment facility being approximately 3.6 miles from the site with monitoring wells being more closely located to the site.

7.4 Tribal Records

The Site does not lie within a designated tribal area. Thus tribal records are not applicable to this Site.

7.5 Oil and/or Gas Wells

A review of the Munger Map Book and did not indicate any oil and/or gas wells on or near the subject property.

8.0 USER QUESTIONS AND RESPONSES

Our client supplied the responses indicated after the following questions:

1) Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? **No.**

2) Are you aware of any Activity and Use Limitations (AULs) such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? **No.**

3) Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? **No. (Knowledge is limited to reports disclosed.)**

4) Does the purchase price being paid for this property reasonably reflect the fair market value of the property? **Yes.**

If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? **n/a**

5) Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example,

a) Do you know the past uses of the property? **As disclosed in report.**

b) Do you know of specific chemicals that are or were present at the property? **No**

c) Do you know of spills or other chemical releases at the property? **No.**

d) Do you know of any environmental cleanups that have taken place at the property? **No.**

6) Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property? **No.**

7) Why are you requesting this Phase I Environmental Site Assessment?

Purchase of property.

8) What type of property transaction is involved (sale, purchase, exchange, etc.)? **Sale.**

9.0 SUMMARY OF FINDINGS

The Phase I Environmental Site Assessment conducted for the Site found the following:

- The Site history did not reveal any RECs per se;
- Site reconnaissance did reveal possible RECs for Site.
- The agency database review did reveal possible RECs for the Site.
- The local agency record review did not reveal any RECs for the Site.

10.0 CONCLUSIONS

We have performed a Phase I Environmental Site Assessment for the 45 acre property located at the Northeast Corner of Palm Avenue and Industrial Parkway in San Bernardino, California. This assessment has revealed evidence of the following Recognized Environmental Conditions in connection with the Site:

- The site is located at or very near the source of the NewMark Groundwater Contamination Superfund site. The source of that superfund site has not been found and the responsible parties not identified. While the site was part of the former Camp Ono, activities on site or in the immediate site vicinity could have contributed to the release of solvents to groundwater;
- Evidence of indiscriminate dumping of debris and fill dirt was observed on site. Such materials can contain hazardous materials;
- Stormwater runoff from the adjacent 215 Freeway flows onto the property. It has been shown elsewhere that stormwater runoff from freeways can contain hydrocarbons, metals and other hazardous materials.

11.0 QUALIFICATIONS

Mr. F. Stephen Masek

Mr. F. Stephen Masek performed the inspection and assessment portions of the survey. Mr. Masek has performed thousands of environmental inspections in a wide variety of commercial and government buildings, including airports, military bases, high-rise buildings, apartment buildings, shopping centers, schools, office buildings, hospitals, retail buildings, factories, recreation facilities, warehouses, residences and R&D buildings. Mr. Masek has been a California Certified Asbestos Consultant since the certification program started in 1992. Mr. Masek has been a California certified lead Inspector / Risk Assessor since 1993. He has extensive experience in related environmental services. He obtained a B.S.B.A. degree from Washington University in St. Louis (1980). California Registered Environmental Assessor #07178 ASTM Member Number 127659, Committees E50 and D22. He contributed to the 2000 revisions to the ASTM Phase I standard, and helped write portions of the ASTM Property Condition Assessment standard.

Ben Morris, Principal

Mr. Morris is the president of PPI. He is a Certified Indoor Environmentalist (CIE), Certified Indoor Environmental Consultant (CIEC), a Certified Mold Remediator (CMR), Certified Microbial Remediation Supervisor (CMRS), a Certified Residential Mold Assessor and a Water Restoration Technician. He has five years experience conducting commercial, residential and industrial inspections throughout Southern California. Mr. Morris has 30 years of operational business experience in the construction industry including general construction, project management and property maintenance for commercial, industrial, medical and residential properties.

12.0 REFERENCES

The United States Environmental Protection Agency Web Site

<http://yosemite.epa.gov/r9/sfund/arindex.nsf/a857a32>

[857b74b94882564c3002b2205/eff835dc2066c18088256f0900622689!](http://yosemite.epa.gov/r9/sfund/arindex.nsf/a857a32857b74b94882564c3002b2205/eff835dc2066c18088256f0900622689!)

San Bernardino Engineering Depot:

National Archive in Laguna Niguel, CA

GeoSearch–

2705 Bee Caves Rd, Suite 330 A Austin, Texas 78746

866-396-0042 A fax: 512-472-9967

www.geo-search.net.

Figures

Figure 1 - Site Location Map



Figure 1- Site Location Map

44.58 Acre Parcel at the Northeast Corner of Palm Avenue and Industrial Parkway in San Bernardino, California

Figure 2- Proposed Site plan

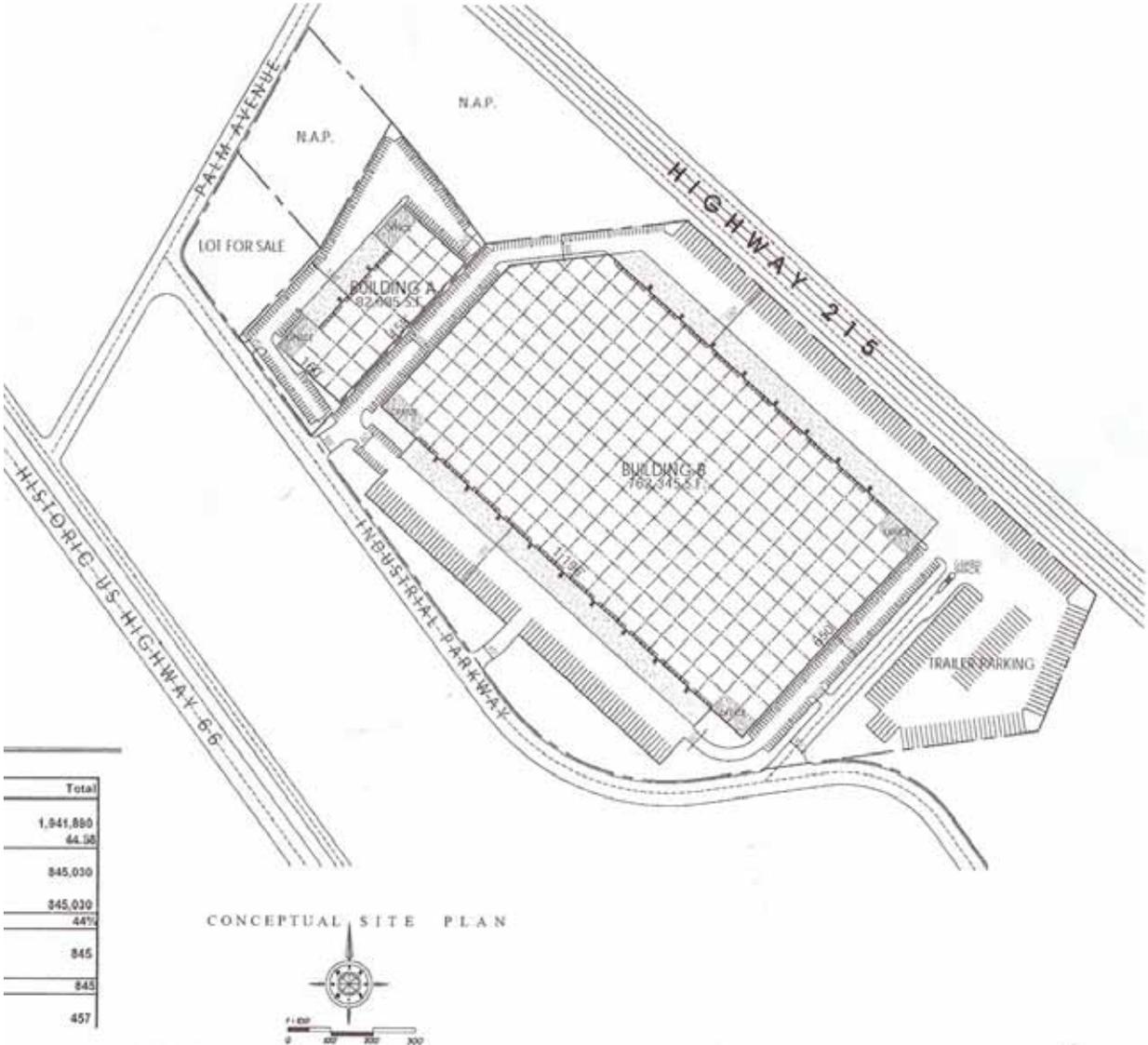


Figure 2- Proposed Site Plan
 44.58 Acre Parcel at the Northeast Corner of Palm Avenue and Industrial Parkway in San Bernardino, California

Figure 3- Map of Camp Ono

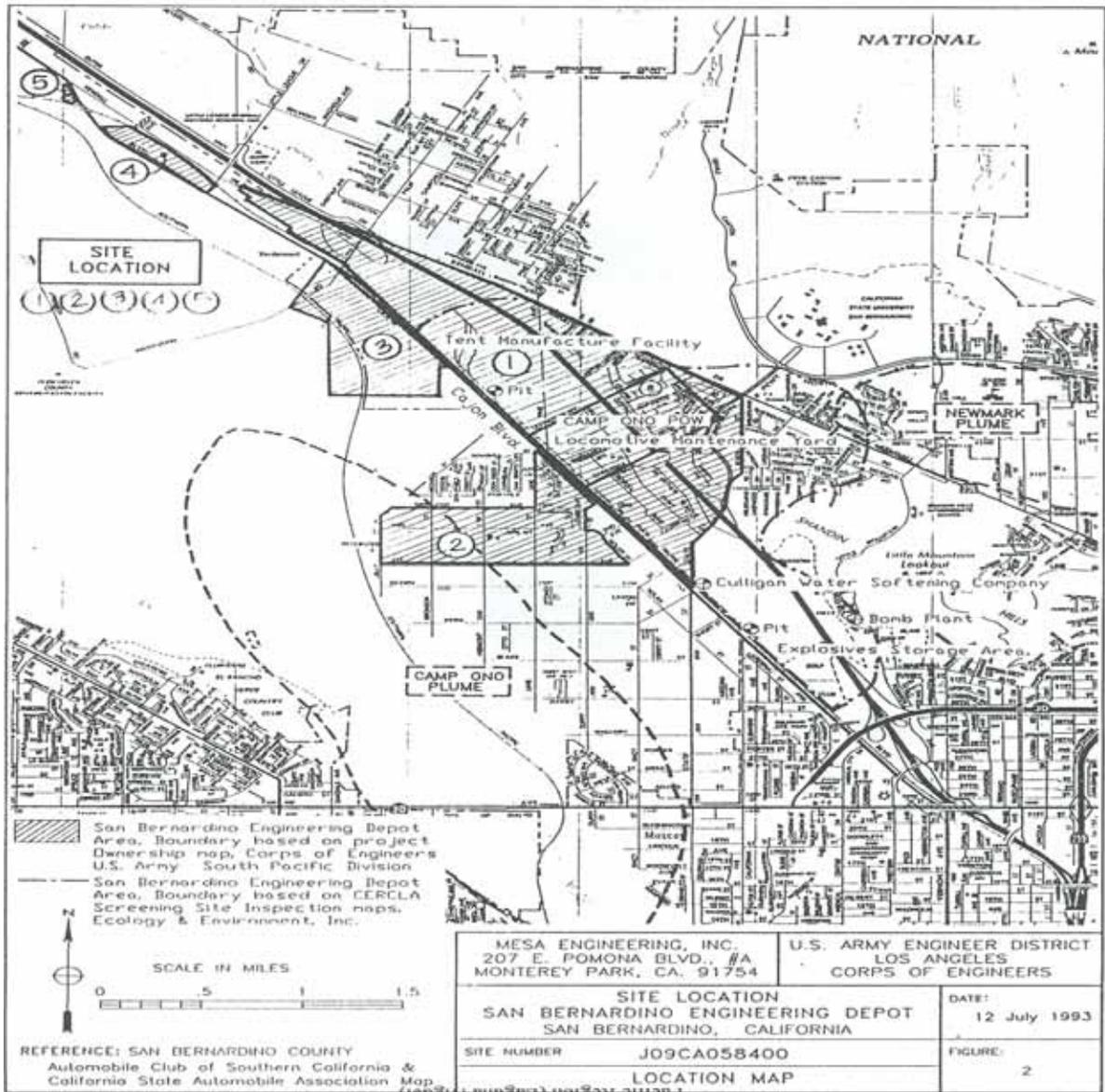


Figure 3- Map of Camp Ono



Figure 4- Groundwater Contamination Plume Map

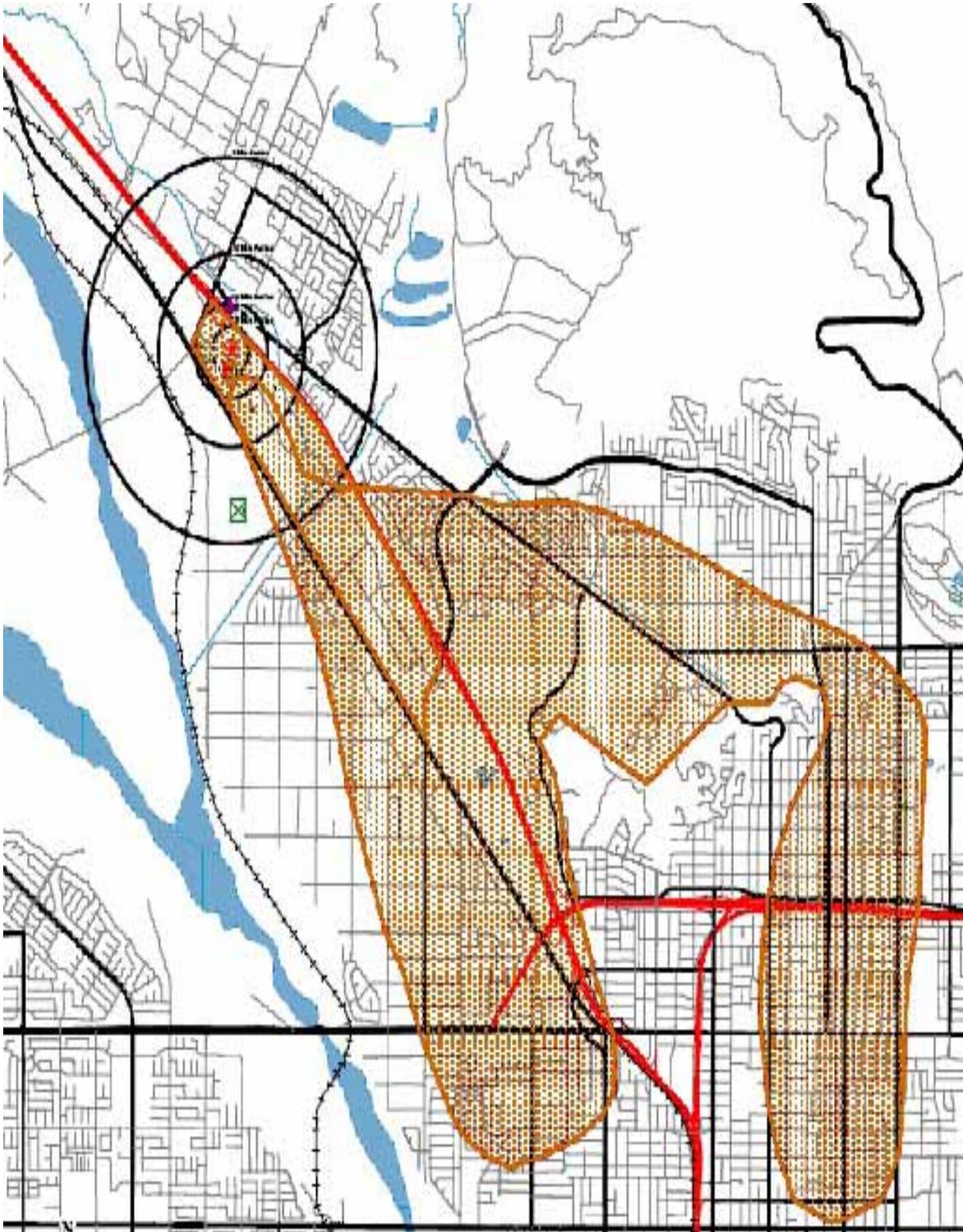


Figure 4- Groundwater Contamination Plume Map



APPENDIX

Appendix A – Site Photographs



Photograph 1: A View of The large area of what appears to be recently worked fill dirt, as viewed from the top of the larger hill on the subject property



Photograph 2: A view of The portion of the subject property shown as "Lot For Sale" on the site plan



Photo 3: The Fred G. Walter and Son machine shop across Industrial Parkway from the subject property and the railroad tracks beyond



Photo 4: The "lot For Sale" on the subject property at the bottom of the photo, Palm Avenue, and water tanks and railroad tracks beyond



Photo 5: The paved lot which adjoins, but which is shown as is not being a part of the subject property , and the Denny's restaurant and service station adjoining the subject property



Photo 6: One of several piles of demolition debris we observed, this with roofing materials which may contain asbestos (the silver paint and the roofing)



Photo7: Some of the old tires we observed dumped onto the subject property



Photo 8: One of the empty drums we observed dumped onto the subject property



Photo 9: Another drum dumped onto the subject property



Photo 10: Demolition debris



Photo 11: The partially buried old building foundation on the east side of the base of the large hill on the subject property

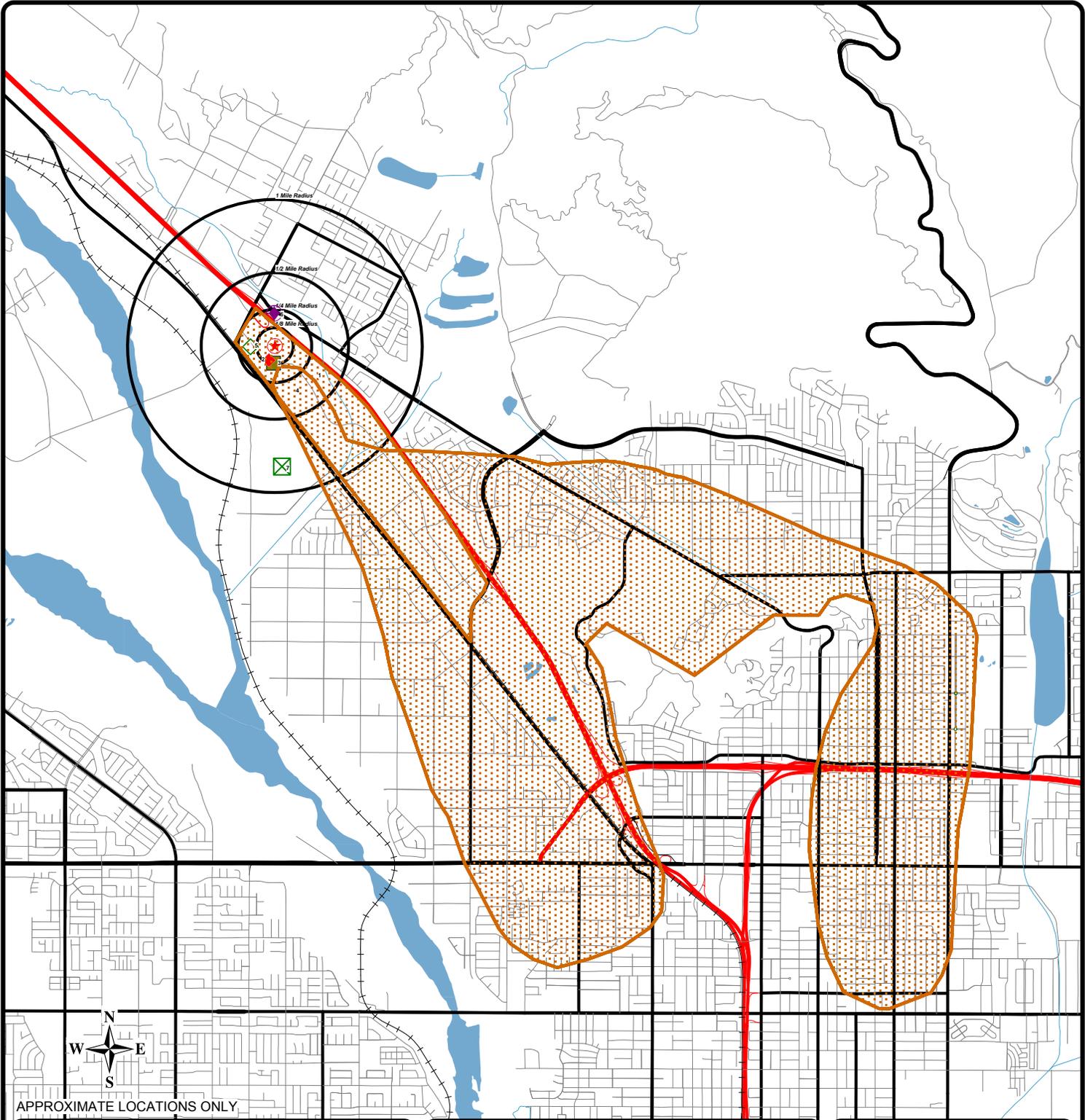


Photo 12: The graded / filled area along the 215 Freeway



Photo 13: One of the storm water drains from the 215 Freeway which drains onto the subject property

Appendix B- GeoSearch Report

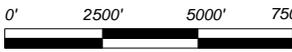


APPROXIMATE LOCATIONS ONLY

-  TARGET PROPERTY (TP)
-  LUST
-  SWEEPS
-  SITE POLYGON
-  HWTS
-  FUDS
-  SBFD

STREET MAP 1

*Palm and Industrial
Industrial Parkway
San Bernardino, CA*



0' 2500' 5000' 7500'

SCALE: 1" = 5000'



GeoSearch

2705 Bee Caves Rd, Suite 330
Austin, Texas 78746
866-396-0042

aerial map industries 7/12/1980



12474-68

USGS 5/22/2002



USGS 10/03/1995



USDA 8/20/1972



ASCS-USDA 9/9/1968



Universe 10/18/1966

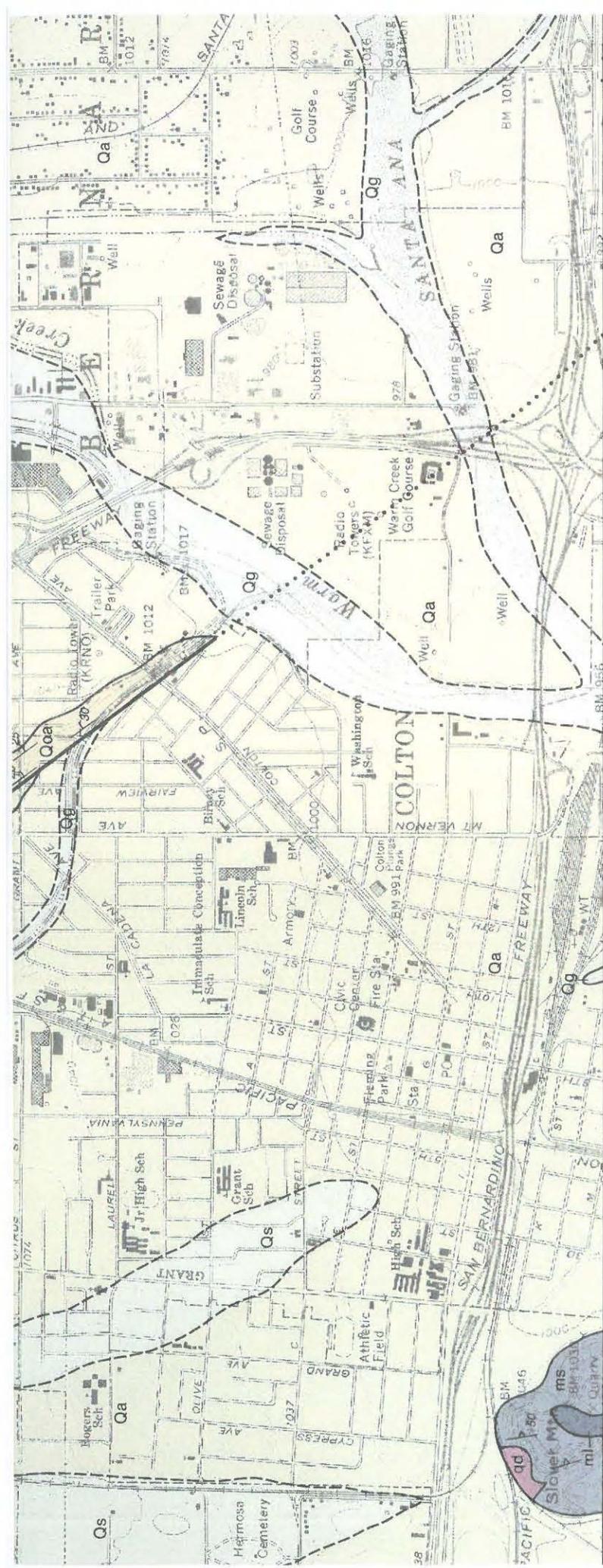


ASCS-USDA 1/25/1953



ASCS-USDA 7/9/1938





GEOLOGIC MAP OF THE SAN BERNARDINO NORTH / NORTH 1/2 OF SAN BERNARDINO SOUTH QUADRANGLES

1967

1967

BY THOMAS W. DIBBLEE, JR., 2004

EDITED BY JOHN A. MINCH

Dibblee Geology Center Map #DF-127: First Printing, AUGUST 2004

PUBLISHED BY AND AVAILABLE FROM THE

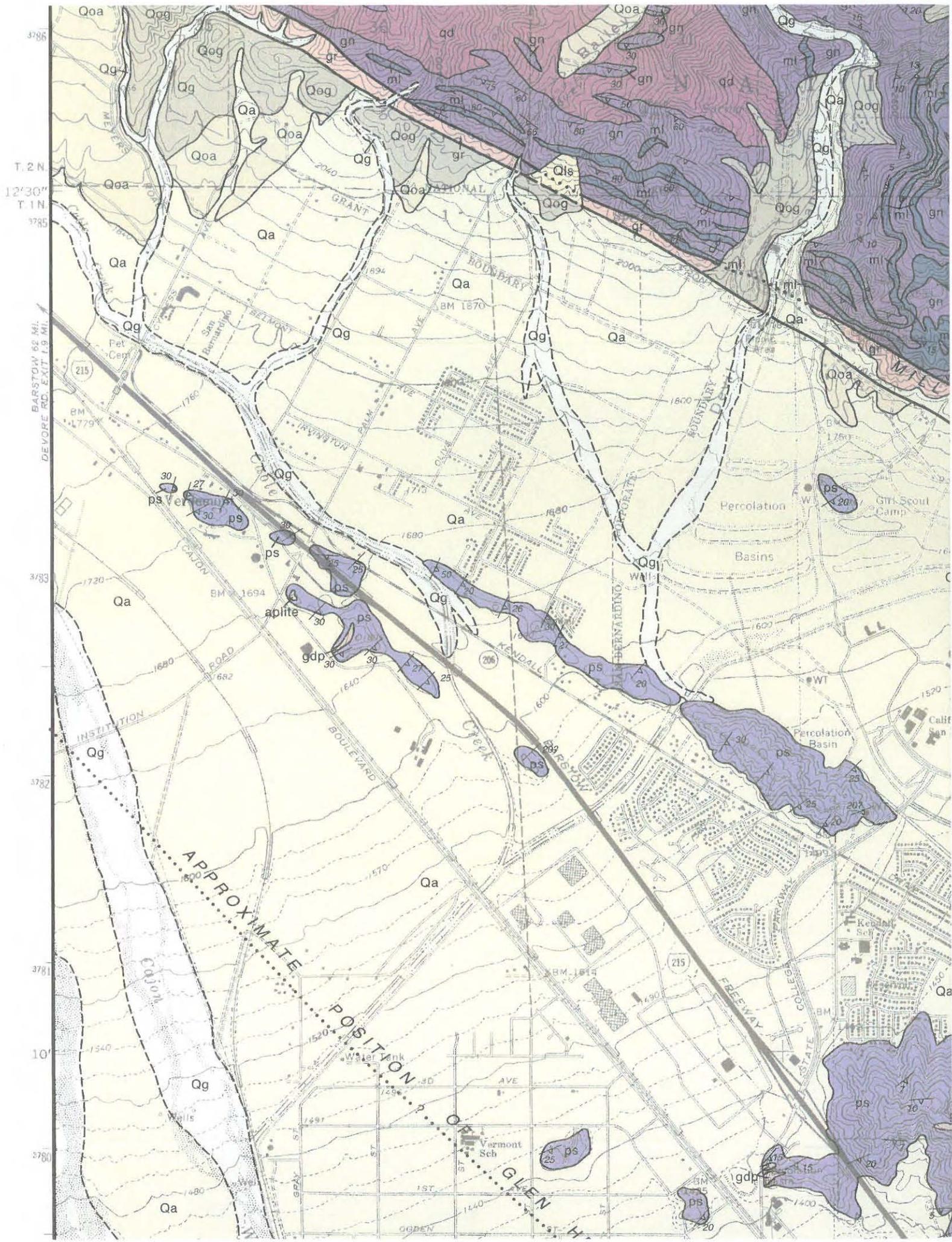
SANTA BARBARA MUSEUM OF NATURAL HISTORY

2559 PUESTA DEL SOL ROAD, SANTA BARBARA, CA 93105

[HTTP://WWW.SBNATURE.ORG/](http://www.sbnature.org/)

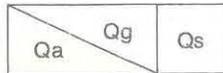
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IMPORTANT DISCLAIMER: The data depicted on this map was prepared by Thomas W. Dibblee, Jr., with strong emphasis on basic geologic information. The accuracy of the information should be verified by the user associated with recent development may vary from other published sources. References do not show Alquist-Priolo Earthquake Fault Zoning. This map was prepared and disclosed and used to regulate development at <<http://www.consrv.ca.gov/dmg/>>



SAN BERNARDINO NORTH AND NORTH 1/2 SAN BERNARDINO SOUTH MAP (DF-127)

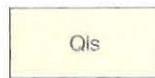
LEGEND



SURFICIAL SEDIMENTS

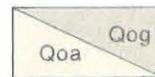
Alluvial sediments, Unconsolidated, undissected

- Qg** Alluvial gravel and sand of stream channels
- Qa** Alluvial fan gravel and sand of valley areas, derived from rocks of San Bernardino Mountains composed of unsorted boulders and cobbles in mountain area, down slope into finer cobble-gravel and sand outward southwest in valley area.
- Qs** Drift sand, deposited by north winds



LANDSLIDE DEBRIS

- Qls** Landslide of rock rubble



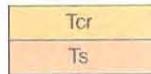
OLDER SURFICIAL SEDIMENTS

Dissected older alluvial deposits, slightly indurated, undeformed; age, late Pleistocene

- Qoa** Alluvial fan gravel and sand of lower terraces
- Qog** Alluvial fan deposits of boulder gravel in major canyons, older, at higher levels

— UNCONFORMITY —

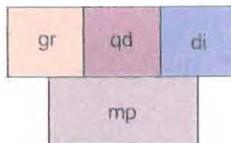
AREA NORTHEAST OF SAN ANDREAS FAULT



SEDIMENTARY ROCKS

- Tcr** Crowder Formation near Crestline, terrestrial sandstone and cobble conglomerate of granitic detritus, friable, light gray to tan, arkosic; similar to Crowder Formation; Pliocene – late Miocene, in areas to northwest
- Ts** Terrestrial sandstone and conglomerate of granitic detritus, semi-lithified, light gray to tan, arkosic; exposed in San Andreas fault zone eastern part of quadrangle; similar to Cajon Formation, Miocene, of Cajon Valley area northwest of quadrangle

— UNCONFORMITY —



PLUTONIC ROCKS

Granitic rocks of San Bernardino Mountains, medium grained holocrystalline; age, Cretaceous

- gr** Leucocratic granitic rocks, mostly quartz monzonite or monzogranite but vary to granodiorite, as determined only from thin sections, composed of quartz, potassic feldspar and sodic plagioclase feldspar in nearly equal amounts and less than 10 percent biotite, little to no hornblende; in few places contains scattered phenocrysts of potassic feldspar; rock gray-white to light gray, massive, rarely gneissoid, somewhat incoherent where weathered especially on areas of subdued relief where weathered to residual sandy soil; includes units mapped by Miller et al, 2001, as biotite monzogranite granodiorite of Lake Gregory and granodiorite of Arrowhead Peak
- qd** Intermediate plutonic rocks, mostly quartz diorite, varies to monzodiorite, composed of 1/4 or less of quartz, 3/4 of sodic plagioclase, minor amounts of potassic feldspar, 10 – 15 % biotite and hornblende; gray, massive to gneissoid; commonly includes mixtures of gneiss; includes unit mapped by Miller et al, 2001, as monzodiorite of Crestline
- di** Diorite, dark gray, massive, medium grained, somewhat incoherent where weathered, composed of hornblende, biotite, and plagioclase feldspar; complexly migmatized with gneissic rocks; only one outcrop near lower Waterman Creek
- mp** Monzonite of Cedar Pines Park, composed of potassic feldspar and sodic plagioclase feldspar in nearly equal amounts, sparse quartz, and minor hornblende and biotite of a ratio greater than 10:1; locally porphyritic with phenocrysts of potassic feldspar; rock gray, indistinctly gneissoid, probably engulfed in granitic rocks; age based on correlation with similar rock near Fawnskin 27 km to east which yielded a zircon U/Pb age of 245 Ma (Miller et al, 2001, written commun: from J.E. Wooden) or Triassic age exposed on crest of range at north border of quadrangle



Holocene

Pleistocene

QUATERNARY

CENOZOIC

Pliocene

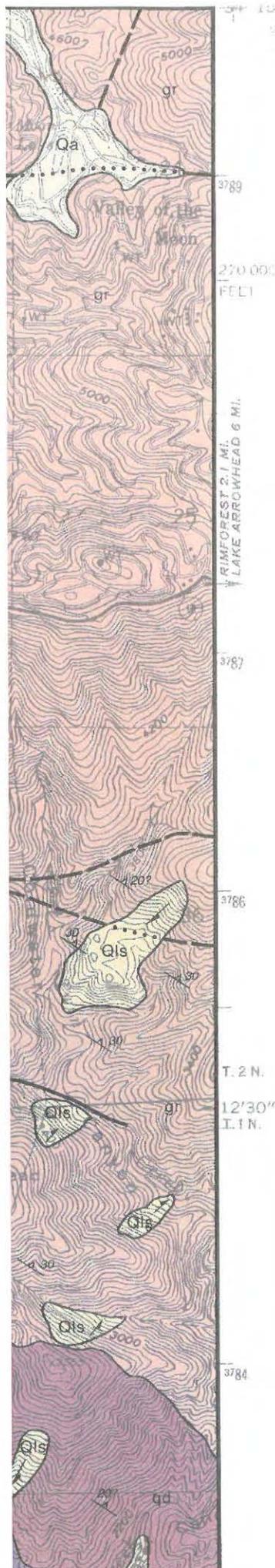
Miocene

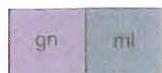
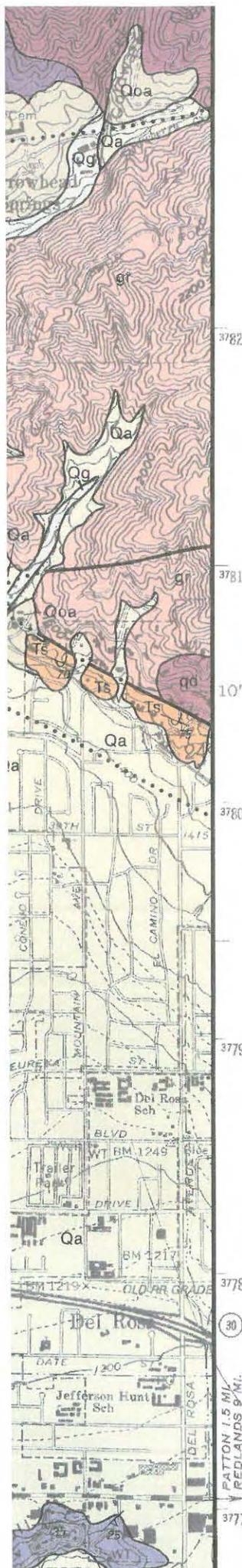
TERTIARY

