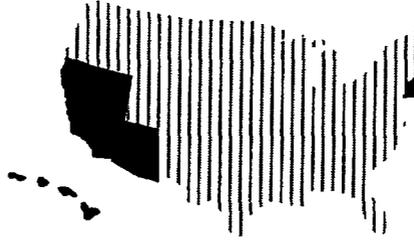


# IX Response Action Contract



**FIRST FIVE-YEAR REVIEW REPORT  
FOR  
INDUSTRIAL WASTE PROCESSING  
SUPERFUND SITE  
PINEDALE, FRESNO COUNTY, CALIFORNIA**

September 2004



**U.S. Environmental Protection Agency  
Contract No. 68-W-98-225**

**CH2M HILL, Inc.**  
and Team Subcontractors:  
**URS Group, Inc.**  
**E2 Consulting Engineers, Inc.**

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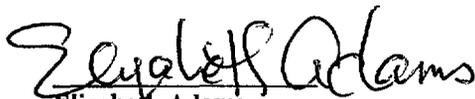
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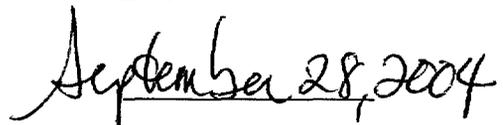
**Prepared for  
Contract No. 68-W-98-225/WA NO. 183-FREE-09G9  
United States Environmental Protection Agency  
Region 9  
75 Hawthorne Street  
San Francisco, California 94105**

**Approved by:**

**Date:**



**Elizabeth Adams  
Chief, Site Cleanup Branch  
EPA, Region 9**



# Contents

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Acronyms and Abbreviations	iii
Five-year Review Summary Form	iv
Executive Summary	ES-1
<b>1.0 Introduction</b>	<b>1-1</b>
<b>2.0 Site Chronology</b>	<b>2-1</b>
<b>3.0 Site Background</b>	<b>3-1</b>
3.1 Land and Resource Use	3-1
3.2 Physical Characteristics	3-1
3.2.1 Geology	3-2
3.2.2 Hydrogeology	3-2
3.3 History of Contamination	3-3
3.4 Initial Response	3-3
3.5 Basis for Taking Action	3-4
<b>4.0 Response Actions</b>	<b>4-1</b>
4.1 Non-time-critical Removal Action	4-1
4.1.1 Completion	4-3
4.2 Pinedale Industrial Area Groundwater Treatment Program	4-3
4.3 Focused Remedial Investigation Report	4-4
4.3.1 Soil gas	4-5
4.3.2 Groundwater	4-5
4.4 Summary of Operation and Maintenance	4-8
<b>5.0 Five-year Review Process</b>	<b>5-1</b>
5.1 Documents Review	5-1
5.2 Regulatory Review	5-1
5.2.1 Five-year Review of ARARs	5-1
5.2.2 Changes to Existing ARARs	5-2
5.3 Site Inspection	5-2
5.4 Interviews and Operation and Maintenance	5-3
<b>6.0 Technical Assessment</b>	<b>6-1</b>
6.1 Is the Remedy Functioning as Intended by Decision Documents?	6-1
6.2 Are the Exposure Assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of the Remedy Selection Still Valid?	6-1
6.3 Has Any Other Information Come to Light that Could Call into Question the Protectiveness of the Remedy?	6-2
<b>7.0 Conclusions and Recommendations</b>	<b>7-1</b>
7.1 Issues Identified and Recommended Follow-up Actions	7-1
<b>8.0 Protectiveness Statement</b>	<b>8-1</b>

**9.0 Next Review**

9-1

**Tables**

- 2-1 Chronology of Site Events
- 3-1 Surface and Subsurface Soil Sampling Results, June and July 1998
- 3-2 VOC Analytical Results - Upper Vadose Zone - August 16-25,1993
- 3-3 VOC Analytical Results - Lower Vadose Zone - December 1-7,1993
- 4-1 TCE Concentration in samples from Groundwater Monitoring Well DHS-IWP-A
- 4-2 Summary of Soil-Gas Sampling Analytical Results
- 4-3 Summary of Analytical Results for Grab Groundwater Samples - 1999
- 6-1 Soil PRGs Past and Present
- 7-1 Summary Table- Issues, Recommendations and Follow-Up Actions

**Figures**

- 1-1 Location Map
- 3-1 Site Location Map
- 3-2 Former and Current Site Use Map
- 3-3 Pinedale Industrial Area Location
- 3-4 Geologic Cross Section
- 3-5 Hardpan Layer Distribution Map
- 3-6 Approximate Locations of Soil Sampling 1988-1990
- 3-7 RI/FS (1995) Lead Concentration in surface soil (milligrams per kilograms)
- 3-8 Soil Chemistry Cross Section 1995 RI/FS
- 4-1 1999 FRI Soil Boring Location Map
- 4-2 1998 Removal Action Confirmation Sampling Locations
- A-1 Pinedale Groundwater TCE Plume Site Plan
- A-2 Pinedale Selected Off-site Groundwater Treatment System Layout
- A-3 Pinedale Selected On-site Groundwater Treatment System Layout
- A-4 Off-site Monitoring and Supply Well Locations
- A-5 On-site Intermediate Groundwater TCE and Cr Concentrations, September 2003
- A-6 Off-site Groundwater Deep Well Elevations and Contour Map, September 2003
- A-7 On-site Intermediate Groundwater Contour Map, September 2003

**Appendices**

- A Pinedale Groundwater TCE Plume Map, Groundwater Treatment Facility, Location Map of Monitoring and Supply Wells, Pinedale Groundwater TCE and Cr Concentrations Map, Groundwater Deep Well Elevations and Contour Map, and Groundwater Contour Map
- B Documents Reviewed Extraction and Remedial Investigation
- C Five-year Review Site Inspection Checklist and Memo
- D Site Inspection Photographs
- E Certification of Completion Documents
- F City of Fresno Storm Water Discharge Permit for Pacific Tent & Awning

# Acronyms and Abbreviations

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ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
cm/sec	centimeters per second
DCE	dichloroethylene
DHS	California Department of Health Services
DOH	California Department of Health (currently DHS)
DTSC	Department of Toxic Substances Control
ESL	environmental screening level
ESC	Environmental Strategies Corporation
FDPU	Fresno Department of Public Utility
FRI	focused remedial investigation
GAC	granular-activated carbon
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
O&M	Operations and Maintenance
IWP	Industrial Waste Processing
NPL	National Priority List
PCE	tetrachloroethylene
PIA	Pinedale Industrial Area
PRG	preliminary remediation goal
PRP	potentially responsible party
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RI/FS	remedial investigation/feasibility study
RWQCB	Regional Water Quality Control Board
RWQCBCVR	California Regional Water Quality Control Board Central Valley Region
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act Site Industrial Waste Processing Superfund Site
SJVOAPCD	San Joaquin Valley Unified Air Pollution Control District
SOU	Soils Operable Unit
TBC	to be considered
TCA	trichloroethane
TCE	trichloroethylene
TAT	technical assistance team
TTLC	total threshold limit concentration
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

## Five-Year Review Summary Form

SITE IDENTIFICATION		
<b>Site name:</b> Industrial Waste Processing (IWP) Superfund Site		
<b>USEPA ID:</b> CAD980736284 <b>CERCLIS ID:</b> 09G9		
<b>Region:</b> 9	<b>State:</b> CA	<b>City/County:</b> Pinedale/Fresno
SITE STATUS		
<b>NPL status:</b> Final		
<b>Remediation status:</b> Complete		
<b>Multiple OUs?</b> No	<b>Construction completion date:</b> August 1998	
Has site been put into reuse? Yes		
REVIEW STATUS		
<b>Lead agency:</b> USEPA		
<b>Author's name:</b> Travis Cain		
<b>Author's title:</b> Remedial Project Manager	<b>Author's affiliation:</b> USEPA Region 9	
<b>Review period:</b> May-August 2004		
<b>Date(s) of site inspection:</b> may 10, 2004		
<b>Type of review:</b> Policy; Regional Discretion. The response action for this site was performed under removal authority which is not typically subject to the Five-year Review requirement. EPA Region 9, however, has chosen to conduct this Five-year Review because the removal action resulted in leaving hazardous substances, pollutants, or contaminants onsite above levels that allow for unlimited use and unrestricted exposure.		
<b>Review number:</b> 1 (first)		
<b>Triggering action:</b> Preliminary Closeout		
<b>Triggering action date:</b> September 28, 1998		
<b>Due date:</b> September 28, 2004		

### Issues and Recommendations:

**Issue:** The Removal Action Report (ESC 1998) specified a requirement to conduct semiannual monitoring of the Site fence and vegetative cover as part of the Operations and Maintenance (O&M) of the Site. There was no documentation or any other available evidence to indicate that these requirements have been met.

**Recommendation:** This O&M requirement may no longer be warranted because of the Site redevelopment and based upon observations made during the May 10,2004 Site inspection. The property continues to be used for commercial/light industrial purposes and the new property owner maintains a warehouse/office facility which was constructed in 2001. The Site is covered with the building slab, asphalt and/or landscaping and is almost completely surrounded with a fence (the front of the building does not have fencing so as to allow for access from the street). The property appears to be very well maintained.

**Issue:** There is draft guidance now available for evaluation of potential indoor air issues as a result of vapor intrusion from soils and groundwater (Subsurface Vapor Intrusion Guidance, EPA, November 2002) that was not available at the time the risk assessment was prepared for this Site.

Indoor air vapor intrusion was recognized as a potential exposure pathway in the 1995 Human Health Risk Assessment. Therefore an evaluation of "infiltration of VOCs into indoor air" was conducted on the assumption that future residential development of the Site might occur.

The future concentrations of VOCs within a residence located on the IWP Site were estimated using a conservative attenuation factor approach whereby an attenuation coefficient was multiplied by estimated soil gas concentrations. The calculated estimate of soil gas concentrations in mg/kg were based on the measured site-specific total soil concentrations taken from the 1994 Draft RI/FS.

At the time of this risk assessment, the models used to estimate indoor air concentrations at IWP were not validated by EPA. As a result, the future indoor air pathways of exposure were not included in the overall site risk estimates, but were represented in the "Uncertainties" section of the Risk Assessment Report.

In light of the availability of the new guidance, some of the assumptions made in the original risk assessment may no longer be current.

**Recommendation:** Because of the present availability of guidance relating to vapor intrusion to indoor air, it is recommended that the current EPA-approved screening model from this 2002 guidance document be applied. Using available site-specific data, both the industrial and residential scenarios should be evaluated. If the results yield a toxicity level for TCE indicating either an immediate/short term or chronic/long-term unacceptable exposure risk, then corrective measures will be required.

**Protectiveness Statement:** The remedy at the Soils Operable Unit of the Industrial Waste Processing Superfund Site is expected to be protective, however, the potential for vapor intrusion to indoor air risk should be re-evaluated using the currently available draft guidance (Subsurface Vapor Intrusion Guidance, EPA, November 2002). If the results of the evaluation yield an unacceptable risk, then corrective actions will be required. It is expected that these actions will take approximately one year to complete, at which time a protectiveness determination will be made.

# Executive Summary

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The United States Environmental Protection Agency (USEPA) completed the first five-year review of the response action at the Industrial Waste Processing (IWP or the Site) Superfund Site, in Pinedale, Fresno County, California. This five-year review was performed as a matter of policy because the removal action resulted in leaving hazardous substances, pollutants, or contaminants onsite above levels that allow for unlimited use and unrestricted exposure. The purpose of this five-year review is to ensure that the response action remains protective of human health and the environment.

The Site is approximately 0.5 acre, located at 7140 North Harrison Street in Pinedale, a town north of Fresno, California. From approximately 1967 to 1981, IWP was a chemical reclamation facility for glycols and solder wastes. From 1977 to 1983, IWP operated as a distributor of various chemical solvents for Ashland Oil. After 1983, the Site was used for storage of chemicals and equipment. Chemicals stored at the Site included alcohols, acetone, toluene, benzene, TCE, and tetrachloroethylene (PCE). Spills, leaking drums, and improper storage of hazardous wastes are believed to be the main cause of contamination at the Site.

In 1988, the DTSC and the USEPA conducted an inspection that included soil sampling. They discovered that some of the surface and subsurface soil samples contained lead and/or TCE. In August 1988, a time-critical removal action was performed at the Site whereby, drums, tanks, sumps, containers, and the top 3 inches of contaminated soil were removed.

A total of 19,000 gallons of hazardous liquids and 290 cubic yards of contaminated soil were taken off the Site. Nine waste streams were sent for treatment or disposal, including acidic solids and sludges, base solids and sludges, halogenated liquids, solidified solvent sludges, asbestos, drums and piles of lead solder and surface soil, sterno waste, and tank oil. Following removal and sampling, a sealant was placed on the soil over the entire site to prevent horizontal and vertical contaminant migration. Sampling results from surface soil and samples collected during the removal action confirmed that lead and zinc were present in on-site soil at levels exceeding their respective total-threshold limit concentration standards. The removal eliminated the immediate threat from the waste but did not address the residual contamination in the soil.

Because of the residual contamination, the Site was proposed for the National Priorities List (NPL) on October 26, 1989 and finalized on the NPL in August 30, 1990. At that time, USEPA assumed lead responsibility for oversight of Site investigation and cleanup activities.

An investigation of a VOC-contaminated groundwater plume at the nearby Pinedale Industrial Area (PIA) was also being conducted concurrently. Since 1988, the characterization and remediation of the PIA site has been overseen by the California Department of Toxic Substance Control (DTSC). In 1990, Metcalf and Eddy, on behalf of DTSC, installed a monitoring well on the IWP Site as part of the PIA groundwater investigation. VOCs were detected in the groundwater at concentrations above both federal and state MCLs of 5 micrograms per liter ( $\mu\text{g/L}$ ).

From May 1993 until June 1995 the 12 potentially-responsible parties conducted a remedial investigation/feasibility study (RI/FS) that included a human health risk assessment for the contaminated soil.

Results of the RI/FS showed that on-site surface and subsurface soils contained metals and VOCs at concentrations greater than respective PRGs; some of which are probable human carcinogens. Off-site lead impacted soil immediately adjacent to the site was also identified. The human health risk assessment concluded that:

- the carcinogenic risk estimates were within acceptable risk ranges;
- the ingestion of zinc and inhalation of TCE in ambient outdoor air contributed to the most overall hazard indices;
- modeling suggested that adverse health effects to children attributable to surface soil lead concentrations are possible.

In September 1995, USEPA signed an action memorandum for a non-time critical removal action at IWP for the soil operable unit. The Action Memorandum proposed excavation and disposal of surface soils contaminated with lead above 400 milligrams per kilogram (mg/kg) and TCE above 7 mg/kg and no action (natural degradation) of VOCs in deeper soils. The 1995 RI/FS, which included a human health risk assessment for the soil, fulfilled the requirement for an engineering evaluation and cost analyses that generally precedes a non-time-critical removal action.

The non-time-critical removal action work plan was approved by USEPA January 7, 1998. The work plan called for excavation and off site disposal of TCE- and lead-impacted soil at concentrations greater than their respective RAOs, confirmation sampling, and backfilling with clean fill. The non-time removal action was completed on August 7, 1998, the USEPA and DTSC conducted a pre-final inspection of the Site. USEPA and DTSC concurrently determined that all the construction activities had been completed to USEPA and DTSC's satisfaction; therefore, a final inspection was not necessary. USEPA provided a certificate of completion for the excavation work on January 27, 1999, which documents USEPA's concurrence that all portions of the remedial action for soil were completed in accordance with the Action Memorandum and Consent Decree.

A focused remediation investigation (FRI) report was performed in 1999 to assess if IWP was a significant contributor to the regional TCE PIA groundwater plume. The FRI consisted of drilling four boreholes where elevated levels of VOCs were previously detected in subsurface soils. Soil, soil gas, and groundwater samples were collected and analyzed for VOCs. The 1999 FRI concluded that IWP was not a significant contributor to the regional PIA VOC plume because of decreasing soil gas and groundwater concentrations with depth and VOC concentrations in groundwater orders of magnitude less than source areas within the PIA plume.

In 2001, the Site was sold and redeveloped by Pacific Tent & Awning, a manufacturer and distributor of fabric awnings and accessories. The property remains zoned as commercial/light industrial. The Site currently houses an 8,192-square-foot warehouse/office facility that covers approximately 80 percent of the Site area. The remainder of the Site has been covered by asphalt, concrete, and landscaping (landscape covering is in compliance with city ordinances).

Indoor air vapor intrusion was recognized as a potential exposure pathway in the 1995 Human Health Risk Assessment. Therefore an evaluation of "infiltration of VOCs into indoor air" was conducted on the assumption that future residential development of the Site might occur. The future concentrations

of VOCs within a residence located on the IWP Site were estimated using a conservative attenuation factor approach whereby an attenuation coefficient was multiplied by estimated soil gas concentrations. The calculated estimate of soil gas concentrations in mg/kg were based on the measured site-specific total soil concentrations taken from the 1994 Draft RI/FS. At the time of this risk assessment, the models used to estimate indoor air concentrations at IWP were not validated by EPA. As a result, the future indoor air pathways of exposure were not included in the overall site risk estimates, but were represented in the "Uncertainties" section of the Risk Assessment Report.

Because of the present availability of guidance relating to vapor intrusion to indoor air, it is recommended that the current EPA-approved screening model from this 2002 guidance document be applied. Using available site-specific data, both the industrial and residential scenarios should be evaluated.

The remedy at the Soils Operable Unit of the Industrial Waste Processing Superfund Site is expected to be protective, however, the potential for vapor intrusion to indoor air risk should be re-evaluated using the currently available draft guidance (Subsurface Vapor Intrusion Guidance, EPA, November 2002). If the results of the evaluation yield an unacceptable risk, then corrective actions will be required. It is expected that these actions will take approximately one year to complete, at which time a protectiveness determination will be made.

# 1.0 Introduction

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The United States Environmental Protection Agency (USEPA) conducted a five-year review of the response actions implemented at the Industrial Waste Processing (IWP or the Site) Superfund Site, in Pinedale, Fresno County, California (Figure 1-1). This review was conducted from May to August 2004.

The five-year review process evaluates whether the response action at the Site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify any deficiencies found during the review and provide recommendations for addressing these deficiencies.

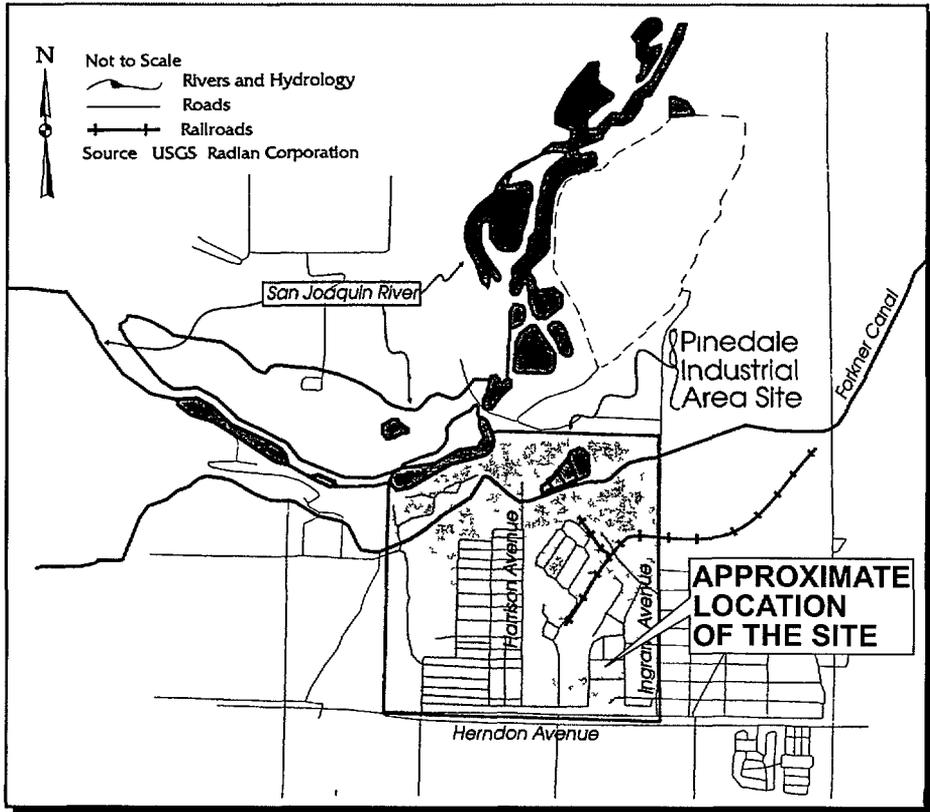
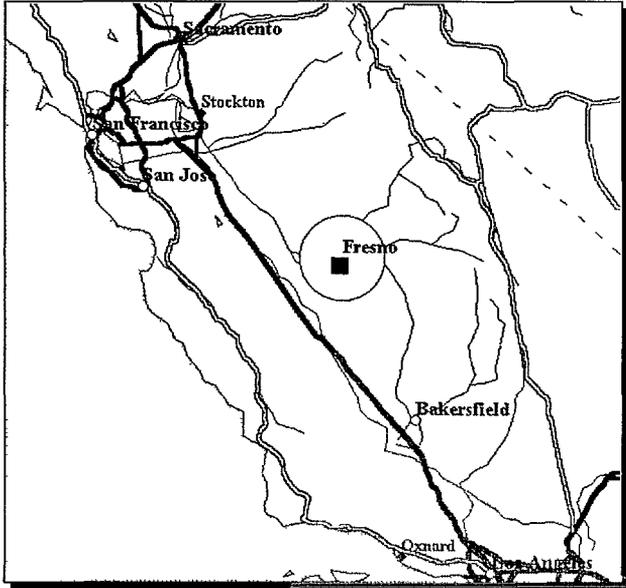
This review is required by federal statute. USEPA must implement five-year reviews consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). CERCLA Section 121(c), as amended, states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the Site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.

Consequently, this five-year review was performed because hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unrestricted use and unlimited exposure. This is the first five-year review for IWP and was performed as a matter of policy.

This report is organized into sections that describe the history and setting of the Site, response action decisions and implementation, and an evaluation of remedial actions. These sections are:

- Section 2.0 - Chronology of Site events.
- Section 3.0 - Land use, Site setting, the history of contamination, and initial response.
- Section 4.0 - The response actions implemented at IWP and the current status of the removal action.
- Section 5.0 - Activities performed during the five-year review process.
- Section 6.0 - Technical assessment of the remedial actions implemented at the Site.
- Section 7.0 - Issues at the Site identified and recommendations provided.
- Section 8.0 - Protectiveness statement for IWP.



Source Army Corps of Engineers, Omaha District July 1993

**FIGURE 1-1**  
**LOCATION MAP**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO CALIFORNIA

**CH2MHILL**

## 2.0 Site Chronology

Table 2-1 provides a chronology of events at the Site.

