Semiannual Groundwater Monitoring Report
First Quarter and Second Quarter 2010
Lockheed Martin Corporation
Beaumont Site 1, Beaumont, California

Prepared for:

LOCKHEED MARTIN

TETRA TECH

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TC# 25241-01.0303 / October 2010

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LOCKHEED MARTIN

October 25, 2010

Mr. Daniel Zogaib
Southern California Cleanup Operations
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Subject: Submittal of the *Semi-annual Groundwater Monitoring Report First Quarter and Second Quarter 2010, Beaumont Site 1, Beaumont, California*

Dear Mr. Zogaib:

Please find enclosed one hard copy of the body of the report and two compact disks containing electronic copies of the report and appendices of the *Semi-annual Groundwater Monitoring Report*
First Quarter and Second Quarter 2010, Beaumont Site 1, Beaumont, California for your approval or review and comment. This report contains an evaluation of trend data and recommendations for modifications of the monitoring program.

If you have any questions regarding this submittal, please contact me at 408.756.9595 or denise.kato@lmco.com.

Sincerely,

Denise Kato

Denise Kato
Remediation Analyst Senior Staff

Enclosures

Copy with Enc:
Gene Matsushita, LMC (1 electronic and 1 hard copy)
Ian Lo, Camp, Dresser, McKee (electronic copy)
Thomas J. Villeneuve, Tetra Tech, Inc. (electronic and hard copy)
Alan Bick, Gibson Dunn (electronic copy)

Semiannual Groundwater Monitoring Report First Quarter and Second Quarter 2010 Beaumont Site 1, Beaumont, California

Prepared for:

Lockheed Martin Corporation

Prepared by:

Tetra Tech, Inc.

October 2010

Christopher Patrick
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ACRONYMS

AFCEE	Air Force Center for Environmental Excellence
B	The result is < 5 times the blank contamination. Cross contamination is suspected.
bgs	below ground surface
BPA	burn pit area
COPC	chemical of potential concern
COV	coefficient of variation
CSM	conceptual site model
1,1-DCA	1,1-dichloroethane
1,2-DCA	1,2-dichloroethane
1,1 -DCE	1,1-dichloroethene
cis-1,2-DCE	cis-1,2-dichloroethene
DO	dissolved oxygen
DWNL	California drinking water notification level
DTSC	Department of Toxic Substances Control
e	A holding time violation occurred.
EC	electrical conductivity
EPA	United States Environmental Protection Agency
f	The duplicate relative percent difference was outside the control limit.
ft/day	feet per day
GMP	Groundwater Monitoring Program
GPS	global positioning system

GR	weathered granite / boulder
HCP	Habitat Conservation Plan
IUOE	International Union of Operating Engineers
J	The analyte was positively identified, but the analyte concentration is an estimated value.
K	hydraulic conductivity
k	The analyte was found in the field blank.
LEB	Lockheed equipment blank
LMC	Lockheed Martin Corporation
LPC	Lockheed Propulsion Company
LTB	Lockheed trip blank
MAROS	Monitoring and Remediation Optimization System
MCL	Maximum Contaminant Level
MCEA	Massacre Canyon Entrance Area
MDLs	method detection limits
MEF	Mount Eden formation
MeV	Million electronic volts
mg/L	milligrams per liter
MNA	monitored natural attenuation
μg/L	microgram per liter
μg/L/yr	microgram per liter per year
MS/MSD	matrix spike/matrix spike duplicate
msl	mean sea level
MTBE	methyl-tert butyl ether
NA	not analyzed / applicable
NPCA	Northern Potrero Creek Area

NTUs	nephelometric turbidity units
NWS	National Weather Service
ORP	oxidation-reduction potential
PQL	practical quantitation limit
q	The analyte detection was below the practical quantitation limit.
QAL	Quaternary alluvium
QA/QC	quality assurance/quality control
Radian	Radian Corporation, Inc.
Report	Supplemental Site Investigation Report
RMPA	Rocket Motor Production Area
S	Mann-Kendall statistic
SAP	Sampling and Analysis Plan
SKR	Stephens' Kangaroo Rat
Tetra Tech	Tetra Tech, Inc.
TOC	top of casing
TCE	trichloroethene
TNT	2,4,6-trinitrotoluene
1,1,1-TCA	1,1,1-trichloroethane
1,1,2-TCA	1,1,2-trichloroethane
U	The analyte was not detected above the method detection limit.
UG	upgradient
USFWS	United States Fish and Wildlife Service
VFA	volatile fatty acids
VOCs	volatile organic compounds

SECTION 1 INTRODUCTION

This Semiannual Groundwater Monitoring Report (Report) has been prepared by Tetra Tech, Inc. (Tetra Tech), on behalf of Lockheed Martin Corporation (LMC), and presents the results of the First Quarter 2010 and Second Quarter 2010 water quality monitoring activities of the Beaumont Site 1 (Site) Groundwater Monitoring Program (GMP). The Site is located south of the City of Beaumont, Riverside County, California (Figure 1-1). Currently, the Site is inactive with the exception of remedial activities performed under Consent Order 88/89 034 and Operation and Maintenance Agreement (O&M Agreement) 93/94 025 with the Department of Toxic Substances Control (DTSC). The State of California owns the 9,117 acre site, and LMC maintains a conservation easement over 565 acres (Figure 1-2).

The GMP has a quarterly/semiannual/annual/biennial monitoring frequency with both groundwater and surface water collected and sampled as part of the GMP. The annual and biennial events are larger major monitoring events, and the quarterly and semiannual events are smaller minor events. All new wells are sampled quarterly for one year. The semiannual wells are sampled second and fourth quarter of each year, annual wells are sampled the second quarter of each year, and the biennial wells are sampled during the second quarter of even numbered years.

The objectives of this Report are to:

- Briefly summarize the site history;
- Document water level and water quality monitoring procedures and results; and
- Analyze and evaluate the groundwater elevation and water quality monitoring data generated.

This Report is organized into the following sections: 1) Introduction, 2) Summary of Monitoring Activities, 3) Groundwater Monitoring Results, 4) Summary and Conclusions, and 5) References. A brief description of the previous site environmental investigations and the current conceptual site model (CSM) can be found in Appendix A.

1.1 SITE BACKGROUND

The Site is a 9,117 acre parcel located south of Beaumont, California. The Site was primarily used for ranching prior to 1960. From 1960 to 1974, the Site was used by Lockheed Propulsion Company (LPC) for solid rocket motor and ballistics testing (Tetra Tech, 2003a). Activities at the Site also included burning of process chemicals and waste rocket propellants in an area commonly referred to as the burn pit area (BPA).

Nine primary historical operational areas have been identified at the Site. A site historical operational areas and features map is presented as Figure 1-2. Historical operational areas were used for various activities associated with rocket motor assembly, testing, and propellant incineration. A brief description of each historical operational area follows:

Historical Operational Area A – Eastern Aerojet Range

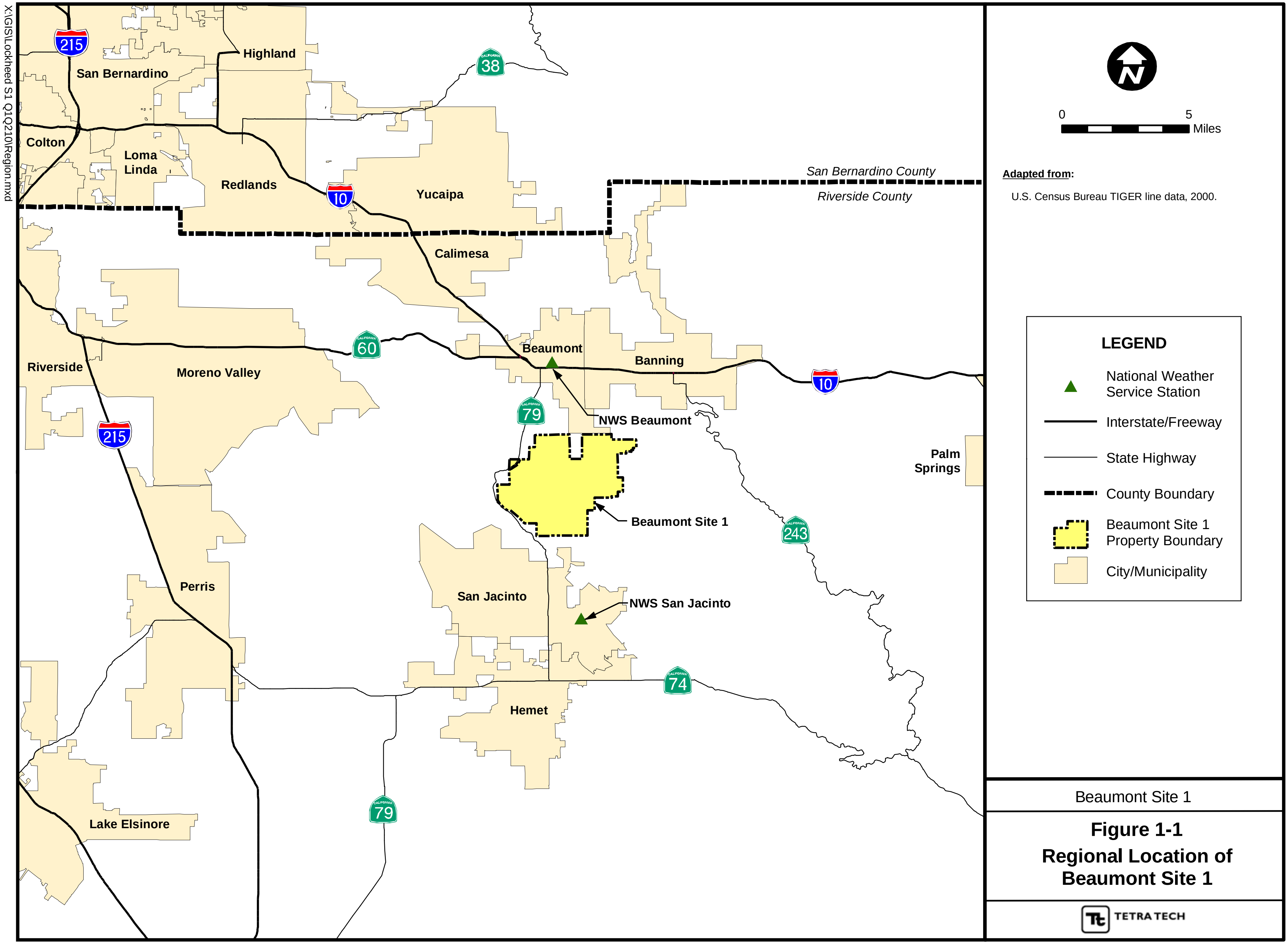
Between 1970 and 1972, Aerojet leased an area (referred to as the Eastern Aerojet Range) along the eastern portion of the Site. The Eastern Aerojet Range was used periodically for ballistics research and development experimentation on several types of 30-millimeter projectiles. Avanti, a highly classified project, utilized the land directly east of the Eastern Aerojet Range, including several U-shaped revetments for the storage of explosive materials and rocket motors. Due to its classified status, the purpose of the Avanti project and its operational procedures are unknown (Radian, 1986).

Historical Operational Area B – Rocket Motor Production Area

The Rocket Motor Production Area (RMPA), also known as the Propellant Mixing Area, was used for the processing and mixing of rocket motor solid propellants. The rocket motor production process consisted of: 1) a fuel slurry station, 2) a mixing station, and 3) a cast and curing station.

If a defect was found in the solid propellant mix, the rocket motor was scrapped. The solid propellant was removed from the casings by water jetting at the motor washout located south of the mixing station (Radian, 1986).

In 1973, an area east of the mixing station, known as the blue motor burn pit, was utilized for the destruction of four motors, which included a motor with “Maloy blue” solid propellant (Radian, 1986).



Beaumont Site 1

Figure 1-1
Regional Location of Beaumont Site 1

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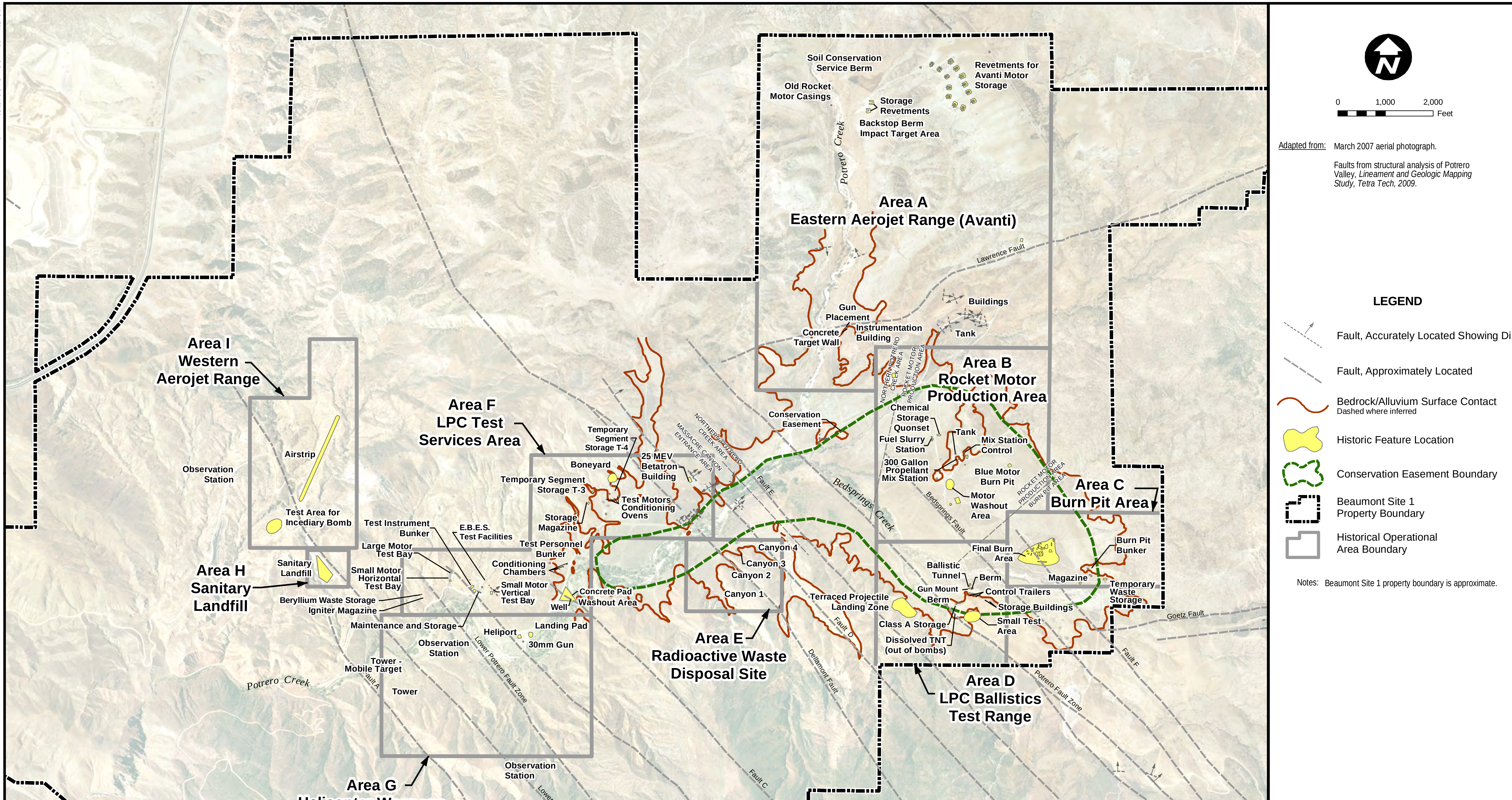

Beaumont Site 1

Figure 1-2
Historical Operational Areas, Site Features, and Conservation Easement

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Historical Operational Area C – Burn Pit Area

The BPA consisted of three primary features: 1) the chemical storage area, 2) burn pits, and 3) the beryllium test stand. Hazardous wastes generated at the Site were stored in 55-gallon drums on a concrete pad east of the burn pits at the chemical storage area until enough material was generated for a burning event. The hazardous materials burned in the pits included: ammonium perchlorate, wet propellant from motor washout, dry propellant, batches of out-of-specification propellant, various kinds of adhesives, resin curatives such as polybutadiene acrylonitrile/acrylic acid copolymer, burn rate modifiers such as ferrocene, pyrotechnic and ignition components, packaging materials (e.g., metal drums, plastic bags, and paper drums), and solvents (Radian, 1986).

On the south side of the bedrock outcrop where the burn pit instrumentation bunker was located, there was a one-time firing of small beryllium research motors.

Historical Operational Area D – LPC Ballistics Test Range

The LPC Ballistics Test Range facilities included gun mounts, a ballistic tunnel, and storage buildings and trailers. Guns were tested by firing through the tunnel toward a terraced hill. Live rounds were not used although projectiles were often specially shaped and weighted to simulate actual live rounds (Radian, 1986). Another major project conducted in this area was experimentation on a rocket-assisted projectile to test penetration capability. Additional experiments included impact testing of various motors and pieces of equipment (Radian, 1986).

Class A explosives were reportedly stored in two or three 10-foot by 10-foot buildings located behind a berm. A small canyon behind the hill to the south of the former storage buildings was reportedly used as a small test area for incendiary bombs. An incendiary bomb was detonated in the center of drums containing various types of fuel (e.g., jet fuel, gasoline, and diesel) set in circles of different radii to observe shrapnel and penetration patterns. This test may have been conducted in Area I. At a small area near the bend in the road, acetone was used to dissolve 2,4,6-trinitrotoluene (TNT) out of projectiles before they were fired (Radian, 1986).

Historical Operational Area E – Radioactive Waste Disposal Site

During 1971, low-level radioactive waste was buried in one of four canyons southeast of the LPC test services area as reported by former site employees. In 1990, the radioactive waste was located and removed. The analytical results indicated that detected radiation levels were within the range of naturally occurring levels (Radian, 1990). Maps from the removal action report suggest the waste was removed from Canyon 2.

Historical Operational Area F – LPC Test Services Area

The LPC Test Services Area included the following features: 1) three bays for structural load tests, 2) a 13-foot-diameter spherical pressure vessel, 3) six temperature conditioning chambers, 4) four environmental chambers, 5) a 25-million electron volt (MeV) Betatron for X-raying large structures, 6) personnel and instrumentation protection bunkers, and 7) supporting workshops and storage areas (Radian, 1986).

If defects were identified during the integrity and environmental testing activities, the rocket motors were taken to a secondary washout area located south of the conditioning chambers adjacent to Potrero Creek (Radian, 1986).