CRETACEOUS

TRIASSIC

MESOZOIC





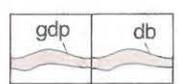
GNEISS

(Gneiss of Devil Canyon of Miller et al, 2001) foliated holocrystalline rocks, metamorphosed under conditions of high temperature and pressure from sedimentary petrooliths of probably Precambrian age; latest cooling age Mesozoic)

- gn** Gneiss, composed of white to light gray laminae of mostly quartz and feldspar alternating with gray to nearly black laminae rich in biotite and minor hornblende; laminae undulated, locally contorted; hard but brittle, closely fractured; in many places includes small masses and migmatites of granitic rocks, in some areas complexly intruded by granitic dikes and sills
- ml** Marble, white to gray-white, medium to coarse crystalline, massive, with little evidence of bedding, composed of calcite or dolomite, occurs as many layers interbedded in gneiss as mapped

PRECAMBRIAN(?) TO MESOZOIC

AREA SOUTHWEST OF SAN ANDREAS FAULT



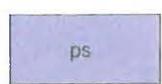
GRANODIORITE PORPHYRY DIKES

Hypabyssal dikes in Pelona Schist, similar to those rocks in eastern San Gabriel Mountains, radiometrically dated as 25.6 Ma (May and Walker, 1989, in Morton and Matti, 2001)

- gdp** Granodiorite to dacite porphyry light gray, medium to fine grained, composed of quartz, potassic feldspar and sodic plagioclase, and minor biotite; dikes fine grained, rock porphyritic with small phenocrysts of potassic feldspar and quartz
- db** Diabase

TERTIARY

CENOZOIC



PELONA SCHIST

Mica schist metamorphosed from petrooliths of sedimentary and pyroclastic rocks of unknown age in late Cretaceous time

- ps** Mica schist, composed of muscovite and biotite micas, albite feldspar and quartz, locally chlorite, gray with silvery sheen on foliation planes, weathers brown; fine – medium grained, highly foliated, cleaves into flat slabs along foliation planes

MESOZOIC



METASEDIMENTARY ROCKS

Severely metamorphosed marine sedimentary rocks of inferred Paleozoic (?) age, as small pendant remnants engulfed in plutonic rocks

- ms** Biotite schist, dark gray, fine grained foliated, includes minor biotite-quartz-feldspar schist or gneiss, quartzite and calc-silicate hornfels in Riverside area
- mq** Quartzite, light gray, massive to layered, hard but brittle, fractured
- ml** Marble, white to light blue-gray, coarse grained
- mig** Migmatized mixture of biotite schist and tonalitic granitic rocks

PERTINENT REFERENCES

Dibblee, T.W. Jr., (1963 unpublished) Geology of the San Bernardino 15' quadrangle California: U.S. Geological Survey, scale 1:62500

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Matti, J.C., Morton, D.M., and Cox, B.F., 1985, Distribution and geologic relations of fault systems in the vicinity of the central Transverse Ranges, Southern California; U.S. Geological Survey Open File Report 85-365, 23 p. 4 figs, map scale 1:250,000

Miller, F.K., Matti, J.A., and Carson, S.E., 2001, Geologic map of the San Bernardino North 7.5' quadrangle, San Bernardino County, California, U.S. Geological Survey Open File Report 01-131, scale 1:24000, digitized

Morton, D.M., and Matti, J.A., 2001, Geological map of the Devore 7.5' quadrangle, San Bernardino County, California U.S. Geological Survey Open File Report 01-73, scale 1:24,000 digitized

Willingham, C.R., 1981, Gravity anomaly patterns and fault interpretations in the San Bernardino Valley and western San Gorgonio Pass area, Southern California; in; A.R. Brown and R.W. Ruff, editors, Geology of the San Jacinto Mountains; South Coast Geological Society, Annual Field Trip Guidebook no 9 (219 p), South Coast Geological Society p. 164-173



RADIUS REPORT

Property:

**Palm and Industrial
Industrial Parkway
San Bernardino, CA**

Prepared For:

Masek Consulting Services, Inc. - Mission Viejo

Job #: 62575 / Date: 12/05/06

DATABASE FINDINGS SUMMARY

***Target property is located in Radon Zone 2 (San Bernardino County, CA). Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.**

DATABASE	ACRONYM	LOCA- TABLE	UNLOCA- TABLE	SEARCH RADIUS
<u>FEDERAL</u>				
DEPARTMENT OF DEFENSE	DOD	0	0	1.000 miles
FORMERLY USED DEFENSE SITES	FUDS	1	0	1.000 miles
NATIONAL PRIORITY LIST	NPL	2	0	1.000 miles
RECORDS OF DECISION	RODS	1	0	1.000 miles
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION	RCRAC	0	0	1.000 miles
BROWNFIELDS MANAGEMENT SYSTEM	USBF	0	0	0.500 miles
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM	CERCLIS	2	0	0.500 miles
DELISTED NATIONAL PRIORITY LIST	DNPL	0	0	0.500 miles
EPA DOCKET DATA	DOCKETS	0	0	0.500 miles
INDIAN LEAKING PETROLEUM STORAGE TANKS - REGION 09	INDLPSTR09	0	0	0.500 miles
NO FURTHER REMEDIAL ACTION PLANNED	NFRAP	0	0	0.500 miles
OPEN DUMP INVENTORY	ODI	0	0	0.500 miles
RESOURCE CONSERVATION & RECOVERY ACT - TREATMENT, STORAGE & DISPOSAL	RCRAT	0	0	0.500 miles
TOXICS RELEASE INVENTORY	TRI	0	0	0.500 miles
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRS	0	0	0.250 miles
INDIAN PETROLEUM STORAGE TANKS - REGION 09	INDPSTR09	0	0	Target Property and Adjoining
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR / HANDLER	RCRAG	0	0	Target Property and Adjoining
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	Target Property
BIENNIAL REPORT SYSTEM	BRS	0	0	Target Property
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNS	0	0	Target Property
FEDERAL INSTITUTIONAL / ENGINEERING CONTROLS	USEC	0	0	Target Property
<u>STATE</u>				
CALSITES DATABASE	CALSITES	3	0	1.000 miles
DTSC'S HAZARDOUS WASTE AND SUBSTANCES SITE LIST (CORTESE LIST)	CORTESE	1	0	1.000 miles
SAN GABRIEL VALLEY AREAS OF CONCERN	CAAOC	0	0	1.000 miles
TOXIC PITS CLEANUP ACT SITES	CATOPITS	0	0	1.000 miles
FRESNO COUNTY CUPA/SOLID WASTE PROGRAMS RESOURCE LIST	CAFSW	0	0	0.500 miles
HAZARDOUS WASTE & SUBSTANCES SITE LIST	HWSSL	0	0	0.500 miles
LEAKING UNDERGROUND STORAGE TANKS	LUST	1	0	0.500 miles
NEEDING FURTHER EVALUATION	NFE	0	0	0.500 miles
NO FURTHER ACTION	NFA	0	0	0.500 miles

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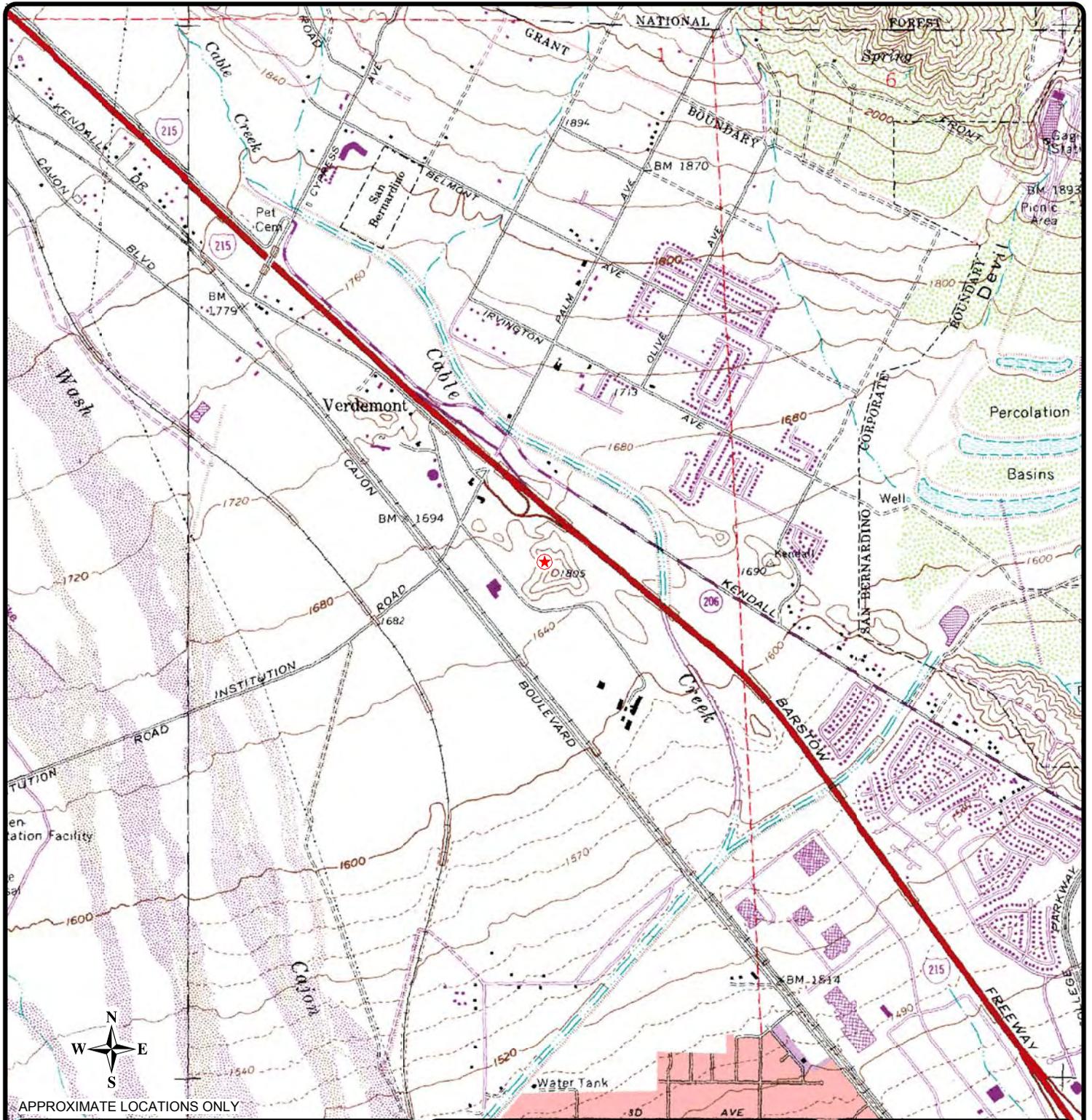
DATABASE FINDINGS SUMMARY

DATABASE	ACRONYM	LOCA- TABLE	UNLOCA- TABLE	SEARCH RADIUS
SCHOOL PROPERTY EVALUATION PROGRAM PROPERTIES	SCH	0	0	0.500 miles
SOLID WASTE INFORMATION SYSTEM	SWIS	0	0	0.500 miles
UNCONFIRMED PROPERTIES REFERRED TO ANOTHER LOCAL OR STATE AGENCY	REF	1	0	0.500 miles
VOLUNTARY CLEANUP PROGRAM	VCP	0	0	0.500 miles
WASTE MANAGEMENT UNIT DATABASE	WMUDS	0	0	0.500 miles
DRY CLEANER FACILITIES	CACLEANER	0	0	0.250 miles
DTSC'S REGISTERED HAZARDOUS WASTE TRANSPORTERS	DTSCHWT	0	0	0.250 miles
HAZARDOUS WASTE TANNER SUMMARY	HWTS	4	0	0.250 miles
RIVERSIDE COUNTY MEDICAL WASTE	CARCMW	0	0	0.250 miles
SAN BERNARDINO FIRE DEPT	SBFD	3	0	0.250 miles
SPILLS, LEAKS, INVESTIGATION & CLEANUP RECOVERY LISTING	SLIC	0	0	0.250 miles
STATEWIDE ENVIRONMENTAL EVALUATION AND PLANNING SYSTEM	SWEEPS	1	0	0.250 miles
ABOVEGROUND STORAGE TANKS	CAAST	0	0	Target Property and Adjoining
HISTORICAL PETROLEUM STORAGE TANKS	HISTPST	0	0	Target Property and Adjoining
UNDERGROUND STORAGE TANKS - CERTIFIED UNIFIED PROGRAM AGENCIES	USTCUPA	0	0	Target Property and Adjoining
CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM	CHMIRS	0	0	Target Property
DTSC'S DEED RESTRICTIONS	DTSCDR	0	0	Target Property
SITE MITIGATION LIST OF INDUSTRIAL SITES WITH A SPILL OR COMPLAINT	CALASM	0	0	Target Property
TOTAL		20	0	

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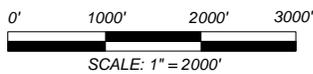


APPROXIMATE LOCATIONS ONLY

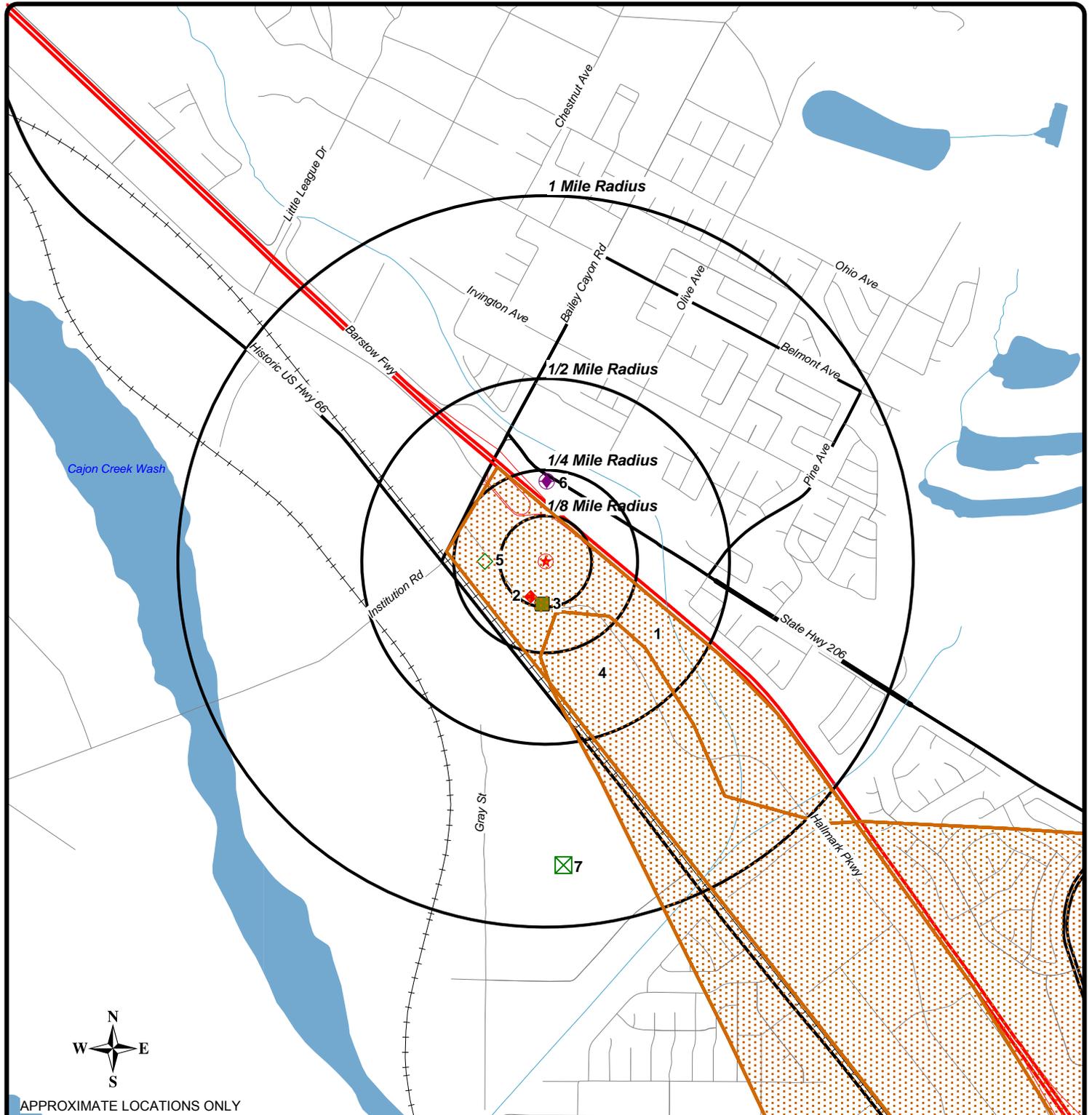
 TARGET PROPERTY (TP)

TOPOGRAPHIC MAP
 Quad: San Bernardino North
 Source: USGS, 1988

Palm and Industrial
 Industrial Parkway
 San Bernardino, CA



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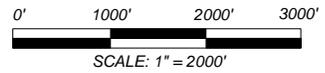


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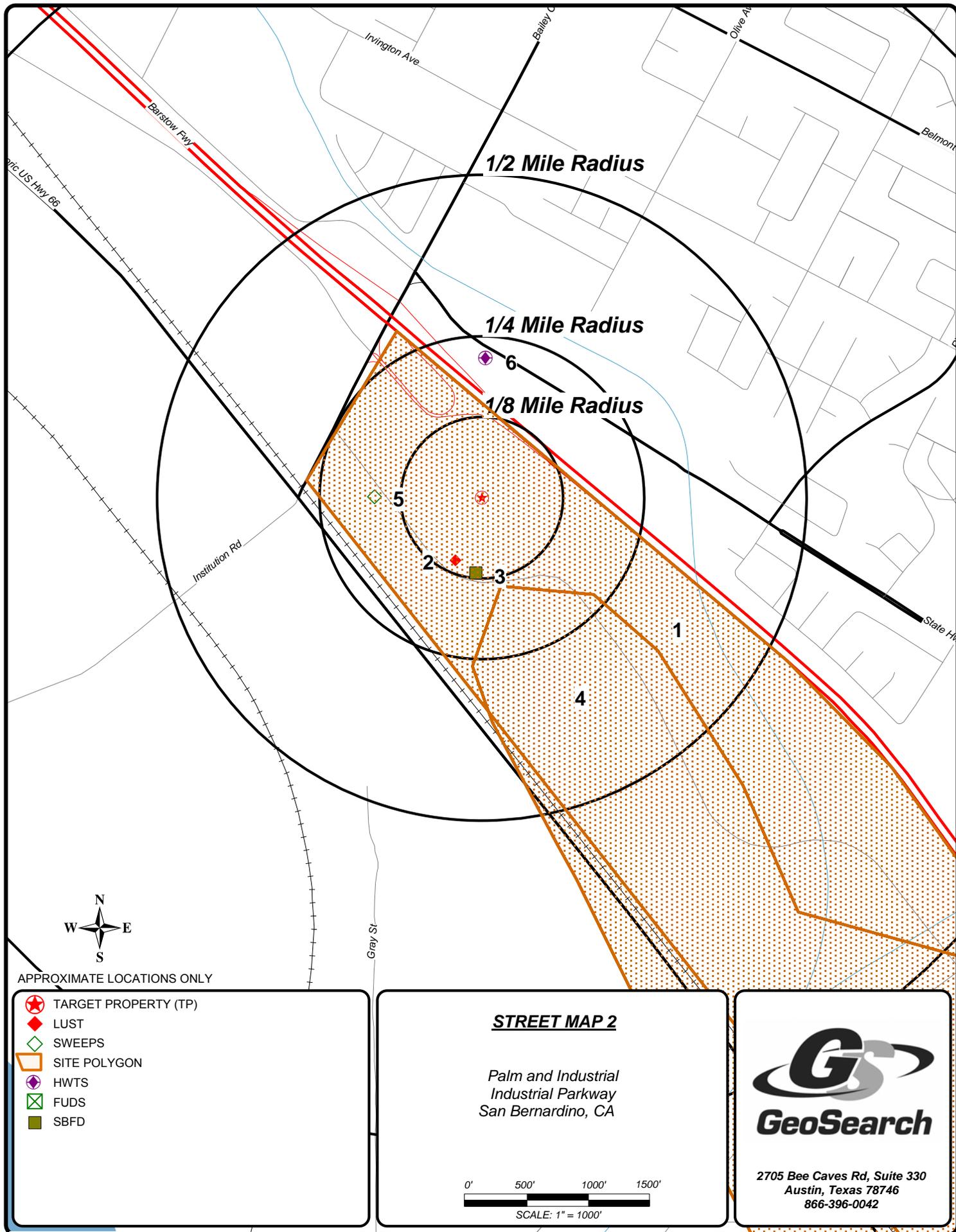
-  TARGET PROPERTY (TP)
-  LUST
-  SWEEPS
-  SITE POLYGON
-  HWTS
-  FUDS
-  SBFD

STREET MAP 1

*Palm and Industrial
Industrial Parkway
San Bernardino, CA*



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APPROXIMATE LOCATIONS ONLY

-  TARGET PROPERTY (TP)
-  LUST
-  SWEEPS
-  SITE POLYGON
-  HWTS
-  FUDS
-  SBFD

STREET MAP 2

*Palm and Industrial
Industrial Parkway
San Bernardino, CA*



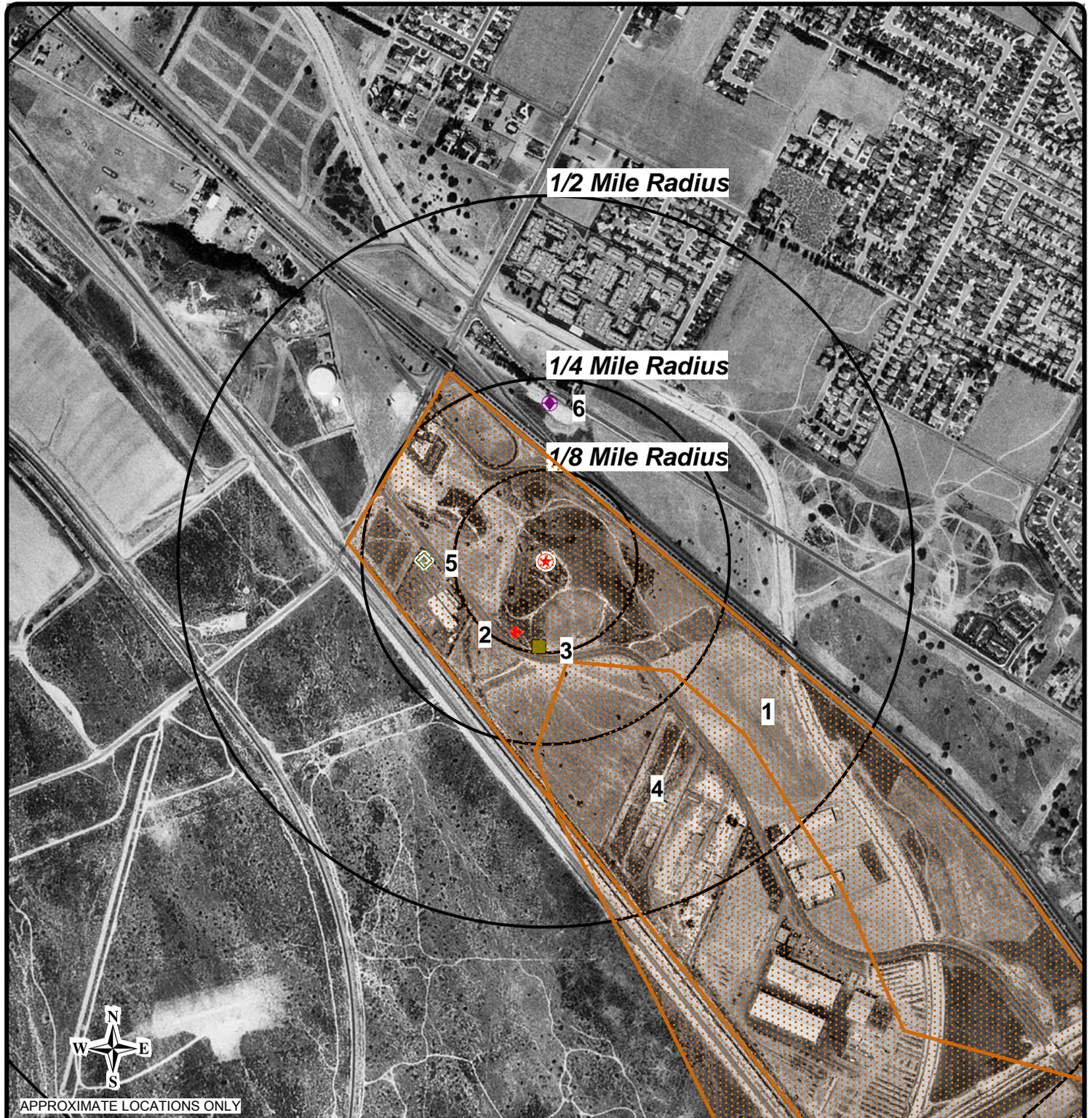
0' 500' 1000' 1500'

SCALE: 1" = 1000'



GeoSearch

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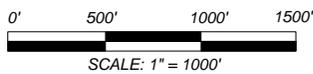


APPROXIMATE LOCATIONS ONLY

-  TARGET PROPERTY (TP)
-  LUST
-  SWEEPS
-  SITE POLYGON
-  HWTS
-  FUDS
-  SBFD

ORTHOPHOTO SITE MAP
 San Bernardino North Quadrangle
 Source: USGS (10/03/1995)

*Palm and Industrial
 Industrial Parkway
 San Bernardino, CA*



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REPORT SUMMARY OF LOCATABLE SITES

Appearing on the Location Map, these sites are referenced by Map ID #, Database Name, Site ID#, Site Name, Address, City, Zip Code and Distance from Site (miles).

(***** denotes institutional/engineering controls exist.)

MAP ID#	DATABASE NAME	SITE ID#	DISTANCE FROM SITE	SITE NAME	ADDRESS	CITY, ZIP CODE	PAGE #
1	NPL	CAD983566209	0.00 X	CAMP ONO	I-215 N. OF UNIV. PARKWAY & CAJON B	SAN BERNARDINO, 92407	2
1	CERCLIS	CAD983566209	0.00 X	CAMP ONO	I-215 N. OF UNIV. PARKWAY & CAJON B	SAN BERNARDINO, 92407	8
1	CALSITES	36970006	0.00 X	CAMP ONO	BOUNDED: I-215, CAJON, PALM AVE, N	SAN BERNARDINO, 92407	13
2	LUST	T0607100240	0.11 SW	AMERICAN NATIONAL CAN COMPANY	5715 INDUSTRIAL PKWY	SAN BERNARDINO, 92407	19
3	SBFD	000FA0004423	0.12 S	LEVEL 3 COMMUNICATIONS	5705 INDUSTRIAL PKWY	SAN BERNARDINO, 92407	25
4	NPL	CAD981434517	0.15 S	NEWMARK GROUND WATER CONTAMINATION	BUNKER HILL GROUND WATER BASIN	SAN BERNARDINO, 92408	2
4	RODS	CAD981434517	0.15 S	NEWMARK GROUND WATER CONTAMINATION	BUNKER HILL GROUND WATER BASIN	SAN BERNARDINO, 92408	4
4	CERCLIS	CAD981434517	0.15 S	NEWMARK GROUND WATER CONTAMINATION	BUNKER HILL GROUND WATER BASIN	SAN BERNARDINO, 92408	8
4	CALSITES	36990001	0.15 S	NORTH SAN BERNARDINO AREA	BUNKER HILL GROUNDWATER BASIN	SAN BERNARDINO, 92401	14
4	CALSITES	36990002	0.15 S	NEWMARK GROUNDWATER CONTAMINATION	BUNKER HILL GROUND WATER BASIN	SAN BERNARDINO, 92408	13
4	CORTESE	36990002	0.15 S	NEWMARK GROUNDWATER CONTAMINATION	BUNKER HILL GROUND WATER BASIN	SAN BERNARDINO, 92408	16
5	HWTS	CAD982523953	0.17 W	WALTER FRED G AND SON	5770 INDUSTRIAL PKWY	SAN BERNARDINO, 92407	20
5	HWTS	CAL000009087	0.17 W	FRED G WALTER MACHINE SHOP	5770 INDUSTRIAL PKWY	SAN BERNARDINO, 924070000	22
5	SBFD	000FA0003340	0.17 W	FRED G WALTER & SON	5770 INDUSTRIAL PARKWAY	SAN BERNARDINO, 92407	25
5	SWEEPS	I36-000-53707	0.17 W	FRED G. WALTER & SON	5770 INDUSTRIAL PKY	SAN BERNARDINO, 92407	27
6	HWTS	CAC001221792	0.22 N	7 ELEVEN FOOD STORES	3211 KENDALL DR	SAN BERNARDINO, 924070000	24
6	HWTS	CAD982043119	0.22 N	7 ELEVEN FOOD STORES	3211 KENDALL DR	SAN BERNARDINO, 92407	22
6	SBFD	000FA0006112	0.22 N	7 ELEVEN #26934	3211 KENDALL	SAN BERNARDINO, 92408	26
7	FUDS	CA9799F5587	0.84 S	SAN BER ENGR DEPOT		SAN BERNARDINO	1



FORMERLY USED DEFENSE SITES - FUDS

MAP ID# 7

Distance from Property: 0.84 mi. S

SITE INFORMATION

FACILITY #: **CA9799F5587**

NAME: **SAN BER ENGR DEPOT**

ADDRESS: **SAN BERNARDINO**

COUNTY: **SAN BERNARDINO**

STATE: **CA**

CONGRESSIONAL DISTRICT: **43**

EPA REGION: **9**

DISTRICT: **LOS ANGELES DISTRICT (SPL)**

PHONE: **213-452-3921**



NATIONAL PRIORITY LISTING (NPL)

MAP ID# 1

Distance from Property: 0.00 mi. X

SITE INFORMATION

EPA ID#: CAD983566209

NAME: CAMP ONO

ADDRESS: I-215 N. OF UNIV. PARKWAY & CAJON BLVD
SAN BERNARDINO, CA 92407

CONTACT/ PHONE: JERE JOHNSON (415)972-3094

NPL STATUS: A - SITE IS PART OF NPL SITE

FEDERAL FACILITY CODE N - NOT A FEDERAL FACILITY

OWNERSHIP TYPE CODE: NOT REPORTED

SITE DESCRIPTION

NOT REPORTED

ACTIONS

TYPE: DS - DISCOVERY

RESPONSIBLE ORGANIZATION: F - EPA FUND-FINANCED

START DATE: NOT REPORTED

COMPLETION DATE: 04/01/1990

MAP ID# 4

Distance from Property: 0.15 mi. S

SITE INFORMATION

EPA ID#: CAD981434517

NAME: NEWMARK GROUND WATER

ADDRESS: BUNKER HILL GROUND WATER BASIN
SAN BERNARDINO, CA 92408

CONTACT/ PHONE: ELIZABETH ADAMS(415)972-3183

JERE JOHNSON (415)972-3094

ROBERT MANDEL (415)972-3040

FREDERICK SCHAUFFLER (415)972-3174

NPL STATUS: F - CURRENTLY ON THE FINAL NPL

FEDERAL FACILITY CODE N - NOT A FEDERAL FACILITY

OWNERSHIP TYPE CODE: NOT REPORTED

SITE DESCRIPTION

LITER (UG/L) HAVE BEEN DETECTED IN 20 PUBLIC WATER SUPPLY WELLS IN NORTHERN SAN BERNARDINO. THE PATTERN OF CONTAMINATION INDICATES THAT A RELEASE OR RELEASES OCCURRED IN NORTHWEST SAN BERNARDINO AND THAT CONTAMINANTS HAVE MIGRATED MORE THAN FIVE MILES TOWARD THE SANTA ANA RIVER TO THE SOUTHEAST. THE PLUME IS SPLIT BY A MAJOR OUTCROP OF RELATIVELY IMPERMEABLE BEDROCK AND DIVIDES THE CONTAMINATED GROUND WATER INTO AN EASTERN BRANCH (THE NEWMARK PLUME) AND A WESTERN BRANCH (THE MUSCOY PLUME). EPA IS ADDRESSING THE LEADING EDGES OF THE PLUME AS TWO SEPARATE OUS. THE IDENTIFICATION, CHARACTERIZATION AND REMEDIATION OF THE SOURCE OF CONTAMINATION WILL CONSTITUTE A THIRD OU. THE MUSCOY PLUME OPERABLE UNIT (OU) OF THE NEWMARK GROUND WATER CONTAMINATION SITE IS LOCATED WITHIN THE BUNKER HILL BASIN (ALSO KNOWN AS THE UPPER SANTA ANA RIVER BASIN) IN SAN BERNARDINO, CALIFORNIA. THE GROUND WATER CONTAMINATION AT THE NEWMARK SUPERFUND SITE AFFECTS A LARGE PORTION OF A 110 SQUARE MILE AQUIFER IN THE SAN BERNARDINO VALLEY OF SOUTHERN CALIFORNIA. THE AQUIFER, KNOWN AS THE BUNKER HILL BASIN, IS BOUNDED BY THE SAN BERNARDINO AND SAN GABRIEL MOUNTAINS TO THE NORTH, THE CRAFTON HILLS AND BADLANDS ON THE SOUTHEAST, AND BY A HYDROGEOLOGIC BARRIER FORMED BY THE SAN JACINTO FAULT ALONG THE SOUTHWEST. WATERS FLOWING FROM ALL PARTS OF THE AQUIFER JOIN IN A CONFINED ARTESIAN ZONE BEFORE LEAVING THE BASIN WHERE THE SANTA ANA RIVER CROSSES THE SAN JACINTO FAULT LINE. THE GROUND WATER CURRENTLY SERVES APPROXIMATELY A HALF-MILLION RESIDENTS OF SAN BERNARDINO, RIVERSIDE AND SURROUNDING COMMUNITIES. THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT HAS INDICATED THAT THE BUNKER HILL BASIN AQUIFER IS CAPABLE OF STORING APPROXIMATELY 1.6 TRILLION GALLONS AND PRODUCING 81 BILLION GALLONS EACH YEAR. THE AQUIFER RECEIVES RAINFALL AND NATURAL