TABLE 2-1  
Chronology of Site Events  
*Industrial Waste Processing Superfund Site  
Pinedale, Fresno County, California*

Event	Date
IWP operated as a chemical reclamation facility for glycols and solder wastes and as a distributor of various chemical solvents for Ashland Oil.	1967-1983
IWP operated as a chemical storage area.	1983
California Department of Health (Now DTSC) and Fresno County Department of Health performed a joint inspection of the facility.	July 1986
DTSC conducted a Site investigation; lead and zinc found to be present in on-site soils at levels exceeding their respective total threshold limit concentration (TTLC) standards. DTSC's Site mitigation unit submitted an incident report to USEPA.	May 1988
USEPA conducted a preliminary assessment of the Site to compile an inventory and map materials at the Site; concluded that the Site required an immediate response action.	June 7, 1988
USEPA determined that the second phase of the Site assessment would be conducted concurrently with a USEPA-directed removal action.	June 1988
USEPA technical assistance team (TAT) performed a time-critical removal action at the Site, removing the drums, tanks, and piles of waste left on the Site when IWP ceased operations.	June 21, 1988
Subsurface sampling of soils conducted by USEPA TAT to determine the extent of vertical and lateral migration of contaminants from the surface. Eighteen soil borings were advanced on site, and two borings were advanced off site.	July 1988
As part of DTSC's groundwater investigation, Weston on behalf of DTSC, conducted a soil gas sampling survey of IWP and neighboring Vendo and Calcot sites.	March 1989
IWP is proposed to be listed on the National Priorities List (NPL).	October 26, 1989
DTSC completed a sampling plan calling for on-site soil investigation and installation of three monitoring wells upgradient and three downgradient of the Site.	May 1990
Metcalf and Eddy installed one monitoring well for the California Department of Health Services (DHS) at the IWP Site as part of the Pinedale groundwater investigation.	August 1990
IWP added to the NPL.	August 30, 1990
DTSC prepared a preliminary health assessment and concluded the IWP Site is characterized as a Category C or Indeterminate Public Health Hazard.	August 1991
USEPA began an investigation of residual soil contamination at the Site.	1992
Twelve potentially-responsible parties (PRPs) enter into a consent order with USEPA.	May 12, 1993
USEPA issued an Administrative Order on Consent for the Soils Operable Unit (SOU), requiring a remedial investigation/feasibility study (RI/FS).	May 1993
ESC conducted Phase I geotechnical investigation to determine the general characteristics of the soils from the surface to 10 feet below ground surface (bgs).	August 1993
ESC conducted Phase II geotechnical investigation to determine the physiochemical properties of the soils from the surface to 10 feet bgs to approximate 119 feet bgs, where groundwater was encountered.	December 1-7, 1993
USEPA requested that two additional samples be collected and analyzed for lead from the area immediately adjacent to the previously-collected samples.	August 8, 1994
Supplemental Phase II activities were conducted and additional two soils samples were collected from the surface of the Site and analyzed for total organic carbon.	August 11, 1994

TABLE 2-1  
 Chronology of Site Events  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

<b>Event</b>	<b>Date</b>
A final RI/FS for the SOU, which included a human health risk assessment, was submitted to USEPA by Bechtel Environmental Inc. and its subcontractor ICF Kaiser Engineers.	May 1995
USEPA distributed a fact sheet describing the proposed non-time critical removal action.	July 1995
USEPA held a public meeting.	August 1995
USEPA signed an Action Memorandum for a non-time-critical removal action based on the RI/FS to remove and dispose of lead and trichloroethene (TCE)-contaminated soil at concentrations greater than 400 milligrams per kilogram (mg/kg) and 7 mg/kg, respectively.	September 28, 1995
PRPs signed a Consent Decree and agree to perform a removal of the surface soil as described in the Action Memorandum.	April 1996
USEPA approved PRPs Removal Action Work plan, Removal Action Field Sampling Plan, Removal Action Quality Assurance Project Plan, and the Site-specific Health and Safety Plan.	January 7, 1998
On-site construction began, to remove and dispose of lead and trichloroethene (TCE)-Contaminated soil at concentrations greater than 400 milligrams per kilogram (mg/kg) and 7 mg/kg, respectively.	January 21, 1998
USEPA performed Pre-final/final inspection.	August 7, 1998
Field activities for Site removal action completed.	August 30, 1998
PRPs submitted a Remedial Action Report to USEPA.	November 11, 1998
USEPA approved the Remedial Action Report.	January 17, 1999
USEPA began a groundwater investigation for IWP.	January 25, 1999
Bechtel Environmental Inc. submitted the Final Focused Remedial Investigation (FRI) Report for the groundwater investigation to USEPA.	May 1999
FRI performed to assess whether or not the IWP was as significant contributor to the Pinedale Industrial Area volatile organic compound (VOC) plume.	September 28, 1999
Site sold and redeveloped.	2001
Five-year review Site inspection conducted.	May 10, 2004
First five-year review completed.	September 2004

## 3.0 Site Background

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The Site is approximately 0.5 acre, located at 7140 North Harrison Street in Pinedale, a town north of Fresno, California (Figure 3-1). As of 1995, approximately 86,655 people resided within a 4-mile radius of the Site.

### 3.1 Land and Resource Use

IWP, formally known as "Chem-Serve," occupied an approximately 0.5-acre site on North Harrison Street in the community of Pinedale. From approximately 1967 to 1981, IWP was a chemical reclamation facility for glycols and solder wastes. From 1977 to 1983, IWP operated as a distributor of various chemical solvents for Ashland Oil. After 1983, the Site was used for storage of chemicals and equipment.

In 2001, the Site was sold to Pacific Tent & Awning, a manufacturer and distributor of fabric awnings and accessories. Pacific Tent & Awning developed the Site in 2001. The Site currently houses an 8,192-square-foot warehouse/office facility that covers approximately 80 percent of the Site area. The remainder of the Site has been covered by asphalt, concrete, and landscaping (landscape covering is in compliance with city ordinances) (Figure 3-2).

The Site is located in a highly-developed area with a mix of commercial, industrial, and residential use. The Site itself is zoned commercial/light industrial which it has been historically. Single-family residences are located approximately 200 feet west of the Site. The Site is bound on the north, east, and south by newly-developed office facilities on the former Calcot Ltd. property. The Vendo Company is located approximately 1,000 feet east of the Site, adjacent to the former Calcot Ltd. Property (Figure 3-3).

Adjacent to the site, Calcot Ltd. and Vendo Company form the Pinedale Industrial Area (PIA), located above a regional groundwater VOC plume (Appendix A, Figure A-1). The PIA groundwater treatment program has been under the regulatory authority of the Department of Toxic Substances Control (DTSC) since 1988. IWP is not a potentially responsible party (PRP) for the PIA groundwater treatment program. The PIA treatment system consists of off-site (downgradient from IWP) and on-site (crossgradient from IWP) groundwater pump-and-treat systems using granular-activated carbon (GAC) and air strippers (Figures A-2 and A-3). Following treatment to concentrations below the maximum contaminant levels (MCLs), groundwater is injected back into the aquifer, which is the designated Fresno public water supply.

Several recharge basins located within 1 mile of the Site are used intermittently to promote recharge to the groundwater aquifer. The groundwater aquifer underlying the Site is a sole-source aquifer used for public drinking water purposes by the City of Fresno. In 1995, the conservative target population for drinking water was estimated at 358,000 people. Within 2,000 feet of the Site there are three inactive municipal water supply wells (PCWD-1, PCWD-2, and PCWD-3) and one private water well, PGW-11 (Figure A-4).

### 3.2 Physical Characteristics

The San Joaquin River is located approximately 0.5 mile northwest of the Site. The Forkner Canal is approximately 2,000 feet to the north of the Site, and the Bullard Canal is located approximately 2,000 feet to the south.

In 1995, there were no known state- or federally-designated environmentally-sensitive areas or species within a 4-mile radius of the Site. Based upon limited landscaping both at the Site and the surrounding properties, it is unlikely that any significant ecological receptors would be supported.

### 3.2.1 Geology

The Site is located in the San Joaquin River alluvial plain in Central Valley Physiographic province of California. The province is a structural trough extending approximately 450 miles through central California from Redding, north to the Tehachapi Mountains, south. The valley averages 50 miles in width and is bordered by the coastal ranges to the west and the Sierra Nevada range to the east.

Central Valley lithology is characterized by thick sequences of consolidated sedimentary and marine units and alluvial sediments, eroded from the surrounding mountains and deposited in a westward dipping monocline over crystalline basement rocks. The combined depth of consolidated and unconsolidated sedimentary units in the Central Valley ranges from approximately 3,000 feet beneath the IWP Site to over 15,000 feet west of Fresno. No active faults are known to exist in the Fresno area (Bechtel 1999).

Older alluvium deposits overlie the continental deposits as a series of combined alluvial fans between the San Joaquin and King River drainage systems, creating a complex sequence of channel and overbank deposits. Beneath the Site, these sediments are believed to be over 1,000 feet thick. A 50-foot-thick younger alluvial deposit, deposited by the San Joaquin River, overlies the older alluvial deposit. Both alluvial deposits are composed of silt and fine sand overbank deposits, with discontinuous channel deposits of coarser sand and gravel with cobbles. Layers of hardpan have been detected in the uppermost portion of the younger alluvium beneath the Site.

Borehole logging during the 1995 and 1999 remedial investigations identified relatively consistent sequences of soils beneath the IWP Site. The studies indicate that the upper 10 to 30 feet of sediments beneath the Site are primarily silts and clays with one or more hardpan layers in the upper 20 feet (Figure 3-4). The hardpan layer ranges in permeability from  $2 \times 10^{-4}$  to  $3 \times 10^{-6}$  centimeters per second (cm/sec) and is continuous, with the exception of a small area in the north-central portion of the Site (Figure 3-5; ESC 1995). According to the 1995 remedial investigation, the hardpan layers beneath the Site inhibit the downward and lateral movement of infiltrating water and the upward movement of vapors in the vadose zone.

### 3.2.2 Hydrogeology

Regionally, alluvial sediments are present from the water table (120 feet below ground surface [bgs]) to at least 300 feet bgs, comprising a single aquifer (Dames & Moore 1998). Numerous wells have been installed in this aquifer on adjacent Calcot and Vendo Properties to monitor the PIA plume. Wells have been installed near the water table, called the A-zone and at deeper depths up to 300 feet bgs, known as the B-zone.

Regionally, groundwater recharge at the Site occurs through percolation of surface water in the San Joaquin River channel, in nearby recharge basins, and through leakage of canals. Percolation of rainfall or irrigation water is impeded by the regional indurated hardpan layers. At IWP, a sealant on the soil surface was installed from 1988 to 1998 that inhibited percolation of rainfall (Bechtel 1995).

A regional groundwater divide is located south of the San Joaquin River and is the result of extensive groundwater recharge occurring through the river channel. South of the Site in southwest Fresno, and north of the Site in Madera County, there are large regional cones of depression due to the municipal and agricultural groundwater pumping.

Locally, the dominant groundwater flow direction is to the southwest under unconfined conditions at a gradient of 0.0009 foot per foot (Hargis 1992; Bechtel 1999). Shallow groundwater was encountered beneath the Site at approximately depths of 119 feet bgs and 128 feet bgs during the 1995 and 1999 remedial investigations, respectively.

### 3.3 History of Contamination

The Site, formerly known as "Chem-Serve," was a recycling facility that reclaimed various industrial waste materials. From approximately 1967 to 1981, IWP reclamation activities included solvents from printing operations, glycols from fluids used in natural gas dehydration, and lead solder and zinc from waste solder flux generated by the metal can manufacturing industry. From 1977 to 1983, IWP operated as a distributor of various chemical solvents for Ashland Oil Company. After 1983, the Site was used for storage of chemicals and equipment. Chemicals stored at the Site included alcohols, acetone, toluene, benzene, TCE, and tetrachloroethylene (PCE). Spills, leaking drums, and improper storage of hazardous wastes are believed to be the main cause of contamination at the Site.

In July 1986, Fresno County Department of Health and the California Department of Health Services (now the DTSC) conducted a Site inspection in response to a citizen complaint. During the inspection, DTSC noted the presence of various tanks, waste piles, and process equipment containing crude oil, ethylene glycol, and zinc chloride. DTSC also identified various containers of flammable liquids such as xylene, isopropanol, and naphtha. In response to these observations, DTSC representatives collected three solder samples and analyzed the samples for zinc and lead. Zinc and lead were detected at concentrations above the California total threshold limit concentration (TTLC) standards established to determine hazardous levels.

In response to additional citizen complaints, on May 13, 1988, DTSC returned to the Site to conduct a more extensive Site investigation. Areas of concern identified during the investigation included open containers of asbestos, approximately 300 drums containing solvents (some leaking), two waste piles of lead, and contaminated soil beneath surface waste. Following the investigation, DTSC issued an incident report and contacted the USEPA Emergency Response Division. The USEPA Emergency Response Division and DTSC then conducted a joint inspection on June 7, 1988.

### 3.4 Initial Response

On June 7, 1988, USEPA conducted a preliminary assessment of the Site. During the preliminary assessment, the USEPA contractor compiled an inventory of materials, mapped the Site, and collected surface and subsurface soil samples (Figures 3-2 and 3-6). USEPA found that some of the surface and subsurface soil samples collected at the time contained lead and/or TCE.

Based upon the results found by USEPA during the preliminary assessment, it was determined that a time-critical removal action was necessary. In August 1988, drums, tanks, sumps, containers, and the

top 3 inches of contaminated soil were removed. A total of 19,000 gallons of hazardous liquids and 290 cubic yards of contaminated soil were also removed from the Site. Nine waste streams were sent off site for treatment or disposal, including acidic solids and sludge, base solids and sludge, halogenated liquids, solidified solvent sludge (>1,000 mg/kg halogenation), solidified solvent sludge (<1,000 mg/kg halogenation), asbestos, drums and piles of lead solder and surface soil, sterno waste, and tank oil. Following removal and sampling, a sealant was placed on the soil over the entire Site to prevent contaminant migration. Sampling results from surface soil and samples collected during the removal action confirmed that lead and zinc were present in on-site soil at levels exceeding their respective TTLC standards (Table 3-1). Waste oils and water containing various halogenated compounds were also detected in samples collected from drums and tanks. The removal eliminated the immediate threat from the waste but did not address the residual contamination in the soil.

The Site was proposed for the National Priorities List (NPL) on October 26, 1989 and finalized on the NPL in August 30, 1990. At that time, USEPA assumed lead responsibility for oversight of Site investigation and cleanup activities.

In 1992, USEPA began an investigation of residual soil contamination at the Site. During May 1993, USEPA issued an Administrative Order on Consent for the Soils Operable Unit (SOU), requiring a Remedial Investigation/Feasibility Study (RI/FS). From May 1993 until June 1995, the 12 PRPs conducted an RI/FS that included a human health risk assessment for the contaminated soil. In September 1995 USEPA signed an Action Memorandum for a non-time-critical removal action at the IWP Site for the SOU. The Action Memorandum proposed excavation and disposal of surface soil contaminated with lead and volatile organic compounds (VOCs) and no action (natural degradation) of VOCs in deeper soils (ESC, 1995).

### **3.5 Basis for Taking Action**

The basis for taking action at the IWP Site was to address the residual soil contamination of hazardous substances that potentially posed a threat to human health and the environment via inhalation, ingestion, and direct contact. Results of the 1995 RI/FS showed that surface and subsurface soils contained metals and VOCs; some of which are probable human carcinogens.

During Phase I of the 1995 RI/FS, drainageways and downwind off-site locations immediately south of the site were sampled for total lead and/or metals. Some soil samples exceeded the PRG; therefore, during the Phase II additional investigation, off-site samples were collected 10 feet outside the fence line on each side of the site. Eighteen off-site surface sample locations exceeded the PRG for lead.

The RI/FS showed that the detected average lead concentration was 2,140 mg/kg in surface soil. This exceeded the 400 mg/kg 1995 preliminary remediation goal (PRG) level established for lead by the USEPA (Figure 3-7). Other on-site sampling results from the upper vadose zone (soil from the surface to 10 feet bgs) showed presence of VOCs exceeding their respective PRG levels. The results with corresponding maximum detected values in parentheses were: TCE (1,200 mg/kg), PCE (120 mg/kg), methylene chloride (1,000 mg/kg), and 1,1,2,2-tetrachloroethane (0.97 mg/kg) (Table 3-2 and Figure 3-8). The highest concentration of TCE detected in the lower vadose zone (soil from 10 feet to 119 feet bgs) was 0.11 mg/kg (Table 3-3).

Zinc was detected at concentrations greater than its PRG at locations where elevated lead

concentrations were also present. Lead was therefore used as the primary indicator to evaluate the extent of contamination.

A human health risk assessment was conducted as a part of the 1995 RI/FS. Cancer risk and hazard indices were calculated using the validated data for chemicals detected at the IWP Site provided in the Draft 1994 RI/FS. An evaluation of the potential adverse human health effects due to lead concentrations found at the Site included both the Integrated Exposure Uptake Biokinetic (IEUBK) and Cal/EPA.

Based upon the risk assessment findings, the risks associated with ingestion of arsenic in soil contributed the greatest to average exposures, however, because the on-site concentrations were within regional background concentrations, arsenic was not an issue. Potential for ingestion of zinc was found to contribute the most to the overall hazard index calculation. In addition, overall risk estimates associated with inhalation of TCE in ambient air contributed the greatest reasonable maximum exposures. Therefore, the findings of the risk assessment were that the chemicals and pathways contributing the most to overall hazard index were the ingestion of zinc in soil and the inhalation of TCE in ambient outdoor air (ESC 1995). Despite these risk elements, the risk assessment concluded that the overall carcinogenic risk was within an acceptable risk range (cancer risk ranging from  $4 \times 10^{-5}$  to  $1 \times 10^{-7}$ ).

As part of the risk assessment, potential exposure to VOCs in indoor air were evaluated semi-quantitatively using measured site-specific total soil concentrations taken from the 1994 Draft RI/FS to calculate an estimated soil gas concentrations. The future concentrations of VOCs within a residence located on the IWP Site were estimated using a conservative attenuation factor approach whereby an attenuation coefficient was multiplied by the estimated soil gas concentrations. The model assumed that future property development would include a residence with a basement. This scenario was not included in the overall risk assessment because the models used were not considered valid by USEPA at the time. The conclusion at that time was that the model used may have underestimated inhalation risks because VOCs were assumed to be in equilibrium with that sorbed onto the soil, and based on soil concentration measurements.

The potential contributors of vinyl chloride and chromium were not included in the risk assessment. Vinyl chloride, a biodegradation product of TCE, was not detected in samples from 1-10 feet bgs. Chromium was not included in cancer risk estimates because toxicity criteria were not available. Reasonable maximum exposure risks for chromium in soil from 0 to 5.5 feet bgs reveal that exclusion of potential risks may underestimate risks by a factor of 2 (ESC 1995).

The IEUBK Modeling for lead suggested that adverse health effects to hypothetical residential children attributable to 0 to 0.5 feet bgs detected lead concentrations are possible. Exposure to lead below 1 foot bgs, however, was not expected to result in adverse health effects. The major adverse effects in humans caused by lead include alterations in hematopoietic and nervous systems (ESC, 1995).

Even though the risks were found to be within the risk range, the main basis for action was a result of risk assessment findings showing potential increased carcinogenic risk of child residents to VOCs (by inhalation) or lead (by ingestion).

The estimated volume of on-site lead and/or TCE impacted surface soil was 741 cubic yards with an average depth of one foot. Lead impacted off-site surface soil was estimated as 47 square yards limited to the top three inches of soil.

**TABLE 3-1**  
**Surface and Subsurface Soil Sampling Results, June and July 1988**  
**Industrial Waste Processing Superfund Site**  
**Pinedale, Fresno County, California**

Sample and Analytes	Surface (ppm)	12 Inch (ppm)	24 Inch (ppm)	78 Inch (ppm)
<b>SG-01/B01</b>				
1-1-Dichloroethylene	ND	0.14	ND	ND
Tetrachloroethylene	ND	0.13	ND	ND
1,1,2,2-Tetrachloroethane	ND	0.79	ND	ND
Trichloroethene	ND	0.37	ND	ND
Methylene chloride	0.7	ND	ND	ND
Lead	0.3	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU (b)	NA	BG <sup>c</sup>	BG	40
<b>SG-02/B02</b>				
trans-1,2-Dichloroethene	ND	0.05	ND	ND
trans-1,3-Dichloroethene	ND	0.06	ND	ND
Trichloroethene	0.05	0.29	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	0.15	ND
Lead	1.38	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU	NA	BG	BG	BG
<b>SG-03/B03</b>				
Solvents	ND	ND	NA	NA
Lead	32.8	225	NA	NA
Zinc	NA	1700	NA	NA
HNU	NA	BG	BG	BG
<b>SG-04/B04</b>				
1-1-Dichloroethylene	ND	0.05	ND	NA
Tetrachloroethylene	0.13	0.22	ND	NA
Trichloroethene	0.28	0.25	ND	NA
Methylene chloride	0.7	ND	ND	NA
Lead	1.36	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU (b)	NA	BG	BG	BG
<b>SG-05/B05</b>				
1-1-Dichloroethylene	ND	0.07	ND	NA
Tetrachloroethylene	ND	0.34	ND	NA
1,1,1-Trichloroethane	ND	0.06	ND	NA
Trichloroethene	ND	0.2	ND	NA
Chloroform	0.12	ND	ND	NA
Lead	26.1	711	NA	NA

**TABLE 3-1**  
**Surface and Subsurface Soil Sampling Results, June and July 1988**  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

Zinc	NA	841	NA	NA
HNU	NA	BG	BG	BG
<b>SG-06/B06</b>				
1,2-Dichlorobenzene	ND	6.2	0.12	ND
1,3-Dichlorobenzene	ND	0.07	ND	ND
1,4-Dichlorobenzene	ND	0.21	ND	ND
1,1-Dichloroethane	ND	0.08	ND	0.05
1,1-Dichloroethylene	ND	0.25	ND	ND
1,1,2,2-Tetrachloroethane	ND	0.06	ND	ND
Tetrachloroethylene	0.06	2.5	0.09	ND
1,1,1-Trichloroethane	ND	0.98	0.12	0.1
Trichloroethene	ND	0.26	ND	0.24
Methylene chloride	0.8	ND	ND	ND
Lead	0.27	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU	NA	BG	7	7
<b>B22 (B06 Duplicate)</b>				
1,2-Dichlorobenzene	NA	31	0.33	0.5
1,3-Dichlorobenzene	NA	0.53	ND	ND
1,4-Dichlorobenzene	NA	1.53	ND	ND
1,1-Dichloroethane	NA	0.95	ND	ND
1,1-Dichloroethylene	NA	0.29	ND	0.14
1,1,2,2-Tetrachloroethane	NA	0.51	ND	0.05
Tetrachloroethylene	NA	23	0.24	ND
1,1,1-Trichloroethane	NA	15	0.22	0.09
Trichloroethene	NA	3.1	0.06	0.29
Methylene chloride	NA	ND	ND	ND
Lead	NA	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU	NA	NA	NA	NA
<b>SG-20 (SG-06 Duplicate)</b>				
Tetrachloroethylene	0.06	NA	NA	NA
Lead	0.83	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU	NA	NA	NA	NA
<b>SG-07/B07</b>				
Tetrachloroethylene	ND	0.08	ND	ND
Lead	2.84	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU	NA	BG	BG	BG

**TABLE 3-1**  
**Surface and Subsurface Soil Sampling Results, June and July 1988**  
**Industrial Waste Processing Superfund Site**  
**Pinedale, Fresno County, California**

<b>SG-08/B08</b>				
Tetrachloroethylene	ND	0.06	ND	NA
Methylene chloride	0.8	ND	ND	NA
Lead	107	19	NA	NA
Zinc	NA	705	NA	NA
HNU	NA	BG	5	5
<b>SG-09/B09</b>				
1,2-Dichlorobenzene	ND	0.06	0.39	ND
Tetrachloroethylene	ND	1.4	80	ND
Trichloroethene	ND	0.11	1.2	ND
Lead	890	64,300	1150	NA
Zinc	NA	28,400	5560	NA
HNU	NA	5	5	5
<b>SG-10/B10</b>				
Trichloroethene	0.07	ND	NA	NA
Lead	119	12,400	9	NA
Zinc	NA	12,900	805	NA
HNU	NA	5	NA	35
	<b>Surface</b>	<b>12 Inch</b>	<b>24 Inch</b>	<b>90 Inch</b>
	<b>(ppm)</b>	<b>(ppm)</b>	<b>(ppm)</b>	<b>(ppm)</b>
<b>SG-11/B11</b>				
Methylene chloride	0.6	ND	NA	NA
Lead	731	186	117	NA
Zinc	NA	3040	4800	NA
HNU	NA	5	4	150
<b>SG-19 (SG-11 Duplicate)</b>				
Solvents	ND	NA	NA	NA
Lead	749	NA	NA	NA
Zinc	NA	NA	NA	NA
HNU	NA	NA	NA	NA
	<b>Surface</b>	<b>12 Inch</b>	<b>24 Inch</b>	<b>84 Inch</b>
	<b>(ppm)</b>	<b>(ppm)</b>	<b>(ppm)</b>	<b>(ppm)</b>
<b>SG-12/B12</b>				
1,2-Dichlorobenzene	ND	ND	0.08	ND
Tetrachloroethane	ND	0.86	0.74	ND
1,1,3-Trichloroethane	ND	ND	0.47	0.07
Trichloroethene	ND	0.12	0.08	ND
Lead	1254	9	NA	NA
Zinc	NA	23	NA	NA

**TABLE 3-1**  
 Surface and Subsurface Soil Sampling Results, June and July 1988  
 Industrial Waste Processing Superfund Site  
 Pinedale, Fresno County, California

HNU	NA	NA	NA	17
	<b>Surface (ppm)</b>	<b>12 Inch (ppm)</b>	<b>24 Inch (ppm)</b>	<b>78 Inch (ppm)</b>
<b>SG-13/B13</b>				
Trichloroethene	0.06	ND	NA	NA
Lead	1220	25	NA	NA
Zinc	NA	2480	NA	NA
HNU	NA	4	NA	100
<b>SG-14/B14</b>				
1,1-Dichloroethane	0.38	ND	NA	NA
Mehylene chloride	0.5	ND	NA	NA
1,1,1-Trichloroethane	2.1	ND	NA	NA
Trichloroethene	3	ND	NA	NA
Lead	342	738	NA	NA
Zinc	NA	2130	NA	NA
HNU	NA	5	5	BG
<b>SG-15/B15</b>				
Solvents	ND	ND	NA	NA
Lead	1014	204	NA	NA
Zinc	NA	3050	NA	NA
HNU	NA	BG	BG	BG
<b>SG-16/B16</b>				
1,2-Dichlorobenzene	ND	1.3	0.24	ND
1,2-Dichloroethane	ND	0.4	0.85	0.32
Mehylene chloride	ND	4.3	17	3.8
Tetrachloroethylene	ND	0.25	0.08	ND
1,1,1-Trichloroethane	ND	0.58	1.2	ND
Trichloroethene	ND	0.44	0.64	0.77
Lead	230	434	25	NA
Zinc	NA	4560	1290	NA
HNU	NA	BG	BG	140
<b>SG-17/B17</b>				
1,2-Dichlorobenzene	ND	ND	0.06	ND
1,2-Dichloroethane	ND	0.06	ND	ND
Mehylene chloride	ND	0.11	ND	ND
Lead	0.8	ND	ND	ND
Zinc	230	32	NA	NA
HNU	NA	90	NA	NA

**TABLE 3-1**  
**Surface and Subsurface Soil Sampling Results, June and July 1988**  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

	Surface (ppm)	12 Inch (ppm)	24 Inch (ppm)	78 Inch (ppm)
<b>SG-18/B18</b>				
Solvents	ND	ND	NA	NA
Lead	270	241	190	NA
Zinc	NA	4650	3370	NA
HNU	NA	NA	NA	15
<b>B19 (off site, southwest)</b>				
Solvents	NA	ND		
Lead	NA	13		
Zinc	NA	30		
HNU	NA	BG		
<b>B20 (B21 Duplicate off site, southwest)</b>				
Solvents	NA	ND		
Lead	NA	NA		
Zinc	NA	NA		
HNU	NA	BG		
<b>SG-21 (Background)</b>				
Methylene chloride	0.9			
Lead	<.5			
Zinc	NA			
HNU	NA			
<b>SC-01 (Composite)</b>				
Lead	4.91			
<b>SC-02 (Composite)</b>				
Lead	623			

ppm - parts per million

ND = not detected

NA = not analyzed.

