SECOND FIVE-YEAR REVIEW REPORT FOR

SAN GABRIEL VALLEY AREA 2 SUPERFUND SITE

La Puente Valley County Water District Operable Unit (OU 02)
San Gabriel Valley Water Company B6 Operable Unit (OU 03)
Valley County Water District Operable Unit (OU 04)
San Gabriel Valley Water Company B5 Operable Unit (OU 05)
(collectively known as the Baldwin Park Operable Unit)

LOS ANGELES COUNTY, CALIFORNIA

PREPARED BY

United States Environmental Protection Agency
Region 9
San Francisco, California

Approved by:

Kathleen Salyer

Date: 9/24/12

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California Site Cleanup Branch
U.S. EPA Region 9 Superfund Division

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Executive Summary

This is the second Five-Year Review (FYR) of the San Gabriel Valley Area 2 Superfund Site (Site) located in Los Angeles County, California. The purpose of this FYR is to review information to determine if the remedy is and will continue to be protective of human health and the environment. The triggering action for this FYR was the signing of the previous FYR on September 27, 2007. This FYR addresses operable units (OUs) 02, 03, 04, and 05 at the Area 2 Site, collectively known as the Baldwin Park OU.

The Area 2 Site addresses multiple, commingled plumes of groundwater contamination that have resulted in an area of contamination more than 1 mile wide and 8 miles long. The contamination originates in and near the City of Azusa and extends to the southwest through portions of the cities of Irwindale, Baldwin Park, West Covina, and Industry. The depth to the groundwater varies from approximately 150 to 350 feet, and the groundwater contamination extends in various areas from the water table to more than 1,000 feet below ground surface. The groundwater is contaminated with volatile organic compounds (VOCs), perchlorate, N-nitrosodimethylamine (NDMA), and 1,4-dioxane.

In March 1994, the U.S. Environmental Protection Agency (EPA) selected an interim remedy for the Site groundwater to protect long-term human health and the environment. The major components of the Baldwin Park OU remedy are four separate groundwater pump and treat systems, each of which consists of the following:

- Multiple groundwater extraction wells for which rates and locations were determined during the remedial design process
- Water treatment equipment capable of removing VOCs, perchlorate, NDMA, and 1,4-dioxane from the contaminated groundwater
- Conveyance systems (i.e., pipelines, booster pumps) to transport contaminated groundwater from the wells to the treatment plant, and to transport treated water from the plant to the water distribution systems of one or more local water purveyors
- Conveyance systems to transport waste brine and other wastewaters from the treatment plant to the industrial sewer operated by Sanitation Districts of Los Angeles County (OUs 02, 03, and 04)
- Monitoring wells to help assess remedy performance

Design and construction of the four pump and treat projects occurred between July 2000 and September 2006. Operation, maintenance, and system improvement activities have been performed since construction completion.

Although the interim remedy did not operate at the target extraction rate selected during remedial design, the extraction systems, supplemented by non-remedy production wells, achieved the primary remedial objective by limiting the migration of contaminants of concern (COCs) in groundwater. An evaluation is underway to examine whether the targeted rates need to be modified and whether some

pumping at non-remedy extraction wells should be incorporated into the remedy. The remedy is meeting all Applicable or Relevant and Appropriate Requirements (ARARs) in the Record of Decision (ROD), and there have been no changes in ARARs affecting the protectiveness of the remedy. Although the toxicity values for trichloroethylene (TCE) became more stringent in 2011, the current drinking water standard is protective of human health and the environment. There have been no other changes in the toxicity factors for the COCs that were used in the previous risk assessments or the standardized risk assessment methodology that could affect the protectiveness of the remedy. The institutional controls (governmental controls) that are in place continue to effectively prevent unacceptable exposure to contaminated Site groundwater.

For the above reasons, the interim remedy for the San Gabriel Valley Area 2 Superfund Site is protective of human health and the environment.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: San Gabriel Valley (Area 2) – Baldwin Park OU		
EPA ID: CAD980818512		
Region: 9	**State:** CA	**City/County:** multiple cities in Los Angeles County

SITE STATUS	
NPL Status: Final	
Multiple OUs? Yes	**Has the site achieved construction completion?** No

REVIEW STATUS
Lead agency: EPA **If "Other Federal Agency" was selected above, enter Agency name:**
Author name (Federal or State Project Manager): Wayne Praskins
Author affiliation: EPA Region 9
Review period: February 2012 – September 2012
Date of site inspection: April 17, 2012
Type of review: Statutory
Review number: 2
Triggering action date: September 27, 2007
Due date *(five years after triggering action date)*: September 27, 2012

Five-Year Review Summary Form (continued)

Issues/Recommendations
No issues were identified that affect the protectiveness of the remedy.

Sitewide Protectiveness Statement	
For sites that have achieved construction completion, enter a sitewide protectiveness determination and statement.	
Protectiveness Determination: Protective	*Addendum Due Date (if applicable):*
Protectiveness Statement: The San Gabriel Valley Area 2 Superfund Site remains protective of human health and the environment.	

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List of Abbreviations

µg/L	micrograms per liter
1,2-DCA	1,2-dichloroethane
1,2,3-TCP	1,2,3-trichloropropane
ARAR	Applicable or Relevant and Appropriate Requirements
BPOU	Baldwin Park Operable Unit
Cal/EPA	California Environmental Protection Agency
CCR	California Code of Regulations
CDPH	California Department of Public Health
CDWC	California Domestic Water Company
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
COI	City of Industry
CTC	carbon tetrachloride
DTSC	California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Differences
ft/day	feet per day
FYR	Five-Year Review
gpm	gallons per minute
HQ	Hazard Quotient
IC	institutional control
IRIS	Integrated Risk Information System

ISEP	ionic separation process
LGAC	liquid-phase granular activated carbon
LPVCWD	La Puente Valley County Water District
MCLs	maximum contaminant levels
mgd	million gallons per day
msl	mean sea level
NCP	National Contingency Plan
NDMA	N-nitrosodimethylamine
NLs	Notification Levels
NPL	National Priorities List
O&M	operation and maintenance
OU	operable unit
PCE	tetrachloroethene
PSEP	Performance Standards Evaluation Plan
PRPs	potentially responsible parties
ROD	Record of Decision
RPM	Remedial Project Manager
RSLs	Regional Screening Levels
SCAQMD	South Coast Air Quality Management District
SGVWC	San Gabriel Valley Water Company
Site	San Gabriel Valley Area 2 Superfund Site
TCE	trichloroethylene
U.S.C.	United States Code
UV	ultraviolet

VCWD	Valley County Water District
VFD	variable frequency drive
VOC	volatile organic compounds
VPGAC	vapor phase granular activated carbon
WY	water year

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Second Five-Year Review Report

for

San Gabriel Valley Area 2 Superfund Site

1. Introduction

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy to determine whether the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of FYRs are documented in FYR reports, which identify issues found during the review, if any, and document recommendations to address these issues.

The U.S. Environmental Protection Agency (EPA) prepares FYRs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 121 and the National Contingency Plan (NCP). CERCLA 121 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. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews."*

EPA interpreted this requirement further in the NCP (40 Code of Federal Regulations [CFR] Section 300.430[f][4][ii]), which states:

> *"If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such actions no less often than every five years after the initiation of the selected remedial action."*

EPA conducted the FYR and prepared this report for the remedy implemented at the San Gabriel Valley Area 2 Superfund Site (Site) in Los Angeles County, California. EPA is the lead agency for developing and implementing the remedy for the Site. The California Department of Toxic Substances Control (DTSC), as the support agency representing the State of California, participated in the site inspections, reviewed a draft of this report, and provided input to EPA during the FYR process.

This is the second FYR for the Area 2 Site. The triggering action for this statutory review was the signing of the previous FYR on September 27, 2007. A FYR is required because hazardous substances, pollutants, or contaminants remain on site in groundwater above levels that allow for unlimited use and unrestricted exposure.

The Area 2 Site consists of four independent groundwater extraction and treatment systems. Each system is designated in EPA's "CERCLIS" database (an EPA database of information about Superfund sites) as a separate operable unit (OU 02, OU 03, OU 04, and OU 05) and has separate dates for the design, construction, and operation (referred to in the CERCLIS database as "remedial design," "remedial action," and "operations and maintenance"). The four OUs were implemented in accordance with a single cleanup plan (known as the "Record of Decision" [ROD]) and are collectively known as the Baldwin Park OU (BPOU). Dates for the ROD, the Proposed Plan preceding the ROD, and other actions that are applicable to all four groundwater extraction and treatment systems are designated in CERCLIS as part of OU 00 or OU 01. Each extraction and treatment system is owned and operated by a local water company or district: OU 02 by La Puente Valley County Water District (LPVCWD), OU 03 and OU 05 by San Gabriel Valley Water Company (SGVWC), and OU 04 by Valley County Water District (VCWD). OU 03 and OU 05 are also known as the SGVWC B6 and SGVWC B5 projects, respectively. OU 04 is also known as the VCWD Lante project. Potentially responsible parties (PRPs) are funding the majority of the operation and maintenance costs in compliance with a 2000 EPA Unilateral Administrative Order.

The San Gabriel Valley Area 2 Superfund Site is one of four San Gabriel Valley groundwater sites listed on the National Priorities List (NPL). The other three San Gabriel Valley sites are San Gabriel Valley Area 1 (which includes the El Monte, South El Monte, and Whittier Narrows OUs), San Gabriel Valley Area 3 (which addresses contamination in the Alhambra area), and San Gabriel Valley Area 4 (which addresses the Puente Valley OU).

This FYR addresses OUs 02, 03, 04, and 05 at the Area 2 Site.

2. Site Chronology

Table 1 lists the dates of important events for the Area 2 Site.

Table 1: Chronology of Site Events

Event	Date
Initial discovery of problem or contamination (volatile organic compounds [VOCs] detected in drinking water supply well)	1979
NPL listing (final)	05/08/1984
Feasibility Study Report (included Remedial Investigation results)	04/2/93
Proposed Plan	May 1993
ROD signature	Mar 31, 1994
Explanation of Significant Differences	May 1999
EPA orders potentially responsible parties to implement remedial design and remedial action	June 2000
EPA amends June 2000 Order	Feb 2002
Third party agreement between potentially responsible parties (PRPs) and local water agencies ("BPOU Project Agreement")	Mar 2002
Remedial design LPVCWD (OU 02)	Jul 21, 2000, to Sep 26, 2002
Remedial design SGVWC B6 (OU 03)	Jul 21, 2000, to Mar 31, 2003
Remedial design VCWD Lante (OU 04)	Jul 21, 2000, to Aug 08, 2003
Remedial design SGVWC B5 (OU 05)	Jul 21, 2000, to Sep 29, 2004
Remedial action start LPVCWD (OU 02)	Sep 26, 2002
Remedial action start SGVWC B6 (OU 03)	Mar 31, 2003
Remedial action start VCWD Lante (OU 04)	Aug 08, 2003
Remedial action start SGVWC B5 (OU 05)	Sep 29, 2004
California Department of Public Health (CDPH) issues drinking water permit amendments to allow treated water to be used as drinking water supply (OU 02)	Feb 2001 (operation of air stripping, ion exchange and advanced oxidation), May 2002 (operation of replacement advanced oxidation system), December 2008 (operation of Well 5), December 2009 (construction and startup testing of single pass ion exchange)

Table 1: Chronology of Site Events

Event	Date
CDPH issues drinking water permit amendments (OU 03)	June 2005 (treatment plant operation with backup wells), Feb 2006 (operation with four new wells)
CDPH issues drinking water permit amendment (OU 04)	Nov 2005 (operation of air stripping, ion exchange, and advanced oxidation), July 2007 (addition of liquid-phase granular activated carbon [LGAC])
CDPH issues drinking water permit amendment (OU 05)	April 2008 (treatment plant), July 2009 (City of Industry [COI] Well 5)
First FYR Report	Sep 27, 2007
Remedial Action Upgrade LPVCWD (OU 02) – Well 5 installed and connected	2007-2009
Remedial Action Upgrade SGVWC B5 (OU 05) – Well COI-5 equipped and connected	May 2008 to July 2009
Remedial Action Upgrade LPVCWD (OU 02), SGVWC B6 (OU 03), VCWD Lante (OU 04) – Single pass ion exchange treatment installed to replace Ionic Separation Process (ISEP) systems (to date, only the LPVCWD system is operating).	Jun 2010 to 2011

3. Background

3.1. Physical Characteristics

The San Gabriel Valley Area 2 Superfund Site addresses a large area of groundwater contamination in eastern Los Angeles County (see Figure 1). The contamination originates at current and former industrial facilities in and near Azusa, California. The Site, as defined by the extent of groundwater contamination, covers approximately 10 square miles (see Figure 2).

3.2. Hydrology

The San Gabriel Basin aquifer underlies most of the San Gabriel Valley. It stores an estimated 3 trillion gallons of water and is the primary source of water for most of the Basin's 1 million residents.

The surficial geology of the Baldwin Park area is composed of alluvial materials deposited by the San Gabriel River and its tributaries. Braided stream deposits occur along the river, stream channels, and major tributaries. Floodplain deposits and undifferentiated alluvium cover the area between the stream channels. The underlying sediments are derived from the dominantly crystalline San Gabriel Mountains and are typically coarse-grained (e.g., sand, gravel, and boulders). These sediments are unconsolidated to partially consolidated non-marine sediments of Recent and Pleistocene Age. They were deposited by fluvial and geomorphic processes associated with the San Gabriel River and its tributaries. Marine sediments, probably of Pleistocene and Pliocene Age, underlie some of the non-marine sediments and are included within the groundwater system.

The northern and central portions of the Baldwin Park area consist almost entirely of massive gravel deposits. Lithologic evaluations of well logs indicate gravel deposits greater than 500 feet thick in the northern portions of the Baldwin Park area, mixed with 10- to 30-foot-thick layers of clay and gravelly clay further south. The thickness of alluvial sediments is believed to range from a few hundred feet in the far north to more than 2,000 feet in the south.

The Sierra Madre Fault system passes through the northern portion of the Baldwin Park area, generally east/west, near the base of the San Gabriel Mountains. The system presents a low-permeability barrier that limits groundwater movement southward from the San Gabriel Mountains. In the Baldwin Park area, groundwater levels north of the fault system are substantially higher than those to the south.

Hydraulic conductivity estimates in the Baldwin Park area are some of the highest in the basin. Aquifer test results generally yield hydraulic conductivity estimates ranging between several hundred feet per day (ft/day) to over 1,000 ft/day. The highest estimates are for the northern and central portion of the basin; lower values are observed toward the southwestern and southeastern margins. These high hydraulic conductivity estimates indicate that very large extraction volumes are required to create significant changes in the flow of groundwater. Estimates of specific yield are 0.1 to 0.2, reflecting the coarse-grained materials in the area.

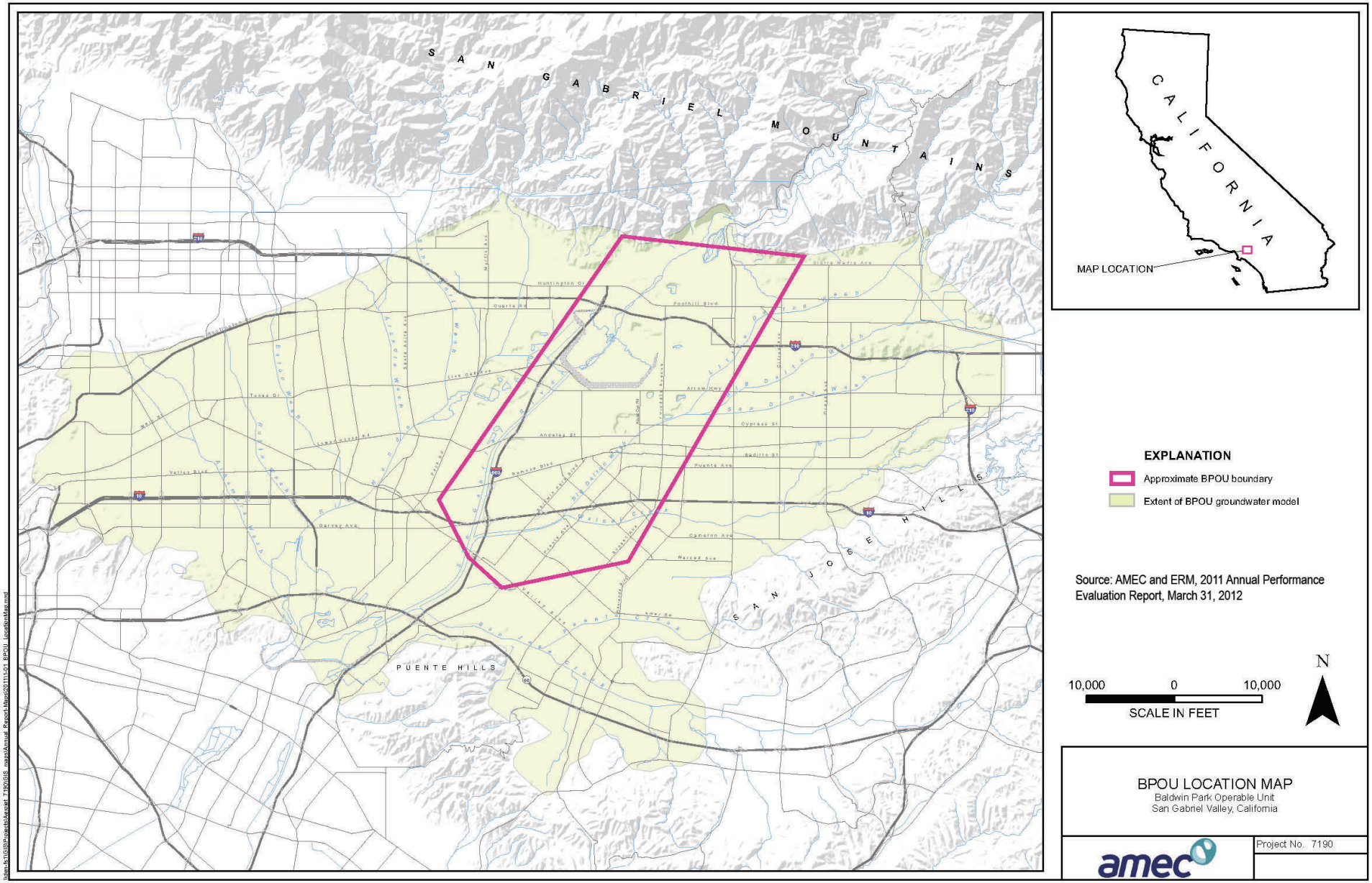

Figure 1: Location Map for the San Gabriel Valley Area 2 Superfund Site

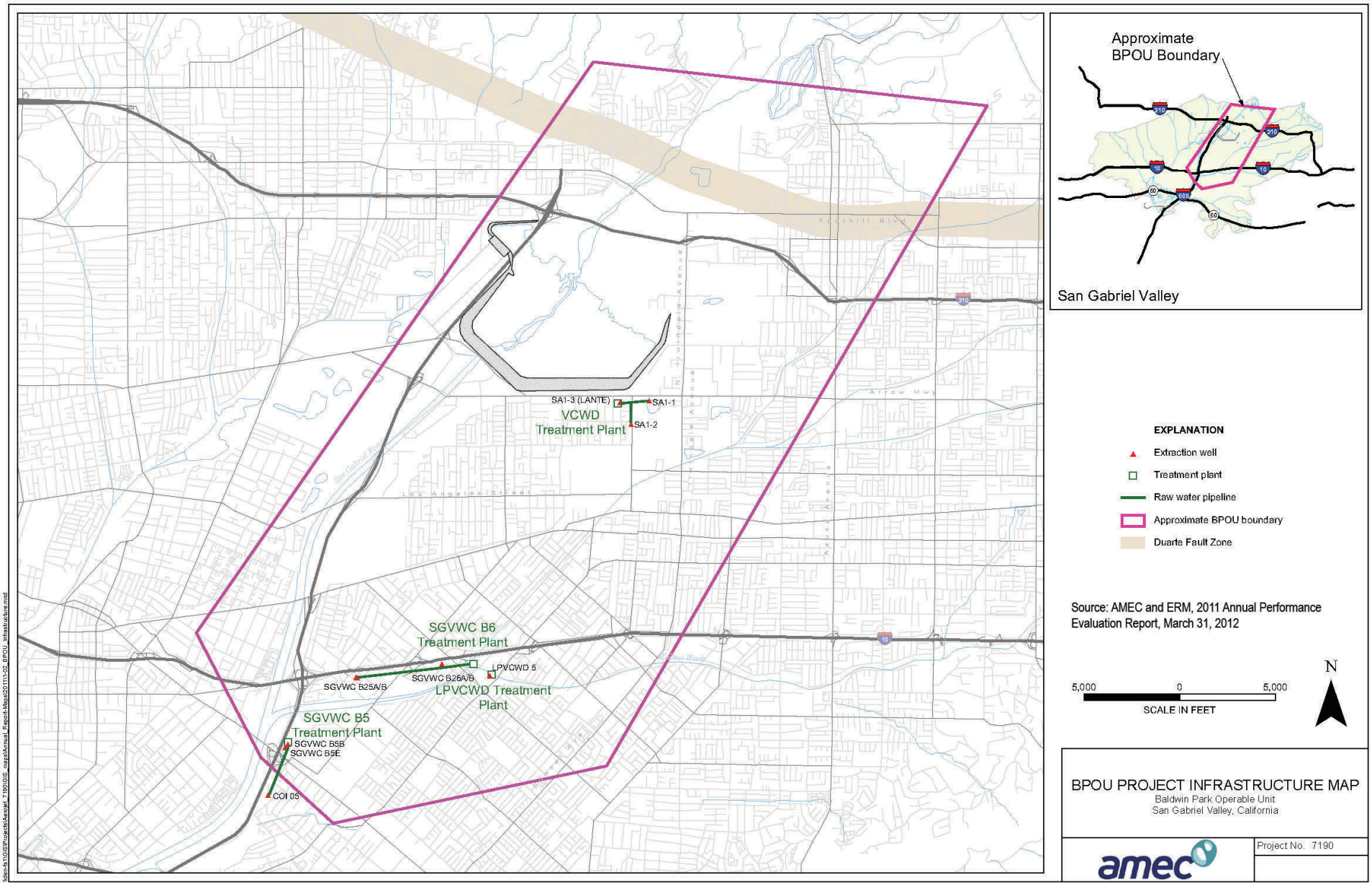

Figure 2: Detailed Map of the San Gabriel Valley Area 2 Superfund Site

Groundwater flows generally southwest in the Baldwin Park area. The elevation of the water table in the Baldwin Park area varies from year to year, decreasing during dry years and increasing during periods of above-average rainfall and associated groundwater recharge. Based on data collected from May through October 2011, the water table ranged from approximately 215 feet above mean sea level (msl) to 250 feet above msl.

3.3. Land and Resource Use

Land use at the site is largely suburban, with a mix of residential, commercial, and industrial development. Much of the development occurred in the 1950s and 1960s. Groundwater at the site is the primary source of drinking water to hundreds of thousands of residents and businesses overlying the site and in adjacent areas. Groundwater pumped from the site is replenished with precipitation in the Valley, recharge of water flowing from the adjacent San Gabriel Mountains, and recharge of water imported from Northern California and the Colorado River.

3.4. History of Contamination

Volatile organic compounds (VOCs) were first detected in groundwater in the San Gabriel Valley in 1979. By 1984, high levels of VOCs were found in 59 wells. On May 8, 1984, the Site was listed on the NPL. As documented in the First FYR (EPA, 2007),[1] as of August 2004, 196 out of 275 water supply wells in the Valley had detectable levels of one or more of the following contaminants: VOCs, perchlorate, N-nitrosodimethylamine (NDMA), and 1,4-dioxane. The groundwater contamination is believed to result from the cumulative impact of decades of improper chemical handling and disposal practices at hundreds of industrial operations in the Valley. Although many of the laws regulating the handling and disposal of hazardous chemicals went into effect after 1970, historical documents demonstrate that local officials were concerned about the potential for groundwater contamination by industrial activity in the San Gabriel Valley as early as the 1950s. Despite the widespread areas of contamination, the San Gabriel Basin aquifer continues to provide approximately 90 percent of the domestic water supply for the Valley's more than 1 million residents.

The Area 2 Site addresses multiple, commingled plumes of groundwater contamination that have resulted in an area of contamination more than 1 mile wide and 8 miles long. The contamination originates in and near the City of Azusa and extends to the southwest through portions of the cities of Irwindale, Baldwin Park, West Covina, and Industry. The depth to the groundwater varies from approximately 150 to 350 feet, and the groundwater contamination extends in various areas from the water table to more than 1,000 feet below ground surface. The most prevalent contaminants in the groundwater are trichloroethylene (TCE), tetrachloroethene (PCE), carbon tetrachloride (CTC), perchlorate, NDMA, and 1,4-dioxane. Other VOCs, including 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloroethane, chloroform, and 1,2,3-trichloropropane (1,2,3-TCP) are also present. TCE, PCE, and CTC are solvents that were commonly used for

[1] U.S. Environmental Protection Agency (EPA). 2007. *First Five-Year Review Report for the San Gabriel Valley Area 2 Superfund Site*. Region 9. September 27.

degreasing and cleaning; perchlorate is used in solid-fuel rockets; and NDMA is associated with liquid-fuel rockets. 1,4-Dioxane has been used as a stabilizer in chlorinated solvents.

Contaminant levels vary significantly throughout the area of contamination. Although the highest contaminant concentrations historically measured in groundwater were in the 1,000s of micrograms per liter (µg/L), contaminants are now commonly detected in the tens to hundreds of µg/L. However, contaminant levels are not declining rapidly and the total size of the contaminated areas in the BPOU remains essentially unchanged.

3.5. Initial Response

No pre-ROD removal actions were taken at the site.

3.6. Basis for Taking Action

The concentrations of multiple contaminants in the groundwater exceed federal and state maximum contaminant levels (MCLs) or State of California Notification Levels (NLs) (previously known as action levels). Despite the widespread contamination, there is no known exposure to unacceptable levels of contamination, because of local restrictions on groundwater pumping, frequent water quality monitoring, and treatment of contaminated groundwater before use.

4. Remedial Actions

4.1. Remedy Selection

EPA adopted a ROD for an interim remedy for the BPOU with a signature date of March 31, 1994, and updated the ROD in May 1999 with an Explanation of Significant Differences (ESD). The remedial objectives expressed in the ROD and ESD are "*to prevent future increases in, and begin to reduce, concentrations of groundwater contaminants by limiting further migration of contaminated groundwater into clean and less contaminated areas or depths that would benefit most from additional protection, and by removing contamination from the aquifer. The ROD specifies extracting contaminated groundwater at the downgradient end of two broad subareas of contamination and locations and rates sufficient to limit the movement of contaminated groundwater through each subarea during all anticipated groundwater flow conditions*." Although not defined as a remedial action objective in the ROD, a secondary objective is to provide data necessary to determine final cleanup standards for the aquifer.

In March 2002, eight potentially responsible parties (PRPs) and seven local water agencies reached an agreement (the BPOU Project Agreement) that provided a means for implementing the remedy. The agreement commits the PRPs and water agencies to implement a joint cleanup and water supply project. The local water agencies agreed to construct, own, and operate the groundwater extraction and treatment facilities called for in EPA's ROD, and the PRPs agreed to fund most of the cost. Table 2 summarizes the local water agencies that operate each of the OU treatment systems.