Rocket motor structural load testing under static and captive firing conditions occurred at the LPC test bays. During several of the initial tests conducted at Bay 309, the readied motor exploded instead of firing (Radian, 1986).

Historical Operational Area G – Helicopter Weapons Test Area

The helicopter weapons test area was used to develop equipment for handling helicopter weapons systems. The facilities within this area included a hanger (Building 302), helicopter landing pad, stationary ground mounted gun platforms, and a mobile target suspended between towers. The primary project at this test area was testing of both stationary guns and guns mounted on helicopters. Experimentation also was performed on the solid propellant portion of an armor-piercing round. The majority of rounds were fired into the side of the creek wash, about 100 yards to the south of the hanger. A longer impact area labeled with distance markers was located in the canyon to the south of the wash. Projectiles were steel only; warheads were not used during tests at this facility (Tetra Tech, 2003a).

Historical Operational Area H – Sanitary Landfill

A permitted sanitary landfill was located along the western side of the Site. The permit for the landfill authorized LPC to dispose of trash such as paper, scrap metal, concrete, and wood generated during routine daily operations. Lockheed policy strictly dictated that hazardous materials were not to be disposed of at this landfill. The trenches were later covered and leveled, with only an occasional tire, metal scrap, or piece of wood remaining on the surface (Tetra Tech, 2003a).

Historical Operational Area I – Western Aerojet Range

Between 1970 and 1972, Aerojet leased an area (referred to as the Western Aerojet Range) along the western portion of the Site. LPC conducted an incendiary test with a 500-pound bomb at the southwest end of the Western Aerojet Range. This test was reportedly similar to testing performed at the LPC Ballistics Test Area. According to a historical report prepared by Radian Corporation, Inc. in 1986, the Western Aerojet Range was originally leveled to be used as an airstrip (Radian, 1986). Based on employee interviews, the airstrip may have been used only on one occasion (Tetra Tech, 2003a). During Munitions and Explosives of Concern (MEC) investigations performed in 2006 it was discovered that inert 27.5 millimeter projectiles were tested in this area.

Post LPC and Aerojet Facility Usage

LMC leased portions of the Site to several outside parties for use in various activities (Radian, 1986; Tetra Tech, 2003a). The International Union of Operating Engineers (IUOE) utilized the Site from 1971 through 1991 for surveying and heavy equipment training. The main office of the IUOE was formerly located within Bunker 304 of Historical Operational Area F (LPC Test Services Area). The IUOE earth-moving activities involved maintaining roads and reshaping various parts of the Site, primarily within Historical Operational Areas F and G.

On several occasions, General Dynamics utilized Historical Operational Area B (RMPA) for testing activities (Radian, 1986). In 1983 and 1984, General Dynamics conducted weapons testing of a Viper Bazooka and Phalanx Gatling gun.

Structural Composites used the steep terrain of the Site for vehicle rollover tests on a number of occasions. Structural Composites also conducted heat and puncture tests on pressurized fiberglass and plastic reinforced cylinders. The tests involved shooting a single 30-caliber round at the cylinders and recording the results (Radian, 1986).

SECTION 2 SUMMARY OF MONITORING ACTIVITIES

Section 2 summarizes the First Quarter 2010 and Second Quarter 2010 groundwater monitoring events conducted at the Site. The results from these monitoring events are discussed in Section 3.

2.1 GROUNDWATER LEVEL MEASUREMENTS

Groundwater level measurements are collected at the Site on a quarterly basis from all available wells. Water level measurements for 170 wells were proposed for the First Quarter 2010 and Second Quarter 2010. The First Quarter 2010 groundwater level measurements were collected from 169 of the Site's wells between March 24 and March 26, 2010. The Second Quarter 2010 groundwater level measurements were collected from 169 of the Site's wells between May 13, and May 17, 2010. Copies of field data sheets from the water quality monitoring events are presented in Appendix B. A summary of well construction details is presented in Appendix C.

In order to correlate observed changes in groundwater levels with local precipitation, precipitation data is collected from the local weather station in Beaumont. Between December 2009 (Fourth Quarter 2009) and March 2010 (First Quarter 2010), the Beaumont National Weather Service (NWS) station reported approximately 8.49 inches of precipitation. Between March 2010 (First Quarter 2010) and June 2010 (Second Quarter 2010), the Beaumont NWS reported approximately 1.65 inches of precipitation.

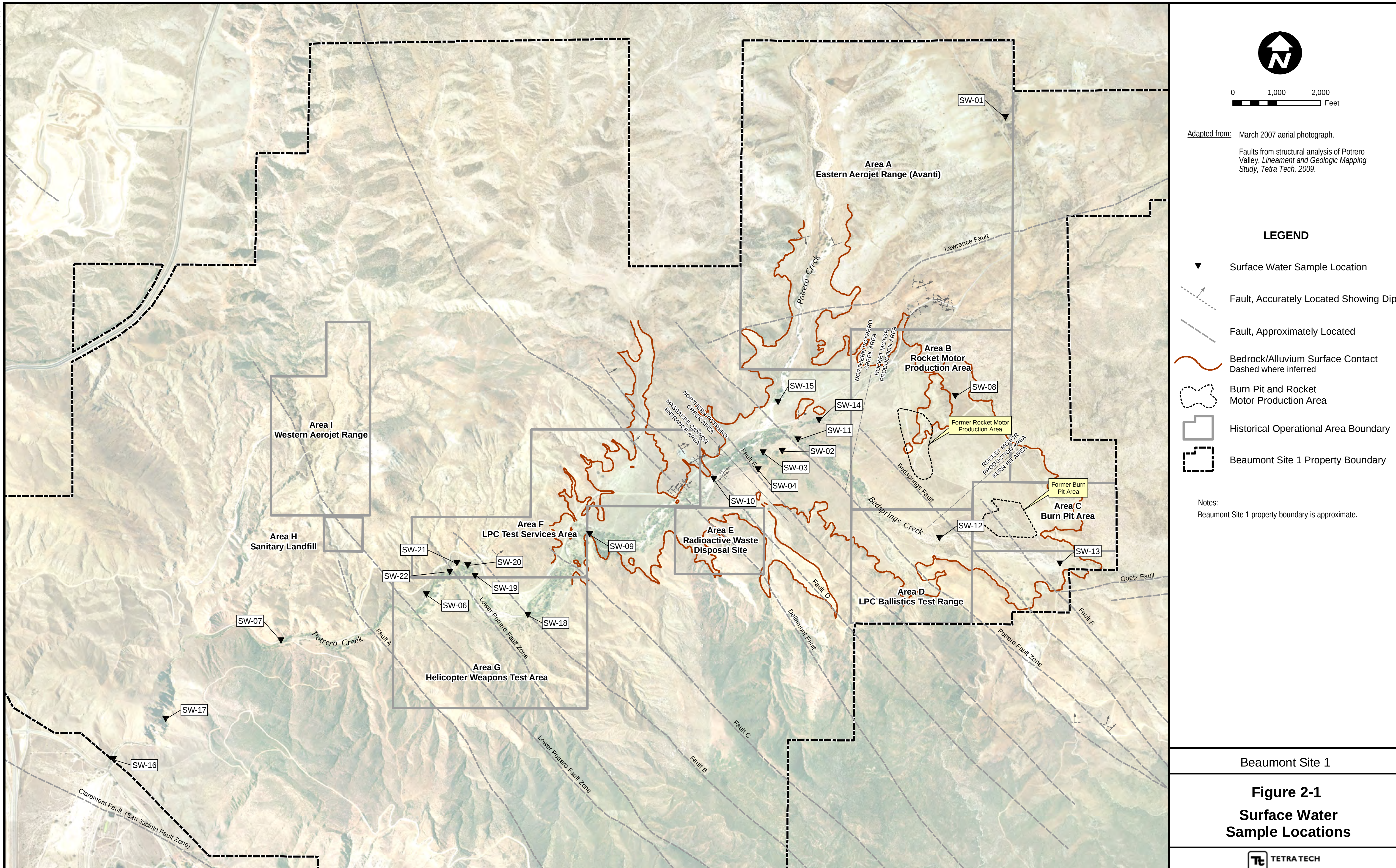
2.2 SURFACE WATER FLOW

The Site is primarily drained by Potrero Creek, an ephemeral stream which follows the valley from north to south before turning southwest to pass through Massacre Canyon toward its convergence with the San Jacinto River. Potrero Creek is fed by local tributary drainage and stormwater runoff from the city of Beaumont as well as other ephemeral streams in the southern and eastern portions of the Site. The largest of the tributary drainages is Bedsprings Creek, which is located southwest of the former RMPA and former BPA. In general, creeks are dry except during and immediately after periods of rainfall. However, springs and seeps occur in and adjacent to Potrero Creek in the western portion of the Site. Surface water flow is not continuous through most of Potrero Valley. In Massacre Canyon, while perennial surface water flow is present, during dryer periods surface water flow becomes limited to two reaches, 50 to 100 feet in length, along the western portion of the Northern Potrero Creek Area (NPCA). In general, creeks are dry except during and immediately after periods of heavy rainfall. The areas within Potrero and Bedsprings Creek where surface water was present were mapped during the First Quarter 2010 and Second Quarter 2010 groundwater monitoring events. The four previously identified fixed locations were checked for flowing water and, if present, the flow rate and volume were determined through field observation and measurements.

2.3 GROUNDWATER AND SURFACE WATER SAMPLING

The frequency of groundwater monitoring is dependent on the monitoring well's classification within the network and intended purpose. Groundwater is sampled as frequently as quarterly and surface water samples are collected semiannually. The First Quarter 2010 monitoring event consisted of water level monitoring, surface water sampling during a storm event, the quarterly sampling of newly installed wells, and natural attenuation sampling of the Large Motor Washout Area (F-33) monitoring wells. The Second Quarter 2010 monitoring event consisted of water level monitoring, surface water sampling, the quarterly sampling of newly installed wells, the semiannual sampling of increasing contaminant trend wells and guard wells, the annual sampling of plume monitoring and select special study wells, and the biennial sampling of vertical distribution wells. Tables 2-1 and 2-2 lists the locations sampled during the First Quarter 2010 and Second Quarter 2010 monitoring events, respectively. The tables summarize analytical methods, sampling dates, Quality Assurance/Quality Control (QA/QC) samples collected, and field notes. Surface water samples are collected from 17 fixed locations. One designated alternate surface water location is sampled if flowing water is not encountered at the southern end of Massacre Canyon at Gilman Hot Springs Road (Figure 2-1). Storm event surface water samples are collected from 12 fixed locations.

Because of the ephemeral nature of the streams on the Site, certain locations are generally sampled only during or shortly after periods of precipitation. Sampling, analytical, and QA/QC procedures for the monitoring events are described in the Site 1 Revised Groundwater Sampling and Analysis Plan (Tetra Tech, Inc., 2003b) (SAP).



Beaumont Site 1

Figure 2-1
Surface Water Sample Locations

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2.3.1 Proposed and Actual Surface Water and Well Locations Sampled

For the First Quarter 2010 monitoring event, a total of 26 sampling locations (12 surface water, and 13 monitoring wells) were proposed for water quality monitoring. Seven proposed surface water sample locations, SW-06, SW-07, SW-09, SW-10, SW-11, SW-18, and SW-19, were not accessible due to safety concerns regarding the high water at the Potrero Creek road crossing and were not sampled. Therefore, water quality data was collected from five surface water and 13 monitoring wells locations. Figure 2-2 presents groundwater and surface water locations sampled for the First Quarter 2010 monitoring event

For the Second Quarter 2010 monitoring event, a total of 143 sampling locations (17 surface water, one alternate surface water, 121 monitoring wells, and four private production wells) were proposed for water quality monitoring. One proposed monitoring well location, MW-71B, and eight proposed surface water sample locations, SW-08, SW-09, SW-10, SW-11, SW-12, SW-13, SW-14, and SW-15, were not sampled because the locations were dry. SW-16 was sampled so SW-17, an alternate surface water location sampled when SW-16 is dry, was not sampled. Therefore, water quality data was collected from nine surface water, 120 monitoring wells locations, and four private production wells. Figure 2-3 presents groundwater and surface water locations sampled for the Second Quarter 2010 monitoring event.

Table 2-1 Sampling Schedule - First Quarter 2010

Monitoring Well or Storm Water Location	Sample Date	VOCs (1)	1,4-Dioxane (2)	Per chlorate (3)	Natural Attenuation Parameters (4)	Comments and QA / QC Samples
SW-06	NA	-	-	-	-	Unable to access location
SW-07	NA	-	-	-	-	Unable to access location
SW-09	NA	-	-	-	-	Unable to access location
SW-10	NA	-	-	-	-	Unable to access location
SW-11	NA	-	-	-	-	Unable to access location
SW-12	01/21/10	X	X	X	X	SW of Burn Pit at road crossing
SW-13	01/21/10	X	X	X	X	SE of Burn Pit at road crossing
SW-14	01/21/10	X	X	X	X	North of MW-42 in unnamed drainage, Duplicate SW-14-Dup
SW-15	01/21/10	X	X	X	X	North of main river crossing of Potrero Creek
SW-16	01/21/10	X	X	X	X	Gillman Hot Srpings Road (former Last Surface Water)
SW-18	NA	-	-	-	-	Unable to access location
SW-19	NA	-	-	-	-	Unable to access location
EW-15	04/01/10	X	X	X	-	Sample with Portable Bladder Pump
F33-TW2	03/31/10	X	X	X	X	Sample with Peristaltic Pump, MS/MSD
F33-TW3	03/31/10	X	X	X	X	Sample with Peristaltic Pump
F33-TW6	03/31/10	X	X	X	X	Sample with Peristaltic Pump
F33-TW7	03/31/10	X	X	X	X	Sample with Peristaltic Pump
MW-70	03/30/10	X	X	X	X	Sample with Dedicated Pump
MW-82	03/30/10	X	X	X	X	Sample with Dedicated Pump, Duplicate MW-82-Dup
MW-83	03/30/10	X	X	X	X	Sample with Dedicated Pump
MW-100	03/29/10	X	X	X	-	Sample with Dedicated Pump
MW-101	03/29/10	X	X	X	-	Sample with Dedicated Pump, Duplicate MW-101-Dup
MW-102	03/29/10	X	X	X	-	Sample with Dedicated Pump
P-06S	04/01/10	X	X	X	-	Sample with Portable Bladder Pump
P-06D	04/01/10	X	X	X	-	Sample with Portable Bladder Pump

Total Sample Locations: 26
Total Samples Collected: 18

Notes:

(1) - Volatile organic compounds (VOCs) analyzed by EPA Method 8260 B.
(2) - 1,4 - Dioxane analyzed by EPA Method 8270C SIM .
(3) - Perchlorate analyzed by EPA Method 332.0.
(4) - Natural attenuation parameters by various methods
MS / MSD - Matrix Spike / Matrix Spike Duplicate.
NA - Not available.

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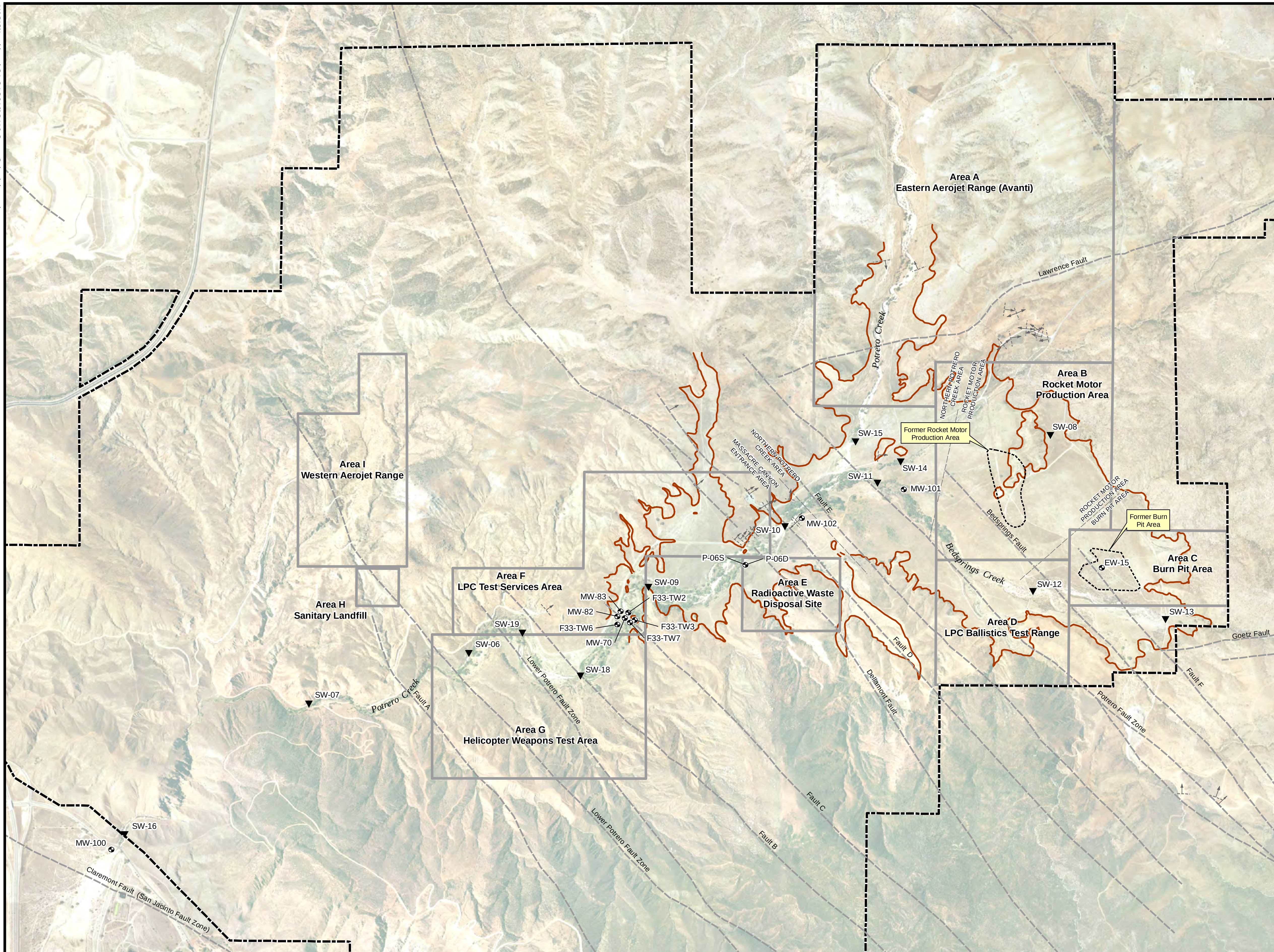