Only detected analytes are reported.

b/ HNU results listed in mg/kg benzene equivalent units.

c/ BG = background HNU level of 2 mg/kg benzene equivalent.

d/\* = unidentified solvent peaks present.

Source: ESC 1995

**TABLE 3-2**  
**VOC Analytical Results – Upper Vadose Zone, August 16-25, 1993**  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

Analyte	Detection Frequencies <sup>(a)</sup>		Maximum Concentration (mg/kg)	Sample No.	Screening Category <sup>(b)</sup>
	2-3.5 feet bgs	8-10 feet bgs			
Chloromethane	0/0	0/0	-	-	1
Bromomethane	0/0	0/0	-	-	1
Vinyl chloride	0/0	0/0	-	-	1
Chloroethane	0/-	0/-	-	-	1
Methylene chloride	14/1	6/0	1,000	14030	2
Acetone	23/0	19/0	30	25030	2
Carbon disulfide	1/0	0/0	.009 L	13030	2
1-1-Dichloroethylene	0/0	0/0	-	-	1
1-1-Dichloroethane	1/0	1/0	.033 L	5030	2
1,2 Dichloroethylene (total)	2/0	6/0	4.2	13095	2
Chloroform	2/0	1/0	.036 L	28100	2
1,2 Dichloroethane	0/0	0/0	-	-	1
2-Butanone	4/0	9/0	17	25030	2
1,1,1-Trichloroethane	3/0	3/0	.47 L	7030	2
Carbon tetrachloride	0/0	0/0	-	-	1
Bromodichloromethane	0/0	0/0	-	-	1
1,2 Dichloropropane	0/0	0/0	-	-	1
cis-1,3-Dichloropropene	0/0	0/0	-	-	1
Trichloroethene	6/1	5/0	1,200	14030	2
Dibromochloromethane	0/0	0/0	-	-	1
1,1,2-Trichloroethane	1/0	0/0	.006 L	16025	2
Benzene	0/0	0/0	-	-	1
trans-1,3-Dichloropropene	0/0	0/0	-	-	1
Bromoform	0/0	0/0	-	-	1
4-Methyl-2-pentanone	11/0	8/0	93 L	14030	2
2-Hexanone <sup>(d)</sup>	3/0	0/0	1.8 L	25030	2
Tetrachloroethylene	10/2	2/0	120 L	14030	
1,1,2,2-Tetrachloroethane	2/1	0/0	.97 L	6030	2

**TABLE 3-2**  
**VOC Analytical Results – Upper Vadose Zone, August 16-25, 1993**  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

Analyte	Detection Frequencies <sup>(a)</sup>		Maximum Concentration (mg/kg)	Sample No.	Screening Category <sup>(b)</sup>
	2-3.5 feet bgs	8-10 feet bgs			
Toluene	5/0	2/0	550	14030	2
Chlorebenzene	0/0	0/0	-	-	1
Ethylbenzene	6/0	2/0	47 L	14030	2
Styrene	0/0	0/0	-	-	1
Xylenes (Total)	11/0	4/0	250		2

<sup>a</sup> The first number listed in the number of times an analyte was detected. The second number listed is the number of samples that contained an analyte at a concentration in excess of its threshold level.

<sup>b</sup> The screening categories are defined as follow:

1- Screened out based on frequency of detection.

2- Screened out based on comparison to threshold level.

c Compared to PRG for n-hexane.

L = Compound detected between the MDL and the CRQL.

bgs = below ground surface

mg/kg = milligrams per kilogram

Source: ESC 1995

**TABLE 3-3**  
**VOC Analytical Results – Lower Vadose Zone, December 1-7, 1993**  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

Volatiles	Detection Frequency	Maximum Concentration (mg/kg)	Sample No.
Chloromethane	0	-	-
Bromomethane	0	-	-
Vinyl chloride	0	-	-
Chloroethane	0	-	-
Methylene chloride	10	.042 J	29010
Acetone	9	8.30 JE	29010
Carbon disulfide	2	.004 L	30020
1-1-Dichloroethylene	5	0.025	31100
1-1-Dichloroethane	18	0.14	31070
1,2 Dichloroethylene (total)	24	0.58	31070
Chloroform	3	.006 L	31040
1,2 Dichloroethane	0	-	-
2-Butanone	9	3.00 E	31070
1,1,1-Trichloroethane	9	0.057	31070
Carbon tetrachloride	0	-	-
Bromodichloromethane	0	-	-
1,2 Dichloropropane	8	.007 L	31020
cis-1,3-Dichloropropene	0	-	-
Trichloroethene	9	0.11	31100
Dibromochloromethane	0	-	-
1,1,2-Trichloroethane	7	.007 L	29060
Benzene	0	-	-
trans-1,3-Dichloropropene	0	-	-
Bromoform	0	-	-
4-Methyl-2-pentanone	7	.61 JE	29010
2-Hexanone <sup>(a)</sup>	7	0.12	30010
Tetrachloroethylene	7	0.063	30010/30020
1,1,2,2-Tetrachloroethane	1	0.005	29010

**TABLE 3-3**  
**VOC Analytical Results – Lower Vadose Zone, December 1-7, 1993**  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

<b>Volatiles</b>	<b>Detection Frequency</b>	<b>Maximum Concentration (mg/kg)</b>	<b>Sample No.</b>
Toluene	30	0.16	30110
Chlorebenzene	0	-	-
Ethylbenzene	3	0.05	30010
Styrene	0	-	-
Xylenes (Total)	4	0.18	30010

<sup>a</sup> Compared to PRG for n-Hexane

J = Estimated concentration

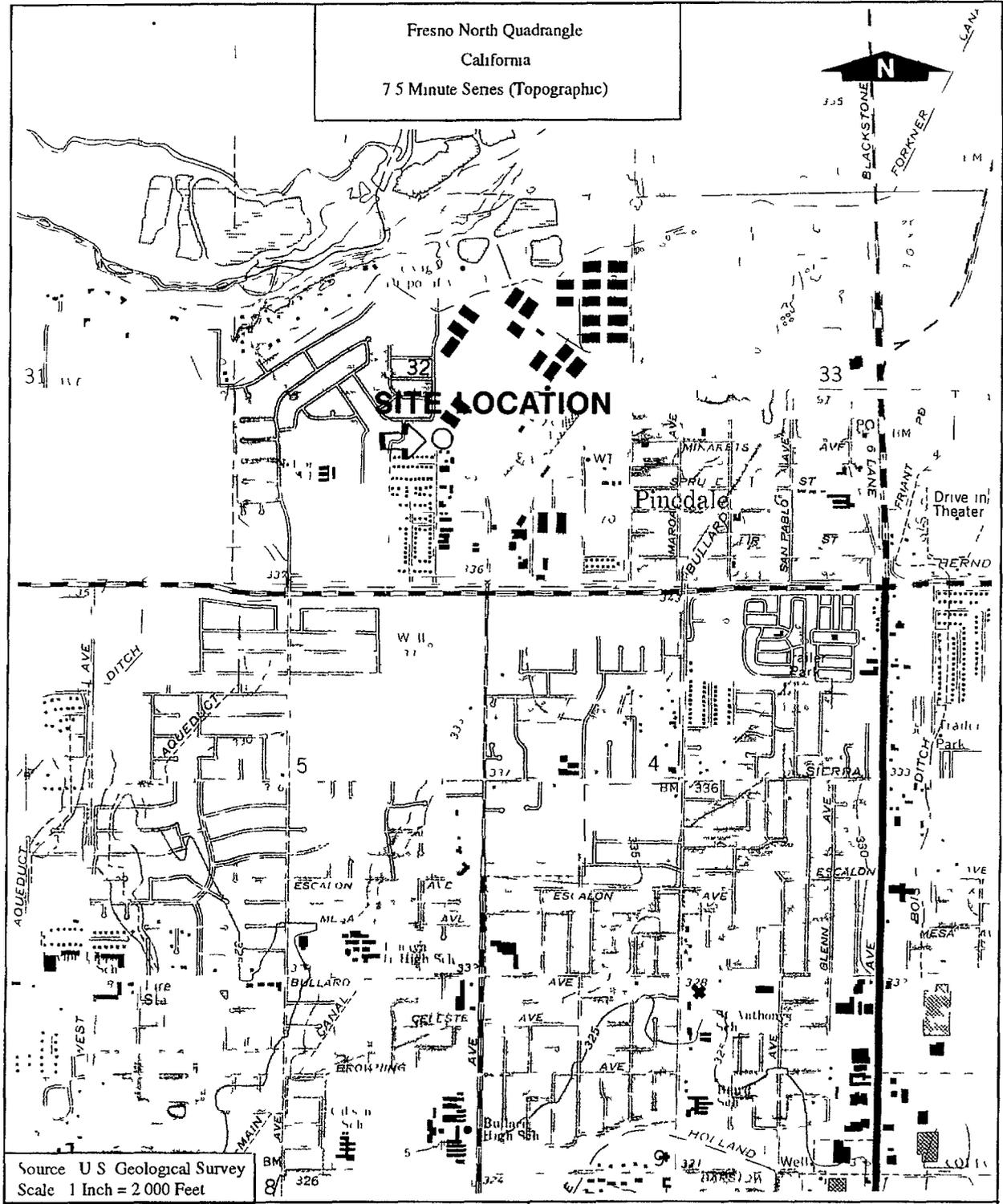
E = Concentration exceeded calibration range.

L = compound detected between the MDL and CRQL.

Thirty-three samples were collected in the lower vadose zone (11 samples from each of three borings).

mg/kg = milligrams per kilogram

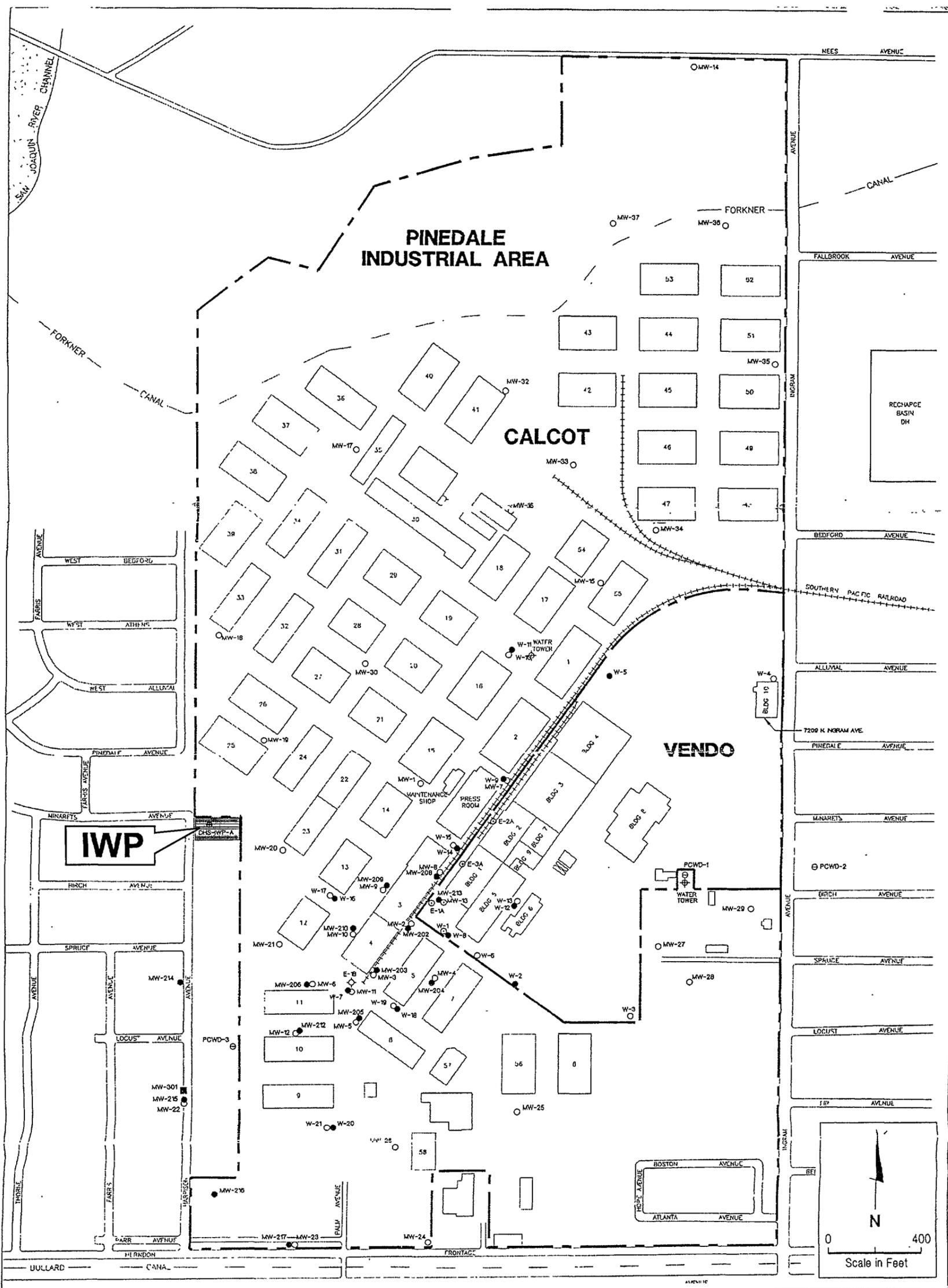
Source: ESC 1995



Source United States Geological Survey/  
ESC Corporation, June 1995

**FIGURE 3-1**  
**SITE LOCATION MAP**  
INDUSTRIAL WASTE PROCESSING  
FRESNO, CALIFORNIA



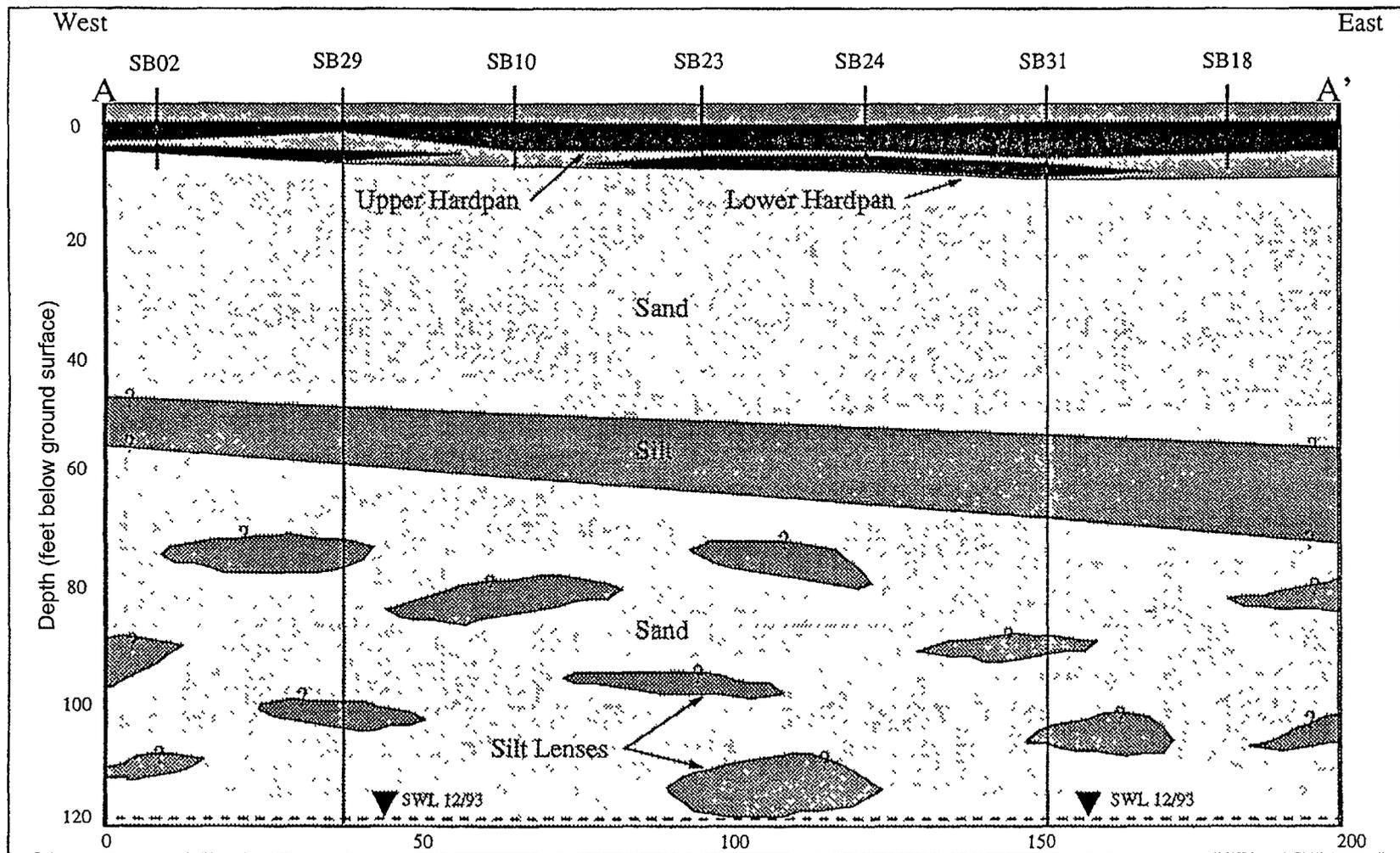


**EXPLANATION**

○ MW-18	SHALLOW MONITORING WELL	⊕ DHS-IWP-A	DTSC MONITORING WELL
● MW-19	INTERMEDIATE MONITORING WELL	⊙ PS-98	MUNICIPAL SUPPLY WELL
■ MW-301	DEEP MONITORING WELL	—	PROPERTY LINE
○ E-2A	SHALLOW EXTRACTION WELL	+++++	RAILROAD SPUR
◇ E-18	INTERMEDIATE EXTRACTION WELL	▭ 47	BUILDING

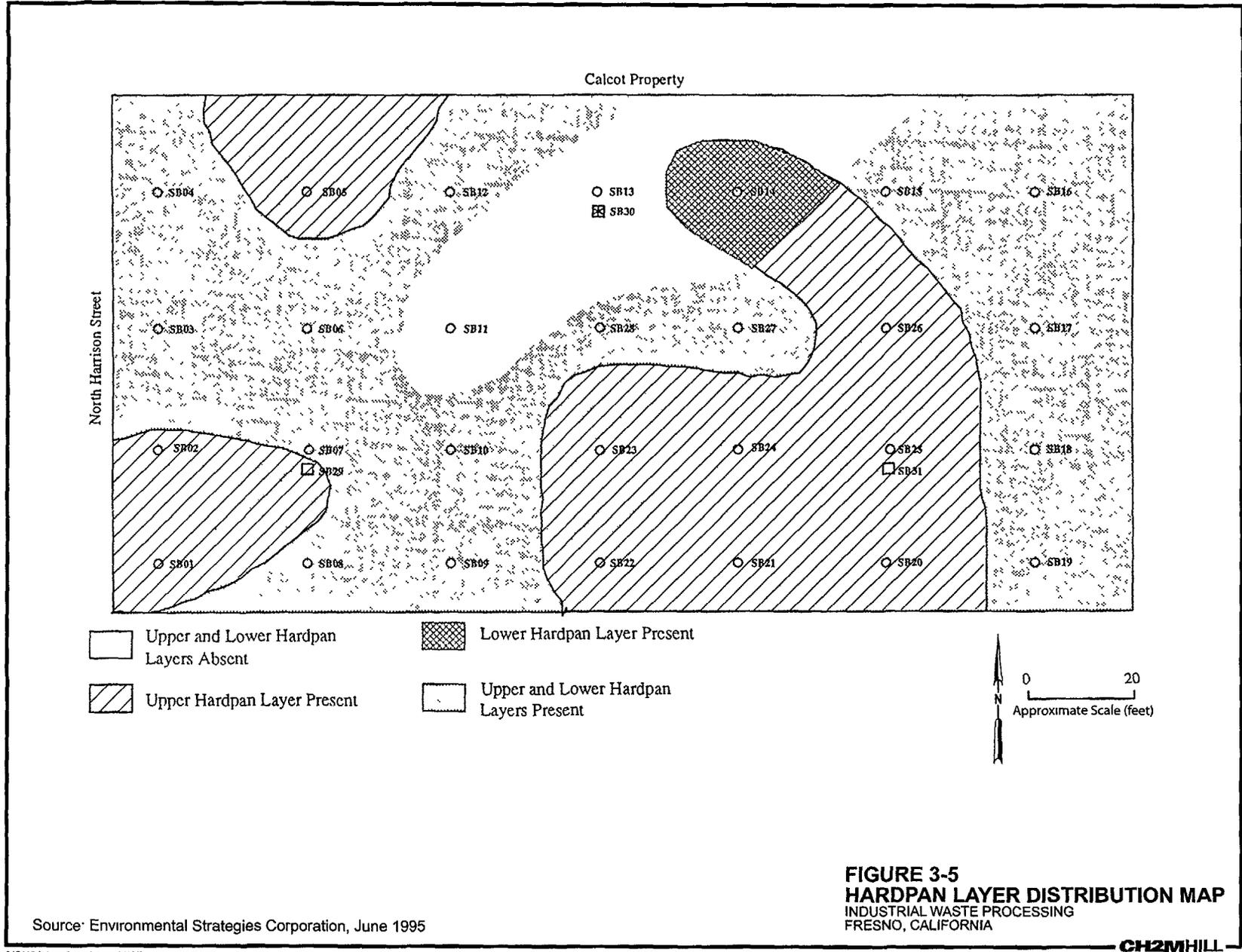
Source: Dames & Moore, 1998

**FIGURE 3-3**  
**PINEDALE INDUSTRIAL**  
**AREA LOCATION**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO, CALIFORNIA