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NATIONAL PRIORITY LISTING (NPL)

RUNOFF FROM THE SURROUNDING MOUNTAINS, COLLECTED FLOODWATER FROM RIVERS, CREEKS AND WASHES, AND WATER IMPORTED FROM OUTSIDE THE REGION THAT IS SPREAD OVER PERCOLATION BASINS. THE MUSCOY PLUME ENCOMPASSES A PORTION OF THE BUNKER HILL AQUIFER LOCATED BENEATH THE WESTERN PORTION OF THE CITY OF SAN BERNARDINO AND AN UNINCORPORATED PART OF SAN BERNARDINO COUNTY KNOWN AS THE MUSCOY COMMUNITY. RESIDENTIAL AND COMMERCIAL USE PREDOMINATES THROUGHOUT THE NEWMARK SUPERFUND SITE. THE PRIMARY CONTAMINANTS OF CONCERN AT THE NEWMARK SUPERFUND SITE ARE THE SOLVENTS PERCHLOROETHYLENE (PCE) AND TRICHLOROETHYLENE (TCE), WHICH ARE WIDELY USED IN A VARIETY OF INDUSTRIES, INCLUDING DRY CLEANING, METAL PLATING, AND MACHINERY DEGREASING. AS OF 1995, PCE AND TCE IN CONCENTRATIONS EXCEEDING THE DRINKING WATER STANDARDS OF 5 MICROGRAMS PER LITER IN 1980, THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS) INITIATED A MONITORING PROGRAM IN SAN BERNARDINO TO TEST FOR THE PRESENCE OF INDUSTRIAL CHEMICALS IN THE WATER FROM PUBLIC SUPPLY WELLS. THE RESULTS OF THE TESTS REVEALED THE PRESENCE OF PERCHLOROETHYLENE (PCE) AND TRICHLOROETHYLENE (TCE) CONTAMINATION IN LARGE PORTIONS OF THE GROUND WATER OF THE BUNKER HILL BASIN. FOURTEEN WELLS OPERATED BY THE CITY OF SAN BERNARDINO WATER DEPARTMENT IN THE NORTH SAN BERNARDINO/MUSCOY AREA WERE FOUND TO CONTAIN CONCENTRATIONS OF PCE AND TCE ABOVE THE STATE AND FEDERAL MAXIMUM CONTAMINANT LEVELS (MCLs) OF 5 PARTS PER BILLION FOR BOTH TCE AND PCE. THE AFFECTED WELLS HAD SUPPLIED NEARLY 25 PERCENT OF THE WATER FOR THE CITY OF SAN BERNARDINO. FOLLOWING INVESTIGATIONS BY THE SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD AND CALIFORNIA DEPARTMENT OF HEALTH SERVICES (NOW THE CALIFORNIA EPA DEPARTMENT OF TOXIC SUBSTANCES CONTROL), THE STATE PROVIDED OVER \$6 MILLION TO CONSTRUCT FOUR WATER TREATMENT SYSTEMS TO PROTECT THE PUBLIC WATER SUPPLY. AFTER YEARS OF TESTING THESE AGENCIES DETERMINED THAT THE SOLVENTS IN THE GROUND WATER WERE CONTINUING TO FLOW SOUTH AND THREATENING MANY MORE WELLS OPERATED BY SAN BERNARDINO, RIVERSIDE AND OTHER COMMUNITIES. THE STATE REQUESTED FEDERAL INVOLVEMENT TO ADDRESS THIS REGIONAL PROBLEM. THE EPA PLACED THE NEWMARK SITE ON THE NATIONAL PRIORITIES LIST (NPL) IN MARCH, 1989. THE EPA REMEDIAL INVESTIGATION (RI) BEGAN IN LATE 1990, FOCUSING ENTIRELY ON THE NEWMARK PLUME. BASED UPON THE FINDINGS OF THE RI, THE MUSCOY PLUME ON THE WESTERN SIDE OF THE VALLEY WAS INCLUDED AS PART OF THE NEWMARK SUPERFUND SITE. ADDITIONAL RI WELL SAMPLING IN THE VICINITY OF THE MUSCOY PLUME WAS CONDUCTED IN SEPTEMBER 1992. THE RI/FS REPORT FOR THE MUSCOY PLUME OPERABLE UNIT (OU) WAS FINALIZED IN DECEMBER, 1994. AS A RESULT OF THE RI INVESTIGATION, THE SAN BERNARDINO AIRPORT WAS NO LONGER SUSPECTED TO BE THE SOURCE OF THE NEWMARK PLUME AS ORIGINALLY IDENTIFIED IN THE AERIAL PHOTOGRAPHIC ANALYSIS CONDUCTED BY EPA'S ENVIRONMENTAL MONITORING SYSTEMS LABORATORY IN SEPTEMBER, 1990. ONGOING INVESTIGATIONS ARE ATTEMPTING TO DEFINITELY IDENTIFY THE SOURCE.

ACTIONS

TYPE: CD - CONSENT DECREE
RESPONSIBLE ORGANIZATION: FE - FEDERAL ENFORCEMENT
START DATE: NOT REPORTED
COMPLETION DATE: 03/23/2005



RECORD OF DECISION SYSTEM (RODS)

MAP ID# 4

Distance from Property: 0.15 mi. S

EPA ID: CAD981434517

NAME: NEWMARK GROUND WATER CONTAMINATION

ADDRESS: BUNKER HILL GROUND WATER BASIN SAN BERNARDINO, CA 92408

COUNTY: SAN BERNARDINO

ROD DATE:: 03/24/1995

ROD TYPE: RECORD OF DECISION

ROD ID: EPA/ROD/R09-95/133

MEDIA: GROUNDWATER

CONTAMINANT: PCE, TCE, VOCS

ABSTRACT: PLEASE NOTE THAT THE TEXT IN THIS DOCUMENT SUMMARIZES THE RECORD OF DECISION FOR THE PURPOSES OF FACILITATING SEARCHING AND RETRIEVING KEY TEXT ON THE ROD. IT IS NOT THE OFFICIALLY APPROVED ABSTRACT DRAFTED BY THE EPA REGIONAL OFFICES. ONCE EPA HEADQUARTERS RECEIVES THE OFFICIAL ABSTRACT, THIS TEXT WILL BE REPLACED.

THE MUSCOY PLUME OU IS LOCATED WITHIN THE BUNKER HILL BASIN (ALSO KNOWN AS THE UPPER SANTA ANA RIVER BASIN) IN SAN BERNARDINO, CALIFORNIA.

THE GROUNDWATER CONTAMINATION AT THE NEWMARK SUPERFUND SITE AFFECTS A LARGE PORTION OF A 110 SQUARE MILE AQUIFER IN THE SAN BERNARDINO VALLEY OF SOUTHERN CALIFORNIA. THE AQUIFER, KNOWN AS THE BUNKER HILL BASIN, IS BOUNDED BY THE SAN BERNARDINO AND SAN GABRIEL MOUNTAINS TO THE NORTH, THE CRAFTON HILLS AND BADLANDS ON THE SOUTHEAST, AND BY A HYDROGEOLOGIC BARRIER FORMED BY THE SAN JACINTO FAULT ALONG THE SOUTHWEST. WATERS FLOWING FROM ALL PARTS OF THE AQUIFER JOIN A CONFINED "ARTESIAN ZONE" BEFORE LEAVING THE BASIN WHERE THE SANTA ANA RIVER CROSSES THE SAN JACINTO FAULTLINE.

THE GROUNDWATER IN THIS AQUIFER IS A VALUABLE RESOURCE, CURRENTLY SERVING NEARLY A HALF-MILLION RESIDENTS OF SAN BERNARDINO, RIVERSIDE AND SURROUNDING COMMUNITIES. ACCORDING TO THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT, THE BUNKER HILL BASIN AQUIFER IS CAPABLE OF STORING APPROXIMATELY 1.6 TRILLION GALLONS AND PRODUCING 81 BILLION GALLONS EACH YEAR.

THE MUSCOY PLUME ENCOMPASSES A PORTION OF THE BUNKER HILL AQUIFER LOCATED BENEATH THE WESTERN PORTION OF THE CITY OF SAN BERNARDINO AND AN UNINCORPORATED PART OF SAN BERNARDINO COUNTY KNOWN AS THE MUSCOY COMMUNITY. RESIDENTIAL AND COMMERCIAL USE PREDOMINATES THROUGHOUT THE NEWMARK SUPERFUND SITE. VERY LITTLE OF THE AREA REMAINS UNDEVELOPED.

THE PRIMARY CONTAMINANTS OF CONCERN AT THE NEWMARK SUPERFUND SITE ARE THE SOLVENTS PERCHLOROETHYLENE (PCE) AND TRICHLOROETHYLENE (TCE), WHICH ARE WIDELY USED IN A VARIETY OF INDUSTRIES, INCLUDING DRY CLEANING, METAL PLATING, AND MACHINERY DEGREASING. THESE ORGANIC SOLVENTS ARE IN A CLASS OF CHEMICALS, KNOWN AS VOLATILE ORGANIC COMPOUNDS (VOCS), WHICH EVAPORATE (VOLATILIZE) READILY AT ROOM TEMPERATURE. IF LARGE ENOUGH AMOUNTS OF PCE AND TCE ARE SPILLED OR LEAKED ONTO THE GROUND, THESE CHEMICALS CAN REACH THE AQUIFER WHERE THEY WILL SLOWLY DISSOLVE INTO GROUNDWATER. AS THE CONTAMINATED WATER FLOWS AWAY FROM THE SOURCE, A PLUME OF CONTAMINATED WATER CAN SPREAD MANY MILES DOWNSTREAM. WELLS WITHIN THE PLUME WILL BE PUMPING CONTAMINATED WATER.

AS OF 1995, PCE AND TCE IN CONCENTRATIONS EXCEEDING THE DRINKING WATER STANDARDS OF 5 MICROGRAMS PER LITER (PARTS PER BILLION) HAVE BEEN DETECTED IN 20 PUBLIC WATER SUPPLY WELLS IN NORTHERN SAN BERNARDINO. THE PATTERN OF CONTAMINATION, DEFINED BY SAMPLING MONITORING WELLS AND WATER SUPPLY WELLS THROUGHOUT THE NEWMARK SUPERFUND SITE, INDICATES THAT A RELEASE OR RELEASES OCCURRED IN NORTHWEST SAN BERNARDINO (APPROXIMATELY IN THE AREA OF A FORMER MILITARY DEPOT KNOWN AS THE SAN BERNARDINO ENGINEERING DEPOT OR CAMP ONO), AND THAT CONTAMINANTS HAVE SPREAD MORE THAN FIVE MILES TOWARD THE SANTA ANA RIVER TO THE SOUTHEAST. A MAJOR OUTCROP OF RELATIVELY IMPERMEABLE BEDROCK (THE SHANDIN HILLS) PILOTS THE PLUME OF



RECORD OF DECISION SYSTEM (RODS)

CONTAMINATED GROUNDWATER INTO AN EASTERN BRANCH (THE NEWMARK PLUME) AND A WESTERN BRANCH (THE MUSCOY PLUME). EPA IS ADDRESSING THE LEADING EDGES OF THE PLUME AS TWO SEPARATE OPERABLE UNITS. THE IDENTIFICATION, CHARACTERIZATION AND REMEDIATION OF THE SOURCE OF CONTAMINATION WILL CONSTITUTE A THIRD OPERABLE UNIT. THE RI/FS REPORT FOR THE NEWMARK OU WAS FINALIZED IN MARCH, 1993, AND EPA'S REGIONAL ADMINISTRATOR SIGNED A RECORD OF DECISION FOR THE NEWMARK OU INTERIM REMEDY ON AUGUST 4, 1993. THE NEWMARK OU REMEDIAL DESIGN WAS INITIATED IN SEPTEMBER, 1993, AND IS EXPECTED TO BE COMPLETED IN EARLY 1995.

THE EPA PLACED THE NEWMARK SITE ON THE NATIONAL PRIORITIES LIST (NPL) IN MARCH, 1989. AT THAT TIME, EPA BELIEVED THE EASTERN (NEWMARK) PLUME OF CONTAMINATION TO BE COMPLETELY SEPARATE FROM THE WESTERN (MUSCOY) PLUME OF GROUNDWATER CONTAMINATION.

THE EPA REMEDIAL INVESTIGATION (RI) BEGAN IN LATE 1990, FOCUSING ENTIRELY ON THE NEWMARK PLUME. RESULTS FROM THE RI SHOWED THAT THE ORIGINALLY SUSPECTED SOURCE OF THE NEWMARK PLUME (A DISPOSAL PIT FOR WASTE LIQUIDS FROM A FORMER AIRPORT) WAS NOT THE SOURCE OF THE CONTAMINATION. ADDITIONAL WELL DRILLING IN THE SUMMER OF 1992 TRACED THE GROUNDWATER CONTAMINATION BACK THROUGH A PREVIOUSLY UNDISCOVERED UNDERGROUND CHANNEL FLOWING FROM THE WESTERN (MUSCOY) SIDE OF THE VALLEY. EPA EXPANDED THE NEWMARK SUPERFUND SITE REMEDIAL INVESTIGATION IN SEPTEMBER, 1992 TO INCLUDE THE MUSCOY PLUME.

DUE TO EPA'S EXPERIENCE WITH THE NEWMARK PLUME AND TO THE AVAILABILITY OF OVER TEN YEARS OF WATER QUALITY DATA FROM STATE AND LOCAL GROUNDWATER INVESTIGATIONS IN SAN BERNARDINO, EP WAS ABLE TO EXPEDITE THE REMEDIAL INVESTIGATION OF THE MUSCOY PLUME OU. IN 1992 ALL AVAILABLE WELLS IN THE VICINITY OF THE MUSCOY PLUME WERE SAMPLED BY EPA. PCE AND TCE WERE THE MOST PREVALENT CONTAMINANTS IN ALL OF THE CONTAMINATED WELLS. OTHER VOCs WERE ALSO DETECTED IN TRACE QUANTITIES. THE RESULTS WERE CONSISTENT WITH WATER QUALITY SAMPLES ANALYZED BY STATE AND LOCAL AUTHORITIES SINCE 1980.

IN 1993, EPA RECOGNIZED THAT SUFFICIENT INFORMATION HAD BEEN COLLECTED TO DEVELOP INTERIM ACTION ALTERNATIVES TO CONTROL THE SPREAD OF THE MUSCOY PLUME WHILE PROCEEDING WITH FIELD WORK TO IDENTIFY THE SOURCE. THE MUSCOY PLUME OU HAS THE LIMITED OBJECTIVES OF ADDRESSING MIGRATION AT THE LEADING EDGE OF THE PLUME WHILE EPA CONTINUES TO INVESTIGATE THE SOURCE OF THE CONTAMINATION. THE RI/FS REPORT FOR THE MUSCOY PLUME OU WAS FINALIZED IN DECEMBER, 1994.

REMEDY: EPA HAS SELECTED AN INTERIM REMEDY FOR THE MUSCOY PLUME OF GROUNDWATER CONTAMINATION IN THE NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE. THIS PORTION OF THE SITE CLEANUP IS REFERRED TO S THE MUSCOY PLUME OPERABLE UNIT (OU). THE MUSCOY PLUME OU IS AN INTERIM ACTION FOCUSING ON CONTAMINATION IN THE UNDERGROUND WATER SUPPLY IN THE BUNKER HILL BASIN OF SAN BERNARDINO, WEST OF THE SHANDIN HILLS. THE PORTION OF THE GROUNDWATER CONTAMINATION NORTH AND EAST OF THE SHANDIN HILLS, CALLED THE NEWMARK OU, WAS ADDRESSED IN A SEPARATE ACTION (NEWMARK OU RECORD OF DECISION, AUGUST 4, 1993). THE SELECTED REMEDY AND ALL OF THE ALTERNATIVES PRESENTED IN THE FEASIBILITY STUDY WERE DEVELOPED TO MEET THE FOLLOWING SPECIFIC OBJECTIVES FOR THE MUSCOY PLUME OU: TO INHIBIT MIGRATION OF GROUNDWATER CONTAMINATION INTO CLEAN PORTIONS OF THE AQUIFER; TO PROTECT DOWNGRAIENT MUNICIPAL SUPPLY WELLS SOUTH AND SOUTHWEST OF THE SHANDIN HILLS; TO BEGIN TO REMOVE CONTAMINANTS FROM THE GROUNDWATER PLUME FOR EVENTUAL RESTORATION OF THE AQUIFER TO BENEFICIAL USES. (THIS IS A LONG-TERM PROJECT OBJECTIVE RATHER THAN AN IMMEDIATE OBJECTIVE OF THE INTERIM ACTION.)

THE REMEDY INVOLVES GROUNDWATER EXTRACTION (PUMPING) AND TREATMENT OF 6,200 GALLONS PER MINUTE (GPM) IN SAN BERNARDINO AT THE LEADING EDGE OF THE CONTAMINANT PLUME, WHICH IS APPROXIMATELY BETWEEN HIGHLAND AVENUE AND BASE LINE STREET, WEST OF INTERSTATE 215 AND EAST OF MEDICAL CENTER DRIVE. THE EXACT NUMBER, LOCATION, AND OTHER DESIGN SPECIFICS OF THE EXTRACTION WELLS WILL BE DETERMINED DURING THE REMEDIAL DESIGN PHASE OF THE PROJECT TO INHIBIT THE MIGRATION OF THE CONTAMINANT PLUME MOST EFFECTIVELY.

ALL THE EXTRACTED CONTAMINATED GROUNDWATER SHALL BE TREATED TO REMOVE VOLATILE ORGANIC COMPOUNDS (VOCs) BY EITHER OF TWO PROVEN TREATMENT TECHNOLOGIES: GRANULAR ACTIVATED CARBON (GAC) FILTRATION OR AIR STRIPPING. EPA DETERMINED DURING THE FEASIBILITY STUDY (DECEMBER 1994) THAT THESE TREATMENT TECHNOLOGIES ARE EQUALLY EFFECTIVE AT REMOVING VOCs AND ARE SIMILAR IN COST AT THIS OU. BOTH



RECORD OF DECISION SYSTEM (RODS)

TECHNOLOGIES HAVE BEEN PROVEN TO BE RELIABLE IN SIMILAR APPLICATIONS. THE VOC TREATMENT TECHNOLOGY WHICH BEST MEETS THE OBJECTIVES OF THE REMEDY FOR THE MUSCOY PLUME OU WILL BE DETERMINED DURING THE REMEDIAL DESIGN PHASE, WHEN MORE DETAILED INFORMATION IS AVAILABLE TO ASSESS EFFECTIVENESS AND COST.

AFTER TREATMENT, THE WATER SHALL MEET ALL APPLICABLE OR RELEVANT AND APPROPRIATE DRINKING WATER STANDARDS FOR VOCS. IF AIR STRIPPING TREATMENT IS SELECTED, AIR EMISSIONS SHALL BE TREATED USING THE BEST AVAILABLE CONTROL TECHNOLOGY (E.G., VAPOR PHASE GAC) TO ENSURE THAT ALL AIR EMISSIONS MEET APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS.

THE TREATED WATER WILL BE TRANSFERRED TO A PUBLIC WATER SUPPLY AGENCY FOR DISTRIBUTION. GROUNDWATER MONITORING WELLS WILL BE INSTALLED AND SAMPLED REGULARLY TO HELP EVALUATE THE EFFECTIVENESS OF THE REMEDY.

IF THE PUBLIC WATER SUPPLY AGENCY DOES NOT ACCEPT ANY OR ALL OF THE TREATED WATER (POSSIBLY DUE TO WATER SUPPLY NEEDS,) ANY REMAINING PORTION OF WATER WILL BE RECHARGED INTO THE AQUIFER VIA REINJECTION WELLS NEAR THE EDGE OF THE PLUME. THE NUMBER, LOCATION AND DESIGN OF THE REINJECTION WELLS WILL BE DETERMINED DURING THE REMEDIAL DESIGN PHASE TO BEST MEET THE OBJECTIVES OF THE REMEDY AND MEET APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS.

THE TOTAL DURATION OF THE MUSCOY PLUME OU INTERIM REMEDY WILL BE APPROXIMATELY 33 YEARS, WITH THE FIRST THREE YEARS FOR DESIGN AND CONSTRUCTION. EPA WILL REVIEW THIS ACTION EVERY FIVE YEARS THROUGHOUT THIS INTERIM REMEDY PERIOD AND AGAIN AT THE CONCLUSION OF THIS PERIOD TO ENSURE THAT THE REMEDY CONTINUES TO BE PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT.

THE REMEDIAL ACTION FOR THE MUSCOY PLUME OU REPRESENTS A DISCRETE ELEMENT IN THE OVERALL LONG-TERM REMEDIATION OF GROUNDWATER AT THE NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE. THE OBJECTIVES OF THIS INTERIM ACTION (I.E., INHIBITING MIGRATION OF GROUNDWATER CONTAMINATION TO CLEAN PORTIONS OF THE AQUIFER, PROTECTING DOWNGRADE MUNICIPAL SUPPLY WELLS SOUTH AND SOUTHWEST OF THE SHANDIN HILLS AND BEGINNING TO REMOVE CONTAMINANT MASS FROM THE AQUIFER IN THE MUSCOY PLUME) ARE NOT INCONSISTENT WITH AND WILL NOT PRECLUDE IMPLEMENTATION OF ANY FINAL OVERALL REMEDIAL ACTION OR ACTIONS SELECTED BY EPA IN THE FUTURE FOR THE NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE.

ROD DATE: 08/04/1993

ROD TYPE: RECORD OF DECISION

ROD ID: EPA/ROD/R09-93/097

MEDIA: GW

CONTAMINANT: VOCS

ABSTRACT: SITE HISTORY/DESCRIPTION: THE NEWMARK GROUNDWATER CONTAMINATION SITE IS A 5-MILE AREA OF GROUND WATER CONTAMINATION IN SAN BERNARDINO, CALIFORNIA. LAND USE IN THE AREA IS PREDOMINANTLY RESIDENTIAL AND COMMERCIAL, WITH A SMALL AMOUNT OF INDUSTRIAL USE. THE 110-SQUARE MILE AQUIFER, KNOWN AS THE BUNKER HILL BASIN, IS BOUNDED BY THE SAN BERNARDINO AND SAN GABRIEL MOUNTAINS TO THE NORTH, THE CRAFTON HILLS AND BADLANDS TO THE SOUTHEAST, AND A HYDROGEOLOGIC BARRIER FORMED BY THE SAN JACINTO FAULT TO THE SOUTHWEST. WATER FLOWING FROM ALL PARTS OF THE AQUIFER JOINS IN A CONFINED "ARTESIAN ZONE" BEFORE LEAVING THE BASIN, WHERE THE SANTA ANA CROSSES THE SAN JACINTO FAULT LINE. MOST OF THE WESTERN PART OF THE BASIN IS AN UNCONFINED AQUIFER WITH NO SUBSTANTIAL BARRIERS TO INFILTRATION FROM THE SURFACE. THE ESTIMATED HALF-MILLION RESIDENTS IN NEARBY COMMUNITIES USE AN AQUITARD CONTAINED IN THE SOUTH CENTRAL PORTION OF THE BASIN TO OBTAIN THEIR DRINKING WATER SUPPLY. IN 1980, STATE MONITORING STUDIES IDENTIFIED CONTAMINATION BY VOCS, INCLUDING TCE AND PCE, IN LARGE PORTIONS OF GROUND WATER IN THE BUNKER HILL BASIN. FOURTEEN WELLS, WHICH SUPPLY APPROXIMATELY 25% OF THE CITY OF SAN BERNARDINO'S DRINKING WATER SUPPLY, ALSO WERE FOUND TO BE CONTAMINATED ABOVE STATE AND FEDERAL LEVELS. FOLLOWING REGIONAL AND STATE INVESTIGATIONS, THE STATE CONSTRUCTED FOUR WATER TREATMENT SYSTEMS TO PROTECT THE WATER SUPPLY, BUT AFTER YEARS OF TESTING IT BECAME APPARENT THAT THE SOLVENTS STILL CONTINUED TO FLOW SOUTHWARD, THREATENING OTHER NEIGHBORING COMMUNITIES. IN 1986 AND 1989, AFTER SEVERAL STATE



RECORD OF DECISION SYSTEM (RODS)

INVESTIGATIONS SUGGESTED THAT THE WIDESPREAD CONTAMINATION HAD RESULTED FROM NUMEROUS, UNIDENTIFIED SOURCES; SEVERAL PLUMES WERE IDENTIFIED IN THE BASIN, INCLUDING AN EASTERN NEWMARK PLUME AND THE WESTERN MUSCOY PLUME. IN 1990, AERIAL PHOTOGRAPHS TAKEN AS PART OF EPA INVESTIGATIONS, ALONG WITH REPORTS OF WITNESSES, SUGGESTED THAT THE PRIMARY SOURCE OF CONTAMINATION WAS THE RESULT OF INTERMITTENT, IMPROPER DISPOSAL ACTIVITIES FROM THE 1950S TO 1970S AT A SOLVENT DISPOSAL PIT (CAT PIT) LOCATED AT THE FORMER SITE OF THE SAN BERNARDINO AIRPORT, NEAR THE NEWMARK WELLFIELD. HOWEVER, THIS COULD NOT EXPLAIN THE FACT THAT THE SOLVENTS ALSO WERE FOUND IN WELLS SCATTERED THROUGHOUT THE WEST SIDE OF THE SHANDIN HILLS, SO EPA AND THE STATE NOW BELIEVE THAT THE CONTAMINATION IS NOT FROM A SINGLE SOURCE. ADDITIONALLY, AT ONE POINT, EPA THOUGHT THE NEWMARK AND MUSCOY PLUMES WERE DISTINCT, BUT ADDITIONAL WELL DRILLING IN 1992 CONFIRMED THAT GROUND WATER FLOWS FROM THE WEST TO EAST THROUGH A PREVIOUSLY UNDISCOVERED CHANNEL. BASED ON THIS INFORMATION OBTAINED DURING THE RI, THE SAN BERNARDINO PLUME IS NO LONGER SUSPECTED TO BE THE SOURCE OF THE CONTAMINATION, AND IT IS NOW BELIEVED THAT THE PRINCIPLE CONTAMINANT SOURCE STEMS FROM THE NORTHWEST SIDE OF THE SHANDIN HILLS, AND MOST LIKELY CONTRIBUTES TO BOTH PLUMES. ALTHOUGH THE ACTUAL CONTAMINATION SOURCE HAS NOT BEEN IDENTIFIED YET, SEVERAL POSSIBLE SOURCES IN THE AREA THAT CURRENTLY ARE UNDER INVESTIGATION INCLUDE CAMP ONO, A FORMER ARMY BASE; AN INACTIVE COUNTY LANDFILL; AND AN AREA OF INDUSTRIAL DEVELOPMENT. THIS ROD ADDRESSES AN INTERIM REMEDY FOR THE AREA OF GROUND WATER CONTAMINATION NORTH AND EAST OF THE SHANDIN HILLS, AS THE NEWMARK OU. A SEPARATE ACTION WILL ADDRESS THE GROUND WATER CONTAMINATION WEST OF THE SHANDIN HILLS, AS THE MUSCOY OU. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE GROUND WATER ARE VOCS, INCLUDING 1,2-DCE, PCE, AND TCE.

REMEDY: SELECTED REMEDIAL ACTION: THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXTRACTING AND TREATING CONTAMINATED GROUND WATER ONSITE, USING EITHER GRANULAR ACTIVATED CARBON (GAC) FILTRATION, AN INNOVATIVE MODIFICATION OF LIQUID PHASE GAC, KNOWN AS ADVANCED OXIDATION, OR AIR STRIPPING, WITH VAPOR PHASE GAC TO CONTROL AIR EMISSIONS, AS DETERMINED DURING THE RD STAGE; PIPING THE TREATED WATER TO THE PUBLIC WATER SUPPLY SYSTEM FOR DISTRIBUTION; PROVIDING FOR A CONTINGENT REMEDY TO RECHARGE THE TREATED WATER INTO THE AQUIFER THROUGH REINJECTION, IF THE PUBLIC WATER SUPPLY DOES NOT ACCEPT ALL OR ANY OF THE TREATED WATER; AND MONITORING GROUND WATER. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS \$49,900,000, WHICH INCLUDES AN UNSPECIFIED O&M COST FOR 33 YEARS.

PERFORMANCE STANDARDS OR GOALS: GROUND WATER CLEANUP GOALS ARE BASED ON THE MORE STRINGENT OF STATE STANDARDS OR SDWA MCLS, AND ARE EXPECTED TO BE MET IN THE FINAL ACTION FOR THIS SITE.



**COMPREHENSIVE ENVIRONMENTAL RESPONSE AND LIABILITY INFORMATION SYSTEM
(CERCLIS)**

MAP ID# 1

Distance from Property: 0.00 mi. X

SITE INFORMATION

EPA ID#: CAD983566209

SITE ID#: 0900003

NAME: CAMP ONO

ADDRESS: I-215 N. OF UNIV. PARKWAY & CAJON BLVD
SAN BERNARDINO, CA 92407

COUNTY: SAN BERNARDINO

CONTACT/ PHONE: JERE JOHNSON (415)972-3094

NON NPL STATUS: NOT REPORTED

FEDERAL FACILITY CODE N - NOT A FEDERAL FACILITY

OWNERSHIP TYPE CODE: NOT REPORTED

SITE DESCRIPTION

NOT REPORTED

ACTIONS

TYPE: DS - DISCOVERY

RESPONSIBLE ORGANIZATION: F - EPA FUND-FINANCED

START DATE: NOT REPORTED

COMPLETION DATE: 04/01/1990

TYPE: PA - PRELIMINARY ASSESSMENT

RESPONSIBLE ORGANIZATION: F - EPA FUND-FINANCED

START DATE: NOT REPORTED

COMPLETION DATE: 09/19/1990

TYPE: SI - SITE INSPECTION

RESPONSIBLE ORGANIZATION: F - EPA FUND-FINANCED

START DATE: NOT REPORTED

COMPLETION DATE: 09/26/1991

MAP ID# 4

Distance from Property: 0.15 mi. S

SITE INFORMATION

EPA ID#: CAD981434517

SITE ID#: 0902439

NAME: NEWMARK GROUND WATER

ADDRESS: BUNKER HILL GROUND WATER BASIN
SAN BERNARDINO, CA 92408

COUNTY: SAN BERNARDINO

CONTACT/ PHONE: ELIZABETH ADAMS(415)972-3183

JERE JOHNSON (415)972-3094

ROBERT MANDEL (415)972-3040

FREDERICK SCHAUFFLER (415)972-3174

NON NPL STATUS: NOT REPORTED

FEDERAL FACILITY CODE N - NOT A FEDERAL FACILITY

OWNERSHIP TYPE CODE: NOT REPORTED

SITE DESCRIPTION

LITER (UG/L) HAVE BEEN DETECTED IN 20 PUBLIC WATER SUPPLY WELLS IN NORTHERN SAN BERNARDINO. THE PATTERN OF CONTAMINATION INDICATES THAT A RELEASE OR RELEASES OCCURRED IN NORTHWEST SAN BERNARDINO AND THAT CONTAMINANTS HAVE MIGRATED MORE THAN FIVE MILES TOWARD THE SANTA ANA RIVER TO THE SOUTHEAST. THE PLUME IS SPLIT BY A MAJOR OUTCROP OF RELATIVELY IMPERMEABLE BEDROCK AND DIVIDES THE CONTAMINATED GROUND WATER



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COMPREHENSIVE ENVIRONMENTAL RESPONSE AND LIABILITY INFORMATION SYSTEM (CERCLIS)

INTO AN EASTERN BRANCH (THE NEWMARK PLUME) AND A WESTERN BRANCH (THE MUSCOY PLUME). EPA IS ADDRESSING THE LEADING EDGES OF THE PLUME AS TWO SEPARATE OUS. THE IDENTIFICATION, CHARACTERIZATION AND REMEDIATION OF THE SOURCE OF CONTAMINATION WILL CONSTITUTE A THIRD OU. THE MUSCOY PLUME OPERABLE UNIT (OU) OF THE NEWMARK GROUND WATER CONTAMINATION SITE IS LOCATED WITHIN THE BUNKER HILL BASIN (ALSO KNOWN AS THE UPPER SANTA ANA RIVER BASIN) IN SAN BERNARDINO, CALIFORNIA. THE GROUND WATER CONTAMINATION AT THE NEWMARK SUPERFUND SITE AFFECTS A LARGE PORTION OF A 110 SQUARE MILE AQUIFER IN THE SAN BERNARDINO VALLEY OF SOUTHERN CALIFORNIA. THE AQUIFER, KNOWN AS THE BUNKER HILL BASIN, IS BOUNDED BY THE SAN BERNARDINO AND SAN GABRIEL MOUNTAINS TO THE NORTH, THE CRAFTON HILLS AND BADLANDS ON THE SOUTHEAST, AND BY A HYDROGEOLOGIC BARRIER FORMED BY THE SAN JACINTO FAULT ALONG THE SOUTHWEST. WATERS FLOWING FROM ALL PARTS OF THE AQUIFER JOIN IN A CONFINED ARTESIAN ZONE BEFORE LEAVING THE BASIN WHERE THE SANTA ANA RIVER CROSSES THE SAN JACINTO FAULT LINE. THE GROUND WATER CURRENTLY SERVES APPROXIMATELY A HALF-MILLION RESIDENTS OF SAN BERNARDINO, RIVERSIDE AND SURROUNDING COMMUNITIES. THE SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT HAS INDICATED THAT THE BUNKER HILL BASIN AQUIFER IS CAPABLE OF STORING APPROXIMATELY 1.6 TRILLION GALLONS AND PRODUCING 81 BILLION GALLONS EACH YEAR. THE AQUIFER RECEIVES RAINFALL AND NATURAL RUNOFF FROM THE SURROUNDING MOUNTAINS, COLLECTED FLOODWATER FROM RIVERS, CREEKS AND WASHES, AND WATER IMPORTED FROM OUTSIDE THE REGION THAT IS SPREAD OVER PERCOLATION BASINS. THE MUSCOY PLUME ENCOMPASSES A PORTION OF THE BUNKER HILL AQUIFER LOCATED BENEATH THE WESTERN PORTION OF THE CITY OF SAN BERNARDINO AND AN UNINCORPORATED PART OF SAN BERNARDINO COUNTY KNOWN AS THE MUSCOY COMMUNITY. RESIDENTIAL AND COMMERCIAL USE PREDOMINATES THROUGHOUT THE NEWMARK SUPERFUND SITE. THE PRIMARY CONTAMINANTS OF CONCERN AT THE NEWMARK SUPERFUND SITE ARE THE SOLVENTS PERCHLOROETHYLENE (PCE) AND TRICHLOROETHYLENE (TCE), WHICH ARE WIDELY USED IN A VARIETY OF INDUSTRIES, INCLUDING DRY CLEANING, METAL PLATING, AND MACHINERY DEGREASING. AS OF 1995, PCE AND TCE IN CONCENTRATIONS EXCEEDING THE DRINKING WATER STANDARDS OF 5 MICROGRAMS PER LITER IN 1980, THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS) INITIATED A MONITORING PROGRAM IN SAN BERNARDINO TO TEST FOR THE PRESENCE OF INDUSTRIAL CHEMICALS IN THE WATER FROM PUBLIC SUPPLY WELLS. THE RESULTS OF THE TESTS REVEALED THE PRESENCE OF PERCHLOROETHYLENE (PCE) AND TRICHLOROETHYLENE (TCE) CONTAMINATION IN LARGE PORTIONS OF THE GROUND WATER OF THE BUNKER HILL BASIN. FOURTEEN WELLS OPERATED BY THE CITY OF SAN BERNARDINO WATER DEPARTMENT IN THE NORTH SAN BERNARDINO/MUSCOY AREA WERE FOUND TO CONTAIN CONCENTRATIONS OF PCE AND TCE ABOVE THE STATE AND FEDERAL MAXIMUM CONTAMINANT LEVELS (MCLS) OF 5 PARTS PER BILLION FOR BOTH TCE AND PCE. THE AFFECTED WELLS HAD SUPPLIED NEARLY 25 PERCENT OF THE WATER FOR THE CITY OF SAN BERNARDINO. FOLLOWING INVESTIGATIONS BY THE SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD AND CALIFORNIA DEPARTMENT OF HEALTH SERVICES (NOW THE CALIFORNIA EPA DEPARTMENT OF TOXIC SUBSTANCES CONTROL), THE STATE PROVIDED OVER \$6 MILLION TO CONSTRUCT FOUR WATER TREATMENT SYSTEMS TO PROTECT THE PUBLIC WATER SUPPLY. AFTER YEARS OF TESTING THESE AGENCIES DETERMINED THAT THE SOLVENTS IN THE GROUND WATER WERE CONTINUING TO FLOW SOUTH AND THREATENING MANY MORE WELLS OPERATED BY SAN BERNARDINO, RIVERSIDE AND OTHER COMMUNITIES. THE STATE REQUESTED FEDERAL INVOLVEMENT TO ADDRESS THIS REGIONAL PROBLEM. THE EPA PLACED THE NEWMARK SITE ON THE NATIONAL PRIORITIES LIST (NPL) IN MARCH, 1989. THE EPA REMEDIAL INVESTIGATION (RI) BEGAN IN LATE 1990, FOCUSING ENTIRELY ON THE NEWMARK PLUME. BASED UPON THE FINDINGS OF THE RI, THE MUSCOY PLUME ON THE WESTERN SIDE OF THE VALLEY WAS INCLUDED AS PART OF THE NEWMARK SUPERFUND SITE. ADDITIONAL RI WELL SAMPLING IN THE VICINITY OF THE MUSCOY PLUME WAS CONDUCTED IN SEPTEMBER 1992. THE RI/FS REPORT FOR THE MUSCOY PLUME OPERABLE UNIT (OU) WAS FINALIZED IN DECEMBER, 1994. AS A RESULT OF THE RI INVESTIGATION, THE SAN BERNARDINO AIRPORT WAS NO LONGER SUSPECTED TO BE THE SOURCE OF THE NEWMARK PLUME AS ORIGINALLY IDENTIFIED IN THE AERIAL PHOTOGRAPHIC ANALYSIS CONDUCTED BY EPA'S ENVIRONMENTAL MONITORING SYSTEMS LABORATORY IN SEPTEMBER, 1990. ONGOING INVESTIGATIONS ARE ATTEMPTING TO DEFINITELY IDENTIFY THE SOURCE.