The major components of the Baldwin Park OU remedy are four separate groundwater pump and treat systems, each ranging in capacity from 2,500 gallons per minute (gpm) to 7,800 gpm. Total treatment capacity is approximately 26,000 gpm of contaminated groundwater (37 million gallons per day [mgd]). EPA's current expectation, based on analyses completed during remedial design, is that an average of approximately 22,000 gpm of contaminated groundwater will be extracted and treated to limit further spread of the contaminated groundwater (i.e., to provide "hydraulic containment" or "capture" of the contaminated areas). The targeted extraction and treatment rate is currently being reviewed. As depicted in Figure 3, the pump and treat systems include the following:

- Multiple groundwater extraction wells for which rates and locations were determined during the remedial design process using a numeric model of groundwater flow and particle movement in the aquifer

- Water treatment equipment capable of removing VOCs from the contaminated groundwater (air stripping at OUs 02, 03, and 04; liquid phase granular activated carbon [LGAC] at OUs 04 and 05)

- Water treatment equipment capable of removing perchlorate from the contaminated groundwater (ion exchange)

- Water treatment equipment capable of removing NDMA and 1,4-dioxane from the contaminated groundwater (ultraviolet light with hydrogen peroxide)

- Conveyance systems (i.e., pipelines, booster pumps) to transport contaminated groundwater from the wells to the treatment plant and treated water from the plant to the water distribution systems of one or more local water purveyors

- Conveyance systems to transport waste brine and other wastewaters from the treatment plant to the industrial sewer operated by the Sanitation Districts of Los Angeles County (OUs 02, 03, and 04)

Table 2: OU Remedy Design Information

Treatment Plant/OU	Treatment Capacity	Extraction Wells	Treatment	Required Monitoring[1]
La Puente Valley County Water District (OU 02)	2,500 gpm	Well No. 2 Well No. 3 Well No. 5	Extraction wells, air stripping, offgas carbon treatment, single pass ion exchange, ultraviolet light (UV) with hydrogen peroxide, pH adjustment, and disinfection.	Semiannual Potentiometric Monitoring Quarterly Groundwater Quality Monitoring at Extraction Wells Semiannual and Annual Groundwater Quality Monitoring at Multiport Monitoring Wells Weekly, Monthly, Annual and Biennial Monitoring Required by CDPH
San Gabriel Valley Water Co. B6 (OU 03)	7,800 gpm	Well B6C Well B6D Well B25A Well B25B Well B26A Well B26B	Extraction wells, air stripping, offgas carbon treatment, regenerable ion exchange, UV with hydrogen peroxide, pH adjustment, disinfection (single pass ion exchange constructed but not yet operational)	
Valley County Water District (OU 04)	7,800 gpm	Well SA1-1 Well SA1-2 Well SA 1-3 (Lante)	Extraction wells, air stripping, offgas carbon treatment, liquid phase carbon, regenerable ion exchange, UV with hydrogen peroxide, pH adjustment, disinfection (single pass ion exchange constructed but not yet operational)	
San Gabriel Valley Water Co. B5 (OU 05)	7,800 gpm	Well No. B5B Well No. B5D Well No. B5E COI-5	Extraction wells, liquid phase carbon, single pass ion exchange, UV with peroxide, disinfection	

Note:
[1] For detailed list of monitoring requirements, see Table 4-2 and Attachment H of the Revised Final Performance Standards Evaluation Plan, Rev. 3 (AMEC Environment & Infrastructure, Inc., 2012).

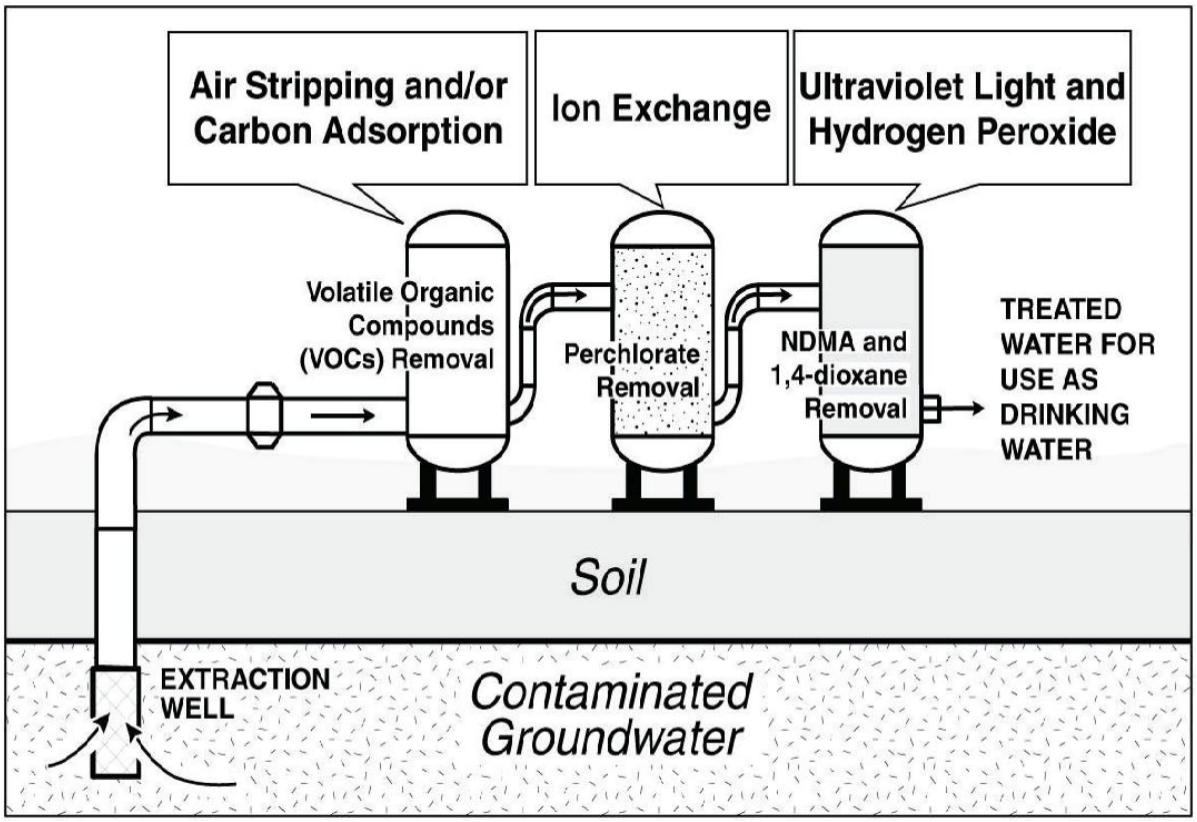

Figure 3: Groundwater Extraction and Treatment Process

The remedy also includes piezometers and groundwater monitoring wells that are monitored to provide data to evaluate the performance of the remedy and provide early warning of upgradient conditions that could affect the remedy.

4.2. Remedy Implementation

Design and construction of the four pump and treat projects (OU 02, OU 03, OU 04, and OU 05) occurred between July 2000 and September 2006. One of the four systems (OU 02) was designed and constructed as a water supply project by local water agencies without significant EPA involvement. The OU 02 system was incorporated into the remedy in 2002 after a decision was made during the remedial design process to include the system as part of the remedy and commitments were made for its continued operation as part of the BPOU Project Agreement. An additional well (Well 5) was installed in 2007 and put into operation in early 2009 as the primary OU 02 extraction well. The new well was intended to help the system operate at rates consistent with EPA's remedial objectives.

Design and construction of the original treatment systems at OUs 03, 04, and 05 took much longer than originally estimated. The four OUs took, on average, 36 months to design and 19 months to construct. All four OUs were permitted by the California Department of Public Health (CDPH) for distribution of the treated water to residents and businesses in the area. The OU 05 treatment plant was the last to be permitted by CDPH in April 2008.

Design information on the four systems is summarized in Table 2. Additional details regarding remedy design are available in the remedial action reports prepared for each of the four OUs.

4.3. Operation and Maintenance

Major operation and maintenance (O&M) activities that were completed during the current FYR period include installation of LGAC for 1,2,3-TCP removal (OU 04), installation of single phase ion exchange systems (OUs 02, 03, 04) intended to provide more reliable and cost-effective treatment of perchlorate (although only the OU 02 ion exchange system has been brought on-line), well rehabilitation (OU 04), installation of a new extraction well (OU 02), and equipping and connecting an extraction well (OU 05). Additional information is provided in Table 3.

Table 3: Major O&M Activities 2007-2012

Treatment Plant/OU	Date	Activity and Progress
La Puente Valley County Water District (OU 02)	2007	Well No. 5 installation completed
	2008	Well No. 5 equipment installation completed
	2009	Well No. 5 in operation
	2009	Calgon ionic separation process (ISEP) equipment decommissioned
	December 2009 through March 2010	Perform failure analysis
	June/July 2010	Single pass ion exchange tested; construction complete and operational under CDPH permit.
	October 2010 through March 2011	Well No. 5 down for repairs
San Gabriel Valley Water Co. B6 (OU 03)	2009	Optimized chemical dosing and other parameters
	2009 to present	Treatment plant capacity restricted because of high pressures across the ISEP units, brine system capacity limitations and other issues with ISEP operation.
	2011	Installed single pass ion exchange units to replace the ISEP system for perchlorate removal. However, the new system has not been tested/permitted because of concerns about elevated nitrate levels (currently removed by the ISEP system).
	March 9-10, 2012	System down temporarily due to failure of the ISEP system resulting in elevated perchlorate concentrations leaving the plant.

Table 3: Major O&M Activities 2007-2012

Treatment Plant/OU	Date	Activity and Progress
Valley County Water District (OU 04)	July 2007	LGAC system (for 1,2,3-TCP removal) permitted for operations
	July 2007	Resumed delivering fully treated effluent water to Suburban Water Systems (SWS) (received amended CDPH drinking water permit)
	April 2008	Permanent vapor phase granular activated carbon (VPGAC) treatment units became operational
	2010	Construction of single pass ion exchange system for perchlorate removal completed to replace the ISEP units. Start-up and testing are on hold while options for nitrate treatment (currently provided by the ISEP) are evaluated
	2011	Rehabilitation of well SA1-2
	2011	Engineering contractor hired to assess options for nitrate management
San Gabriel Valley Water Co. B5 (OU 05)	May 2008	Third well (COI-5) equipped and tested
	July 2009	COI-5 permitted and brought online

Routine maintenance activities include regular cleaning and inspections, filter replacement, lubrication, equipment calibration, UV lamp replacement, replacement of carbon in the off-gas control units (OUs 02, 03, 04), replacement of carbon in the water treatment unit (OUs 04 and 05), and brine system monitoring and maintenance (OUs 03 and 04). Additional details on O&M procedures and requirements are outlined in Remedial Action reports prepared for each OU and in Operation, Maintenance, and Monitoring Plans available for each system.

Water samples are collected and analyzed at least monthly at each operating extraction well (untreated water), weekly after treatment (fully treated water), and at varying frequencies (weekly to monthly) at one or more locations within the treatment system (partially treated water). Results are reported monthly to EPA and entered into an electronic database available for further review and analysis. Treated water samples have been below MCLs and NLs except for the occasions noted in the subsection below on problems in the implementation of system operations/O&M.

Air samples from the treatment systems are collected and analyzed at frequencies that vary from weekly to every two months. Results are reported monthly to EPA and entered into an electronic database available for further review and analysis.

Problems in the Implementation of System Operations/O&M

Several issues affected the ability of the remedy to extract groundwater at targeted rates, and required modifications to plant facilities during this review period. None of these issues affect the protectiveness of the remedy. They included higher-than-expected levels of nitrate and sulfate in the untreated water at OU 03 and OU 04; high back pressure, inadequate brine regeneration system capacity at OU 04 and other performance issues associated with ionic separation process (ISEP) operation at OU 03 and OU 04 (including resin degradation resulting in high back pressures and reduced treatment capacity); and inconsistent or poor performance of the off-gas treatment systems at OU 04. ISEP performance issues are expected to be addressed in part by operation of the single pass ion exchanges systems intended to replace the ISEP for perchlorate removal. The nitrate issues, primarily limited to OU 03 and OU 04, are being evaluated for resolution and are expected to lead to removal of the ISEP systems at OU 03. However, the new ion exchange equipment at OU 03 and OU 04 will not be tested/permitted until the nitrate management issues are resolved and a decision is made on ISEP operation. The off-gas treatment performance issues at OU 04 have been resolved with the addition of permanent VPGAC units. Various staffing, material supply and delivery, and other miscellaneous operational issues have been identified and addressed.

The ISEP unit at the SGVWC B6 plant (OU 03) failed in March 2012 when perchlorate-laden brine was inadvertently used to regenerate the ion exchange resin through a newly-installed valve that was reportedly constructed incorrectly. The brine overwhelmed the resin's perchlorate removal capacity resulting in elevated perchlorate concentrations in water passing through the B6 plant. Effluent water samples contained perchlorate at concentrations up to 20 µg/L. Once this was detected, the treatment plant was immediately removed from service. In accordance with California regulations, a Tier 1 public notice was issued on March 9 advising residents not to drink the water until told it is safe to do so. After extensive flushing, perchlorate levels in the affected area were below the MCL and the Tier 1 Public Notice was rescinded on March 10, indicating that the problem was corrected.

At OU 04, operation was temporarily limited by problems with the groundwater extraction well SA1-2. This problem has been addressed by rehabilitating the well, increasing use of the other two available wells (SA1-1 and SA1-3), and installing a variable frequency drive (VFD) at SA1-2. The well was redeveloped in March 2012 after a long delay related to discharge of the water to be generated during development and is now operational.

Table 4 summarizes past and recent estimates of O&M costs for the remedy. O&M costs generally have been higher than estimated in 2006, and substantially higher than originally estimated in 2002.

Table 4: BPOU Estimated and Actual Annual O&M Costs

	Mar. 2002 estimate (millions per year)	Nov. 2006 estimate (millions per year)	2011 (actual) (millions)
Materials/Supplies	3.5	5.5	6.1
Power	0.6	2.5	1.7
Labor	0.7	1.4	1.6
Water Testing	0.7	0.8	0.7
Repair/Replacement	1.1	0.8	1.0
Contractor Labor	0.3	0.6	1.9
Direct Engineering/Legal	0.3	0.6	0.4
Carbon Purchase	0.3	0.5	2.1
Taxes	0.5	0.4	-
Other	0.4	0.9	0.7
TOTAL:	8.3	14.0	16.2

The 2011 O&M costs were provided by the Main San Gabriel Basin Watermaster. The 2011 O&M cost breakdown by OU is as follows:

La Puente Valley County Water District (OU 02): $1.8 million
San Gabriel Valley Water Co. B6 (OU 03): $5.2 million
Valley County Water District (OU 04): $6.2 million
San Gabriel Valley Water Co. B5 (OU 05): $3.0 million

An evaluation of O&M costs resulted in the following observations:

- The biggest increase from the 2006 estimate was for carbon, which is used for off-gas control at OU 02, OU 03, and OU 04; VOC removal at OU 05; and 1,2,3- trichloropropane removal at the OU 04 subproject. Most of the 2011 carbon cost ($1.6 of $2.1 million) was for OU 05, for which carbon is used to remove VOCs from the groundwater. The constituents driving carbon changeout are 1,2-DCA and carbon tetrachloride, which have CA MCLs of 0.5 µg/L.

- One of the biggest line items continues to be salt for the regenerable ion exchange (ISEP) systems operating at OU 03 and OU 04 ($3.7 million in 2011). The two projects used approximately 27,000 tons of salt in 2011. The ISEP systems may be replaced in 2012 or 2013 by non-regenerable ion exchange systems that do not require salt. However, this will depend on resolution of the nitrate issues that are currently addressed by the ISEP.

- Chemical costs were also significant in 2011, totaling $1.6 million for hydrochloric acid (pH adjustment), sodium hypochlorite (disinfection), hydrogen peroxide (oxidant for 1,4-dioxane removal), orthopolyphosphate (corrosion inhibitor), and sodium hydroxide (pH adjustment).

- Contractor labor in 2011 was $1.3 million higher than the 2006 estimate and totaled $1.9 million. The majority of the labor costs in 2011 ($1.1 million) were for OU 04, which required replacement of some of the ion exchange resin, replacement of air stripper packing, and routine maintenance of the UV treatment system.

5. Progress Since the Last Five-Year Review

5.1. Previous Five-Year Review Protectiveness Statement and Issues

The protectiveness statement from the first FYR for the San Gabriel Valley Area 2 Superfund Site stated the following:

> *The remedy for the San Gabriel Valley Area 2 Superfund Site is protective of human health and the environment because Institutional Controls are in place to prevent installation of wells in the contaminated areas without adding treatment, and therefore, there is no current or potential exposure.*

The first FYR included one issue and recommendation, as summarized in Table 5.

Table 5: Status of Recommendations from the 2007 FYR

Issues from previous FYR	Recommendations	Party Responsible	Milestone Date	Action Taken and Outcome	Date of Action
Ensure permitting and operation of the last extraction well (COI-5) planned as part of OU 05	Monitor progress	SGVWC	Early 2008	COI-5 was permitted and became operational.	July 2009

5.2. Work Completed at the Site During the Review Period

Work completed at the Site during the review period is discussed in Section 4.

6. Five-Year Review Process

6.1. Administrative Components

EPA Region 9 initiated the FYR in December 2011 and scheduled its completion for September 2012. The Baldwin Park OU Five-Year Review team was led by Wayne Praskins of EPA, Remedial Project Manager (RPM) for the Baldwin Park OU Site, and also included Cynthia Wetmore of the Regional Technical Support Program, and contractor support provided by CH2M HILL. In December 2011, EPA held a scoping call with the review team to discuss the Site and items of interest as they related to the protectiveness of the remedy currently in place. A review schedule was established that consisted of the following:

- Community notification
- Document review
- Data collection and review
- Site inspection
- Local interviews
- Five-Year Review Report development and review

6.2. Community Involvement

On February 29, 2012 a public notice was published in the San Gabriel Valley Tribune (English) and La Opinion (Spanish) announcing the commencement of the Five-Year Review process for the Baldwin Park OU Site, providing Wayne Praskins's contact information, and inviting community participation. The press notices are available in Appendix B. EPA did not receive any inquiries from the public from this advertisement.

The FYR report will be made available to the public once it has been finalized. Copies of this document will be placed in the designated public repositories:

West Covina Library	EPA Superfund Records Center
1601 West Covina Parkway	95 Hawthorne Street, Room 403
West Covina, CA 91790	San Francisco, CA 94105-3901

Upon completion of the FYR, EPA will produce and distribute a fact sheet announcing the availability of the final FYR report in the Site document repositories. Both the fact sheet and the final FYR report also will be made available on EPA's website.

6.3. Document Review

This FYR included a review of relevant, site-related documents including the ROD, ESD, and recent monthly progress reports and annual performance monitoring reports. A complete list of the documents reviewed can be found in Appendix A.

ARARs Review

Section 121 (d)(2)(A) of CERCLA specifies that Superfund Remedial Actions must meet any federal standards, requirements, criteria, or limitations that are determined to be Applicable or Relevant and Appropriate Requirements (ARARs). ARARs are those standards, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, Remedial Action, location, or other circumstance at a CERCLA site.

Chemical-specific standards and non-promulgated advisories or guidance identified for the selected remedy in the ROD or in the subsequent ESD for the groundwater at this Site, and considered for this FYR for continued groundwater treatment and monitoring, are listed in Table 6. As the ROD adopted an interim remedy, chemical-specific cleanup requirements for the aquifer were not established. Federal and state drinking water standards for COCs were considered relevant and appropriate for treatment plant effluent (i.e., ARARs). Perchlorate, NDMA, and 1,4-dioxane did not have MCLs at the time of the 1999 ESD. For these COCs that lacked MCLs, safe levels were specified by notification levels (previously known as action levels) developed by the CDPH (formerly known as the California Department of Health Services). The notification levels are not ARARs. The current notification level for NDMA is less stringent than the notification level at the time of the 1999 ESD, and the current notification level for 1,4-dioxane is more stringent (Cal/EPA, 2012).[2] Effective October 18, 2007, the State of California promulgated an MCL for perchlorate of 6 µg/L (Cal/EPA, 2012). State primary drinking water standards are the same as federal primary drinking standards with the following exceptions:

- 1,1-DCA and perchlorate, which do not have federal MCLs
- 1,1-DCE; 1,2-DCA; CTC; and cis-1,2-DCE, which have more stringent state MCLs than federal MCLs

Federal and state laws and regulations that have been promulgated or changed over the past five years, or that are otherwise applicable to the BPOU interim remedy, are described in Table 7. There have been no revisions to laws and regulations that affect the protectiveness of the remedy.

[2] California Environmental Protection Agency (Cal/EPA). 2012. *A Compilation of Water Quality Goals.* Online: http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/index.shtml. April.

Risk Assessment Review

A preliminary human health risk assessment was completed for the Site as part of the 1993 Feasibility Study Report (CH2M HILL, 1993).[3] The preliminary risk assessment identified the exposure pathways at the Baldwin Park OU as domestic use of groundwater including ingestion, inhalation of VOCs, and dermal exposure.

Two exposure pathways (routes by which the contamination can enter the body) were considered in the risk assessment: ingestion of contaminated groundwater and inhalation of VOCs released from the water into the household air during showering, bathing, cooking, or other routes. Dermal absorption (through skin contact) of contaminants was also considered but was believed to present an insignificant risk.

Table 6: Summary of Changes in Chemical-Specific Standards and California Notification Levels

Contaminants of Concern	1994 ROD (µg/L)	1999 ESD[1] (µg/L)	2007 FYR (µg/L)	Current Standard or Notification Level (NL) (µg/L)		Standard or NL Changed?
				State	Federal	
1,1,1-TCA	200	--	NR	200	200	No
1,1-DCA	5	--	NR	5	NA	No
1,1-DCE	6	--	NR	6	7	No
1,2-DCA	0.5	--	NR	0.5	5	No
CTC	0.5	--	NR	0.5	5	No
cis-1,2-DCE	6	--	NR	6	70	No
PCE	5	--	NR	5	5	No
TCE	5	--	NR	5	5	No
Nitrate (as NO_3)	45,000	--	NR	45,000	--	No
Nitrate (as nitrogen)	--	--	--	10,000	10,000	No
Perchlorate	--	18	6	6	NA	No
NDMA	--	0.002	NR	0.01[1]	NA	Less stringent
1,4-dioxane	--	3	NR	1[1]	NA	More stringent

Notes:
[1] California Notification Levels
-- not established
NA not applicable, no federal MCL
NR no revision identified in 2007 FYR

[3] CH2M HILL. 1993. *Baldwin Park OU Feasibility Study Report*.

Table 7: Applicable or Relevant and Appropriate Requirements Evaluation

Requirement	Citation	Document	Description	Effect on Protectiveness	Comments	Amendment Date
Safe Drinking Water Act National Drinking Water Standards (Federal Maximum Contaminant Levels [MCLs])	40 CFR 141 40 CFR 300.430(f)(5)	1994 ROD	Establishes national primary drinking water standards, MCLs, to protect the quality of water in public water systems. MCLs represent the maximum concentrations of contaminants permissible in water delivered to the public. MCLs are generally relevant and appropriate when determining acceptable exposure limits for groundwater that is a current or potential source of drinking water.	There have been no revisions that affect protectiveness.	Treated groundwater delivered to a public water supply system must meet all legal requirements for drinking water in existence at the time the water is served.	N.A.
California Safe Drinking Water Standards (State MCLs)	Health and Safety Code Sections 4010.1(b), 4026(c) State MCLs found in 22 CCR 64435 and 64444.5	1994 ROD	Establishes primary MCLs for contaminants that cannot be exceeded in public water systems. In some cases, the California drinking water standards are more stringent than the federal MCLs.	There have been no revisions since the 2007 FYR that affect protectiveness. Adoption of the State MCL for perchlorate in 2007 did not affect the protectiveness of the remedy, as the treatment systems reduce perchlorate concentrations to less than the MCL.	Treated groundwater delivered to a public water supply system must meet all legal requirements for drinking water in existence at the time the water is served. Perchlorate did not have an established MCL at the time of the 1999 ESD. The perchlorate notification level established at the time of the ESD was 18 µg/L. Since then, the State of California promulgated a more stringent limit of 6 µg/L for perchlorate.	The effective date for the State MCL for perchlorate is October 18, 2007.

Table 7: Applicable or Relevant and Appropriate Requirements Evaluation

Requirement	Citation	Document	Description	Effect on Protectiveness	Comments	Amendment Date
California Domestic Water Quality Monitoring Regulations California Notification Levels	22 CCR 64401 California Health & Safety Code Section 116455	1999 ESD	Safe levels for some chemicals that lack MCLs are specified by notification levels. Drinking water systems provide public notification if notification levels are exceeded, unless the wells in question are taken out of service. Although not an enforceable standard and not an ARAR, a notification level is the concentration of a contaminant in drinking water that CDPH has determined, based on available scientific information, to provide an adequate margin of safety to prevent potential risks to human health.	There have been revisions to the NDMA notification level since the 1999 ESD and 1,4-dioxane notification level since the 2007 FYR. The NDMA notification level has increased from 0.002 µg/L to 0.01 µg/L; the 1,4-dioxane notification level was lowered from 3 µg/L to 1 µg/L. These changes do not impact the protectiveness of the remedy, as the treatment systems reduce the concentrations of these chemicals to less than the current notification levels.	NDMA and 1,4-dioxane did not have established MCLs at the time of the 1999 ESD. Notification levels established at the time of the ESD were 18 µg/L for perchlorate, 0.002 µg/L for NDMA, and 3 µg/L for 1,4-dioxane. The current notification level for NDMA (0.01 µg/L) is less stringent than the notification level at the time of the 1999 ESD, and the current notification level for 1,4-dioxane (1 µg/L) is more stringent.	The effective date for NDMA notification level is March 20, 2003. The effective date for 1,4-dioxane notification level is August 22, 2010.

Table 7: Applicable or Relevant and Appropriate Requirements Evaluation

Requirement	Citation	Document	Description	Effect on Protectiveness	Comments	Amendment Date
Water Quality Control Plan (Basin Plan) for the Los Angeles Region State Water Resources Control Board Resolution No. 68-16 (Antidegradation Policy)	Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)	1994 ROD	Requires that high-quality surface water and groundwater be maintained to the maximum extent possible. Degradation of waters will be allowed only if it is consistent with the maximum benefit to the people of the state, does not unreasonably affect present and anticipated beneficial uses, and does not result in water quality less than that prescribed in State Water Board policies. If degradation is allowed, the discharge must meet best practicable treatment or control, which must prevent pollution or nuisance and result in the highest water quality consistent with maximum benefit to the people of the state.	There have been no revisions that affect protectiveness.	Treated groundwater discharged to land, groundwater, or surface water, including recharge at a spreading basin, must be treated to meet established numeric water quality objectives, including federal or state MCLs, whichever is more stringent, except for EPA-approved CERCLA Section 104(b) activities that will result in temporary high flow, high volume discharges. Nitrate concentrations in the water to be recharged will have to be similar to or lower than the levels of these substances in the portion of the aquifer where the recharge will occur, except for EPA-approved CERCLA section 104(b) activities that will result in temporary high flow, high volume discharges.	The effective dates for multiple basin plan amendments - water quality standards are from April 23, 2009 to February 2, 2012.

Table 7: Applicable or Relevant and Appropriate Requirements Evaluation

Requirement	Citation	Document	Description	Effect on Protectiveness	Comments	Amendment Date
National Pollution Discharge Elimination System California Toxics Rule "Inland Surface Water Plan and Temperature Plan for Surface Waters" (Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California [commonly referred to as Thermal Plan])	40 CFR Parts 122, 123, 124, 40 CFR Part 131 Cal. Water Code Section 13263	1994 ROD	Regulates discharges to surface water. Applicable to discharge of treated groundwater. The California Toxics Rule establishes permit limits for new or revised NPDES permits. In establishing effluent limitations for such discharges, the Regional Board considers the Basin Plan, which incorporates Resolution 68-16, the Thermal Plan, and the best available technology economically achievable.	There have been no revisions that affect protectiveness.	Discharges of treated water to surface water must comply with substantive portions of the NPDES discharge requirements, except for EPA-approved CERCLA Section 104(b) activities that will result in temporary high flow, high volume discharges. No discharges of treated water to surface water are known to have occurred without EPA's prior approval.	The Inland Surface Water Plan was rescinded in 1994 and replaced by the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California in 2000 and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California in 2005.