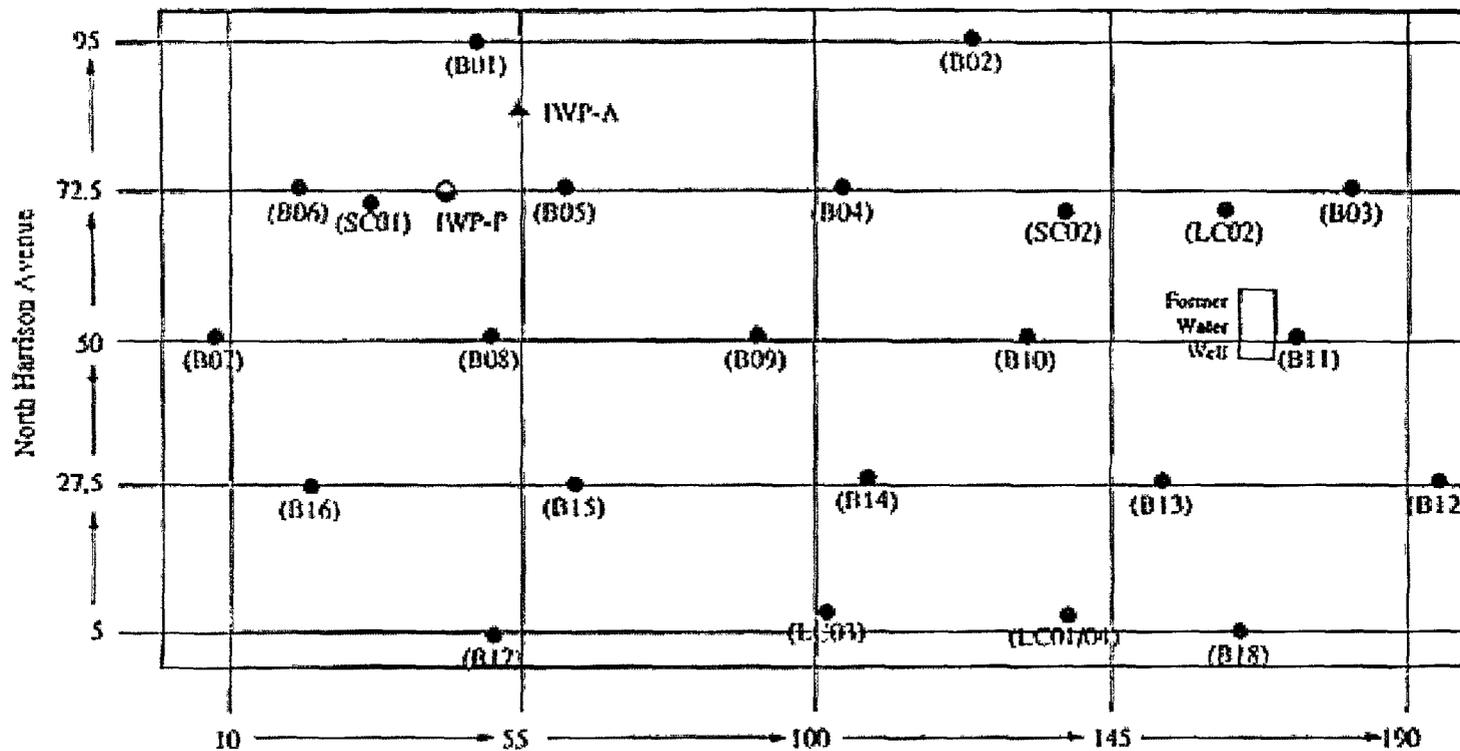


**FIGURE 3-4**  
**GEOLOGIC CROSS SECTION**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO, CALIFORNIA

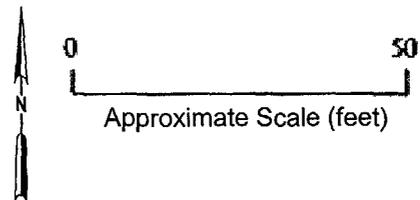
Source: Environmental Strategies Corporation, June 1995



Calcut Property

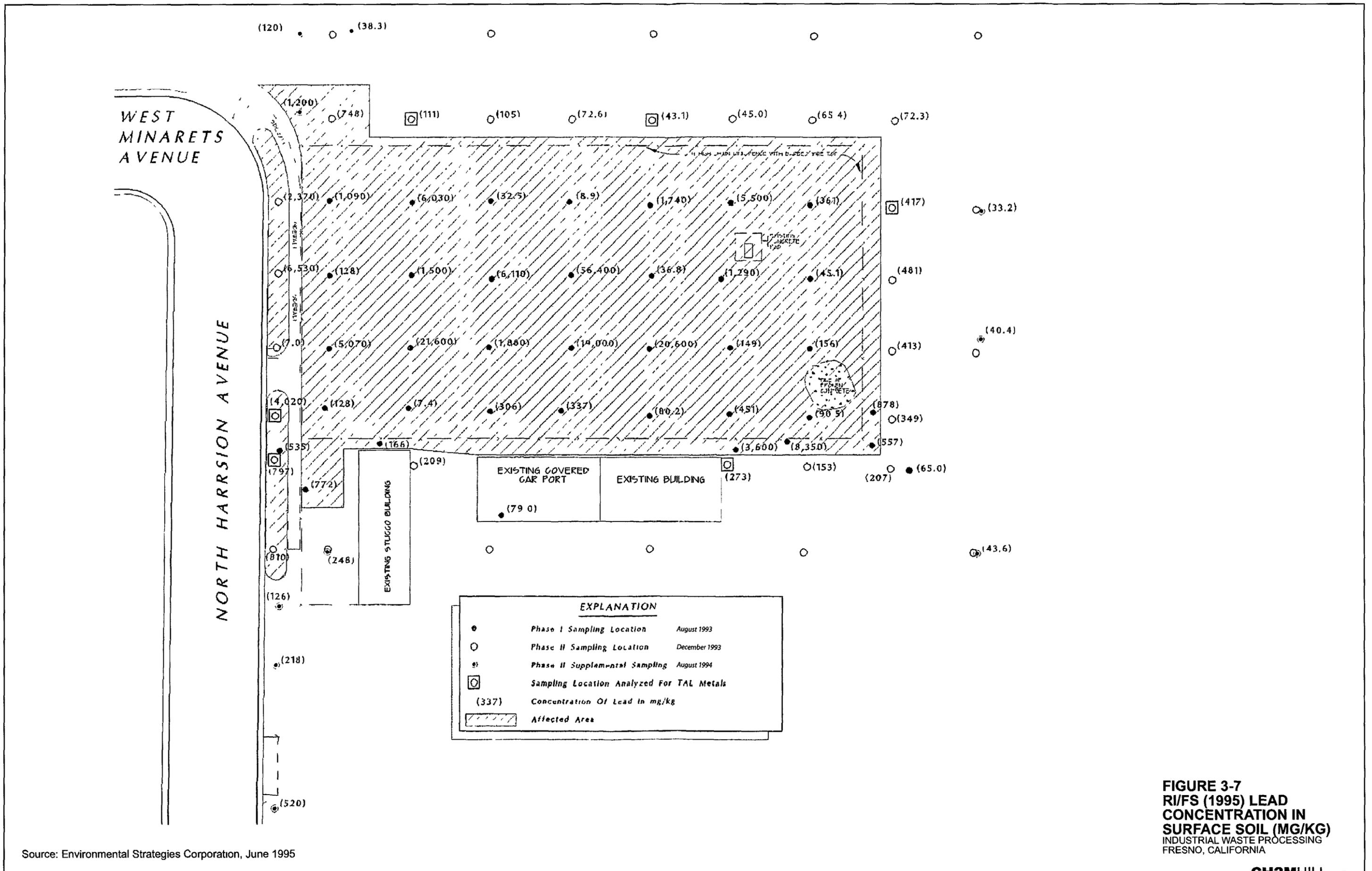


- 1988 sampling locations by E&E
- ▲ 1990 Metcalf & Eddy well
- 1990 Metcalf & Eddy boring

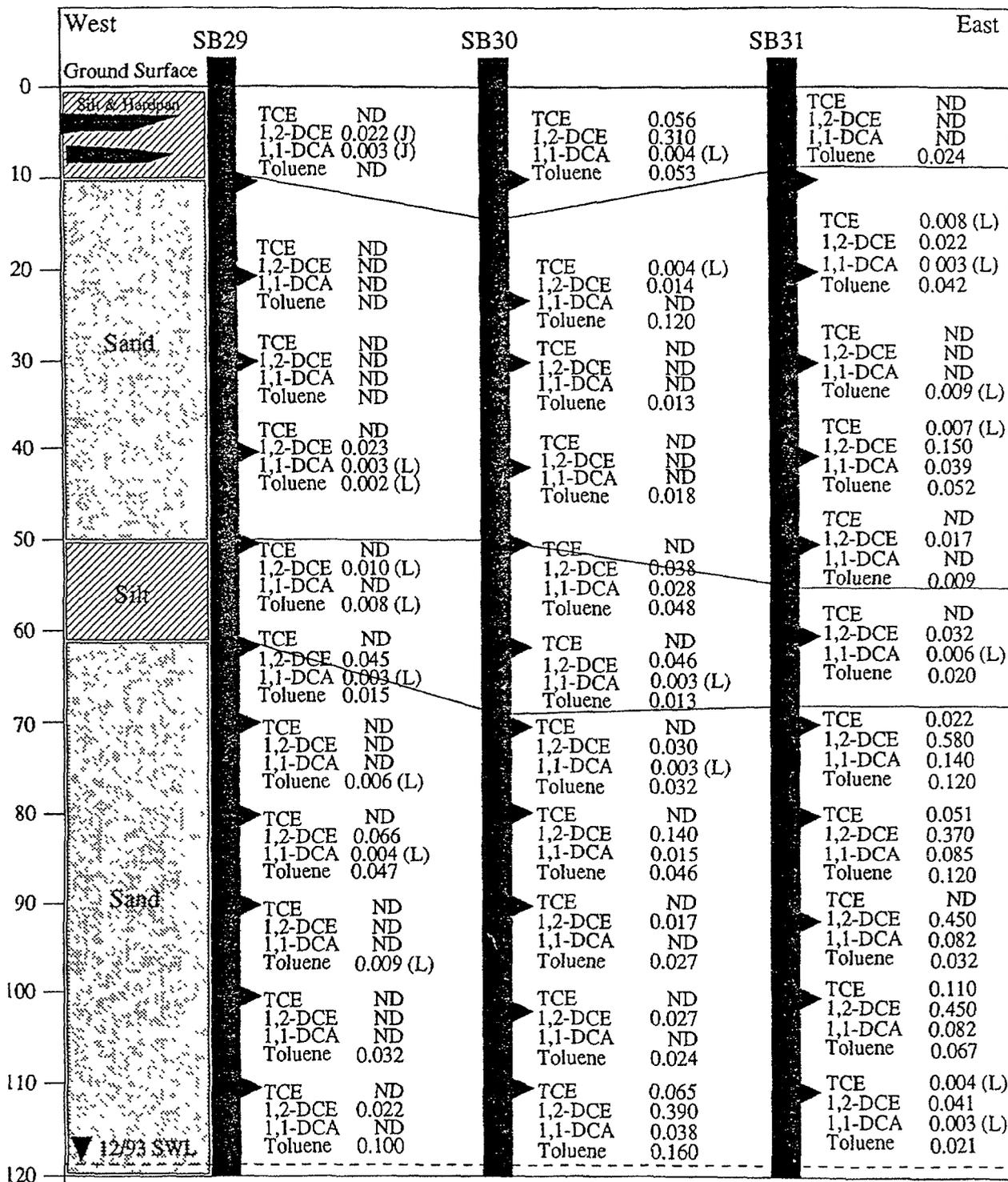


**FIGURE 3-6**  
**APPROXIMATE LOCATIONS OF**  
**SOIL SAMPLING, 1988-1990**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO, CALIFORNIA

Source: Bechtel, May 1999



Source: Environmental Strategies Corporation, June 1995



Note: Compounds are measured in milligrams per kilogram  
 L= Compound detected between the MDL and the CRQL.

Source Environmental Strategies Corp, June 1995

**FIGURE 3-8**  
**SOIL CHEMISTRY CROSS SECTION**  
**1995 RI/FS**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO, CALIFORNIA

## 4.0 Response Actions

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The following sections summarize the response activities conducted subsequent to the initial emergency response removal action conducted in 1988. Although the 1988 removal action was successful in limiting any imminent threat, it did not address residual soil contamination in the SOU.

In September 1995, USEPA signed an Action Memorandum for a non-time-critical removal action at the Site for the SOU. In a 1996 Consent Decree between USEPA and the PRPs, the PRPs agreed to perform a non-time-critical removal action at the Site. The 1995 RI/FS, which included a human health risk assessment for the soil, fulfilled the requirement for an engineering evaluation and cost analyses, which generally precedes a non-time-critical removal action.

The PRP's work plan, which is included as part of the 1995 Action Memorandum, was approved on October 30, 1997 by the USEPA. USEPA selected a non-time-critical removal action for the upper vadose zone soils containing lead and TCE above remedial action levels at the Site. The remedial action objective (RAO) was set at 400 mg/kg for lead and 7 mg/kg for TCE. The removal action consisted of excavation, disposal, and backfilling impacted areas on and off site. The Action Memorandum proposed no action for residual VOCs contamination in the deeper soil on the assumption that the volatiles would naturally degrade over time.

The removal action was conducted during 1998 in conformance with the 1995 Action Memorandum for a non-time-critical removal action.

In 1999, USEPA performed an FRI to determine whether or not contamination from IWP had contributed to the PIA VOC plume. During the 1999 FRI, additional surface and subsurface soil, soil gas, and groundwater samples were collected at the locations indicated in Figure 4-1. Further investigation was performed during Phase II of the FRI activities. Three soil borings at 110 feet bgs were drilled; soil and groundwater samples were analyzed for VOCs. The FRI did not find technical evidence to indicate that contamination at IWP has contributed to the regional PIA groundwater plume; therefore, no further action response at the IWP Site under CERCLA was warranted.

### 4.1 Non-time-critical Removal Action

The non-time-critical removal action work plan was approved by USEPA January 7, 1998. The work plan called for excavation and off site disposal of TCE- and lead-impacted soil at concentrations greater than their respective RAOs, confirmation sampling, and backfilling with clean fill.

Environmental Strategies Corporation (ESC), on behalf of the PRPs, performed the non-time-critical removal action from January 21, 1998 to August 30, 1998. ESC obtained all necessary permits prior to commencing of associated field activities. Various debris, including a 9-foot-square concrete pad and investigation-derived waste, located on the eastern portion of the Site, were removed and disposed of at an USEPA-approved facility. To comply with health and safety requirements, both dust control measures and air sampling and analyses were used during the excavation process.

On January 23, 1998, due to heavy rain and saturated soils, ESC constructed a temporary road, comprising geotextile fabric and baserock, to allow truck access to the Site from the Calcot property. Due to heavy rain, the excavation Site required draining through the use of portable water pumps mat pumped the water to the on-site tanks. The water was characterized and discharged through the Fresno

Department of Public Utilities (FDPU). ESC obtained a discharge permit from the FDPU authorizing discharge to the Fresno Regional Wastewater Treatment Facility. A copy of the permit is provided as Appendix B.

The excavation started on January 22, 1998 at the western boundary of the Site, following the sampling grid from the 1995 RI/FS (VSB01 through VSB28), and proceeded easterly towards the Calcot property. At the end of each work day, excavation areas were covered with plastic sheeting to limit dust generation and inhibit infiltration of precipitation.

Fifty-seven confirmation samples were collected and analyzed for lead, of which seven samples were analyzed for TCE (Figure 4-2). During excavation, 1 foot of soil was removed, and samples were collected approximately 3 inches below grade for lead and 6 inches below grade for TCE. At seven locations, lead and/or TCE exceeded RAOs, and the additional excavation to 2 feet bgs was performed. At locations V14S and V14W (located south and west of RI boring SB14, respectively), excavation was 5 feet bgs, where the shallow hardpan was encountered. The results of confirmation samples collected following excavation show that soil at a concentrations greater than RAOs for TCE and lead was removed from the site.

Approximately 2,352 tons of contaminated soil and debris were excavated from the Site to an average depth of 2 feet below original grade. The area located around remedial investigation boring SB14 was excavated to the hardpan layer at approximately 5 feet bgs.

Off-site areas surrounding 16 out of 18 samples which exceeded the PRG for lead during the RI/FS were excavated to an average of 1 foot below original grade at an approximate 5-foot radius around the fence line of the site (ESC 1998). Two areas— one along North Harrison Avenue and along the eastern property border— were not excavated, as the selected removal action did not address these areas, which were thought to be isolated elevated concentrations not attributable to IWP.

All excavated material was handled as hazardous waste and transported to US Ecology Facility in Beatty, Nevada (EPA ID Number NVT330010000) for disposal.

The PRP work plan included a requirement to test the backfill material prior to placement at the Site; therefore, ESC collected samples from different potential backfill source areas to ensure that the backfill to be used at the Site was not contaminated. These samples were analyzed for VOCs, semivolatiles, and metals. All samples contained arsenic at concentrations greater than the PRG of 0.32 mg/kg. Backfill sample #4 contained the least amount of arsenic, at a concentration of 1.4 mg/kg. Background samples collected during the RI/FS contained arsenic levels ranging from 1.4 mg/kg to 3.2 mg/kg, with a 95 percent upper confidence level (mean) of 2.7 mg/kg. Therefore, because the concentration in backfill sample #4 was less than background (naturally occurring) concentrations, and there were no VOCs nor semivolatile organic compounds in the sample, this material was used to backfill the entire site.

Due to the heavy rainy season from January through May 1998, the base of the excavation was allowed to dry, and backfilling was performed from July 21 through 24, 1998. Approximately 1,560 cubic yards of backfill sample #4 fill material were placed at an average thickness of 2 feet across the Site.

Following backfilling and final grading, the area was hydro-seeded with a non-irrigation native barley/grain mixture.

The total cost of the 1998 removal action was \$776,400. The cost was greater than that estimated in the RI/FS due to increased volume of excavation and inclement weather.

The non-time-critical removal action was intended to address the residual soil contamination at the Site and reduce the present and future on-site risk to human health and the environment. This was achieved by removal and off-site disposal of all soil with lead concentrations above 400 mg/kg and VOCs concentrations above 7 mg/kg.

#### **4.1.1 Completion**

Upon completion of the excavation, backfilling, and hydro-seeding, on August 7, 1998, the USEPA and DTSC conducted a pre-final inspection of the Site. Complete documentation of all work related to both demolition and excavation was provided to USEPA by ESC on behalf of the PRPs. USEPA and DTSC concurrently determined that all the construction activities had been completed to USEPA and DTSC's satisfaction; therefore, a final inspection was not necessary.

USEPA provided a certificate of completion for the excavation work on January 27, 1999, which documents USEPA's concurrence that all portions of the remedial action for soil were completed in accordance with the Action Memorandum and Consent Decree. On a letter dated September 21, 1999, DTSC agreed with USEPA's decision.

The key reference documents that satisfy the remedial action for soils are:

- *Remedial Action Report for Removal Action* (November 11, 1998).
- USEPA Certification of Completion Letter (January 27, 1999).

## **4.2 Pinedale Industrial Area Groundwater Treatment Program**

The IWP site is located near the PIA, located above a groundwater VOC plume. The PIA is a non-NPL site that has been under the regulatory authority of the DTSC since 1988.

The PIA site includes an approximate 2-mile-long plume of TCE-contaminated groundwater. This plume originates approximately 0.5 mile upgradient (northeast) of the IWP site and extends approximately 1.5 miles downgradient (southwest) of the IWP site (Appendix A).

In March 1989, Weston, on behalf of DTSC, conducted a soil gas sampling survey in the PIA, including IWP. The soil gas investigation was part of the nearby PIA groundwater treatment program VOC investigations. Weston's report indicated that elevated concentrations of TCE, 1,1-dichloroethylene (1,1-DCE), and trichloroethane (TCA) were detected in the shallow soil gas beneath areas, with the highest concentration being primarily located within the area occupied by Vendo (ESC 1995).

In 1990, Metcalf and Eddy, on behalf of DTSC, installed a monitoring well on site as part of the PIA groundwater investigation. VOCs were detected in the groundwater at concentrations above federal

and state MCLs of 5 micrograms per liter ( $\mu\text{g/L}$ ). Groundwater sampling results for well DHS-IWP-A are shown depicted on Table 4-1.

TABLE 4-1  
TCE Concentration in Samples from Groundwater Monitoring Well DHS-IWP-A  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

Year	Maximum TCE Concentration ( $\mu\text{g/L}$ )
1990	140
1997	60
1998	31
1999	Low water level
2000	Low water level
2001	Low water level
2002	Low water level
2003	Low water level

$\mu\text{g/L}$ : micrograms per liter

Cleanup action at the PIA began in 1999. The PIA treatment system consists of both off-site (downgradient from IWP) and on-site (crossgradient from IWP) groundwater treatment systems using granular-activated carbon (GAC) and air stripping. Once groundwater is treated for VOCs, it is injected back into the Fresno public water distribution system.

According to the PIA Site September 2003 Semi-Annual Groundwater Monitoring Report, approximately 3.26 billion gallons of water have been treated and approximately 260 pounds of TCE removed (BSK 2004). The TCE plume map from the September 2003 report which shows lateral extent of TCE above the MCL of 5  $\mu\text{g/L}$  is crossing into the IWP Site (Figure A-1 in Appendix A). The plume map is non-depth specific. This report indicated that some modifications were taking place at the on-site groundwater treatment system, specifically that a new system was being installed as part of the Remedial Action Plan. The change includes an additional extraction well (E-2B) which is to increase treatment system capacity to 2,000 gallons per minute. As of this review, the State of California's Department of Toxic Substances Control is still overseeing investigation and remediation at this site. PIA treatment system location, corresponding extraction and injection wells are shown in Appendix A.

### 4.3 Focused Remedial Investigation Report

The 1999 FRI investigation was performed to assess if IWP was a significant contributor to the regional TCE PIA groundwater plume. The FRI consisted of drilling four boreholes where elevated levels of VOCs were previously detected in subsurface soils. Soil, soil gas, and groundwater samples were collected and analyzed for: 1,1 DCE; 1,2 DCE; cis-1,2 DCE; 1,1,1-TCA; TCE; and PCE.

### 4.3.1 Soil gas

Soil gas samples were collected at four locations every 10 feet starting at 10 feet bgs, where possible, to a maximum depth of 120 feet bgs. The maximum soil gas concentration was 200 µg/L of TCE at 10 feet bgs in borehole EPA-1. Soil gas concentration generally decreased with depth from 100 feet to 200 feet bgs. The maximum amount of other VOCs at 10 feet bgs in soil gas samples include 95 µg/L (1,1-DCA), 50 µg/L (cis-1, 3-DCE), 30 µg/L (1,1,1 DCA) and 92 µg/L (PCE). No constituent of concern was detected above the concentration of 1 µg/L at 120 feet (Table 4-2).

### 4.3.2 Groundwater

Shallow (130 feet bgs) and deep (150 to 175 feet bgs) groundwater samples were collected during the 1999 investigation. The maximum concentration of TCE detected was 49 µg/L at 130 feet bgs in borehole EPA-3. The maximum concentration of cis-1, 2-DCE was 200 µg/L in borehole EPA-2. VOCs were not detected in groundwater samples from the deep zone (150 to 175 feet bgs) (Table 4-2).

TABLE 4-3

Summary of Analytical Results for Grab Groundwater Samples - 1999  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

Sample ID	Borehole	Borehole	Borehole	Borehole EPA-4	
	EPA-1 EPA-1-W-1	EPA-2 EPA-2-W-1	EPA-3 EPA-3-W-1	EPA-4-W-2	EPA-4-W-3
Compound (µg/l)	Depth - 130 ft	Depth - 130 ft	Depth - 130 ft	Depth - 150 ft	Depth - 175 ft
1-1-Dichloroethylene	2	50	5 U	1 U	1 U
1-1-Dichloroethane	7	10	8	1 U	1 U
cis-1,2-Dichloroethylene	85	200	140	1 U	1 U
1,1,1-Trichloroethane	1 U	5 U	5 U	1 U	1 U
Trichloroethene	28	41	49	1 U	1 U
Tetrachloroethylene	3.5 J	50	5 U	1 U	1 U

U = not detected at the detection limit.

J = Estimated concentration (at less than the quantitation limit).