N

0 1,000 2,000
Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Sampled Well (First Quarter 2010)
- Surface Water Sample Location (First Quarter 2010)
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Bedrock/Alluvium Surface Contact, Dashed where inferred
- Burn Pit and Rocket Motor Production Area
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Notes:

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 2-2
First Quarter (March) 2010
Sample Locations

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Table 2-2 Sampling Schedule - Second Quarter 2010

Monitoring Well or Surface Water Location	Sample Date	VOCs (1)	VOCs (2)	1,4-Dioxane (3)	Per chlorate (4)	Lead (5)	Natural Attenuation Parameters (6)	Expanded Natural Attenuation Parameters (7)	Comments and QA / QC Samples
SW-01	05/11/10	X	-	X	X	-	-	-	Pond near main gate
SW-02	05/11/10	X	-	X	X	-	-	-	South of OW-02, upper pond #1
SW-03	05/11/10	X	-	X	X	-	-	-	Upper Pond #2, Duplicate
SW-04	05/11/10	X	-	X	X	-	-	-	South of MW-43/MW-45, upper pond #3
SW-06	05/11/10	X	-	X	X	-	-	-	Near prior S-3 in sandstone canyon
SW-07	05/11/10	X	-	X	X	-	-	-	Near MW-67
SW-08	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-09	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-10	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-11	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-12	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-13	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-14	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-15	NA	-	-	-	-	-	-	-	Dry, no sample collected.
SW-16	05/11/10	X	-	X	X	-	-	-	Gillman Hot Springs Road (former Last Surface Water)
SW-17	NA	-	-	-	-	-	-	-	Sample only if SW-16 is dry
SW-18	05/12/10	X	-	X	X	-	-	-	Near MW-77A/B in Potrero Creek
SW-19	05/11/10	X	-	X	X	-	-	-	West of F34-TW1 in Potrero Creek
PPW-1	05/04/10	-	X	X	X	-	-	-	Private Production Well
PPW-2	05/04/10	-	X	X	X	-	-	-	Private Production Well, MS/MSD
PPW-3	05/04/10	-	X	X	X	-	-	-	Private Production Well, Duplicate
PPW-4	5/14/10	-	X	X	X	-	-	-	Private Production Well, Unable to access
EW-13	06/18/10	X	-	X	X	-	-	X	Sample with Portable Bladder Pump
EW-15	06/18/10	X	-	X	X	-	-	X	Sample with Portable Bladder Pump
F33-TW2	05/06/10	X	-	X	X	-	X	-	Sample with Peristaltic Pump, MS/MSD
F33-TW2	06/11/10	-	-	-	-	-	-	X	Sample with Peristaltic Pump
F33-TW3	05/06/10	X	-	X	X	-	X	-	Sample with Peristaltic Pump
F33-TW3	06/11/10	-	-	-	-	-	-	X	Sample with Peristaltic Pump
F33-TW6	05/06/10	X	-	X	X	-	X	-	Sample with Peristaltic Pump
F33-TW6	06/10/10	-	-	-	-	-	-	X	Sample with Peristaltic Pump
F33-TW7	05/07/10	X	-	X	X	-	X	-	Sample with Peristaltic Pump
F33-TW7	06/10/10	-	-	-	-	-	-	X	Sample with Peristaltic Pump
F34-TW1	06/11/10	X	-	X	X	-	-	X	Sample with Peristaltic Pump, MS/MSD
IW-04	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-01	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-02	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, Duplicate
MW-03	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-05	06/15/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-06	06/15/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-07	06/15/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, Duplicate
MW-08	06/15/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, Duplicate
MW-09	06/15/10	X	-	X	X	-	-	X	Sample with Peristaltic Pump
MW-11	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-12	06/17/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-13	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, MS/MSD
MW-14	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-15	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-17	06/17/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-18	05/05/10	X	-	X	X	-	X	-	Sample with Dedicated Pump
MW-18	06/14/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-19	06/17/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-22	06/18/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-23	06/18/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-26	06/15/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-27	06/21/10	X	-	X	X	-	-	X	Sample with Portable Bladder Pump
MW-28	06/15/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-29	06/17/10	X	-	X	X	-	-	X	Sample with Portable Bladder Pump
MW-31	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-32	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-34	06/17/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-35	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-36	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, MS/MSD
MW-40	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-43	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-45	06/15/10	X	-	X	X	-	-	X	Sample with Peristaltic Pump, Duplicate
MW-46	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-47	06/16/10	X	-	X	X	-	-	X	Sample with Peristaltic Pump
MW-48	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-49	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-53	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-54	06/18/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-55	06/15/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, Duplicate
MW-56A	06/03/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-56B	06/03/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-56C	06/03/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, Duplicate
MW-59A	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-59B	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-59D	06/10/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-60A	06/08/10	X	-	X	X	X	-	X	Sample with Dedicated Pump, MS/MSD, Duplicate
MW-60B	06/08/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-61A	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump

Total Sample Locations: 162
Total Samples Collected: 151

Notes:
(shaded) Well not sampled or surface water sample not collected.
(1) - Volatile organic compounds (VOCs) analyzed by EPA Method 8260 B.
(2) - Volatile organic compounds (VOCs) analyzed by EPA Method 524.2.
(3) - 1,4 - Dioxane analyzed by EPA Method 8270C SIM .
(4) - Perchlorate analyzed by EPA Method 332.0
(5) - Lead analyzed by EPA Method 6010.
(6) - Natural attenuation parameters by various methods
(7) - Expanded natural attenuation parameters by various methods
MS / MSD - Matrix Spike / Matrix Spike Duplicate.
NA - Not available.

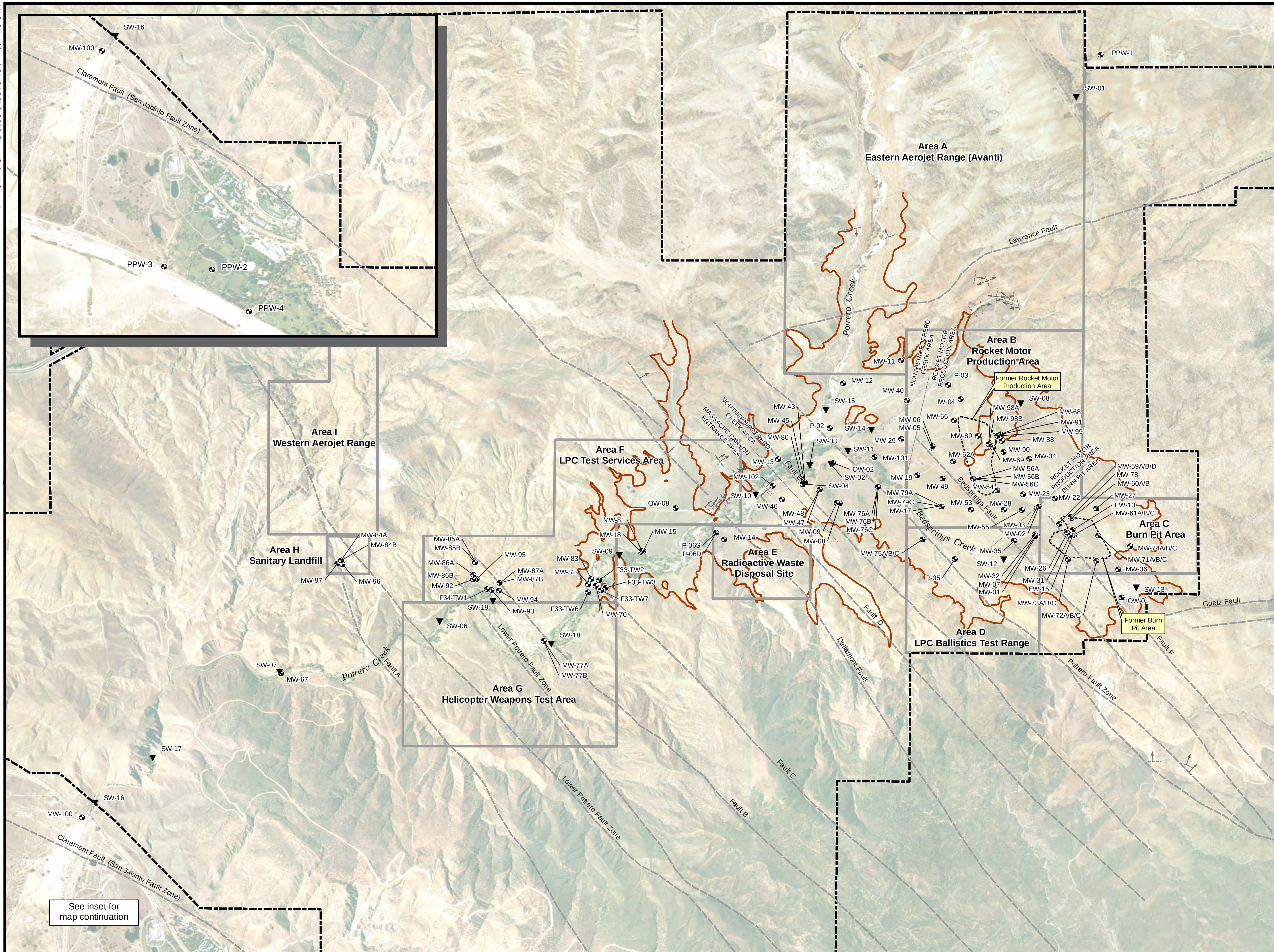
Table 2-2 Sampling Schedule – Second Quarter 2010 (continued)

Monitoring Well or Surface Water Location	Sample Date	VOCs (1)	VOCs (2)	1,4-Dioxane (3)	Per chlorate (4)	Lead (5)	Natural Attenuation Parameters (6)	Expanded Natural Attenuation Parameters (7)	Comments and QA / QC Samples
MW-61B	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, Duplicate
MW-61C	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-62A	06/17/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-66	06/17/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-67	05/07/10	X	-	X	X	-	X	-	Sample with Dedicated Pump
MW-67	06/14/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-68	06/17/10	X	-	X	X	-	-	X	Sample with Portable Bladder Pump
MW-69	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-70	05/05/10	X	-	X	X	-	X	-	Sample with Dedicated Pump
MW-70	06/10/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-71A	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-71B	NA	-	-	-	-	-	-	-	Dry
MW-71C	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-72A	06/04/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-72B	06/04/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-72C	06/04/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-73A	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-73B	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-73C	06/08/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-74A	06/04/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-74B	06/04/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-74C	06/04/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-75A	06/02/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-75B	06/02/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-75C	06/02/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-76A	06/03/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-76B	06/03/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-76C	06/03/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-77A	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump
MW-77A	06/09/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-77B	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump
MW-77B	06/09/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-78	06/08/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-79A	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-79C	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-80	06/15/10	X	-	X	X	-	-	X	Sample with Peristaltic Pump
MW-81	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-82	05/06/10	X	-	X	X	-	X	-	Sample with Dedicated Pump
MW-82	06/10/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-83	05/05/10	X	-	X	X	-	X	-	Sample with Dedicated Pump
MW-83	06/10/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-84A	06/11/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-84B	06/11/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-85A	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump
MW-85A	06/09/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-85B	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump
MW-85B	06/08/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-86A	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump
MW-86A	06/08/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-86B	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump, Duplicate
MW-86B	06/08/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-87A	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump
MW-87A	06/08/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-87B	05/12/10	X	-	X	X	-	-	-	Sample with Dedicated Pump
MW-87B	06/08/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-88	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-89	06/17/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-90	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-91	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-92	06/11/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-93	06/11/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-94	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-95	06/11/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-96	06/11/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-97	06/11/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-98A	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-98B	06/07/10	X	-	X	X	-	-	X	Sample with Dedicated Pump, Duplicate
MW-99	06/09/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-100	06/02/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
MW-101	05/07/10	X	-	X	X	-	X	-	Sample with Dedicated Pump, Duplicate
MW-101	06/10/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
MW-102	05/07/10	X	-	X	X	-	X	-	Sample with Dedicated Pump
MW-102	06/16/10	-	-	-	-	-	-	X	Sample with Dedicated Pump
OW-01	06/18/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
OW-02	06/15/10	X	-	X	X	-	-	X	Sample with Peristaltic Pump, Duplicate
OW-08	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
P-02	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
P-03	06/14/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
P-05	06/16/10	X	-	X	X	-	-	X	Sample with Dedicated Pump
P-06D	06/17/10	X	-	X	X	-	-	X	Sample with Portable Bladder Pump, MS/MSD, Duplicate
P-06S	06/17/10	X	-	X	X	-	-	X	Sample with Portable Bladder Pump

Total Sample Locations: 162
Total Samples Collected: 151

Notes:

(shaded) - Well not sampled or surface water sample not collected.
(1) - Volatile organic compounds (VOCs) analyzed by EPA Method 8260 B.
(2) - Volatile organic compounds (VOCs) analyzed by EPA Method 524.2.
(3) - 1,4 - Dioxane analyzed by EPA Method 8270C SIM .
(4) - Perchlorate analyzed by EPA Method 332.0
(5) - Lead analyzed by EPA Method 6010.
(6) - Natural attenuation parameters by various methods
(7) - Expanded natural attenuation parameters by various methods
MS / MSD - Matrix Spike / Matrix Spike Duplicate.
NA - Not available.



0 1,000 2,000
Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Sampled Well (Second Quarter 2010)
- Surface Water Sample Location (Second Quarter 2010)
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Bedrock/Alluvium Surface Contact
  Dashed where inferred
- Burn Pit and Rocket Motor Production Area
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Note:

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 2-3
Second Quarter (June) 2010
Sample Locations

TETRA TECH

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2.3.2 Field Sampling Procedures

The following water quality field parameters were measured and recorded on field data sheets (Appendix B) during well purging activities: water level, temperature, pH, electrical conductivity (EC), turbidity, oxidation reduction potential (ORP), and dissolved oxygen (DO). Groundwater samples were collected from monitoring wells by low-flow purging and sampling through dedicated double valve pumps, a portable bladder pump, or a peristaltic pump.

Collection of water quality parameters was initiated when at least one discharge hose / pump volume had been removed and purging was considered complete when the above parameters had stabilized, or the well was purged dry (evacuated). Stabilization of water quality parameters were used as an indication that representative formation water had entered the well and was being purged. The criteria for stabilization of these parameters are as follows: water level ± 0.1 foot, pH ± 0.1, EC ± 3%, turbidity < 10 nephelometric turbidity units (NTUs) (if > 10 NTUs ± 10%), DO ± 0.3 milligrams per liter (mg/L) and ORP ± 10 millivolts (mV). Sampling instruments and equipment were maintained, calibrated, and operated in accordance with the manufacturer's specifications, guidelines, and recommendations. If a well was purged dry, the well was sampled with a disposable bailer after sufficient recharge had taken place to allow sample collection.

Groundwater samples were collected in order of decreasing volatilization potential and placed in appropriate containers. A sample identification label was affixed to each sample container and sample custody was maintained by chain-of-custody record. Groundwater samples collected were chilled and transported to a state accredited analytical laboratory, via courier, thus maintaining proper temperatures and sample integrity. Trip blanks (LTBs) were collected for the monitoring events to assess cross-contamination potential of water samples while in transit. Equipment blanks (LEBs) were collected when sampling with non-dedicated equipment to assess cross-contamination potential of water samples via sampling equipment.

Surface water sampling locations were previously located using a global positioning satellite (GPS) system and marked in the field. Surface water samples were collected at previously GPS mapped locations using either a disposable bailer and transferred to the laboratory supplied water sample containers or the water sample was collected directly in the laboratory supplied water sample containers. Temperature, pH, EC, turbidity, ORP, and DO were measured and recorded on field data sheets at surface water sampling locations.

2.4 ANALYTICAL DATA QA/QC

The samples were tested using approved United States Environmental Protection Agency (EPA) methods. Since the analytical data were obtained by following EPA approved method criteria, the data were evaluated by using the EPA approved validation methods described in the National Functional Guidelines (EPA, 1999 and 2004). The National Functional Guidelines contain instructions on method required quality control parameters and on how to interpret these parameters to confer validation to environmental data results.

Quality control parameters used in validating data results include: holding times, field blanks, laboratory control samples, method blanks, duplicate environmental samples, spiked samples, and surrogate and spike recovery data.

2.5 HABITAT CONSERVATION

All monitoring activities were performed in accordance with the U.S. Fish and Wildlife Service approved Habitat Conservation Plan (HCP) [USFWS, 2005] and subsequent clarifications (LMC, 2006a and 2006b) of the HCP. Groundwater sampling activities were conducted with light duty vehicles and were supervised by a USFWS approved biologist as specified in the Low Effect HCP.

SECTION 3 GROUNDWATER MONITORING RESULTS

Section 3 presents the results and interpretations of the First Quarter 2010 and Second Quarter 2010 groundwater monitoring events. The following subsections include tabulated summaries of groundwater elevation and water quality data contour maps, and primary COPC analyte results. Plots of groundwater elevation versus time (hydrographs) and concentration versus time (time series graphs) for primary and secondary COPC analytes are presented in Appendices D and E, respectively.

3.1 GROUNDWATER ELEVATION

Groundwater elevations during the First Quarter 2010 and Second Quarter 2010 monitoring events ranged from approximately 2,149 feet mean sea level (msl) upgradient of the former BPA to approximately 1,795 feet msl in the Massacre Canyon Entrance Area (MCEA). A total of 170 monitoring wells were identified for groundwater level measurements for the First Quarter 2010 monitoring event and a total of 170 monitoring wells were identified for groundwater level measurements for the Second Quarter 2010 monitoring event. For the First Quarter 2010 monitoring event, three wells (OW-05, OW-06, and OW-07) were dry, and measurements from one well could not be collected due to an obstruction in its casing (EW-01). For the Second Quarter 2010 monitoring event, three wells were dry (OW-05, OW-06, and OW-07), and measurements from one well could not be collected due to an obstruction in its casing (EW-02). Monitoring wells that have previously been identified as artesian wells are fitted with pressure caps to prevent groundwater flow onto the ground surface and pressure gauges for measurement of shut-in head for calculation of static water level. Groundwater elevations for the First Quarter 2010 and Second Quarter 2010 monitoring events from wells screened in the alluvium and weathered Mount Eden formation are shown on Figures 3-1 and 3-2, respectively. A tabulated summary of groundwater elevations for all the wells measured during the First Quarter 2010 and Second Quarter 2010 monitoring events are presented in Table 3-1. Hydrographs for individual wells and well groups are presented in Appendix D.