Table 7: Applicable or Relevant and Appropriate Requirements Evaluation

Requirement	Citation	Document	Description	Effect on Protectiveness	Comments	Amendment Date
California Hazardous Waste Control Act	22 CCR 66261, 66262, 66268	1994 ROD	In lieu of the federal RCRA program, the State is authorized to enforce its Hazardous Waste Control Act and implement regulations subject to EPA authority (C.C.R. Title 22, Division 4.5). Wastes can be classified as non-RCRA, state-only hazardous wastes if they exceed the soluble threshold limit concentration or total threshold limit concentration values.	There have been no revisions that affect protectiveness.	Potentially applicable to waste streams associated with treatment operations that include, but are not limited to, spent granular activated carbon and spent ion exchange resins. If waste is determined to be hazardous, the requirements for handling such waste set forth in Sections 66262 and 66268 are applicable.	N.A.
Operation, maintenance, and closure requirements for treatment units	22 CCR 66264.601-.603 22 CCR Sections 66264.111-.115	1994 ROD	These regulations include design, operation, maintenance, and closure requirements for miscellaneous treatment units and units that use chemical, physical, or biological treatment methods to treat hazardous waste.	There have been no revisions that affect protectiveness.	Potentially relevant and appropriate to air strippers or granular activated carbon contactors. If units are used to treat water containing hazardous waste, the requirements set forth in Sections 66264.601-.603 and 66264.111-.115 are relevant and appropriate.	N.A.

Table 7: Applicable or Relevant and Appropriate Requirements Evaluation

Requirement	Citation	Document	Description	Effect on Protectiveness	Comments	Amendment Date
Container Storage Requirements	22 CCR 66264.170 - .178	1994 ROD	Establishes requirements for the storage of contaminated groundwater over 90 days.	There have been no revisions that affect protectiveness.	Potentially relevant and appropriate for the storage of contaminated groundwater over 90 days. If groundwater is determined to be hazardous waste, the requirements set forth in Sections 66264.170 -.178 are relevant and appropriate.	N.A.
Land Disposal Restrictions	22 CCR 66268	1994 ROD	Relevant and appropriate to discharges of contaminated or treated groundwater to land, including the discharge of treated water to spreading basins.	There have been no revisions that affect protectiveness.	Waters must be treated to meet federal or state MCLs, whichever is more stringent, prior to discharge to land. If groundwater is determined to be hazardous waste, the requirements set forth in Section 66268 are relevant and appropriate.	N.A.

Table 7: Applicable or Relevant and Appropriate Requirements Evaluation

Requirement	Citation	Document	Description	Effect on Protectiveness	Comments	Amendment Date
Clean Air Act Rules and Regulations of the South Coast Air Quality Management District (SCAQMD)	42 U.S.C. section 7401 et seq. SCAQMD Regulation XIV, Rule 1401 SCAQMD Rules 401, 402, 403	1994 ROD	Regulates air emissions to protect human health and the environment, and is the enabling statute for air quality programs and standards. The substantive requirements of programs are implemented primarily through Air Pollution Control Districts. The SCAQMD regulates air quality in the San Gabriel Valley.	There have been revisions since the 1994 ROD but not since the 2007 FYR. No revisions affect protectiveness.	Three of the four treatment plants include air-stripping towers and associated VPGAC off-gas treatment units for VOC removal. In August 2006, by mutual agreement among EPA, SCAQMD, and the Water Districts (La Puente Valley County Water District, San Gabriel Valley Water Company, and Valley County Water District), air stripper and off-gas control system permits with SCAQMD were cancelled, and EPA assumed compliance oversight with respect to operations formerly covered by the SCAQMD permits. Air emissions risk limits were identified in June 15, 2009 and February 3, 2011 letters from Wayne Praskins/EPA to Scott Goulart	Visible Emissions amended November 9, 2001. Fugitive Dust amended June 3, 2005. In August 2006, air stripper and off gas control system permits with SCAQMD were cancelled.

Notes:

ASR	applicable state requirement	N.A.	not applicable
CCR	California Code of Regulations	SCAQMD	South Coast Air Quality Management District
CFR	Code of Federal Regulations	U.S.C.	United States Code

The preliminary risk assessment identified the exposure pathways and associated risks shown below in Table 8. The preliminary risk assessment was reviewed to identify any changes in exposure or toxicity that would impact protectiveness of the remedy currently in place.

Table 8: Exposure Pathways and Risks from Preliminary Risk Assessment

Exposure Scenario & Pathway	Risk Driver(s)	Risk Estimate
RME Residential Scenario/Ingestion	Trichloroethene (TCE)	3×10^{-5}
RME Residential Scenario/Ingestion	Tetrachloroethene (PCE)	1×10^{-5}

Note:
RME = Reasonable Maximum Exposure
Source: *Baldwin Park OU Feasibility Study Report* (CH2M HILL, 1993)

Exposure Pathways

EPA's understanding of contaminant migration from soil gas and/or groundwater into buildings has evolved over the past few years leading to the conclusion that vapor intrusion may have a greater potential for posing risk to human health than assumed when the ROD was prepared. In September 2002, EPA released an external review draft version of its vapor intrusion guidance titled *Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils* (EPA, 2002). One criterion in considering whether there is a potential for vapor intrusion is the depth to contamination source (EPA, 2002; ITRC, 2007; Cal/EPA, 2011).[4] At Baldwin Park, the depth of groundwater is between 100 and 350 feet below the surface, and significant preferential pathways for vertical migration such as subsurface fractures have not been identified. Therefore, vapor intrusion is not identified as a potential issue for this FYR.

No other changes in exposure pathways were identified that would impact protectiveness of the remedy.

Toxicity Values: EPA's Integrated Risk Information System (IRIS; EPA, 2012)[5] has a program to update toxicity values that are used to conduct human health risk assessments when newer scientific information becomes available. Since completion of the preliminary risk assessment, there have been a number of changes to the toxicity values for certain contaminants of concern at the Site. Table 9 provides a comparison of the current toxicity factors with the toxicity factors used in the preliminary risk assessment. For each chemical that had an update, the table provides an indication of whether the

[4] U.S. Environmental Protection Agency (EPA). 2002. *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance).* November.

Interstate Technology Regulatory Council (ITRC). 2007. *Technical and Regulatory Guidance. Vapor Intrusion Pathway: A Practical Guideline*. January.

California Environmental Protection Agency (Cal/EPA). 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. October.

[5] U.S. Environmental Protection Agency (EPA). 2012. Integrated Risk Information System (IRIS) Database. Online: http://www.epa.gov/iriswebp/iris/index.html.

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Table 9: Comparison Between Toxicity Values used in the 1993 Baseline Risk Assessment and Current Region 9 Values

Chemical	Ingestion Exposure										Inhalation Exposure									
	Reference Dose Oral (RfDo) (mg/kg/day)					Cancer Slope Factor Oral (SFo) (mg/kg/day)$^{-1}$					Reference Dose Inhalation (RfDi) (mg/kg/day)					Cancer Slope Factor Inhalation (SFi) (mg/kg/day)$^{-1}$				
	Table ROD-3[1]		Current Values[2]		Impact on Estimated Hazard	Table ROD-3[1]		Current Values[2]		Impact on Estimated Risk	Table ROD-3[1]		Current Values[2]		Impact on Estimated Hazard	Table ROD-3[1]		Current Values[2]		Impact on Estimated Risk
VOLATILES																				
Acetone	0.1	I	0.9	I	decrease	--	--	--	--	--	--	--	8.9	A	increase	--	--	--	--	--
Benzene	--	--	0.004	I	increase	0.029	H	0.055	I	increase	--	--	0.0086	I	increase	0.029	H	0.027	I	decrease
Carbon Disulfide	0.1	I	0.1	I	--	--	--	--	--	--	0.003	H	0.2	I	decrease	--	--	--	--	--
Carbon Tetrachloride	0.0007	I	0.004	I	decrease	0.13	I	0.07	I	decrease	--	--	0.029	I	increase	0.13	I	0.021	I	decrease
Chloroform	0.1	I	0.01	I	increase	0.0061	I	0.031	C	increase	--	--	0.028	A	increase	0.081	I	0.081	I	--
1,1-Dichloroethane	0.1	H	0.2	P	decrease	--	--	0.0057	C	increase	0.1	H	--	--	decrease	--	--	0.0056	C	increase
1,2-Dichloroethane	--	--	0.006	X	increase	0.091	I	0.091	I	--	--	--	0.002	P	increase	0.091	I	0.091	I	--
1,1-Dichloroethene	0.0009	E	0.05	I	decrease	--	--	--	--	--	--	--	0.057	I	increase	--	--	--	--	--
cis-1,2-Dichloroethene	0.01	H	0.002	I	increase	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	0.02	I	0.02	I	--	--	--	--	--	--	--	--	0.017	P	increase	--	--	--	--	--
Ethylbenzene	0.1	I	0.1	I	--	--	--	0.011	C	increase	0.3	I	0.29	I	increase	--	--	0.0088	C	increase
Methylene chloride	0.06	I	0.006	I	increase	0.0075	I	0.002	I	decrease	0.9	H	0.17	I	increase	0.0016	I	0.000035	I	decrease
Tetrachloroethene	0.01	I	0.006	I	increase	0.051	H	0.0021	I	decrease	--	--	0.011	I	increase	0.002	H	0.00091	I	decrease
Toluene	0.2	I	0.08	I	increase	--	--	--	--	--	0.6	H	1.4	I	decrease	--	--	--	--	--
1,1,1-Trichloroethane	0.09	H	2	I	decrease	--	--	--	--	--	0.3	H	1.4	I	decrease	--	--	--	--	--
Trichloroethene	0.006	E	0.0005	I	increase	0.011	H	0.046	I	increase	--	--	0.00057	I	increase	0.017	H	0.014	I	decrease
Xylenes, Total	2	I	0.2	I	increase	--	--	--	--	--	0.09	H	0.029	I	increase	--	--	--	--	--

Notes:

[1] EPA, Region 9. 1994. Record of Decision. Baldwin Park Operable Unit, San Gabriel Valley Superfund Sites. Los Angeles County, California.

[2] EPA. 2012. Regional Screening Levels (RSL) Table. May. Online: http://www.epa.gov/region9/superfund//prg/index.html

A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs)

C = California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment's (OEHHA's) Chronic Reference Exposure Levels (RELs) from December 2008 and the Cancer Potency Values from July 21, 2009)

E = Environmental Criteria and Assessment Office (ECAO)

H = Health Effects Assessment Summary Tables (HEAST)

I = Integrated Risk Information System (IRIS)

P = Provisional Peer Reviewed Toxicity Values (PPRTVs)

X = PPRTV Appendix H

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change would cause an increase or a decrease in the estimated risk/hazard in comparison with the results of the preliminary risk assessment.

Groundwater results are compared to EPA Regional Screening Levels (RSLs) as a first step in determining whether response actions may be needed to address potential human health exposures. The RSLs are chemical-specific concentrations that correspond to an excess cancer risk level of $1x10^{-6}$ (or a Hazard Quotient [HQ]) of 1 for noncarcinogens) developed for standard exposure scenarios (e.g., residential and commercial/industrial). RSLs are not de facto cleanup standards for a Superfund site, but they do provide a good indication of whether actions may be needed. In September 2011, EPA completed a review of the TCE toxicity literature and posted on IRIS both cancer and non-cancer toxicity values which resulted in lower RSLs for TCE. The drinking water screening level for chronic exposure for cancer excess risk level of $1x10^{-6}$ is 0.44 µg/L (see Table 10). EPA uses an excess cancer risk range between 10^{-4} and 10^{-6} for assessing potential exposures, which means a TCE concentration between 0.44 and 44 µg/L. The current MCL for TCE is 5 µg/L which is within the revised protective carcinogenic risk range. EPA's 2011 Toxicological Review for TCE also developed safe levels that include at least a 10-fold margin of safety for health effects other than cancer. Any concentration below the non-cancer RSL indicates that no adverse health effect from exposure is expected. Concentrations significantly above the RSL may indicate an increased potential of non-cancer effects. The non-cancer screening level for TCE is 2.6 µg/L (Table 10). EPA considers the TCE MCL of 5 µg/L protective for both cancer and non-cancer effects.

Table 10: Summary of Drinking Water RSLs for Contaminants of Concern

Contaminant of Concern	RSL for cancer excess risk level of $1x10^{-6}$ (µg/L)	RSL for non-cancer hazard (µg/L)
TCE	0.44	2.6
PCE	9.7	35

EPA also recently reassessed PCE toxicity literature for both cancer and non-cancer effects and released the toxicological review in February 2012, posted on IRIS. The reassessment resulted in a decrease in the cancer slope factor for PCE, and has raised the cancer RSL for PCE to 9.7 µg/L. The non-cancer RSL was also revised based on adverse neurological effects and resulted in a non-cancer risk RSL of 35 µg/L. The PCE MCL of 5 µg/L remains protective for both carcinogenic and non-cancer effects.

In addition, 1,4-dioxane[6] is currently under review as part of EPA's IRIS reassessment program (EPA, 2011).[7] Any potential change to the 1,4-dioxane toxicity values will need to be addressed in subsequent Five-Year Reviews.

[6] IRIS toxicity assessment revisions that are in the near-final stage (External Peer Review) can be found at the following website: http://cfpub.epa.gov/ncea/iris_drafts/erd.cfm?excCol=Archive&archiveStatus=both

[7] U.S. Environmental Protection Agency (EPA). 2011. *IRIS Toxicological Review of 1,4-Dioxane (Inhalation) (External Review Draft).* Washington, DC, EPA/635/R-11/003A.

6.4. Data Review

Data from monthly progress reports from March 2011 through March 2012 and annual performance evaluation reports from 2007 through 2011 were reviewed as part of the FYR to evaluate whether the interim remedy at the Site is achieving the remedial action objectives. The results of the data review are discussed below.

Groundwater Extraction System Performance

The remedy was designed to hydraulically contain (i.e., "capture") contaminated groundwater in the Baldwin Park area and start to reduce contaminant concentrations within the groundwater. Table 11 summarizes the extraction rates achieved at the four OUs from 2007 through March 2012, compared to target rates. The target extraction rates are based on groundwater flow model simulations performed in 2000 and 2001 and represent the average extraction rates that the model predicted would be necessary to achieve the remedial action objectives.

Table 11: Target and Actual Extraction Rates

Treatment Plant/OU	Extraction Wells	EPA Target Annual Average Rates, gpm	Actual Annual Average Rates, gpm					
			2007	2008	2009	2010	2011	2012 (Jan-Mar)
La Puente Valley County Water District (OU 02)[1]	Well No. 2 Well No. 3 Well No. 5	2,250	2,449	2,326	2,295	2,288	2,271	2,094
San Gabriel Valley Water Co. B6 (OU 03)	Well B25A Well B25B Well B26A Well B26B	6,500	7,235	6,443	4,694	4,531	5,302	3,886
Valley County Water District (OU 04)	Well SA1-1 Well SA1-2 Well SA1-3	6,000	4,963	4,869	5,092	4,262	4,149	5,390
San Gabriel Valley Water Co. B5 (OU 05)[2]	Well No. B5B Well No. B5D Well No. B5E COI-5	7,000	2,455	5,635	6,294	6,833	7,170	7,432

Notes:
[1]The LPVCWD subproject began operation of the new No. 5 extraction well in December 2008.
[2]The SGVWC B5 subproject began operation of the COI-5 extraction well in July 2009.

During this Five-Year Review period, OU 02 achieved the target rate each year through 2011. At OU 05, extraction rates have steadily increased each year, with the actual average rate exceeding the target rate in 2011 and 2012 (through March). OU 03 has not achieved the target rate since 2007 and OU 04 did not achieve the target rate during the FYR period. The reduced production rates at OU 03 and OU 04 were primarily related to limitations and operational problems associated with the ISEP and elevated nitrate concentrations in the extracted groundwater. The startup of single phase ion exchange treatment systems and resolution of the nitrate treatment issues are expected to improve the extraction rates at these OUs by 2013.

Contaminant mass removal is estimated annually based on flow rates from groundwater extraction wells and water quality results for these same extraction wells. Table 12 summarizes the contaminant mass removal estimates for each OU.

Table 12: BPOU Remedy: Estimated Contaminant Mass Removed from Groundwater

Treatment Plant/OU	Mass Removed (lbs.)					Primary Compounds Contributing Mass
	2007	2008	2009	2010	2011	
La Puente Valley County Water District (OU 02)	1,010	896	612	658	639	Perchlorate, TCE CTC, PCE
San Gabriel Valley Water Co. B6 (OU 03)	2,302	2,392	1,553	1,743	2,036	Perchlorate, TCE, PCE, CTC
Valley County Water District (OU 04)	4,725	3,639	7,424	6,384	7,024	1,1-DCE, PCE, TCE, perchlorate, cis-1,2-DCE
San Gabriel Valley Water Co. B5 (OU 05)	119	421	427	455	526	TCE, PCE, perchlorate, CTC
Totals	**8,156 lbs**	**7,348 lbs**	**10,016 lbs**	**9,240 lbs**	**10,226 lbs**	

Significant contaminant mass continues to be removed by the interim remedy. The majority of contaminant mass removal is at Subarea 1, corresponding to the VCWD project (OU 04). Mass removal at SGVWC B5 (OU 05) was significantly lower than at the other BPOU OUs, although extraction rates were the highest.

Performance Monitoring

In addition to the groundwater extraction rate measurements and contaminant mass removal estimates, a comprehensive groundwater monitoring program is in place to monitor water levels and water

quality to provide data needed to evaluate remedy performance. The monitoring program, described in the *Performance Standards Evaluation Plan* (PSEP) (Revision 3, dated April 13, 2012),[8] includes 11 groundwater extraction wells, 18 multilevel monitoring wells, a 3-well cluster, 7 conventional monitoring wells, 35 piezometers (water levels only), and 13 production wells. Locations of wells and piezometers that are included in the water level monitoring program are shown on Figure 4, and their monitoring frequencies are listed in Table 13. Locations of wells that are included in the water quality monitoring program are shown on Figure 5, and their monitoring frequencies are listed in Table 14.

Annual performance evaluations were completed for 2007 through 2011 and summarized in reports submitted to EPA. The reports provide potentiometric surface maps and evaluations of regional water level fluctuations due to basin-wide recharge and pumping conditions; local-scale water level fluctuations due to ongoing groundwater production and extraction system pumping; regional- and local-scale lateral hydraulic gradients and flow directions; and regional and local-scale vertical hydraulic gradients and flow directions.

In response to requests from EPA, groundwater modeling and forward particle tracking was conducted in 2010-11 to evaluate the hydraulic effects of the operation of project extraction wells. Forward particle tracking was performed by starting particles at the beginning of each quarterly stress period in water year (WY) 2007-08 and then simulating the forward paths of the particles under transient groundwater flow conditions for 12 quarters (three years). Figures 6 through 9 show particle tracking results for the period from June 2008 to June 2011.

Based on the 2010-11 evaluation of forward particle tracking results and chemical mass removal rates, the following general observations regarding extraction system performance were made:

- Operation of the VCWD (OU 04) Lante extraction well SA1-3 in 2011 had a significant effect on hydraulic control and chemical mass removal in Subarea 1 (the northern portion of the plume, corresponding to the VCWD Lante project). Pumping of the SA1-1 extraction well had a lesser effect on hydraulic control and chemical mass removal due to the location of this well in relation to the distribution of COCs, and the resultant lower COC concentrations in groundwater extracted from this well. The SA1-2 extraction well did not operate in 2011. As shown in Figure 6, a number of the particles migrated beyond the Subarea 1 extraction wells.

- The operation of LPVCWD (OU 02) extraction well(s) at or above their target extraction rates provided consistent hydraulic control and chemical mass removal in this area of the plume throughout 2011.

- The SGVWC B6 (OU 03) extraction wells provide partial hydraulic control of the higher level contamination migrating towards Subarea 3 and significant chemical mass removal. The deeper OU 03 extraction wells also help contain the deeper -500 foot msl contamination.

[8] AMEC Environment & Infrastructure, Inc. 2012. *Performance Standards Evaluation Plan, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites*, Rev. 3. April.

- Operation of the SGVWC B5 (OU 05) extraction wells combined with the operation of the California Domestic Water Company (CDWC) production wells provided significant hydraulic control in the downgradient portion of Subarea 3 (the southern portion of the plume) in 2011 in all depth intervals evaluated. Operation of the COI-5 extraction well provided little benefit in terms of hydraulic control or chemical mass removal.

Based on the available information, the project extraction wells, as supplemented by production wells in the CDWC Bassett well field, are limiting the migration of COCs in groundwater despite the below-target extraction rates at OU 03 and OU 04.

The annual performance evaluation reports also provide plume maps and chemical cross-sections for seven COCs, and show temporal trends in chemical concentrations. The seven contaminants are 1,2-dichloroethane (1,2-DCA); 1,4-dioxane; carbon tetrachloride; NDMA; perchlorate; PCE; and TCE. The generalized distribution of these COCs based on 2011 data, along with their time-concentration trends relative to the MCL (or NL), are shown on Figures 10 through 16.

The concentration trends in individual wells show significant fluctuations as basin water levels vary, and by themselves do not reveal broad patterns; however, comparing the spatial distribution of the COCs as presented in the annual performance evaluation reports, the COC plumes generally appear to have declined in extent and concentration in Subarea 1 (northern portion of the BPOU) during the review period. This is likely due to several factors, including reduced mass loading in source areas, mass removal by the extraction system in OU 04, and downgradient migration. COC concentrations in monitoring well MW 5-24, located just downgradient of the OU 04 extraction wells, are elevated and generally have been stable.

In the mid-plume area of the BPOU, downgradient of Subarea 1 and upgradient of Subarea 3, considerably higher concentrations of 1,4-dioxane, PCE, and TCE were observed in 2011 in monitoring well MW 5-08 Port 4 compared to previous years. Slightly higher concentrations of these COCs were also observed in nearby monitoring well MW 5-05 Port 2 in 2011 compared to previous years. MW 5-08 is near the western boundary of the COC plumes, with no monitoring points immediately downgradient. If future monitoring events indicate continued high or increasing COC concentration trends in these wells, additional monitoring points may be needed in this area to anticipate future changes in water quality, particularly at the OU 05 treatment plant.

COC concentrations in monitoring wells in the downgradient edge of the plumes did not indicate any observable trends over the course of the review period. Concentrations in monitoring wells MW 5-26 and MW 5-27, located downgradient of the SGVWC B5 Subproject extraction wells and the CDWC Bassett well field, remained at non-detect levels or below MCLs (or NLs). The extent of BPOU contamination does not appear to have migrated beyond the capture zone of the downgradient extraction wells located in the southwest corner of the BPOU area.

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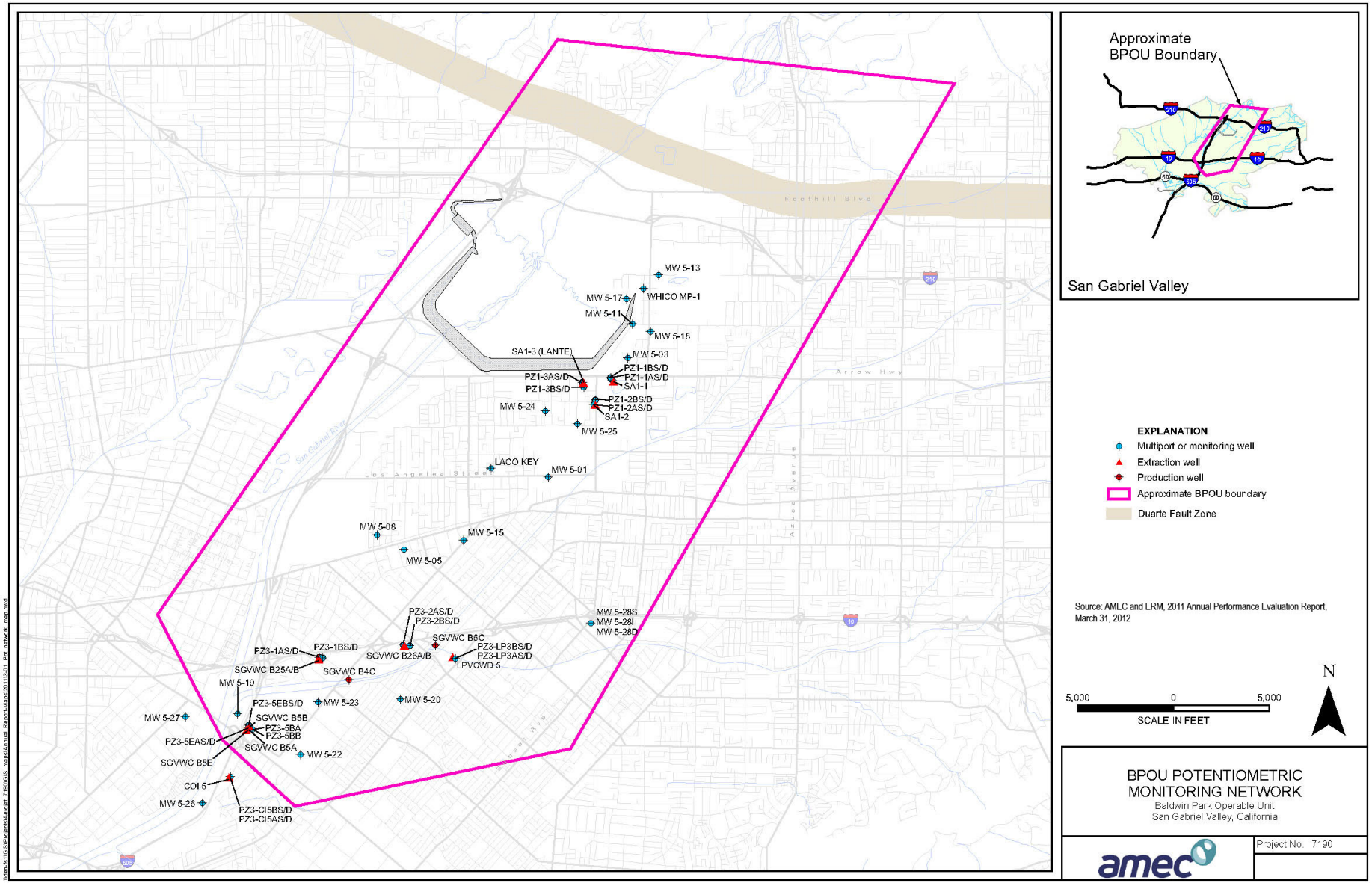

Figure 4: Locations of Wells and Piezometers in the Water Level Monitoring Program

Table 13: Potentiometric Monitoring Network and Monitoring Frequency

Well Name	Site ID	Port	Sampling Frequency
Extraction Wells			
COI 5	08000097		Quarterly
LPVCWD 05	08000209		Quarterly
SA1-1	08000185		Quarterly
SA1-2	08000186		Quarterly
SA1-3 (Lante)	08000060		Quarterly
SGVWC B25A	08000187		Quarterly
SGVWC B25B	08000188		Quarterly
SGVWC B26A	08000189		Quarterly
SGVWC B26B	08000190		Quarterly
SGVWC B5B	61900719		Quarterly
SGVWC B5E	08000205		Quarterly
Piezometers			
PZ1-1AD	PZ1-1AD		Quarterly
PZ1-1AS	PZ1-1AS		Quarterly
PZ1-1BD	PZ1-1BD		Quarterly
PZ1-1BS	PZ1-1BS		Quarterly
PZ1-2AD	PZ1-2AD		Quarterly
PZ1-2AS	PZ1-2AS		Quarterly
PZ1-2BD	PZ1-2BD		Quarterly
PZ1-2BS	PZ1-2BS		Quarterly
PZ1-3AD	PZ1-3AD		Quarterly
PZ1-3AS	PZ1-3AS		Quarterly
PZ1-3BD	PZ1-3BD		Quarterly
PZ1-3BS	PZ1-3BS		Quarterly
PZ3-1AD	PZ3-1AD		Quarterly
PZ3-1AS	PZ3-1AS		Quarterly
PZ3-1BD	PZ3-1BD		Quarterly
PZ3-1BS	PZ3-1BS		Quarterly
PZ3-2AD	PZ3-2AD		Quarterly
PZ3-2AS	PZ3-2AS		Quarterly
PZ3-2BD	PZ3-2BD		Quarterly
PZ3-2BS	PZ3-2BS		Quarterly
PZ3-5EAD	PZ3-5EAD		Quarterly
PZ3-5EAS	PZ3-5EAS		Quarterly
PZ3-5EBD	PZ3-5EBD		Quarterly
PZ3-5EBS	PZ3-5EBS		Quarterly
PZ3-CI5AD	PZ3-CI5AD		Quarterly
PZ3-CI5AS	PZ3-CI5AS		Quarterly
PZ3-CI5BD	PZ3-CI5BD		Quarterly