µg/L = micrograms per liter

ft = feet Source: Bechtel 1999

VOC concentrations in groundwater were found to be significantly lower at IWP, compared with that of the center of the PIA groundwater regional plume; 49 µg/L of TCE in boring EPA-3 (Bechtel 1999) compared with 190 µg/L of TCE in PIA well E-2B sampled in September 2003 as part of the groundwater monitoring program (BSK 2003). The 1999 FRI concluded that IWP was not a significant contributor to the regional PIA VOC plume because of decreasing soil gas and groundwater concentrations with depth and VOC concentrations in groundwater orders of magnitude less than source areas within the plume. USEPA believes that the groundwater contamination present beneath the IWP Site will be addressed by the remediation of the PIA site and/or natural degradation.

**TABLE 4-2**  
 Summary of Soil-Gas Sampling Analytical Results  
 Industrial Waste Processing Superfund Site  
 Pinedale, Fresno County, California

<b>Borehole EPA-1</b>												
<b>Sample ID</b>	<b>EPA-1-1</b>	<b>EPA-1-2</b>	<b>EPA-1-3</b>	<b>EPA-1-4</b>	<b>EPA-1-5</b>	<b>EPA-1-6</b>	<b>EPA-1-7</b>	<b>EPA-1-8</b>	<b>EPA-1-9</b>	<b>EPA-1-10</b>	<b>EPA-1-11</b>	<b>EPA-1-12</b>
	<b>Depth (feet below ground surface)</b>											
<b>Compound (<math>\mu\text{g/L}</math>)</b>	10	20	30	40	50	60	70	80	90	100	110	120
1-1-Dichloroethylene	10.J	0.6 J	1 U	1 U	1 U	NS	1 U	NS	1 U	1 U	1 U	1 U
1-1-Dichloroethane	9 J	3	1	1 U	.08 J	NS	2	NS	1	0.9 J	2	1 U
cis-1,2--Dichloroethylene	50	23	21	0.5 J	21	NS	36	NS	20	17	44	1
1,1,1-Trichloroethane	30	15	9	1	4	NS	4	NS	0.8 J	1 U	1 U	1 U
Trichloroethene	200	80	40 E	1 U	18	NS	16	NS	3	0.9 J	2	1 U
Tetrachloroethylene	30	24	28 E	0.7 J	19	NS	23	NS	3	0.6 J	1 U	1 U

<b>Borehole EPA-2</b>												
<b>Sample ID</b>	<b>EPA-2-1</b>	<b>EPA-2-2</b>	<b>EPA-2-3</b>	<b>EPA-2-4</b>	<b>EPA-2-5</b>	<b>EPA-2-6</b>	<b>EPA-2-7</b>	<b>EPA-2-8</b>	<b>EPA-2-9</b>	<b>EPA-2-10</b>	<b>EPA-2-11</b>	<b>EPA-2-12</b>
	<b>Depth (feet below ground surface)</b>											
<b>Compound (<math>\mu\text{g/L}</math>)</b>	10	20	30	40	50	60	70	80	90	100	110	120
1-1-Dichloroethylene	3	2	1	NS	5 U	5 U	5 U	NS	1 U	1 U	1 U	1 U
1-1-Dichloroethane	1	2	2	NS	5 U	3 J	3 J	NS	2	0.6 J	1 U	1 U
cis-1,2--Dichloroethylene	5	12	22	NS	24	30	38	NS	26	13	6	1 U
1,1,1-Trichloroethane	30	23	16	NS	10	9	10	NS	2	1	1 U	1 U
Trichloroethene	33	33	45	NS	36	31	33	NS	5	0.6 J	1 U	1 U
Tetrachloroethylene	21	41	72	NS	57	59	61	NS	10	1 U	1 U	1 U

**TABLE 4-2**

Summary of Soil-Gas Sampling Analytical Results  
 Industrial Waste Processing Superfund Site  
 Pinedale, Fresno County, California

Borehole EPA-3												
Sample ID	EPA-3-1	EPA-3-2	EPA-3-3	EPA-3-4	EPA-3-5	EPA-3-6	EPA-3-7	EPA-3-8	EPA-3-9	EPA-3-10	EPA-3-11	EPA-3-12
	Depth (feet below ground surface)											
Compound ( $\mu\text{g/L}$ )	10	20	30	40	50	60	70	80	90	100	110	120
1-1-Dichloroethylene	0.5 J	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1-1-Dichloroethane	1 U	1	2	1	1	2	1 U	2	1	0.5 J	1 U	1 U
cis-1,2—Dichloroethylene	0.5 J	21	36	12	12	20	.07 J	23	19	8	1 U	0.6 J
1,1,1-Trichloroethane	13	16	11	8	5	1	1 U	2	1	1 U	1 U	1 U
Trichloroethene	14	33	29	10	6	8	1 U	4	0.8 J	0.5 J	1 U	1 U
Tetrachloroethylene	92	61	54	25	12	5	1 U	5	0.5 J	1 U	1 U	1 U

NS = not sampled.

U = not detected at the detection limit.

J = estimated concentration (at less than the quantitation limit).

E = quantity detected exceeded the calibration range of the instrument.

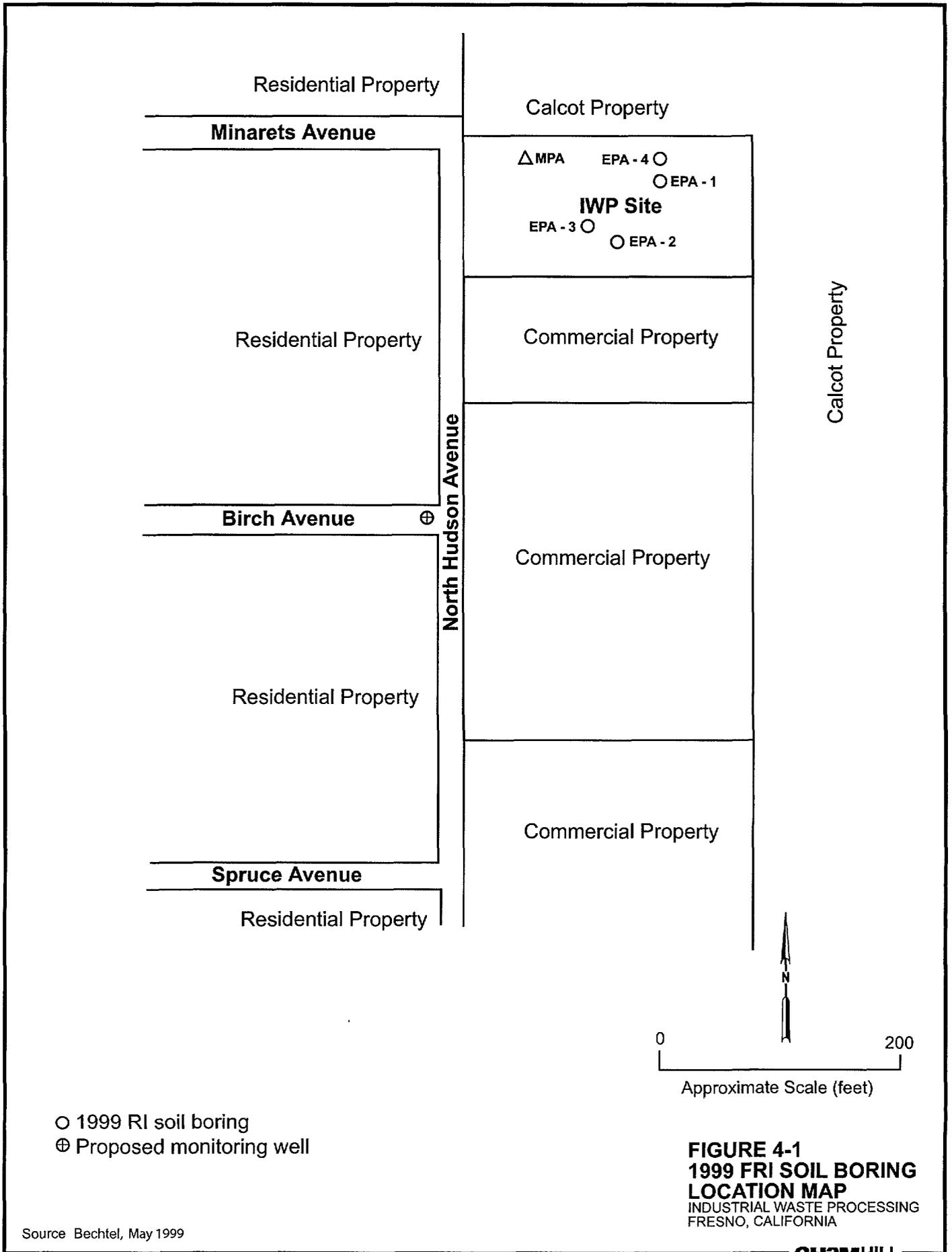
$\mu\text{g/L}$  = micrograms per liter

Source: Bechtel 1999

## **4.4 Summary of Operation and Maintenance**

The Remedial Action Report for Removal Action (ESC 1998) included a plan for operations and maintenance (O&M) that provided for inspection of the Site's security fence and vegetative cover on a semiannual basis. The purpose of these inspections is to check for breaches in both the security access and the vegetative cover. The inspections are to be conducted during the months of April and October. During the time this five-year review was performed, there was no supporting documentation available to show that monitoring has occurred.

In 2001, the Site was sold and redeveloped by Pacific Tent & Awning, a manufacturer and distributor of fabric awnings and accessories. The property remains zoned as commercial/light industrial. The Site currently houses an 8,192-square-foot warehouse/office facility that covers approximately 80 percent of the Site area. The remainder of the Site has been covered by asphalt, concrete, and landscaping (landscape covering is in compliance with city ordinances).

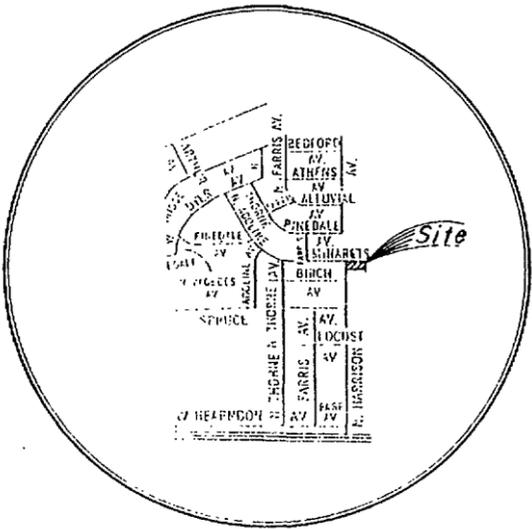
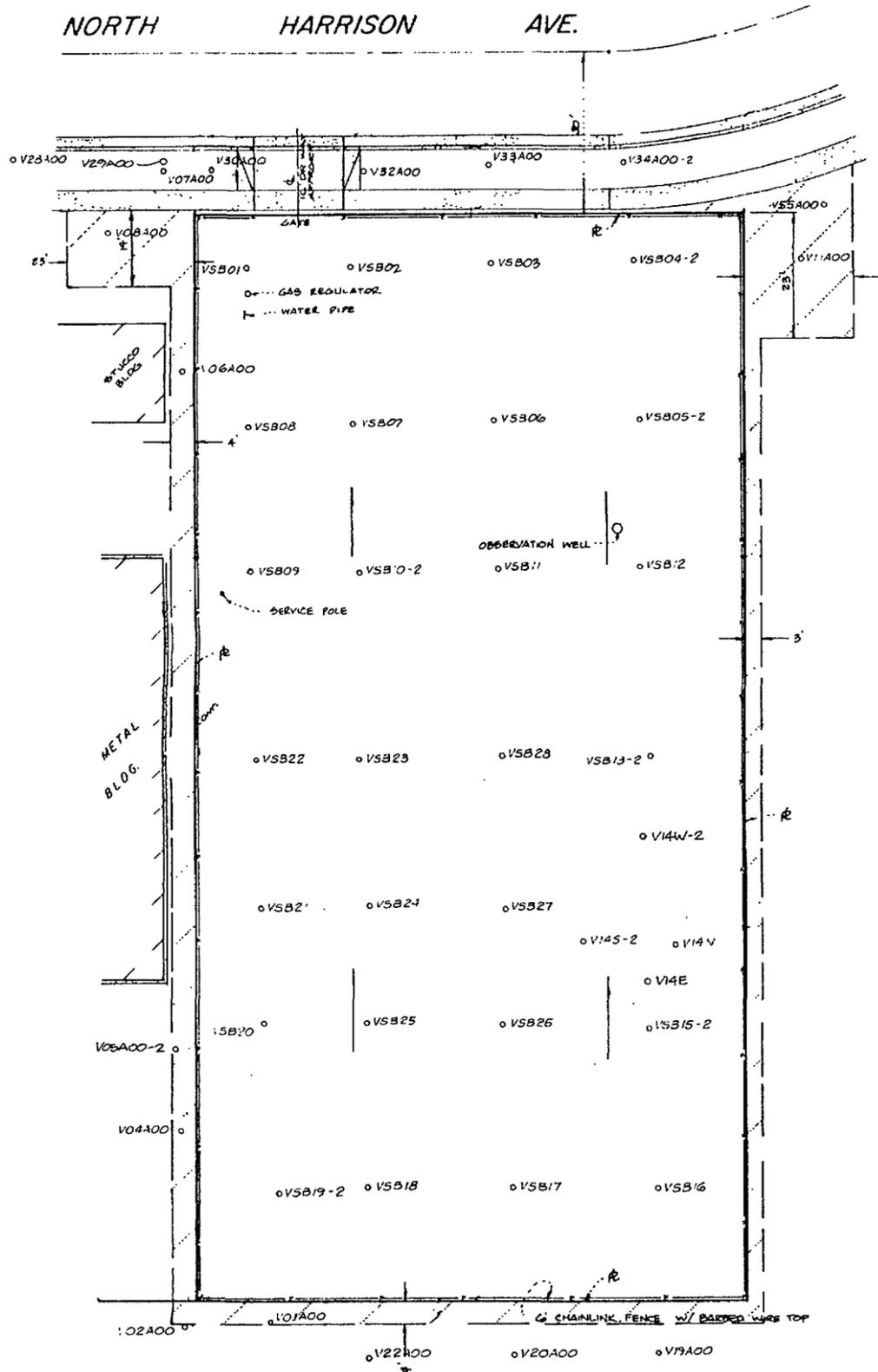


- 1999 RI soil boring
- ⊕ Proposed monitoring well

**FIGURE 4-1**  
**1999 FRI SOIL BORING**  
**LOCATION MAP**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO, CALIFORNIA

Source: Bechtel, May 1999

Scale - 1" = 20'



VICINITY MAP  
NOT TO SCALE

**SITE ADDRESS**  
7140 N. HARRISON AVE.  
**ASSESSOR'S PARCEL NUMBER**  
405-331-09

**LEGEND**  
▬ PROPERTY LINE  
○ VSB VERIFICATION SAMPLE LOCATION

**FIGURE 4-2**  
**1998 REMOVAL ACTION**  
**CONFIRMATION SAMPLING**  
**LOCATIONS**  
INDUSTRIAL WASTE PROCESSING  
FRESNO, CALIFORNIA

Source: Environmental Strategies Corporation, November 1998

## 5.0 Five-year Review Process

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The five-year review consisted of a review of relevant documents (Appendix B) and a regulatory review. A Site inspection was performed on May 10, 2004. The inspection checklist is found in Appendix C and photographs from the inspection are presented as Appendix D. The certification of completion of the removal action documents are provided as Appendix E. Although it was determined that formal interviews were not needed as part of this review, some informal interviews were conducted with the current property owner and DTSC. Following the release of this document, USEPA will produce and distribute a fact sheet to the community near the site. The fact sheet will summarize the findings of the five-year review and instructions on how to access a copy of the review. The fact sheet will be presented in English and in Spanish.

### 5.1 Documents Review

A brief review of numerous documents related to Site activities was conducted as part of the Five-year review process. The documents chosen for review primarily focused on progress since the issuance of the remedial action report but ranged in publication date from 1988 to the present. Appendix B provides a list of the documents reviewed as part of this report.

### 5.2 Regulatory Review

A review of applicable or relevant and appropriate requirements (ARARs) was conducted to determine if changes to standards, newly promulgated standards and To Be Considereds (TBCs) have occurred since issuance of the Action Memorandum and Consent Decree that might affect current protectiveness of the remedy.

#### 5.2.1 Five-year Review of ARARs

The ARARs reviewed for this five-year review are those contained in the Action Memorandum for a non-time-critical removal action signed on September 28, 1995.

This review focuses on the identification of any changes to the ARARs provided in the Action Memorandum. Additionally, regulations promulgated since the Action Memorandum took effect that may impact the protectiveness of the remedy on human health and the environment were reviewed. In the preamble to the final National Contingency Plan, the USEPA states that it will not reopen remedy selection decisions contained in Records of Decisions (i.e., ARARs are normally frozen at the time of Record of Decision signature) unless a new or modified requirement calls into question the protectiveness of the selected remedy (55 FR 8757, March 8, 1990). Any findings that differ from the Action Memorandum are explained.

The original 1995 Action Memorandum for a non-time-critical removal action identified the following requirements as ARARs:

- **California Hazardous Waste Control Act** - The authorized state hazardous waste program under the federal Resource Conservation and Recovery Act (RCRA).

- 22 CCR 66262.30-33, Packaging, labeling, marking, and placarding requirements. Requires that prior to transportation of hazardous waste off-site, the waste must be packaged in accordance with specified Department of Transportation regulations, and the packages must be labeled and marked in accordance with Department of Transportation regulations.
- 22 CCR 66262.34 (a) (1) (A), Accumulation time requirements. Requires that waste may be stored at the site for less than 90 days without a permit, provided that the waste is placed in containers or tanks and the pertinent container or tank requirements are met.
- **San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Regulations -** Requires the removal actions at IWP to meet the substantive provisions stipulated for fugitive dust requirements.
  - Rule 8020, Fugitive Dust Requirements for Control of Fine Particulate Matter from Construction, Demolition, Excavation, and Extraction Activities.
  - Rule 8040, Fugitive Dust Requirements for Control of Fine Particulate Matter from Landfill Disposal Sites.

### 5.2.2 Changes to Existing ARARs

The SJVUAPCD Rule 8020 and Rule 8040 have been instituted under the following new rule number Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earth-moving Activities subsequently. The changes were made without regulatory effect on the IWP remedial actions.

A review of these existing ARARs indicates that, to date, there have been no significant changes or updates that would impact the protectiveness of the remedial actions. Therefore, the ARARs remain applicable, relevant, and appropriate for the removal action at IWP.

## 5.3 Site Inspection

A Site inspection was performed on May 10, 2004. The inspection included a walk of the Site, surrounding properties, and monitoring well monitoring well DHS-IWP-A. The site inspection also included observation of animal habitats both on and around the Site. A summary of the inspection findings is presented below. The Site inspection checklist and photographs are provided in Appendix C and D, respectively.

The Site was redeveloped in 2001 and currently houses an 8,192-square-foot warehouse/office facility that covers approximately 80 percent of the site (Photo #01). Approximately 20 percent of the Site is covered with asphalt, concrete, and landscaping. A locked side gate is located on the southwest Site border (Photo #02). A fence approximately 10 feet tall extends from the south through the west borders of the Site. There is a locked gate on the west fence that leads into the back of the warehouse through North Harrison Street and into a small landscaped grassy area (Photo #03). There is no fence on the northern or eastern borders of the Site (Photo #04). The main Site access is through North Palm Bluffs Street through an open driveway (Photo #05).

Along the southern fence line there is a designated covered recycling and garbage area. All Site boundaries are surrounded by landscaping consisting of grass, small shrubs, and trees in compliance with city codes (Photo #06). There are no signs indicating that the Site is a Superfund site.

During the warehouse inspection, small containers of chemicals for general use in manufacturing awnings were observed in a storage cabinet and on shelves (Photo #07). There were no tanks nor large chemical containers observed at the Site. No stains or cracks were observed on the warehouse floors. The warehouse appeared to be well-maintained in accordance with the awning manufacture business practices.

Since the 1999 FRI report the properties surrounding the Site have been developed. A new office building and parking lot have been constructed within the parcel located to the north and east of the Site (Photo #04). The property adjacent to the southern border is undeveloped (Photo #08), and currently houses a metal shed. Heavy machinery was observed at the property during the Site visit.

The groundwater monitoring well DHS-IWP-A is located within the warehouse (Photo #09). The well appeared to be in good condition. It was also reported by the property owner that the well is inspected twice a year by a consultant for DTSC as part of the PIA groundwater treatment program. There is no lock on the well cover (Photos #10 and #11). However, well access can only be obtained during regular business hours, as the building is locked during non-business hours.

During the site visit only limited landscaping was observed on site and the surrounding properties, indicating that the Site is unlikely to support any significant use by biological/ecological receptors. This was confirmed by an ecological risk assessor.

## **5.4 Interviews and Operation and Maintenance**

No formal interviews were conducted for this five-year-review. However, there were informal conversations with the current property owner and the some DTSC staff responsible for overseeing the PIA site remediation.

The property owner provided some background information of how the property was obtained, the building construction and a tour of the current operations.

DTSC allowed for a review of documents pertaining to the current groundwater remedial action which they are overseeing at the PIA site.

During the time of this five-year review, there was no documentation available regarding Site O&M activities.

## **6.0 Technical Assessment**

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This section discusses whether the response action selected at the time of the signing of the 1999 USEPA's Preliminary Closeout Report is functioning as intended and is still protective of human health and the environment.

### **6.1 Is the Remedy Functioning as Intended by Decision Documents?**

All soil removal actions have been completed, as mandated in the Consent Decree and Action Memorandum. The soil removal action, which consisted of excavation and placement of clean fill, was completed to the satisfaction of USEPA, as documented in the January 27, 1999 Certificate of Completion (Appendix E).

The Removal Action Report (ESC 1998) specified semiannual monitoring of the Site fence and vegetative cover. There was no documentation available at the time of this five-year review to determine the status of O&M activities. Based upon redevelopment of the Site to an commercial/light industrial business, and observations made during the May 10, 2004 Site inspection, this O&M requirement may no longer be warranted.

### **6.2 Are the Exposure Assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of the Remedy Selection Still Valid?**

There have been changes to the physical condition of the Site, since the removal action was finalized. Formerly, the Site was relatively open and was used for mostly for drum storage. The Site was redeveloped in 2001 and currently houses an 8,192-square-foot warehouse/office facility that covers approximately 80 percent of the site (Photo #01). Approximately 20 percent of the Site is covered with asphalt, concrete, and landscaping. The property is used for commercial/light industrial which has been the historical zoning for the Site. The assumptions made in the 1995 RI/FS were generally based on future land use as residential property. Because it is still possible that future land use could be residential, these assumptions remain valid.

The RAOs set forth in the 1995 Action Memorandum were based upon the findings of the RI/FS. The findings suggested that lead and TCE in shallow soils contributed the greatest potential human health risk based on site-specific data. In order to address this imminent and substantial endangerment the proposed removal action involved excavation and disposal of surface soils to below 400 mg/kg lead and 7 mg/kg TCE. The removal action objective levels were based on PRGs available at the time of the action memorandum. Since then, the PRGs for TCE have changed as follows:

TABLE 6-1  
Soil PRGs Past and Present  
*Industrial Waste Processing Superfund Site  
Pinedale, Fresno County, California*

Chemical	RAO Value (mg/kg)	2002 Residential Soil PRG (mg/kg)	2002 Industrial Soil PRG (mg/kg)	Maximum Concentration 0-10 feet bgs after Removal Action (mg/kg)
Trichloroethylene	7.1	0.053	0.11	0.023

mg/kg = milligrams per kilogram

The PRG for lead has remained the same.

Indoor air vapor intrusion was recognized as a potential exposure pathway in the 1995 Human Health Risk Assessment. Therefore an evaluation of "infiltration of VOCs into indoor air" was conducted on the assumption that future residential development of the Site might occur. The future concentrations of VOCs within a residence located on the IWP Site were estimated using a conservative attenuation factor approach whereby an attenuation coefficient was multiplied by estimated soil gas concentrations. The calculated estimate of soil gas concentrations in mg/kg were based on the measured site-specific total soil concentrations taken from the 1994 Draft RI/FS. At the time of this risk assessment, the models used to estimate indoor air concentrations at IWP were not validated by EPA. As a result, the future indoor air pathways of exposure were not included in the overall site risk estimates, but were represented in the "Uncertainties" section of the Risk Assessment Report.

Because of the present availability of guidance relating to vapor intrusion to indoor air (Subsurface Vapor Intrusion Guidance, EPA, November 2002), it is recommended that the current EPA-approved screening model from this 2002 guidance document be applied. Using available site-specific data, both the industrial and residential scenarios should be evaluated. If the results of the evaluation yield an unacceptable risk, then corrective actions will be required. It is expected that these actions will take approximately one year to complete, at which time a protectiveness determination will be made.