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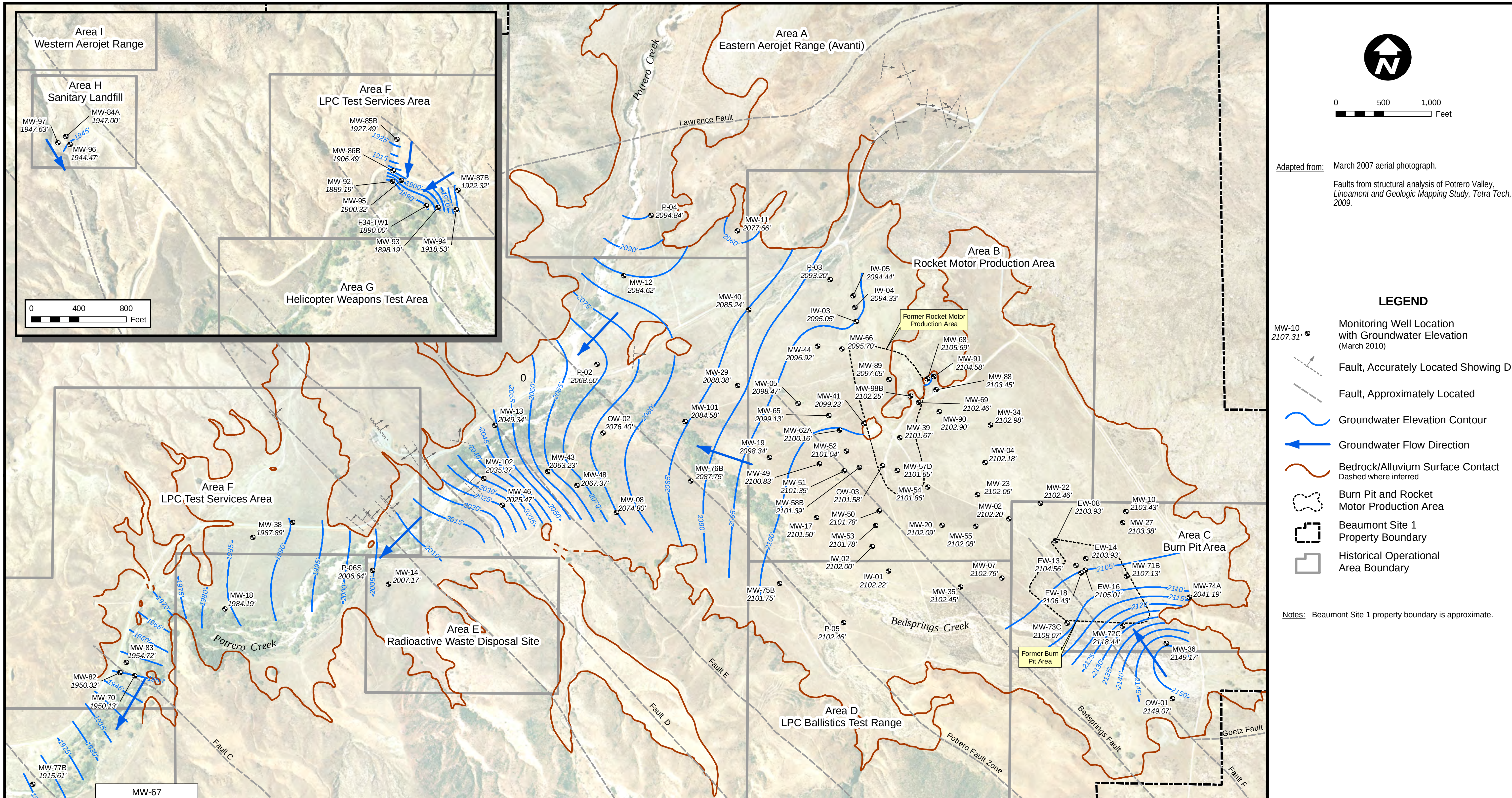

Beaumont Site 1

Figure 3-1
First Quarter (March) 2010 Groundwater Contours for Alluvium and Weathered Mount Eden Formation

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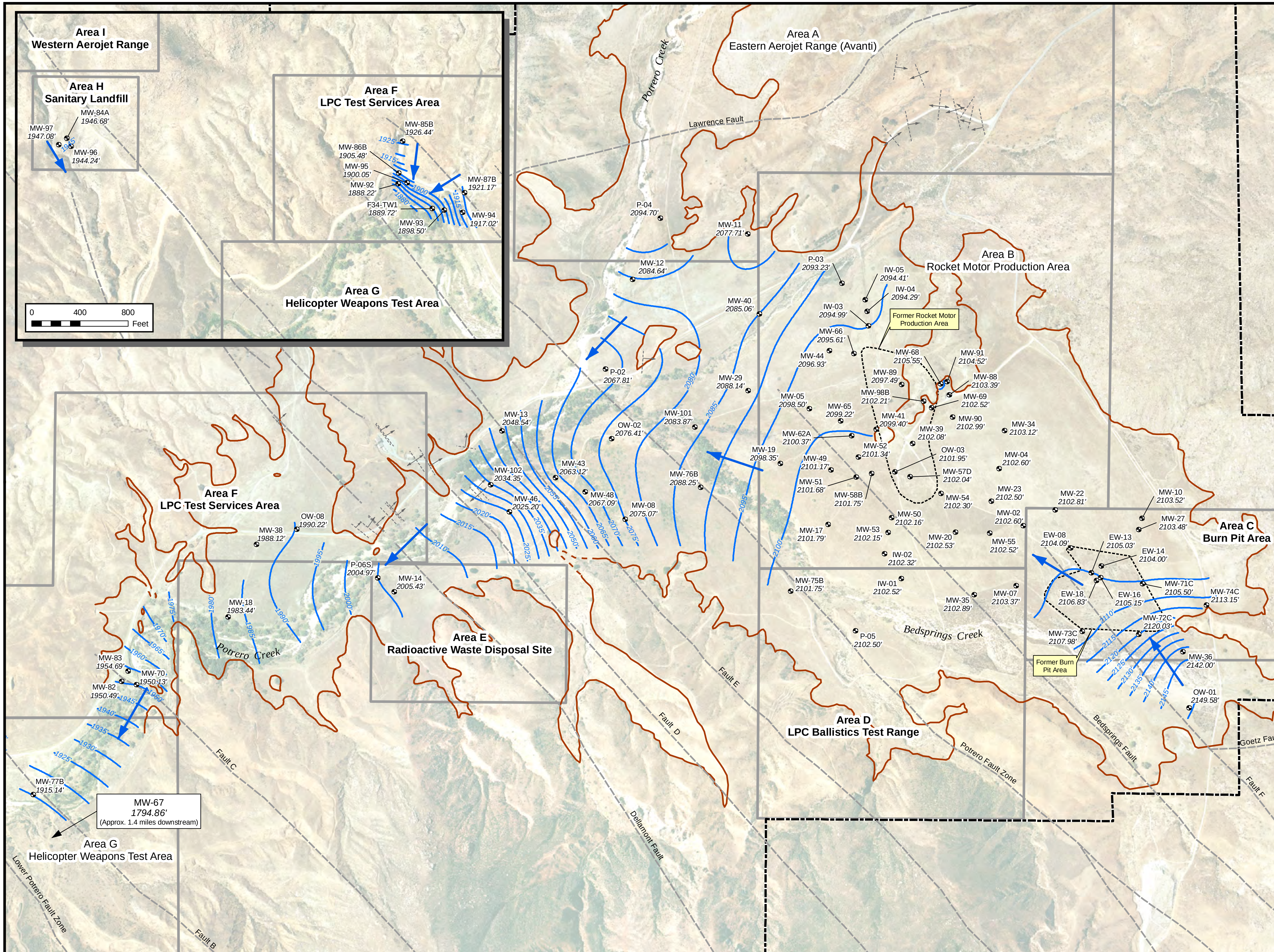


0 500 1,000 Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- MW-10 2107.31' — Monitoring Well Location with Groundwater Elevation (May 2010)
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Groundwater Elevation Contour
- Groundwater Flow Direction
- Bedrock/Alluvium Surface Contact (Dashed where inferred)
- Burn Pit and Rocket Motor Production Area
- Beaumont Site 1 Property Boundary
- Historical Operational Area Boundary

Note: Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-2
Second Quarter (May) 2010 Groundwater Contours for Alluvium and Weathered Mount Eden Formation

TETRA TECH

Table 3-1 Groundwater Elevation - First Quarter 2010 and Second Quarter 2010

Well ID	Site Area	Formation Screened	Measuring Point Elevation (feet msl)	March 2010 Groundwater Elevation Data				June 2010 Groundwater Elevation Data			
				Date Measured	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)	Groundwater Elevation Change from Second Quarter 2009	Date Measured	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)	Groundwater Elevation Change from Third Quarter 2010
EW-01	RMPA	QAL	2142.62	03/24/10	NA	NA	NA	05/17/10	40.73	2101.89	NA
EW-02	RMPA	QAL	2126.15	03/25/10	26.78	2099.37	-0.33	05/14/10	NA	NA	NA
EW-08	BPA	MEF	2178.40	03/25/10	74.47	2103.93	-1.12	05/13/10	74.31	2104.09	0.16
EW-09	BPA	MEF	2179.67	03/25/10	75.83	2103.84	-0.92	05/13/10	75.48	2104.19	0.35
EW-10	BPA	MEF	2180.19	03/25/10	76.25	2103.94	-1.05	05/13/10	76.00	2104.19	0.25
EW-11	BPA	MEF	2182.09	03/25/10	76.81	2105.28	-1.01	05/13/10	76.04	2106.05	0.77
EW-12	BPA	MEF	2183.28	03/25/10	79.31	2103.97	-1.06	05/13/10	79.11	2104.17	0.20
EW-13	BPA	MEF	2185.57	03/25/10	81.01	2104.56	-0.90	05/13/10	80.54	2105.03	0.47
EW-14	BPA	QAL/MEF	2184.59	03/26/10	80.66	2103.93	-1.03	05/13/10	80.59	2104.00	0.07
EW-15	BPA	MEF	2184.10	03/25/10	78.48	2105.62	NA	05/13/10	77.75	2106.35	NA
EW-16	BPA	MEF	2185.52	03/25/10	80.51	2105.01	-1.03	05/13/10	80.37	2105.15	0.14
EW-17	BPA	MEF	2179.15	03/25/10	75.20	2103.95	0.27	05/13/10	74.19	2104.96	1.01
EW-18	BPA	MEF	2184.98	03/25/10	78.55	2106.43	-0.62	05/13/10	78.15	2106.83	0.40
EW-19	MCEA	QAL	2033.89	03/26/10	28.21	2005.68	10.28	05/17/10	30.02	2003.87	-1.81
F33-TW2	NPCA	QAL	1959.75	03/26/10	3.87	1955.88	3.60	05/14/10	4.49	1955.26	-0.62
F33-TW3	NPCA	QAL	1955.79	03/26/10	4.45	1951.34	1.47	05/14/10	4.69	1951.10	-0.24
F33-TW6	NPCA	QAL	1950.62	03/26/10	4.72	1945.90	2.37	05/14/10	4.75	1945.87	-0.03
F33-TW7	NPCA	QAL	NA	03/26/10	6.41	NA	NA	05/14/10	6.47	NA	NA
F34-TW1	MCEA	QAL	1894.08	03/26/10	4.08	1890.00	1.92	05/14/10	4.36	1889.72	-0.28
IW-01	RMPA	QAL	2160.73	03/24/10	58.51	2102.22	0.24	05/17/10	58.21	2102.52	0.30
IW-02	RMPA	QAL	2155.01	03/24/10	53.01	2102.00	0.06	05/17/10	52.69	2102.32	0.32
IW-03	NPCA	QAL	2132.86	03/25/10	37.81	2095.05	-0.69	05/13/10	37.87	2094.99	-0.06
IW-04	NPCA	QAL	2135.09	03/25/10	40.76	2094.33	-0.97	05/13/10	40.80	2094.29	-0.04
IW-05	NPCA	QAL	2136.94	03/25/10	42.50	2094.44	-0.69	05/13/10	42.53	2094.41	-0.03
MW-01	RMPA	MEF	2176.98	03/25/10	74.30	2102.68	0.51	05/13/10	73.65	2103.33	0.65
MW-02	RMPA	MEF	2170.10	03/24/10	67.90	2102.20	-0.58	05/13/10	67.50	2102.60	0.40
MW-03	RMPA	MEF	2169.36	03/24/10	126.47	2042.89	-0.16	05/13/10	126.98	2042.38	-0.51
MW-04	RMPA	QAL	2160.02	03/24/10	57.84	2102.18	-0.63	05/13/10	57.42	2102.60	0.42
MW-05	RMPA	QAL	2121.40	03/25/10	22.93	2098.47	-0.50	05/13/10	22.90	2098.50	0.03
MW-06	RMPA	QAL	2121.76	03/25/10	25.67	2096.09	-0.09	05/14/10	25.64	2096.12	0.03
MW-07	BPA	QAL	2176.52	03/25/10	73.76	2102.76	0.48	05/13/10	73.15	2103.37	0.61
MW-08	NPCA	QAL	2090.53	03/26/10	15.73	2074.80	0.73	05/17/10	15.46	2075.07	0.27
MW-09	NPCA	QAL	2089.16	03/26/10	0.15 PSI	2089.51	2.56	05/17/10	0.10 PSI	2089.39	-0.12
MW-10	RMPA	QAL	2179.40	03/24/10	75.97	2103.43	-1.08	05/13/10	75.88	2103.52	0.09
MW-11	NPCA	QAL	2122.61	03/26/10	44.95	2077.66	-0.06	05/14/10	44.90	2077.71	0.05
MW-12	NPCA	QAL	2098.49	03/26/10	13.87	2084.62	8.20	05/14/10	13.85	2084.64	0.02
MW-13	NPCA	QAL	2057.89	03/26/10	8.55	2049.34	9.17	05/14/10	9.35	2048.54	-0.80
MW-14	MCEA	QAL	2029.67	03/26/10	22.50	2007.17	10.59	05/17/10	24.24	2005.43	-1.74
MW-15	MCEA	QAL	2009.76	03/26/10	24.38	1985.38	4.40	05/14/10	25.29	1984.47	-0.91
MW-17	RMPA	QAL	2140.40	03/24/10	38.90	2101.50	0.23	05/14/10	38.61	2101.79	0.29
MW-18	MCEA	QAL	2008.69	03/26/10	24.50	1984.19	4.03	05/14/10	25.25	1983.44	-0.75
MW-19	NPCA	QAL	2118.49	03/24/10	20.15	2098.34	0.63	05/14/10	20.14	2098.35	0.01
MW-20	RMPA	QAL	2162.03	03/24/10	59.94	2102.09	-0.10	05/13/10	59.50	2102.53	0.44
MW-22	RMPA	QAL	2173.48	03/24/10	71.02	2102.46	-0.81	05/13/10	70.67	2102.81	0.35
MW-23	RMPA	QAL	2165.02	03/24/10	62.96	2102.06	-0.34	05/13/10	62.52	2102.50	0.44
MW-26	BPA	MEF	2183.81	03/25/10	78.06	2105.75	0.89	05/13/10	77.01	2106.80	1.05
MW-27	BPA	QAL	2182.73	03/24/10	79.35	2103.38	-1.12	05/13/10	79.25	2103.48	0.10
MW-28	RMPA	QAL	2160.84	03/24/10	58.81	2102.03	-0.06	05/13/10	58.40	2102.44	0.41
MW-29	NPCA	MEF	2115.09	03/25/10	26.71	2088.38	0.31	05/14/10	26.95	2088.14	-0.24
MW-30	RMPA	QAL	2165.01	03/24/10	62.44	2102.57	-0.63	05/13/10	62.17	2102.84	0.27
MW-31	BPA	Granite	2186.52	03/25/10	94.04	2092.48	0.24	05/13/10	93.16	2093.36	0.88
MW-32	RMPA	Granite	2176.61	03/25/10	87.28	2089.33	0.37	05/13/10	86.58	2090.03	0.70
MW-34	RMPA	QAL	2153.80	03/24/10	50.82	2102.98	-0.83	05/13/10	50.68	2103.12	0.14
MW-35	RMPA	QAL	2170.98	03/25/10	68.53	2102.45	0.33	05/13/10	68.09	2102.89	0.44
MW-36	UG	QAL	2205.18	03/24/10	56.01	2149.17	25.91	05/13/10	63.18	2142.00	-7.17
MW-38	MCEA	MEF	2030.29	03/26/10	42.40	1987.89	3.31	05/14/10	42.17	1988.12	0.23
MW-39	RMPA	QAL	2144.18	03/24/10	42.51	2101.67	-0.47	05/13/10	42.10	2102.08	0.41
MW-40	NPCA	MEF	2126.39	03/26/10	41.15	2085.24	0.64	05/14/10	41.33	2085.06	-0.18
MW-41	RMPA	MEF	2133.95	03/25/10	34.72	2099.23	-0.64	05/17/10	34.55	2099.40	0.17
MW-43	NPCA	QAL	2068.58	03/26/10	5.35	2063.23	2.23	05/17/10	5.46	2063.12	-0.11
MW-44	NPCA	QAL	2128.69	03/25/10	31.77	2096.92	-0.56	05/17/10	31.76	2096.93	0.01
MW-45	MCEA	QAL	2068.18	03/26/10	Artesian 3.80 PSI	2076.95	3.00	05/17/10	3.80 PSI	2076.95	0.00
MW-46	MCEA	QAL	2072.17	03/26/10	46.70	2025.47	5.29	05/17/10	46.97	2025.20	-0.27
MW-47	NPCA	QAL	2076.67	03/26/10	Artesian 2.90 PSI	2083.36	1.62	05/17/10	3.00 PSI	2083.60	0.23
MW-48	NPCA	QAL	2076.44	03/26/10	9.07	2067.37	2.50	05/17/10	9.35	2067.09	-0.28
MW-49	RMPA	QAL	2130.92	03/24/10	30.09	2100.83	-0.15	05/17/10	29.75	2101.17	0.34
MW-50	RMPA	QAL	2151.43	03/24/10	49.65	2101.78	-0.08	05/17/10	49.27	2102.16	0.38
MW-51	RMPA	QAL	2138.36	03/24/10	37.01	2101.35	-0.56	05/17/10	36.68	2101.68	0.33
MW-52	RMPA	QAL	2136.18	03/25/10	35.14	2101.04	-0.25	05/17/10	34.84	2101.34	0.30
MW-53	RMPA	QAL	2153.29	03/24/10	51.51	2101.78	-0.11	05/17/10	51.14	2102.15	0.37
MW-54	RMPA	QAL	2153.44	03/24/10	51.58	2101.86	-0.25	05/13/10	51.14	2102.30	0.44
MW-55	RMPA	QAL	2166.66	03/24/10	64.58	2102.08	-0.26	05/13/10	64.14	2102.52	0.44
MW-56A	RMPA	MEF	2143.09	03/24/10	52.98	2090.11	0.00	05/17/10	52.72	2090.37	0.26
MW-56B	RMPA	QAL	2142.58	03/24/10	40.85	2101.73	-0.08	05/17/10	40.50	2102.08	0.35
MW-56C	RMPA	QAL	2142.77	03/24/10	41.30	2101.47	-0.28	05/17/10	40.94	2101.83	0.36
MW-56D	RMPA	QAL	2142.48	03/24/10	40.79	2101.69	-0.16	05/17/10	40.42	2102.06	0.37
MW-57A	RMPA	QAL	2145.98	03/24/10	44.18	2101.80	-0.17	05/17/10	43.80	2102.18	0.38
MW-57B	RMPA	QAL	2146.19	03/24/10	44.31	2101.88	-0.08	05/17/10	43.93	2102.26	0.38
MW-57C	RMPA	QAL	2146.02	03/24/10	44.18	2101.84	-0.20	05/17/10	43.79	2102.23	0.39
MW-57D	RMPA	QAL	2146.10	03/24/10	44.45	2101.65	-0.28	05/17/10	44.06	2102.04	0.39
MW-58A	RMPA	QAL	2140.73	03/24/10	39.31	2101.42	-0.07	05/17/10	38.96	2101.77	0.35
MW-58B	RMPA	QAL	2140.78	03/24/10	39.39	2101.39	-0.35	05/17/10	39.03	2101.75	0.36
MW-58C	RMPA	QAL	2141.02	03/24/10	39.65	2101.37	-0.22	05/17/10	39.31	2101.71	0.34
MW-58D	RMPA	QAL	2140.94	03/24/10	39.51	2101.43	-0.08	05/17/10	39.15	2101.79	0.36
MW-59A	BPA	MEF	2180.14	03/24/10	80.93	2099.21	-0.50	05/13/10	81.45	2098.69	-0.52

Notes:

BPA - Burn Pit Area.
MCEA - Massacre Canyon Entrance Area.
NPCA - Northern Protero Creek Area.
RMPA - Rocket Motor Production Area.
UG - Upgradient

DG - Downgradient
BTOC - Below top of casing.
msl - Mean sea level.
NA - Not available.
PSI - pounds per square inch

"-" Formation screened not defined.
QAL - Quaternary alluvium.
QAL/MEF - Quaternary alluvium / Mt Eden.
MEF - Mount Eden Formation.