ACTIONS

TYPE: CD - CONSENT DECREE

RESPONSIBLE ORGANIZATION: FE - FEDERAL ENFORCEMENT

START DATE: NOT REPORTED

COMPLETION DATE: 03/23/2005



**COMPREHENSIVE ENVIRONMENTAL RESPONSE AND LIABILITY INFORMATION SYSTEM
(CERCLIS)**

TYPE: **CO - COMBINED RI/FS**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **06/28/1990**
COMPLETION DATE: **08/04/1993**

TYPE: **CO - COMBINED RI/FS**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **09/25/1992**
COMPLETION DATE: **03/24/1995**

TYPE: **DS - DISCOVERY**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **08/01/1986**

TYPE: **ED - RISK/HEALTH ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **03/21/1993**

TYPE: **ED - RISK/HEALTH ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **12/02/1994**

TYPE: **EH - Explanation Of Significant Differences**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **08/09/2004**

TYPE: **EH - Explanation Of Significant Differences**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **08/09/2004**

TYPE: **HR - HRS PACKAGE**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **10/01/1987**

TYPE: **JF - ECOLOGICAL RISK ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **03/21/1993**

TYPE: **JF - ECOLOGICAL RISK ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **12/02/1994**

TYPE: **LO - Lodged By DOJ**
RESPONSIBLE ORGANIZATION: **FE - FEDERAL ENFORCEMENT**
START DATE: **NOT REPORTED**
COMPLETION DATE: **08/11/2004**



**COMPREHENSIVE ENVIRONMENTAL RESPONSE AND LIABILITY INFORMATION SYSTEM
(CERCLIS)**

TYPE: **NF - FINAL LISTING ON NPL**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **03/31/1989**

TYPE: **NP - PROPOSAL TO NPL**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **06/24/1988**

TYPE: **NS - NPL RP SEARCH**
RESPONSIBLE ORGANIZATION: **FE - FEDERAL ENFORCEMENT**
START DATE: **08/23/1989**
COMPLETION DATE: **06/13/1990**

TYPE: **PA - PRELIMINARY ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **06/01/1987**

TYPE: **RA - REMEDIAL ACTION**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **09/18/1995**
COMPLETION DATE: **09/30/2004**

TYPE: **RD - REMEDIAL DESIGN**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **09/24/1993**
COMPLETION DATE: **10/03/1997**

TYPE: **RD - REMEDIAL DESIGN**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **04/17/1995**
COMPLETION DATE: **09/30/2003**

TYPE: **RO - RECORD OF DECISION**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **08/04/1993**

TYPE: **RO - RECORD OF DECISION**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **03/24/1995**

TYPE: **RS - REMOVAL ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **09/02/1992**

TYPE: **RS - REMOVAL ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **07/31/1989**
COMPLETION DATE: **07/31/1989**



**COMPREHENSIVE ENVIRONMENTAL RESPONSE AND LIABILITY INFORMATION SYSTEM
(CERCLIS)**

TYPE: **RS - REMOVAL ASSESSMENT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **07/02/1990**
COMPLETION DATE: **07/02/1990**

TYPE: **SI - SITE INSPECTION**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **NOT REPORTED**
COMPLETION DATE: **06/01/1987**

TYPE: **TG - TECHNICAL ASSISTANCE GRANT**
RESPONSIBLE ORGANIZATION: **F - EPA FUND-FINANCED**
START DATE: **04/30/1993**
COMPLETION DATE: **07/01/1993**

TYPE: **UG - READY-FOR-REUSE EVALUATION CHECKLIST**
RESPONSIBLE ORGANIZATION: **EP - EPA IN-HOUSE**
START DATE: **NOT REPORTED**
COMPLETION DATE: **03/24/2004**



DEPARTMENT OF TOXIC SUBSTANCES CONTROL (CALSTATES)

MAP ID# 1

Distance from Property: 0.00 mi. X

FACILITY INFORMATION

ID#: 36970006

NAME: **CAMP ONO**

ADDRESS: **BOUNDED: I-215, CAJON, PALM AVE, N STATE
SAN BERNARDINO, CA**

STATUS (DATE): **PROPERTY/SITE REFERRED TO ANOTHER AGENCY (08/08/1995)**

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:

NATIONAL SECURITY/INTERNATIONAL AFFAIRS

ACCESS TO SITE: **NOT REPORTED**

GROUNDWATER CONTAMINATION: **NOT REPORTED**

COMMENTS

FACILITY IDENTIFIED VIA EPA FIT PRELIMINARY ASSESSMENT (PA). EPA COMPLETED PA AND RECOMMEND HIGH-PRIORITY SCREENING SITE INSPECTION. LOCATION INFORMATION: SITE IS LOCATED IN TOWNSHIP 1 NORTH, RANGE 4 WEST, SECTIONS 18 & 19 AND TOWNSHIP 1 NORTH, RANGE 5 WEST, SECTIONS 12 & 13. THE SITE EXTENDS FOR APPROX TWO MILES AND IS BOUNDED BY US INTERSTATE 215 ON THE EAST AND CAJON BLVD ON THE WEST. PALM AVENUE AND STATE STREET BORDER THE NORTH AND SOUTH ENDS. THIS SITE HAS NOW BECOME A PART OF NORTH SAN BERNARDINO/ MUSCOY OIL. REGION 4 SITE. SOF FOR AG'S REFERRAL BEING PREPARED BY ROGER VINTZE - CDU-HQ. EPA LEAD.

MAP ID# 4

Distance from Property: 0.15 mi. S

FACILITY INFORMATION

ID#: 36990002

NAME: **NEWMARK GROUNDWATER CONTAMINATION**

ADDRESS: **BUNKER HILL GROUND WATER BASIN
SAN BERNARDINO, CA**

STATUS (DATE): **ANNUAL WORKPLAN - ACTIVE SITE (04/04/1996)**

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:

NONCLASSIFIABLE ESTABLISHMENTS

ACCESS TO SITE: **NOT REPORTED**

GROUNDWATER CONTAMINATION: **CONTROLLED**

COMMENTS

THIS IS THE DATE THE SITE WAS FIRST LISTED PURSUANT TO SECTION 25356. DTSC REVIEWED THE DRAFT ROD FOR THE NEWMARK GROUNDWATER MUSCOY PLUME OU AND CONCURS WITH US EPA'S SELECTED REMEDY OF EXTRACTION AND TREATMENT OF CONTAMINATED USING GRANULAR ACTIVATED CARBON CARBON TREATMENT TECHNOLOGY AND DISTRIBUTION OF THE TREATED WATER TO A PUBLIC WATER SUPPLY AGENCY (AND/OR REINJECTION INTO THE ACQUIFER). A CONSENT DECREE FOR THE NEWMARK AND MUSCOY OPERABLE UNITS WAS SIGNED BY A JUDGE. THE CITY OF SAN BERNARDINO WILL PERFORM THE WORK DESCRIBED IN THE STATEMENT OF WORK. WORKPLAN FOR THE INITIAL SITE INVESTIGATION, SAN BERNARDINO ENGINEER DEPOT-CAMP ONO INITIAL WWII OPERATIONAL AREAS REPORT, AND WORKPLAN FOR PROPOSED GROUNDWATER MONITORING WELLS FOR THE MUSCOY INVESTIGATION AREA SUBMITTED. SOIL GAS SURVEY STARTED AT THE SOURCE OPERABLE UNIT IN MARCH 2000. PUBLIC MEETING HELD IN SAN BERNARDINO TO ADDRESS COMMUNITY CONCERNS ON MUSCOY WELL LOCATIONS IN JUNE 2000. SETTLEMENT CONFERENCE HELD IN SAN BERNARDINO WITH CITY, COUNTY, USEPA, ARMY AND DEPARTMENT OF JUSTICE REPRESENTATIVES TO NEGOTIATE REIMBURSEMENT OF PAST COSTS ON JUNE 15, 2000. REMOVAL ACTION (NWMRK): AIR STRIPPING TOWERS AT NEWMARK CAME ON LINE. COMPLETED DESIGN FOR TREATMENT OF CHLORINATED VOC'S FOR THE NEWMARK OPERABLE UNIT LOCATED IN THE BUNKER HILL GROUNDWATER BASIN. TWO TREATMENT PLANTS WILL TREAT 17 MILLION GALLONS OF GROUNDWATER PER DAY. DRAFT FINAL SOIL GAS SURVEY SUBMITTED TO THE DEPARTMENT FOR THE SOURCE OU. COMMENTS SENT TO ARMY CORPS OF ENGINEERS. GROUNDWATER CONTAMINATED WITH PCE AND TCE. ROD FOR THE NEWMARK OPERABLE UNIT COMPLETED. DTSC AND THE CITY OF SAN BERNARDINO ENTERED INTO AN AGREEMENT ON 10/31/1986, AMENDED ON 04/22/1988, TO CONSTRUCT THREE TREATMENT SYSTEMS: WATERMAN, NEWMARK AND 17TH & SIERRA. THE COMPLETION DATE OF THE REMOVAL ACTION IS 08/30/1990 WHEN ALL THREE SYSTEMS WERE ONLINE. THE WATERMAN AND 17TH & SIERRA SYSTEMS ARE DESCRIBED IN THE NORTH SAN BERNARDINO SITE (ID# 36990001). DTSC ENTERED INTO AN AGREEMENT WITH



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DEPARTMENT OF TOXIC SUBSTANCES CONTROL (CALSTATES)

U.S. EPA TO CLEAN UP THE NEWMARK OPERABLE UNIT. THE REMEDIAL DESIGN FOR THE MUSCOY OPERABLE UNIT WAS COMPLETED. ON 08/26/1996 DTSC SIGNED A STATE-SUPERFUND CONTRACT WITH U.S. EPA FOR THE MUSCOY OU OF THE NEWMARK NPL SITE. START-UP AND OPERATION OF A 17 MILLION GALLON PER DAY GROUNDWATER TREATMENT REMEDIATION SYSTEM FOR THE NEWMARK OPERABLE UNIT. DTSC REVIEWED AND COMMENTED ON THE 100% DESIGN SUBMITTAL FOR THE NEWMARK OU.

BACKGROUND

THIS SITE IS PART OF THE NORTH SAN BERNARDINO AREA GROUNDWATER SITE. IT ENCOMPASSES FOUR MUNICIPAL WELLS KNOWN AS THE NEWMARK WELL FIELD. THE SITE WAS LISTED ON THE NPL IN MARCH, 1989. THE SITE CONSISTS OF APPROXIMATELY 700 SQUARE FEET IN THE BUNKER HILL GROUNDWATER BASIN. THE SAN BERNARDINO MUNICIPAL WATER DEPARTMENT WAS FORCED TO CLOSE THE FOUR WELLS IN THE EARLY 1980S, WHEN THEY WERE FOUND TO BE CONTAMINATED WITH HIGH LEVELS OF HALO-GENATED ORGANIC CHEMICALS INCLUDING TETRACHLOROETHYLENE (PCE) AND TRICHLOROETHYLENE (TCE). THERE ARE LEVELS OF TCE AND PCE IN THE FOUR DOMESTIC WATER WELLS ABOVE THE STATE HEALTH BASED ACTION LEVELS FOR DRINKING WATER AT THIS SITE. TCE WAS A DEGREASER USED IN LARGE QUANTITIES FOR COMMERCIAL, INDUSTRIAL, AND AEROSPACE APPLICATIONS IN THE AREA. PCE IS A SIMILAR DEGREASER AND IS COMMONLY USED AS A CLEANING COMPOUND IN THE DRY CLEANING INDUSTRY. GROUNDWATER IN THE WELL FIELD IS OF HIGH NATURAL QUALITY. FOUR DOMESTIC SUPPLY WELLS HAVE BEEN CLOSED. THERE IS EVIDENCE THAT SUGGESTS THAT THE CONTAMINATION IS MOVING IN THE DIRECTION OF OTHER WELL FIELDS SERVING THE MAJORITY OF THE POPULATION OF THE CITIES OF SAN BERNARDINO AND RIVERSIDE. THE POPULATION SERVED BY WELLS POTENTIALLY AFFECTED BY THE CONTAMINATION IS AT LEAST 200,000. IN NOVEMBER, 1986, DHS FOUND THE BUNKER HILL BASIN, INCLUDING THE NEWMARK WELL FIELD, TO CONSTITUTE AN IMMINENT AND SUBSTANTIAL ENDANGERMENT TO PUBLIC HEALTH AND THE ENVIRONMENT. HOWEVER, THERE IS NO KNOWN CURRENT EXPOSURE ABOVE THE DRINKING WATER STANDARDS. IN OCTOBER, 1986, DHS ENTERED INTO A CONTRACT WITH THE CITY OF SAN BERNARDINO TO CONDUCT INITIAL REMEDIAL ACTIONS. THESE ACTIONS INCLUDED DESIGN, CONSTRUCTION AND INSTALLATION OF AIRSTRIPPING TOWERS (USING CARBON VAPOR UNITS TO CONTROL EXHAUST EMISSIONS) FOR THE NEWMARK WELL FIELD. THESE ACTIONS WERE PART OF WORK CONDUCTED FOR THE STATE'S NORTH SAN BERNARDINO SUPERFUND SITE. THE TREATMENT SYSTEM HAS BEEN IN OPERATION SINCE JUNE, 1988, AND IT REPLACED THE TOTAL CAPACITY OF THE FOUR MUNICIPAL WELLS. THE SYSTEM CAN TREAT UP TO 8.6 MILLION GALLONS PER DAY. DTSC AND U.S. EPA ENTERED INTO A SUPERFUND AGREEMENT TO CLEAN UP THE NEWMARK OPERABLE UNIT. THE NEWMARK OU GROUNDWATER TREATMENT SYSTEM IS OPERATIONAL. THIS TREATMENT SYSTEM INTEGRATES INTO AND REPLACES THE STATE FUNDED TREATMENT SYSTEM INSTALLED IN 1988. GROUNDWATER EXTRACTION WELLS HAVE BEEN INSTALLED AT THE LEADING EDGE OF THE NEWMARK CONTAMINATION PLUME. AIR STRIPPING TOWERS AT THE WATERMAN AND AT THE 48TH STREET TREATMENT PLANTS HAVE BEEN REPLACED WITH GRANULAR ACTIVATED CARBON (GAC) TREATMENT UNITS. TOTAL GROUNDWATER TREATMENT CAPACITY FOR THE NEWMARK OU IS 41.6 MILLION GALLONS PER DAY. ADDITIONAL CARBON UNITS WILL BE ADDED TO THE NEWMARK OU TREATMENT SYSTEM TO HANDLE ADDITIONAL CONTAMINATED WATER FROM THE MUSCOY OU PLUME. EXTRACTION WELLS AND A PIPELINE ARE CURRENTLY IN THE DESIGN PHASE.

MAP ID# 4

Distance from Property: 0.15 mi. S

FACILITY INFORMATION

ID#: 36990001

NAME: NORTH SAN BERNARDINO AREA

ADDRESS: BUNKER HILL GROUNDWATER BASIN
SAN BERNARDINO, CA

STATUS (DATE): PROPERTY/SITE REFERRED TO ANOTHER AGENCY (09/09/1995)

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:

NONCLASSIFIABLE ESTABLISHMENTS

ACCESS TO SITE: NOT REPORTED

GROUNDWATER CONTAMINATION: **CONFIRMED**

COMMENTS

THIS IS THE DATE THE SITE WAS FIRST LISTED PURSUANT TO SECTION 25356. SITE CONSISTS OF APPROX FIFTEEN SQUARE MILES OF GROUNDWATER CONTAMINATED WITH TCE AND PCE IN THE BUNKER HILL GROUNDWATER BASIN; INCLUDES AREAS WITHIN ZIP CODES 92401, 92404, 92405, 92407, AND 92411. SITE INSPECTION DONE: PRELIMINARY ASSESSMENT/SITE INVESTIGATION PREPARED BY DHS TSCP; ONGOING IRM IMPLEMENTATION. REMOVAL ACTION (WATER): WATERMAN GW PUMP/TREAT ONLINE REMOVAL ACTION (17&S): 17TH & SIERRA GW PUMP/TREAT ONLINE. DTSC AND THE CITY OF SAN



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DEPARTMENT OF TOXIC SUBSTANCES CONTROL (CALSTATES)

BERNARDINO ENTERED INTO AN AGREEMENT ON 10/31/1986, AMENDED ON 04/22/1988, TO CONSTRUCT THREE TREATMENT SYSTEMS: WATERMAN, NEWMARK, AND 17TH & SIERRA. THE COMPLETION DATE FOR THE REMOVAL ACTION IS 08/30/1990 WHEN ALL THREE SYSTEMS WERE ONLINE. THE NEWMARK SYSTEM IS DESCRIBED IN THE NEWMARK GROUNDWATER CONTAMINATION SITE (ID# 36990002). REMOVAL ACTION (19TH STREET). AN 8.6 MILLION GALLON PER DAY CAPACITY GRANULAR ACTIVATED CARBON (GAC) WELLHEAD TREATMENT SYSTEM WAS CONSTRUCTED ON 19TH STREET IN THE CITY OF SAN BERNARDINO. THIS GAC SYSTEM WILL BE OPERATED BY THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT. THE SYSTEM WILL FUNCTION TO HELP STOP THE MIGRATION OF A TCE AND PCE CONTAMINATED GROUNDWATER PLUME AND TO PROVIDE SAFE WATER TO RESIDENTS OF THE CITY OF SAN BERNARDINO. THE REMOVAL WAS INITIATED IN JUNE 1992 AND COMPLETED ON AUGUST 13, 1993 AT A COST OF APPROXIMATELY \$1.9 MILLION.

BACKGROUND

THIS SITE IS AN AREA OF GROUNDWATER CONTAMINATION AND CONSISTS OF APPROXIMATELY 15 SQUARE MILES IN THE BUNKER HILL GROUNDWATER BASIN IN SAN BERNARDINO COUNTY. THE SITE INCLUDES AREAS WITHIN THE FOLLOWING ZIP CODES: 92401, 92404, 92405, 92407, AND 92411. IN THE PAST FOUR YEARS, THE SAN BERNARDINO MUNICIPAL WATER DISTRICT HAS REMOVED FOURTEEN DOMESTIC SUPPLY WELLS FROM PRODUCTION BECAUSE OF TRICHLOROETHYLENE (TCE) AND TETRACHLOROETHENE (PCE) CONTAMINATION.

THERE ARE LEVELS OF TCE AND PCE IN DOMESTIC WATER WELLS ABOVE THE STATE HEALTH-BASED ACTION LEVEL FOR DRINKING WATER AT THIS SITE. TCE WAS A DEGREASER USED IN LARGE QUANTITIES FOR COMMERCIAL, INDUSTRIAL AND AEROSPACE APPLICATIONS IN THE AREA. PCE IS A SIMILAR DEGREASER AND DRY CLEANING COMPOUND THAT WAS ALSO COMMONLY USED BY LOCAL BUSINESSES.

POTENTIAL EXPOSURE TO CONTAMINANTS IS POSSIBLE THROUGH WITHDRAWAL OF GROUNDWATER THROUGH DOMESTIC WATER WELLS. ANOTHER POTENTIAL ROUTE OF EXPOSURE EXISTS THROUGH AIR EMISSIONS RESULTING FROM THE STRIPPING TOWERS. POSSIBLE RECEPTORS INCLUDE OVER 200,000 LOCAL RESIDENTS AND DOWNGRADIENT CITIES.

IN NOVEMBER 1986, THE DEPARTMENT MADE AN IMMINENT AND SUBSTANTIAL ENDANGERMENT DETERMINATION AT THE SITE. DTSC ENTERED INTO AN AGREEMENT WITH THE CITY OF SAN BERNARDINO TO DESIGN AND CONSTRUCT THREE TREATMENT SYSTEMS IN AN EFFORT TO RETARD MIGRATION OF UNDERGROUND CONTAMINANTS. THESE THREE SYSTEMS ARE NOW ON LINE, TREATING UP TO 30 MILLION GALLONS OF GROUNDWATER PER DAY.



CORTESE

MAP ID# 4

Distance from Property: 0.15 mi. S

FACILITY ID: 36990002
NAME: NEWMARK GROUNDWATER CONTAMINATION
ADDRESS: BUNKER HILL GROUND WATER BASIN
SAN BERNARDINO, CA 92408
OTHER NAMES USED:
NEWMARK WELLFIELD
NEWMARK GROUNDWATER CONTAMINATION
OTHER ADDRESSES USED:
BUNKER HILL GROUND WATER BASIN, SAN BERNARDINO, CA 92408
MUSCOY AREA N. OF SAN BERNARDINO, SAN BERNARDINO, CA 92401
COUNTY: SAN BERNARDINO
BRANCH: SO CAL - CYPRESS
DTSC REGION: SO CAL - CYPRESS
STATUS: 04/22/1996 - ANNUAL WORKPLAN - ACTIVE SITE
LEAD: ENVIRONMENTAL PROTECTION AGENCY
TYPE: NPL SITE, JOINT STATE/FEDERAL-FUNDED
NPL: LISTED
PROJECT MGR: YASSER AREF - (714) 484-5349 EMAIL: YAREF@dtsc.ca.gov
SIC: 99 - NONCLASSIFIABLE ESTABLISHMENTS
ASSEMBLY DISTRICT: 63 SENTATE DISTRICT: 31
REGIONAL WATER QUALITY CONTROL BOARD: NOT REPORTED
ACCESS: NO DATA AVAILABLE AT THIS TIME.

SITE HISTORY

THIS SITE IS PART OF THE NORTH SAN BERNARDINO AREA GROUNDWATER SITE. IT ENCOMPASSES FOUR MUNICIPAL WELLS KNOWN AS THE NEWMARK WELL FIELD. THE SITE WAS LISTED ON THE NPL IN MARCH, 1989. THE SITE CONSISTS OF APPROXIMATELY 700 SQUARE FEET IN THE BUNKER HILL GROUNDWATER BASIN. THE SAN BERNARDINO MUNICIPAL WATER DEPARTMENT WAS FORCED TO CLOSE THE FOUR WELLS IN THE EARLY 1980S, WHEN THEY WERE FOUND TO BE CONTAMINATED WITH HIGH LEVELS OF HALO- GENATED ORGANIC CHEMICALS INCLUDING TETRACHLOROETHYLENE (PCE) AND TRICHLOROETHYLENE (TCE). THERE ARE LEVELS OF TCE AND PCE IN THE FOUR DOMESTIC WATER WELLS ABOVE THE STATE HEALTH BASED ACTION LEVELS FOR DRINKING WATER AT THIS SITE. TCE WAS A DEGREASER USED IN LARGE QUANTITIES FOR COMMERCIAL, INDUSTRIAL, AND AEROSPACE APPLICATIONS IN THE AREA. PCE IS A SIMILAR DEGREASER AND IS COMMONLY USED AS A CLEANING COMPOUND IN THE DRY CLEANING INDUSTRY. GROUNDWATER IN THE WELL FIELD IS OF HIGH NATURAL QUALITY. FOUR DOMESTIC SUPPLY WELLS HAVE BEEN CLOSED. THERE IS EVIDENCE THAT SUGGESTS THAT THE CONTAMINATION IS MOVING IN THE DIRECTION OF OTHER WELL FIELDS SERVING THE MAJORITY OF THE POPULATION OF THE CITIES OF SAN BERNARDINO AND RIVERSIDE. THE POPULATION SERVED BY WELLS POTENTIALLY AFFECTED BY THE CONTAMINATION IS AT LEAST 200,000. IN NOVEMBER, 1986, DHS FOUND THE BUNKER HILL BASIN, INCLUDING THE NEWMARK WELL FIELD, TO CONSTITUTE AN IMMINENT AND SUBSTANTIAL ENDANGERMENT TO PUBLIC HEALTH AND THE ENVIROMENT. HOWEVER, THERE IS NO KNOWN CURRENT EXPOSURE ABOVE THE DRINKING WATER STANDARDS. IN OCTOBER, 1986, DHS ENTERED INTO A CONTRACT WITH THE CITY OF SAN BERNARDINO TO CONDUCT INITIAL REMEDIAL ACTIONS. THESE ACTIONS INCLUDED DESIGN, CONSTRUCTION AND INSTALLATION OF AIRSTRIPPING TOWERS (USING CARBON VAPOR UNITS TO CONTROL EXHAUST EMISSIONS) FOR THE NEWMARK WELL FIELD. THESE ACTIONS WERE PART OF WORK CON- DUCTED FOR THE STATE'S NORTH SAN BERNARDINO SUPERFUND SITE. THE TREATMENT SYSTEM HAS BEEN IN OPERATION SINCE JUNE, 1988, AND IT REPLACED THE TOTAL CAPACITY OF THE FOUR MUNICIPAL WELLS. THE SYSTEM CAN TREAT UP TO 8.6 MILLION GALLONS PER DAY. DTSC AND U.S. EPA ENTERED INTO A SUPERFUND AGREEMENT TO CLEAN UP THE NEWMARK OPERABLE UNIT. THE NEWMARK OU GROUNDWATER TREATMENT SYSTEM IS OPERATIONAL. THIS TREATMENT SYSTEM INTEGRATES INTO AND REPLACES THE STATE FUNDED TREATMENT SYSTEM INSTALLED IN 1988. GROUNDWATER EXTRAC- TION WELLS HAVE BEEN INSTALLED AT THE LEADING EDGE OF THE NEWMARK CONTAMINATION PLUME. AIR STRIPPING TOWERS AT THE WATERMAN AND AT THE 48TH STREET TREATMENT PLANTS HAVE BEEN REPLACED WITH GRANULAR ACTIVATED CARBON (GAC) TREATMENT UNITS. TOTAL GROUNDWATER TREATMENT CAPACITY FOR THE NEWMARK OU IS 41.6 MILLION GALLONS PER DAY. ADDITIONAL CARBON UNITS WILL BE ADDED TO THE NEWMARK OU TREATMENT SYSTEM TO HANDLE ADDITIONAL CONTAMINATED WATER FROM THE MUSCOY OU PLUME. EXTRACTION WELLS AND A PIPELINE ARE CURRENTLY IN THE DESIGN PHASE.

COMMENTS

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CORTESE

06/30/1988

REMOVAL ACTION (NWMRK): AIR STRIPPING TOWERS AT NEWMARK CAME ON LINE.

01/31/1989

THIS IS THE DATE THE SITE WAS FIRST LISTED PURSUANT TO SECTION 25356.

08/30/1990

DTSC AND THE CITY OF SAN BERNARDINO ENTERED INTO AN AGREEMENT ON 10/31/1986, AMENDED ON 04/22/1988, TO CONSTRUCT THREE TREATMENT SYSTEMS: WATERMAN, NEWMARK AND 17TH & SIERRA. THE COMPLETION DATE OF THE REMOVAL ACTION IS 08/30/1990 WHEN ALL THREE SYSTEMS WERE ONLINE. THE WATERMAN AND 17TH & SIERRA SYSTEMS ARE DESCRIBED IN THE NORTH SAN BERNARDINO SITE (ID# 36990001).

07/25/1991

GROUNDWATER CONTAMINATED WITH PCE AND TCE.

08/04/1993

ROD FOR THE NEWMARK OPERABLE UNIT COMPLETED.

03/21/1995

DTSC REVIEWED THE DRAFT ROD FOR THE NEWMARK GROUNDWATER MUSCOY PLUME OU AND CONCURS WITH US EPA'S SELECTED REMEDY OF EXTRACTION AND TREATMENT OF CONTAMINATED USING GRANULAR ACTIVATED CARBON CARBON TREATMENT TECHNOLOGY AND DISTRIBUTION OF THE TREATED WATER TO A PUBLIC WATER SUPPLY AGENCY (AND/OR REINJECTION INTO THE ACQUIFER).

09/13/1995

DTSC ENTERED INTO AN AGREEMENT WITH U.S. EPA TO CLEAN UP THE NEWMARK OPERABLE UNIT.

10/03/1996

ON 08/26/1996 DTSC SIGNED A STATE-SUPERFUND CONTRACT WITH U.S. EPA FOR THE MUSCOY OU OF THE NEWMARK NPL SITE.

10/30/1997

DTSC REVIEWED AND COMMENTED ON THE 100% DESIGN SUBMITTAL FOR THE NEWMARK OU.

06/30/1998

COMPLETED DESIGN FOR TREATMENT OF CHOLORINATED VOC'S FOR THE NEWMARK OPERABLE UNIT LOCATED IN THE BUNKER HILL GROUNDWATER BASIN. TWO TREATMENT PLANTS WILL TREAT 17 MILLION GALLONS OF GROUNDWATER PER DAY.

10/28/1998

START-UP AND OPERATION OF A 17 MILION GALLON PER DAY GROUNDWATER TREATMENT REMEDIATION SYSTEM FOR THE NEWMARK OPERABLE UNIT.

06/20/2000

WORKPLAN FOR THE INITIAL SITE INVESTIGATION, SAN BERNARDINO ENGINEER DEPOT-CAMP ONO INITIAL WWII OPERATIONAL AREAS REPORT, AND WORKPLAN FOR PROPOSED GROUNDWATER MONITORING WELLS FOR THE MUSCOY INVESTIGATION AREA SUBMITTED. SOIL GAS SURVEY STARTED AT THE SOURCE OPERABLE UNIT IN MARCH 2000. PUBLIC MEETING HELD IN SAN BERNARDINO TO ADDRESS COMMUNITY CONCERNS ON MUSCOY WELL LOCATIONS IN JUNE 2000. SETTLEMENT CONFERENCE HELD IN SAN BERNARDINO WITH CITY, COUNTY, USEPA, ARMY AND DEPARTMENT OF JUSTICE REPRESENTATIVES TO NEGOTIATE REIMBURSEMENT OF PAST COSTS ON JUNE 15, 2000.

07/20/2001

DRAFT FINAL SOIL GAS SURVEY SUBMITTED TO THE DEPARTMENT FOR THE SOURCE OU. COMMENTS SENT TO ARMY CORPS OF ENGINEERS.

09/30/2003

THE REMEDIAL DESIGN FOR THE MUSCOY OPERABLE UNIT WAS COMPLETED.

03/23/2005

A CONSENT DECREE FOR THE NEWMARK AND MUSCOY OPERABLE UNITS WAS SIGNED BY A JUDGE. THE CITY OF SAN BERNARDINO WILL PERFORM THE WORK DESCRIBED IN THE STATEMENT OF WORK.