Page 1 of 2

Source: AMEC, Performance Standards Evaluation Plan, Rev 3, April 13, 2012

Table 13: Potentiometric Monitoring Network and Monitoring Frequency

Well Name	Site ID	Port	Sampling Frequency
PZ3-CI5BS	PZ3-CI5BS		Quarterly
PZ3-LP3AD	PZ3-LP3AD		Quarterly
PZ3-LP3AS	PZ3-LP3AS		Quarterly
PZ3-LP3BD	PZ3-LP3BD		Quarterly
PZ3-LP3BS	PZ3-LP3BS		Quarterly
PZ3-5BA	PZ3-5BAS		Quarterly
PZ3-5BB	PZ3-5BBS		Quarterly
SGVWC B5A	61900718		Quarterly
Multiport Monitoring Wells			
MW 5-01	EPAW51	Ports 1-13	Semi-Annual
MW 5-03	BPW503	Ports 1-10	Semi-Annual
MW 5-05	BPW505	Ports 1-4	Semi-Annual
MW 5-08	BPW508	Ports 1-4	Semi-Annual
MW 5-11	BPW511	Ports 1-3	Semi-Annual
MW 5-13	BPW513	Ports 1-3	Semi-Annual
MW 5-15	BPW515	Ports 1-3	Semi-Annual
MW 5-17	BPW517	Ports 1-3	Semi-Annual
MW 5-18	BPW518	Ports 1-3	Semi-Annual
MW 5-19	BPW519	Ports 1-6	Semi-Annual
MW 5-20	BPW520	Ports 1-7	Semi-Annual
MW 5-22	BPW522	Ports 1-6	Semi-Annual
MW 5-23	BPW523	Ports 1-6	Semi-Annual
MW 5-24	BPW524	Ports 1-7	Semi-Annual
MW 5-25	BPW525	Ports 1-7	Semi-Annual
MW 5-26	BPW526	Ports 1-7	Semi-Annual
MW 5-27	BPW527	Ports 1-7	Semi-Annual
WHICO MP-1	W10WHMP1	Ports 1-6	Semi-Annual
Monitoring Wells			
LACO Key	Z1000006		Weekly

Source: AMEC, Performance Standards Evaluation Plan, Rev 3, April 13, 2012

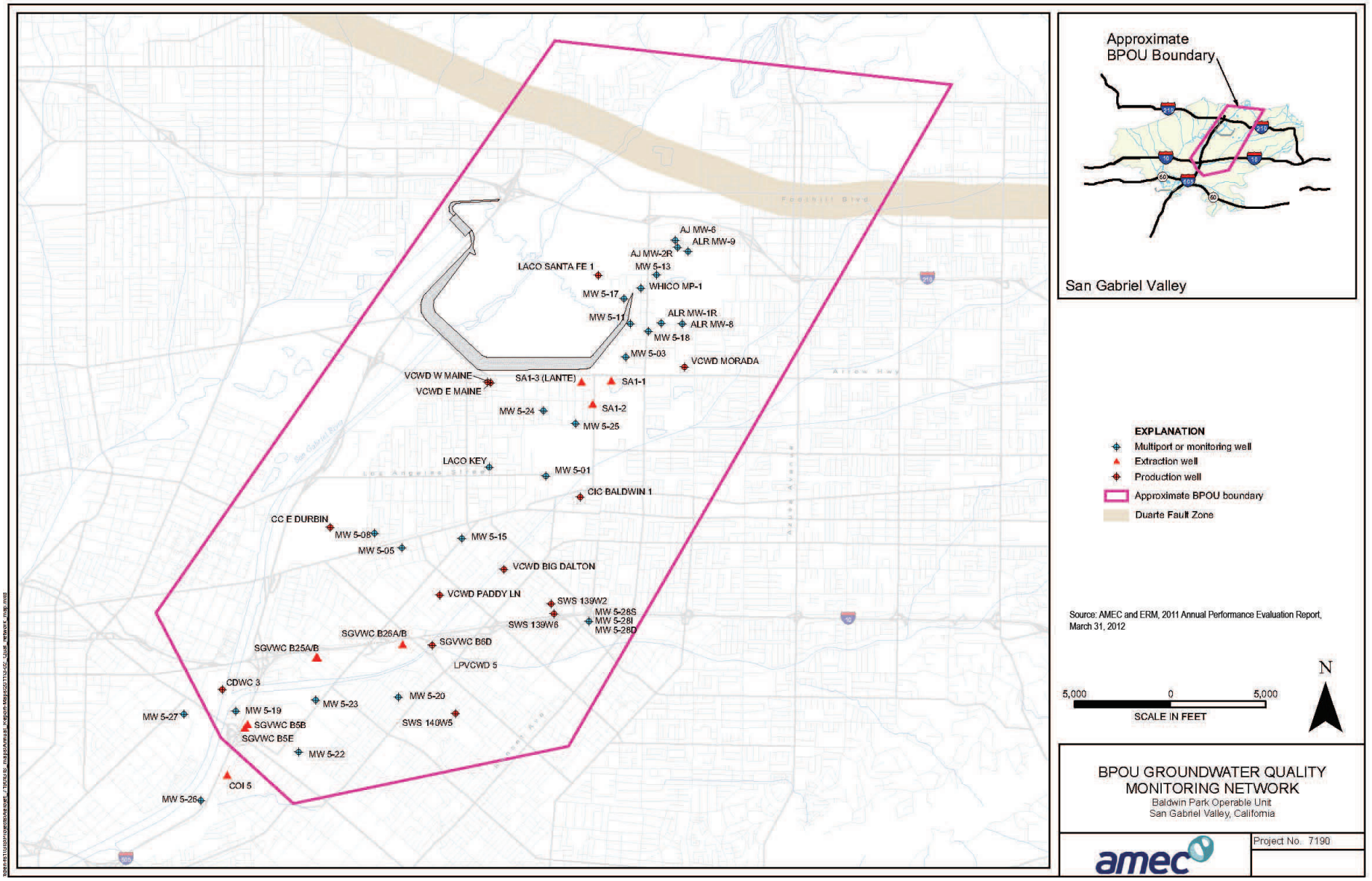

Figure 5: Locations of Wells in the Water Quality Monitoring Program

Table 14: Groundwater Quality Monitoring Network and Sampling Frequency

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements: Analytes and Sampling Frequency [a]						DPH Requirements									
			VOCs	1,4-Dioxane	NDMA	Perchlorate	Nitrate, Sulfate		EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 353.2	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods
			VOCs	1,4-Dioxane	NDMA	Perchlorate	Nitrate, Sulfate		VOCs including TICs	NDMA	Nitrosamines	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Title 22 SOCs
Extraction Wells																		
COI 5[b]	08000097		Q		Q	Q	Q		M[c]	M	M	M	M		M	A	M	
LPVCWD 05[b]	08000209		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A	A	
SA1-1[b]	08000185		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A	M	
SA1-2[b]	08000186		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A	M	
SA1-3 (Lante)[b]	08000060		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A	M	
SGVWC B25A[b]	08000187		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A		
SGVWC B25B[b]	08000188		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A		
SGVWC B26A[b]	08000189		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A		
SGVWC B26B[b]	08000190		Q	Q	Q	Q	Q		M[c]	M		M	M	M	M	A		
SGVWC B5B[b]	61900719		Q		Q	Q	Q		M[c]	M	M	M	M		M	A	M	
SGVWC B5E[b]	08000205		Q		Q	Q	Q		M[c]	M	M	M	M		M	A	M	
Multiport Monitoring Wells																		
MW5-01	BPW501	Port 13	A	A	A	A	A											
		Port 12	A	A	A	A	A											
		Port 11	A	A	A	A	A											
		Port 10	A	A	A	A	A											
		Port 9	A	A	A	A	A											
		Port 8	A		A	A	A											
		Port 7	A		A	A	A											
		Port 6	A		A	A	A											
		Port 5	A		A	A	A											
		Port 4	A		A	A	A											
		Port 3	A		A	A	A											
		Port 2	A		A	A	A											
		Port 1	A		A	A	A											

Source: AMEC, Performance Standards Evaluation Plan, Rev 3, April 13, 2012

Table 14: Groundwater Quality Monitoring Network and Sampling Frequency

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements: Analytes and Sampling Frequency [a]					DPH Requirements									
			VOCs	1,4-Dioxane	NDMA	Perchlorate	Nitrate, Sulfate	EPA Method 524.2 VOCs including TICs	EPA Method 1625C (MOD) NDMA	EPA Method 521 Nitrosamines	EPA Method 314.0 Perchlorate	EPA Method 300.0 NO_3	EPA Method 353.2 SO_4	EPA Method 8270C (MOD) 1,4-Dioxane	EPA Method 525.2 or 625 or 8270C SVOCs including TICs	EPA Method 524.2 SIM (MOD) 123-TCP	Various Methods Title 22 SOCs
MW5-03[b]	BPW503	Port 10	SA	SA	SA	SA	SA	A[c]	A	A	A	A		A	A	A	A
		Port 9	SA	SA	SA	SA	SA	A[c]	A	A	A	A		A	A	A	A
		Port 8	SA	SA	SA	SA	SA	A[c]	A	A	A	A		A	A	A	A
		Port 7	SA	SA	SA	SA	SA	A[c]	A	A	A	A		A	A	A	A
		Port 6	SA	SA	SA	SA	SA	A[c]	A	A	A	A		A	A	A	A
		Port 5	SA		SA	SA	SA	A[c]	A	A	A	A		A	A	A	A
		Port 4	A		A	A	A	A[c]	A	A	A	A		A	A	A	A
		Port 3	A		A	A	A	A[c]	A	A	A	A		A	A	A	A
		Port 2	A		A	A	A	A[c]	A	A	A	A		A	A	A	A
		Port 1	A		A	A	A	A[c]	A	A	A	A		A	A	A	A
MW5-05[b]	BPW505	Port 4	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 3	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 2	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 1	A	A	A	A	A	A[c]	A		A	A		A	A		
MW5-08[b]	BPW508	Port 4	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 3	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 2	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 1	A		A	A	A	A[c]	A		A	A		A	A		
MW5-11[b]	BPW511	Port 3	A	A	A	A	A	A[c]	A	A	A	A		A	A	A	A
		Port 2	A	A	A	A	A	A[c]	A	A	A	A		A	A	A	A
		Port 1	A	A	A	A	A	A[c]	A	A	A	A		A	A	A	A
MW5-13[b]	BPW513	Port 3	A	A	A	A	A	BIE[c]	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE
		Port 2	A	A	A	A	A	BIE[c]	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE
		Port 1	A	A	A	A	A	BIE[c]	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE
MW5-15[b]	BPW515	Port 3	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 2	A	A	A	A	A	A[c]	A		A	A		A	A		
		Port 1	A	A	A	A	A	A[c]	A		A	A		A	A		
MW5-17[b]	BPW517	Port 3	A	A	A	A	A	BIE[c]	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE
		Port 2	A	A	A	A	A	BIE[c]	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE
		Port 1	A	A	A	A	A	BIE[c]	BIE	BIE	BIE	BIE		BIE	BIE	BIE	BIE
MW5-18[b]	BPW518	Port 3	A	A	A	A	A	A[c]	A	A	A			A	A	A	A
		Port 2	A	A	A	A	A	A[c]	A	A	A			A	A	A	A
		Port 1	A		A	A	A	A[c]	A	A	A			A	A	A	A

Source: AMEC, Performance Standards Evaluation Plan, Rev 3, April 13, 2012

Table 14: Groundwater Quality Monitoring Network and Sampling Frequency

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements: Analytes and Sampling Frequency [a]					DPH Requirements									
			VOCs	1,4-Dioxane	NDMA	Perchlorate	Nitrate, Sulfate	EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 353.2	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods
								VOCs including TICs	NDMA	Nitrosamines	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Title 22 SOCs
MW5-19	BPW519	Port 6	A	A	A	A	A										
		Port 5	SA	SA	SA	SA	SA										
		Port 4	SA	SA	SA	SA	SA										
		Port 3	SA		SA	SA	SA										
		Port 2	A		A	A	A										
		Port 1	A		A	A	A										
MW5-20	BPW520	Port 7	A		A	A	A										
		Port 6	A		A	A	A										
		Port 5	A	A	A	A	A										
		Port 4	A	A	A	A	A										
		Port 3	A	A	A	A	A										
		Port 2	A	A	A	A	A										
		Port 1	A		A	A	A										
MW5-22[b]	BPW522	Port 6	A		A	A	A	A[c]	A		A	A		A	A	A	
		Port 5	A		A	A	A	A[c]	A		A	A		A	A	A	
		Port 4	A		A	A	A	A[c]	A		A	A		A	A	A	
		Port 3	A		A	A	A	A[c]	A		A	A		A	A	A	
		Port 2	A		A	A	A	A[c]	A		A	A		A	A	A	
		Port 1	A		A	A	A	A[c]	A		A	A		A	A	A	
MW5-23	BPW523	Port 6	A		A	A	A										
		Port 5	A	A	A	A	A										
		Port 4	A	A	A	A	A										
		Port 3	A	A	A	A	A										
		Port 2	A	A	A	A	A										
		Port 1	A		A	A	A										
MW5-24	BPW524	Port 7	SA	SA	SA	SA	SA										
		Port 6	SA	SA	SA	SA	SA										
		Port 5	SA	SA	SA	SA	SA										
		Port 4	SA	SA	SA	SA	SA										
		Port 3	SA	SA	SA	SA	SA										
		Port 2	SA	SA	SA	SA	SA										
		Port 1	SA	SA	SA	SA	SA										

Source: AMEC, Performance Standards Evaluation Plan, Rev 3, April 13, 2012

Table 14: Groundwater Quality Monitoring Network and Sampling Frequency

			PSEP Requirements						DPH Requirements									
			Analytes and Sampling Frequency [a]						EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 353.2	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods
Well Name	Site ID	Port or Sampling Depth (ft bgs)	VOCs	1,4-Dioxane	NDMA	Perchlorate	Nitrate, Sulfate		VOCs including TICs	NDMA	Nitrosamines	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Title 22 SOCs
MW5-25	BPW525	Port 7	SA		SA	SA	SA											
		Port 6	SA		SA	SA	SA											
		Port 5	SA	SA	SA	SA	SA											
		Port 4	SA	SA	SA	SA	SA											
		Port 3	SA	SA	SA	SA	SA											
		Port 2	SA	SA	SA	SA	SA											
		Port 1	SA	SA	SA	SA	SA											
MW5-26	BPW526	Port 7	SA		SA	SA	SA											
		Port 6	SA		SA	SA	SA											
		Port 5	SA		SA	SA	SA											
		Port 4	SA		SA	SA	SA											
		Port 3	SA		SA	SA	SA											
		Port 2	SA		SA	SA	SA											
		Port 1	SA		SA	SA	SA											
MW5-27	BPW527	Port 7	SA		SA	SA	SA											
		Port 6	SA		SA	SA	SA											
		Port 5	SA		SA	SA	SA											
		Port 4	SA		SA	SA	SA											
		Port 3	SA		SA	SA	SA											
		Port 2	SA		SA	SA	SA											
		Port 1	SA		SA	SA	SA											
MW 5-28D	BPW528D		A	A	A	A	A											
MW 5-28I	BPW528I		A	A	A	A	A											
MW 5-28S	BPW528S		A	A	A	A	A											
WHICO MP-1	W10WHMP1	Port 6	A	A	A	A	A											
		Port 5	A	A	A	A	A											
		Port 4	A	A	A	A	A											
		Port 3	A	A	A	A	A											
		Port 2	A	A	A	A	A											
		Port 1	A	A	A	A	A											

Source: AMEC, Performance Standards Evaluation Plan, Rev 3, April 13, 2012

Table 14: Groundwater Quality Monitoring Network and Sampling Frequency

Well Name	Site ID	Port or Sampling Depth (ft bgs)	PSEP Requirements: Analytes and Sampling Frequency [a]					DPH Requirements									
			VOCs	1,4-Dioxane	NDMA	Perchlorate	Nitrate, Sulfate	EPA Method 524.2	EPA Method 1625C (MOD)	EPA Method 521	EPA Method 314.0	EPA Method 300.0	EPA Method 353.2	EPA Method 8270C (MOD)	EPA Method 525.2 or 625 or 8270C	EPA Method 524.2 SIM (MOD)	Various Methods
			VOCs	1,4-Dioxane	NDMA	Perchlorate	Nitrate, Sulfate	VOCs including TICs	NDMA	Nitrosamines	Perchlorate	NO_3	SO_4	1,4-Dioxane	SVOCs including TICs	123-TCP	Title 22 SOCs
Monitoring Wells																	
AJMW-2R	W11AJMW2R		A	A	A	A	A										
AJMW-4	W11AJMW4		A	A	A	A	A										
AJMW-6	W11AJMW6		A	A	A	A	A										
ALR MW-1R	W11AZW01R		A	A	A	A	A										
ALR MW-8	W11AZW08		A	A	A	A	A										
ALR MW-9	W11AZW09		A	A	A	A	A										
LACO Key	Z1000006		A	A	A	A	A										
Production Wells																	
CC E Durbin	01902920		A		A	A	A										
CDWC 03	01903057		A		A	A	A										
CIC Baldwin 1	01900885		A		A	A	A										
LACO SF1	08000070		A	A	A	A	A										
SGVWC B6D	08000098		A	A	A	A	A										
SWS 139W2	01901599	285	A		A	A	A										
		370	A		A	A	A										
SWS 139W6	08000152	975	A		A	A	A										
SWS 140W5	08000145		A		A	A	A										
VCWD Big Dalton [b]	01900035	275	A	A	A	A	A	A [c]	A		A	A		A	A		
		410	A	A	A	A	A										
VCWD E Maine	01900027		A		A	A	A										
VCWD Morada	01900029	430	A	A	A	A	A										
		510	A	A	A	A	A										
VCWD Paddy Lane [b]	01900031	340	A	A	A	A	A	A [c]	A		A	A		A	A		
		460	A	A	A	A	A										
VCWD W Maine	01900028		A		A	A	A										

[a] Sampling freqency:
BIE (Biennial)
A (Annual)
SA (Semi-annual)
Q (Quarterly)
M (Monthly
BIW (Biweekly)

[b] DPH required monitoring
[c] TIC analysis annually
[d] Non-volatile synthetic organic chemicals - includes Ethylene Bromide

Source: AMEC, Performance Standards Evaluation Plan, Rev 3, April 13, 2012

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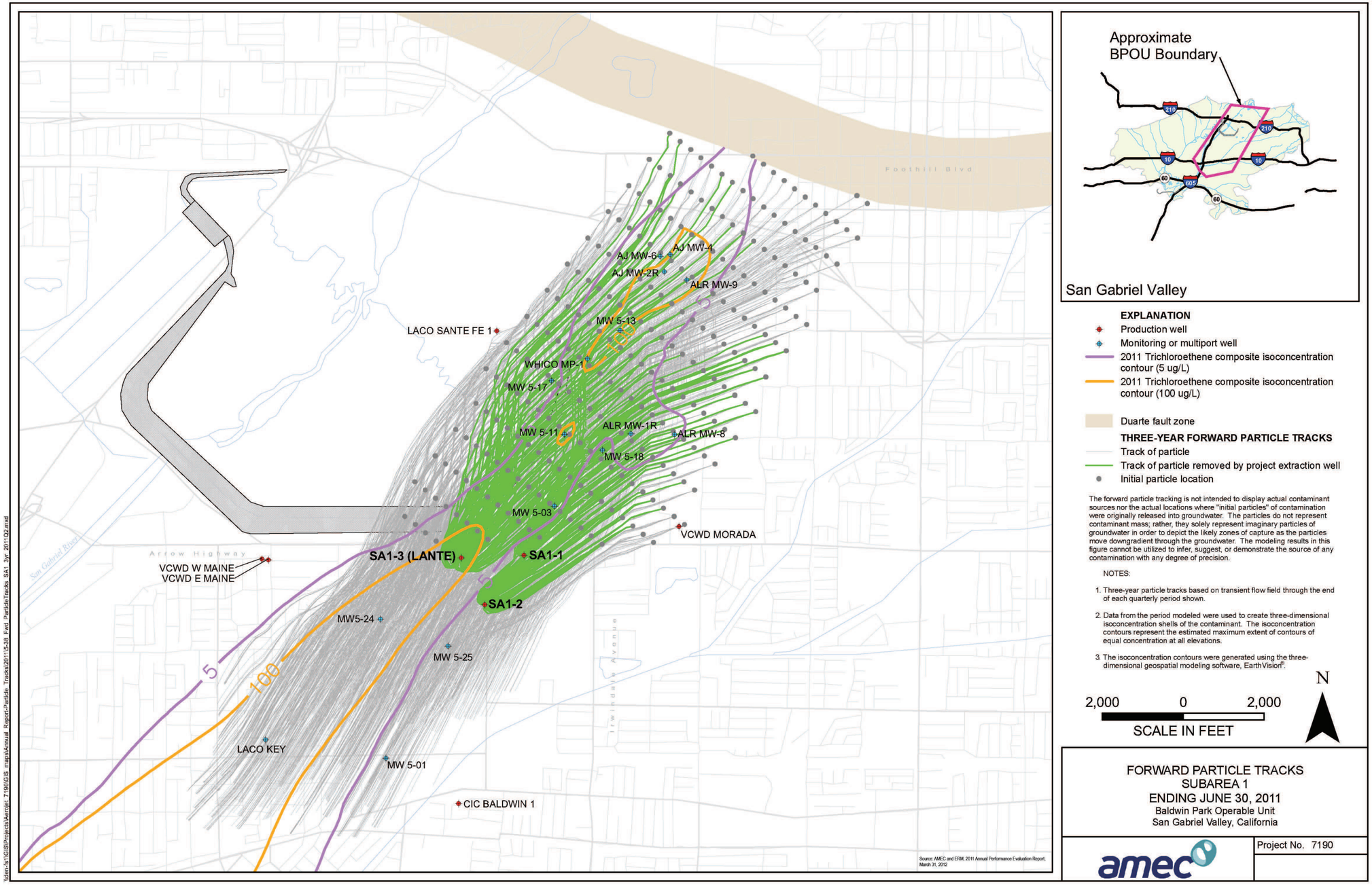

Figure 6: Forward Particle Tracking Results for Subarea 1, Quarter Ending June 30, 2011

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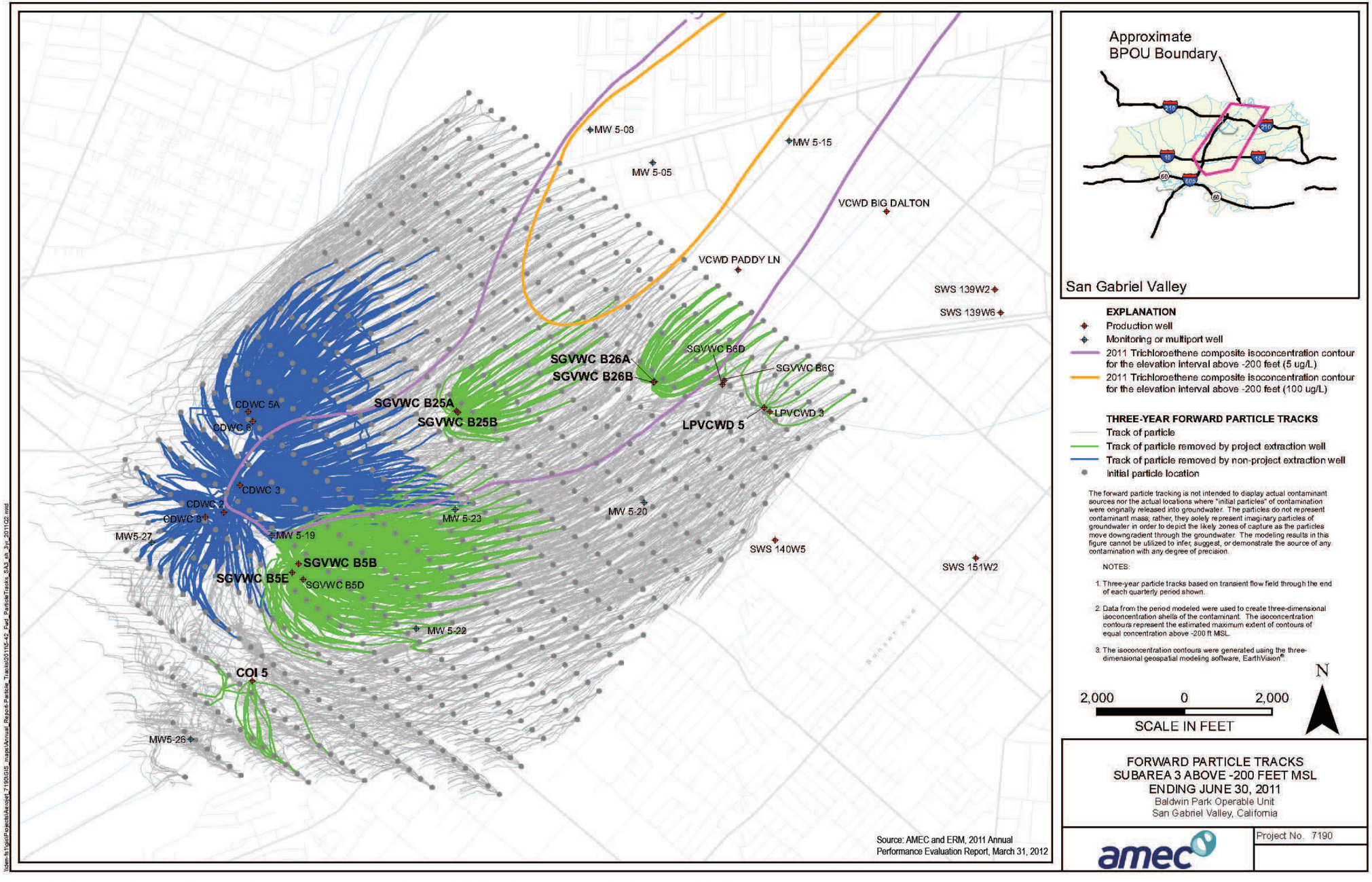

Figure 7: Forward Particle Tracking Results for Subarea 3 Above -200 Feet MSL, Quarter Ending June 30, 2011