Table 3-1 Groundwater Elevation - First Quarter 2010 and Second Quarter 2010 (continued)

Well ID	Site Area	Formation Screened	Measuring Point Elevation (feet msl)	March 2010 Groundwater Elevation Data				June 2010 Groundwater Elevation Data			
				Date Measured	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)	Groundwater Elevation Change from Second Quarter 2009	Date Measured	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)	Groundwater Elevation Change from Third Quarter 2010
MW-59B	BPA	MEF	2180.39	03/24/10	76.84	2103.55	-0.84	05/13/10	76.37	2104.02	0.47
MW-59C	BPA	MEF	2179.93	03/24/10	78.21	2101.72	-0.54	05/13/10	77.71	2102.22	0.50
MW-59D	BPA	MEF	2180.53	03/24/10	78.01	2102.52	-0.47	05/13/10	77.48	2103.05	0.53
MW-60A	BPA	MEF	2182.59	03/24/10	80.80	2101.79	-0.68	05/13/10	80.49	2102.10	0.31
MW-60B	BPA	MEF	2182.77	03/24/10	79.69	2103.08	-1.01	05/13/10	79.45	2103.32	0.24
MW-61A	BPA	MEF	2186.95	03/25/10	88.08	2098.87	-0.13	05/13/10	87.39	2099.56	0.69
MW-61B	BPA	MEF	2186.77	03/25/10	80.75	2106.02	-0.44	05/13/10	80.30	2106.47	0.45
MW-61C	BPA	MEF	2186.84	03/25/10	85.80	2101.04	0.01	05/13/10	85.10	2101.74	0.70
MW-61D	BPA	MEF	2186.83	03/25/10	83.21	2103.62	0.06	05/13/10	82.48	2104.35	0.73
MW-62A	RMPA	QAL	2131.32	03/25/10	31.16	2100.16	-0.61	05/14/10	30.95	2100.37	0.21
MW-62B	RMPA	QAL	2131.49	03/25/10	31.00	2100.49	-0.14	05/14/10	30.71	2100.78	0.29
MW-63	RMPA	QAL	2156.20	03/24/10	54.24	2101.96	-0.19	05/13/10	53.81	2102.39	0.43
MW-64	RMPA	QAL	2128.41	03/25/10	29.20	2099.21	-0.61	05/14/10	29.12	2099.29	0.08
MW-65	RMPA	QAL	2128.92	03/25/10	29.79	2099.13	-0.50	05/14/10	29.70	2099.22	0.09
MW-66	RMPA	QAL	2130.43	03/25/10	34.73	2095.70	-0.68	05/14/10	34.82	2095.61	-0.09
MW-67	MCEA	QAL	1799.54	03/26/10	4.47	1795.07	4.71	05/13/10	4.68	1794.86	-0.21
MW-68	RMPA	QAL	2144.69	03/24/10	39.00	2105.69	-0.73	05/13/10	39.14	2105.55	-0.14
MW-69	RMPA	QAL	2143.26	03/24/10	40.80	2102.46	-0.95	05/13/10	40.74	2102.52	0.06
MW-70	NPCA	QAL	1976.15	03/26/10	26.02	1950.13	3.58	05/13/10	26.02	1950.13	0.00
MW-71A	BPA	Granite	2193.77	03/25/10	159.08	2034.69	0.25	05/13/10	161.60	2032.17	-2.52
MW-71B	BPA	QAL/MEF	2194.01	03/25/10	86.88	2107.13	-1.07	05/13/10	86.95	2107.06	-0.07
MW-71C	BPA	MEF	2193.87	03/25/10	88.59	2105.28	-0.34	05/13/10	88.37	2105.50	0.22
MW-72A	BPA	Granite	2199.06	03/24/10	87.07	2111.99	12.15	05/13/10	83.60	2115.46	3.47
MW-72B	BPA	MEF	2199.22	03/24/10	81.90	2117.32	12.77	05/13/10	79.95	2119.27	1.95
MW-72C	BPA	QAL	2199.35	03/24/10	80.91	2118.44	13.85	05/13/10	79.32	2120.03	1.59
MW-73A	BPA	MEF	2189.39	03/24/10	110.67	2078.72	1.74	05/13/10	109.34	2080.05	1.33
MW-73B	BPA	MEF	2189.48	03/24/10	94.55	2094.93	2.44	05/13/10	93.75	2095.73	0.80
MW-73C	BPA	QAL	2189.65	03/24/10	81.58	2108.07	1.98	05/13/10	81.67	2107.98	-0.09
MW-74A	UG	Granite	2199.66	03/24/10	158.47	2041.19	0.80	05/13/10	161.06	2038.60	-2.59
MW-74B	UG	Granite	2199.81	03/24/10	118.14	2081.67	-0.04	05/13/10	117.77	2082.04	0.37
MW-74C	UG	MEF	2199.96	03/24/10	86.81	2113.15	0.65	05/13/10	86.81	2113.15	0.00
MW-75A	RMPA	MEF	2149.44	03/26/10	56.82	2092.62	0.49	05/17/10	56.79	2092.65	0.03
MW-75B	RMPA	QAL	2149.51	03/26/10	47.76	2101.75	0.89	05/17/10	47.76	2101.75	0.00
MW-75C	RMPA	QAL	2150.02	03/26/10	48.55	2101.47	0.61	05/17/10	48.42	2101.60	0.13
MW-76A	NPCA	MEF	2105.91	03/26/10	24.40	2081.51	0.55	05/17/10	24.64	2081.27	-0.24
MW-76B	NPCA	QAL	2105.40	03/26/10	17.65	2087.75	2.09	05/17/10	17.15	2088.25	0.50
MW-76C	NPCA	QAL	2106.29	03/26/10	10.40	2095.89	0.48	05/17/10	10.26	2096.03	0.14
MW-77A	MCEA	MEF	1930.62	03/26/10	10.48	1920.14	4.29	05/14/10	10.86	1919.76	-0.38
MW-77B	MCEA	MEF	1930.88	03/26/10	15.27	1915.61	2.62	05/14/10	15.74	1915.14	-0.47
MW-78	BPA	MEF	2182.63	03/24/10	90.70	2091.93	-0.52	05/14/10	90.22	2092.41	0.48
MW-79A	RMPA	MEF	2142.00	03/24/10	43.88	2098.12	0.35	05/14/10	43.35	2098.65	0.53
MW-79C	RMPA	QAL	2142.07	03/24/10	40.94	2101.13	0.31	05/14/10	40.75	2101.32	0.19
MW-80	NPCA	MEF	2070.47	03/26/10	Artesian 0.15 PSI	2070.82	3.27	05/14/10	0.10 PSI	2070.70	-0.12
MW-81	MCEA	MEF	2010.72	03/26/10	25.82	1984.90	4.32	05/14/10	26.59	1984.13	-0.77
MW-82	NPCA	QAL	1974.17	03/26/10	23.85	1950.32	3.25	05/14/10	23.68	1950.49	0.17
MW-83	NPCA	QAL	1976.93	03/26/10	22.21	1954.72	4.74	05/14/10	22.24	1954.69	-0.03
MW-84A	MCEA	MEF	2,010.02	03/26/10	63.02	1947.00	0.19	05/14/10	63.34	1946.68	-0.32
MW-84B	MCEA	MEF	2,011.19	03/26/10	65.66	1945.53	0.14	05/14/10	66.95	1944.24	-1.29
MW-85A	MCEA	MEF	1,929.31	03/26/10	4.48	1924.83	3.68	05/14/10	5.27	1924.04	-0.79
MW-85B	MCEA	MEF	1,928.74	03/26/10	1.25	1927.49	4.94	05/14/10	2.30	1926.44	-1.05
MW-86A	MCEA	MEF	1,923.21	03/26/10	13.71	1909.50	3.26	05/14/10	14.55	1908.66	-0.84
MW-86B	MCEA	QAL/MEF	1,923.21	03/26/10	16.72	1906.49	2.95	05/14/10	17.73	1905.48	-1.01
MW-87A	MCEA	MEF	1,938.92	03/26/10	18.28	1920.64	4.69	05/14/10	19.48	1919.44	-1.20
MW-87B	MCEA	MEF	1,938.82	03/26/10	16.50	1922.32	5.52	05/14/10	17.65	1921.17	-1.15
MW-88	RMPA	QAL	2,141.97	03/25/10	38.52	2103.45	-0.99	05/13/10	38.58	2103.39	-0.06
MW-89	RMPA	QAL	2,130.82	03/26/10	33.17	2097.65	-0.95	05/13/10	33.33	2097.49	-0.16
MW-90	RMPA	QAL	2,147.71	03/24/10	44.81	2102.90	-1.08	05/13/10	44.72	2102.99	0.09
MW-91	RMPA	MEF	2,144.85	03/24/10	40.27	2104.58	-0.82	05/13/10	40.33	2104.52	-0.06
MW-92	MCEA	MEF	1,919.83	03/26/10	30.64	1889.19	2.97	05/14/10	31.61	1888.22	-0.97
MW-93	MCEA	MEF	1,931.47	03/26/10	33.28	1898.19	3.06	05/14/10	32.97	1898.50	0.31
MW-94	MCEA	MEF	1,936.55	03/26/10	18.02	1918.53	5.33	05/14/10	19.53	1917.02	-1.51
MW-95	MCEA	MEF	1,920.80	03/26/10	20.48	1900.32	1.77	05/14/10	20.75	1900.05	-0.27
MW-96	MCEA	MEF	1998.63	03/26/10	54.16	1944.47	0.36	05/14/10	54.39	1944.24	-0.23
MW-97	MCEA	MEF	1996.47	03/26/10	48.84	1947.63	1.89	05/14/10	49.39	1947.08	-0.55
MW-98A	RMPA	MEF	2141.68	03/25/10	47.46	2094.22	-0.50	05/13/10	47.30	2094.38	0.16
MW-98B	RMPA	MEF	2141.73	03/25/10	39.48	2102.25	-0.67	05/13/10	39.52	2102.21	-0.04
MW-99	RMPA	MEF	2144.63	03/24/10	57.21	2087.42	-0.30	05/13/10	57.29	2087.34	-0.08
MW-100	DG	Granite	1525.79	03/24/10	100.85	1424.94	7.12	05/17/10	101.82	1423.97	-0.97
MW-101	NPCA	QAL	1525.79	03/24/10	11.32	2084.58	3.78	05/14/10	12.03	2083.87	-0.71
MW-102	MCEA	QAL	2095.90	03/26/10	31.84	2035.37	7.31	05/17/10	32.86	2034.35	-1.02
OW-01	BPA	QAL	2204.62	03/24/10	55.55	2149.07	0.36	05/13/10	55.04	2149.58	0.51
OW-02	NPCA	QAL	2078.97	03/26/10	2.57	2076.40	0.36	05/17/10	2.56	2076.41	0.01
OW-03	RMPA	QAL	2143.65	03/24/10	42.07	2101.58	-0.28	05/17/10	41.70	2101.95	0.37
OW-05	NPCA	QAL	2160.85	03/26/10	Dry Well	Dry Well	NA	05/14/10	Dry	Dry Well	NA
OW-06	MCEA	QAL	2084.67	03/26/10	Dry Well	Dry Well	NA	05/14/10	Dry	Dry Well	NA
OW-07	MCEA	QAL	2108.06	03/26/10	Dry Well	Dry Well	NA	05/14/10	Dry	Dry Well	NA
OW-08	MCEA	QAL	2036.33	03/26/10	46.08	1990.25	4.31	05/14/10	46.11	1990.22	-0.03
P-02	NPCA	QAL	2081.15	03/26/10	12.65	2068.50	6.72	05/17/10	13.34	2067.81	-0.69
P-03	NPCA	QAL	2140.25	03/25/10	47.05	2093.20	-0.10	05/13/10	47.02	2093.23	0.03
P-04	NPCA	QAL	2112.63	03/26/10	17.79	2094.84	8.71	05/17/10	17.93	2094.70	-0.14
P-05	RMPA	QAL	2162.20	03/26/10	59.74	2102.46	0.69	05/17/10	59.70	2102.50	0.04
P-06S	MCEA	QAL	2034.44	03/26/10	27.80	2006.64	NA	05/17/10	29.47	2004.97	NA
P-06D	MCEA	QAL	2034.41	03/26/10	28.58	2005.83	10.31	05/17/10	30.37	2004.04	-1.79
P-07	MCEA	QAL	2034.60	03/26/10	29.09	2005.51	10.24	05/17/10	30.86	2003.74	-1.77
P-08	MCEA	QAL	2030.87	03/26/10	24.82	2006.05	10.35	05/17/10	26.61	2004.26	-1.79

Notes:

BPA - Burn Pit Area.
MCEA - Massacre Canyon Entrance Area.
NPCA - Northern Protero Creek Area.
RMPA - Rocket Motor Production Area.
UG - Upgradient
DG - Downgradient
BTOC - Below top of casing.
msl - Mean sea level.
NA - Not available.
PSI - pounds per square inch
"-" Formation screened not defined.
QAL - Quaternary alluvium.
QAL/MEF - Quaternary alluvium / Mt Eden.
MEF - Mount Eden Formation.

Between December 2009 (Fourth Quarter 2009) and March 2010 (First Quarter 2010), the Beaumont NWS reported approximately 8.49 inches of precipitation, and the average site-wide groundwater elevation increased approximately 1.61 feet. Between March 2010 (First Quarter 2010) and June 2010 (Second Quarter 2010), the Beaumont NWS reported approximately 1.65 inches of precipitation and the average site-wide groundwater elevation decreased approximately 0.03 feet. Table 3-2 presents the range and average change in groundwater elevation by area. Figures 3-3 and 3-4 present elevation differences between the Fourth Quarter 2009 and First Quarter 2010 and First Quarter 2010 and Second Quarter 2010 groundwater monitoring events.

Table 3-2 Groundwater Elevation Change – First Quarter 2010 and Second Quarter 2010

Site Area	Range of Groundwater Elevation Change - First Quarter 2010		Average Change By Area	Range of Groundwater Elevation Change - Second Quarter 2010		Average Change By Area
BPA	-1.12	13.85	0.89	-2.52	3.47	0.52
MCEA	0.14	10.59	4.58	-1.81	0.31	-0.79
NPCA	-0.97	9.17	2.35	-0.80	0.50	-0.11
RMPA	-1.08	0.89	-0.25	-0.51	0.70	0.24

Notes:

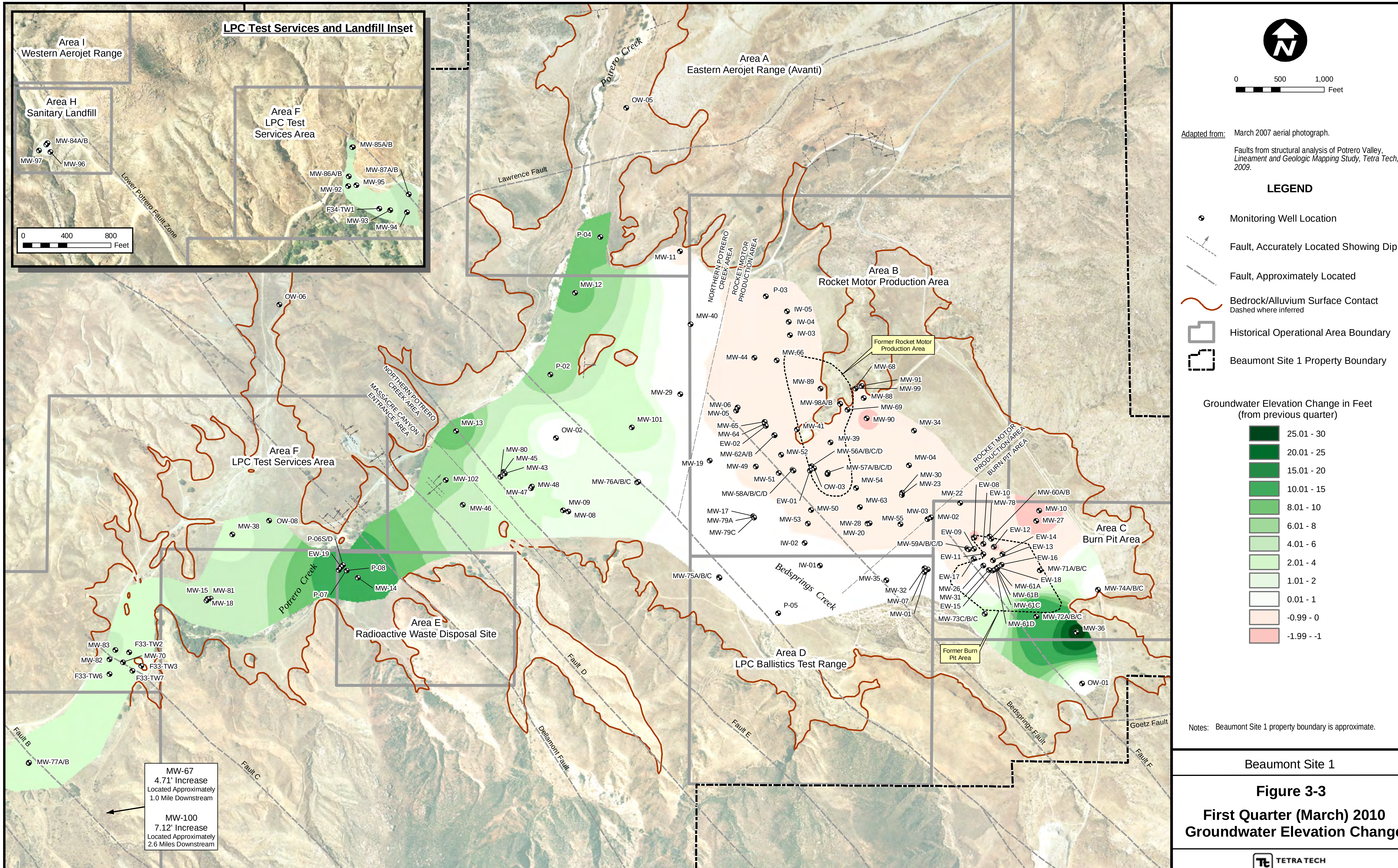
BPA - Burn Pit Area.