### **6.3 Has Any Other Information Come to Light that Could Call into Question the Protectiveness of the Remedy?**

All soil removal activities related to cleanup of soils were completed in 1998. USEPA certified completion of removal activities in 1999.

Since the removal action was completed, EPA has issued draft guidance for evaluation of potential indoor air issues as a result of vapor intrusion from soils and groundwater (Subsurface Vapor Intrusion Guidance, EPA, November 2002). In reviewing the IWP 1995 Risk Assessment and taking into consideration the current property use (warehouse and office space), it is not expected that the indoor air exposure pathway is a concern at the Site.

However, it is prudent to review and re-assess the potential human health risks as recommended by the recent guidance.

## 7.0 Conclusions and Recommendations

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The following sections summarize conclusions and recommendations from the five-year review. Where required, follow-up action is recommended.

### 7.1 Issues Identified and Recommended Follow-up Actions

**Issue:** The Removal Action Report (ESC 1998) specified a requirement to conduct semiannual monitoring of the Site fence and vegetative cover as part of the Operations and Maintenance (O&M) of the Site. There was no documentation or any other available evidence to indicate that these requirements have been met.

**Recommendation:** This O&M requirement may no longer be warranted because of the Site redevelopment and based upon observations made during the May 10, 2004 Site inspection. The property continues to be used for commercial/light industrial purposes and the new property owner maintains a warehouse/office facility which was constructed in 2001. The Site is covered with the building slab, asphalt and/or landscaping and is almost completely surrounded with a fence (the front of the building does not have fencing so as to allow for access from the street). The property appears to be very well maintained.

**Issue:** There is draft guidance now available for evaluation of potential indoor air issues as a result of vapor intrusion from soils and groundwater (*Subsurface Vapor Intrusion Guidance*, EPA, November 2002) that was not available at the time the risk assessment was prepared for this Site. Indoor air vapor intrusion was recognized as a potential exposure pathway in the 1995 Human Health Risk Assessment. Therefore an evaluation of "infiltration of VOCs into indoor air" was conducted on the assumption that future residential development of the Site might occur. The future concentrations of VOCs within a residence located on the IWP Site were estimated using a conservative attenuation factor approach whereby an attenuation coefficient was multiplied by estimated soil gas concentrations. The calculated estimate of soil gas concentrations in mg/kg were based on the measured site-specific total soil concentrations taken from the 1994 Draft RI/FS.

At the time of this risk assessment, the models used to estimate indoor air concentrations at IWP were not validated by EPA. As a result, the future indoor air pathways of exposure were not included in the overall site risk estimates, but were represented in the "Uncertainties" section of the Risk Assessment Report.

In light of the availability of the new guidance, some of the assumptions made in the original risk assessment may no longer be current.

**Recommendation:** Because of the present availability of guidance relating to vapor intrusion to indoor air, it is recommended that the current EPA-approved screening model from this 2002 guidance document be applied. Using available site-specific data, both the industrial and residential scenarios should be evaluated. If the results yield a toxicity level for TCE indicating either an immediate/short term or chronic/long-term unacceptable exposure risk, then corrective measures will be required. These issues, recommendations and follow-up actions are summarized in the following table (Table 7-1).

TABLE 7-1  
 Summary Table- Issues, Recommendations and Follow-Up Actions  
*Industrial Waste Processing Superfund Site*  
*Pinedale, Fresno County, California*

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
O&M requirements	These requirements may no longer be warranted, since the USEPA site has been redeveloped	USEPA	USEPA	Sep-09	N	N
Vapor intrusion to indoor air assessment	a) Use EPA-approved screening model from 2002 vapor intrusion guidance; b) Use available site-specific data; c) Evaluate both industrial and residential scenarios.	USEPA	USEPA	Sep-05	N	N

## **8.0 Protectiveness Statement**

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The remedy at the Soils Operable Unit of the Industrial Waste Processing Superfund Site is expected to be protective, however, the potential for vapor intrusion to indoor air risk should be re-evaluated using the currently available draft guidance (Subsurface Vapor Intrusion Guidance, EPA, November 2002). If the results of the evaluation yield an unacceptable risk, then corrective actions will be required. It is expected that these actions will take approximately one year to complete, at which time a protectiveness determination will be made.

## 9.0 Next Review

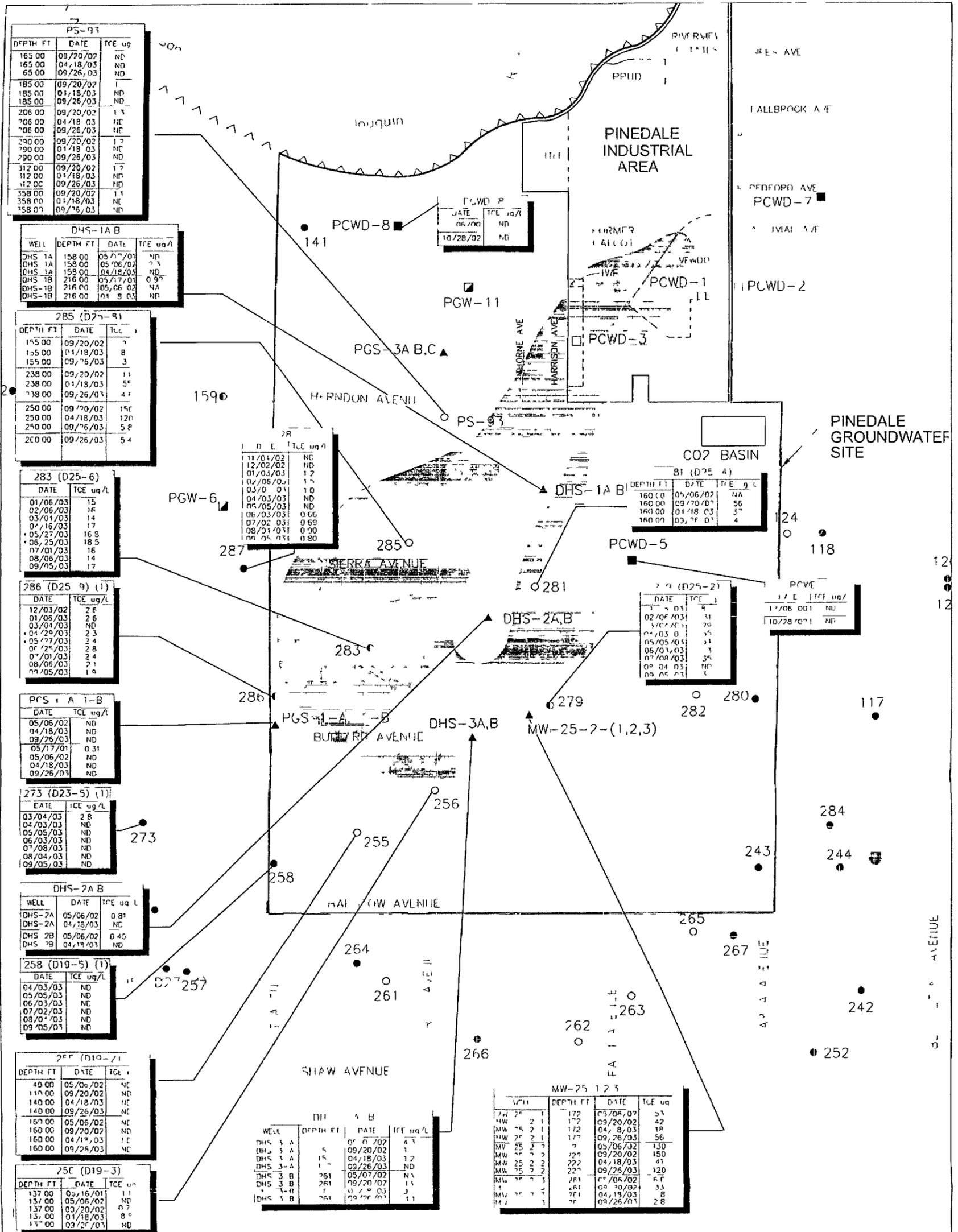
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Statutory Five-year reviews are not required for this Site because the response action was a removal-only and no remedial action has or will take place. However, because the removal action resulted in leaving hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure, USEPA may choose to conduct a second Five-year review as a matter of policy in 2009.

**Appendix A**

**Pinedale Groundwater TCE Plume Map, Groundwater Treatment Facility, Location Map of Monitoring and Supply Wells, Pinedale Groundwater TCE and Cr Concentrations Map, Groundwater Deep Well Elevations and Contour Map, and Groundwater Contour Map**

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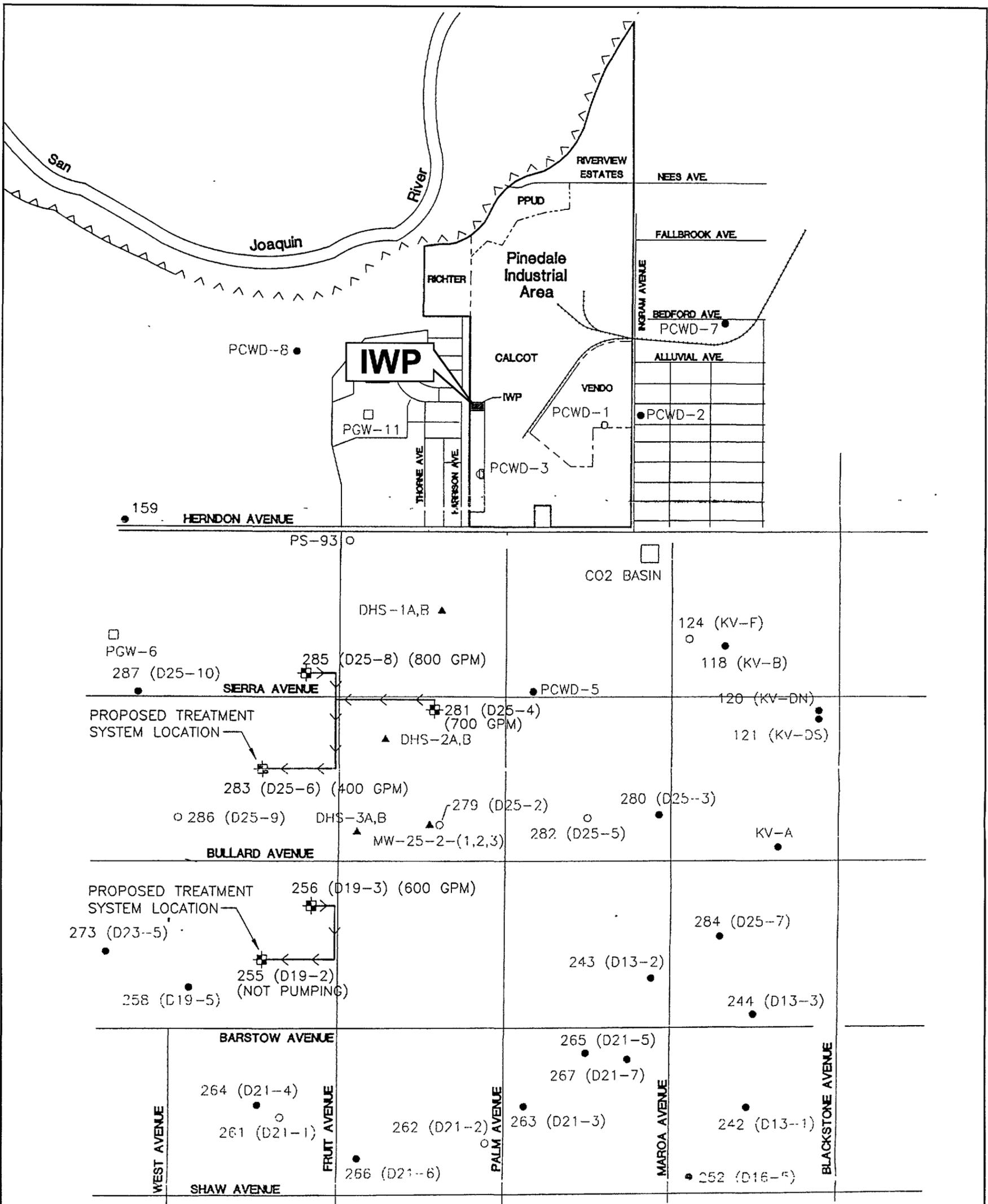
**LEGEND**

- PINEDALED COUNTY WATER DISTRICT (P.W.D.) MUNICIPAL SUPPLY WELL NOT IN SERVICE
- PINEDALED COUNTY WATER DISTRICT MUNICIPAL SUPPLY WELL IN SERVICE
- MUNICIPAL SUPPLY WELL CURRENTLY IN SERVICE
- MUNICIPAL SUPPLY WELL NOT CURRENTLY IN SERVICE
- ▲ MUNICIPAL SUPPLY WELL WITH TREATMENT
- (1) NOTE: RESULTS FOR SAMPLES COLLECTED BY THE CITY OF FRESNO
- \* AVERAGE FOR MULTIPLE SAMPLES IN ONE MONTH
- 285 NEW CITY OF FRESNO WELL DESIGNATION (D25-8)
- ▲ MONITORING WELL CLUSTER
- ▲ ESTIMATED LATERAL EXTENT OF TCE ABOVE 5 ug/L FROM DEPTH SPECIFIC
- ND NOT DETECTED
- NA NOT ANALYZED
- PRIVATE WATER WELL

Scale in Feet: 0 to 1500

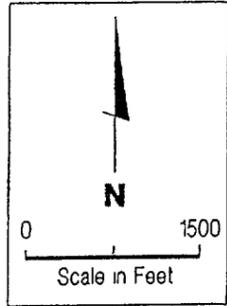
**FIGURE A-1**  
**PINEDALE GROUNDWATER**  
**TCE PLUME SITE PLAN**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO CALIFORNIA

Source BSK Associates, Inc., January 2004



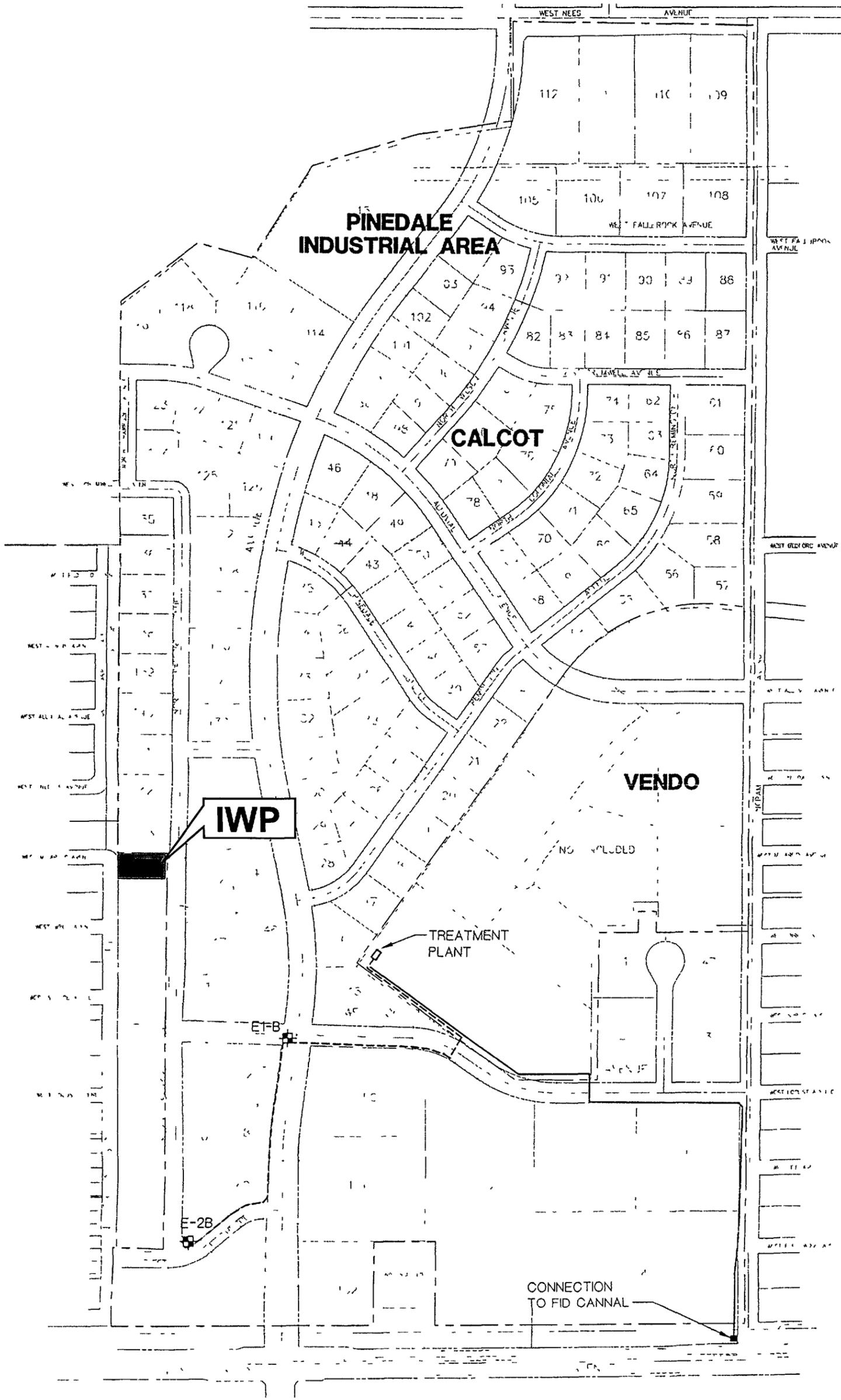
**LEGEND**

- ⊕ PROPOSED MUNICIPAL WELL EXTRACTION
- MUNICIPAL SUPPLY WELL CURRENTLY IN SERVICE
- MUNICIPAL SUPPLY WELL NOT CURRENTLY IN SERVICE
- 285 NEW CITY OF FRESNO WELL DESIGNATION (D25-8)
- OLD CITY OF FRESNO WELL DESIGNATION
- PRIVATE GROUNDWATER WELL (PGW)
- ▲ MONITORING WELL CLUSTER
- PROPOSED CONVEYANCE PIPELINE



**FIGURE A-2  
 PINEDALE SELECTED OFF-SITE  
 GROUNDWATER TREATMENT  
 SYSTEM LAYOUT**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO, CALIFORNIA

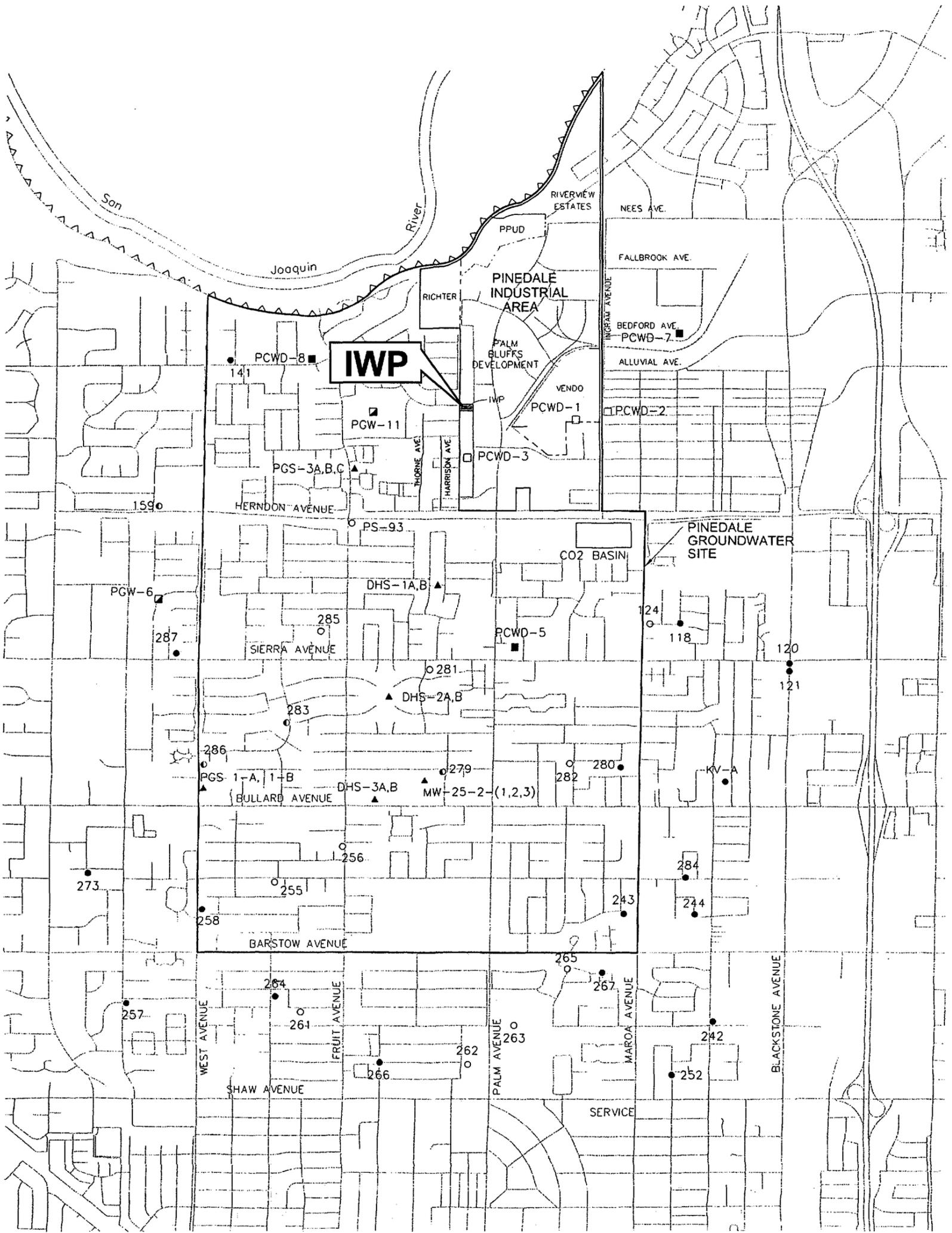
Source: Dames & Moore, November 1998



- LEGEND**
- ⊕ PROPOSED ON-SITE EXTRACTION WELL
  - UNTREATED WATER PIPELINE
  - TREATED NON-POTABLE WATER PIPELINE
  - - - PROPERTY LINE

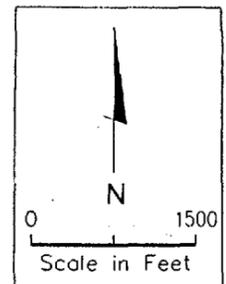
**FIGURE A-3  
 PINEDALE SELECTED ON-SITE  
 GROUNDWATER TREATMENT  
 SYSTEM LAYOUT**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO, CALIFORNIA