POTENTIAL/CONFIRMED HAZARDOUS WASTE

DESCRIPTION

HALOGENATED ORGANIC COMPOUNDS

ASSOCIATED ID'S

CODE	DESCRIPTION	VALUE
CSTAR	CALSTARS CODE	400259-66



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CORTESE

PCODE **BEP DATABASE PCODE** **P43058**

SPECIAL CHARACTERISTICS

PROGRAM PROGRAM NAME

MSCA **MULTI-SITE COOPERATIVE AGREEMENT**

COMMITMENT INFORMATION

CODE	DESC.	DUE DATE	REVISED	COMPLETED	ACTIVITY
ORDE	ISE	-	-	11/30/1986	I/SE, IORSE, FFA, FFSRA, VCA, EA
PPP	-	-	-	11/30/1987	PUBLIC PARTICIPATION PLAN
RA	NWMRK	-	-	06/30/1988	REMOVAL ACTION
RIFS	OU	-	-	03/12/1993	REMEDIAL INVESTIGATION / FEASIBILITY STUDY
RIFS	MO-U	-	-	03/12/1993	REMEDIAL INVESTIGATION / FEASIBILITY STUDY
RAP	N-OU	-	-	08/04/1993	REMEDIAL ACTION PLAN / RECORD OF DECISION
RIFS	M-OU	-	-	12/02/1994	REMEDIAL INVESTIGATION / FEASIBILITY STUDY
RAP	M-OU	-	-	03/21/1995	REMEDIAL ACTION PLAN / RECORD OF DECISION
DES	N-OU	-	-	06/30/1998	DESIGN
RMDL	N-OU	-	-	10/28/1998	REMEDIAL ACTION (RAP REQUIRED)
DES	M-OU	-	-	09/30/2003	DESIGN
ORDE	CD	06/30/2005	-	03/23/2005	I/SE, IORSE, FFA, FFSRA, VCA, EA
RIFS	S-OU	06/30/2005	-	-	REMEDIAL INVESTIGATION / FEASIBILITY STUDY
RMDL	M-OU	12/31/2005	-	-	REMEDIAL ACTION (RAP REQUIRED)
ROD	S-OU	12/31/2005	-	-	RECORD OF DECISION
RMDL	S-OU	09/30/2006	-	-	REMEDIAL ACTION (RAP REQUIRED)
CERT	-	06/30/2008	-	-	CERTIFICATION
OM	-	12/31/2049	-	-	OPERATION & MAINTENANCE



LEAKING UNDERGROUND STORAGE TANKS (LUST)

MAP ID# 2

Distance from Property: 0.11 mi. SW

SITE INFORMATION

ID#: **T0607100240** REGIONAL CASE #: **083601948T** LOCAL CASE #: **90116**
SITE NAME: **AMERICAN NATIONAL CAN COMPANY** RESPONSIBLE PARTY: **JUDY PETERS**
ADDRESS: **5715 INDUSTRIAL PKWY** ADDRESS: **8870 W. BYRN MAWR**
SAN BERNARDINO, CA
CROSS STREET: **NOT REPORTED**
COUNTY: **NOT REPORTED**
FACILITY OPERATOR: **NOT REPORTED**
ENFORCEMENT TYPE: **NOT REPORTED**
FUNDING TYPE: **NOT REPORTED**
HOW THE CASE/LEAK WAS DISCOVERED: **NO DATA REPORTED**
HOW THE CASE/LEAK WAS STOPPED: **NOT REPORTED**
CAUSE OF LEAK: **NOT REPORTED**
SOURCE OF LEAK: **NO DATA REPORTED**
DATE LEAK WAS STOPPED: **NOT REPORTED**
DATE OF LEAK CONFIRMATION: **NOT REPORTED**
DATE OF PRELIMINARY SITE ASSESSEMENT WORKPLAN SUBMITTED: **1991-10-15 00:00:00**
DATE OF PRELIMINARY SITE ASSESSEMENT UNDERWAY: **NOT REPORTED**
DATE OF POLUTION CHARACTERIZATION: **NOT REPORTED**
DATE OF REMEDIAL ACTION UNDERWAY: **NOT REPORTED** DATE OF REMEDIATION PLAN: **NOT REPORTED**
DATE OF VERIFICATION MONITORING UNDERWAY: **NOT REPORTED**
DATE CASE WAS CLOSED: **1991-10-23 00:00:00** DATE CASE WAS ENTERED INTO SYSTEM: **1991-11-15 00:00:00**
DATE LEAK WAS DISCOVERED: **NOT REPORTED** DATE ENFORCEMENT BEGAN: **NOT REPORTED**
DATE CASE WAS REPORTED: **1991-06-14 00:00:00** DATE CASE WAS REVIEWED: **1991-11-15 00:00:00**
DATE MAXIMUM MTBE CONCENTRATION WAS FOUND: **NOT REPORTED**
MTBE CLASSIFICATION: **NOT REPORTED**
MAXIMUM GROUNDWATER CONCENTRATION OF MTBE: **NOT REPORTED**
MAXIMUM SOIL CONCENTRATION OF MTBE: **NOT REPORTED**
REGIONAL BOARD RESPONSIBLE FOR CASE: **SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD (REGION 8)**
CURRENT STATUS: **9 - CASE CLOSED**
SUBSTANCE/S RELEASED: **GASOLINE - AUTOMOTIVE**
QUANTITY OF SUBSTANCE RELEASED: **NOT REPORTED**
INTERIM FOR THE CASE: **NOT REPORTED**
PROGRAM FOR THE CASE: **NO PROGRAM DESCRIPTION AVAILABLE**
NUMBER OF MTBE ANALYTICAL RESULTS: **0**
NUMBER OF GASOLINE ANALYTICAL RESULTS: **1** MTBE TESTED: **NT**
LEAD AGENCY: **LOCAL AGENCY LEAD** LOCAL AGENCY: **NOT REPORTED**
CASE SUMMARY: **NOT REPORTED**
GROUNDWATER BASIN: **UPPER SANTA ANA VALL**
BENEFICIAL USE: **NOT REPORTED**
PRIORITY: **NOT REPORTED** CLEANUP FUND ID: **NOT REPORTED**
ABATEMENT METHOD: **NOT REPORTED**
WATER SYSEM FOR THE NEAREST PUBLIC DRINKING WATER WELL: **NOT REPORTED**
WATER SYSEM ID #: **NOT REPORTED** WATER WELL ID#: **NOT REPORTED**
WELL NAME FOR THE NEAREST DRINKING WATER WELL: **NOT REPORTED**
DISTANCE TO NEAREST DRINKING WATER WELL: **0**



HAZARDOUS WASTE SUMMARY REPORT (HWTS)

MAP ID# 5

Distance from Property: 0.17 mi. W

EPA ID: **CAD982523953**
NAME: **WALTER FRED G AND SON**
ADDRESS: **5770 INDUSTRIAL PKWY**
SAN BERNARDINO, CA 92407
COUNTY: **SAN BERNARDINO**
CONTACT: **NOT REPORTED**
PHONE: **NOT REPORTED**

MANIFEST SUMMARY INFORMATION

TSD ID: **CAD099452708**
YEAR: **1995**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **LOS ANGELES**
WASTE CATEGORY: **WASTE OIL AND MIXED OIL**
DISPOSAL METHOD: **RECYCLER**
AMOUNT DISPOSED(TONS): **2.3769**

TSD ID: **CAT000613893**
YEAR: **1999**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **LOS ANGELES**
WASTE CATEGORY: **AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT**
DISPOSAL METHOD: **TRANSFER STATION**
AMOUNT DISPOSED(TONS): **0.2251**

TSD ID: **CAT000613927**
YEAR: **1999**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **SAN BERNARDINO**
WASTE CATEGORY: **AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT**
DISPOSAL METHOD: **TRANSFER STATION**
AMOUNT DISPOSED(TONS): **0.8879**

TSD ID: **CAT000613927**
YEAR: **2000**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **SAN BERNARDINO**
WASTE CATEGORY: **AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT**
DISPOSAL METHOD: **TRANSFER STATION**
AMOUNT DISPOSED(TONS): **0.2400**

TSD ID: **CAT000613976**
YEAR: **2000**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **ORANGE**
WASTE CATEGORY: **LIQUIDS WITH HALOGENATED ORGANIC COMPOUNDS >= 1,000 MG./L**
DISPOSAL METHOD: **TRANSFER STATION**
AMOUNT DISPOSED(TONS): **0.2000**

TSD ID: **CAT000613927**
YEAR: **2001**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **SAN BERNARDINO**
WASTE CATEGORY: **AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT**
DISPOSAL METHOD: **TRANSFER STATION**
AMOUNT DISPOSED(TONS): **0.2700**



HAZARDOUS WASTE SUMMARY REPORT (HWTS)

TSD ID: CAT000613976
YEAR: 2001
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: ORANGE
WASTE CATEGORY: LIQUIDS WITH HALOGENATED ORGANIC COMPOUNDS >= 1,000 MG./L
DISPOSAL METHOD: TRANSFER STATION
AMOUNT DISPOSED(TONS): 0.2000

TSD ID: CAT000613927
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: SAN BERNARDINO
WASTE CATEGORY: AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT
DISPOSAL METHOD: TRANSFER STATION
AMOUNT DISPOSED(TONS): 0.2300

TSD ID: CAT000613927
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: SAN BERNARDINO
WASTE CATEGORY: AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT
DISPOSAL METHOD: TRANSFER STATION
AMOUNT DISPOSED(TONS): 0.1400

TSD ID: CAT000613927
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: SAN BERNARDINO
WASTE CATEGORY: AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT
DISPOSAL METHOD: TRANSFER STATION
AMOUNT DISPOSED(TONS): 0.2200

TSD ID: CAT000613927
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: SAN BERNARDINO
WASTE CATEGORY: AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT
DISPOSAL METHOD: TRANSFER STATION
AMOUNT DISPOSED(TONS): 0.1600

TSD ID: CAT000613927
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: SAN BERNARDINO
WASTE CATEGORY: AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT
DISPOSAL METHOD: TRANSFER STATION
AMOUNT DISPOSED(TONS): 0.1200



HAZARDOUS WASTE SUMMARY REPORT (HWTS)

MAP ID# 5

Distance from Property: 0.17 mi. W

EPA ID: **CAL000009087**
NAME: **FRED G WALTER MACHINE SHOP**
ADDRESS: **5770 INDUSTRIAL PKWY**
SAN BERNARDINO, CA 92407
COUNTY: **SAN BERNARDINO**
CONTACT: **WALTER FRED G**
PHONE: **NOT REPORTED**

MANIFEST SUMMARY INFORMATION

TSD ID: **CAT080011059**
YEAR: **1995**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **LOS ANGELES**
WASTE CATEGORY: **BLANK OR UNKNOWN**
DISPOSAL METHOD: **RECYCLER**
AMOUNT DISPOSED(TONS): **0.2085**

TSD ID: **CAT080011059**
YEAR: **1995**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **LOS ANGELES**
WASTE CATEGORY: **UNSPECIFIED OIL-CONTAINING WASTE**
DISPOSAL METHOD: **RECYCLER**
AMOUNT DISPOSED(TONS): **0.3336**

TSD ID: **CAT080011059**
YEAR: **1995**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **LOS ANGELES**
WASTE CATEGORY: **OFF-SPECIFICATION, AGED OR SURPLUS ORGANICS**
DISPOSAL METHOD: **RECYCLER**
AMOUNT DISPOSED(TONS): **0.0208**

MAP ID# 6

Distance from Property: 0.22 mi. N

EPA ID: **CAD982043119**
NAME: **7 ELEVEN FOOD STORES**
ADDRESS: **3211 KENDALL DR**
SAN BERNARDINO, CA 92407
COUNTY: **SAN BERNARDINO**
CONTACT: **NOT REPORTED**
PHONE: **NOT REPORTED**

MANIFEST SUMMARY INFORMATION

TSD ID: **CAT080013352**
YEAR: **1993**
GENERATOR COUNTY: **SAN BERNARDINO**
DISPOSAL COUNTY: **LOS ANGELES**
WASTE CATEGORY: **WASTE OIL AND MIXED OIL**
DISPOSAL METHOD: **RECYCLER**
AMOUNT DISPOSED(TONS): **0.7297**



HAZARDOUS WASTE SUMMARY REPORT (HWTS)

TSD ID: CAT080013352
YEAR: 1996
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.2919

TSD ID: CAT080013352
YEAR: 1998
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 1.4386

TSD ID: CAT080013352
YEAR: 1999
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 1.7305

TSD ID: CAT080013352
YEAR: 2000
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.3100

TSD ID: CAT080013352
YEAR: 2001
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 2.0600

TSD ID: CAD028409019
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: OTHER ORGANIC SOLIDS
DISPOSAL METHOD: TRANSFER STATION
AMOUNT DISPOSED(TONS): NOT REPORTED

TSD ID: CAT080013352
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.5600



HAZARDOUS WASTE SUMMARY REPORT (HWTS)

TSD ID: CAT080013352
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.5800

TSD ID: CAT080013352
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.1400

TSD ID: CAT080013352
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.3300

TSD ID: CAT080013352
YEAR: 2002
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: WASTE OIL AND MIXED OIL
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.6200

MAP ID# 6

Distance from Property: 0.22 mi. N

EPA ID: CAC001221792
NAME: 7 ELEVEN FOOD STORES
ADDRESS: 3211 KENDALL DR
SAN BERNARDINO, CA 92407
COUNTY: SAN BERNARDINO
CONTACT: 7 ELEVEN FOOD STORES
PHONE: (909) 887-8470

MANIFEST SUMMARY INFORMATION

TSD ID: CAT080013352
YEAR: 1996
GENERATOR COUNTY: SAN BERNARDINO
DISPOSAL COUNTY: LOS ANGELES
WASTE CATEGORY: AQUEOUS SOLUTION WITH TOTAL ORGANIC RESIDUES LESS THAN 10 PERCENT
DISPOSAL METHOD: RECYCLER
AMOUNT DISPOSED(TONS): 0.2293



HAZARDOUS MATERIAL SITES - SAN BERNARDINO COUNTY

MAP ID# 3

Distance from Property: 0.12 mi. S

ID#: 000FA0004423
NAME: LEVEL 3 COMMUNICATIONS
ADDRESS: 5705 INDUSTRIAL PKWY
SAN BERNARDINO, CA 92407
OWNER: LEVEL 3 COMMUNICATIONS
PERMIT #: PT0009979
PERMIT DESCRIPTION: ABOVEGROUND PETROLEUM STORAGE (AST) (SPCC)
STATUS: ACTIVE
PERMIT EXPIRATION: 10/31/05

MAP ID# 3

Distance from Property: 0.12 mi. S

ID#: 000FA0004423
NAME: LEVEL 3 COMMUNICATIONS
ADDRESS: 5705 INDUSTRIAL PKWY
SAN BERNARDINO, CA 92407
OWNER: LEVEL 3 COMMUNICATIONS
PERMIT #: PT0009980
PERMIT DESCRIPTION: HAZMAT HANDLER 0-10 EMPLOYEES
STATUS: ACTIVE
PERMIT EXPIRATION: 10/31/05

MAP ID# 5

Distance from Property: 0.17 mi. W

ID#: 000FA0003340
NAME: FRED G WALTER & SON
ADDRESS: 5770 INDUSTRIAL PARKWAY
SAN BERNARDINO, CA 92407
OWNER: WALTER, ROBERT & DOLORES J.
PERMIT #: PT0002743
PERMIT DESCRIPTION: SPECIAL HANDLER
STATUS: ACTIVE
PERMIT EXPIRATION: 05/31/05

MAP ID# 5

Distance from Property: 0.17 mi. W

ID#: 000FA0003340
NAME: FRED G WALTER & SON
ADDRESS: 5770 INDUSTRIAL PARKWAY
SAN BERNARDINO, CA 92407
OWNER: WALTER, ROBERT & DOLORES J.
PERMIT #: PT0002744
PERMIT DESCRIPTION: SPECIAL GENERATOR(B)
STATUS: ACTIVE
PERMIT EXPIRATION: 05/31/05



HAZARDOUS MATERIAL SITES - SAN BERNARDINO COUNTY

MAP ID# 6

Distance from Property: 0.22 mi. N

ID#: 000FA0006112
NAME: 7 ELEVEN #26934
ADDRESS: 3211 KENDALL
SAN BERNARDINO, CA 92408
OWNER: 7 ELEVEN, INC
PERMIT #: PT0003574
PERMIT DESCRIPTION: HAZMAT HANDLER - UST ONLY
STATUS: ACTIVE
PERMIT EXPIRATION: 07/31/05

MAP ID# 6

Distance from Property: 0.22 mi. N

ID#: 000FA0006112
NAME: 7 ELEVEN #26934
ADDRESS: 3211 KENDALL
SAN BERNARDINO, CA 92408
OWNER: 7 ELEVEN, INC
PERMIT #: PT0011190
PERMIT DESCRIPTION: UST OWNERSHIP/OPERATING PERMIT (PER UST)
STATUS: ACTIVE
PERMIT EXPIRATION: 07/31/05

MAP ID# 6

Distance from Property: 0.22 mi. N

ID#: 000FA0006112
NAME: 7 ELEVEN #26934
ADDRESS: 3211 KENDALL
SAN BERNARDINO, CA 92408
OWNER: 7 ELEVEN, INC
PERMIT #: PT0011191
PERMIT DESCRIPTION: UST OWNERSHIP/OPERATING PERMIT (PER UST)
STATUS: ACTIVE
PERMIT EXPIRATION: 07/31/05

MAP ID# 6

Distance from Property: 0.22 mi. N

ID#: 000FA0006112
NAME: 7 ELEVEN #26934
ADDRESS: 3211 KENDALL
SAN BERNARDINO, CA 92408
OWNER: 7 ELEVEN, INC
PERMIT #: PT0011192
PERMIT DESCRIPTION: UST OWNERSHIP/OPERATING PERMIT (PER UST)
STATUS: ACTIVE
PERMIT EXPIRATION: 07/31/05



STATEWIDE ENVIRONMENTAL EVALUATION and PLANNING SYSTEM - (SWEEPS)

MAP ID# 5

Distance from Property: 0.17 mi. W

FACILITY INFORMATION

FACILITY #: 53707

BOE #: 44-021196

NAME: FRED G. WALTER & SON

ADDRESS: 5770 INDUSTRIAL PKY
SAN BERNARDINO, CA 92407

STATUS: **INACTIVE**

JURISDICTION: **SAN BERNARDINO COUNTY**

AGENCY: **ENVIRONMENTAL HEALTH - U.S.T.**

TANK INFORMATION

TANK #: 000001

INSTALLED: 01-01-82

TANK USE: **M.V. FUEL**

CONTENT: **PRODUCT**

CAPACITY: **5000**

REMOVED: **09-15-91**

STORAGE TYPE: **PRODUCT**

CONTAINMENT: **BARE STEEL**

TANK #: 000002

INSTALLED: 01-01-82

TANK USE: **M.V. FUEL**

CONTENT: **PRODUCT**

CAPACITY: **5000**

REMOVED: **09-15-91**

STORAGE TYPE: **PRODUCT**

CONTAINMENT: **BARE STEEL**

TANK #: 000003

INSTALLED: 01-01-82

TANK USE: **OIL**

CONTENT: **WASTE**

CAPACITY: **1000**

REMOVED: **09-15-91**

STORAGE TYPE: **WASTE**

CONTAINMENT: **CONCRETE**



ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

AIRSAFS	Aerometric Information Retrieval System / Air Facility Subsystem	(2/2005)
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The EPA modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BRS	Biennial Reporting System	(1/2003)
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The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The purpose of this report is to communicate the findings of EPA's Biennial Reporting System (BRS) data collection efforts to the public, government agencies, and the regulated community.

Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CERCLIS	Comprehensive Environmental Response, Compensation & Liability Information System	(1/2006)
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CERCLIS is the repository for site and non-site specific Superfund information in support of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This database contains an extract of sites that have been investigated or are in the process of being investigated for potential environmental risk.

DNPL	Delisted National Priority List	(1/2006)
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This database includes U.S. Environmental Protection Agency (EPA) Final National Priority List sites where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

DOCKETS	Epa Docket Data	(12/2005)
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EPA Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards all by facility and geographically.

DOD	Department Of Defense Sites	(1/2005)
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This information originates from the National Atlas of the United States, publication date October 2005. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.



ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

ERNS	Emergency Response Notification System	(1/2004)
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This database contains data on reported releases of oil and hazardous substances. The data comes from spill reports made to the EPA, U.S. Coast Guard, the National Response Center and/or the Department of Transportation.

FUDS	Formerly Used Defense Sites	(12/2004)
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Formerly Used Defense Sites

HMIRS	Hazardous Materials Incident Reporting System	(2/2004)
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The HMIRS database contains unintentional hazardous materials release information reported to the US Department of Transportation.

INDLPSTR09	Indian Leaking Underground Storage Tanks	(12/2005)
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Leaking underground storage tanks on Indian lands located in Region 9 include the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

INDPSTR09	Indian Underground Storage Tanks	(12/2005)
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Underground storage tanks on Indian lands located in Region 9 include the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

NFRAP	No Further Remedial Action Planned-cerclis Archives	(1/2006)
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This database includes sites, which have been determined by the EPA, following preliminary assessment, to no longer pose a significant risk or require further activity under CERCLA. After initial investigation, no contamination was found, contamination was quickly removed or contamination was not serious enough to require Federal Superfund action or NPL consideration.

NPL	National Priority List	(1/2006)
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This database includes U.S. Environmental Protection Agency (EPA) National Priority List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

ODI	Open Dump Inventory	(6/1985)
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Information on facilities or sites where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 6944 of the Solid Waste Disposal Act (42 U.S.C. 6941 et seq.) and which is not a facility for disposal of hazardous waste.

RODS	Record Of Decision System	(4/2004)
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These decision documents maintained by the U.S. EPA describe the chosen remedy for NPL



ENVIRONMENTAL RECORDS DEFINITIONS - FEDERAL

(Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

TRI	Toxics Release Inventory	(12/2002)
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This EPA database includes information about releases and transfers of toxic chemicals from manufacturing facilities.

USBF	United States Brownfields Management System	(8/2006)
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Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The EPA maintains the activities, including grantee assessment, cleanup and redevelopment, of the various Brownfield grant programs through the Brownfields Management System database.

USEC	Federal Engineering Controls	(3/2006)
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A listing of site locations where Engineering Controls are in effect, such as a cap, barrier, or other device engineering to prevent access, exposure, or continued migration of contamination. Used in conjunction with Institutional Controls.



ENVIRONMENTAL RECORDS DEFINITIONS - STATE

CAAST	Above Ground Storage Tanks	(11/2002)
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This database contains registered AST facility listings from the State Water Resources Control Board.

CACLEANER	Dry Cleaner Facilities	(8/2006)
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An inventory of drycleaner facilities that have registered EPA identification numbers:

- 7211 Power Laundries, Family and Commercial
- 7212 Garment Pressing, and Agents for Laundries and Drycleaners
- 7213 Linen Supply
- 7215 Coin-Operated Laundries and Drycleaning
- 7216 Drycleaning Plants, Except Rug Cleaning
- 7217 Carpet and Upholstery Cleaning
- 7218 Industrial Launderers
- 7219 Laundry and Garment Services, N.E.C.

CALSITES	Calsites Database	(9/2004)
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The CALSITES database is maintained by the Department of Toxic Substance Control. This database contains potential or confirmed hazardous substance release properties.

CATOXPITS	Toxic Pits Cleanup Act Sites	(7/1995)
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Sites with possible contamination of hazardous substances where cleanup is necessary

CHMIRS	California Hazardous Material Incident Report System	(5/2005)
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CHMIRS contains accidental or spill release information on reported hazardous material incidents.

CORTESE	Dtsc's Hazardous Waste And Substances Site List (cortese List)	(1/2006)
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DTSC's Hazardous Waste and Substances Site List (Cortese List)

DTSCDR	Dtsc's Deed Restrictions	(3/2006)
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The Department of Toxic Substances Control's Deed Restrictions. According to the DTSC, restricted land use indicates whether the site or area within the site has an environmental restriction recorded and/or other institutional control preventing certain types of land use or activities.

DTSCHWT	Dtsc's Registered Hazardous Waste Transporters	(3/2006)
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The Department of Toxic Substances Control's Registered Hazardous Waste Transporters.



ENVIRONMENTAL RECORDS DEFINITIONS - STATE

HISTPST	Historical Underground Storage Tank Listing	(9/1995)
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The Hazardous Substance Storage Container Database, historical listing of Underground Storage Tank sites.

HWSSL	Hazardous Waste & Substances Site List	(11/2002)
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The sites on this list are designated by the State Water Resources Control Board (LUST), The Integrated Waste Board (SWIS), and the Department of Toxic Substance Control (CALSTITES).

HWTS	Hazardous Waste Tanner Summary	(12/2002)
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This data is prepared from information extracted from copies of hazardous waste manifests received each year by the Department of Toxic Substances Control. The Hazardous Waste Summary Report (Tanner Report) currently includes manifest data from the 1993 through the 2002 reporting years.

LUST	Leaking Underground Storage Tanks	(11/2005)
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This database is maintained by the State Water Resources Control Board. LUST records contain an inventory of reported leaking underground storage tank incidents.

NFA	No Further Action Determination	(7/2005)
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NO FURTHER ACTION DETERMINATION - This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

NFE	Sites Needing Further Evaluation	(7/2005)
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PROPERTIES NEEDING FURTHER EVALUATION - This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need further assessment.

REF	Referred To Another Local Or State Agency	(7/2005)
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UNCONFIRMED PROPERTIES - This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

SCH	School Property Evaluations	(7/2005)
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SCHOOL PROPERTY EVALUATION PROGRAM - This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.



ENVIRONMENTAL RECORDS DEFINITIONS - STATE

SLIC	Spills, Leaks, Investigation & Cleanup Recovery Listing	(4/2006)
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These records are maintained by the California Regional Water Quality Control Board (RWQCB). This list includes contaminated sites that impact groundwater or have the potential to impact ground water.

SWEEPS	Statewide Environmental Evaluation And Planning System	(10/1994)
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The Statewide Environmental Evaluation and Planning System (SWEEPS) contains a historical listing of active and inactive underground storage tank locations from the State Water Resources Control Board. Refer to CUPA listing for source of current data.

SWIS	Solid Waste Information System	(10/2005)
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These records contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

USTCUPA	Underground Storage Tanks	(1/2006)
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An underground storage tank is an individual tank or group of tanks that store hazardous substances. Underground storage tanks are completely or considerably below the ground surface. This database is maintained by the State Water Resources Control Board.

VCP	Voluntary Cleanup Program	(9/2004)
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The California Voluntary Cleanup program provides regulatory oversight by the Department of Toxic Substance Control (DTSC) to project proponents desiring to address mitigation activities at sites which have lower health and/or environmental risk than sites which are currently being addressed by DTCS.



ENVIRONMENTAL RECORDS DEFINITIONS - LOCAL

CAAOC San Gabriel Valley Areas Of Concern (1/2006)

A listing of the San Gabriel Valley Superfund Sites located in Los Angeles County with Volatile Organic Compound groundwater contamination.

- EPA Region 9 (1/2006)

CAFSW Fresno County Cupa/solid Waste Programs Resource List (7/2006)

FRESNO

County of Fresno - Hazardous Materials and Solid Waste Prog (7/2006)

CALASM Site Mitigation List Of Industrial Sites With A Spill Or Complaint (1/2006)

Site Mitigation List of industrial sites with a spill or complaint for Los Angeles County.

LOS ANGELES

- Soil Remediation Unit (1/2006)

CARCMW Riverside County Medical Waste Facilities (4/2000)

Medical Facilities in Riverside County, CA that dispose of medical waste.

RIVERSIDE

- (4/2000)

SBFD Hazardous Site Listing - San Bernardino County (3/2005)

Information provided in this database includes a listing of permitted sites in San Bernardino County, CA. This listing is maintained by the San Bernardino County Fire Department, Hazardous Materials Division. Included are underground storage tanks, medical waste handlers/generators, hazardous waste handlers, hazardous waste generators and waste oil generators/handlers.

SAN BERNARDINO

San Bernardino County Fire Dept. - Hazardous Materials Division (3/2005)

USTCUPA Underground Storage Tanks, City Of Berkeley

This database contains active UST facility listings gathered from local Certified Unified Program Agencies (CUPA). CUPA's are local agencies that have been certified by the CAL EPA to implement state environmental programs within the local agency's jurisdiction. The agencies (county, city, JPA - Joint Powers Authority) provide oversight of businesses that deal with hazardous materials, aboveground and underground storage tanks. See the following for CUPA listing.

ALAMEDA

City of Berkeley - Toxic Management Division

City of Fremont - Fremont Fire Department

City of Oakland - Office of Emergency Services

City of Pleasanton / Livermore - Livermore-Pleasanton Fire Department

City of Union City - Fire Department



ENVIRONMENTAL RECORDS DEFINITIONS - LOCAL

AMADOR

County of Amador - Environmental Health Department

CALAVERAS

County of Calaveras - Environmental Health Department

COLUSA

County of Colusa - Environmental Health

DEL NORTE

County of Del Norte - Department of Health and Social Services

EL DORADO

County of El Dorado - Solid Waste Division

GLENN

County of Glenn - Air Pollution Control District

IMPERIAL

County of Imperial - Department of Planning and Building

INYO

County of Inyo - Environmental Health Department

KERN

City of Bakersfield - Fire Department

KINGS

County of Kings - Environmental Health Services

LAKE

County of Lake - Division of Environmental Health

LASSEN

County of Lassen - Department of Agriculture

LOS ANGELES

City of El Segundo - Fire Department

City of Glendale - Fire Department

MADERA

County of Madera - Environmental Health Department

MARIN

City of San Rafael - Fire Department

MENDOCINO

County of Mendocino - Environmental Health Department

MODOC

County of Modoc - Department of Agriculture

ORANGE

City of Anaheim - Environmental Protection Section

City of Fullerton - Fire Department

City of Santa Ana - Santa Ana Fire Department

County of Orange - Environmental Health Department



ENVIRONMENTAL RECORDS DEFINITIONS - LOCAL

PLACER

City of Roseville - Roseville Fire Department

RIVERSIDE

County of Riverside - Environmental Health Department

SAN BENITO

City of Hollister Fire Dept - Environmental Service Department

County of San Benito - Health Department

SAN BERNARDINO

City of Hesperia - Hesperia Fire Prevention District

City of Victorville - Victorville Fire Department

SAN DIEGO

County of San Diego - Department of Environmental Health Services

SAN FRANCISCO

County of San Francisco - Department of Public Health

SAN LUIS OBISPO

City of San Luis Obispo - City Fire Department

County of San Luis Obispo - Environmental Health Division

SANTA BARBARA

County of Santa Barbara - County Fire Department

SANTA CLARA

City of Gilroy - Community Development Department, B.L.E.

City of Milpitas - Milpitas Fire Department

City of San Jose - Fire Department

City of Sunnyvale - Department of Public Safety

Cupertino, Los Gatos, Morgan Hill Campbell - Santa Clara County Central Fire Protecti

Los Altos, Los Altos Hills, Monte Sereno, and Saratoga Unicorporated Areas -

SANTA CRUZ

County of Santa Cruz - Environmental Health Department

SIERRA

County of Sierra - Health Department

SISKIYOU

County of Siskiyou - Environmental Health Department

SOLANO

County of Solano - Environmental Health Services

SONOMA

City of Healdsburg/ Sebastapol - Healdsburg Fire Department

City of Petaluma -

City of Santa Rosa - Santa Rosa Fire Department

TEHAMA

County of Tehama - Department of Environmental Health



ENVIRONMENTAL RECORDS DEFINITIONS - LOCAL

TRINITY

County of Trinity - Department of Health

TUOLUMNE

County of Tuolumne - Environmental Health

VENTURA

City of Oxnard - Fire Department

County of Ventura - Environmental Health Division

YOLO

County of Yolo - Environmental Health Department



RCRA – Descriptions

Acronyms

RCRAG – RCRA GENERATOR/HANDLER

RCRAT – RCRA TSD

RCRA – RCRA CORRECTIVE ACTION

Generator Types

Large Quantity Generators:

- Generate 1,000 kg or more of hazardous waste during any calendar month; or
- Generate more than 1 kg of acutely hazardous waste during any calendar month; or
- Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or
- Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or
- Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg or that material at any time.

Small Quantity Generators:

- Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or
- Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.

Conditionally Exempt Small Quantity Generators:

- Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or
- Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time:
 - 1 kg or less of acutely hazardous waste; or
 - 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or
- Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month, and accumulate at any time:
 - 1 kg or less of acutely hazardous waste; or
 - 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

TSD Indicator: Indicates that the handler is engaged in the treatment, storage or disposal of hazardous waste.

Allowed Values: TSD

Not a TSD, Verified

Not a TSD, Unverified

Transporter Indicator: Indicates that the handler is engaged in the transportation of hazardous waste.

Allowed Values: Handler transports wastes for hire (i.e., commercial transport)

Handler transports wastes for self

Handler transports wastes, but commercial status is unknown

Not a transporter, verified

Unverified





PROFESSIONAL
PROPERTY
INSPECTIONS, LLC
ENVIRONMENTAL SERVICES

889 Sterling Oaks Ct.
Oak Park, CA 91377
818-707-7725

ESA USER QUESTIONNAIRE

Phase I Environmental Site Assessment
ASTM Standard 1527-05

Palm

INTRODUCTION

In order to qualify for one of the *Landowner Liability Protections (LLPs)** offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *user* must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

(1) Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

No Yes (if yes please describe)

(2) Are you aware of any AULs (activity and use limitations) such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

No Yes (if yes please describe)

(3) As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

No Yes (if yes please describe)

(4) Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

Yes No

If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

Yes No (if yes please explain)

NA

(5) Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example, as *user*,

(a.) Do you know the past uses of the *property*?

No Yes (if yes please describe)

as disclosed

(b.) Do you know of specific chemicals that are present or once were present at the *property*?

No Yes (if yes please describe)

(c.) Do you know of spills or other chemical releases that have taken place at the *Property*?

No Yes (if yes please describe)

(d.) Do you know of any environmental cleanups that have taken place at the *property*?

No Yes (if yes please describe)

(6) As the **user** of this **ESA**, based on your knowledge and experience related to the **property** are there any **obvious** indicators that point to the presence or likely presence of contamination at the **property**?

No Yes (if yes please describe)

Litigation, Administrative Action, Violation Notices

To your knowledge, are or have there been any above ground or underground tanks or other activities that included the use of significant quantities of hazardous materials at the Site.

No Yes (if yes please describe)

Do you know of any pending, threatened or past litigation or administrative actions relative to hazardous materials, hazardous waste or petroleum products associated with the Site?

No Yes (if yes please describe)

See Superfund ERB

Do you know of any current notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?

No Yes (if yes please describe)

Additional Information

In addition, certain information should be collected, if available, and provided to the *environmental professional* selected to conduct the Phase I. This information is intended to assist the *environmental professional* but is not necessarily required to qualify for one of the *LLPs*.* The information includes:

(a) The reason why the Phase I is required.

Acquisition

(b) The type of *property* and type of *property* transaction, for example, sale, purchase, exchange, etc.

Future industrial

(c) The complete and correct address for the *property* (a map or other documentation showing *property* location and boundaries is helpful).

(d) The scope of services desired for the Phase I (including whether any parties to the *property* transaction may have a required standard scope of services on whether any considerations beyond the requirements of Practice E 1527 are to be considered).

(e) Identification of all parties who will rely on the Phase I *report*.