MCEA - Massacre Canyon Entrance Area.

NPCA - Northern Protero Creek Area.

RMPA - Rocket Motor Production Area.

Groundwater elevations and seasonal responses to changes in recharge for select shallow and deeper wells are shown on Figures 3-5 through 3-7. The selected wells represent a groundwater flow path from upgradient of the former BPA, through the former BPA, through the former RMPA and southwestward (downgradient) through the Northern Potrero Creek Area (NPCA) and MCEA. Groundwater elevations in shallow wells (alluvium and shallow MEF) upgradient of the BPA and at the BPA show a rapid and significant response to rainfall with a more dampened response observed further out in the valley through the RMPA, NPCA, and MCEA (Figures 3-5 and 3-7). The deeper MEF and bedrock wells show a response very similar to the shallow wells during the periods of increased precipitation (Figure 3-6).

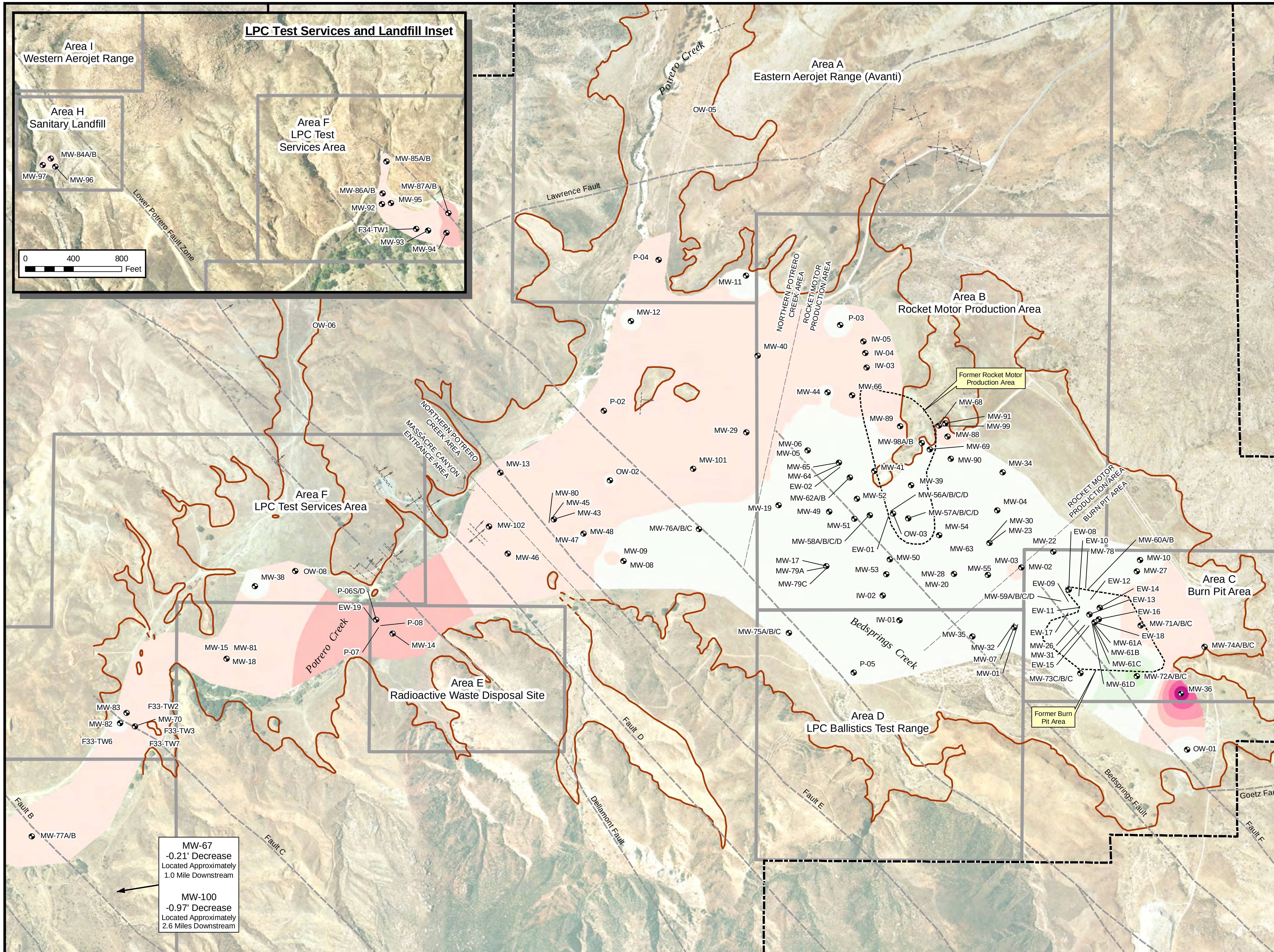


Beaumont Site 1

Figure 3-3

First Quarter (March) 2010
Groundwater Elevation Change

TETRA TECH



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N

0 500 1,000
Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Monitoring Well Location
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Bedrock/Alluvium Surface Contact (Dashed where inferred)
- Beaumont Site 1 Property Boundary
- Historical Operational Area Boundary

Groundwater Elevation Change in Feet (from previous quarter)

- 2.01 - 4
- 1.01 - 2
- 0.01 - 1
- -0.99 - 0
- -1.99 - -1
- -3.99 - -2
- -5.99 - -4
- -9.99 - -6

Notes: Beaumont Site 1 property boundary is approximate.

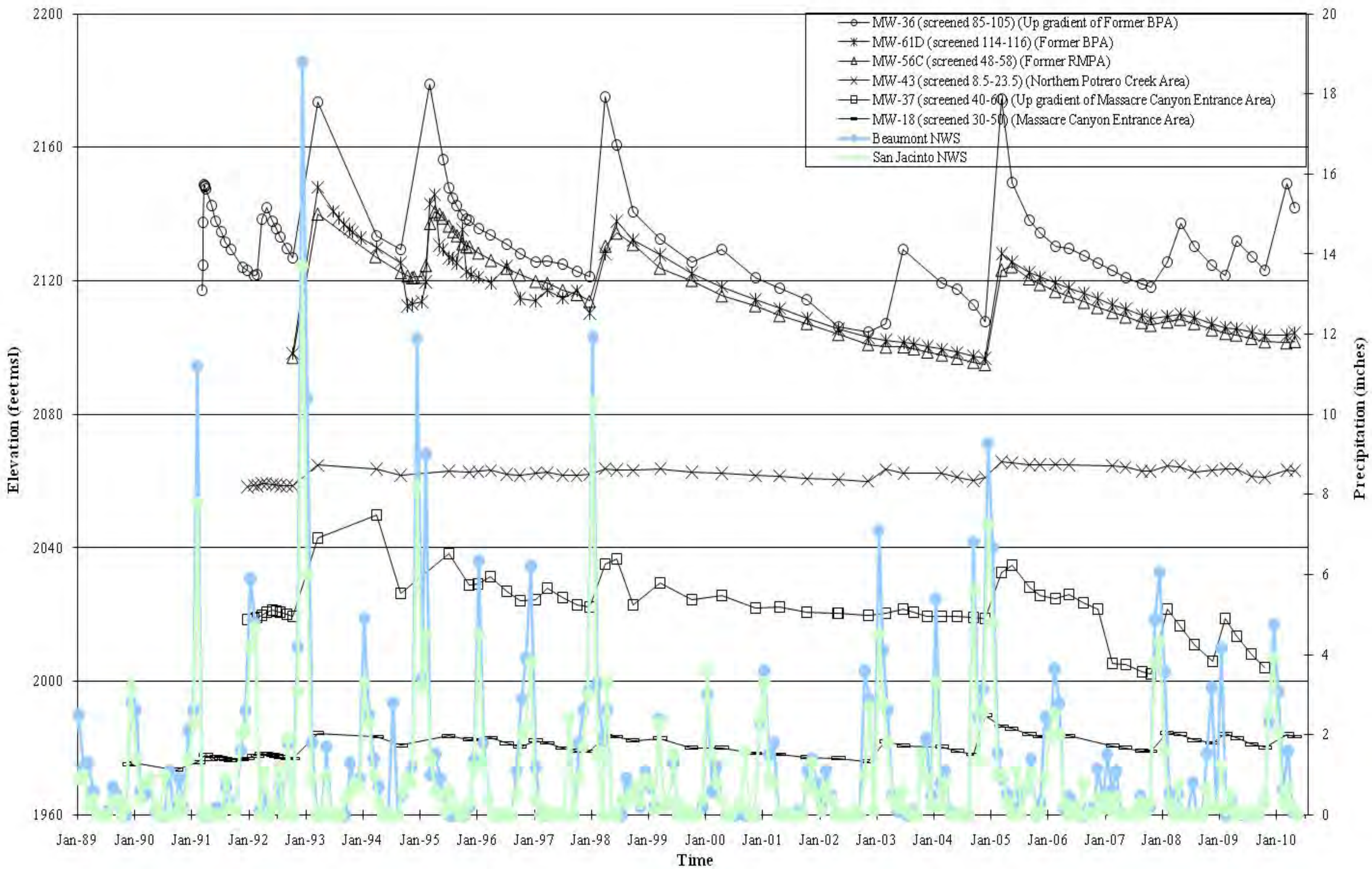
Beaumont Site 1

Figure 3-4

Second Quarter (May) 2010 Groundwater Elevation Change

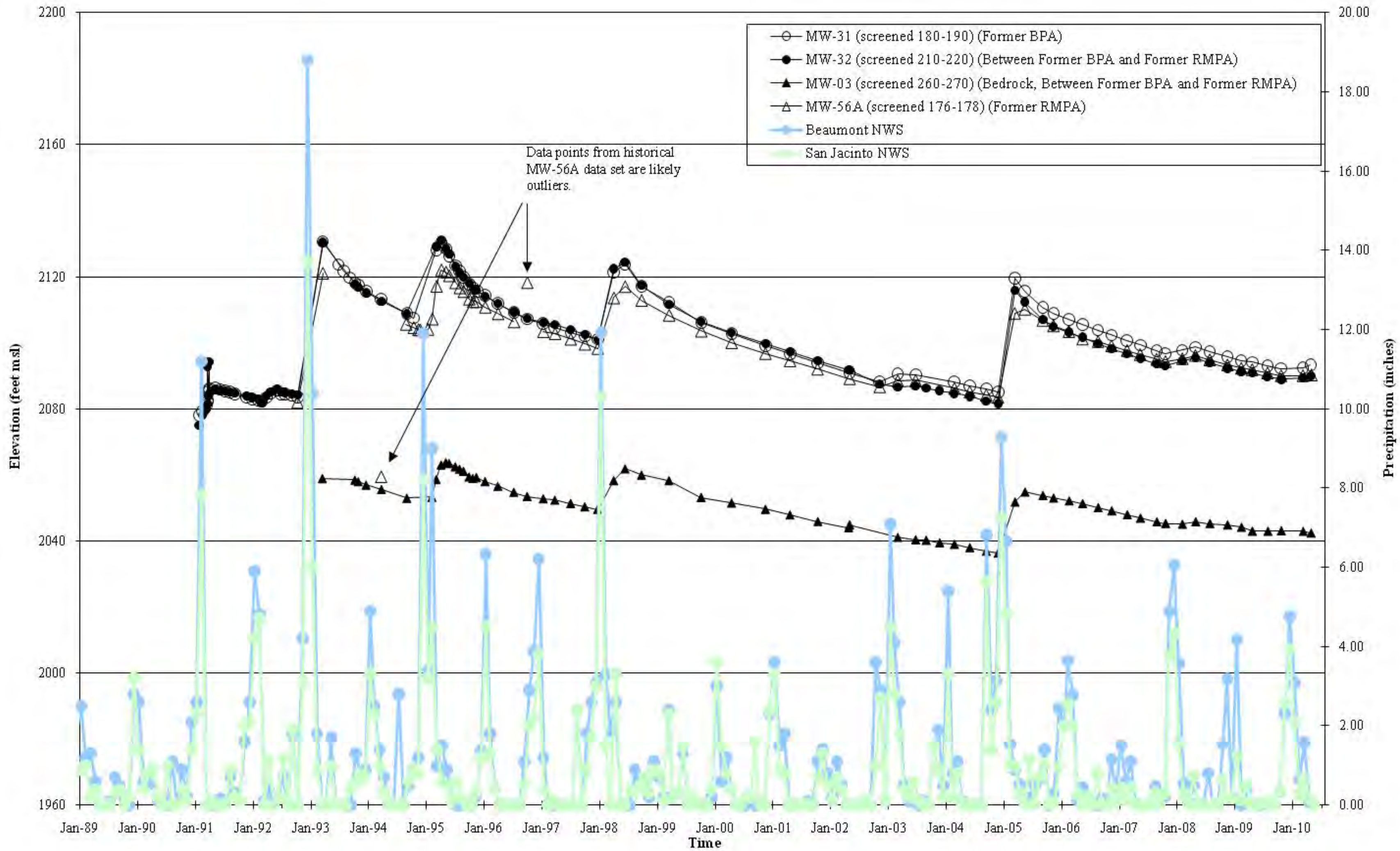
TETRA TECH

Figure 3-5- Groundwater Elevations vs. Time - Selected Alluvial and Shallow Mount Eden formation Wells



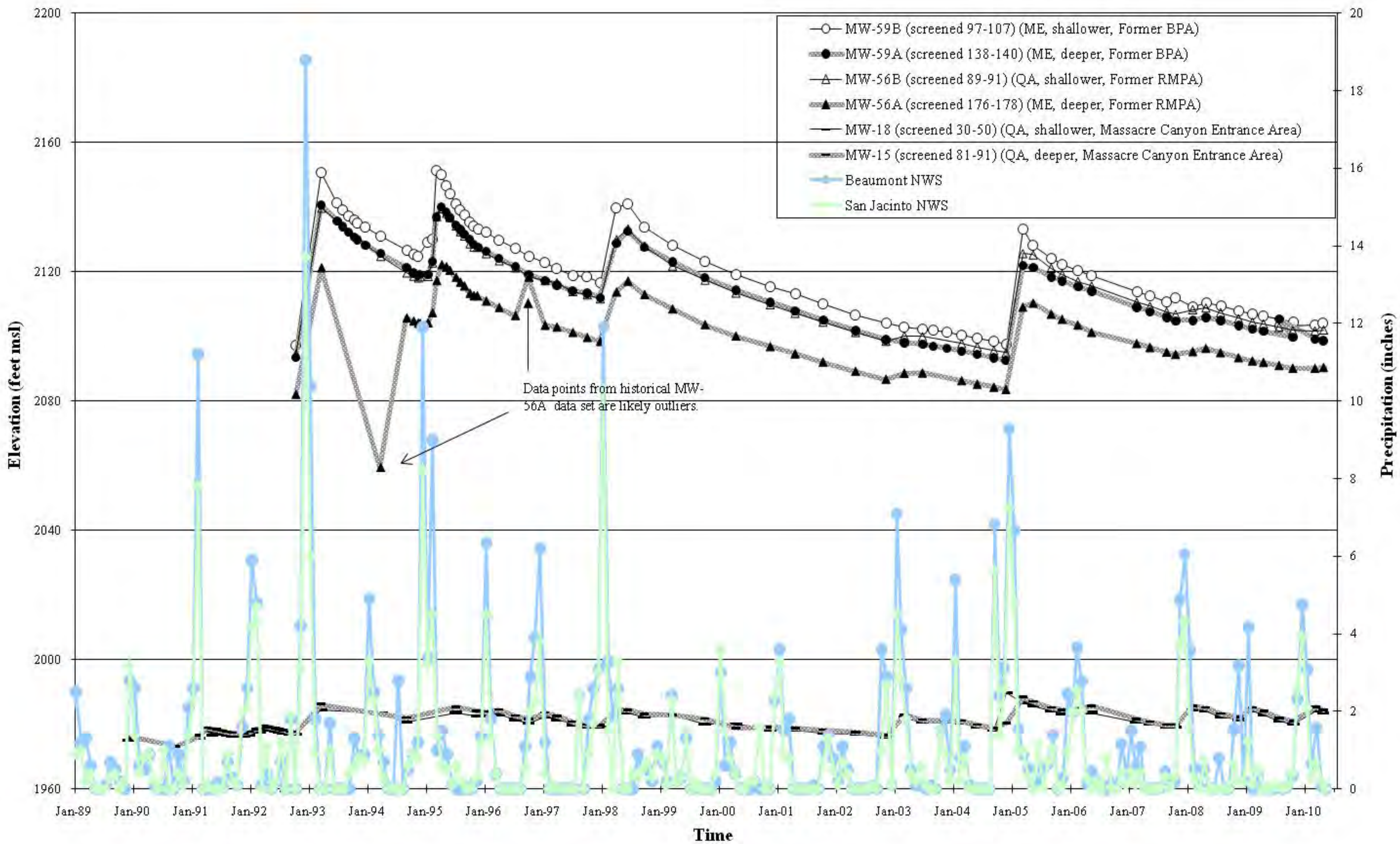
NWS - National Weather Service

Figure 3-6- Groundwater Elevations vs. Time - Deeper Mount Eden formation and Bedrock Wells



NWS - National Weather Service

Figure 3-7- Groundwater Elevations Comparison - Selected Shallower and Deeper Screened Wells in the Alluvial and Shallow Mount Eden formation



NWS - National Weather Service

3.2 SURFACE WATER FLOW

During First Quarter 2010 and Second Quarter 2010, the Potrero and Bedsprings creek riparian corridors were walked to determine the presence, nature, and quantity of surface water within the creek beds. The locations where surface water was encountered were plotted and a determination was made whether the water was flowing or stagnant. Where flowing water was encountered, the flow rate was determined using a modified version of the EPA Volunteer Stream Monitoring: Methods Manual (USEPA 1997).