Source Dames & Moore, November 1998



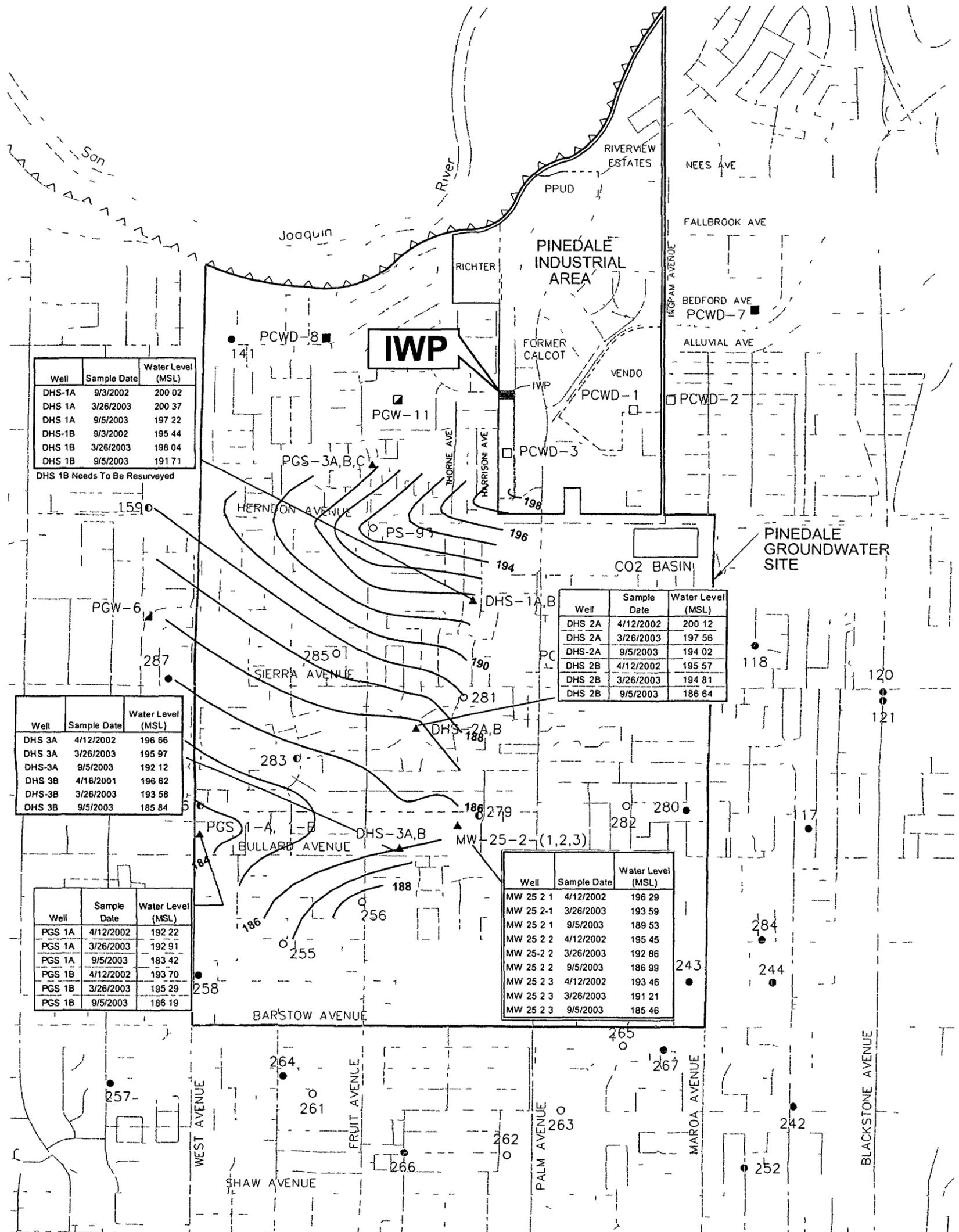
**LEGEND**

- |  |                                     |
|--|-------------------------------------|
| □ PINEDALE COUNTY WATER DISTRICT (PCWD) MUNICIPAL SUPPLY WELL NOT IN SERVICE | 285 CITY OF FRESNO WELL DESIGNATION |
| ■ PINEDALE COUNTY WATER DISTRICT MUNICIPAL SUPPLY WELL IN SERVICE            | ▲ MONITORING WELL CLUSTER           |
| ● MUNICIPAL SUPPLY WELL CURRENTLY IN SERVICE                                 | ▣ PRIVATE WATER WELL                |
| ○ MUNICIPAL SUPPLY WELL NOT CURRENTLY IN SERVICE                             |                                     |
| ◐ MUNICIPAL SUPPLY WELL WITH TREATMENT                                       |                                     |



**FIGURE A-4  
OFF-SITE MONITORING AND  
SUPPLY WELL LOCATIONS  
INDUSTRIAL WASTE PROCESSING  
FRESNO, CALIFORNIA**





Well	Sample Date	Water Level (MSL)
DHS-1A	9/3/2002	200 02
DHS 1A	3/26/2003	200 37
DHS 1A	9/5/2003	197 22
DHS-1B	9/3/2002	195 44
DHS 1B	3/26/2003	198 04
DHS 1B	9/5/2003	191 71

DHS 1B Needs To Be Resurveyed

Well	Sample Date	Water Level (MSL)
DHS 2A	4/12/2002	200 12
DHS 2A	3/26/2003	197 56
DHS-2A	9/5/2003	194 02
DHS 2B	4/12/2002	195 57
DHS 2B	3/26/2003	194 81
DHS 2B	9/5/2003	186 64

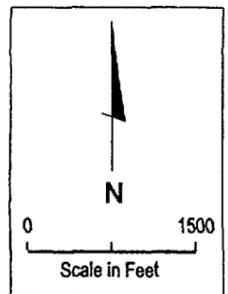
Well	Sample Date	Water Level (MSL)
DHS 3A	4/12/2002	196 66
DHS 3A	3/26/2003	195 97
DHS-3A	9/5/2003	192 12
DHS 3B	4/16/2001	196 62
DHS-3B	3/26/2003	193 58
DHS 3B	9/5/2003	185 84

Well	Sample Date	Water Level (MSL)
PGS 1A	4/12/2002	192 22
PGS 1A	3/26/2003	192 91
PGS 1A	9/5/2003	183 42
PGS 1B	4/12/2002	193 70
PGS 1B	3/26/2003	195 29
PGS 1B	9/5/2003	186 19

Well	Sample Date	Water Level (MSL)
MW 25 2 1	4/12/2002	196 29
MW 25 2-1	3/26/2003	193 59
MW 25 2 1	9/5/2003	189 53
MW 25 2 2	4/12/2002	195 45
MW 25-2 2	3/26/2003	192 86
MW 25 2 2	9/5/2003	186 99
MW 25 2 3	4/12/2002	193 46
MW 25 2 3	3/26/2003	191 21
MW 25 2 3	9/5/2003	185 46

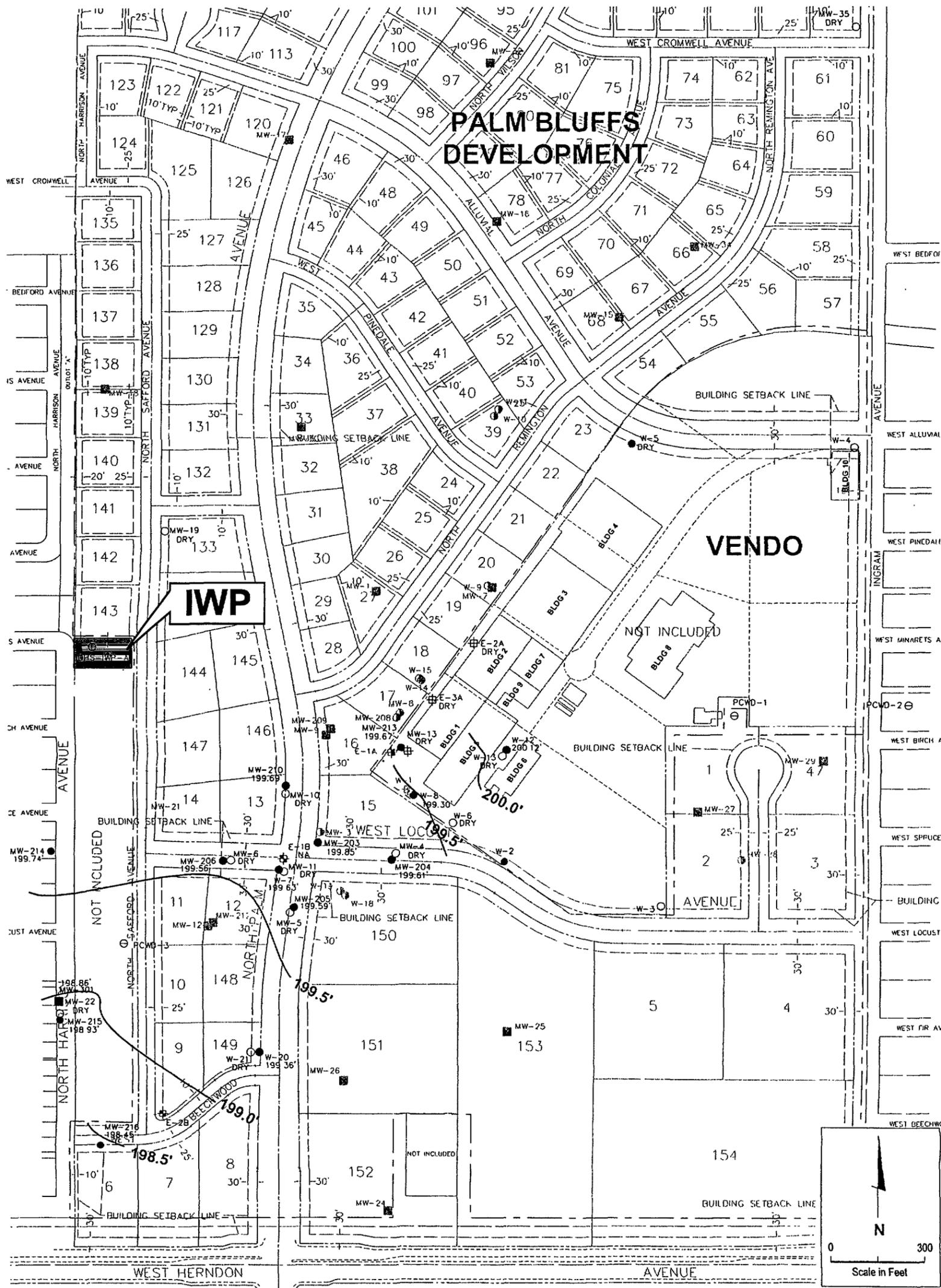
**LEGEND**

- PINEDALE COUNTY WATER DISTRICT (PCWD) MUNICIPAL SUPPLY WELL NOT IN SERVICE
- PINEDALE COUNTY WATER DISTRICT MUNICIPAL SUPPLY WELL IN SERVICE
- MUNICIPAL SUPPLY WELL CURRENTLY IN SERVICE
- MUNICIPAL SUPPLY WELL NOT CURRENTLY IN SERVICE
- ⊙ MUNICIPAL SUPPLY WELL WITH TREATMENT
- 285 CITY OF FRESNO WELL DESIGNATION
- ▲ MONITORING WELL CLUSTER
- ⊘ PRIVATE WATER WELL
- APPROXIMATE LINES OF EQUAL ELEVATION



**FIGURE A-6**  
**OFF-SITE GROUNDWATER DEEP WELL**  
**ELEVATIONS AND CONTOUR MAP**  
**SEPTEMBER 2003**  
 INDUSTRIAL WASTE PROCESSING  
 FRESNO CALIFORNIA

Source BSK Associates, Inc , January 2004



**LEGEND**

- |     |  |          |                                      |
|-----|--|----------|--------------------------------------|
| --- | PROPERTY LINE                            | ○ W-19   | SHALLOW MONITORING WELL              |
| ⊕   | DHS-IWP-A DHS-IWP-A-DTSC MONITORING WELL | ● W-18   | INTERMEDIATE MONITORING WELL         |
| ⊖   | PS-98 MUNICIPAL SUPPLY WELL              | ■ MW-301 | DEEP MONITORING WELL                 |
| ⊕   | E-28 DEEP EXTRACTION WELL                | ⊙        | WELLS ABANDONED BY VENDO             |
| ⊕   | E-2A SHALLOW EXTRACTION WELL             | ⊙        | WELLS ABANDONED BY CALCOT            |
|     |  | 208.94   | GROUNDWATER ELEVATION (MSL)          |
|     |  | —        | APPROXIMATE LINES OF EQUAL ELEVATION |

**FIGURE A-7  
ON-SITE INTERMEDIATE  
GROUNDWATER CONTOUR MAP  
SEPTEMBER 2003  
INDUSTRIAL WASTE PROCESSING  
FRESNO, CALIFORNIA**

Source: BSK Associates Inc., January 2004

**Appendix B**  
**Documents Reviewed**

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## APPENDIX B

# Documents Reviewed

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**Appendix C**  
**Five-year Review Site Inspection Checklist**

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APPENDIX C

# Five-year Review Site Inspection Checklist and Memo

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**TABLE C-1**

Site Inspection Team Roster

Site Inspection- May 10, 2004

*Industrial Waste Processing, Superfund Site, Pinedale, Fresno County, California*

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<b>Name</b>	<b>Title</b>	<b>Affiliation</b>
Monica Pereira	Environmental Specialist	CH2M HILL, Oakland Office

---

**Five-Year Review Site Inspection Checklist  
Industrial Waste Processing Superfund Site  
Fresno, California**

I. SITE INFORMATION	
<b>Site name:</b> Industrial Waste Processing	<b>Date of inspection:</b> May 10, 2004
<b>Location and Region:</b> Fresno, CA, Region 9	<b>USEPA ID:</b> CAD980736284
<b>Agency, office, or company leading the five-year review:</b> USEPA Region 9	<b>Weather/temperature:</b> Approximately 75°, Sunny
<b>Remedy Includes:</b> (Check all that apply) <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Landfill cover/containment (Asphalt and cement)</li> <li><input checked="" type="checkbox"/> Access controls (Site access is through an open driveway; there is no fencing on the north border of the Site; there is a locked gate on the west border of the Site and a locked gate on the southwest corner of the Site)</li> <li><input checked="" type="checkbox"/> Vegetative cover (Grass, shrubs, and small trees surrounds the Site in compliance with city code)</li> <li><input type="checkbox"/> Other</li> </ul>	
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached [in report]	
II. INTERVIEWS (No interviews were conducted for this 5-year review)	
<b>1. O&amp;M Site Manager (Inspections)</b> Name <u>NA</u> Title <u>NA</u> Date <u>NA</u>  Interviewed: _____ Phone No: _____  Problems, suggestions: <u>At time of this five-year review, there was no O&amp;M documentation available.</u>	

**2. O&M staff**

Name NA Title \_\_\_\_\_ Date \_\_\_\_\_

Interviewed: \_\_\_\_\_ Phone No: \_\_\_\_\_

Problems, suggestions:

**3. Local regulatory authorities and responsible agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.**

Agency NA

Contact:

Name Title Date Phone No.

Problems; suggestions:

**4. Other interviews (optional): No interviews where conducted for this five-year review**

**III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (Check all that apply)**

**1. O&M Documents**

- O&M manual  Readily available  Up to date
- As-built drawings  Readily available  Up to date
- Maintenance logs  Readily available  Up to date

Remarks: Not available

**2. Site-Specific Health and Safety Plan**  Readily available  Up to date

- Contingency plan/emergency response plan  Readily available  Up to date
- NA

Remarks: Not applicable

**3. Permits and Service Agreements**

- Air discharge permit  Readily available  Up to date  N/A
- Effluent discharge  Readily available  Up to date  N/A
- Waste disposal, POTW  Readily available  Up to date  N/A
- Other permits \_\_\_\_\_  Readily available  Up to date  N/A

Remarks: \_\_\_\_\_

**4. Gas Generation Records**  Readily available  Up to date  N/A

Remarks:

5.	<b>Settlement Monument Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks:				
6.	<b>Groundwater Monitoring Records</b>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks: <u>Groundwater Monitoring records are readily available at DTSC office in the town of Clovis.</u>				
7.	<b>Leachate Extraction Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _				
8.	<b>Discharge Compliance Records</b>			
	<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks:				
9.	<b>Daily Access/Security Logs</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks:				
<b>IV. O&amp;M COSTS - N/A</b>				
1.	<b>O&amp;M Organization</b>			
	<input type="checkbox"/> State in-house	<input type="checkbox"/> Contractor for State		
	<input type="checkbox"/> PRP in-house	<input type="checkbox"/> Contractor for PRP		
	<input type="checkbox"/> Other			
2.	<b>O&amp;M Cost Records</b>			
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date		
	<input type="checkbox"/> Funding mechanism/agreement in place			
	<input type="checkbox"/> Original O&M cost estimate	<input type="checkbox"/> Breakdown attached		
Total annual cost by year for review period if available - see Report.				
	Date	Date	Total cost	
From	_____	To	_____	<input type="checkbox"/> Breakdown attached
	Date	Date	Total cost	
From	_____	To	_____	<input type="checkbox"/> Breakdown attached
	Date	Date	Total cost	
3.	<b>Unanticipated or Unusually High O&amp;M Costs During Review Period</b>			
Describe costs and reasons:				
_____				
_____				
_____				

**V. ACCESS AND INSTITUTIONAL CONTROLS**     Applicable

**A. Fencing**

1. **Fencing**     Location shown on Site map     Gates secured     N/A

Remarks: Chain-link in good condition, about 10 feet tall, with barbed wire and a locked gate on the west border of the property. A side locked gate on the southwest corner of the property. The property is accessible through the open driveway and open north border.

**B. Other Access Restrictions**

1.    **Signs and other security measures**    No Signs Displayed

Remarks:

**C. Institutional Controls**     Not Applicable

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented     Yes     No     N/A  
 Site conditions imply ICs not being fully enforced     Yes     No     N/A

Type of monitoring (e.g., self-reporting, drive by)

Frequency NA

Responsible party/agency NA

Contact NA

Name	Title	Date	Phone No.
------	-------	------	-----------

Reporting is up to date     Yes     No     N/A  
 Reports are verified by the lead agency     Yes     No     N/A

Specific requirements in deed or decision documents have been met     Yes     No     N/A

Violations have been reported     Yes     No     N/A

Other problems or suggestions:

2. **Adequacy:**     ICs are adequate     ICs are inadequate     N/A

Remarks

-

**D. General**

1. **Vandalism/trespassing**     Location shown on Site map     No vandalism evident

Remarks:

2. **Land use changes on-site**     Yes     No

Remarks: The Site was fully re-developed in 2001. It currently houses an 8,192-square-foot warehouse surrounded by a small parking lot.

3. Land use changes off-site  Yes  No

Remarks: The parcel on the north border of the Site and the parcel on the east border have both been developed into modern office facilities.

**VI. GENERAL SITE CONDITIONS**

A. Roads  Applicable

1. Roads  Location shown on Site map  Roads adequate   
N/A

Remarks: The Site stormwater run off flows into the Pinedale flood control system on North Harrison Avenue.

B. Other Site Conditions

Remarks: Approximately 95 percent of the top soil of the Site has been fully capped by the building structure, asphalt, or cement. The other approximately 5 percent of the topsoil has been capped with vegetation in order to comply with the City code.

**VII. LANDFILL COVERS  Applicable**

A. Landfill Surface

1. Settlement (Low spots)  Location shown on Site map  Settlement not evident  
Areal extent \_\_\_\_\_  Depth \_\_\_\_\_

Remarks: The Site was graded for drainage from east to west. Approximately 95 percent of the top soil on the Site has been fully capped by the building structure, asphalt, or cement. The other approximately 5 percent of the topsoil has been capped with vegetation in order to comply with the City code.

2. Cracks  Location shown on Site map  Cracking not evident  
Lengths \_\_\_\_\_ Widths \_\_\_\_\_ Depth \_\_\_\_\_

Remarks: \_

3. Erosion  Location shown on Site map  Erosion not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_

Remarks: \_

4. Holes  Location shown on Site map  Holes not evident  
Areal extent \_\_\_\_\_ Depth \_\_\_\_\_

Remarks:

5. <b>Vegetative Cover</b>	<input checked="" type="checkbox"/> Grass	Cover properly established	<input checked="" type="checkbox"/> No signs of stress
Trees/Shrubs (indicate size and locations on a diagram) - See photos 01 and 06.			
Remarks: Landscape present to comply with the City code.			
6. <b>Alternative Cover</b> (armored rock, concrete, etc.)	<input type="checkbox"/> N/A		
Remarks: Approximately 90 percent of the Site is covered in concrete/slab.			
7. <b>Bulges</b>	<input type="checkbox"/> Location shown on Site map		<input checked="" type="checkbox"/> Bulges not evident
Areal extent _____	Height _____		
Remarks:			
8. <b>Wet Area/Water Damage</b>	<input type="checkbox"/> Wet areas/water damage not evident		
Wet areas	Location shown on Site map	Areal extent _____	
Ponding	Location shown on Site map	Areal extent _____	
<input checked="" type="checkbox"/> Seeps	<input checked="" type="checkbox"/> Location shown on Photo #12	Areal extent <u>≈ 2 square feet</u>	
Soft subgrade	Location shown on Site map	Areal extent _____	
Remarks: <u>Probably, due to irrigation leakage at the base of the utility pole.</u>			
9. <b>Slope Instability</b> Slides	<input type="checkbox"/> Location shown on Site map		<input checked="" type="checkbox"/> No evidence of slope instability
Areal extent _____	Remarks:		
<b>B. Benches</b>	<input type="checkbox"/> Applicable		<input checked="" type="checkbox"/> N/A
1. <b>Flows Bypass Bench</b>	<input type="checkbox"/> Location shown on Site map		<input checked="" type="checkbox"/> N/A or okay
Remarks:			
2. <b>Bench Breached</b>	<input type="checkbox"/> Location shown on Site map		<input checked="" type="checkbox"/> N/A or okay
Remarks:			
3. <b>Bench Overtopped</b>	<input type="checkbox"/> Location shown on Site map		<input checked="" type="checkbox"/> N/A or okay
Remarks:			
<b>C. Letdown Channels</b>	<input type="checkbox"/> Applicable		<input checked="" type="checkbox"/> N/A
1. <b>Settlement</b>	<input type="checkbox"/> Location shown on Site map		<input type="checkbox"/> No evidence of settlement
Areal extent _____	Depth _____		
Remarks:			
2. <b>Material Degradation</b>	<input type="checkbox"/> Location shown on Site map		<input type="checkbox"/> No evidence of degradation
Material type _____	Areal extent _____		
Remarks:			

3.	<b>Erosion</b>	<input type="checkbox"/> Location shown on Site map	<input type="checkbox"/> No evidence of erosion
	Areal extent _____	Depth _____	
	Remarks:		
4.	<b>Undercutting</b>	<input type="checkbox"/> Location shown on Site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks:		
5.	<b>Obstruction</b>	Type _____	<input type="checkbox"/> No obstruction
	Location shown on Site map	Areal extent _____	
	Size _____		
	Remarks:		
6.	<b>Excessive Vegetative Growth</b>	Type _____	<input type="checkbox"/> No
	Areal extent _____		
	Remarks:		
<b>D. Cover Penetrations</b>		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	<b>Gas Vents</b>	<input type="checkbox"/> Active	<input type="checkbox"/> Passive <input checked="" type="checkbox"/> N/A
	Properly secured/located	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	Evidence of leakage at penetration		
	Remarks:		
2.	<b>Gas Monitoring Probes</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> NA
	Properly secured/located		
	Evidence of leakage at penetration		
	Remarks:		
3.	<b>Monitoring Wells (within surface area of landfill)</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition
	Properly secured/located		
	Remarks: The monitoring is located within the warehouse. The well has been reported dry.		
4.	<b>Leachate Extraction Wells</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	Properly secured/located	<input type="checkbox"/> Needs O&M	<input checked="" type="checkbox"/> N/A
	Evidence of leakage at penetration		
	Remarks:		

5.	<b>Settlement Monuments</b>	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed	<input checked="" type="checkbox"/> N/A
Remarks:				
<b>E. Gas Collection and Treatment (effluent from groundwater treatment system)</b>				
		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A	
1.	<b>Gas Treatment Facilities</b>			
	<input type="checkbox"/> Flaring	<input type="checkbox"/> Thermal destruction	<input type="checkbox"/> Collection for reuse	
	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks:				
2.	<b>Gas Collection Wells, Manifolds and Piping</b>			
	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks:				
3.	<b>Gas Treatment Facilities</b> (e.g., gas monitoring of adjacent homes or buildings)			
	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A	
Remarks:				
<b>F. Cover Drainage Layer</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A	
1.	<b>Outlet Pipes Inspected</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks:				
2.	<b>Outlet Rock Inspected</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks: _				
<b>G. Detention/Sedimentation Ponds</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A	
1.	<b>Siltation</b>	Areal extent _____	Depth _____	<input type="checkbox"/> N/A
Siltation not evident				
Remarks: _				
2.	<b>Erosion</b>	Areal extent _____	Depth _____	
Erosion not evident				
Remarks:				
3.	<b>Outlet Works</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A	
Remarks: _				

4.	<b>Dam</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks:_____			
<b>H. Retaining Walls</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	<b>Deformations</b>	<input type="checkbox"/> Location shown on Site map	<input type="checkbox"/> Deformation not evident
Horizontal displacement_____ Vertical displacement_____			
Rotational displacement_____			
Remarks:_____			
2.	Degradation	<input type="checkbox"/> Location shown on Site map	<input type="checkbox"/> Degradation not evident
Remarks:_____			
<b>I. Perimeter Ditches/Off-Site Discharge</b>		<input checked="" type="checkbox"/> Applicable	N/A
1.	<b>Siltation</b>	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> Siltation not evident
Areal extent_____ Depth_____			
Remarks:_____			
2.	<b>Vegetative Growth</b>	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> Vegetation does not impede flow			
Areal extent_____ Type_____			
Remarks:_____			
3.	<b>Erosion</b>	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> Erosion not evident
Areal extent_____ Depth_____			
Remarks:_____			
4.	<b>Discharge Structure</b>	<input checked="" type="checkbox"/> Functioning	N/A
Remarks: Simple drain to the Pinedale flood control district			
One drain located at approximately 2 feet from the property on North Harrison Street flowing to the Pinedale flood control district.			
<b>VIII. VERTICAL BARRIER WALLS</b>		<input checked="" type="checkbox"/> Not Applicable	
1.	<b>Settlement</b>	Location shown on Site map	Settlement not evident
Areal extent_____ Depth_____			
Remarks:_____			
2.	<b>Performance Monitoring</b>	Type of monitoring_____	
Performance not monitored			
Frequency_____		<input type="checkbox"/> Evidence of breaching	
Head differential_____			
Remarks:_____			