TBD

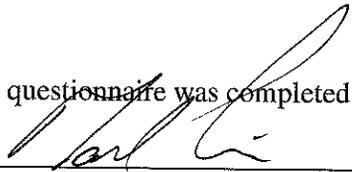
(f) Identification of the site contact and how the contact can be reached.

(g) Any special terms and conditions which must be agreed upon by the *environmental professional*, and

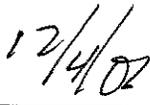
(h) any other knowledge or experience with the *property* that may be pertinent to the *environmental professional* (for example, copies of any available prior *environmental site assessment reports*, documents, correspondence, etc., concerning the *property* and its environmental condition) and any environmental permits such as air quality management district, stormwater, wastewater, underground storage tanks or aboveground tanks.

* *Landowner Liability Protections*, or *LLPs*, is the term used to describe the three types of potential defenses to Superfund liability in EPA's *Interim Guidance Regarding Criteria Landowners Must Meet in Order to Qualify for Bona Fide Prospective Purchaser, Contiguous Property Owner, or Innocent Landowner Limitations on CERCLA Liability* ("Common Elements" Guide) issued on March 6, 2003. 36 P.L. 107-118.

This questionnaire was completed by:



Signature



Date



May 31, 2007
Project No. 100025001

IDS Real Estate Group
c/o Mr. Mark Cousineau
Hazard Management Consulting, Inc.
211 West Avenida Cordoba, Suite 200
San Clemente, California 92672

Subject: Results of Environmental Services
45-Acre Property
Palm Avenue
San Bernardino, California

Dear Mr. Cousineau:

This letter report presents the results of various environmental services provided by Ardent Environmental Group, Inc. (Ardent) for the 45-acre property located in San Bernardino, California ("site," Figure 1). The site is southwest of North Palm Avenue, between Industrial Parkway and the Interstate 215 Freeway ("215 Freeway"). Work was conducted in general accordance with the proposal dated April 5, 2007 between IDS Real Estate Group and Ardent. The site is currently vacant and it is our understanding that IDS Real Estate Group is considering redevelopment of the site for commercial purposes.

A previous Phase I Environmental Site Assessment ("ESA," referred to herein as the "previous Phase I ESA") was completed for the site in January 2007 by Professional Property Inspections, Inc. ("PPI"). Based on the results of the previous Phase I ESA, PPI concluded that the site was part of a larger property that was historically occupied by the Former United States Army ("Army") San Bernardino Engineering Depot ("SBED"). Two regional groundwater contamination plumes (known as the Newmark and Muscoy Groundwater Plumes) have been identified in the area. Due to the extensive plume size, threat to drinking water, and absence of known responsible parties, the Environmental Protection Agency ("EPA") designated the entire area as the Newmark Superfund Site and placed it on the National Priority List ("NPL," Federal Superfund Site). EPA, the State and City have been taking response action under CERCLA. The

previous Phase I ESA did not determine whether previous investigations were completed on the site associated with the Newmark Superfund Site or provide the current status of the Newmark Superfund Site activities.

The Phase I ESA also indicated that stormwater runoff from the I-215 Freeway flows onto the property through a storm drain and soil contamination might be present. PPI also concluded that fill soil and debris that have been placed on-site may contain hazardous materials. Based on these conclusions, Hazard Management Consulting, Inc. provided Ardent with a Request For Proposal (RFP) dated April 4, 2007 outlining a specific scope of work to address these issues.

OBJECTIVES

The objectives of the work presented herein were to assess the status of the Newmark Superfund Site; assess possible soil contamination next to a storm drain; and inspect debris piles and fill materials that have been placed on site for possible hazardous materials.

ENVIRONMENTAL SERVICES

To meet the objectives, Ardent obtained a copy of the previous Phase I ESA for review; completed interviews and reviewed current data regarding the Newmark Superfund Site; collected and analyzed on-site soil samples next to off-site storm drains; and visually inspected debris and fill soils that have been deposited on the site for possible hazardous materials. The following presents out findings.

Newmark Superfund Site

According to EPA, Southern California repositories for environmental reports associated with the Newmark Superfund Site included the City of San Bernardino Water Department (“SBWD”), San Bernardino Valley Municipal Water District (“SBVMWD”), San Bernardino County Library in Yucaipa, and California State University San Bernardino. Ardent requested information from all of these agencies and reviewed available files at the SBWD, SBVMWD, and the San Bernar-

dino County Library in Yucaipa. Only the SBWD had current information (post-1995) for the Newmark Superfund Site.

The Former SBED, also known as Camp Ono, comprised approximately 1,600 acres and was used by the Army as a vehicle and ammunition supply and storage depot, dry cleaning facility, sewage spreading area, tent manufacturing and dyeing facility, locomotive maintenance facility, railcar and tank degreasing facility, motor vehicle pool, prisoner of war camp, bomb manufacturing, and water softening facility. In 1980, municipal groundwater wells in the vicinity of the site indicated elevated concentrations of chlorinated solvents, namely tetrachloroethylene (“PCE”) and trichloroethene (“TCE”). Two regional groundwater plumes (known as the Newmark and Muscoy Groundwater Operable Units [“OU”]) have been identified in the area (collectively known as the “Newmark Superfund Site”). Groundwater in the vicinity of the SBED has been reported at depths ranging from approximately 138 to 230 feet below the ground surface (“bgs”) in very complex geologic formations. Based on a number of subsequent investigations, the source of the impacted groundwater is assumed to include activities formerly conducted at the SBED (namely operations at Camp Ono).

The Army had little documentation regarding the location of specific activities formerly conducted at the SBED. Information reviewed by Ardent indicated that the site was located at the extreme northern portion of Camp Ono. The northern entrance to Camp Ono was off Palm Avenue onto a street that was oriented in the same approximate location as Industrial Parkway. The street was oriented around the two large hills located on the site. A review of historical documents prepared by consultants retained by the Army indicated that the subject site was not used during occupation of the surrounding area by the SBED. Most of the activities conducted at Camp Ono were completed on the topographically flat areas located further southeast of the site.

According to a document reviewed by Ardent, an old-timer was interviewed whose father was a heavy equipment operator at Camp Ono. Following completion of World War II, Camp Ono was dismantled. According to the old-timer, “every movable object on the base including motors, tools, equipment of every kind, spare parts, etc. and possibly drums were loaded on trucks and taken to the northern end of the base and dumped in a relatively large excavation. The material

was covered by bulldozing native soil, sand, cobbles, etc. back over the discarded material.” According to the old-timer, these materials were buried “adjacent to and across the street from the Fred G. Walter Machine Shop, either on the east side or more likely the west side of the second hill south of the north line of the camp...” (Figure 2).

Based on these interviews, EPA retained EG&G Idaho, Inc. (“EG&G”) in 1993 to complete a magnetic field survey (i.e., a geophysical survey) throughout the site. According to EG&G, the work was completed based on the interviews discussed above which suggested that the site may contain a “buried waste trench” containing large amounts of buried ferrous materials making it an excellent target for a magnetic field survey. Based on the results, EG&G concluded that the magnetic data did not indicate the presence of a “...trench such as was described in interviews and reports.” EG&G continued to say “nothing in the data indicates such a feature exists within the survey area.” Based on this information, there is a low likelihood that the buried materials described by old-timers were located on the subject site.

Based on previous investigations, a number of historical features were identified on properties in the site vicinity, including the Lower Apex Parcel (located northwest of the site and beyond Palm Avenue), and the Cajon Landfill and former Wastewater Treatment Plant (located northwest of Cajon Boulevard and Palm Avenue (Figure 1). Soil gas surveys completed in 2002 and 2003 on properties in the site vicinity have indicated elevated concentrations of PCE, TCE, and Freon. Groundwater wells located immediately southeast of and downgradient from the site have indicated no detectable to low concentrations of TCE (up to 1 micrograms per liter [“ug/l”]) and PCE (up to 7 ug/l). The Maximum Contaminant Level (“MCL”) for drinking water is 5 ug/l for TCE and PCE.

Following a number of investigations, the extent of the plumes appears to have been defined. EPA, in conjunction with the California Department of Toxic Substances Control (“DTSC”) and other regulatory agencies, have adopted a Record of Decision (“ROD”) for interim remedial actions at both the Newmark and Muscoy OUs. In each instance, the ROD calls for extraction and treatment of impacted groundwater and delivery of treated water to the SBWD. EPA’s investiga-

tions have indicated that the source of the contamination for both the Newmark and Muscoy OUs originate from the same general area (i.e., the SBED, which was part of the World War II Army Base Camp Ono). Currently, the EPA has not made a final determination regarding the Army's or any other party's responsibility for the contamination but has entered a consent decree resolving the Army's liability for response action for regional groundwater. Under this settlement, the Army will pay the City of San Bernardino \$69 million to implement a wellhead treatment system. The source investigation has been complicated by very difficult geological conditions and the lack of good records of the Army activities. The EPA is continuing to work with State and local agencies to pinpoint the source of the contamination and develop a comprehensive final cleanup plan. The SBWD has constructed four wellhead treatment systems to implement the ROD and to ensure safety of the public drinking water supply.

On-Site Soil Sampling Adjacent to Off-Site Storm Drains

On April 24, 2007, Ardent visited the site and observed two off-site storm drains that apparently divert storm water runoff from the adjacent I-215 Freeway onto the site. No stained or odorous soil was encountered. Ardent collected one sample in the vicinity of each storm drain (designated SD1-1 and SD2-1), as shown on Figure 2. Soil samples were collected in laboratory supplied jars at depths of approximately 1-foot bgs. Soil samples were analyzed for total petroleum hydrocarbons carbon chain C₁₀-C₃₂ (TPHcc), volatile organic compounds ("VOCs"), and Title 22 metals in general accordance with EPA Method Nos. 8015 (modified), 8260B, and 6010/7000 series. Laboratory results indicated no detectable concentrations of VOCs and no detectable to low concentrations of petroleum hydrocarbons (up to 103 milligrams per kilogram ["mg/kg"] of total petroleum hydrocarbons as oil C₂₃-C₃₂ TPHo) and metals.

The San Bernardino County Fire Department ("SBCFD") and Regional Water Quality Control Board, Santa Ana Region ("SARWQCB") are lead regulatory agencies that sometimes provide oversight for remedial activities. Neither agency has cleanup standards for chemical constituents in soils. The agencies typically consider each project on a case-by case basis. The Regional Water Quality Control Board, Los Angeles Region ("LARWQCB") and the Federal EPA have cleanup goals that are sometimes used by the SARWQCB and SBCFD.

As presented herein, concentrations of petroleum hydrocarbons were generally assessed based on the LARWQCB Interim Site Assessment & Cleanup Guidebook dated May 1996 (referred to herein as the “LARWQCB guidelines”). The LARWQCB guidelines were established to provide cleanup goals to protect groundwater. The guidelines take into account a number of variables including constituents detected, lithological conditions, and depth to groundwater. Based on these guidelines and site conditions, concentrations of total petroleum hydrocarbons as gasoline C₄-C₁₂ (“TPHg”) and diesel fuel C₁₃-C₂₂ (“TPHd”) would be considered elevated if the concentrations exceeded 1,000 and 10,000 mg/kg, respectively. Concentrations of heavier petroleum hydrocarbons, referred to herein as TPHo C₂₃-C₃₀, would be considered elevated if concentrations exceeded 50,000 mg/kg. These concentrations were based on samples collected at depths greater than 150 feet to groundwater in sandy conditions.

Metals were compared to the Federal EPA Preliminary Remediation Goals for industrial properties (“PRGi”) and the California hazardous waste criteria. The PRGi values are based on human health-risk criteria. As per the hazardous waste criteria, elevated concentrations of metals would be defined as levels exceeding the Total Threshold Limit Concentration (“TTLC”) and/or ten times the Soluble Threshold Limit Concentration (“STLC”). Because arsenic is naturally occurring in California soils at concentrations that typically exceed the Federal PRGi values, arsenic was considered elevated at concentrations exceeding published background levels. According to the Kearney Foundation of Soil Science, background concentrations of arsenic in California ranges from approximately 0.59 to 11 mg/kg. Based on this publication, elevated concentrations of arsenic were defined as concentrations exceeding 11 mg/kg.

Based on these values, the concentrations of petroleum hydrocarbons and metals detected in the shallow soil samples collected at the site would be considered low and no further investigations or remediation is necessary.

Inspection of Debris and Fill Soils

Ardent walked and drove the site to visually inspect debris and fill that has been placed on the property. No stained or odorous soil, or materials such as car batteries, 55-gal drums, or tran-

site pipes were observed. The materials placed on the property consisted of construction, landscaping, and municipal debris such as wood (processed and natural), metal, mattresses, glass, wire, plastic, concrete and brick. Based on this information, these materials would not be considered an environmental concern to the site.

Based on a review of the previous Phase I ESA, PPI indicated that they had observed a few empty 55-gallon drums on the site. The locations of these features were not documented in the previous report. Although, pictures of the drums were provided. Ardent did not observe these features during our site reconnaissance. Ardent reviewed the pictures provide in the previous Phase I ESA and did not observe stained soil beneath the drums. Due to the fact that the drums were reportedly empty and no staining was noted in the vicinity of these features, it is our opinion that these features, if still present on the site, would not be considered an environmental concern to the site.

CONCLUSIONS

Ardent has completed a review of regulatory files regarding the Newmark Superfund Site; has collected and analyzed soil samples adjacent to storm drains that divert storm water runoff from the I-215 Freeway onto the site; and has visually inspected debris and fill materials that have been placed on the site.

The site was part of the historical SBED or Camp Ono that operated during World War II. Activities at Camp Ono, who was operated by the Army, was suspected to have impacted groundwater in the site vicinity with chlorinated solvents (i.e., the Newmark Superfund Site). To further assess the source of groundwater contamination, the Army has completed a number of investigations which have included a review of historical land use to evaluate possible areas of chemical uses, and the completion of soil, soil vapor, and groundwater sampling. Although the site was within the area described as Camp Ono, historical records have not shown suspect areas of possible concern on the site (i.e., the site was always vacant land). During an interview, an old-timer indicated that surplus materials from Camp Ono may have been buried on-site, although following a geophysical survey completed at the site, no anomalies indicative of buried

debris was noted. Based on this information, there is a low likelihood that historical land use at the site has contributed to the regional groundwater issues associated with Camp Ono.

Suspect areas associated with Camp Ono and located within close proximity to the site have been investigated and elevated concentrations of PCE, TCE, and Freon have been detected in soil gas samples. Due to the complex geologic conditions in the site vicinity, historical release, and lack of well documented land use during the Camp Ono operations, the EPA has not made a final determination regarding the Army's or any other party's responsibility for the contamination. However, the EPA has entered into a consent decree resolving the Army's liability for response action for regional groundwater. Under this settlement, the Army will pay the City of San Bernardino \$69 million to implement a wellhead treatment system. The EPA is continuing to work with State and local agencies to pinpoint the source of the contamination and develop a comprehensive final cleanup plan. In the meantime, wellhead treatment systems have been installed to supply clean drinking water to the City of San Bernardino.

Laboratory results of shallow soil samples collected in the vicinity of possible runoff from the off-site storm drains indicated no detectable concentrations of VOCs and no detectable to low concentrations of petroleum hydrocarbons and metals. Based on this information, there is a low likelihood that storm water runoff onto the site has environmental impacted the site. Based on our visual observations of debris and fill materials placed on the site, there is a low likelihood that hazardous materials are present.

If you have any questions or comments regarding this letter report, please call the undersigned at your convenience.

Sincerely,
Ardent Environmental Group, Inc.



Paul A. Roberts, P.G., R.E.A. I/II
Principal Geologist

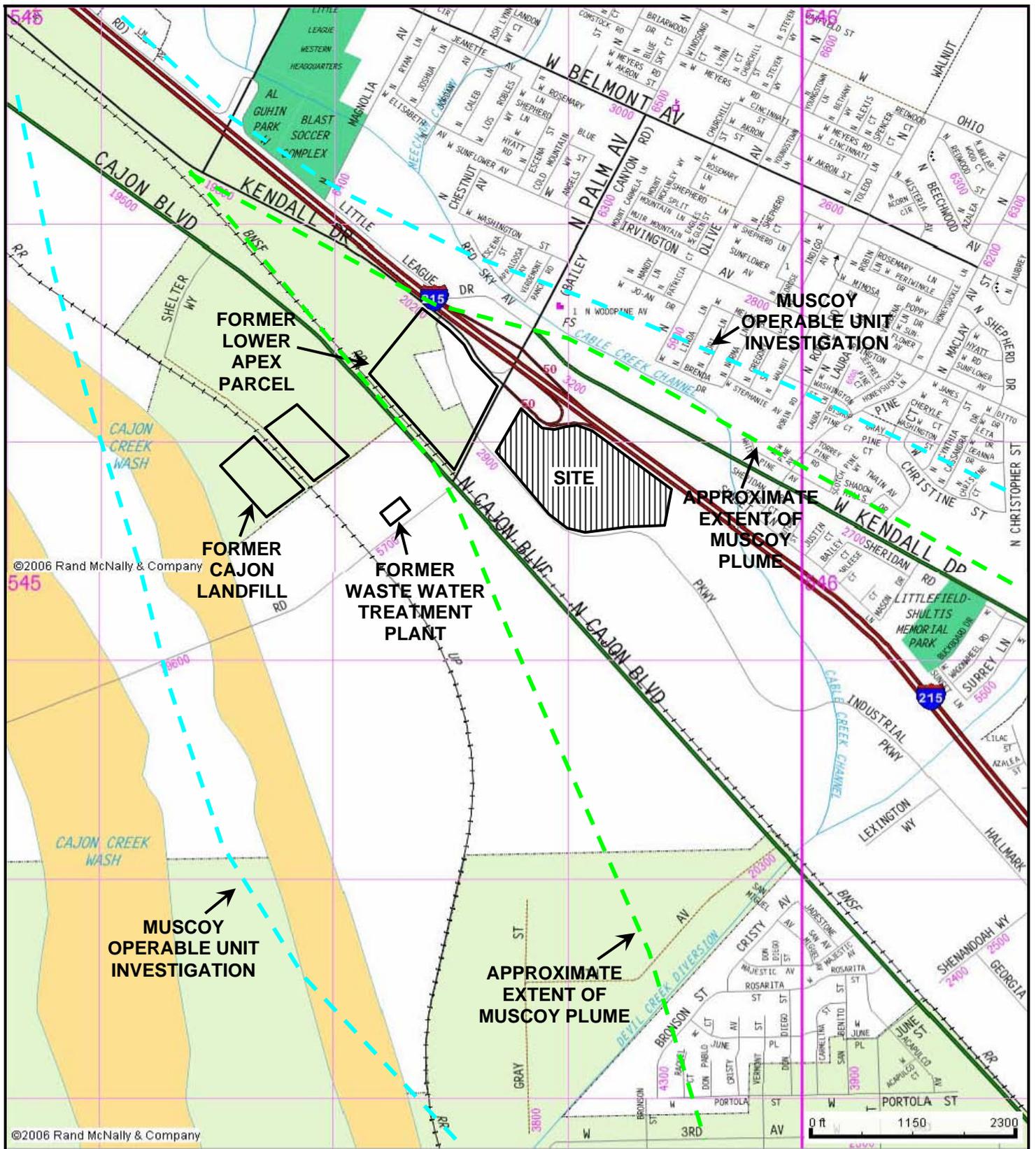
PAR/paw

Attachments: Figure 1 – Site Location Map
Figure 2 – Soil Sample Location Map
Pertinent Information

Distribution: (2) Addressee

References

- EG&G Idaho, Inc., 1993, Magnetic Field Survey Camp Ono (Muscoy Operable Unit) Geophysical Survey, San Bernardino, California.
- Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, 1996, Background Concentrations of Trace and Major Elements in California Soils, dated March.
- Kleinfelder, 2003, Data Report Final Site Investigation – Former San Bernardino Engineering Depot Newmark Groundwater Contamination Superfund Site San Bernardino, California, dated December May, 2003.
- Montgomery Watson, 2002, Final Investigation Report Initial Soil Gas Survey in the Vicinity of the San Bernardino Engineering Depot Camp Ono, San Bernardino, California: Report Prepared for United States Army Corps of Engineers Sacramento District, Sacramento, California, dated September 25.
- Regional Water Quality Control Board, Los Angeles Region (RWQCB), 1996, Interim Site Assessment & Cleanup Guidebook, dated May.
- URS Consultants (URS), 1996, Source Operable Unit Technical Memorandum: Report Prepared for Contract No. 68-W9-0054/WA No. 54-39-9NJ5, United States Environmental Protection Agency, Region IX, San Francisco, California, dated February 15.
- Weiss Associates (Weiss), 2001, Final Subsurface Investigation Report for USACE Engineering and Environmental Investigation Services Contract No. DACW05-96-D-0001, T.O. No. 0017, Soil Gas Survey Lower Apex Parcel and Cat Pit Area, San Bernardino Engineering Depot, San Bernardino, California: Report prepared for the Department of the Army, United States Army Engineer District, Sacramento Corps of Engineers, Sacramento, California, dated December 14.



REFERENCE: 2006 RAND MCNALLY & COMPANY DIGITAL EDITION

NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE



APPROXIMATE SCALE IN FEET

	PROJECT NO. 100025001	SITE LOCATION MAP PALM AVENUE AND INDUSTRIAL PARKWAY SAN BERNARDINO, CALIFORNIA	FIGURE
	DATE 5/07		1



- Legend**
- Off-site storm drain location
 - Shallow soil sample location and designation
 - Approximate site boundary



NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE

REFERENCE: 2007 GOOGLE EARTH

	PROJECT NO. 100025001	SOIL SAMPLE LOCATION MAP PALM AVENUE AND INDUSTRIAL PARKWAY SAN BERNARDINO, CALIFORNIA	FIGURE
	DATE 5/07		2

Figure 2- Proposed Site plan

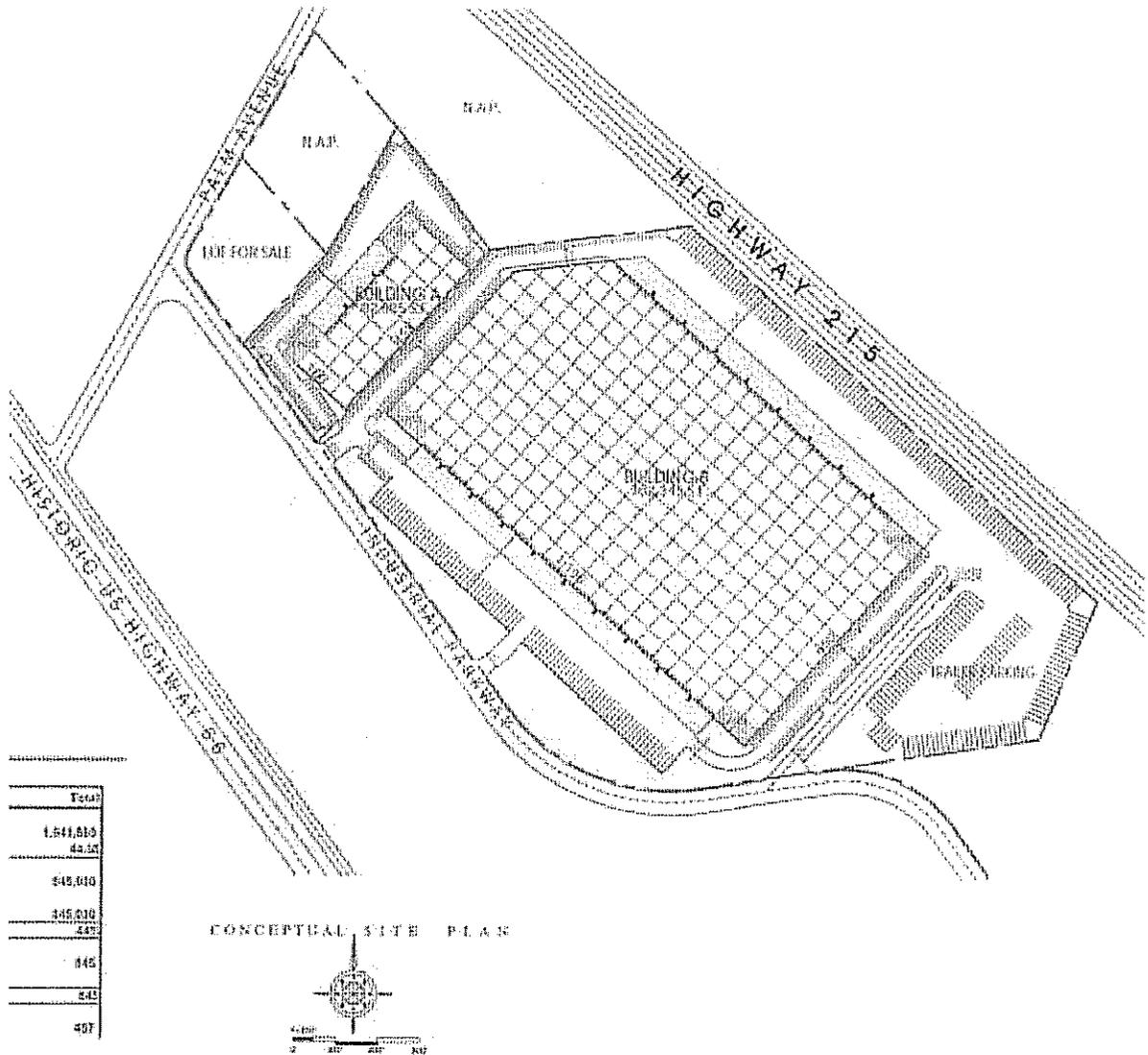


Figure 2- Proposed Site Plan
 44.58 Acre Parcel at the Northeast Corner of Palm Avenue and Industrial Parkway in San Bernardino, California

AR0152

RECORD OF COMMUNICATION

TO:	
FROM:	Kevin Mayer, RPM, H-6-4 Clifford Davis, CI, H-7-4
DATE:	August 31, 1993
TIME:	4:30 PM
METHOD:	Telephone _____ Interview <u>X</u> _____ Other (Specify) _____
SUBJECT: Camp Ono	
<p>SUMMARY: We met with _____ and _____, who are sister and brother, at _____ residence in _____. Their father, who is deceased, told them about having been a civilian heavy equipment operator at Camp Ono during World War II. At the end of the war, when the base was to be closed, all personnel and operating vehicles were removed from the base. Then every movable object on the base, including motors, tools, equipment of every kind, spare parts, etc. and possibly drums were loaded on trucks, taken to the north end of the base and dumped in a relatively large excavation. The material was covered by bulldozing the native soil, sand, cobbles, etc. back over the discarded material. This process was continued until all material was disposed and covered.</p> <p>_____ and _____ stated that the POWs were confined and lived in an area outside of the base boundaries, in the space between 1st and 3rd Avenues and Vermont and June Streets in Muscoy. They also indicated that there was a private residence taken over by the military on the south side of the POW camp, and used as an Officer's Club, with the family who had lived there moved into a barn in back which was fixed up for residential use.</p> <p>_____ and _____ then took Kevin and I out to the Camp Ono area and we drove into the former base, entering from the north on Industrial, from Palm Avenue. _____ and _____ indicated that this was one of the gates into the camp. Adjacent to _____ and across the street from the Fred G. Walter Machine Shop, either on the east side or more likely the west side of the second hill south of the north line of the Camp is the area where they believe their father indicated that the surplus material was buried. _____ stated that his father had told him</p>	

7
9
5
0
0
0
0

000567

SUMMARY: (Continued)

the disposal area was not visible from the Palm Avenue gate and the "main north-south road" of Camp Ono, which followed the same course as the current Industrial Parkway. From aerial photographs taken in 1949, scarring on the west side appears to be the location of the buried material. Scarring on the east side, next to I-215, still shows the patterns for tent foundations and roads from the Base, indicating that the ground had not been disturbed after tents were removed. While walking the area, we located the apparent path of a buried aqueduct from Diablo Canyon, and also found several stand pipes and one water meter box labeled "H & C 437, Water Meter" with a 4" stand pipe, with both the meter box and the stand pipe painted blue. The water supply was capped on the southwest end. There was also a real estate sign, indicating that the north part of the former camp property is for lease, and the entire north and western side of the camp appears destined to become an industrial park.

and then continued to drive with us, showing us concrete building or tent foundations, asphalt (possibly from roads or pads) and other remnants still visible in the area just south of the current concrete flood control channel from Devils Canyon. They also showed us what they believe was the main Camp entrance, located on Cajon Blvd., across from the Cimmaron Ranch housing development, where the original railroad sidings were located. The road came out from the Camp immediately south of the tracks, and can still be recognized from the hump in Cajon Blvd, where the road was built up to the level of the railroad tracks.

On the north side of Camp Ono, showed us where there had been a rebar or steel plant, owned by brother, either as a partner or as one of the officers. There was also a rock plant or smelter next to the foundry, and considerable white staining of the hillside behind the rock plant. These plants are closest to Cajon Blvd, north of the intersection with Palm, but probably were accessed from Kendall or Palm, since there was no track crossing of the AT & SF tracks. They also mentioned that the Cajon landfill, visible to the west of the plants, was used as a parking lot during the US Festivals back in the 1970s.

ATTACHMENTS

CONCLUSIONS, ACTIONS REQUIRED

CC: Kevin Mayer

**Magnetic Field Survey
Camp Ono (Muscoy Operable Unit) Geophysical Survey
San Bernardino, CA**

conducted by

**EG&G Idaho, Inc.
Idaho National Engineering Laboratory (INEL)
Idaho Falls, Idaho**

Objective

Locate and map the position of a suspected buried waste trench.

Conclusion

A trench as described in EPA documents and interviews does not exist within the survey area.

Overview

Air photos, interviews, and groundwater data, suggest this site at Camp Ono may contain a buried waste trench, possibly the source of groundwater contamination in the area. The trench is expected to contain a large amount of ferrous material making it an excellent target for a magnetic field survey. It is estimated to be less than two hundred meters long and on the order of five meters wide and located within an area three hundred meters long and seventy-five meters wide. The approximately six acre site is flat lying and covered with light vegetation. The area is bounded by low steep sided hills. The following page is a site sketch map showing the survey location.

Scope

In order to meet the project objective, a magnetic field survey was performed. The data were collected using a Rapid Geophysical Surveyor (RGS), a system developed at the Idaho National Engineering Laboratory to rapidly and cost effectively collect closely spaced magnetic field data. To meet the objective of this survey, magnetic field data were collected at one tenth meter intervals along profiles spaced two meters apart producing a very densely spaced data set. The spacing of two meters between profiles was a departure from the original proposed scope. The change was made in the field because the site to be surveyed was approximately twice the area on which the original scope was designed (six acres vs. three acres). The decision to change the spacing was made by Glen Carpenter, the field geophysicist, and was concurred with by Paul Martin of Ecology and Environment Inc., representing the EPA. Given the description of the

SAN BERNARDINO, CA

PALM AVENUE

GAS STATION



FENCE

HILL

HILL

1-215

1-215

100N,50W

100N,0W

50N,50W

50N,0W

0N,34W

0N,0W

50S,30W

50S,0W

50S,24E

100S,100W

100S,50W

100S,0W

100S,29E

150S,100W

150S,50W

150S,0W

200S,100W

200S,50W

200S,7W

HILL

SITE MAP
(NOT TO SCALE)

target trench, this larger spacing would clearly meet the objective of the survey and would allow the survey to be completed with the originally proposed level of effort. Conventional magnetic field surveys and electromagnetic surveys designed for this objective are typically performed on a five meter by one meter grid resulting in lower resolution results gained at greater expense.

The Rapid Geophysical Surveyor (RGS)

The measurements made with the RGS are vertical gradient of the vertical magnetic field measurements, similar to those made in conventional magnetic field surveys. The advantage of the RGS lies in the ability to collect data more rapidly and cost effectively than with conventional magnetic field surveying systems. For this project, data were collected on a grid of two meters by one tenth meter totalling approximately 70,000 data points. Collecting 70,000 with a conventional systems would require 28 days. That clearly would not be cost effective and the survey would be modified to reduce the cost. For example, a conventional survey would likely have been conducted on a grid of five meters by one meter totalling only 4,000 points. Collection of the 4,000 points would require a similar amount of time and expense as the 70,000 point RGS survey. The conventional magnetic field survey would produce a low resolution data set making interpretation difficult and conclusions less certain. The difficulties caused by low resolution data sets include spacial aliasing and limited ability to separate superimposed signals at complicated sites.

The RGS system gains its productivity advantages primarily through the implementation of two ideas: 1) the ability of the magnetic field sensors to operate at high data collection rates and 2) the integration of the positioning system into the data logging and magnetic field sensing package. The RGS is a hand operated system that uses a rolling wheel to transport the sensors and measure the distance travelled along data collection profiles. The data logging system monitors the turning of the wheel and uses that information to drive the data collection at predetermined intervals. The system is operated at walking speed along profiles. The survey area is covered in much the same way as one would mow a lawn with closely spaced passes covering the entire survey area. Compared to conventional surveys of equal areas, roughly fifteen times as many data points can be collected in the same time period.

Field Activities

The field crew from the INEL arrived in San Bernardino the evening of October 24, 1993. The crew met with EPA official Clifford Davis and Paul Martin of Ecology and Environment at the survey site the following morning. As requested, a fifty meter by fifty meter grid had already been put in place at the site from which the geophysical survey crew could establish a detailed grid. The field crew familiarized themselves with the survey site. The area was relatively flat and free from obstructions that would interfere with the RGS performance. Data collection began that morning. Data were collected on profiles running from east to west across the short dimension of the survey area starting at the northern end of the site. Data collection progressed to the south for two days until the six acre site had been completely covered. Weather conditions were warm (80 degrees F) and windy, (20-50 mph). Although unpleasant, the

conditions did not interfere or influence the performance of the RGS. Data collection were completed by late afternoon of the following day as scheduled.

Results

Attached are a color contour map and a shaded relief map of the vertical gradient of the magnetic field over the survey area. In the color contour map, reds and oranges show areas of high amplitude positive gradient. Greens and blues show areas of strong negative gradient. The shaded relief map is a presentation of the same data set. In this presentation, high and low amplitude gradients are depicted as high and low "elevations". The data are then illuminated from a low angle light source to brighten high amplitudes and cast shadows in the low amplitude areas. The shaded relief map is useful to enhance trends in the data. A clear overlay showing cultural features and an interpretation summary is attached. Also attached is a clear overlay showing the position of data profiles included in the discussion.

Discussion

The magnetic data do not indicate the presence of a trench such as was described in interviews and reports. Such a trench would be expected to produce a large linear feature hundreds of meters long and as much as 10 meters across. The gradient values would also be expected to be on the order of several thousand gamma\meter. Nothing in the data indicates such a feature exists within the survey area.

Several features of note do appear in the data. Three underground utilities cross the survey area.