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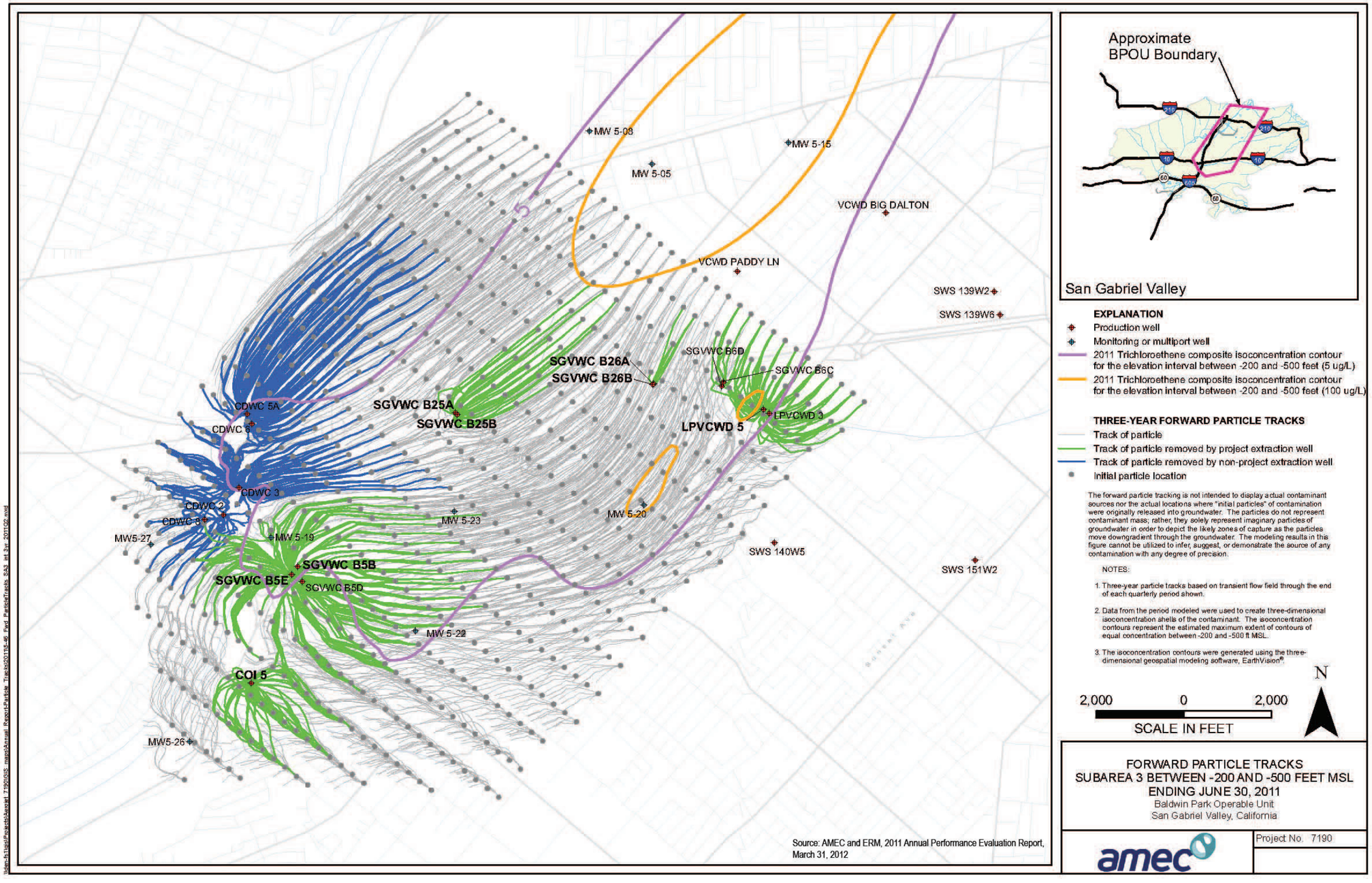

Figure 8: Forward Particle Tracking Results for Subarea 3 Between -200 and -500 Feet MSL, Quarter Ending June 30, 2011

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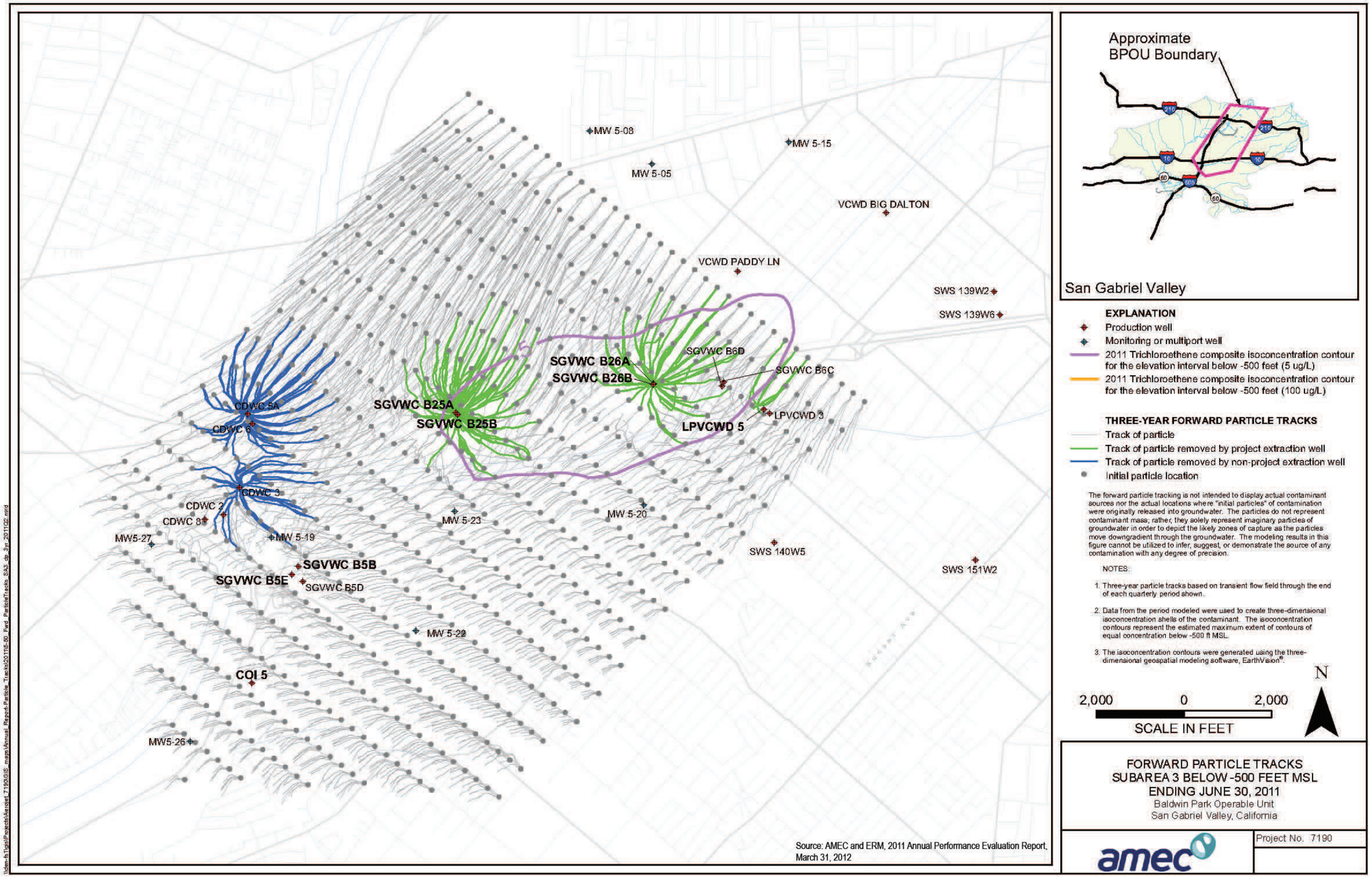

Figure 9: Forward Particle Tracking Results for Subarea 3 Below -500 Feet MSL, Quarter Ending June 30, 2011

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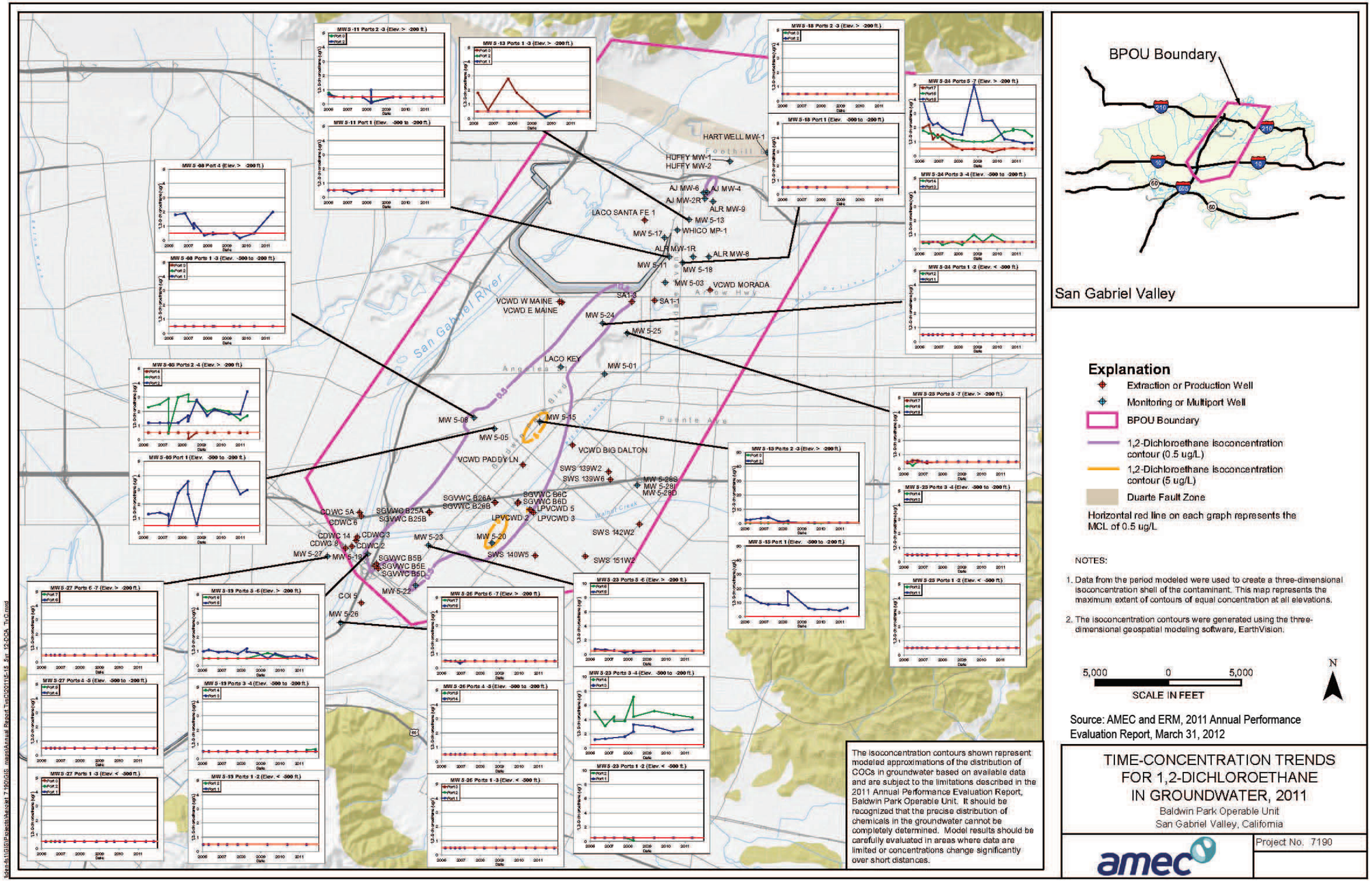

Figure 10: Time-Concentration Trends for 1,2-Dichloroethane in Groundwater, 2011

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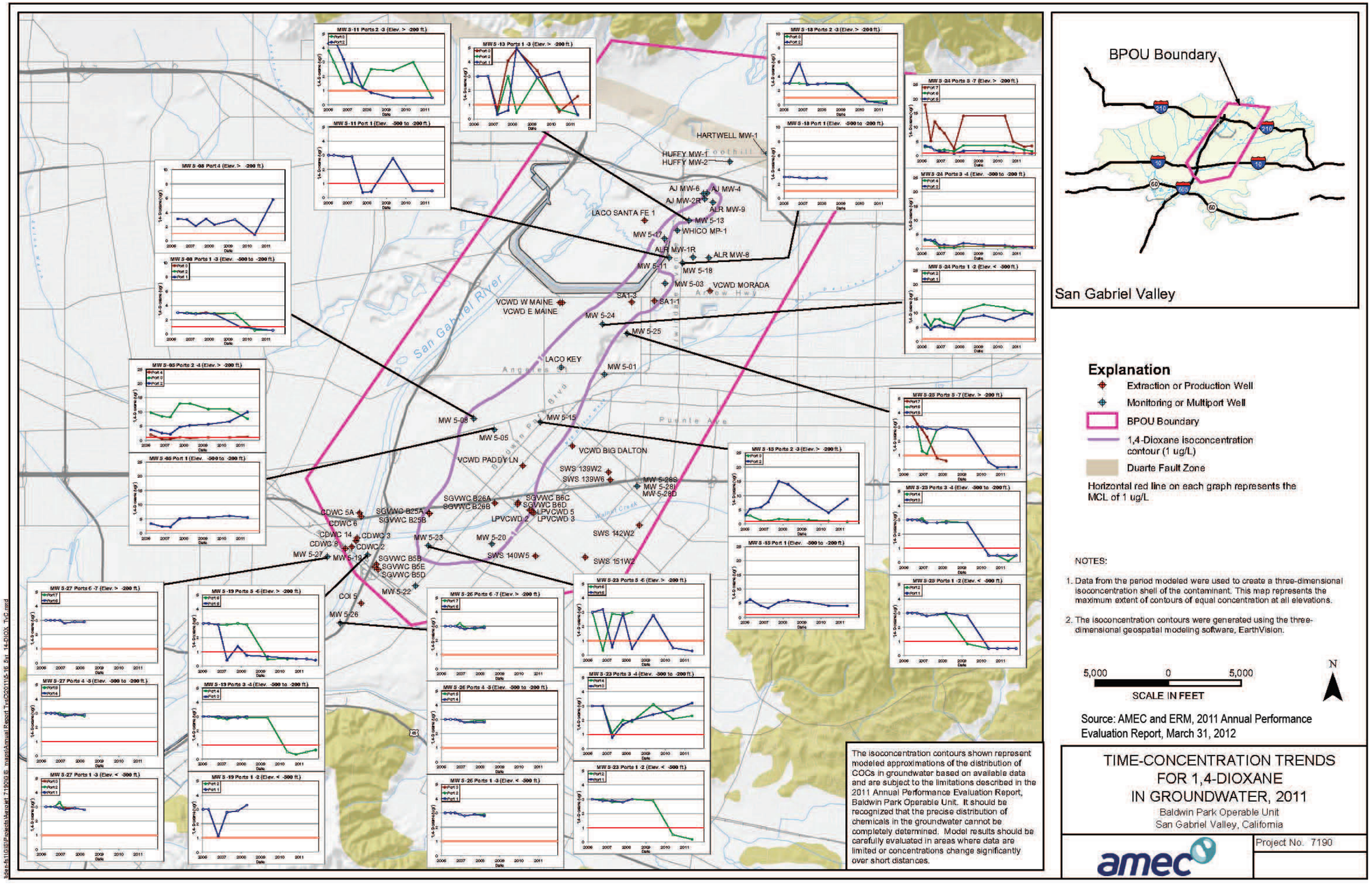

Figure 11: Time-Concentration Trends for 1,4-Dioxane in Groundwater, 2011

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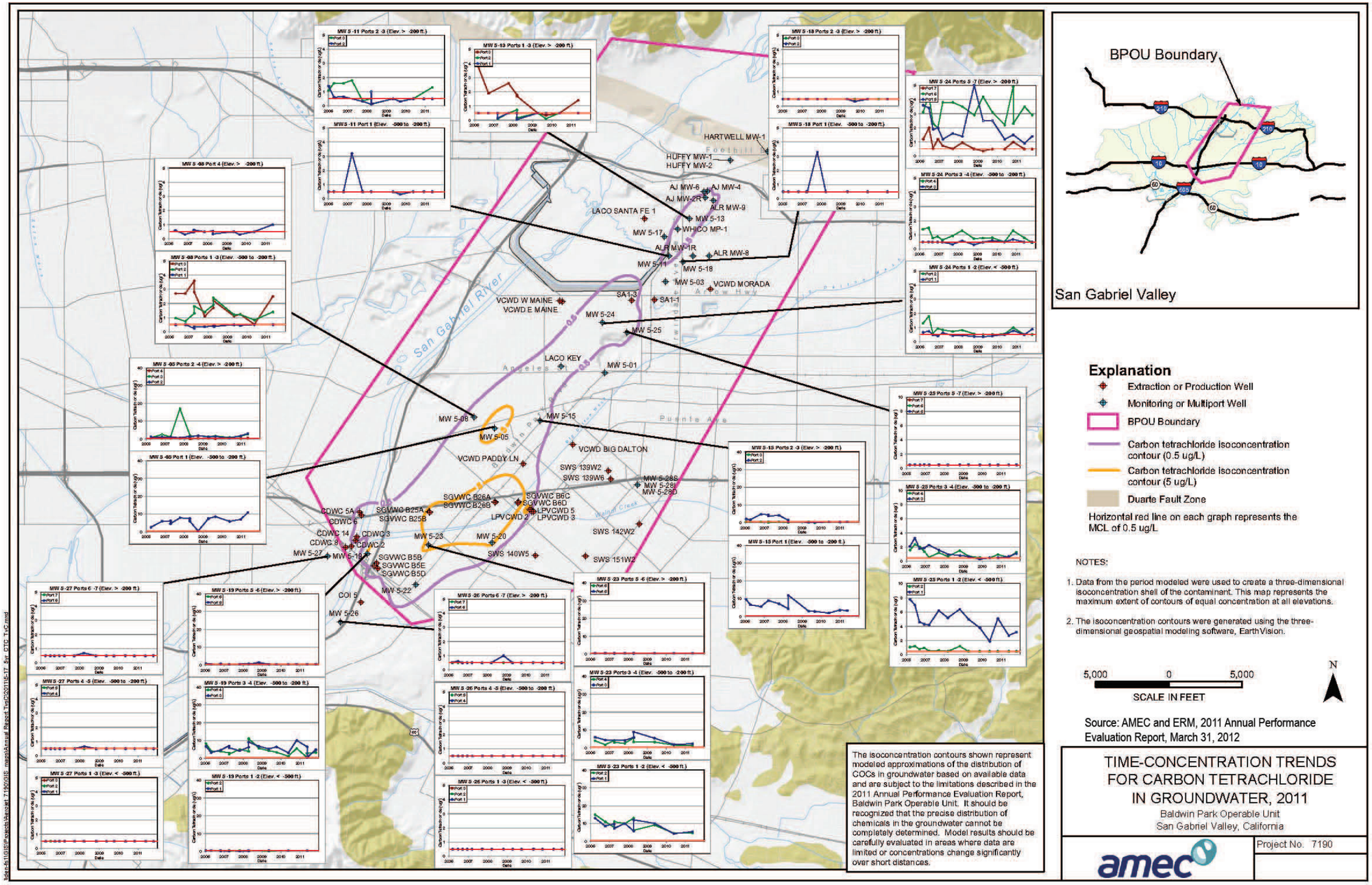

Figure 12: Time-Concentration Trends for Carbon Tetrachloride in Groundwater, 2011

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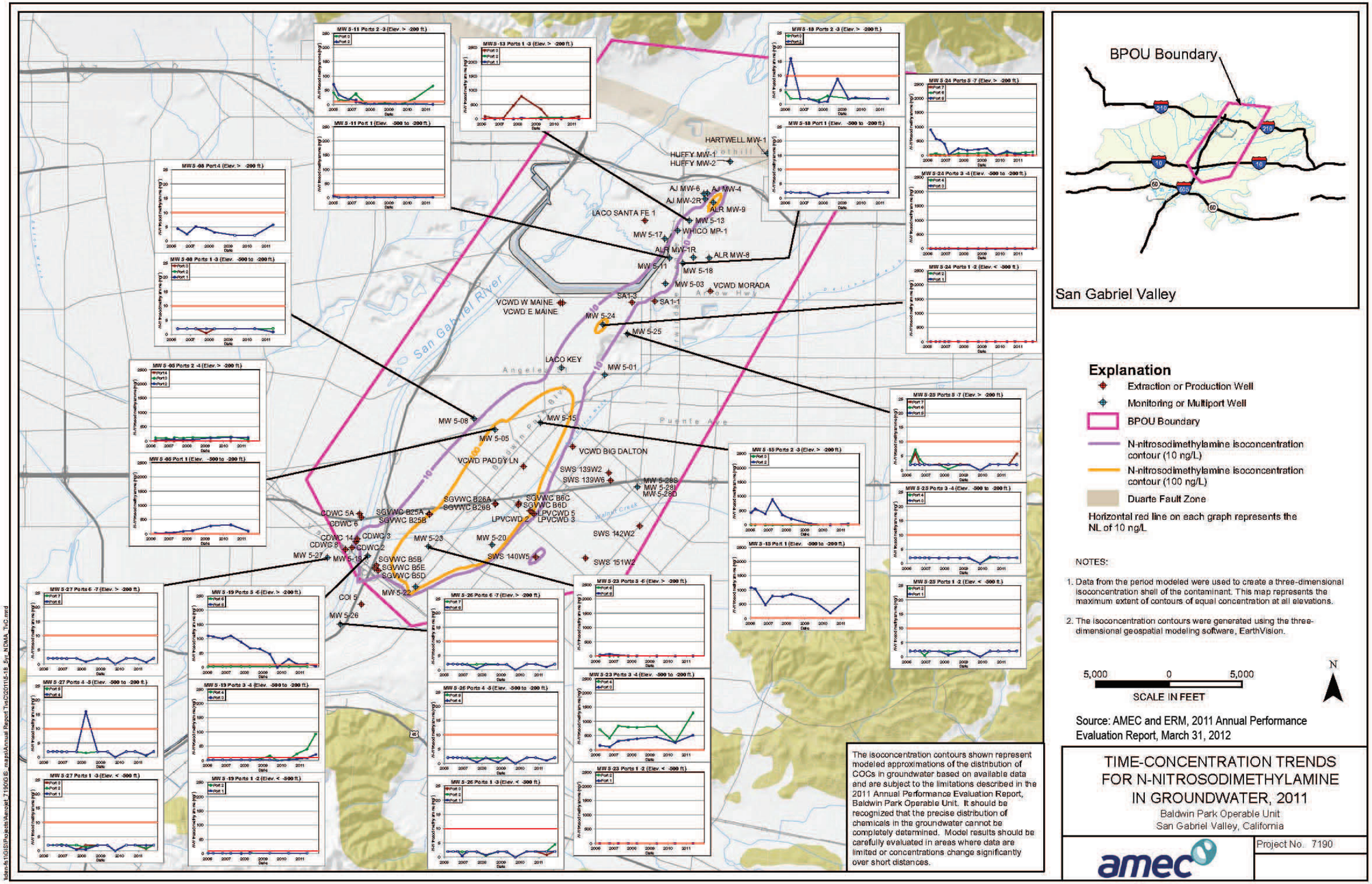

Figure 13: Time-Concentration Trends for N-nitrosodimethylamine in Groundwater, 2011

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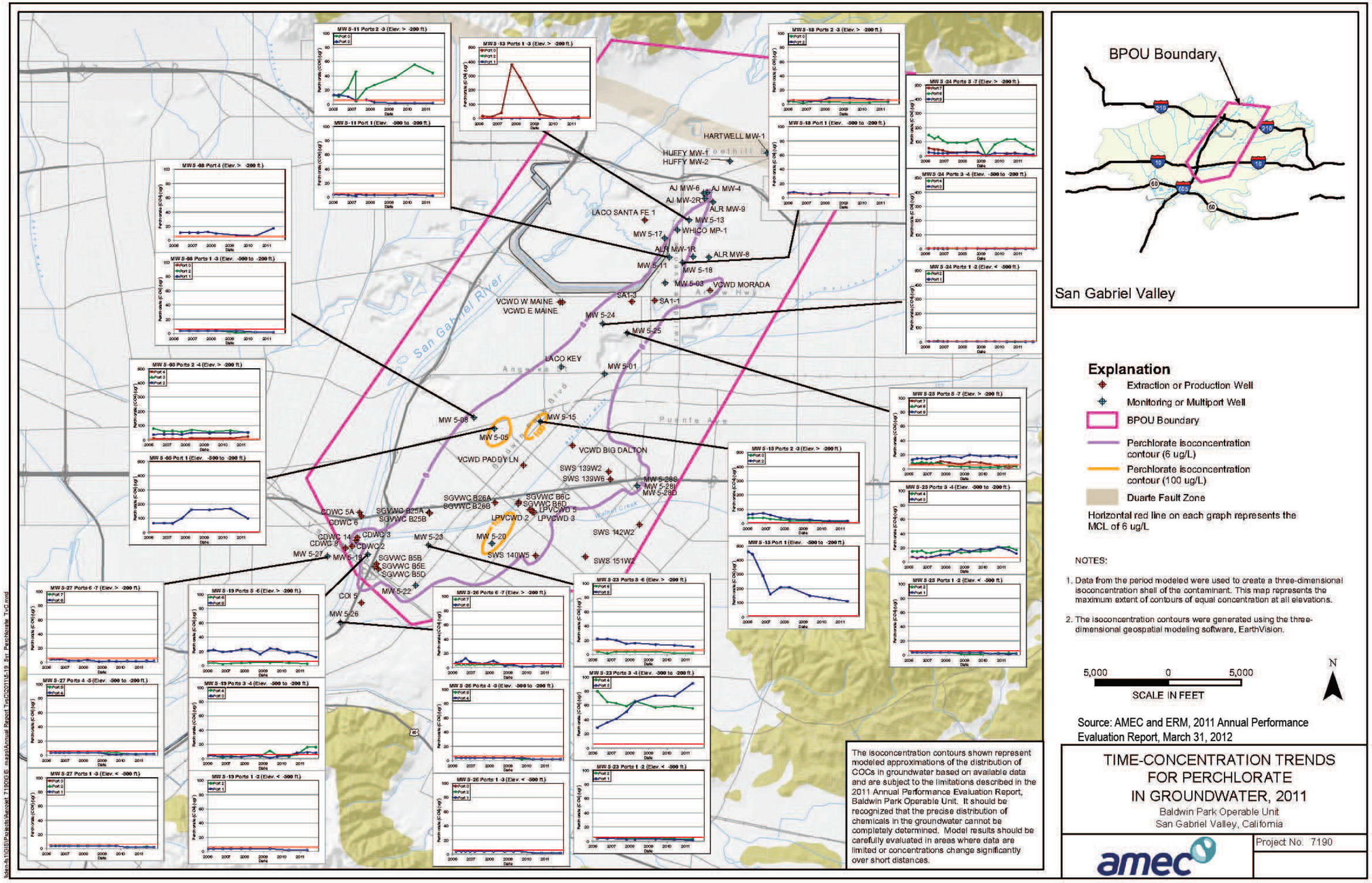