<b>IX. GROUNDWATER/SURFACE WATER REMEDIES</b> <input checked="" type="checkbox"/> Applicable	
<b>A. Groundwater Extraction Wells, Storm Drains and Gutters</b> <input checked="" type="checkbox"/> Applicable	
1. <b>Pumps, Wellhead Plumbing, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs O&M <input checked="" type="checkbox"/> N/A Remarks: _____	
2. <b>Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <input checked="" type="checkbox"/> N/A Remarks:	
3. <b>Spare Parts and Equipment</b> <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input checked="" type="checkbox"/> NA Remarks: _____	
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b> <input checked="" type="checkbox"/> N/A	
1. <b>Collection Structures, Pumps, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M Remarks:	
2. <b>Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M <input type="checkbox"/> N/A Remarks:	
3. <b>Spare Parts and Equipment</b> <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided <input checked="" type="checkbox"/> N/A Remarks:	

<b>C. Treatment System</b> <input checked="" type="checkbox"/> Not Applicable		
1.	<b>Treatment Train</b> (Check components that apply)	
	<input type="checkbox"/> Metals removal	<input type="checkbox"/> Oil/water separation
	<input type="checkbox"/> Air stripping	<input type="checkbox"/> Carbon adsorbers
	<input type="checkbox"/> Additive (e.g., chelation agent, flocculent)	
	<input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M	
	<input type="checkbox"/> Sampling ports properly marked and functional	
	<input type="checkbox"/> Sampling/maintenance log displayed and up to date	
	<input type="checkbox"/> Equipment properly identified	
	<input type="checkbox"/> Quantity of groundwater treated annually	
	<input type="checkbox"/> Quantity of surface water treated annually <u>N/A</u>	
	Remarks: _____	
2.	<b>Electrical Enclosures and Panels</b> (properly rated and functional)	
	<input type="checkbox"/> N/A	<input type="checkbox"/> Good condition
		<input type="checkbox"/> Needs O&M
	Remarks: _____	
3.	<b>Tanks, Vaults, Storage Vessels</b>	
	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M
	Remarks: _____	
4.	<b>Discharge Structure and Appurtenances</b>	
	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M
	Remarks: _____	
5.	<b>Treatment Building(s) - support building</b>	
	<input type="checkbox"/> N/A	<input type="checkbox"/> Good condition (especially roof and doorways)
		<input type="checkbox"/> Needs repair
	Remarks: _____	
6.	<b>Monitoring Wells</b> (pump and treatment remedy)	
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning - See Report
		<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> Good condition - See Report	<input type="checkbox"/> All required wells located - no
		<input type="checkbox"/> Needs O&M <input type="checkbox"/> N/A
	Remarks: _____	
<b>D. Monitored Natural Attenuation</b> <input checked="" type="checkbox"/> Applicable		

**1. Monitoring Wells (natural attenuation remedy)**

Properly secured/locked       Functioning       Routinely sampled     Good condition

All required wells located     Needs O&M

Remarks: There is no lock placed on the monitoring well cover. The well is monitored every 6 months; however, it has been reported dry since 1999.

**X. OTHER REMEDIES    N/A**

If there are remedies applied at the Site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

**XI. OVERALL OBSERVATIONS**

**A. Implementation of the Remedy**

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The preferred remedial action at the IWP is soil removal and natural attenuation of the lower vadose zone. The soil removal was performed in 1998 and the RAOs for the soil contaminated with lead and TCE were achieved. See the Five-year Review Report for a full technical evaluation.

Issues identified during Site visit are:

1. Accessibility to well - is good with permission of the owner during business hours only. Not possible without the keys to the building.
2. Lock on the well cover.
3. Lack of O&M documentation.

**Appendix D**  
**Site Inspection Photographs**

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Photographic Record # 01  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: West View of IWP Site



Photographic Record # 02  
Industrial Waste Processing  
Date: May 10, 2004

Photographer: Monica Pereira/CH2M HILL

Description: Side Gate and Storm Drain on the Southwest Corner of Property



Photographic Record # 03  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Locked Gate on the Back of  
Warehouse-North Harrison Street Site Access



Photographic Record # 04  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: View of North and East Borders of the Site



Photographic Record # 05  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Newly Developed Parking Lot at the Site. Eastward Facing  
the Vendo Company



Photographic Record # 06  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Landscaping on the North Boundary of the Site

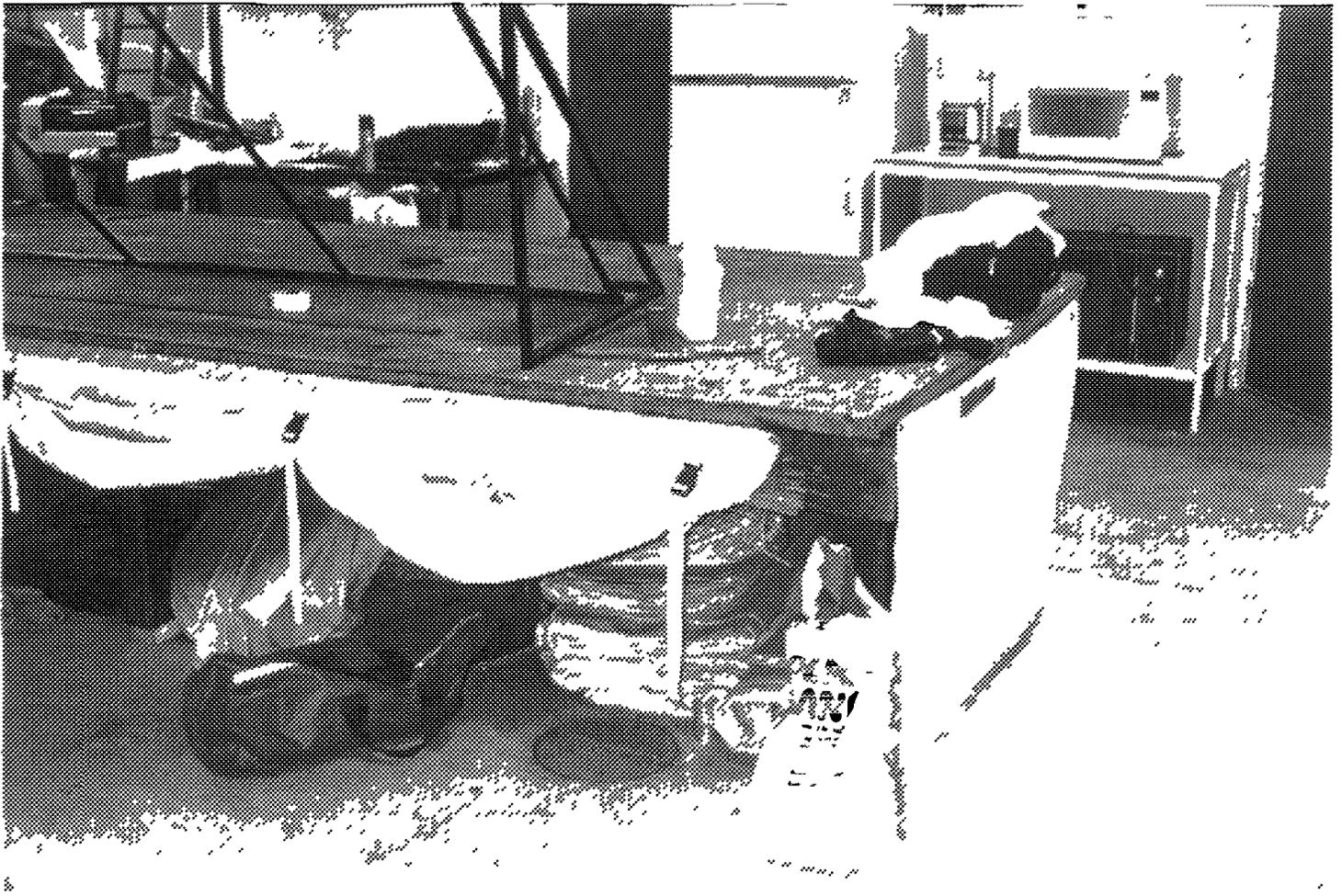


Photographic Record # 07  
Industrial Waste Processing  
Date: May 10, 2004

Photographer: Monica Pereira/CH2M HILL  
Description: Picture from Inside Warehouse Looking Southeast Towards  
Entrance from Inside Warehouse



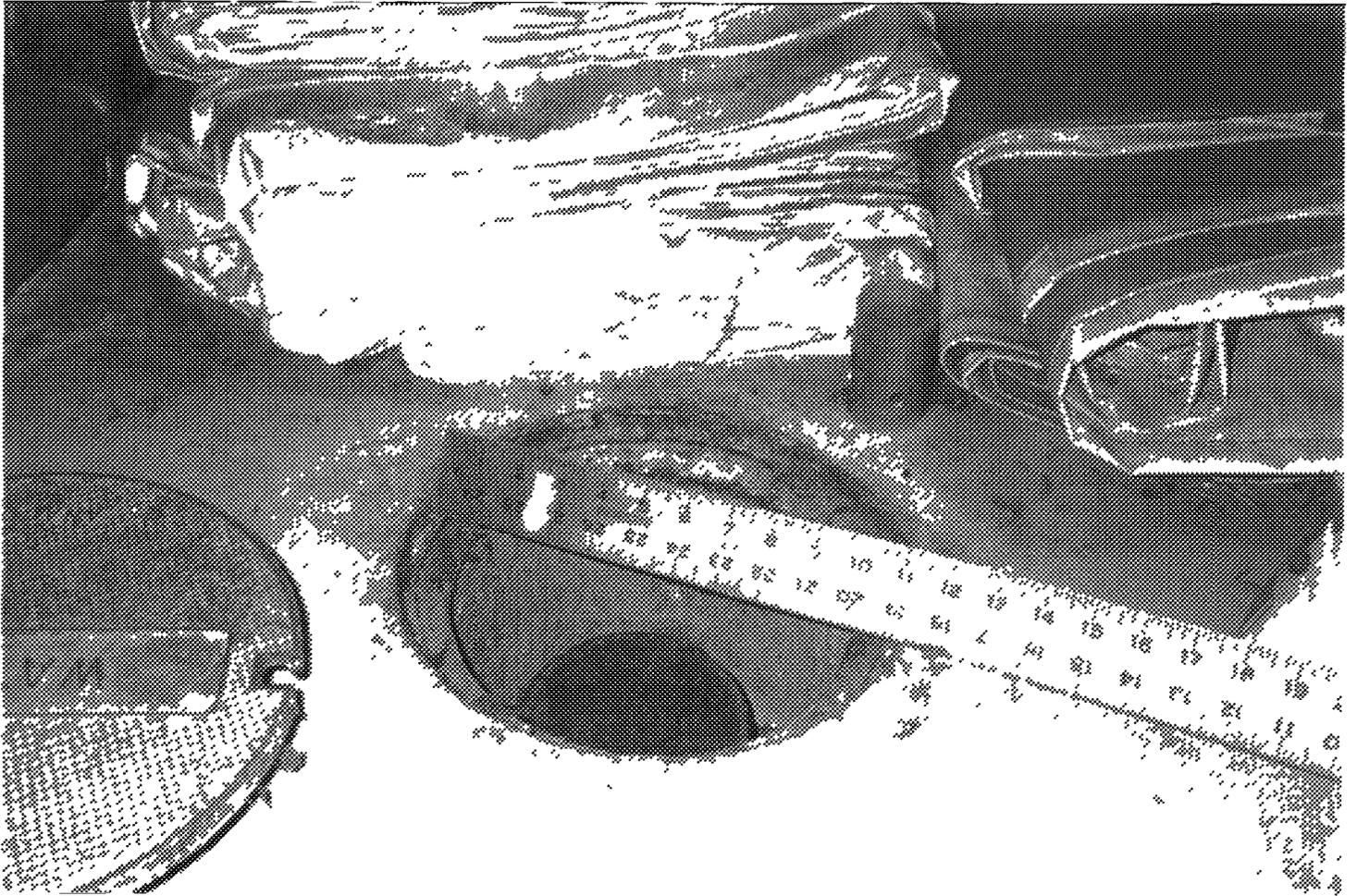
Photographic Record # 08  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Undeveloped Property on the Southern Border of the Site



Photographic Record # 09  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Monitoring Well DHS-IWP-A (Under the Table)



Photographic Record # 10  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Monitoring Well DHS-IWP-A



Photographic Record # 11  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Monitoring Well DHS-IWP-A Open Cover



Photographic Record # 12  
Industrial Waste Processing  
Date: May 10, 2004  
Photographer: Monica Pereira/CH2M HILL  
Description: Water Puddle Immediately Behind the Site

**Appendix E**  
**Certification of Completion Documents**

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

January 27, 1999

**DUPLICATE DOCUMENT**

Mr. Keith Howard, Esq.  
Law Offices of Cooper, White & Cooper  
1333 N California Boulevard, Suite 450  
Walnut Creek, CA 94596

Do not send to Records Center

Re: Certification of Completion for the Industrial Waste Processing Superfund Site

Dear Mr. Howard:

EPA has reviewed and approved the "Remedial Action Report for Removal Action at Industrial Waste Processing, Fresno, CA." The Removal Action performed at the Industrial Waste Processing Site (IWP) has been performed in accordance with the Consent Decree Case No. CIV-F-97-5402 REC SMS United States vs. American National Can Company, Crown Beverage Packaging, Inc., NL Industries, Inc., and Tri-Valley Growers.

Pursuant to Section XIII of the Consent Decree, EPA certifies that the removal action has been completed. Certification of Completion of the Removal Action shall not affect Settling Defendants' obligations under the above mentioned Consent Decree.

Oversight billing for the Removal Action is forthcoming. If you have any questions please call the Remedial Project Manager, Beatriz Bofill, at (415) 744-2235.

Sincerely,

Beatriz Bofill  
Project Manager

cc: Emmanuel Mensah, DTSC  
Richard Freudenberg, ESC  
Jeannie Cervera, EPA



## Department of Toxic Substances Control



Edwin F. Lowry, Director  
10151 Croydon Way, Suite 3  
Sacramento, California 95827-2106

Gray Davis  
Governor

Winston H. Hickox  
Secretary for  
Environmental  
Protection

September 21, 1999

Ms. Cathy Moore, Chief  
U.S. Environmental Protection Agency  
Region IX (SFD-7-2)  
75 Hawthorne Street  
San Francisco, California 94105

INDUSTRIAL WASTE PROCESSING SITE-REMOVAL ACTION REPORT/*Focused RI*

Dear Ms. Moore:

The Department of Toxic Substances Control (DTSC) has completed review of the Removal Action Report and the final Focused Remedial Investigation (RI) Report for the Industrial Waste Processing Site (IWP) in Fresno, California. Based on our review of these documents, we agree with U.S. EPA that the principal objectives of the Removal Action have been satisfied e.g., cleanup of soil to residential standards. In addition, the focused RI results indicate that the site does not contribute significantly to groundwater contamination. As we have discussed, the community should be notified should U.S. EPA elect to close out this site.

If you have any questions regarding this matter, please contact Mr. Emmanuel Mensah at (916) 255-3704.

Sincerely,

Richard Hume, Chief  
National Priority List Unit  
Northern California-Central  
Cleanup Operations Branch.

cc: Ms. Carolyn Kenmore  
Superfund Site Cleanup Branch  
U.S. EPA Region IX  
75 Hawthorne Street  
San Francisco, California 94105

**Appendix F**  
**City of Fresno Storm Water Discharge Permit for**  
**Pacific Tent & Awning**

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**FRESNO METROPOLITAN FLOOD CONTROL DISTRICT  
NOTICE OF REQUIREMENTS**

**SPR**

**PUBLIC AGENCY**

Mr. Rayburn Beach, Senior Planner  
Development Services Department  
City of Fresno  
2600 Fresno Street  
Fresno, CA 93721

**DEVELOPER**

**PACIFIC TENT & AWNING**  
4051 N. VALENTINE, #114  
FRESNO, CA 93722  
-

PROJECT NO.	<u>2001-264</u>	PRELIMINARY FEE(S) (See below)	
DRAINAGE AREA(S)	<u>" CO1 " " - "</u>	DRAINAGE AREA	<u>" CO1 " \$2,124.00</u>
DATE	<u>7-25-01</u>	DRAINAGE AREA	<u>" - " -</u>
APN	<u>405-331-09</u>	TOTAL FEE	<u>\$2,124.00</u>
		ADDRESS	<u>7295 N. PALM BLUFFS</u>

The proposed development will generate storm runoff which produces potentially significant environmental impacts and which must be properly discharged and mitigated pursuant to the California Environmental Quality Act and the National Environmental Policy Act. The District in cooperation with the City and County has developed and adopted the Storm Drainage and Flood Control Master Plan. Compliance with and implementation of this Master Plan by this development project will satisfy the drainage related CEQA/NEPA impact of the project mitigation requirements.

The proposed development shall pay drainage fees pursuant to the Drainage Fee Ordinance prior to issuance of a building permit at the rates in effect at the time of such issuance. The fee indicated above is valid through February 29, 20 02 based on the site plan submitted to the District on 07/18/01 Contact FMFCD for a revised fee in cases where changes are made in the proposed site plan which materially alter the proposed impervious area.

Considerations which may affect the fee obligation(s) or the timing or form of fee payment:

- a) Fees related to undeveloped or phased portions of the project may be deferrable.
- b) Fees may be calculated based on the actual percentage of runoff if different than that typical for the zone district under which the development is being undertaken and if permanent provisions are made to assure that the site remains in that configuration.
- c) Master Plan storm drainage facilities may be constructed, or required to be constructed in lieu of paying fees.
- d) The actual cost incurred in constructing Master Plan drainage system facilities is credited against the drainage fee obligation.

**No. 2001-264**

**FRESNO METROPOLITAN FLOOD CONTROL DISTRICT  
NOTICE OF REQUIREMENTS**

Page 2 of 4

- e) When the actual costs incurred in constructing Master Plan facilities exceeds the drainage fee obligation, reimbursement will be made for the excess costs from future fees collected by the District from other development.

**Approval of this development shall be conditioned upon compliance with these District Requirements.**

1.      a.     Drainage from the site shall be directed to     Harrison Avenue.
- b.     Grading and drainage patterns shall be as identified on Exhibit No. 1 // 2
- c.     The grading and drainage patterns shown on the site plan conform to the adopted Storm Drainage and Flood Control Master Plan.
2.     The proposed development shall construct and/or dedicate Storm Drainage and Flood Control Master Plan facilities located within the development or necessitated by any off-site improvements required by the approving agency.
- See Exhibit No. 1, see Paragraph No. 7.
- None required.
3.     The following final improvement plans shall be submitted to the District for review prior to final development approval.
- |                                     |              |                          |                    |                          |           |
|-------------------------------------|--------------|--------------------------|--------------------|--------------------------|-----------|
| <input checked="" type="checkbox"/> | Grading Plan | <input type="checkbox"/> | Storm Drain Plan   | <input type="checkbox"/> | Final Map |
| <input type="checkbox"/>            | Street Plan  | <input type="checkbox"/> | Water & Sewer Plan | <input type="checkbox"/> | Other     |
4.     Availability of drainage facilities
- a.     Permanent drainage service is available provided the developer can verify to the satisfaction of the City of Fresno that runoff can be safely conveyed to the Master Plan inlet(s).
- b.     The construction of facilities required by Paragraph No. 2 hereof will provide permanent drainage service.
- c.     Permanent drainage service will not be available. The District recommends temporary facilities until permanent service is available. Temporary service is available through     Master Plan facilities located in Thorne Avenue.
- d.     See Exhibit No. 2.
5.     The proposed development:
- Appears to be located within a     500 year     100 year flood prone area as designated on the latest Flood Insurance Rate Maps available to the District, necessitating appropriate floodplain management action. See attached Floodplain Policy.
- Does not appear to be located within a flood prone area.

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT  
NOTICE OF REQUIREMENTS

Page 3 of 4

6. The Federal Clean Water Act and the State General Permits for Storm Water Discharges Associated with Construction and Industrial Activities (State General Permits) require developers of construction projects disturbing five or more acres, and discharges associated with industrial activity not otherwise exempt from National Pollutant Discharge Elimination System (NPDES) permitting, to implement controls to reduce pollutants, prohibit the discharge of waters other than storm water to the municipal storm drain system, and meet water quality standards. These requirements apply both to pollutants generated during construction, and to those which may be generated by operations at the development after construction.

- a. State General Permit for Storm Water Discharges Associated with Construction Activities, August 1999 (available at the District Office.) A State General Construction Permit is required for all clearing, grading, and disturbances to the ground that result in soil disturbance of at least five acres (or less than five acres if part of a larger common plan of development or sale). Permittees are required to: submit a Notice of Intent to be covered and must pay a permit fee to the State Water Resources Control Board (State Board), develop and implement a storm water pollution prevention plan, eliminate non-storm water discharges, conduct routine site inspections, train employees in permit compliance, and complete an annual certification of compliance.

Under the Phase II federal storm water quality regulations a State General Construction Storm Water Permit will be required for all activities that disturb one acre no later than November, 2003.

- b. State General Permit for Storm Water Discharges Associated with Industrial Activities, April, 1997 (available at the District Office.) A State General Industrial Permit is required for specific types of industries described in the NPDES regulations or by Standard Industrial Classification (SIC) code. The following categories of industries are generally required to secure an industrial permit: manufacturing; trucking; recycling; and waste and hazardous waste management. Specific exemptions exist for manufacturing activities which occur entirely indoors. Permittees are required to: submit a Notice of Intent to be covered and must pay a permit fee to the State Water Resources Control Board, develop and implement a storm water pollution prevention plan, eliminate non-storm water discharges, conduct routine site inspections, train employees in permit compliance, sample storm water runoff and test it for pollutant indicators, and annually submit a report to the State Board.

**SPR**

**No. 2001-264**

FRESNO METROPOLITAN FLOOD CONTROL DISTRICT  
NOTICE OF REQUIREMENTS

Page 4 of 4

- c. The proposed development is encouraged to select and implement storm water quality controls recommended in the Fresno-Clovis Storm Water Quality Management Construction and Post-Construction Guidelines (available at the District Office) to meet the requirements of the State General Permits, eliminate the potential for non-storm water to enter the municipal storm drain system, and where possible minimize contact with materials which may contaminate storm water runoff.
7. A requirement of the District may be appealed by filing a written notice of appeal with the Secretary of the District within ten days of the date of this Notice of Requirements.
8. The District reserves the right to modify, reduce or add to these requirements, or revise fees, as necessary to accommodate changes made in the proposed development by the developer or requirements made by other agencies.
9.  X  See Exhibit No. 2 for additional comments, recommendations and requirements.

  
for Gerald E. Lakeman, District Engineer

  
Project Engineer: Kirk Duncan

C: DANCO CONSTRUCTION CO., INC.  
110 W. PONTIAC WAY, STE. 105  
CLOVIS, CA 93612

**OTHER REQUIREMENTS**  
**EXHIBIT NO. 2**

In an effort to improve storm water runoff quality, outdoor storage areas shall be constructed and maintained such that material which generates contaminants will not be conveyed by runoff into the storm drain system.

The District encourages, but does not require that roof drains from non-residential development be constructed such that they are directed onto and through a landscaped grassy swale area to filter out pollutants from roof runoff.

Runoff from areas where industrial activities, product, or merchandise come into contact with and may contaminate storm water must be directed through landscaped areas or otherwise treated before discharging it off-site or into a storm drain. Roofs covering such areas are recommended. Cleaning of such areas by sweeping instead of washing is to be required unless such wash water can be directed to the sanitary sewer system. Storm drains receiving untreated runoff from such areas that directly connect to the District's system will not be permitted. Loading docks, depressed areas, and areas servicing or fueling vehicles are specifically subject to these requirements. The District's policy governing said industrial site NPDES program requirements are attached.

Development No. SPR 2001-264