- I. The most outstanding feature runs east/west across the survey area at approximately 130 meters south. The magnetic anomaly is characterized by a series of narrow highs and lows forming a well defined line across the survey area. This feature is shown on the clear overlay as feature (I) and correlates with two features observed in the field. A five foot tall vertical four inch steel pipe observed in the field located at (17W,129S). Also observed in the field was another vertical steel pipe and a concrete vault labeled "water" that fell just outside the survey area at (30E,126S). This feature serves as a good model to show the magnetic response to a relatively small magnetic source. In general, the feature appears to be relatively shallow (approx. 1 meter or less) based on the width of the anomaly and slopes on the flanks of the anomaly.
- II. A second utility line appears to cross the area producing a similar response as anomaly discussed previously (I). The trend runs east/west across the area from (24E,84S) to (100W,102S). The feature is labeled (II) on the attached clear overlay. Again the anomaly is characterized by a series of gradient highs and lows producing a long linear trend across the area. This feature is somewhat obscured by other randomly scattered magnetic sources but is still evident in the data. In general, the feature appears to be relatively shallow (approx. less than one meter) based on the width and slopes on the flanks of the anomaly.

- III. A third linear feature similar to the two already discussed extends on a north/south trend from (25E,6S) to (28E,106S) labeled on the clear overlay as (III). Here again the anomaly is characterized by a series of narrow highs and lows suggesting a feature such as an underground utility. A profile of data was plotted across the anomaly (III-III'). Based on the slopes on the flanks of the anomaly, the feature is less than one half meter deep.

Each of the following features is representative of an isolated random target. Each is small in area and does not reflect organized dumping into a trench or pit. The following is a brief discussion of these notable features. Each of the features is supported by multiple profiles. It is important to remember that because the survey was conducted for another objective with two meters between profiles, some distortion in the shape of the anomaly, primarily in the north/south direction may occur, making detailed analysis of individual anomalies more tenuous, but not totally without merit.

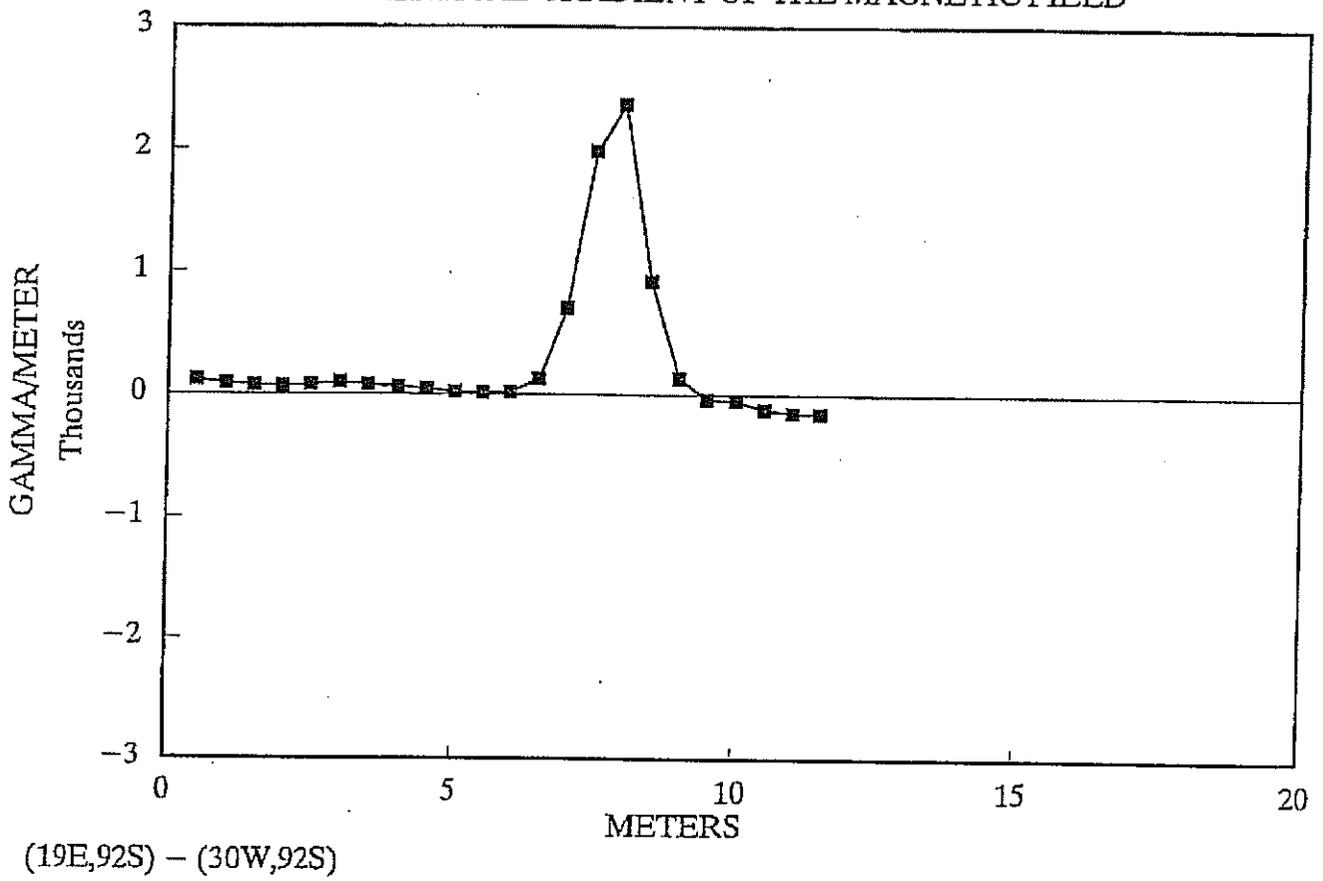
- A. The anomaly noted as "A" at (25W,31S) on the attached clear overlay corresponds to a significant magnetic anomaly. Observed in the field at this location was a partially buried one inch steel cable. The observed magnetic anomaly correlates well with the cable observed on the surface.
- B. The anomaly noted on the clear overlay as "B" at (3W,81S) suggests a collection of small objects at or near the surface. The anomaly is characterized by large amplitude variations in the magnetic field over small lateral distances. This is indicative of small, near surface ferrous objects rather than a massive object at depth. No objects were noted in the field at this location.
- C. The anomaly indicated by "C" at (30W,100S) as shown on the clear overlay is typical of a response from a moderately sized magnetic object or collection of objects (two to three meters across) buried one to two meters in depth. A profile of the data across the anomaly is titled C-C'.
- D. The magnetic anomaly "D" centered at (17W,129S) is the result of a four inch steel pipe standing approximately five feet high that was noted in the field. The anomaly has the typical character of an isolated small object. This pipe is likely associated with the underground utility running across the survey area at this point.
- E. The anomaly indicated by "E" at (15W,95S) as shown on the clear overlay is typical of a response from a moderately sized magnetic object or collection of objects (approximately two meters across) buried less than one meter in depth.

Conclusion

A magnetic field survey over the six acre survey area was performed using the RGS. The grid spacing was one tenth meter along profiles spaced two meters apart. The approximately 70,000 data points were collected over a two day period and were used to produce the attached maps.

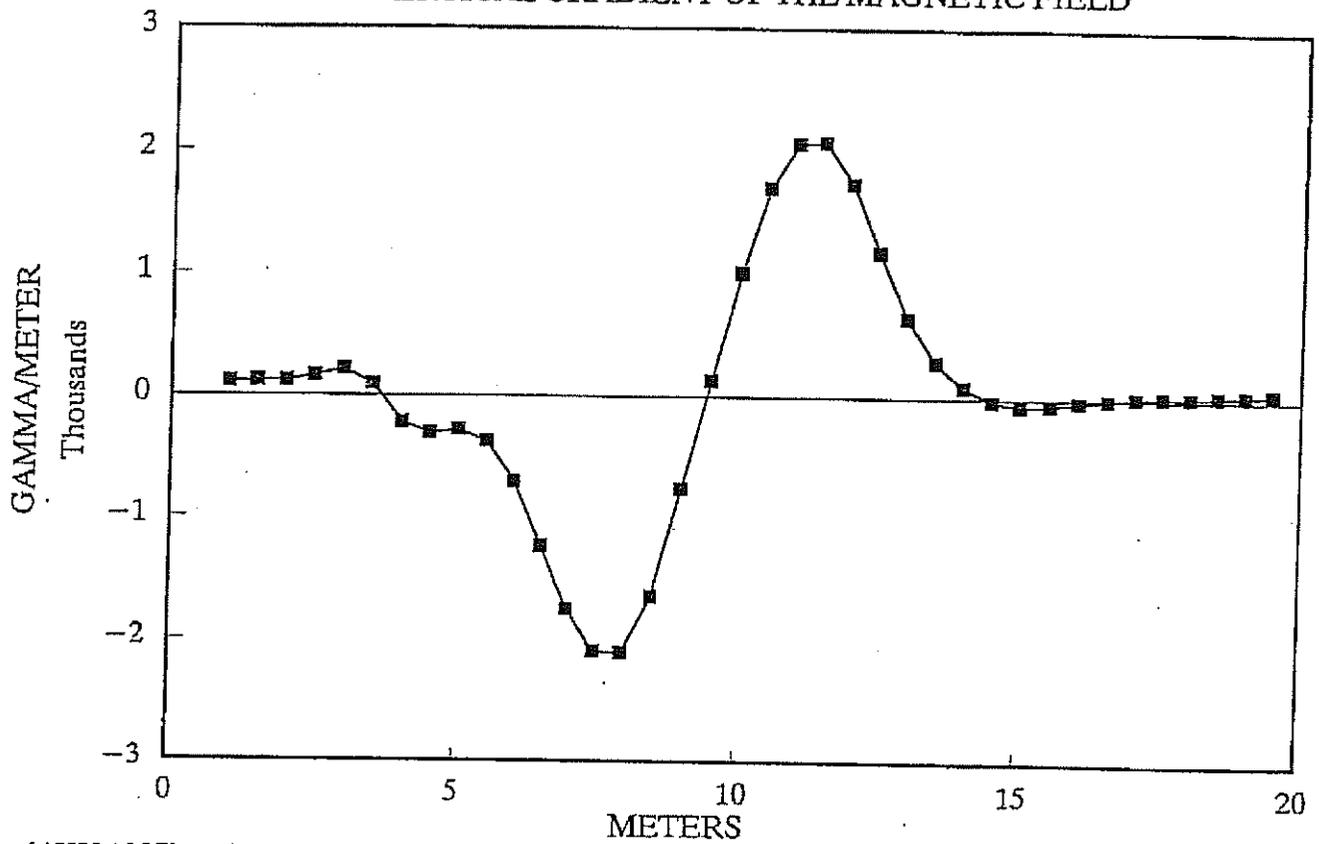
III-III'

VERTICAL GRADIENT OF THE MAGNETIC FIELD



C-C'

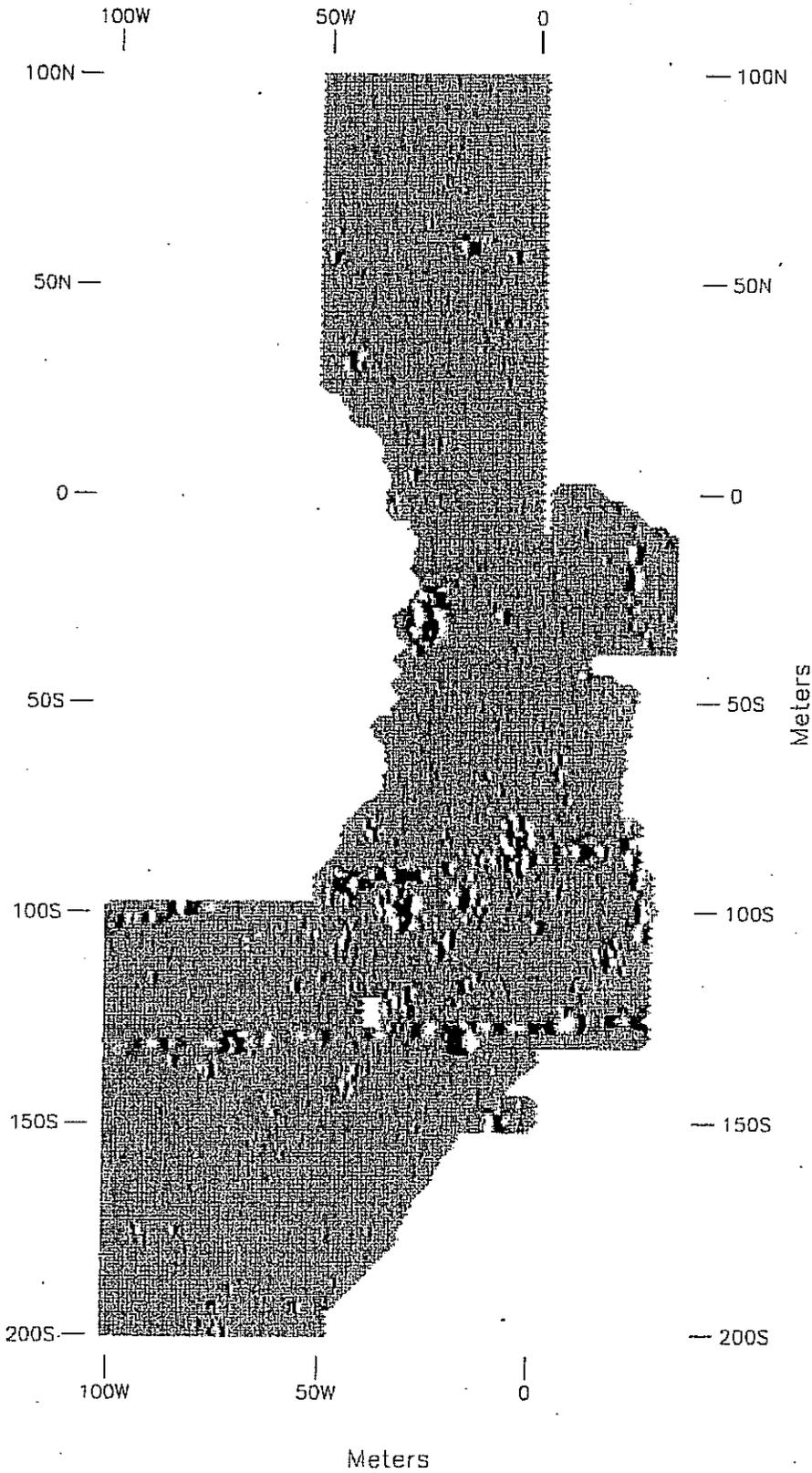
VERTICAL GRADIENT OF THE MAGNETIC FIELD



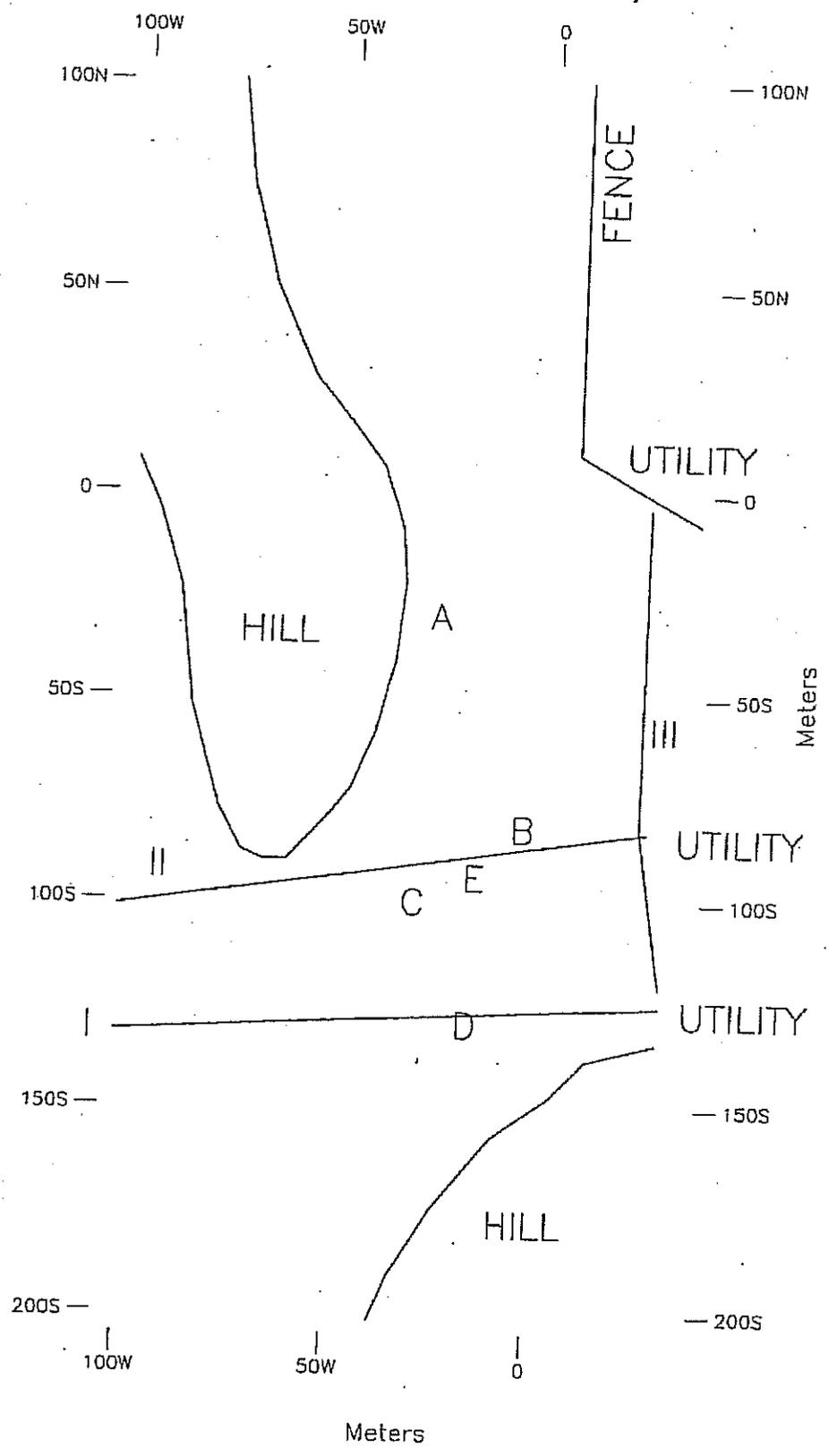
(40W,100S) - (20W,100S)

The data show that the target trench does not exist within the survey area. The area is characterized by a limited number of scattered shallow buried ferrous objects. Each site encompasses only a small area and is likely not significant in itself. Three utilities passing through the survey area demonstrate the systems ability to detect buried ferrous objects of small size.

CAMP ONO
VERTICAL GRADIENT OF THE MAGNETIC FIELD
(RAPID GEOPHYSICAL SURVEYOR)

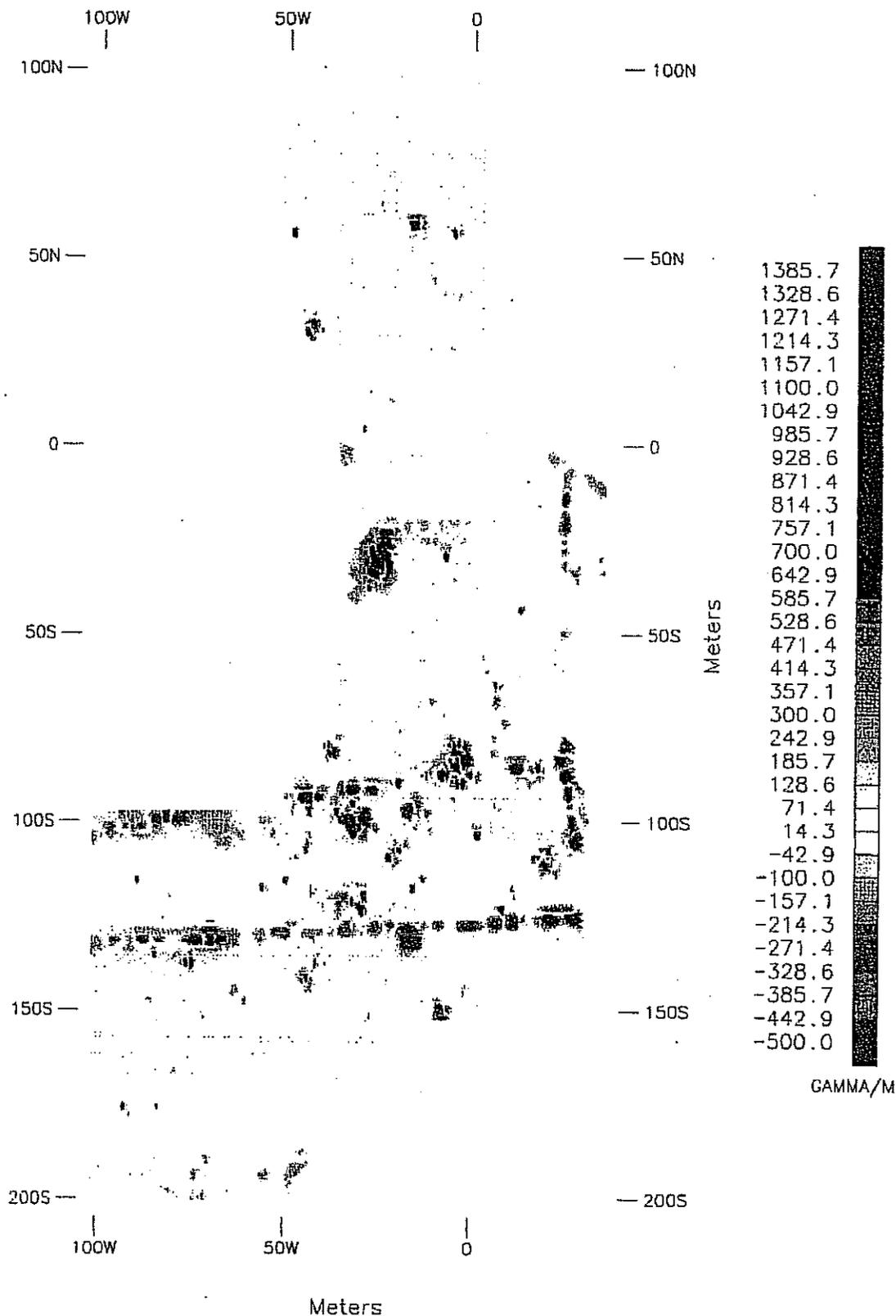


CAMP ONO
VERTICAL GRADIENT OF THE MAGNETIC FIELD
(RAPID GEOPHYSICAL SURVEYOR)

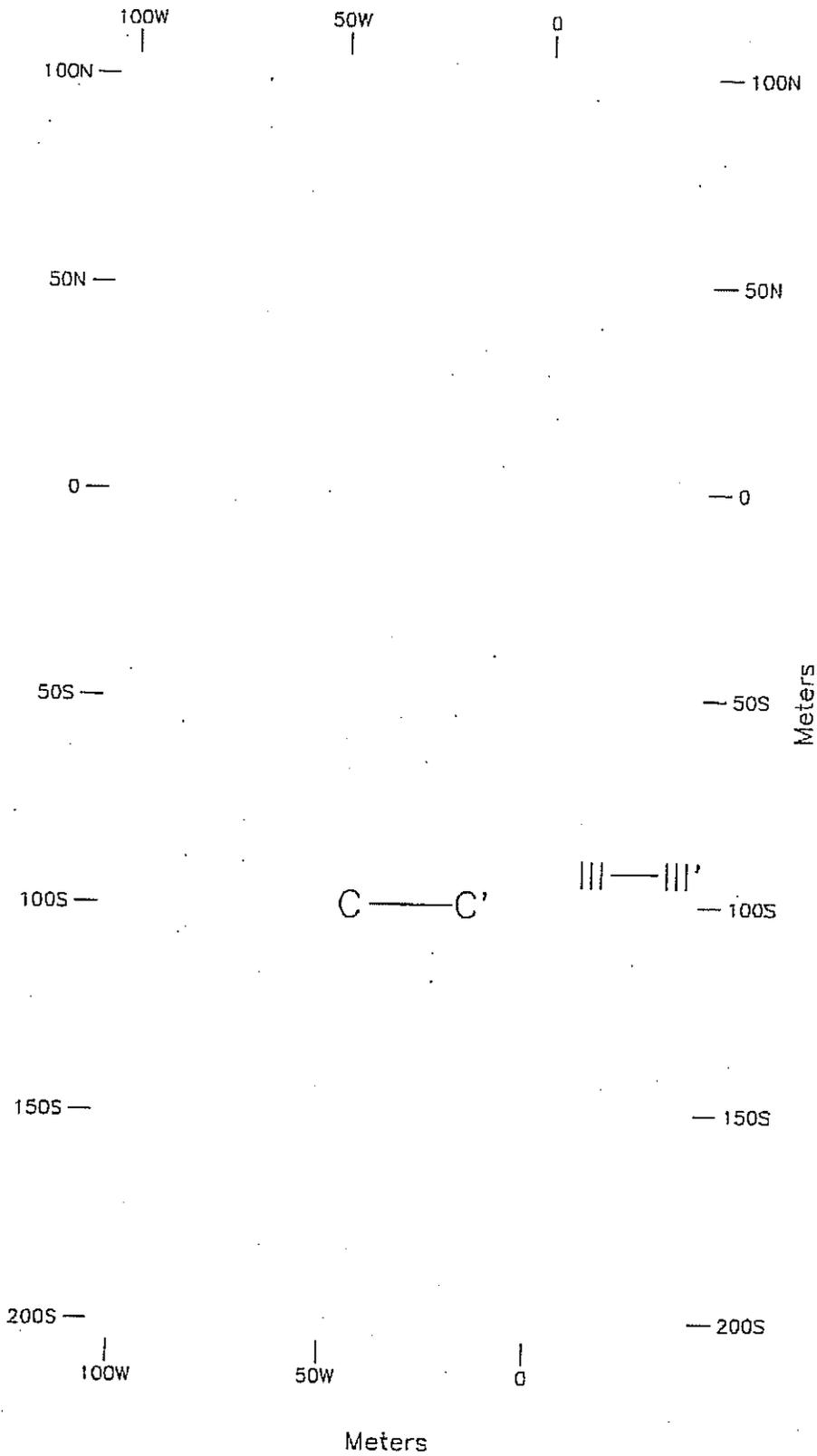


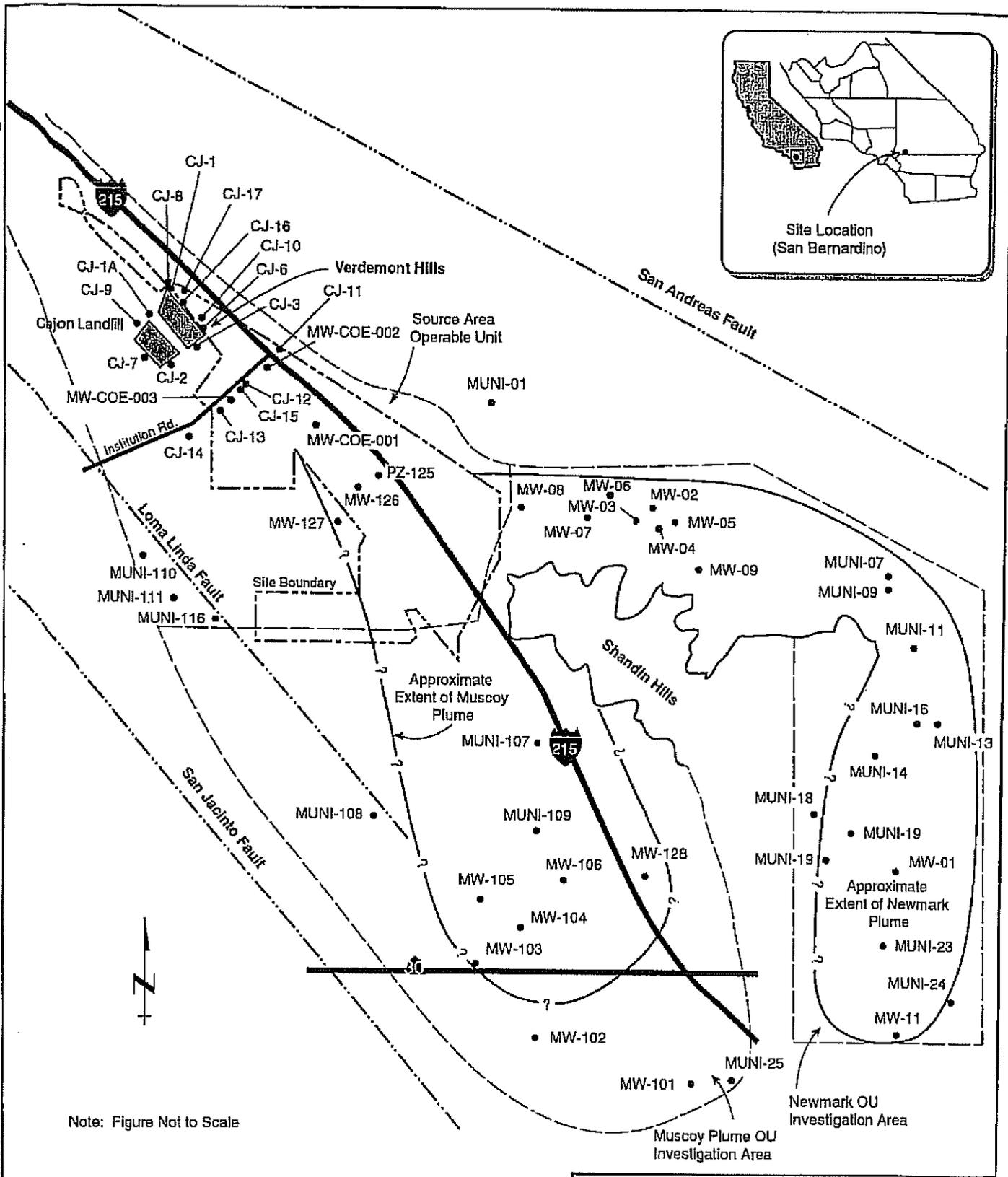
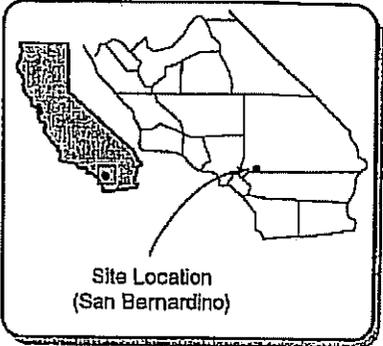
CAMP ONO

VERTICAL GRADIENT OF THE MAGNETIC FIELD (RAPID GEOPHYSICAL SURVEYOR)



CAMP ONO
VERTICAL GRADIENT OF THE MAGNETIC FIELD
(RAPID GEOPHYSICAL SURVEYOR)





Note: Figure Not to Scale

LEGEND

- OU Investigation Area
- Fault
- Well Location
- - - San Bernardino Engineer Depot Boundary



MONTGOMERY WATSON

INITIAL SOIL GAS SURVEY IN THE VICINITY OF
THE SAN BERNARDINO ENGINEER DEPOT

**NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE**

FIGURE 1-2

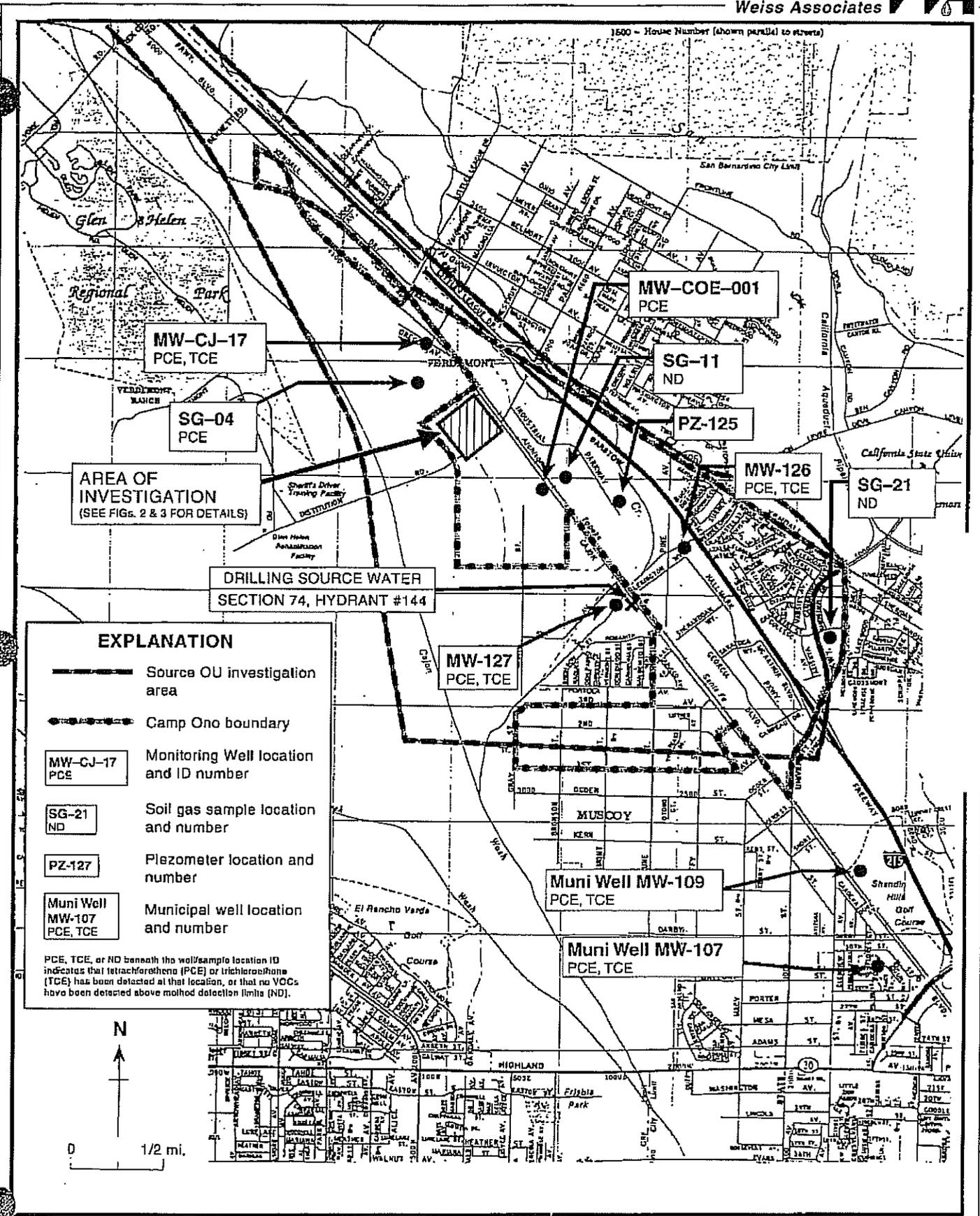


Figure 1. Site Location Map, Institution Road Ground Water Wells, Camp Ono and Vicinity, San Bernardino, California

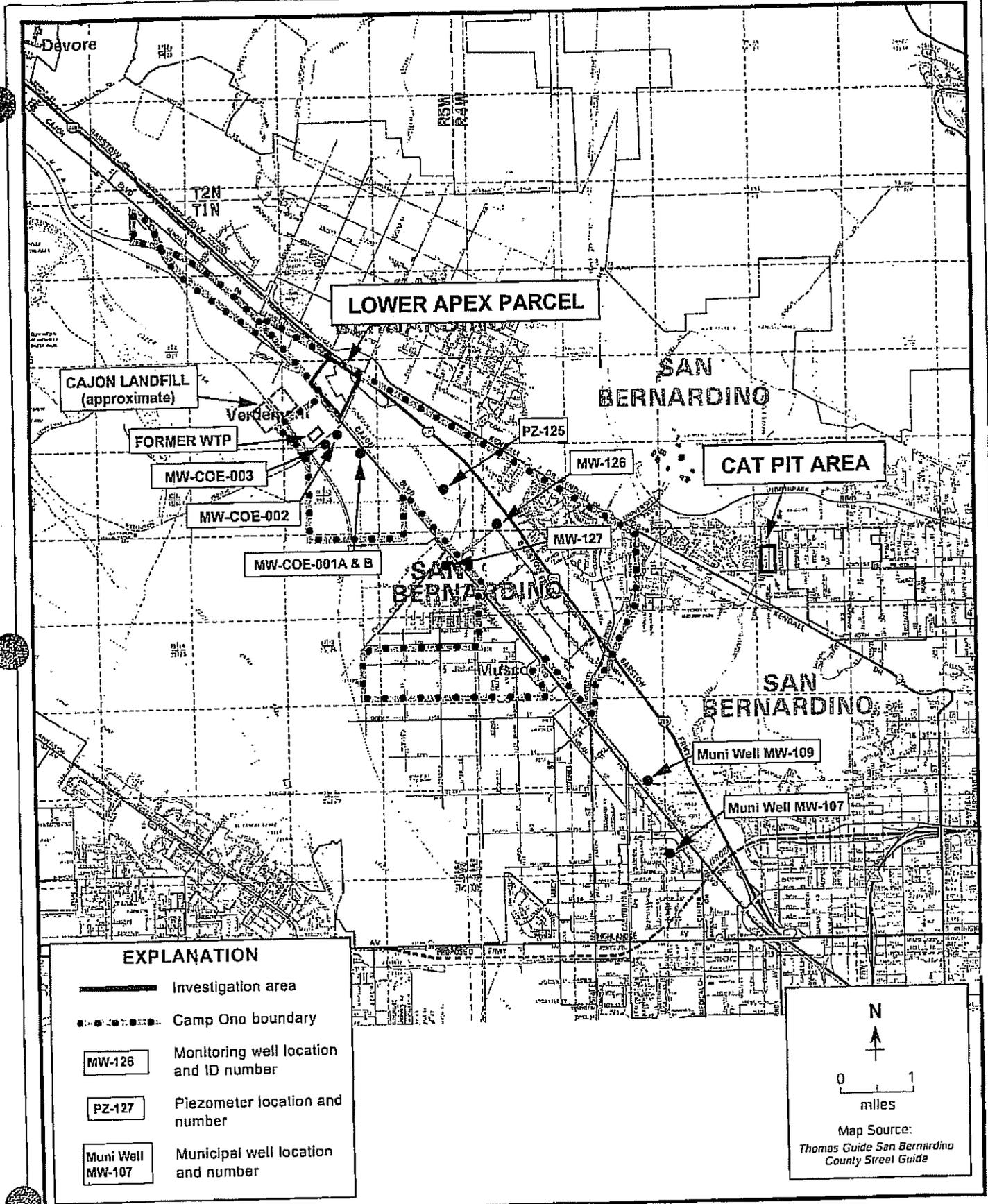


Figure 1. Site Location Map, Lower Apex Parcel, Camp Ono, and Cat Pit Area, San Bernardino and Vicinity, California

May 08, 2007



Paul Roberts
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1141 Pomona Rd, Suite E
Corona, CA 92882
TEL: (951)736-5334
FAX: (951)736-7560

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 091653

RE: Palm Avenue, 100025001

Attention: Paul Roberts

Enclosed are the results for sample(s) received on April 25, 2007 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Rodriguez", is written over the typed name.