Figure 14: Time-Concentration Trends for Perchlorate in Groundwater, 2011

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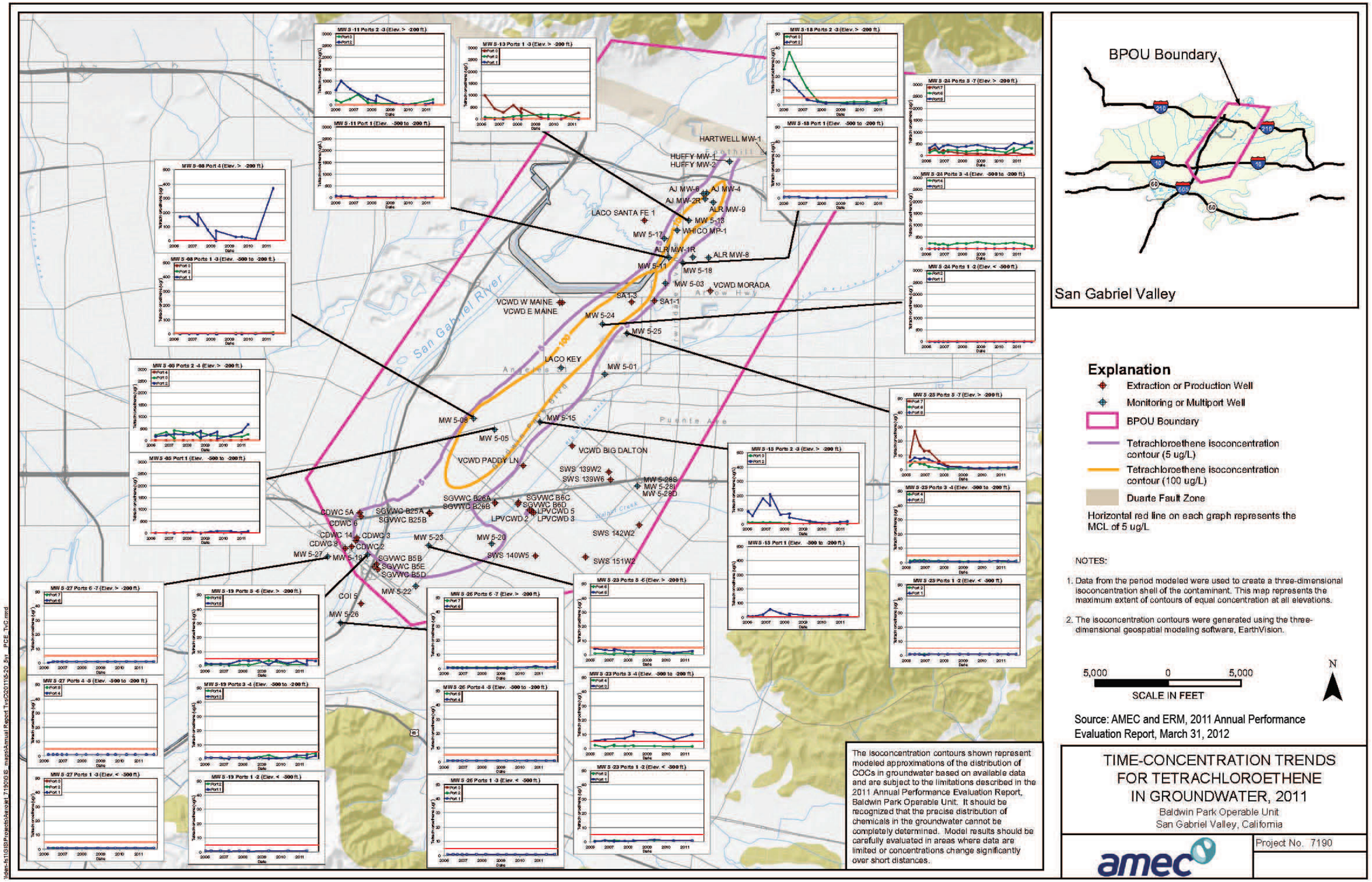

Figure 15: Time-Concentration Trends for Tetrachloroethene in Groundwater, 2011

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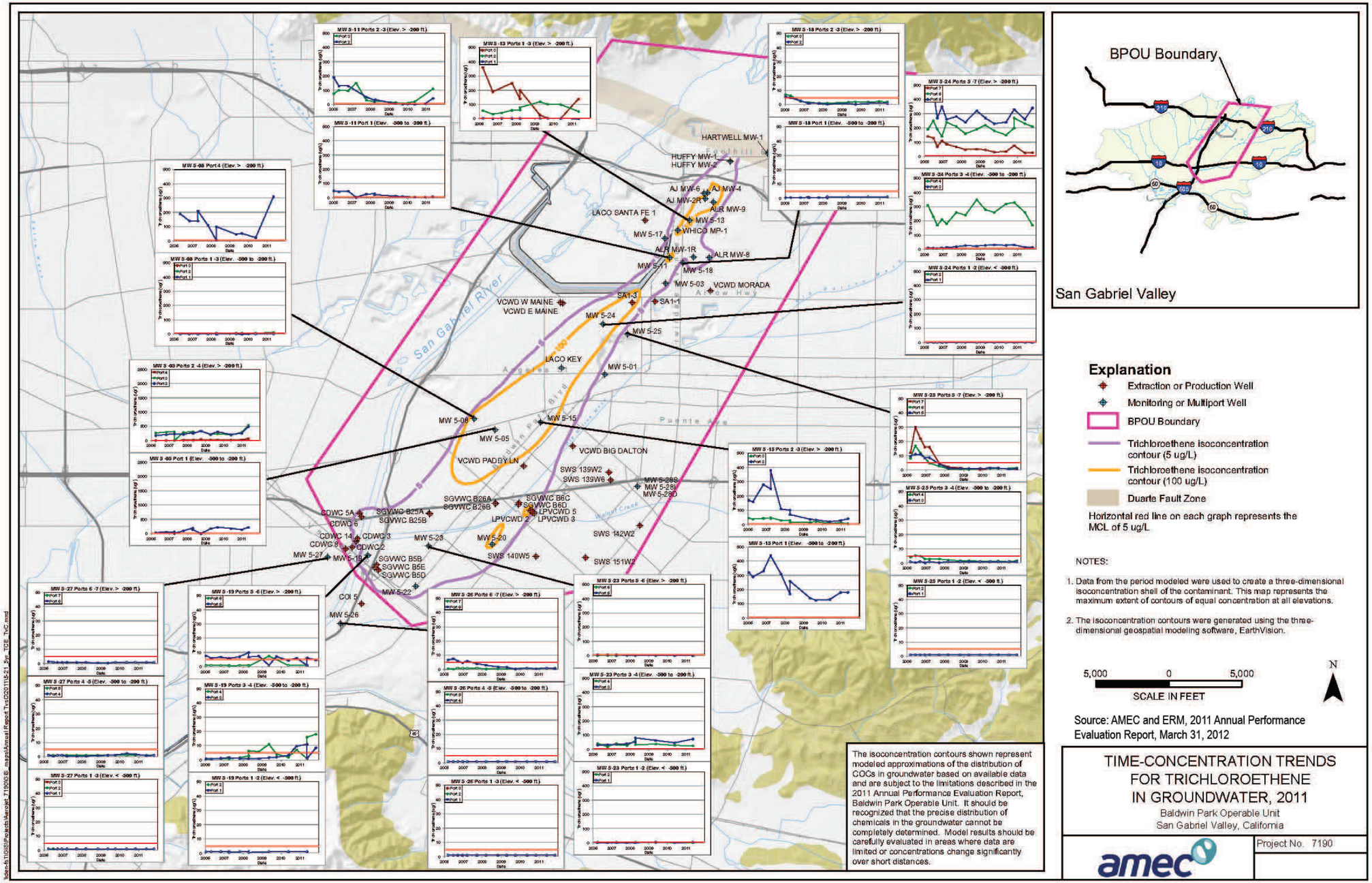

Figure 16: Time-Concentration Trends for Trichloroethene in Groundwater, 2011

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6.5. Site Inspection

Site Inspection

Site inspections were conducted on April 17, 2012 by Wayne Praskins, the EPA Project Manager, and CH2M HILL, EPA's Contractor. A DTSC representative, Peter MacNicholl, also participated in the inspections. The purpose of the inspections was to confirm that conditions are as reported in the monthly progress reports and annual performance evaluation reports.

The inspections found the remedy operating as reported. Ongoing difficulties were noted with the operation of the ISEP systems at OU 03 and OU 04, as described in Section 4.3 of this FYR report. The site inspection checklists and inspection photographs are provided in Appendices C and D, respectively.

6.6. Interviews

Site interviews were conducted in April 2012, with the following personnel:

- Tony Zampiello, Assistant Executive Officer, Main San Gabriel Basin Watermaster – April 3, 2012
- Lynda Noriega, General Manager, Valley County Water District – April 16, 2012
- Ken Manning, Executive Director, and Randy Schoellerman, Assistant Executive Director, San Gabriel Basin Water Quality Authority – April 27, 2012

The purpose of the interviews was to document perceptions about problems or successes at the Site and remedial activities implemented to date.

Tony Zampiello and Lynda Noriega both stated that they thought that operation of the systems could be improved and/or optimized. Concerns were raised about the expiration of the project agreement between the PRPs and local water agencies in 2017. All of the interviewees mentioned that there were some complaints from the community (regarding noise, water quality, purpose of remedy components) at the beginning of the project, but that none have been received recently. Interview reports are provided in Appendix E.

6.7. Institutional Controls

The March 1994 ROD for the Baldwin Park OU discusses governmental controls that affect the extraction and use of groundwater. The primary governmental control is the judgment in the matter of Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et. al., amending the original judgment entered on January 4, 1973 by the Superior Court of California, County of Los Angeles, establishing the entity known as the Main San Gabriel Basin Watermaster with authority to regulate

groundwater pumping in the San Gabriel Valley. The Watermaster has authority to manage and restrict the use of groundwater resources in the San Gabriel Basin. The withdrawal and utilization of water resources in the Basin are subject to the Watermaster's authority. No drinking water production wells may be drilled without Watermaster's approval. In conjunction, governmental controls on the use of groundwater as drinking water include EPA- and California-promulgated MCLs and California NLs that require drinking water standards be met prior to serving the water. These drinking water controls and the Watermaster's authority to regulate water resources and eliminate unregulated use of area groundwater serve as ICs that prohibit unauthorized use of or exposure to groundwater.

Table 15 lists the ICs associated with the Site.

Table 15: Institutional Controls Summary Table

Media	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Instrument in Place	Notes
Ground water	No	All	Regulate groundwater pumping and eliminate unregulated use of area groundwater	January 4, 1973, judgment, as amended, administered by the Main San Gabriel Basin Watermaster	
Ground water	No	All	Establish drinking water controls	EPA and California promulgated MCLs and California NLs	Treatment systems remove COCs to comply with drinking water standards

7. Technical Assessment

This section presents the technical assessment of the BPOU interim groundwater remedy.

7.1. Question A: Is the remedy functioning as intended by the decision documents?

The interim remedy was designed to hydraulically contain contaminated groundwater in the Baldwin Park area and start to reduce contaminant concentrations within the groundwater. Design and construction of the four pump and treat projects occurred between July 2000 and September 2006. Operation, maintenance, and system improvement activities have been performed since construction completion.

Based on a review of documents from the past five years, the project extraction wells, as supplemented by production wells in the CDWC Bassett well field, are limiting the migration of COCs in groundwater, and the BPOU contamination has not migrated beyond the capture zone of the downgradient extraction wells located in the southwest corner of the BPOU area. Despite the fact that the groundwater extraction systems at two of the four OUs (OUs 03 and 04) did not achieve the target extraction rates selected during remedial design, the movement of contaminated groundwater from the Site was controlled. OU 03 has not achieved the target rate since 2007 and OU 04 did not achieve the target rate during the FYR period.

A review of documents and the results of the site inspections and interviews indicate that the reduced production rates at OU 03 and OU 04 were primarily related to limitations and operational problems associated with the ISEP systems and elevated nitrate concentrations in the extracted groundwater. The ISEP technology was selected during remedial design; it was not required by the ROD. In March 2012, the OU 03 plant experienced a treatment plant failure associated with the ISEP system that resulted in water with elevated perchlorate concentrations being delivered to the potable water supply system for a short period of time. Although corrective actions have been taken to prevent another similar incident, this event is illustrative of the ongoing difficulties with the operation of the ISEP systems. In addition, the salt required for the ISEP systems continues to be one of the costliest O&M line items associated with the remedy.

Construction of single pass ion exchange systems for perchlorate removal has been completed to replace the ISEP units at OU 03 and OU 04. However, startup and testing are on hold while options for nitrate treatment (currently provided by the ISEP) are being evaluated. The startup of single phase ion exchange treatment systems and resolution of the nitrate treatment issues are expected to improve the extraction rates at these OUs by 2013.

Many opportunities for optimization of the treatment systems were identified during the site inspections and interviews, including increasing the capacity of the brine system at OU 04, replacing the air strippers at OU 03 with an LGAC system, upgrading the control system at OU 03, re-evaluating

the CDPH permit standards for resin changeout, and implementing a BPOU-wide purchasing program for treatment plant materials and BPOU-wide maintenance contracts that may result in cost savings.

The data collected and analyzed in accordance with the EPA-approved performance standards evaluation plan generally appear sufficient to monitor the performance of the interim remedy. In the mid-plume area of the BPOU, downgradient of Subarea 1 and upgradient of Subarea 3, considerably higher concentrations of 1,4-dioxane, PCE, and TCE were observed in 2011 in monitoring well MW 5-08 Port 4 compared to previous years. MW 5-08 is near the western boundary of the COC plumes, with no monitoring points immediately downgradient. If future monitoring events indicate continued high or increasing COC concentration trends in these wells, additional monitoring points may be needed in this area.

The Watermaster's authority to regulate water resources and eliminate unregulated use of area groundwater, along with drinking water regulations that control unacceptable exposure to contaminated Site groundwater, serve as effective governmental controls that are protecting human health at the Site.

7.2. Question B: Are the exposure assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of Remedy Selection Still Valid?

Changes in Standards and Advisory Levels

Effective August 22, 2010, the NL for 1,4-dioxane became more stringent. This change does not impact the protectiveness of the remedy, as the treatment systems reduce the concentrations of 1,4-dioxane to less than the current notification level. There have been no other revisions to laws, regulations, or advisory levels that affect the protectiveness of the remedy.

Changes in Exposure Pathways

No changes in exposure pathways were identified that would impact protectiveness of the remedy.

Changes in Toxicity and Other Contaminant Characteristics

In the past five years, there have been a number of changes to the toxicity values for certain contaminants of concern at the Site. The most relevant changes are to TCE and PCE.

In September 2011, EPA completed a review of the TCE toxicity literature and posted on IRIS both cancer and non-cancer toxicity values which resulted in lower RSLs for TCE. EPA considers the current MCL for TCE of 5 µg/L protective for cancer and non-cancer effects as explained in Section 6.3.

EPA also recently reassessed PCE toxicity literature for both cancer and non-cancer effects and released the toxicological review in February 2012. The reassessment determined that risk for cancer

was less than previously assumed, and has raised the cancer and non-cancer RSLs for PCE. Therefore the PCE MCL of 5 µg/L remains protective for both carcinogenic and non-cancer effects.

The contaminant 1,4-dioxane is currently under review as part of EPA's IRIS reassessment program. Any change to the 1,4-dioxane toxicity values will need to be addressed in subsequent Five-Year Reviews.

Changes in Risk Assessment Methods

There have been no changes in standardized risk assessment methodologies that could affect the protectiveness of the remedy.

Expected Progress Towards Meeting RAOs

The remedy in place is an interim remedy, which set treatment levels for groundwater leaving the treatment plants but did not establish cleanup levels in the aquifer. The treatment systems are reducing the concentrations of the COCs in the extracted water to less than the current MCLs and NLs that were specified as treatment levels in the ROD and ESD. EPA will determine when sufficient information is available to develop remedial alternatives for the final remedy for the Site.

7.3. Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

There is no other information that calls into question the protectiveness of the remedy.

7.4. Technical Assessment Summary

Although the interim remedy is not achieving target extraction rates, the remedy extraction systems, supplemented by non-remedy pumping, are limiting the migration of COCs in groundwater at the downgradient (leading edge) of contamination. The institutional controls (governmental controls) that are in place continue to effectively prevent unacceptable exposure to contaminated Site groundwater. The remedy is meeting all ARARs in the ROD, and there have been no changes in ARARs affecting the protectiveness of the remedy. Although the toxicity values for TCE became more stringent in 2011, the current MCL is within EPA's risk range and is therefore protective of human health and the environment. There have been no other changes in the toxicity factors for the contaminants of concern that were used in the previous risk assessments or the standardized risk assessment methodology that could affect the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

8. Issues

No issues were identified that affect the protectiveness of the remedy.

9. Recommendations and Follow-up Actions

No actions are needed to achieve or maintain the protectiveness of the remedy. The following are recommendations identified during the Five-Year Review that may improve technical effectiveness, but do not affect and are not needed to achieve protectiveness:

- The groundwater extraction systems at two of the four OUs (OUs 03 and 04) have not been able to achieve the target extraction rates selected during remedial design. The reduced production rates are primarily related to limitations and operational problems associated with the ISEP systems and elevated nitrate concentrations in the extracted groundwater. For OU 03, EPA should work with the PRPs and water agencies to establish a timetable for completing installation of the new single pass (perchlorate) ion exchange system. This improvement is expected to allow the project to achieve the targeted extraction and treatment rate. For OU 04, EPA should seek agreement with the PRPs on a timetable for making a decision on improvements needed to achieve the targeted extraction and treatment rate. The improvements are expected to include use of the single pass ion exchange system and modification to or replacement of the ISEP system.

- Considerably higher concentrations of 1,4-dioxane, PCE, and TCE were observed in 2011 in a monitoring well located in the mid-plume area of the BPOU (MW 5-08 Port 4), downgradient of Subarea 1 and upgradient of Subarea 3, compared to previous years (e.g., PCE increased from 12 to 370 µg/L; TCE increased from 23 to 310 µg/L). If future monitoring events indicate continued high levels or increasing COC concentration trends, additional monitoring points may be needed in this area.

- Begin to consider potential options for the final remedy for the Site, incorporating best management practices for green remediation as appropriate.

10. Protectiveness Statements

The interim remedy for the San Gabriel Valley Area 2 Superfund Site remains protective of human health and the environment.

11. Next Review

This is a statutory Site that requires ongoing FYRs as long as waste is left onsite that does not allow for unrestricted use and unlimited exposure. The next FYR will be due within five years of the signature date of this FYR.

Appendix A: List of Documents Reviewed

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List of Documents Reviewed

AMEC Environment & Infrastructure, Inc. (AMEC). 2012. *Performance Standards Evaluation Plan, Rev. 3, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites.* April.

Geomatrix Consultants (Geomatrix) and ERM – West, Inc.(ERM). 2008. *2007 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites.* April 13.

Geomatrix and ERM. 2009. *2008 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites.* April 10.

Geomatrix and ERM. 2010. *2009 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites*. March 31.

Geomatrix and ERM. 2011. *2010 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites*. April 6.

Geomatrix and ERM. 2012. *2011 Annual Performance Evaluation Report, Baldwin Park Operable Unit of the San Gabriel Valley Superfund Sites*. March 31.

La Puente Valley County Water District. 2010. *Operation, Maintenance, and Monitoring Plan for VOC, Single-Pass Ion Exchange and UVTerra Treatment Facility Located at 1695 Puente Avenue, Baldwin Park, California.* Revised June.

Main San Gabriel Valley Watermaster. March 2011 through March 2012. Monthly Progress Reports for the Baldwin Park Operable Unit (BPOU).

SPEC Services Incorporated and Stetson. 2005. *Operation, Maintenance and Monitoring Plan for the Valley County Water District Water Treatment Facility, 5120 Lante Street, Baldwin Park, California*. September.

Stetson Engineers, Inc. (Stetson). 2003. *Interim Remedial Action Report, San Gabriel Valley Area 2 Superfund Site (commonly known as the Baldwin Park Operable Unit), La Puente Valley County Water District Subproject, Operable Unit 02.* September.

Stetson. 2004. *Interim Remedial Action Report, San Gabriel Valley Area 2 Superfund Site (commonly known as the Baldwin Park Operable Unit), San Gabriel Valley Water Company Plant B6 Subproject, Operable Unit 03.* September.

Stetson. 2005. *Revised Draft Interim Remedial Action Report, San Gabriel Valley Area 2 Superfund Site (commonly known as the Baldwin Park Operable Unit), Valley County Water District Subproject, Operable Unit 04.* January.

Stetson. 2005. *San Gabriel Water Company Operation, Maintenance and Monitoring Plan for the Plant B6 Treatment Facility Located at 14104 Corak Street, Baldwin Park, California.* April.

Stetson. 2006. *Interim Remedial Action Report, San Gabriel Valley Area 2 Superfund Site, San Gabriel Valley Water Company Plant B5 Subproject, Operable Unit 05, Part of the Baldwin Park Operable Unit.* September.

Stetson. 2009. *San Gabriel Water Company Operation, Maintenance and Monitoring Plan for the Plant B5 Treatment Facility Located at 209 Perez Place, City of Industry, California*. Revised October.

U.S. Environmental Protection Agency (EPA). 1994. *Baldwin Park Operable Unit Record of Decision.* March.

EPA. 1999. *Baldwin Park Operable Unit Explanation of Significant Differences*. May.

EPA. 2007. *First Five-Year Review Report for the San Gabriel Valley Area 2 Superfund Site*. September 27.

Appendix B: Press Notices

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San Gabriel Valley Tribune, February 29, 2012

PUBLIC NOTICE
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY BEGINS SECOND FIVE-YEAR REVIEW OF CLEANUP AT THE SAN GABRIEL VALLEY AREA 2 SUPERFUND SITE

The U.S. Environmental Protection Agency (EPA) has begun its second five-year review of cleanup actions at the San Gabriel Valley Area 2 Superfund Site (Site) located in eastern Los Angeles County. A remedy for the site was selected in 1994 and updated in 1999. The remedy is a combined groundwater cleanup and water supply project, providing clean drinking water to residents and businesses in Azusa, Baldwin Park, Irwindale, West Covina, and surrounding communities. It consists of four large water treatment systems: three in Baldwin Park and one in the City of Industry.

THE REVIEW PROCESS
The primary purpose of a five-year review is to determine whether the site remedy remains protective of human health and the environment. EPA generally conducts five year reviews when hazardous substances remain in the groundwater above risk-based levels that prevent unrestricted use and exposure. As part of the review, EPA will be looking at how well the remedy is achieving EPA's cleanup goals, changes in scientific knowledge about site contaminants, changes in exposure pathways, and changes in regulations.

COMMUNITY INVOLVEMENT
If you have any concerns about the San Gabriel Valley Area 2 Site, and particularly if you have direct knowledge regarding the operation and maintenance of the remedy, then EPA would like to talk with you. Please contact Wayne Praskins, the EPA Project Manager for the Site. When completed, a copy of the five-year review report will be placed in the information repository and be available on-line at EPA's website.

SITE HISTORY
The Site is one of seven groundwater cleanup projects in the San Gabriel Valley being addressed under EPAs Superfund cleanup program. The Site addresses approximately 10 square miles of contaminated groundwater resulting from current and former industrial facilities in and near Azusa, CA. Beginning in 1979, investigations found solvents commonly used for degreasing and cleaning in groundwater at the Site. Other contaminants, including perchlorate and N-nitrosodimethylamine (NDMA), were discovered in the 1990s. In 1994, the Site cleanup plan called for one or more groundwater extraction and treatment systems to limit further spread of the contaminated groundwater and begin the long-term cleanup process. Four large groundwater pump and treat systems were constructed between 2000 and 2006 with a combined treatment capacity of 37 million gallons per day (mgd). By 2010, more than $205 million had been spent on the cleanup and over 42,000 pounds of contamination removed from the groundwater. EPA is now overseeing upgrades to some of the water treatment systems and is directing a comprehensive performance evaluation program to make sure the remedy meets cleanup goals.

FOR MORE INFORMATION
Please visit EPA's website for the San Gabriel Valley, Area 2 Site: **www.epa.gov/region09/SanGabrielBaldwinPark.** Or visit the information repositories to review the administrative record for the Site.

Information Repositories:

West Covina Library
1601 West Covina Parkway
West Covina, CA 91790
Telephone: (626) 962-3541

Hours: Tue-Thu, 10 am - 8 pm;
Sat, 8 am - 6 pm;
Sun, Mon & Fri, Closed

U.S. EPA Superfund Records Center
95 Hawthorne Street, Room 403
San Francisco, CA 94105-3901

Hours: Mon – Fri, 8am – 5pm

Contact Information:

Wayne Praskins
Project Manager
75 Hawthorne St. (SFD 7-3)
San Francisco, CA 94105
(415) 972-3181
praskins.wayne@epa.gov

Alejandro Díaz
Community Involvement Coordinator
75 Hawthorne St. (SFD-6-3)
San Francisco, CA 94105
(800) 231-3075 or (415) 972-3242
diaz.alejandro@epa.gov

CNS#2269342

La Opinion, February 29, 2012

AVISO PÚBLICO
LA AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS INICIA LA SEGUNDA REVISION DE CINCO AÑOS DE LIMPIEZA EN EL SITIO SUPERFUND SAN GABRIEL VALLEY ÁREA 2

La Agencia de Protección Ambiental de los Estados Unidos (EPA, por sus siglas en inglés) ha iniciado la revisión de cinco años sobre las acciones de limpieza en el Sitio Superfund San Gabriel Valley Área 2 (Sitio) ubicado en el este del condado de Los Ángeles. Un remedio para el Sitio fue seleccionado en 1994 y actualizado en 1999. El remedio es un proyecto combinado para limpiar el agua subterránea y proporcionar agua al proveer agua potable limpia para residentes y negocios en Azusa, Baldwin Park, Irwindale, West Covina y las comunidades vecinas. Está compuesto de cuatro sistemas grandes de tratamiento de agua: tres en Baldwin Park y una en la ciudad de Industry.

EL PROCESO DE REVISIÓN
El propósito principal de una revisión de cinco años es determinar si el remedio del sitio continúa protegiendo la salud pública y el medio ambiente. La EPA, por lo general, hace revisiones de cinco años cuando sustancias peligrosas siguen en el agua subterránea a niveles arriba de los niveles basados en riesgo que previenen exposición o uso sin restricciones. Como parte de la revisión, la EPA estará examinando el rendimiento del remedio comparado con las metas de limpieza de la EPA, cambios en conocimiento científico sobre los contaminantes del sitio, cambios en posibles vías de exposición, y cambios en reglamentos.

PARTICIPACIÓN DE LA COMUNIDAD
Si usted tiene cualquiera preocupación sobre el Sitio, y en particular si tiene conocimiento directo sobre la operación y mantenimiento del remedio, la EPA gustaría hablar con usted. Por favor, póngase en contacto con Wayne Praskins, el Gerente del Proyecto de la EPA. Al completarse, una copia de la revisión de cinco años será disponible en el depósito de información y será disponible en el sitio web de la EPA.

HISTORIA DEL SITIO
El sitio es uno de los siete proyectos de limpieza en el Valle de San Gabriel bajo la dirección del programa de limpieza Superfund de la EPA. El sitio aborda aproximadamente 10 millas cuadradas de agua subterránea contaminada por instalaciones industriales pasadas y presentes en y cerca de Azusa, CA. Iniciando en 1979, investigaciones encontraron solventes usados comúnmente para desengrasar y limpiar en el agua subterránea en el Sitio. Otros contaminantes, incluyendo perclorato y N-nitrosodimetilamina (NDMA), fueron descubiertos en los años 1990s. En 1994, el plan de limpieza manifestó uno o más sistemas de bombeo y tratamiento para el agua subterránea para limitar aun más la difusión de agua contaminada para después comenzar el proceso de limpieza a largo plazo. Cuatro sistemas grandes de tratamiento de agua fueron construidos entre 2000 y 2006 con una capacidad de tratar 37 millones de galones por día (mgd). Para 2010, más de $205 millones habían sido gastados en la limpieza y más de 42,000 libras de contaminación extraídas del agua subterránea. Hoy, la EPA está supervisando mejoramientos a algunos de los sistemas de tratamiento y está supervisando un programa de evaluación comprensiva de rendimiento para asegurar que el remedio alcanza las metas de limpieza.

PARA MÁS INFORMACIÓN
Por favor vista al sitio web de la EPA para el sitio San Gabriel Valley Área 2: **www.epa.gov/region09/SanGabrielBaldwinPark.** O visita a los depósitos de información para revisar el registro administrativo para el sitio.

Depósitos de Información:

Biblioteca West Covina
1601 West Covina Parkway
West Covina, CA 91790
Teléfono: (626) 962-3541

Horas: Mar-Jue, 10 am - 8 pm;
Sab, 8 am - 6 pm;
Dom, Lun & Vie, Cerrado

U.S. EPA Superfund Records Center
95 Hawthorne Street, Room 403
San Francisco, CA 94105-3901

Horas: Lun – Vie, 8am – 5pm

Información de Contacto:

Wayne Praskins
Gerente del Proyecto
75 Hawthorne St. (SFD 7-3)
San Francisco, CA 94105
(415) 972-3181
praskins.wayne@epa.gov

Alejandro Díaz (hispanohablante)
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diaz.alejandro@epa.gov

CNS#2269344

Appendix C: Site Inspection Checklists

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San Gabriel Valley Area 2 Superfund Site
Los Angeles County, California
Five-Year Review Site Inspection Checklist
LPVCWD FACILITY

I. SITE INFORMATION	
Site Name: San Gabriel Valley Area 2 Superfund Site	**EPA ID:** CAD CAD980818512
City/State: multiple cities in Los Angeles County	**Date of Inspection:** April 17, 2012
Agency Completing 5 Year Review: EPA	**Weather/temperature:** Sunny, 70s

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☒ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager: Greg Gallindo and Todd Hull /LPVCWD -** Not formally interviewed, but participated in Site Inspection
   Title: General Manager and Distribution Superintendent, respectively.