Four fixed stream locations, SF-1 through SF-4, were previously chosen for stream flow measurements. SF-1 is located near Gilman Hot Springs at the southeast border of the Site, SF-2 is located in the vicinity of MW-67, SF-3 is located in the vicinity of MW-15 and 18, and SF-4 is located near MW-101.

At each location a section of stream that is relatively straight for at least 20 feet was chosen for measurement. This 20 foot section was marked and width measurements were taken at various points to determine the average width. Depth measurements were collected at five points along the width of the stream to determine the average depth of the stream. The average width and depth measurements were multiplied together to obtain an average cross sectional area. Velocity was measured by releasing a float upgradient and recording the time it took to float through the 20-foot marked section.

Three velocity measurements were taken and averaged. The length of the measured section was divided by the average velocity and the answer was multiplied by a correction factor of 0.9 to correct for friction between the water and stream bed. The average cross sectional area was then multiplied by the corrected average surface velocity to obtain the average cubic feet of water per second (cfs) flowing through that section of the stream.

A summary of the surface water flow rates is presented in Table 3-3, and the measurement locations and the locations where surface water was encountered are shown on Figures 3-8 and 3-9.

Table 3-3 Surface Water Flow Rates

Location ID	Description of Location	Date Measured	Length of Measured Section (ft)	Width of Measured Section (ft)	Depth of Measured Section (ft)	Float Travel Time (seconds)	Cross Sectional Area (ft2)	Surface Velocity (ft /sec)	Stream Flow Rate (cfs)	Site Stream Flow Rate (cfs)
First Quarter (March) 2010										
SF-1	Near Gilman Hot Springs Road	03/31/10	20	13.97	0.05	11.33	0.7	1.59	1.11	0.85
SF-2	Near MW-67	03/31/10	20	2.34	0.11	8.06	0.26	2.23	0.58	
SF-3	Near MW-15 and 18	03/31/10	20	12.48	0.05	11.73	0.57	1.53	0.87	
SF-4	Near MW-42	03/31/10	NA	NA	NA	NA	NA	NA	NA	
Second Quarter (June) 2010										
SF-1	Near Gilman Hot Springs Road	06/01/10	20	12.30	0.05	13.73	0.64	1.31	0.84	0.52
SF-2	Near MW-67	06/01/10	20	3.50	0.08	12.60	0.27	1.43	0.39	
SF-3	Near MW-15 and 18	06/01/10	20	2.33	0.10	12.17	0.22	1.48	0.33	
SF-4	Near MW-42	06/01/10	NA	NA	NA	NA	NA	NA	NA	

Notes: Measurements are averaged. NA - insufficient flow for measurement
cfs - cubic feet per second

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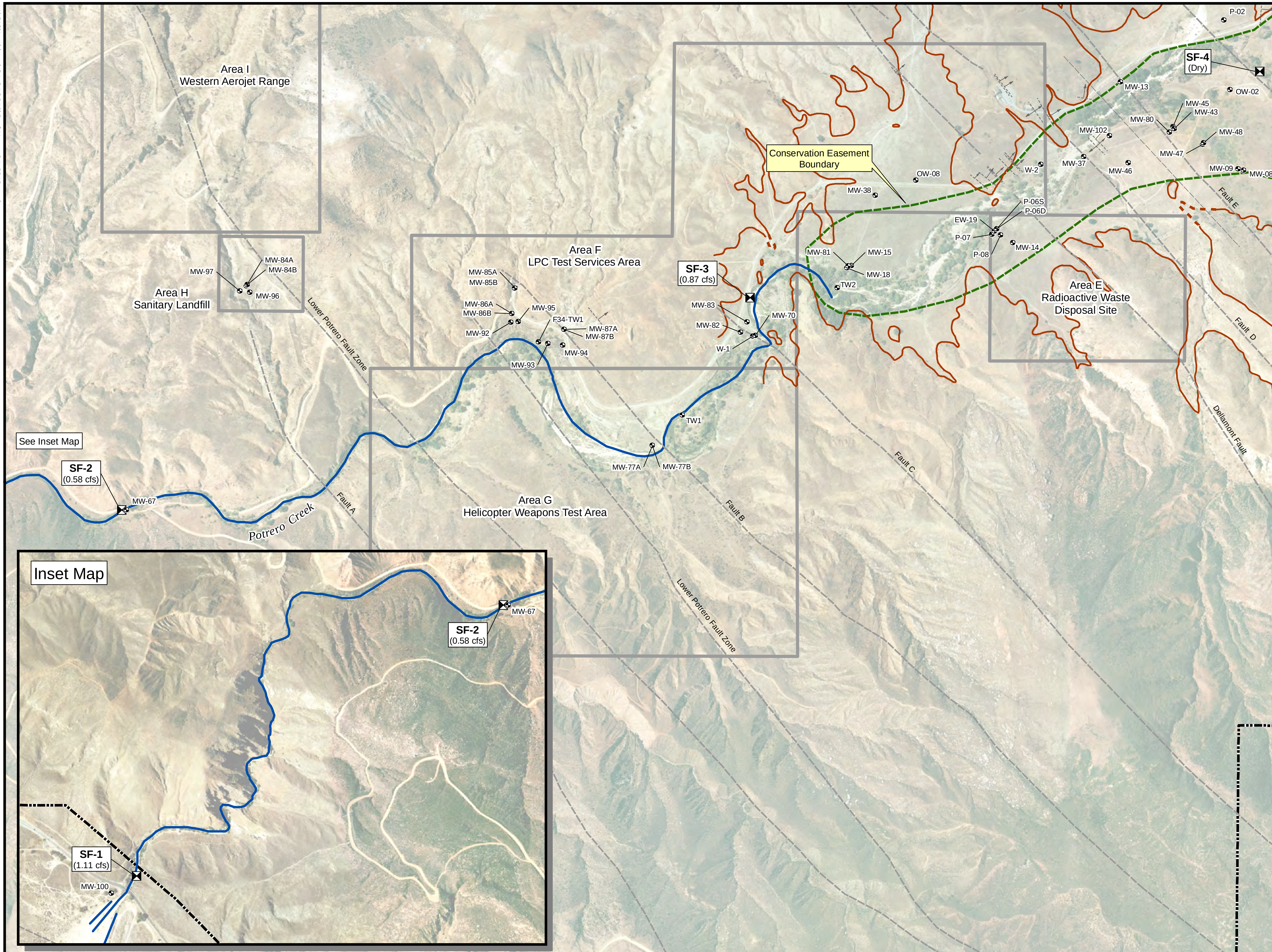


0 500 1,000
Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Existing Well Location
- Surface Flow Measurement Location
- Surface Water Flow
- Bedrock/Alluvium Surface Contact
  Dashed where inferred
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Conservation Easement Boundary
- Beaumont Site 1 Property Boundary
- Historical Operational Area Boundary

Notes:

Beaumont Site 1 property boundary is approximate.

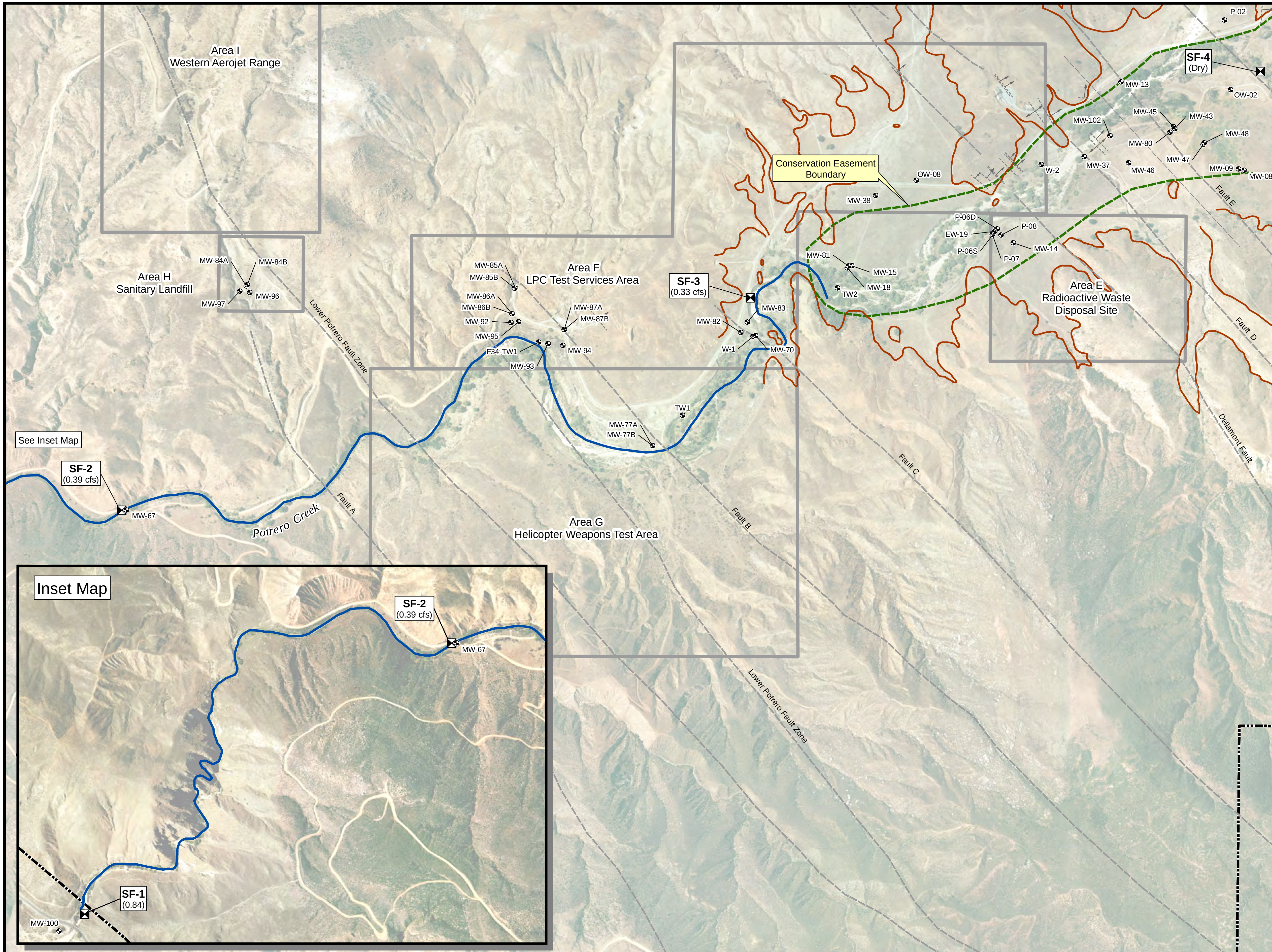
cfs - Cubic feet per second.

N/A - Surface flow not significant enough for measurement.

Beaumont Site 1

Figure 3-8
First Quarter 2010
Surface Water Flow Locations

TETRA TECH



0 500 1,000 Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Existing Well Location
- Surface Flow Measurement Location
- Surface Water Flow
- Bedrock/Alluvium Surface Contact, Dashed where inferred
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Conservation Easement Boundary
- Beaumont Site 1 Property Boundary
- Historical Operational Area Boundary

Notes:

Beaumont Site 1 property boundary is approximate.

cfs - Cubic feet per second.

N/A - Surface flow not significant enough for measurement.

Beaumont Site 1

Figure 3-9

Second Quarter 2010 Surface Water Flow Locations

TETRA TECH

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3.3 GROUNDWATER FLOW

Groundwater flow directions from First Quarter 2010 and Second Quarter 2010 (Figures 3-1 and 3-2 respectively) were similar to previously observed patterns for a dry period (Appendix A, Figure 2-14). Generally, groundwater flowed northwest from the southeastern limits of the valley (near the former BPA) beneath the former RMPA, towards Potrero Creek where groundwater flow then changes direction and begins heading southwest, parallel to the flow of Potrero Creek, into Massacre Canyon.

3.3.1 Horizontal and Vertical Groundwater Gradients

Horizontal groundwater gradients are calculated using a segmented path from well to well that approximates the overall site flowline. The horizontal gradient is a measure of the change in the hydraulic head over a change in distance between wells (the slope of the water table). The overall horizontal groundwater gradient (approximating a flowline from MW-36, upgradient of the BPA, through the RMPA and NPCA to MW-18, in the MCEA) increased to 0.014 ft/ft between First Quarter 2010 and Second Quarter 2010.

Vertical groundwater gradients are calculated from individual clusters of wells. Well clusters are used to measure the difference in static water level at different depths within the aquifer. The vertical gradient is a comparison of static water level between wells at different depths within the aquifer and is an indication of the vertical flow (downward - negative gradient; upward - positive gradient), of groundwater. The vertical groundwater gradients at the Site are generally negative in the BPA, negative in the RMPA, negative in the NPCA, and positive in the MCEA.

A summary of horizontal and vertical groundwater gradients is presented in Table 3-4. A complete listing of historical horizontal and vertical groundwater gradients and associated calculations is presented in Appendix F.

Table 3-4 Summary of Horizontal and Vertical Groundwater Gradient

Horizontal Groundwater Gradients (feet / foot), approximating a flowline from MW-36 to MW-18 and subsections					
Location:	**Overall**	**BPA**	**RMPA**	**NPCA**	**MCEA**
Date	**MW-36 to MW-18**	**MW-36 to MW-2**	**MW-2 to MW-5**	**MW-5 to MW-46**	**MW-46 to MW-18**
Previous - Fourth Quarter (Nov) 2009	0.013	0.0100	0.0016	0.022	0.013
First Quarter (March) 2010	0.015	0.0228	0.0015	0.020	0.014
Second Quarter (June) 2010	0.014	0.0192	0.0017	0.020	0.014

Vertical Groundwater Gradients (feet / foot)					
Location:	**BPA**	**RMPA**	**NPCA**	**MCEA**	**MCEA**
shallow screen	**MW-59B** (MEF)	**MW-56B** (QAL	**MW-75B** (QAL)	**MW-18** (QAL)	**MW-77B** (MEF)
Date deep screen	**MW-59A** (MEF)	**MW-56A** (MEF)	**MW-75A** (MEF)	**MW-15** (QAL)	**MW-77A** (MEF)
Previous - Fourth Quarter (Nov) 2009	-0.13	-0.14	-0.07	0.02	0.03
First Quarter (March) 2010	-0.12	-0.14	-0.08	0.03	0.05
Second Quarter (June) 2010	-0.14	-0.14	-0.08	0.02	0.05

Notes:

BPA - Burn Pit Area.
RMPA - Rocket Motor Production Area
NPCA - Northern Potrero Creek Area.
MCEA - Massacre Canyon Entrance Area.
QAL - Quaternary alluvium.
MEF - Mount Eden Formation.

3.4 ANALYTICAL DATA SUMMARY

Summaries of validated laboratory analytical results for organic (VOCs, 1,4-dioxane) and inorganic (perchlorate, natural attenuation and general minerals parameters) analytes detected above their respective method detection limits (MDLs) from the First Quarter 2010 and Second Quarter 2010 water quality monitoring events are presented in Tables 3-5, 3-6, and 3-7, respectively. A complete list of analytes tested, along with validated sample results by analytical method are provided in Appendix G.

Sample results detected above the published maximum contaminant level (MCL), federal or state, whichever is lower, or the California Department of Health Services state drinking water notification level (DWNL) are bolded in Tables 3-5, 3-6, and 3-7. Laboratory analytical data packages, which include environmental, field QC, and laboratory QC results, are provided in Appendix H and consolidated analytical data summary tables are presented in Appendix I. Tables 3-8 and 3-9 present summary statistics of the organic and inorganic analytes detected during the First Quarter 2010 and Second Quarter 2010 monitoring events, respectively.

Table 3-5 Summary of Validated Detected Organic and Inorganic Analytes - First Quarter 2010

Sample Location	Sample Date	Per chlorate	1,4-Dioxane	Acetone	Benzene	Carbon disulfide	Chloro form	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	Methylene Chloride	1,1,2-Trichloro ethane	Trichloro ethene	Tetrachloro ethene	Vinyl Chloride
All results reported in µg/L unless otherwise stated																	
SW-12	1/21/2010	<0.071	<0.10	5.6 Jq	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
SW-13	1/21/2010	<0.071	0.17 Jq	5.1 Jq	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	0.18 BJkq	<0.31	<0.17	<0.17	<0.13
SW-14	1/21/2010	0.33	<0.10	7.9 Jq	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
SW-15	1/21/2010	<0.071	<0.10	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	0.19 BJkq	<0.31	<0.17	<0.17	<0.13
SW-16	1/21/2010	0.34	0.13 BJaq	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
EW-15	4/1/2010	**480**	**82**	<5.0	0.36 Jq	<0.36	0.62	**21**	**33**	**570**	**20**	0.40 Jq	0.35 Jq	0.98	**120**	0.25 Jq	**0.89**
F33-TW2	3/31/2010	<0.071	**3.0**	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
F33-TW3	3/31/2010	<0.071	**3.9**	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	0.42 Jq	0.23 Jq	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
F33-TW6	3/31/2010	<0.071	2.5	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
F33-TW7	3/31/2010	<0.071	2.9	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
MW-100	3/29/2010	<0.071	<0.10	<5.0	<0.14	1.8 Jb	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
MW-101	3/29/2010	<0.071	**23**	<5.0	<0.14	<0.36	<0.17	1.8 Jb	0.57 Jb	**61 Jb**	**47 Jb**	1.7 Jb	<0.15	<0.31	**47 Jb**	<0.17	**2.2 Jb**
MW-102	3/29/2010	<0.071	**20**	<5.0	0.14 Jbq	<0.36	<0.17	1.8 Jb	0.33 Jbq	**27 Jb**	**34 Jb**	2.3 Jb	<0.15	<0.31	**18 Jb**	<0.17	**3.3 Jb**
MW-70	3/30/2010	**21**	**3.0**	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
MW-82	3/30/2010	<0.071	2.9	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	0.12 Jq	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
MW-83	3/30/2010	0.55	2.8	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
P-06D	4/1/2010	<0.071	**10**	<5.0	<0.14	<0.36	<0.17	0.37 Jq	<0.21	2.9	0.44 Jq	<0.10	<0.15	<0.31	1.9	<0.17	<0.13
P-06S	4/1/2010	0.32 Bk	0.79	<5.0	<0.14	<0.36	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.15	<0.31	<0.17	<0.17	<0.13
MDL (µg/L)		0.071	0.10	5	0.14	0.36	0.17	0.098	0.21	0.12	0.18	0.10	0.15	0.31	0.17	0.17	0.13
MCL/DWNL (µg/L)		6	3 (1)	-	1	160 (1)	-	5	5	6	6	10	5	5	5	5	0.5

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.