Eddie F. Rodriguez
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories.



Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 08-May-07

CLIENT: Ardent Environmental Group
Lab Order: 091653
Project: Palm Avenue, 100025001
Lab ID: 091653-001

Client Sample ID: SD1-1
Collection Date: 4/24/2007
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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ICP METALS

EPA 3050B		EPA 6010B				
RunID: ICP6_070504D	QC Batch: 35599	PrepDate: 5/3/2007	Analyst: RQ			
Antimony	ND	2.0	mg/Kg	1	5/4/2007 06:58 PM	
Arsenic	2.5	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Barium	56	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Beryllium	ND	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Cadmium	ND	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Chromium	16	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Cobalt	5.9	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Copper	13	2.0	mg/Kg	1	5/4/2007 06:58 PM	
Lead	33	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Molybdenum	ND	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Nickel	12	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Selenium	ND	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Silver	ND	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Thallium	ND	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Vanadium	28	1.0	mg/Kg	1	5/4/2007 06:58 PM	
Zinc	79	1.0	mg/Kg	1	5/4/2007 06:58 PM	

HYDROCARBON CHAIN IDENTIFICATION

LUFT		EPA 8015B(M)				
RunID: GC7_BACK_070427C	QC Batch: 35491	PrepDate: 4/27/2007	Analyst: CBR			
T/R Hydrocarbons: C10-C12	ND	10	mg/Kg	1	4/28/2007 02:17 AM	
T/R Hydrocarbons: C13-C15	ND	10	mg/Kg	1	4/28/2007 02:17 AM	
T/R Hydrocarbons: C16-C22	ND	10	mg/Kg	1	4/28/2007 02:17 AM	
T/R Hydrocarbons: C23-C32	48	10	mg/Kg	1	4/28/2007 02:17 AM	
T/R Hydrocarbons:>C32	55	10	mg/Kg	1	4/28/2007 02:17 AM	
Surr: p-Terphenyl	98.6	57-122	%REC	1	4/28/2007 02:17 AM	

MERCURY BY COLD VAPOR TECHNIQUE

EPA 7471		EPA 7471A				
RunID: AA5_070501D	QC Batch: 35611	PrepDate: 5/1/2007	Analyst: EKS			
Mercury	ND	0.10	mg/Kg	1	5/1/2007	

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B		EPA 8260B				
RunID: MS5_070430B	QC Batch: T07VS090	PrepDate:	Analyst: DMP			
1,1,1,2-Tetrachloroethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,1,1-Trichloroethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified



Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 08-May-07

CLIENT: Ardent Environmental Group
Lab Order: 091653
Project: Palm Avenue, 100025001
Lab ID: 091653-001

Client Sample ID: SD1-1
Collection Date: 4/24/2007
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	MS5_070430B	QC Batch:	T07VS090	PrepDate:	Analyst:	DMP
1,1,2,2-Tetrachloroethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,1,2-Trichloroethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,1-Dichloroethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,1-Dichloroethene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,1-Dichloropropene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2,3-Trichlorobenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2,3-Trichloropropane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2,4-Trichlorobenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2,4-Trimethylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2-Dibromo-3-chloropropane	ND	10	µg/Kg	1	4/30/2007 11:54 PM	
1,2-Dibromoethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2-Dichlorobenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2-Dichloroethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,2-Dichloropropane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,3,5-Trimethylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,3-Dichlorobenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,3-Dichloropropane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
1,4-Dichlorobenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
2,2-Dichloropropane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
2-Chlorotoluene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
4-Chlorotoluene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
4-Isopropyltoluene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Benzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Bromobenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Bromodichloromethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Bromoform	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Bromomethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Carbon tetrachloride	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Chlorobenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Chloroethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Chloroform	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Chloromethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
cis-1,2-Dichloroethene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
cis-1,3-Dichloropropene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Dibromochloromethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	
Dibromomethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM	

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range
H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit
S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified
DO Surrogate Diluted Out



Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 08-May-07

CLIENT:	Ardent Environmental Group	Client Sample ID:	SD1-1
Lab Order:	091653	Collection Date:	4/24/2007
Project:	Palm Avenue, 100025001	Matrix:	SOIL
Lab ID:	091653-001		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_070430B	QC Batch: T07VS090	PrepDate:	Analyst: DMP		
Dichlorodifluoromethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Ethylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Hexachlorobutadiene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Isopropylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
m,p-Xylene	ND	10	µg/Kg	1	4/30/2007 11:54 PM
Methylene chloride	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
n-Butylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
n-Propylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Naphthalene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
o-Xylene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
sec-Butylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Styrene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
tert-Butylbenzene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Tetrachloroethene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Toluene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
trans-1,2-Dichloroethene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Trichloroethene	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Trichlorofluoromethane	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Vinyl chloride	ND	5.0	µg/Kg	1	4/30/2007 11:54 PM
Surr: 1,2-Dichloroethane-d4	99.3	41-149	%REC	1	4/30/2007 11:54 PM
Surr: 4-Bromofluorobenzene	86.8	57-137	%REC	1	4/30/2007 11:54 PM
Surr: Dibromofluoromethane	96.6	51-137	%REC	1	4/30/2007 11:54 PM
Surr: Toluene-d8	97.6	68-127	%REC	1	4/30/2007 11:54 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 08-May-07

CLIENT: Ardent Environmental Group
Lab Order: 091653
Project: Palm Avenue, 100025001
Lab ID: 091653-002

Client Sample ID: SD2-1
Collection Date: 4/24/2007
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
	EPA 3050B		EPA 6010B			
RunID: ICP6_070504D	QC Batch: 35599				PrepDate: 5/3/2007	Analyst: RQ
Antimony	ND	2.0		mg/Kg	1	5/4/2007 07:04 PM
Arsenic	4.6	1.0		mg/Kg	1	5/4/2007 07:04 PM
Barium	58	1.0		mg/Kg	1	5/4/2007 07:04 PM
Beryllium	ND	1.0		mg/Kg	1	5/4/2007 07:04 PM
Cadmium	ND	1.0		mg/Kg	1	5/4/2007 07:04 PM
Chromium	11	1.0		mg/Kg	1	5/4/2007 07:04 PM
Cobalt	7.0	1.0		mg/Kg	1	5/4/2007 07:04 PM
Copper	15	2.0		mg/Kg	1	5/4/2007 07:04 PM
Lead	42	1.0		mg/Kg	1	5/4/2007 07:04 PM
Molybdenum	ND	1.0		mg/Kg	1	5/4/2007 07:04 PM
Nickel	9.8	1.0		mg/Kg	1	5/4/2007 07:04 PM
Selenium	ND	1.0		mg/Kg	1	5/4/2007 07:04 PM
Silver	ND	1.0		mg/Kg	1	5/4/2007 07:04 PM
Thallium	ND	1.0		mg/Kg	1	5/4/2007 07:04 PM
Vanadium	24	1.0		mg/Kg	1	5/4/2007 07:04 PM
Zinc	54	1.0		mg/Kg	1	5/4/2007 07:04 PM
HYDROCARBON CHAIN IDENTIFICATION						
	LUFT		EPA 8015B(M)			
RunID: GC7_BACK_070427C	QC Batch: 35491				PrepDate: 4/27/2007	Analyst: CBR
T/R Hydrocarbons: C10-C12	ND	10		mg/Kg	1	4/28/2007 01:52 AM
T/R Hydrocarbons: C13-C15	ND	10		mg/Kg	1	4/28/2007 01:52 AM
T/R Hydrocarbons: C16-C22	ND	10		mg/Kg	1	4/28/2007 01:52 AM
T/R Hydrocarbons: C23-C32	11	10		mg/Kg	1	4/28/2007 01:52 AM
T/R Hydrocarbons:>C32	ND	10		mg/Kg	1	4/28/2007 01:52 AM
Surr: p-Terphenyl	105	57-122		%REC	1	4/28/2007 01:52 AM
MERCURY BY COLD VAPOR TECHNIQUE						
	EPA 7471		EPA 7471A			
RunID: AA5_070501D	QC Batch: 35611				PrepDate: 5/1/2007	Analyst: EKS
Mercury	ND	0.10		mg/Kg	1	5/1/2007
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
	EPA 8260B		EPA 8260B			
RunID: MS5_070430B	QC Batch: T07VS090				PrepDate:	Analyst: DMP
1,1,1,2-Tetrachloroethane	ND	5.0		µg/Kg	1	5/1/2007 12:13 AM
1,1,1-Trichloroethane	ND	5.0		µg/Kg	1	5/1/2007 12:13 AM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 08-May-07

CLIENT: Ardent Environmental Group
Lab Order: 091653
Project: Palm Avenue, 100025001
Lab ID: 091653-002

Client Sample ID: SD2-1
Collection Date: 4/24/2007
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_070430B	QC Batch: T07VS090	PrepDate:	Analyst: DMP		
1,1,2,2-Tetrachloroethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,1,2-Trichloroethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,1-Dichloroethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,1-Dichloroethene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,1-Dichloropropene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2,3-Trichlorobenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2,3-Trichloropropane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2,4-Trichlorobenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2,4-Trimethylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2-Dibromo-3-chloropropane	ND	10	µg/Kg	1	5/1/2007 12:13 AM
1,2-Dibromoethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2-Dichlorobenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2-Dichloroethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,2-Dichloropropane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,3,5-Trimethylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,3-Dichlorobenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,3-Dichloropropane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
1,4-Dichlorobenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
2,2-Dichloropropane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
2-Chlorotoluene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
4-Chlorotoluene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
4-Isopropyltoluene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Benzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Bromobenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Bromodichloromethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Bromoform	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Bromomethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Carbon tetrachloride	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Chlorobenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Chloroethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Chloroform	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Chloromethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
cis-1,2-Dichloroethene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
cis-1,3-Dichloropropene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Dibromochloromethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM
Dibromomethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	S Spike/Surrogate outside of limits due to matrix interference	Results are wet unless otherwise specified
	DO Surrogate Diluted Out	



Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: 08-May-07

CLIENT: Ardent Environmental Group **Client Sample ID:** SD2-1
Lab Order: 091653 **Collection Date:** 4/24/2007
Project: Palm Avenue, 100025001 **Matrix:** SOIL
Lab ID: 091653-002

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	MS5_070430B	QC Batch:	T07VS090	PrepDate:	Analyst:	DMP
Dichlorodifluoromethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Ethylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Hexachlorobutadiene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Isopropylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
m,p-Xylene	ND	10	µg/Kg	1	5/1/2007 12:13 AM	
Methylene chloride	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
n-Butylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
n-Propylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Naphthalene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
o-Xylene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
sec-Butylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Styrene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
tert-Butylbenzene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Tetrachloroethene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Toluene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
trans-1,2-Dichloroethene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Trichloroethene	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Trichlorofluoromethane	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Vinyl chloride	ND	5.0	µg/Kg	1	5/1/2007 12:13 AM	
Surr: 1,2-Dichloroethane-d4	100	41-149	%REC	1	5/1/2007 12:13 AM	
Surr: 4-Bromofluorobenzene	89.7	57-137	%REC	1	5/1/2007 12:13 AM	
Surr: Dibromofluoromethane	95.6	51-137	%REC	1	5/1/2007 12:13 AM	
Surr: Toluene-d8	98.3	68-127	%REC	1	5/1/2007 12:13 AM	

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range
 H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit
 S Spike/Surrogate outside of limits due to matrix interference Results are wet unless otherwise specified
 DO Surrogate Diluted Out





Advanced Technology Laboratories

Date: 08-May-07

CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: MB-35599	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 5/3/2007	RunNo: 78999						
Client ID: PBS	Batch ID: 35599	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 5/4/2007	SeqNo: 1194864						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.483	2.0									
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	0.096	1.0									
Copper	ND	2.0									
Lead	ND	1.0									
Molybdenum	ND	1.0									
Nickel	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	1.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: 091680-028AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 5/3/2007	RunNo: 78999						
Client ID: ZZZZZZ	Batch ID: 35599	TestNo: EPA 6010B	EPA 3050B	Analysis Date: 5/4/2007	SeqNo: 1194871						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	79.986	2.0	125.0	0	64.0	24	110				
Arsenic	96.576	1.0	125.0	1.013	76.5	61	104				
Barium	153.430	1.0	125.0	74.82	62.9	35	135				
Beryllium	98.261	1.0	125.0	0	78.6	64	104				
Cadmium	100.737	1.0	125.0	0.08441	80.5	65	106				
Chromium	111.413	1.0	125.0	13.01	78.7	47	122				
Cobalt	101.934	1.0	125.0	7.749	75.3	55	111				

Qualifiers:

- B Analyte detected in the associated Method Blank
 - ND Not Detected at the Reporting Limit
 - DO Surrogate Diluted Out
 - E Value above quantitation range
 - R RPD outside accepted recovery limits
 - H Holding times for preparation or analysis exceeded
 - S Spike/Surrogate outside of limits due to matrix interference
- Calculations are based on raw values



CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID: 091680-028AMS SampType: MS TestCode: 6010_S Units: mg/Kg RunNo: 78999
Client ID: ZZZZZZ Batch ID: 35599 TestNo: EPA 6010B EPA 3050B Analysis Date: 5/4/2007 SeqNo: 1194871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	113.772	2.0	125.0	12.84	80.7	52	132				
Lead	97.430	1.0	125.0	2.513	75.9	37	128				
Molybdenum	98.234	1.0	125.0	0	78.6	58	108				
Nickel	103.546	1.0	125.0	8.063	76.4	48	120				
Selenium	92.153	1.0	125.0	0	73.7	57	105				
Silver	20.792	1.0	125.0	0	16.6	44	116				S
Thallium	88.484	1.0	125.0	0	70.8	55	103				
Vanadium	129.358	1.0	125.0	35.38	75.2	57	116				
Zinc	126.821	1.0	125.0	37.59	71.4	41	120				

Sample ID: 091680-028AMS SampType: MSD TestCode: 6010_S Units: mg/Kg RunNo: 78999
Client ID: ZZZZZZ Batch ID: 35599 TestNo: EPA 6010B EPA 3050B Analysis Date: 5/4/2007 SeqNo: 1194872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	82.036	2.0	125.0	0	65.6	24	110	79.99	2.53	20	
Arsenic	100.885	1.0	125.0	1.013	79.9	61	104	96.58	4.36	20	
Barium	167.245	1.0	125.0	74.82	73.9	35	135	153.4	8.62	20	
Beryllium	101.942	1.0	125.0	0	81.6	64	104	98.26	3.68	20	
Cadmium	105.511	1.0	125.0	0.08441	84.3	65	106	100.7	4.63	20	
Chromium	117.190	1.0	125.0	13.01	83.3	47	122	111.4	5.05	20	
Cobalt	106.788	1.0	125.0	7.749	79.2	55	111	101.9	4.65	20	
Copper	120.867	2.0	125.0	12.84	86.4	52	132	113.8	6.05	20	
Lead	101.849	1.0	125.0	2.513	79.5	37	128	97.43	4.43	20	
Molybdenum	102.772	1.0	125.0	0	82.2	58	108	98.23	4.52	20	
Nickel	108.269	1.0	125.0	8.063	80.2	48	120	103.5	4.46	20	
Selenium	96.334	1.0	125.0	0	77.1	57	105	92.15	4.44	20	
Silver	14.816	1.0	125.0	0	11.9	44	116	20.79	33.6	20	SR
Thallium	92.112	1.0	125.0	0	73.7	55	103	88.48	4.02	20	
Vanadium	136.973	1.0	125.0	35.38	81.3	57	116	129.4	5.72	20	
Zinc	135.330	1.0	125.0	37.59	78.2	41	120	126.8	6.49	20	

Qualifiers:

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- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID:	LCS-35599	SampleType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	5/3/2007	RunNo:	78999
Client ID:	LCSS	Batch ID:	35599	TestNo:	EPA 6010B	EPA	3050B	Analysis Date:	5/4/2007	SeqNo:	1194873
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.862	2.0	50.00	0.4831	94.8	80	120				
Arsenic	46.591	1.0	50.00	0	93.2	80	120				
Barium	48.206	1.0	50.00	0	96.4	80	120				
Beryllium	46.968	1.0	50.00	0	93.9	80	120				
Cadmium	47.119	1.0	50.00	0	94.2	80	120				
Chromium	49.448	1.0	50.00	0	98.9	80	120				
Cobalt	48.256	1.0	50.00	0.09594	96.3	80	120				
Copper	49.721	2.0	50.00	0	99.4	80	120				
Lead	49.505	1.0	50.00	0	99.0	80	120				
Molybdenum	49.460	1.0	50.00	0	98.9	80	120				
Nickel	47.990	1.0	50.00	0	96.0	80	120				
Selenium	46.394	1.0	50.00	0	92.8	80	120				
Silver	47.848	1.0	50.00	0	95.7	80	120				
Thallium	48.701	1.0	50.00	0	97.4	80	120				
Vanadium	49.350	1.0	50.00	0	98.7	80	120				
Zinc	48.054	1.0	50.00	0	96.1	80	120				

Qualifiers:

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

TestCode: 7471_S

Sample ID: 091642-027A-MS	SampType: MS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 5/1/2007	RunNo: 78694						
Client ID: ZZZZZZ	Batch ID: 35611	TestNo: EPA 7471A	EPA 7471	Analysis Date: 5/1/2007	SeqNo: 1189182						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.966	0.10	0.8300	0.01422	115	58	168				

Sample ID: 091642-027A-MSD	SampType: MSD	TestCode: 7471_S	Units: mg/Kg	Prep Date: 5/1/2007	RunNo: 78694						
Client ID: ZZZZZZ	Batch ID: 35611	TestNo: EPA 7471A	EPA 7471	Analysis Date: 5/1/2007	SeqNo: 1189183						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.955	0.10	0.8300	0.01422	113	58	168	0.9657	1.06	20	

Sample ID: LCS-35611	SampType: LCS	TestCode: 7471_S	Units: mg/Kg	Prep Date: 5/1/2007	RunNo: 78694						
Client ID: LCSS	Batch ID: 35611	TestNo: EPA 7471A	EPA 7471	Analysis Date: 5/1/2007	SeqNo: 1189186						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.878	0.10	0.8300	0	106	80	120				

Sample ID: MB-35611	SampType: MBLK	TestCode: 7471_S	Units: mg/Kg	Prep Date: 5/1/2007	RunNo: 78694						
Client ID: PBS	Batch ID: 35611	TestNo: EPA 7471A	EPA 7471	Analysis Date: 5/1/2007	SeqNo: 1189187						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Qualifiers:

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CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: T043007LCS2	SampType: LCS	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 78619						
Client ID: LCSS	Batch ID: T07VS090	TestNo: EPA 8260B		Analysis Date: 4/30/2007	SeqNo: 1187628						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	100.440	5.0	100.0	0	100	72	125				
Benzene	105.230	5.0	100.0	0	105	80	119				
Chlorobenzene	100.310	5.0	100.0	0	100	78	119				
MTBE	107.910	5.0	100.0	0	108	58	138				
Toluene	100.910	5.0	100.0	0	101	73	121				
Trichloroethene	99.820	5.0	100.0	0	99.8	76	120				
Surr: 1,2-Dichloroethane-d4	47.910		50.00		95.8	41	149				
Surr: 4-Bromofluorobenzene	46.680		50.00		93.4	57	137				
Surr: Dibromofluoromethane	47.540		50.00		95.1	51	137				
Surr: Toluene-d8	49.320		50.00		98.6	68	127				

Sample ID: 091642-023AMS	SampType: MS	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 78619						
Client ID: ZZZZZZ	Batch ID: T07VS090	TestNo: EPA 8260B		Analysis Date: 4/30/2007	SeqNo: 1187629						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	91.610	5.0	100.0	0	91.6	49	144				
Benzene	96.280	5.0	100.0	0	96.3	64	128				
Chlorobenzene	91.030	5.0	100.0	0	91.0	44	145				
Toluene	93.100	5.0	100.0	0	93.1	51	137				
Trichloroethene	92.890	5.0	100.0	0	92.9	52	141				
Surr: 1,2-Dichloroethane-d4	47.460		50.00		94.9	41	149				
Surr: 4-Bromofluorobenzene	45.980		50.00		92.0	57	137				
Surr: Dibromofluoromethane	46.850		50.00		93.7	51	137				
Surr: Toluene-d8	49.740		50.00		99.5	68	127				

Sample ID: 091642-023AMSD	SampType: MSD	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 78619						
Client ID: ZZZZZZ	Batch ID: T07VS090	TestNo: EPA 8260B		Analysis Date: 4/30/2007	SeqNo: 1187630						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	94.190	5.0	100.0	0	94.2	49	144	91.61	2.78	30	

Qualifiers:

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 - S Spike/Surrogate outside of limits due to matrix interference
- Calculations are based on raw values



CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: 091642-023AMSD	SampType: MSD	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 78619						
Client ID: ZZZZZZ	Batch ID: T07VS090	TestNo: EPA 8260B		Analysis Date: 4/30/2007	SeqNo: 1187630						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	97.140	5.0	100.0	0	97.1	64	128	96.28	0.889	30	
Chlorobenzene	91.340	5.0	100.0	0	91.3	44	145	91.03	0.340	30	
Toluene	93.560	5.0	100.0	0	93.6	51	137	93.10	0.493	30	
Trichloroethene	94.020	5.0	100.0	0	94.0	52	141	92.89	1.21	30	
Surr: 1,2-Dichloroethane-d4	47.110		50.00		94.2	41	149		0	30	
Surr: 4-Bromofluorobenzene	47.010		50.00		94.0	57	137		0	30	
Surr: Dibromofluoromethane	47.760		50.00		95.5	51	137		0	30	
Surr: Toluene-d8	49.620		50.00		99.2	68	127		0	30	

Sample ID: T043007MB6	SampType: MBLK	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 78619						
Client ID: PBS	Batch ID: T07VS090	TestNo: EPA 8260B		Analysis Date: 4/30/2007	SeqNo: 1187631						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0									
1,1,1-Trichloroethane	ND	5.0									
1,1,2,2-Tetrachloroethane	ND	5.0									
1,1,2-Trichloroethane	ND	5.0									
1,1-Dichloroethane	ND	5.0									
1,1-Dichloroethene	ND	5.0									
1,1-Dichloropropene	ND	5.0									
1,2,3-Trichlorobenzene	ND	5.0									
1,2,3-Trichloropropane	ND	5.0									
1,2,4-Trichlorobenzene	ND	5.0									
1,2,4-Trimethylbenzene	ND	5.0									
1,2-Dibromo-3-chloropropane	ND	10									
1,2-Dibromoethane	ND	5.0									
1,2-Dichlorobenzene	ND	5.0									
1,2-Dichloroethane	ND	5.0									
1,2-Dichloropropane	ND	5.0									
1,3,5-Trimethylbenzene	ND	5.0									

Qualifiers:

B Analyte detected in the associated Method Blank
 ND Not Detected at the Reporting Limit
 DO Surrogate Diluted Out
 E Value above quantitation range
 R RPD outside accepted recovery limits
 Calculations are based on raw values
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference



CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID: T043007MB6	SampType: MBLK	TestCode: 8260_S	Units: µg/Kg	Prep Date:	RunNo: 78619						
Client ID: PBS	Batch ID: T07VS090	TestNo: EPA 8260B		Analysis Date: 4/30/2007	SeqNo: 1187631						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,3-Dichlorobenzene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Chlorotoluene	ND	5.0									
4-Chlorotoluene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
Benzene	ND	5.0									
Bromobenzene	ND	5.0									
Bromodichloromethane	ND	5.0									
Bromoform	ND	5.0									
Bromomethane	ND	5.0									
Carbon tetrachloride	ND	5.0									
Chlorobenzene	ND	5.0									
Chloroethane	ND	5.0									
Chloroform	ND	5.0									
Chloromethane	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
cis-1,3-Dichloropropene	ND	5.0									
Dibromochloromethane	ND	5.0									
Dibromomethane	ND	5.0									
Dichlorodifluoromethane	ND	5.0									
Ethylbenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Isopropylbenzene	ND	5.0									
m,p-Xylene	ND	10									
Methylene chloride	ND	5.0									
n-Butylbenzene	ND	5.0									
n-Propylbenzene	ND	5.0									
Naphthalene	ND	5.0									

Qualifiers:

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ANALYTICAL QC SUMMARY REPORT

CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

TestCode: 8260_S

Sample ID: T043007MB6	SampType: MBLK	TestCode: 8260_S	Units: ug/Kg	RunNo: 78619
Client ID: PBS	Batch ID: T07VS090	TestNo: EPA 8260B		SeqNo: 1187631
Analyte	Result	PQL	SPK value	SPK Ref Val
			%REC	LowLimit
				HighLimit
				RPD Ref Val
				%RPD
				RPDLimit
				Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	5.0									
sec-Butylbenzene	ND	5.0									
Styrene	ND	5.0									
tert-Butylbenzene	ND	5.0									
Tetrachloroethene	ND	5.0									
Toluene	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
Trichloroethene	ND	5.0									
Trichlorofluoromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Surr: 1,2-Dichloroethane-d4	49.930		50.00		99.9	41		149			
Surr: 4-Bromofluorobenzene	46.520		50.00		93.0	57		137			
Surr: Dibromofluoromethane	47.630		50.00		95.3	51		137			
Surr: Toluene-d8	49.660		50.00		99.3	68		127			

Qualifiers:

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Advanced Technology Laboratories

Date: 08-May-07

CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

BatchID: 35491

Sample ID:	MB-35491	SampType:	MBLK	TestCode:	8015_S_DM	Units:	mg/Kg	Prep Date:	4/27/2007	RunNo:	78560
Client ID:	PBS	Batch ID:	35491	TestNo:	EPA 8015B(M)	LUFT		Analysis Date:	4/27/2007	SeqNo:	1186459
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	ND	10									
ORO	ND	10									
Surr: p-Terphenyl	86.571		80.00		108	57	122				
Sample ID:	LCS-35491	SampType:	LCS	TestCode:	8015_S_DM	Units:	mg/Kg	Prep Date:	4/27/2007	RunNo:	78560
Client ID:	LCSS	Batch ID:	35491	TestNo:	EPA 8015B(M)	LUFT		Analysis Date:	4/27/2007	SeqNo:	1186460
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	882.167	10	1000	0	88.2	65	130				
Surr: p-Terphenyl	83.555		80.00		104	57	122				
Sample ID:	091701-003AMS	SampType:	MS	TestCode:	8015_S_DM	Units:	mg/Kg	Prep Date:	4/27/2007	RunNo:	78560
Client ID:	ZZZZZZ	Batch ID:	35491	TestNo:	EPA 8015B(M)	LUFT		Analysis Date:	4/27/2007	SeqNo:	1186461
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	875.182	10	1000	0	87.5	40	147				
Surr: p-Terphenyl	87.238		80.00		109	57	122				
Sample ID:	091701-003AMSD	SampType:	MSD	TestCode:	8015_S_DM	Units:	mg/Kg	Prep Date:	4/27/2007	RunNo:	78560
Client ID:	ZZZZZZ	Batch ID:	35491	TestNo:	EPA 8015B(M)	LUFT		Analysis Date:	4/27/2007	SeqNo:	1186462
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
DRO	871.644	10	1000	0	87.2	40	147	875.2	0.405	30	
Surr: p-Terphenyl	85.915		80.00		107	57	122		0	0	

Qualifiers:

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- S Spike/Surrogate outside of limits due to matrix interference



CLIENT: Ardent Environmental Group
Work Order: 091653
Project: Palm Avenue, 100025001

ANALYTICAL QC SUMMARY REPORT

BatchID: 35491

Sample ID: MB-35491 **SampType:** MBLK **TestCode:** HC_S_ATL **Units:** mg/Kg **Prep Date:** 4/27/2007 **RunNo:** 78560
Client ID: PBS **Batch ID:** 35491 **TestNo:** EPA 8015B(M LUFT **Analysis Date:** 4/27/2007 **SeqNo:** 1186525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C8-C10	ND	10									
T/R Hydrocarbons: C10-C18	ND	10									
T/R Hydrocarbons: C18-C28	ND	10									
T/R Hydrocarbons: C28-C36	ND	10									
T/R Hydrocarbons: C36-C40	ND	10									
T/R Hydrocarbons: C8-C40 Total	86.284		80.00		108			57		122	
Surr: p-Terphenyl											

Qualifiers:

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- E Value above quantitation range
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- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CHAIN OF CUSTODY RECORD



Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#: _____
Logged By: AP Date: 4/26/07

Method of Transport
Client ATL ATL
CA OverN FEDEX Other: _____

Sample Condition Upon Receipt
1. CHILLED Y N 4. SEALED Y N
2. HEADSPACE (VOA) Y N 5. # OF SPLS MATCH COC Y N
3. CONTAINER INTACT Y N 6. PRESERVED Y N

Client: Ardent Environmental Group, Inc.
Attn: Paul Roberts
Address: 1141 Pomonz Road, Suite E
City: Corona State: CA Zip Code: 92582
Project #: 100025001 Sampler: Paul Roberts
Relinquished by: (Signature and Printed Name) Paul Roberts Date: 4-25-07
Relinquished by: (Signature and Printed Name) Paul Roberts Date: 4-25-07
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Bill To: _____
Attn: _____
Co: _____
Address: _____
City: _____ State: _____ Zip: _____

Special Instructions/Comments:

Circle or Add Analysis(es) Requested
801A (Pesticides) _____
802 (PCB) _____
8208 (Nitrates) _____
8270C (Mn) _____
8010B (Total Metal) _____
8015B (GRO) / BTEX _____
8015B (ORO) _____
TPT (Glo-Gel 8015) _____
TITR 22 metals _____

LAB USE ONLY:
Batch #: _____
Lab No.: SD1-1
1 SD2-1

Sample Description
Sample I.D. / Location
Date
Time

LAB USE ONLY:	Sample I.D. / Location	Date	Time
	<u>SD1-1</u>	<u>4/24</u>	
	<u>SD2-1</u>	<u>4/24</u>	

801A (Pesticides) _____
802 (PCB) _____
8208 (Nitrates) _____
8270C (Mn) _____
8010B (Total Metal) _____
8015B (GRO) / BTEX _____
8015B (ORO) _____
TPT (Glo-Gel 8015) _____
TITR 22 metals _____

Specify Appropriate Matrix
SOIL _____
WATER _____
GROUND WATER _____
WASTEWATER _____
Container(s) _____
TAT # _____
Type _____

QA/QC
RTNE
CT
SWRCB
Logcode _____
OTHER _____
REMARKS _____

• TAT starts 8 a.m. following day if samples received after 3 p.m.
TAT: A=Overnight ≤ 24 hr B=Emergency Next workday
Container Types: T=Tube V=VOA L=Liter P=Pin J=Jar B=Tedlar G=Glass P=Plastic M=Metal
Preservatives: H=HCl N=HNO₃ S=H₂SO₄ C=4°C Z=Zn(AC)₂ O=NaOH T=Na₂S₂O₃

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