2. **O&M contractor:** N/A

3. **Local regulatory authorities and response 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**. None interviewed

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required) – Appendix C

Tony Zampiello/Main San Gabriel Basin Watermaster's Office

Linda Noriega/Valley County Water District

Ken Manning/San Gabriel Basin Water Quality Authority

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ Readily available	☒ Up to date	☐ N/A
☒ As-Built Drawings	☒ Readily available	☒ Up to date	☐ N/A
☒ Maintenance Logs	☒ Readily available	☒ Up to date	☐ N/A

Remarks: As built drawings for the newest facilities (Well 5 and Single Pass Ion Exchange) are on-site. Newer system not completely integrated into single O&M Manual, but all are available. LPVCWD operators fill out a daily report 7 days a week, 365 days per year. Electronic copies on site and sent to Superintendent. (Hard copies also onsite). CDPH monthly reports prepared by operators and sent to Superintendent.

2. Health and Safety Plan Documents

☒ Site-Specific Health and Safety Plan	☒ Readily available	☒ Up to date (2010)	☐ N/A
☒ Contingency plan/emergency response plan	☒ Readily available	☒ Up to date	☐ N/A

Remarks: LPVCWD has safety plan for the system. Emergency response plan undergoes a table-top review once a year. Stetson has prepared a Spill Response Plan that covers all of the BPOU projects. It documents overall reporting procedures.

3. O&M and OSHA Training Records ☒ Readily available ☒ Up to date ☐ N/A

Remarks: The operator certifications are all up to date and are kept at the office. Per CDPH, the facility requires that certified T-3 level staff oversee operations. Greg is a T-4 and Todd is a T-3. The operators are both T-2. Operations staff have 24-hr OSHA Hazwoper training with annual refreshers.

4. Permits and Service Agreements

☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A (1)
☒ Effluent discharge	☐ Readily available	☒ Up to date	☐ N/A (2)
☒ Waste disposal, POTW	☐ Readily available	☒ Up to date	☐ N/A (3)
☐ Other permits	☐ Readily available	☐ Up to date	☐ N/A

Remarks: (1) All air discharges are covered by EPA requirements; there is not a discharge permit. A Contractor (Yorke Engineering) conducts all of the monitoring and data evaluation and provides carbon change-out recommendations to LPVCWD. LPVCWD sends Yorke a weekly report with system operational data and readings.

(2) Effluent discharge is covered by the CDPH 97-005 operating permit issued to LPVCWD. The permit is up-to-date and a copy is on-site and at the LPVCWD offices.

(3) LPVCWD holds an industrial waste discharge permit that is limited to 400 gallons per day. It is only used when they rinse the new resin when it arrives (~ every 6 months). The rinse water fills their storage tank, and then the tank is slowly drained out at less than their 400-gallon daily limit.

5. Gas Generation Records ☐ Readily available ☐ Up to date ☒ N/A

Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A

Remarks:

7. Groundwater Monitoring Records ☒ Readily available ☒ Up to date ☐ N/A

Remarks: Off-site groundwater monitoring is coordinated through the Watermaster; LPVCWD is not involved. The data are managed by a third-party (LDC) and included in monthly reports submitted to EPA. The plant data are generated by LPVCWD- operators collect all of the samples. They pre-generate all of the COC forms in accordance with a sample log of their CDPH permit requirements. All lab results are reviewed weekly. Key samples are analyzed with 48-hour turnaround. LPVCWD maintains their own water quality database they use for report generation. Weck Laboratories also submits the data directly to CDPH and LDC.

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, Weck Labs submits all discharge data directly to CDPH and LDC. LPVCWD summarizes all of the monitoring data in the monthly reports that are submitted to CDPH, EPA and other stakeholders.

10. Daily Access/Security Logs ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, LPVCWD operators prepare detailed daily operations logs. There are operators on-site 8-hours per day, every day. A security system was installed last year with 16 cameras placed throughout the treatment plant. They are motion activated and send video clips to staff whenever they are triggered. The site is also fully fenced and the gate is locked.

IV. O&M Costs ☐ Applicable ☒ N/A

1. O&M Organization
☐ State in-house ☐ Contractor for State
☐ PRP in-house ☐ Contractor for PRP
☒ Other: LPVCWD operates the system.

2. O&M Cost Records: Not reviewed as part of the Site Inspection.

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
Describe costs and reasons: None now that the ISEP system has been removed from operation.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☒ Gates secured ☐ N/A
Remarks: The site is fully fenced with a locked metal access gate.

2. Other Access Restrictions

1. Signs and other security measures ☐ Location shown on site map ☐ N/A
Remarks: As noted above, the plant is now equipped with a remote security system.

3. Institutional Controls

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
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: ☐ Additional report attached (if additional space required).

2. Adequacy ☐ ICs are adequate ☐ ICs are inadequate ☒ N/A
Remarks:

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident
Remarks: There has been trespassing and vandalism, but the security system has reduced its frequency.

2. Land use changes onsite ☒ N/A
Remarks:

3. Land use changes offsite ☐ N/A
Remarks: None. No significant complaints from neighboring mobile homes except some noise complaints during Well 5 well installation.

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

1. Roads damaged ☐ Location shown on site map ☐ Roads adequate ☒ N/A
Remarks:

2. Other Site Conditions

Remarks: N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

1. Groundwater Extraction Wells, Pumps, and Pipelines ☒ Applicable ☐ N/A

1. Pumps, Wellhead Plumbing, and Electrical ☐ N/A
☒ All required wells located ☒ Good condition ☐ Needs O& M
Remarks: All 3 wells are located on-site (Nos. 2, 3 and 5). The well 2 pump was replaced in 2008. LPVCWD may rehabilitate well 3 within the next few years. Well 5 is equipped with a submersible pump (to reduce noise) and a VFD. The submersible pump had to be replaced early on, but is working fine now. Per the permit, wells 2 and 5 cannot operate at the same time.

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☒ System located ☒ Good condition ☐ Needs O& M
Remarks: Well 5, installed within the last 5 years, is the primary source of water for the plant. The wells produce enough head to lift the water through the air strippers.

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks: Did not review the spare parts or equipment inventory.

2. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. Collection Structures, Pumps, and Electrical ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☒ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☒ Air stripping ☒ Carbon adsorbers (VGAC) ☒ Filters (list type): 10 micron upgradient of IE.
☒ Additive (list type, e.g., chelation agent, flocculent) Sulfuric acid after strippers, Peroxide injected after ion exchange (IE) and before UV (dose to 1 ppm). Caustic after UV to increase pH to 8 because of prior "red water" problems
☒ Others (list): UV System (NDMA and 1,4-dioxane), single pass IE in lead-lag arrangement(perchlorate)
☒ Good condition ☐ Needs O&M
☒ Sampling ports properly marked and functional
☒ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☒ Quantity of groundwater treated annually (list volume): 3,662 acre-feet in 2011
Remarks: Two air strippers, 1 with 1,000 gpm capacity and 1 with 1,500 gpm. Packing material in strippers now inspected annually, but has never been replaced.
The IE resin is replaced about every 6 months.
RC Foster performs the O&M activities that require heavy equipment or lifts.

2. Electrical Enclosures and Panels (properly rated and functional) ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: The panels were not opened up as part of the inspection.

3. Tanks, Vaults, Storage Vessels ☐ N/A
☒ Good condition ☐ Proper secondary containment ☐ Needs O&M
Remarks:
1) ~60,000 gallon wet well after strippers. Water is pumped here through remainder of system.
2) 60,000 gallon effluent wet well.

4. Discharge Structure and Appurtenances ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: 2 booster pumps, both operate continuously. Caustic (NaOH) added after the UV to bring the pH back to 8 (needed because of past "red water' complaints).

5. Treatment Building(s) ☐ N/A
☒ Good condition (esp. roof and doorways) ☐ Needs Repair
☒ Chemicals and equipment properly stored
Remarks: Operation room contains SCADA control system. System can be operated remotely.
Chemical storage includes sulfuric acid (injected prior to IE), peroxide (injected prior to UV), NaOH to increase effluent pH, sodium hypochlorite for effluent disinfection.

6. Monitoring Wells (pump and treatment remedy) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: EPA receives the data from monitoring well sampling and is not aware of any problems with the monitoring wells. The wells are sampled at least annually. The only wells observed during the inspection were the on-site piezometers.

4. Monitored Natural Attenuation ☐ Applicable ☒ N/A

1. Monitoring Wells (natural attenuation remedy) ☒ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

5. Long Term Monitoring ☒ Applicable ☐ N/A

1. Monitoring Wells ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: None of the BPOU regional groundwater monitoring wells were observed during the inspection. However, EPA knows that they are all operational and receives data from the wells at least annually.

X. OTHER REMEDIES ☐ Applicable ☒ 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

1. 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.).

Overall BPOU remedy performance was not discussed as part of this Site Inspection.

2. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Now that the ISEP has been decommissioned, O&M has been fairly routine.

3. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

None.

4. Opportunities for Optimization
They are currently experiencing some issues with VGAC performance- meeting required air-to-water ratio. If this continues, they may need to consider the addition of heaters on the air discharge from the strippers. Now that they have a couple years of operations, they may want to approach CDPH about relaxing the standard for IE resin changeout. Currently, the permit requires a resin change when they reach 4 ppb perchlorate at the cross-over between the lead/lag vessels. LP VCWD is also considering whether the caustic addition is still necessary now that they have eliminated ISEP.

Inspection Team Roster

Name	Organization	Title
Wayne Praskins	U.S. EPA REGION 9	Remedial Project Manager
David Towell	CH2M HILL	EPA Contractor
Pete MacNicholl	DTSC	Project Manager
Greg Galindo	LPVCWD	General Manager
Todd Hull	LPVCWD	Superintendent of Distribution
Cesar Ortiz	LPVCWD	Production Specialist
Dennis Clark	LPVCWD	Treatment Plant Operator

San Gabriel Valley Area 2 Superfund Site
Los Angeles County, California
Five-Year Review Site Inspection Checklist
SGVWC B6 FACILITY

I. SITE INFORMATION	
Site Name: San Gabriel Valley Area 2 Superfund Site	EPA ID: CAD CAD980818512
City/State: multiple cities in Los Angeles County	Date of Inspection: April 17, 2012
Agency Completing 5 Year Review: EPA	Weather/temperature: Sunny, 80s

Remedy Includes: (Check all that apply)
- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☒ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager: Tom Schiewe/SGVWC - Not formally interviewed, but participated in Site Inspection
   Title: Production Superintendent

2. O&M contractor: N/A

3. Local regulatory authorities and response 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. None interviewed

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required) – Appendix C

Tony Zampiello/Main San Gabriel Basin Watermaster's Office

Linda Noriega/Valley County Water District

Ken Manning/San Gabriel Basin Water Quality Authority

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ Readily available	☒ Up to date	☐ N/A
☒ As-Built Drawings	☒ Readily available	☒ Up to date	☐ N/A
☒ Maintenance Logs	☒ Readily available	☒ Up to date	☐ N/A

Remarks: O&M Manuals and As-Built Drawings are kept at the treatment plant and at SGVWC's main office. Maintenance logs are kept at SGVWC's office. SGVWC operators fill out daily logs/report (multiple forms) for each shift (the treatment plant is staffed 24 hrs per day, 7 days a week). The Superintendent reviews the daily reports.

2. Health and Safety Plan Documents
☒ Site-Specific Health and Safety Plan ☒ Readily available ☒ Up to date ☐ N/A
☒ Contingency plan/emergency response plan ☒ Readily available ☒ Up to date ☐ N/A
Remarks: The safety plan is frequently updated. The safety plan, emergency response plan and the BPOU Spill Response Plan are all available together in the same binder.

3. O&M and OSHA Training Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: The operator certifications are all up to date and are kept at the office (and are reported annually to CDPH and the PUC). Per CDPH, the B6 facility must have T-5 level staff that oversee treatment plant operations. Tom Schiewe and Eric Velasquez are both T-5. The on-site operators are all either T-4 or T-3 certified. Tom has been HazWoper trained with annual refreshers until last year.

4. Permits and Service Agreements
☐ Air discharge permit ☐ Readily available ☐ Up to date ☒ N/A (1)
☒ Effluent discharge ☐ Readily available ☒ Up to date ☐ N/A (2)
☒ Waste disposal, POTW ☐ Readily available ☒ Up to date ☐ N/A (3)
☐ Other permits ☐ Readily available ☐ Up to date ☒ N/A (4)
Remarks: (1) All air discharges are covered by EPA requirements; there is not a discharge permit. A Contractor (Yorke Engineering) conducts all of the monitoring and data evaluation and provides carbon change-out recommendations to SGVWC. SGVWC sends Yorke a weekly report with system operational data and readings.
(2) Effluent discharge is covered by the CDPH 97-005 operating permit issued to SGVWC. The permit is up-to-date and a copy is at the SGVWC main office.
(3) Brine discharge is covered by a permit with CSDLAC. The permit is in the CR's name, not SGVWC. The CRs do all of the monitoring and reporting. SGVWC reviews the reports prior to submittal.
(4) SGVWC previously had a RWQCB permit for discharge to the wash, but they are not sure if it is still active.

5. Gas Generation Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: Off-site groundwater monitoring is coordinated through the Watermaster; SGVWC is not involved. The data are managed by a third-party (LDC) and included in monthly reports submitted to EPA. The plant data is generated by SGVWC and all analyses are done in accordance with the CDPH permit. Oscar Ramos/SGVWC water quality superintendent maintains a sample tracking spreadsheet and oversees water quality staff that collect the samples. Weck Laboratories submits the data directly to CDPH and LDC. SGVWC receives hard copies of all lab reports. Weck calls SGVWC immediately if any MCL exceedances are detected.

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, Weck Labs submits all discharge data directly to CDPH and LDC. SGVWC summarizes all of the monitoring data in the monthly reports that are submitted to CDPH, EPA, and other stakeholders.

10. Daily Access/Security Logs ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, SGVWC operators prepare detailed daily operations logs and the plant is staffed 24 hours a day. However, the daily logs note any security issues.

IV. O&M Costs ☐ Applicable ☒ N/A

1. O&M Organization
   ☐ State in-house ☐ Contractor for State
   ☐ PRP in-house ☐ Contractor for PRP
   ☒ Other: SGVWC operates the system.

2. O&M Cost Records: Not reviewed as part of the Site Inspection.

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
   Describe costs and reasons: The B6 facility has had high O&M costs. Most costs are routine but some have been unanticipated. In particular, the ISEP system has resulted in significant and ongoing increased O&M costs. High pressure across the ISEP unit has limited the maximum flow through the treatment plant to 6,200 gpm (compared to a design capacity of 7,800 gpm). SGVWC is currently adding about 10% more resin to the ISEP vessels. SGVWC believes that the increased back pressures throughout the ISEP system were caused in part by receipt of "bad salt" from a vendor years ago.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☒ Gates secured ☐ N/A
   Remarks: The site is fully fenced with locked metal access gates.

2. Other Access Restrictions

1. Signs and other security measures ☐ Location shown on site map ☐ N/A
   Remarks: There is one security camera in place at the single pass ion exchange vessels (located across the street from the main plant). SGVWC hopes to add more security cameras this year.

3. Institutional Controls

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
   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: ☐ Additional report attached (if additional space required).

2. Adequacy ☐ ICs are adequate ☐ ICs are inadequate ☒ N/A
   Remarks:

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident
   Remarks: They have not experienced any significant vandalism or graffiti and have not had issues with trespassing. The site is bounded on two sides by difficult-to-access flood control channels.

2. Land use changes onsite ☒ N/A
Remarks:

3. Land use changes offsite ☐ N/A
Remarks: Some residential properties still remain adjacent to the plant although SGVWC purchased several of the residential properties to provide sufficient room for the plant and may purchase more in the future.

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

1. Roads damaged ☐ Location shown on site map ☐ Roads adequate ☒ N/A
Remarks:

2. Other Site Conditions

Remarks: N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

1. Groundwater Extraction Wells, Pumps, and Pipelines ☒ Applicable ☐ N/A

1. Pumps, Wellhead Plumbing, and Electrical ☐ N/A
☐ All required wells located ☒ Good condition ☐ Needs O& M
Remarks: The four primary wells (two clusters) are located off-site and were not visited during the inspection. However, all four wells have been in continuous routine operation. Two older wells that serve as backups are located at the treatment plant and are in good condition.

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☒ System located ☒ Good condition ☐ Needs O& M
Remarks: All of the extraction wells pump into a common influent line and are distributed evenly using CLA valves between the active air strippers with a maximum capacity of 1,950 gpm each.

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks: Did not review the spare parts or equipment inventory. SGVWC stated that they have $140,000 of spare parts/equipment on-site. They also have the components of a 1,000 gpm nitrate treatment system on-site that they expect to install later this year.

2. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. Collection Structures, Pumps, and Electrical ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☒ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☒ Air stripping (60:1 A/W ratio ☒ Carbon adsorbers (VGAC) ☒ Filters (list type): 10 micron upgradient of ISEP (1).
☒ Additive (list type, e.g., chelation agent, flocculent) Acid injected after strippers to bring pH down to 7.4, Peroxide injected after ISEP and before UV (dose to 2 ppm). Caustic is injected after UV to increase pH back up to 7.6
☒ Others (list): ISEP (perchlorate and nitrate), UV System (NDMA and 1,4-dioxane), single pass IE in lead-lag arrangement for perchlorate (not yet active) (2), soft water system for the ISEP regeneration water
☒ Good condition ☐ Needs O&M
☒ Sampling ports properly marked and functional
☒ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☒ Quantity of groundwater treated annually (list volume): 8,548 acre-feet in 2011
Remarks: (1) There are 416 individual filter units that are changed approximately every 3 months ($100k/year).
(2) The IE has 12 vessels (6 pairs) with a capacity of 1,450 gpm each.
(3) The salt for regen brine creation is a major O&M component. They use 10 truckloads of salt per week (each is 25 tons) at the current operating rate (14 loads at full capacity).

2. Electrical Enclosures and Panels (properly rated and functional) ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: The panels were not opened up as part of the inspection.

3. Tanks, Vaults, Storage Vessels ☐ N/A
☒ Good condition ☐ Proper secondary containment ☐ Needs O&M
Remarks:
1) 80,000 gallon wet well after strippers. Water is pumped here through remainder of system using 5 150 hp boosters.
2) 150,000 gallon effluent wet well beneath the UV building.
3) New backwash tank installed adjacent to single pass IE vessels as a backup.

4. Discharge Structure and Appurtenances ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: 1.1 million gallon effluent tank on-site and a new 1.2 million gallon tank across the street to increase residence time.

5. Treatment Building(s) ☐ N/A
☒ Good condition (esp. roof and doorways) ☐ Needs Repair
☒ Chemicals and equipment properly stored
Remarks: Operation room contains SCADA control system. Chemical storage includes salt (4 tanks), acid, peroxide, NaOH and sodium hypochlorite for effluent disinfection.

6. Monitoring Wells (pump and treatment remedy) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: EPA receives the data from monitoring well sampling and is not aware of any problems with the monitoring wells. The wells are sampled at least annually. No monitoring wells were observed during the inspection.

4. Monitored Natural Attenuation ☐ Applicable ☒ N/A

1. Monitoring Wells (natural attenuation remedy) ☒ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

5. Long Term Monitoring ☒ Applicable ☐ N/A

1. Monitoring Wells ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: None of the BPOU regional groundwater monitoring wells were observed during the inspection. However, EPA knows that they are all operational and receives data from the wells at least annually.

X. OTHER REMEDIES ☐ Applicable ☒ 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

1. 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.).

Overall BPOU remedy performance was not discussed as part of this Site Inspection.

2. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Although O&M procedures appear to be adequate. ISEP operation continues to be problematic.

3. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

SGVWC recently experienced a treatment plant failure that resulted in water with elevated perchlorate concentrations being delivered to the potable water supply system. A faulty valve was installed on a brine discharge line that resulted in brine containing high levels of perchlorate being sent back to the influent side of the ISEP unit rather than to the brine discharge tank. This perchlorate-laden brine overwhelmed the ISEP. The failure was not detected for two weeks because of the time it took to analyze the effluent samples. SGVWC shutdown the B6 plant and worked closely with CDPH on public notification once the failure was discovered. The faulty valve has been replaced and the lines that allowed concentrated brine to return to the ISEP influent have been cut and capped to eliminate the possibility of this happening again. In addition, effluent samples are now analyzed with rapid turnaround and the lab has been instructed to call SGVWC immediately if elevated concentrations are ever detected in the effluent.

4. Opportunities for Optimization

SGVWC has purchased the components of a 1,000 gpm Siemens ion exchange (IE) system to be used for nitrate removal. They hope to the system installed by the end of the year. It will have regenerable resin, but will only require 1 load of salt per week. With the 1,000 gpm of nitrate treatment and startup of the single pass IE for perchlorate removal, they would be able to eliminate the ISEP system from the treatment process.

In the meantime, they are talking to CDPH about starting up the single pass IE, shutting down the ISEP and using in-line nitrate analyzers and lower concentration nitrate extraction wells to keep the plant effluent below 36 ppm (80% of the MCL). The plant influent concentration for nitrate is currently around 36 ppm.

SGVWC would like to replace the air strippers with an LGAC system. They believe this would result in O&M savings over the long term.

SGVWC is also hoping to replace the entire control system with one designed by TESCO. This would increase reliability. In addition, the current control system is in the ISEP control cabinet, so if the ISEP is dismantled it will need to be revamped anyway. Calgon maintains the current system, but does not have local support staff.

Inspection Team Roster

Name	Organization	Title
Wayne Praskins	U.S. EPA REGION 9	Remedial Project Manager
David Towell	CH2M HILL	EPA Contractor
Pete MacNicholl	DTSC	Project Manager
Tom Schiewe	SGVWC	Production Superintendent
Frank LoGuidice	SGVWC	VP of Engineering and Operations
Eric Velasquez	SGVWC	Chief Plant Supervisor

San Gabriel Valley Area 2 Superfund Site
Los Angeles County, California
Five-Year Review Site Inspection Checklist
VCWD LANTE FACILITY

I. SITE INFORMATION	
Site Name: San Gabriel Valley Area 2 Superfund Site	EPA ID: CAD CAD980818512
City/State: multiple cities in Los Angeles County	Date of Inspection: April 17, 2012
Agency Completing 5 Year Review: EPA	Weather/temperature: Sunny, 70s

Remedy Includes: (Check all that apply)
- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☒ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager: Tom Mortenson/VCWD - Not formally interviewed, but participated in Site Inspection
   Title: Operations Manager

2. O&M contractor: N/A

3. Local regulatory authorities and response 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. None interviewed

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required).

Tony Zampiello/Main San Gabriel Basin Watermaster's Office

Linda Noriega/Valley County Water District

Ken Manning/San Gabriel Basin Water Quality Authority

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ Readily available	☒ Up to date	☐ N/A
☒ As-Built Drawings	☒ Readily available	☒ Up to date	☐ N/A
☒ Maintenance Logs	☒ Readily available	☒ Up to date	☐ N/A

Remarks: Stetson updates the O&M Manuals and As-Built drawings for CDPH approval whenever there are changes. RC Foster provides documentation whenever they conduct maintenance activities. VCWD operators prepare a daily production report and log.

2. Health and Safety Plan Documents
☐ Site-Specific Health and Safety Plan ☐ Readily available ☐ Up to date ☒ N/A
☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date ☒ N/A
Remarks: VCWD has system-wide safety plans and emergency response plans, but not site-specific plans. Stetson has prepared a Spill Response Plan that covers all of the BPOU projects. It documents overall reporting procedures.

3. O&M and OSHA Training Records ☒ Readily available ☒ Up to date ☒ N/A (OSHA)
Remarks: The operator certifications are all up to date. Per CDPH, the facility requires that certified T-5 level staff oversee operations. Both Tom Mortenson and Bill Wilson are T-5. The on-site operators are all T-3 or T-4 certified.

4. Permits and Service Agreements
☐ Air discharge permit ☐ Readily available ☐ Up to date ☒ N/A (1)
☒ Effluent discharge ☐ Readily available ☒ Up to date ☐ N/A (2)
☒ Waste disposal, POTW ☐ Readily available ☒ Up to date ☐ N/A (3)
☐ Other permits ☐ Readily available ☐ Up to date ☐ N/A
Remarks: (1) All air discharges are covered by EPA requirements; there is not a discharge permit. A Contractor (Yorke Engineering) conducts all of the monitoring and data evaluation and provides carbon change-out recommendations to VCWD.
(2) Effluent discharge is covered by the CDPH 97-005 operating permit issued to VCWD. The permit is up-to-date and is kept at the VCWD offices. CDPH performs periodic site inspections
(3) Brine discharge is covered by a permit with CSDLAC and the CRs hold the permit, not VCWD. The CRs do all of the monitoring and reporting and provide the data to VCWD. There have not been any issues for the last several years.

5. Gas Generation Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: Off-site groundwater monitoring is coordinated through the Watermaster; VCWD is not involved. The data are managed by a third-party (LDC) and included in monthly reports submitted to EPA. The plant data is generated by VCWD and the analyses are done in accordance with the CDPH permit. VCWD's water quality person handles all of the sampling. Weck Laboratories submits the data directly to CDPH and LDC.

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, Weck Labs submits all discharge data directly to CDPH and LDC. VCWD obtains the data required to support preparation of monthly reports to CDPH.

10. Daily Access/Security Logs ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, VCWD operators prepare detailed daily operations logs. There are not separate security logs.

IV. O&M Costs ☐ Applicable ☒ N/A

1. O&M Organization
   ☐ State in-house ☐ Contractor for State
   ☐ PRP in-house ☐ Contractor for PRP
   ☒ Other: Valley County Water District (VCWD) operates the system.

2. O&M Cost Records: Not reviewed as part of the Site Inspection.
   :

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
   Describe costs and reasons: Operating costs for the facility are high, due mostly to routine O&M.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☒ Gates secured ☐ N/A
   Remarks: The site is fully fenced with a cinder block wall and locked metal access gates

2. Other Access Restrictions

1. Signs and other security measures ☐ Location shown on site map ☐ N/A
   Remarks: No trespassing signs on the gates.

3. Institutional Controls

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
   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: ☐ Additional report attached (if additional space required).

2. Adequacy ☐ ICs are adequate ☐ ICs are inadequate ☒ N/A
   Remarks:

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident
   Remarks: None since they completed the full cinderblock walls at least 5 or 6 years ago.

2. Land use changes onsite ☒ N/A
   Remarks:

3. Land use changes offsite ☐ N/A
Remarks: None, surrounding area remains a mix of commercial, light industrial and residential.

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

1. Roads damaged ☐ Location shown on site map ☐ Roads adequate ☒ N/A
Remarks:

2. Other Site Conditions

Remarks: N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

1. Groundwater Extraction Wells, Pumps, and Pipelines ☒ Applicable ☐ N/A

1. Pumps, Wellhead Plumbing, and Electrical ☐ N/A
☐ All required wells located ☒ Good condition ☐ Needs O& M
Remarks: Did not go to the two off-site extraction wells (SA1-1 and SA1-2). SA1-3 is currently operating at approximately 3,400 gpm. No well performance issues were noted. They replaced the bearings on the pump a few years ago - no unusual wear and tear.

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☒ System located ☒ Good condition ☐ Needs O& M
Remarks: The wells feed a common influent pipeline with enough head to lift the water through the air strippers. The acid injection upstream of the strippers is no longer active. The flow is distributed evenly between the active strippers with a maximum flow through each of 1,950 gpm.

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks: Did not review the spare parts or equipment inventory.

2. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. Collection Structures, Pumps, and Electrical ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☒ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☒ Air stripping ☒ Carbon adsorbers (1) ☒ Filters (list type): 10 micron, upgradient of ISEP.
☒ Additive (list type, e.g., chelation agent, flocculent) Peroxide injected after ISEP and before UV (dose to 4 ppm).
☒ Others (list): UV System (NDMA and 1,4-dioxane), ISEP (perchlorate and nitrate), Ion Exchange (not active yet, but will be used for perchlorate)
☒ Good condition ☐ Needs O&M
☒ Sampling ports properly marked and functional
☒ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☒ Quantity of groundwater treated annually (list volume): 6,691 acre-feet in 2011
Remarks: (1) VGAC for stripper off-gas and LGAC for 1,2,3-TCP removal
Calcification in the air strippers has been a significant issue. They are now replacing packing material about once a year and Stetson is monitoring the packing conditions quarterly.
The off-gas treatment was originally performed with a resin system that proved problematic and was replaced by the VGAC system ~5 years ago.

2. Electrical Enclosures and Panels (properly rated and functional) ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: The panels were not opened up as part of the inspection.

3. Tanks, Vaults, Storage Vessels ☐ N/A
☒ Good condition ☐ Proper secondary containment ☐ Needs O&M
Remarks:
1) 80,000 gallon wet well after strippers. Water is pumped here through remainder of system.
2) 10 LGAC vessels were added several years ago specifically for 1,2,3-TCP removal
3) 180,000 gallon effluent storage vault/wet well beneath the UV treatment building.

4. Discharge Structure and Appurtenances ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: 4 booster pumps are used to pump all of the treated water to Suburban- located ~4 miles away.
3 booster pumps are available to pump water to the VCWD system, but these are not used and there are no plans for VCWD to take treated water. ~200 gpm is used as part of system operations (e.g., the ISEP regeneration process).

5. Treatment Building(s) ☐ N/A
☒ Good condition (esp. roof and doorways) ☐ Needs Repair
☒ Chemicals and equipment properly stored
Remarks: Operation room contains SCADA control system. Equipped with an auto-dialer to alert operators of alarm conditions. Certain alarm conditions will cause the system to automatically shut down.
Chemical storage includes salt, peroxide, acid, sodium hypochlorite and caustic.

6. Monitoring Wells (pump and treatment remedy) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: EPA receives the data from monitoring well sampling and is not aware of any problems with the monitoring wells. The wells are sampled at least annually. The only wells observed during the inspection were the on-site piezometers.

4. Monitored Natural Attenuation ☐ Applicable ☒ N/A

1. Monitoring Wells (natural attenuation remedy) ☒ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

5. Long Term Monitoring ☒ Applicable ☐ N/A

1. Monitoring Wells ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: None of the BPOU regional groundwater monitoring wells were observed during the inspection. However, EPA knows that they are all operational and receives data from the wells at least annually.

X. OTHER REMEDIES ☐ Applicable ☒ 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

1. 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.).

Overall BPOU remedy performance was not discussed as part of this Site Inspection.

2. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Flow rates through the VCWD system have been limited by performance of the ISEP system, primarily because of high nitrate concentrations in the influent, brine system capacity limitations, and back pressures across the ISEP system. Operation of the single-pass ion exchange units for perchlorate removal could potentially help alleviate this issue somewhat, allowing the ISEP system to be decommissioned or focused on nitrate removal for a portion of the water.

The primary issues associated with ISEP downtime have been related to:

1) High back pressures across the resin. 25% of the resin was recently replaced and resin breakdown was observed in the lower portions of each vessel, likely associated with the quality of the regen water,
2) ISEP PLC issues
3) Turntable misalignment (although this has not been as prevalent recently)
4) Brine pump failure
5) Other mechanical failures (The ISEP has lots of mechanical parts, resulting in lots of opportunity for failures/breakdowns.)

3. Early Indicators of Potential Remedy Failure
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. None, other than the ongoing difficulties in keeping the ISEP operational.
4. Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. Capacity of the brine system is one of the key limiting factors to increasing flow rates, so increasing capacity could improve performance. VCWD is now monitoring nitrates in-line throughout the system. Closer review of nitrate levels could lead to a less conservative approach and increased treatment rates. VCWD would like to optimize peroxide dosing. However, because they can't discharge to waste (i.e., the flood control channels) they and CDPH are reluctant to experiment much with operations in the event it could lead to system upset that could not easily be rectified.

Inspection Team Roster

Name	Organization	Title
Wayne Praskins	U.S. EPA REGION 9	Remedial Project Manager
David Towell	CH2M HILL	EPA Contractor
Pete MacNicholl	DTSC	Project Manager
Tom Mortenson	VCWD	Operations Manager
Bill Wilson	VCWD	Production and Treatment Supervisor
Frank Saucedo	VCWD	Water Treatment Plant Operator

San Gabriel Valley Area 2 Superfund Site
Los Angeles County, California
Five-Year Review Site Inspection Checklist
SGVWC B5 FACILITY

I. SITE INFORMATION	
Site Name: San Gabriel Valley Area 2 Superfund Site	EPA ID: CAD CAD980818512
City/State: multiple cities in Los Angeles County	Date of Inspection: April 17, 2012
Agency Completing 5 Year Review: EPA	Weather/temperature: Sunny, 80s

Remedy Includes: (Check all that apply)
- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☒ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other:

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. O&M site manager: Tom Schiewe/SGVWC - Not formally interviewed, but participated in Site Inspection
   Title: Production Superintendent

2. O&M contractor: N/A

3. Local regulatory authorities and response 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. None interviewed

4. Other interviews (optional) ☐ N/A ☒ Additional report attached (if additional space required) – Appendix C

Tony Zampiello/Main San Gabriel Basin Watermaster's Office

Linda Noriega/Valley County Water District

Ken Manning/San Gabriel Basin Water Quality Authority

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. O&M Documents

☒ O&M Manuals	☒ Readily available	☒ Up to date	☐ N/A
☒ As-Built Drawings	☒ Readily available	☒ Up to date	☐ N/A
☒ Maintenance Logs	☒ Readily available	☒ Up to date	☐ N/A

Remarks: O&M Manuals and As-Built Drawings are kept at the treatment plant and at SGVWC's main office. Maintenance logs are kept at SGVWC's office. SGVWC operators fill out daily logs/report (multiple forms) each day. The Superintendent reviews the daily reports. Plant is not routinely staffed and can be operated remotely from SGVWC's offices.

2. Health and Safety Plan Documents
☒ Site-Specific Health and Safety Plan ☒ Readily available ☒ Up to date ☐ N/A
☒ Contingency plan/emergency response plan ☒ Readily available ☒ Up to date ☐ N/A
Remarks: The safety plan is frequently updated. The safety plan, emergency response plan and the BPOU Spill Response Plan are all available together in the same binder.

3. O&M and OSHA Training Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: The operator certifications are all up to date and are kept at the office (and are reported annually to CDPH and the PUC). Per CDPH, the B5 facility must have T-5 level staff that oversee treatment plant operations. Tom Schiewe and Eric Velasquez are both T-5. The on-site operators are all either T-4 or T-3 certified. Tom has been HazWoper trained with annual refreshers until last year.

4. Permits and Service Agreements
☐ Air discharge permit ☐ Readily available ☐ Up to date ☒ N/A
☒ Effluent discharge ☐ Readily available ☒ Up to date ☐ N/A (1)
☒ Waste disposal, POTW ☐ Readily available ☒ Up to date ☐ N/A (2)
☐ Other permits ☐ Readily available ☐ Up to date ☒ N/A
Remarks: (1) Effluent discharge is covered by the CDPH 97-005 operating permit issued to SGVWC. The permit is up-to-date and a copy is at the SGVWC main office.
(2) SGVWC has a sanitary sewer permit from CSDLAC. Discharge is limited to 5 gpm and 500 gallons per day. Primarily used for discharge of backwash water from LGAC system.

5. Gas Generation Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

6. Settlement Monument Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

7. Groundwater Monitoring Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: Off-site groundwater monitoring is coordinated through the Watermaster; SGVWC is not involved. The data are managed by a third-party (LDC) and included in monthly reports submitted to EPA. The plant data are generated by SGVWC and all analyses are done in accordance with the CDPH permit. Oscar Ramos/SGVWC water quality superintendent maintains a sample tracking spreadsheet and oversees water quality staff that collect the samples. Weck Laboratories submits the data directly to CDPH and LDC. SGVWC receives hard copies of all lab reports. Weck calls SGVWC immediately if any MCL exceedances are detected.

8. Leachate Extraction Records ☐ Readily available ☐ Up to date ☒ N/A
Remarks:

9. Discharge Compliance Records ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, Weck Labs submits all discharge data directly to CDPH and LDC. SGVWC summarizes the monitoring data in the monthly reports that are submitted to CDPH, EPA, and other stakeholders.

10. Daily Access/Security Logs ☒ Readily available ☒ Up to date ☐ N/A
Remarks: As noted above, SGVWC operators prepare detailed daily operations logs. However, the plant is not routinely staffed. The daily logs note any security issues. Daily logs are kept on-site and at SGVWC's office.

IV. O&M Costs ☐ Applicable ☒ N/A

1. O&M Organization
   ☐ State in-house ☐ Contractor for State
   ☐ PRP in-house ☐ Contractor for PRP
   ☒ Other: SGVWC operates the system.

2. O&M Cost Records: Not reviewed as part of the Site Inspection.

3. Unanticipated or Unusually High O&M Costs During Review Period ☐ N/A
   Describe costs and reasons: None. They did have to change the pump bowls on the extraction wells.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

1. Fencing

1. Fencing damaged ☐ Location shown on site map ☒ Gates secured ☐ N/A
   Remarks: The site is fully fenced with locked metal access gates.

2. Other Access Restrictions

1. Signs and other security measures ☐ Location shown on site map ☒ N/A
   Remarks:

3. Institutional Controls

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
   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: ☐ Additional report attached (if additional space required).

2. Adequacy ☐ ICs are adequate ☐ ICs are inadequate ☒ N/A
   Remarks:

4. General

1. Vandalism/trespassing ☐ Location shown on site map ☒ No vandalism evident
   Remarks: They have not experienced any significant vandalism or trespassing.

2. Land use changes onsite ☒ N/A
   Remarks:

3. Land use changes offsite ☐ N/A
   Remarks: None. Surrounding area is industrial and the freeway borders one side of the plant.

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

1. Roads damaged ☐ Location shown on site map ☐ Roads adequate ☒ N/A
Remarks:

2. Other Site Conditions

Remarks: N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

1. Groundwater Extraction Wells, Pumps, and Pipelines ☒ Applicable ☐ N/A

1. Pumps, Wellhead Plumbing, and Electrical ☐ N/A
☐ All required wells located ☒ Good condition ☐ Needs O& M
Remarks: The two primary wells are located on-site (B5B and B5E). Each is in good condition and is producing at maximum capacity of 3,300 gpm. The City of Industry well is off-site and was not visited during the inspection. However, it is in routine operations and is pumping at its maximum capacity of 1,200 gpm.

2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☐ N/A
☒ System located ☒ Good condition ☐ Needs O& M
Remarks: All of the extraction wells pump into a common influent line and are distributed evenly to the LGAC system.

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks: Did not review the spare parts or equipment inventory.

2. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. Collection Structures, Pumps, and Electrical ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances ☒ N/A
☐ Good condition ☐ Needs O& M
Remarks:

3. Spare Parts and Equipment ☒ N/A
☐ Readily available ☐ Good condition
☐ Requires Upgrade ☐ Needs to be provided
Remarks:

3. Treatment System ☒ Applicable ☐ N/A

1. Treatment Train (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☒ Carbon adsorbers (LGAC) (1) ☒ Filters (list type): 10 micron upgradient of IE (2).
☒ Additive (list type, e.g., chelation agent, flocculent) Peroxide injected after IE and before UV (dose to 1 ppm).
☒ Others (list): Lead-lag ion exchange (IE) (perchlorate) (3), UV System (NDMA and 1,4-dioxane) (4)
☒ Good condition ☐ Needs O&M
☒ Sampling ports properly marked and functional
☒ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☒ Quantity of groundwater treated annually (list volume): 11,573 acre-feet in 2011
Remarks: (1) 8 pairs of lead-lag LGAC vessels, 1,100 gpm each. Carbon changed about every 4 months with 1,2-DCA or carbon tetrachloride breakthrough.
(2) There are 416 individual filter units changed approximately every 3 months ($100k/year).
(3) The IE has 8 vessel pairs with a capacity of 1,000 gpm each. Resin lasts ~12-14 months.
(4) The UV system lamps last 12,000 hours (compared to ~8,800 hours at B6). The vendor (Trojan) also has the maintenance contract.

2. Electrical Enclosures and Panels (properly rated and functional) ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: The panels were not opened up as part of the inspection.

3. Tanks, Vaults, Storage Vessels ☐ N/A
☒ Good condition ☐ Proper secondary containment ☐ Needs O&M
Remarks:
1) Two reservoirs are present on-site to store system effluent - one 3 million gallon tank and one 500,000 gallon tank.

4. Discharge Structure and Appurtenances ☐ N/A
☒ Good condition ☐ Needs O& M
Remarks: Two 1,000 gallon chlorine tanks for disinfection. Five booster pumps are available to lift the water to system pressure.

5. Treatment Building(s) ☐ N/A
☒ Good condition (esp. roof and doorways) ☐ Needs Repair
☒ Chemicals and equipment properly stored
Remarks: Operation room contains SCADA control system. Chemical storage includes peroxide and sodium hypochlorite for effluent disinfection.

6. Monitoring Wells (pump and treatment remedy) ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: EPA receives the data from monitoring well sampling and is not aware of any problems with the monitoring wells. The wells are sampled at least annually. Two of the three on-site piezometers were observed during the inspection.

4. Monitored Natural Attenuation ☐ Applicable ☒ N/A

1. Monitoring Wells (natural attenuation remedy) ☒ N/A
☐ All required wells located ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks:

5. Long Term Monitoring ☒ Applicable ☐ N/A

1. Monitoring Wells ☐ N/A
☐ All required wells located ☐ Properly secured/locked ☒ Functioning ☒ Routinely sampled
☐ Good condition ☐ Needs O&M
Remarks: None of the BPOU regional groundwater monitoring wells were observed during the inspection. However, EPA knows that they are all operational and receives data from the wells at least annually.

X. OTHER REMEDIES ☐ Applicable ☒ 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

1. 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.).

Overall BPOU remedy performance was not discussed as part of this Site Inspection.

2. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

No particular O&M issues at the B5 facility.

3. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

None

4. Opportunities for Optimization

Nothing specific to the B5 facility. However, SGVWC believes that implementing an OU-wide purchasing program for treatment plant materials and OU-wide maintenance contracts would result in cost savings.

Inspection Team Roster

Name	Organization	Title
Wayne Praskins	U.S. EPA REGION 9	Remedial Project Manager
David Towell	CH2M HILL	EPA Contractor
Pete MacNicholl	DTSC	Project Manager
Tom Schiewe	SGVWC	Production Superintendent
Frank LoGuidice	SGVWC	VP of Engineering and Operations
Eric Velasquez	SGVWC	Chief Plant Supervisor

Appendix D: Photographs from Site Inspections

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La Puente Valley County Water District (OU 02)

Photo 1: Extraction Well No. 5

Photo 2: LPVCWD Air Stripper

Photo 3: Single Pass Ion Exchange Treatment Vessels

Photo 4: LPVCWD UV Treatment Building and Effluent Pump Station

Photo 5: LPVCWD Treatment Plant Overview

San Gabriel Valley Water Co. B6 (OU 03)

Photo 1: SGVWC B6 Air Stripper (1 of 4) and VGAC Off-Gas Units

Photo 2: SGVWC B6 Salt Storage Tanks

Photo 3: SGVWC B6 ISEP Treatment Unit (1 of 2)

Photo 4: SGVWC B6 Single Pass Ion Exchange Vessels (not yet in operation)

Photo 5: SGVWC B6 Treatment Building and Air Strippers

Valley County Water District (OU 04)

Photo 1: Extraction Well SA1-3 (Lante Well)

Photo 2: VCWD Air Strippers and VGAC Off-Gas Treatment

Photo 3: VCWD LGAC Treatment Vessels

Photo 4: VCWD Single Pass Ion Exchange Treatment Vessels (not yet active)

Photo 5: VCWD ISEP Treatment Unit

Photo 6: VCWD UV Treatment Units

San Gabriel Valley Water Co. B5 (OU 05)

Photo 1: SGVWC B5 LGAC System Vessels

Photo 2: SGVWC B5B Well and Effluent Storage Tank

Photo 3: SGVWC B5 Ion Exchange System Vessels

Photo 4: SGVWC B5 UV Treatment and Plant Operations Building

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Appendix E: Interview Forms

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Five-Year Review Interview Record			**Interviewee:** Tony Zampiello/Main San Gabriel Basin Watermaster email: tonyz@watermaster.org	
Site Name		**EPA ID No.**	**Date of Interview**	**Interview Method**
San Gabriel Valley Area 2 Superfund Site – Baldwin Park OU		EPA ID# CAD980818512	4/3/2012	In person
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Wayne Praskins	EPA Region 9	415-972-3181	Praskins.wayne@epa.gov	75 Hawthorne Street San Francisco, CA 94105
Jenny Ledesma	CH2M HILL, EPA contractor	510-587-7566	jledesma@ch2m.com	155 Grand Avenue, Suite 800 Oakland, CA 94612

Purpose of the Five-Year Review

The purpose of the five-year review is to evaluate the implementation and performance of the remedy, and to confirm that human health and the environment continue to be protected by the remedial actions performed. This interview is being conducted as a part of the second five-year review for the San Gabriel Valley Area 2 Superfund Site. The period covered by this five-year review is from completion of the first five-year review in September 2007 to present.

Interview Questions

1. Please describe Watermaster's role in the Baldwin Park cleanup project (i.e., the VCWD, LPVCWD, SGVWC B6, and SGVWC B5 projects).

Response: Watermaster is a voting member of the operations committee for each of the Baldwin Park subprojects; holds contracts for technical work; acts as a liaison between the Cooperating Respondents (CRs) and the Water Entities (WEs) and is involved in technical disputes/issues; provides direction to the project manager (Stetson Engineers); and works with the CRs on implementation of the Performance Standards Evaluation Plan (PSEP).

2. Do you believe that the project is operating effectively and efficiently? Do you have any comments, suggestions, or recommendations regarding the project's management or operation?

Response: Although the project is operating fairly effectively, the overall efficiency could be improved. The CRs and WEs have re-instated monthly face-to-face meetings and have created an Efficiencies and Innovation Committee (similar to the old technical committee). More management oversight is needed to make sure that ideas that come out of the meetings are acted on. For example, project-wide bulk contracts for purchasing carbon/resin/key materials would reduce costs. Energy optimization and cessation of brine discharges could also reduce long-term costs. The CRs are sometimes hesitant to share information and push for the lowest short-term costs without considering the full impacts and long-term considerations.

The Watermaster has had comments on the CRs' model calibration and has some concerns with how the CRs are assessing groundwater flow and remedy performance.

Despite some issues, the Watermaster has a good working relationship with CR representatives.

3. Do you have suggestions on how the project can better meet its cleanup goals?

Response: The project is doing a pretty good job of meeting cleanup goals. Surprised that this large group with divergent interests and concerns was able to get together and get the project built and operating. Everyone needs to start thinking about what happens when the project agreement expires in 2017. If the CRs stop funding operation of the treatment plants, the WEs will start looking into cheaper options for meeting their water supply needs, including purchasing Metropolitan Water District (MWD) water instead of pumping and treating the contaminated wells.

4. Do you have suggestions on how the project can better comply with EPA, State, or local requirements, including EPA reporting requirements?

Response: The projects are doing a good job of meeting all regulatory and reporting requirements. The monthly EPA reporting has been streamlined. There are still some inefficiencies in getting California Department of Public Health (CDPH) approval for use of new materials and other operational changes.

The recent failure at the B6 facility was very well reported. SGVWC worked extensively with CDPH on public notification and responded quickly to the incident.

5. Are you aware of any complaints or concerns from cities, neighbors, or other community members regarding the Baldwin Park cleanup?

Response: Not aware of any recent complaints. Quite awhile ago there were some noise complaints from residents near the B6 facility.

6. What is your overall impression of the project? Do you have any other concerns about the operation or performance of the remedy?

Response: Overall impression is that the project is a general success. Other than a few miscellaneous complaints from the CRs, the diverse group works pretty well together. The Watermaster expects to have an increased/more prominent role moving forward compared to the last few years.

1) One minor concern is that the dispute resolution clause in the project agreement is too easy to raise and various parties readily threaten to use it. However, there has only been one formal dispute to date.
2) The CRs sometimes get too involved in water purveyor operations, which are primarily driven by CDPH.

7. Do you feel well informed about the site activities and progress?

Response: Overall, the Watermaster is well informed about the project. However, they are out of the loop regarding the ongoing discussions between the CRs and water purveyors for how to address the nitrate issues at the VCWD and B6 projects. They are worried about the project splintering with the CRs and water purveyors acting independently.

On issues where the CRs take a more active role, sometimes the information exchange stops and the process just disappears for an extended period.

8. Is there anything else related to the project that you would like to bring up?

Response: Operation of the ISEP equipment has been the largest O&M issue on the project. It would seem that minimizing or eliminating use of the ISEP would greatly improve performance and lower O&M costs.

Five-Year Review Interview Record			**Interviewee: Lynda Noriega, General Manager Valley County Water District** **email:** lnoriega@vcwd.org	
Site Name		**EPA ID No.**	**Date of Interview**	**Interview Method**
San Gabriel Valley Area 2 Superfund Site – Baldwin Park OU		EPA ID# CAD980818512	4/16/2012	In-Person
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Wayne Praskins	EPA Region 9	415-972-3181	Praskins.wayne@epa.gov	75 Hawthorne Street San Francisco, CA 94105
Jenny Ledesma	CH2M HILL, EPA contractor	510-587-7566	jledesma@ch2m.com	155 Grand Avenue, Suite 800 Oakland, CA 94612

Purpose of the Five-Year Review

The purpose of the five-year review is to evaluate the implementation and performance of the remedy, and to confirm that human health and the environment continue to be protected by the remedial actions performed. This interview is being conducted as a part of the second five-year review for the San Gabriel Valley Area 2 Superfund Site. The period covered by this five-year review is from completion of the first five-year review in September 2007 to present.

Interview Questions

1. VCWD is a signatory to the BPOU project agreement and operates one of the four BPOU treatment plants (although it uses little or no water from the plant). Is VCWD's interest limited to operation of the Lante plant, or does it have a broader interest in the Baldwin Park cleanup?

Response: Valley County Water District's interest is very high and has gotten broader as the cleanup has been funded. The VCWD Board would probably seek other funding routes or not operate the plant if no project funds were available. There are no major concerns from the VCWD Board, but dealing with the CRs is challenging. Often, the water companies know what they want to do, but it is very difficult to get things done.

2. Do you believe that the Lante plant, and more broadly the BPOU cleanup, is operating effectively and efficiently? Do you have any comments, suggestions, or recommendations regarding the project's management or operation? Or specifically on EPA's role in the cleanup?

Response: The Lante plant is not working effectively. The plant was designed to do more than what it is currently doing, but it would cost money and everyone wants to save money. Other operational issues have been raised, such as meter issues and distribution, but for the most part everything has been handled. Another pending issue is the current situation with nitrate, but a report is being developed about this issue.

Follow up question: What is the benefit for VCWD to continue maintaining and operating the plant?

Response: VCWD has other wells that help serve their customers. The project has helped by creating work and, most importantly, the largest benefit is that the VCWD wells are being protected.

3. Are you aware of any complaints or concerns from cities, neighbors, or other community members regarding the Lante plant or the Baldwin Park cleanup?

Response: No, not really. There was the recent detection of perchlorate at the B6 Plant that was featured on Channel 5. A resident near the Lante plant used to complain frequently during construction; however not sure if he still lives there or not. There have not been any complaints regarding night operations.

4. Do you feel well informed about the site activities and progress?

Response: Yes. The monthly in-person Baldwin Park project meetings are effective. They provide an opportunity to discuss important issues in person; over the phone is not as effective. Forums for operators are an opportunity to learn more. Currently Tom (Mortenson) attends as well as representatives from other water agencies.

5. Is there anything else related to the Lante plant or the BPOU remedy that you would like to bring up?

Response: If the CRs decide that they will not pay for plant operations, would EPA support VCWD in their decision not to operate? [*EPA indicated that they want the VCWD project to continue to operate and expect the CRs to continue to fund the cleanup to comply with EPA's 2002 order. If the project agreement is not extended, the CRs would need to come up with other ways to comply with EPA's order.*]

VCWD would like to continue operating the plant, but would like to resolve some issues as this would make things easier.

Five-Year Review Interview Record			**Interviewee:** Ken Manning, Executive Director Randy Schoellerman San Gabriel Basin Water Quality Authority email: ken@wqa.com; randy@wqa.com	
Site Name		**EPA ID No.**	**Date of Interview**	**Interview Method**
San Gabriel Valley Area 2 Superfund Site – Baldwin Park OU		EPA ID# CAD980818512	4/27/2012	In-Person
Interview Contacts	**Organization**	**Phone**	**Email**	**Address**
Wayne Praskins	EPA Region 9	415-972-3181	Praskins.wayne@epa.gov	75 Hawthorne Street San Francisco, CA 94105
Jenny Ledesma	CH2M HILL, EPA contractor	510-587-7566	jledesma@ch2m.com	155 Grand Avenue, Suite 800 Oakland, CA 94612

Purpose of the Five-Year Review

The purpose of the five-year review is to evaluate the implementation and performance of the remedy, and to confirm that human health and the environment continue to be protected by the remedial actions performed. This interview is being conducted as a part of the second five-year review for the San Gabriel Valley Area 2 Superfund Site. The period covered by this five-year review is from completion of the first five-year review in September 2007 to present.

Interview Questions

1. How would you describe Water Quality Authority's (WQA's) role in the Baldwin Park cleanup project?

Response: WQA has a major coordination role. They started in this role back in 1993. Ken Manning was away from the Basin and WQA for 6-7 years. Since his return he feels that huge progress and changes have been made and he wants to be sure that people understand that although things are different the mission is still the same – "Clean Water." The WQA coordinates the project's finances to ensure that all entities are working together throughout the process. This is a typical role for WQA on other Operable Units (OUs). At the beginning of the Baldwin Park cleanup, WQA was looking for ways to facilitate the clean up, which was a more aggressive role for them. Now their role is more of a coordinating role. They do this in general for all OUs, but for Baldwin Park, they took a more active part in the heart of the project, by communicating with others on how to get the cleanup done.

WQA is now focusing on how the project can operate more efficiently and innovatively.

2. Do you believe that the BPOU is operating effectively and efficiently? Do you have any comments, suggestions, or recommendations regarding the project's management or operation? Or specifically about the WQA's role in the cleanup?

Response: Yes, but it does not mean that today's efficiencies will be tomorrow's. There is not enough data and/or information to answer questions about the project. There needs to be a way to more quickly get rid of the contamination. Mr. Manning asked if there was a process in place to obtain needed information. [*EPA indicated that the PRPs are in the process of reviewing whether changes are needed to the original extraction plan.]* WQA added that their mandate is not containment, but cleaning the water.

3. Are you aware of any complaints or concerns from cities, neighbors, or other community members regarding the BPOU cleanup?

Response: Yes, they have received general complaints about water and inquiries about the multi-port wells. There seems to be confusion about these wells and the residents are not sure what they are for. No complaints from community members have been received recently (only at the beginning of the project).

4. Do you feel well informed about the site activities and progress?

Response: Yes, with caveats. Information that EPA is providing should be shared with everyone (not just with CRs). Information is sometimes provided to WQA through sources other than EPA. If everyone is kept informed, this avoids duplication of effort or miscommunication. [*EPA assured WQA that they, as well as the Watermaster, are included in most communications*.]

5. Is there anything else related to the project that you would like to bring up?

Response: No further comments.