µg/L - Micrograms per liter.
MDL - Method detection limit.
DWNL - California Department of Public Health drinking water notification level.
MCL - California Department of Public Health Maximum Contaminant Level
(1) - DWNL
"-" - MCL or DWNL not available.
Bold - MCL or DWNL exceeded.

<# - Analyte not detected, method detection limit concentration is shown.
B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable
J - The analyte was positively identified, but the analyte concentration is an estimated value.
a - The analyte was found in the method blank.
b - the surrogate spike recovery was outside control limits.
k - The analyte was found in a field blank.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-6 Summary of Validated Detected Organic Analytes - Second Quarter 2010

Sample Location	Sample Date	1,4-Dioxane	Acetone	2-Butanone	Benzene	Carbon disulfide	Chloro benzene	Chloro ethane	Chloro methane	Carbon Tetra chloride	Chloro form	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	Methyl tert-butyl ether	Methylene Chloride	Toluene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	Tetra chloro ethene	Vinyl Chloride	m,p-Xylenes
All results reported in µg/L unless otherwise stated																										
EW-13	06/18/10	**4,400 Je**	<5.0	<1.2	**3.7**	<0.36	<0.23	0.82	<0.36	<0.15	8.4	**160**	**380**	**10,000**	**430**	3	<0.29	3	<0.22	1.3	**56**	**1,600**	<0.16	**8.6**	**26**	<0.36
EW-15	06/18/10	**370 Je**	<5.0	<1.2	**1.6**	<0.36	0.24 Jq	1	<0.36	<0.15	5.1	**140**	**160**	**5,900**	**76**	2.1	<0.29	1.5 BJkq	<0.22	0.58	**8**	**1,100**	<0.16	3.3	**4.3**	<0.36
F33-TW2	05/06/10	**3.1**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.38 Jq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
F33-TW3	05/06/10	**4.6**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.54	0.21 Jq	<0.10	<0.29	1.2 Jq	<0.22	<0.12	<0.31	0.23 Jq	<0.16	<0.17	<0.13	<0.36
F33-TW6	05/06/10	2.8	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.74 Jq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
F33-TW7	05/07/10	2.8	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.93 Jq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
F34-TW1	06/11/10	**5.5**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	0.55	<0.16	<0.17	<0.13	<0.36
IW-04	06/14/10	**20**	<5.0	<1.2	0.21 Jq	<0.36	<0.23	0.66	<0.36	<0.15	<0.17	0.27 Jq	0.24 Jq	**23**	2.1	0.43 Jq	<0.29	0.36 BJkq	0.27 Jq	<0.12	<0.31	**19**	<0.16	<0.17	**0.81**	<0.36
MW-01	06/10/10	2.7	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.83	**7.6**	**8.4**	**86**	0.94	<0.10	<0.29	<0.15	<0.22	2.7	1.4	**150**	<0.16	0.71	<0.13	<0.36
MW-02	06/09/10	**160**	<5.0	<1.2	0.18 Jq	<0.36	<0.23	<0.35	<0.36	0.28 Jq	1.9	**5.2**	**3.2**	**290**	1.6	0.15 Jq	<0.29	<0.15	<0.22	1.1	1.9	**170**	<0.16	0.57	<0.13	<0.36
MW-03	06/09/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.17 Jq	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	0.39 Jq	<0.16	<0.17	<0.13	<0.36
MW-05	06/15/10	**32**	<50	<12	<1.4	<3.6	<2.3	<3.5	<3.6	<1.5	4.6 Jq	4.3 Jq	<2.1	**170**	<1.8	<1.0	<2.9	<1.5	<2.2	<1.2	<3.1	**140**	<1.6	<1.7	<1.3	<3.6
MW-06	06/15/10	1.6	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	1.8	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	3.4	<0.16	<0.17	<0.13	<0.36
MW-07	06/15/10	0.89	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.24 Jq	1.0 Jf	**1.5 Jf**	**35 Jf**	0.20 Jq	<0.10	<0.29	<0.15	<0.22	0.40 Jq	0.40 Jq	**89 Jf**	<0.16	0.26 Jq	<0.13	<0.36
MW-08	06/15/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-09	06/15/10	**5.6**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-11	06/16/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-12	06/17/10	<0.10	<5.0	<1.2	<0.14	0.44 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-13	06/16/10	0.60 Je	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.28 Jq	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-14	06/16/10	1.8	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.13 Jq	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	0.18 Jq	<0.16	<0.17	<0.13	<0.36
MW-15	06/14/10	**6.6**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.43 Jq	<0.21	2.7	0.33 Jq	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	1.2	<0.16	<0.17	0.13 Jq	<0.36
MW-17	06/17/10	**9.2**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.13 Jq	<0.21	0.54	<0.18	<0.10	<0.29	<0.15	<0.22	0.14 Jq	<0.31	0.99	<0.16	<0.17	<0.13	<0.36
MW-18	05/05/10	**5.2**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.18 Jq	<0.21	1.2	<0.18	<0.10	<0.29	0.15 Jq	<0.22	<0.12	<0.31	1	<0.16	<0.17	<0.13	<0.36
MW-19	06/17/10	**72**	<5.0	<1.2	<0.14	0.40 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	2.8	0.40 Jq	**30**	0.55	<0.10	<0.29	<0.15	<0.22	0.27 Jq	<0.31	**16**	<0.16	<0.17	**1**	<0.36
MW-22	06/18/10	**9.9**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.21 Jq	<0.21	**22**	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**20**	<0.16	<0.17	<0.13	<0.36
MW-23	06/18/10	**4.5**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	**9.5**	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**7.2**	<0.16	<0.17	<0.13	<0.36
MW-26	06/15/10	**570 Je**	<500	<120	<14	<36	<23	<35	<36	<15	<17	**93**	**100**	**5,400**	**37 Jq**	<10	<29	67 BJaq	<22	<12	<31	**3,100**	<16	<17	<13	<36
MW-27	06/21/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-28	06/15/10	**6.4**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.19 Jq	0.93	**0.91**	**34**	<0.18	<0.10	<0.29	<0.15	<0.22	0.51	<0.31	**37**	<0.16	<0.17	<0.13	<0.36
MW-29	06/17/10	**28**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	2.6	0.37 Jq	**32**	0.87	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**56**	<0.16	<0.17	0.28 Jq	<0.36
MW-31	06/14/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-32	06/10/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-34	06/17/10	0.28	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.63	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	1.2	<0.16	<0.17	<0.13	<0.36
MW-35	06/14/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-36	06/14/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-40	06/16/10	**22**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.88	1.1	0.23 Jq	**21**	0.76	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**38**	<0.16	<0.17	<0.13	<0.36
MW-43	06/10/10	**8**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.56	<0.21	**7.5**	0.22 Jq	<0.10	<0.29	<0.15	<0.22	0.12 Jq	<0.31	**6**	<0.16	<0.17	0.13 Jq	<0.36
MW-45	06/15/10	**8.8**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.53	<0.21	**12**	<0.18	<0.10	<0.29	<0.15	<0.22	0.26 Jq	<0.31	**11**	<0.16	<0.17	<0.13	<0.36
MW-46	06/16/10	**11**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.58	<0.21	3.7	1.2	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	2.1	<0.16	<0.17	**0.7**	<0.36
MW-47	06/16/10	0.19 Jq	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-48	06/10/10	1.4	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-49	06/10/10	**22**	<5.0	<1.2	<0.14	0.68	<0.23	<0.35	<0.36	<0.15	1	0.53	<0.21	**20**	<0.18	<0.10	<0.29	<0.15	<0.22	0.91	<0.31	**24**	<0.16	<0.17	<0.13	<0.36
MW-53	06/16/10	2.5	<5.0	<1.2	<0.14	0.41 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	2.7	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	3	<0.16	<0.17	<0.13	<0.36
MW-54	06/18/10	**23**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.48 Jq	0.9	0.46 Jq	**54**	0.23 Jq	<0.10	<0.29	<0.15	<0.22	0.22 Jq	0.35 Jq	**55**	<0.16	0.23 Jq	<0.13	<0.36
MW-55	06/15/10	**110**	<50	<12	<1.4	<3.6	<2.3	<3.5	<3.6	<1.5	<1.7	4.6 Jq	<2.1	**310**	<1.8	<1.0	<2.9	10 BJaq	<2.2	<1.2	<3.1	**190**	<1.6	<1.7	<1.3	<3.6
MW-56A	06/03/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-56B	06/03/10	**7.5**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.6	1.3	**0.62**	**56**	<0.18	<0.10	<0.29	<0.15	<0.22	0.14 Jq	<0.31	**52**	<0.16	<0.17	<0.13	<0.36
MDL (µg/L)		0.10	5	1.2	0.14	0.36	0.23	0.35	0.36	0.15	0.17	0.098	0.21	0.12	0.18	0.10	0.29	0.15	0.22	0.12	0.31	0.17	0.16	0.17	0.13	0.36
MCL/DWNL (µg/L)		3 (1)	-	-	1	160 (1)	-	-	-	0.5	-	5	0.5	6	6	10	13	5	150	200	5	5	150	5	0.5	1750

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.
µg/L - micrograms per liter.
MDL - Method detection limit
DWNL - California Department of Public Health drinking water notification level.
MCL - California Department of Public Health Maximum Contaminant Level
(1) DWNL
"-" - MCL or DWNL not available.
Bold - MCL or DWNL exceeded.
<# - Analyte not detected, method detection limit concentration is shown.

B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable
J - The analyte was positively identified, but the analyte concentration is an estimated value.
a - The analyte was found in the method blank.
e - a holding time violation occurred.
f - The duplicate Relative Percent Difference was outside the control limit.
k - The analyte was found in a field blank.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-6 Summary of Validated Detected Organic Analytes - Second Quarter 2010 (continued)

Sample Location	Sample Date	1,4-Dioxane	Acetone	2-Butanone	Benzene	Carbon disulfide	Chloro benzene	Chloro ethane	Chloro methane	Carbon Tetra chloride	Chloro form	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	Methyl tert-butyl ether	Methylene Chloride	Toluene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	Tetra chloro ethene	Vinyl Chloride	m,p-Xylenes
All results reported in µg/L unless otherwise stated																										
MW-56C	06/03/10	**24**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.66	1.2	**0.65**	**67**	<0.18	<0.10	<0.29	<0.15	<0.22	0.37 Jq	0.35 Jq	**68**	<0.16	<0.17	<0.13	<0.36
MW-59A	06/10/10	1.2	<5.0	<1.2	<0.14	0.57	<0.23	<0.35	<0.36	<0.15	<0.17	0.99	**1.2**	**22**	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**13**	<0.16	<0.17	<0.13	<0.36
MW-59B	06/10/10	**51**	<5.0	<1.2	0.21 Jq	<0.36	<0.23	<0.35	<0.36	**0.5**	2.7	**11**	**17**	**260**	1.4	0.22 Jq	0.38 Jq	<0.15	<0.22	0.34 Jq	1.7	**200**	<0.16	0.34 Jq	<0.13	<0.36
MW-59D	06/10/10	**43**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	**1.2**	3.3	**16**	**24**	**460**	1.9	<0.10	<0.29	<0.15	<0.22	0.59	2	**330**	<0.16	0.84	<0.13	<0.36
MW-60A	06/08/10	**150**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	0.56	2.9	**5.3**	**8.2**	**550**	2.4	0.18 Jq	<0.29	<0.15	<0.22	0.59	1.7	**360**	<0.16	0.48 Jq	<0.13	<0.36
MW-60B	06/08/10	**10**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.55	0.54	**0.73**	**52**	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**14**	<0.16	<0.17	<0.13	<0.36
MW-61A	06/07/10	**41**	16	1.4 Jq	0.31 Jq	<0.36	<0.23	<0.35	<0.36	<0.15	0.17 Jq	4.4	**3.4**	**120**	1.1	0.20 Jq	<0.29	0.29 Jq	1.2	<0.12	<0.31	**22**	<0.16	<0.17	0.35 Jq	<0.36
MW-61B	06/07/10	**580 Jf**	<5.0	<1.2	**1.9**	<0.36	0.59	<0.35	<0.36	**6.4 Jf**	28	**170**	**81**	**8,000**	**38**	3.3	<0.29	0.34 Jq	<0.22	7.6	**16**	**1,900**	<0.16	**7.1**	0.41 Jq	<0.36
MW-61B	06/18/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-61C	06/07/10	**7.8**	<5.0	<1.2	<0.14	1.3	<0.23	<0.35	0.37 Jq	<0.15	1	3.9	**3**	**170**	0.89	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**31**	<0.16	<0.17	<0.13	<0.36
MW-61C	06/18/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-62A	06/17/10	**27**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	2.2	1.3	0.35 Jq	**50**	<0.18	<0.10	<0.29	<0.15	<0.22	0.29 Jq	<0.31	**81**	<0.16	0.27 Jq	<0.13	<0.36
MW-66	06/17/10	**28**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	2.9	3.3	**0.85**	**110**	0.47 Jq	<0.10	<0.29	<0.15	<0.22	0.30 Jq	<0.31	**130**	<0.16	0.27 Jq	<0.13	<0.36
MW-67	05/07/10	1.2	5.1 Jq	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.77 Jq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-68	06/17/10	**18**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.18 Jq	<0.21	5.8	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	3.7	<0.16	<0.17	<0.13	<0.36
MW-69	06/09/10	**7.8**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	1.1	0.13 Jq	<0.21	5	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**15**	<0.16	<0.17	<0.13	<0.36
MW-70	05/05/10	2.8	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.48 Jq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-71A	06/07/10	<0.10	<5.0	<1.2	<0.14	0.5	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-71C	06/07/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-72A	06/04/10	<0.10	<5.0	<1.2	<0.14	0.63	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-72B	06/04/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-72C	06/04/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-73A	06/07/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-73B	06/07/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-73C	06/08/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-74A	06/04/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-74B	06/04/10	<0.10	<5.0	<1.2	<0.14	0.56	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-74C	06/04/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-75A	06/02/10	0.11 Jq	<5.0	<1.2	<0.14	0.41 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-75B	06/02/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-75C	06/02/10	<0.10	<5.0	<1.2	<0.14	0.57	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-76A	06/03/10	2.9	<5.0	<1.2	<0.14	0.41 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-76B	06/03/10	0.35	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-76C	06/03/10	**7.7**	<5.0	<1.2	<0.14	0.40 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	0.49 Jq	<0.21	2.8	0.34 Jq	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	0.81	<0.16	<0.17	0.22 Jq	<0.36
MW-77A	05/12/10	<0.10	<5.0	<1.2	<0.14	1.6	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-77A	06/09/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-77B	05/12/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-77B	06/09/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-78	06/08/10	1.7	<5.0	<1.2	<0.14	3.9	<0.23	<0.35	1.5	<0.15	<0.17	<0.098	<0.21	3.6	<0.18	<0.10	<0.29	<0.15	0.23 Jq	<0.12	<0.31	1.4	<0.16	<0.17	<0.13	<0.36
MW-79A	06/09/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.13 Jq	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-79C	06/09/10	**4.4**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.37 Jq	<0.21	**9.2**	<0.18	<0.10	<0.29	<0.15	<0.22	0.26 Jq	<0.31	**8**	<0.16	<0.17	<0.13	<0.36
MW-80	06/15/10	**6.4**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.41 Jq	<0.21	1.8	0.35 Jq	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	0.44 Jq	<0.16	<0.17	0.15 Jq	<0.36
MW-81	06/14/10	<0.10	<5.0	<1.2	<0.14	0.40 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-82	05/06/10	**3**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.89 Jq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-83	05/05/10	**3.1**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.20 Jq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-84A	06/11/10	<0.10	<5.0	<1.2	<0.14	0.96	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MDL (µg/L)		0.10	5	1.2	0.14	0.36	0.23	0.35	0.36	0.15	0.17	0.098	0.21	0.12	0.18	0.10	0.29	0.15	0.22	0.12	0.31	0.17	0.16	0.17	0.13	0.36
MCL/DWNL (µg/L)		3 (1)	-	-	1	160 (1)	-	-	-	0.5	-	5	0.5	6	6	10	13	5	150	200	5	5	150	5	0.5	1750

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.
µg/L - micrograms per liter.
MDL - Method detection limit
DWNL - California Department of Public Health drinking water notification level.
MCL - California Department of Public Health Maximum Contaminant Level
(1) DWNL
"-" - MCL or DWNL not available.
Bold - MCL or DWNL exceeded.
<# - Analyte not detected, method detection limit concentration is shown.

B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable
J - The analyte was positively identified, but the analyte concentration is an estimated value.
a - The analyte was found in the method blank.
e - a holding time violation occurred.
f - The duplicate Relative Percent Difference was outside the control limit.
k - The analyte was found in a field blank.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-6 Summary of Validated Detected Organic Analytes - Second Quarter 2010 (continued)

Sample Location	Sample Date	1,4-Dioxane	Acetone	2-Butanone	Benzene	Carbon disulfide	Chloro benzene	Chloro ethane	Chloro methane	Carbon Tetra chloride	Chloro form	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	cis-1,2-Dichloro ethene	trans-1,2-Dichloro ethene	Methyl tert-butyl ether	Methylene Chloride	Toluene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Trichloro fluoro methane	Tetra chloro ethene	Vinyl Chloride	m,p-Xylenes
All results reported in µg/L unless otherwise stated																										
MW-84B	06/11/10	<0.10	<5.0	<1.2	<0.14	0.95	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-85A	05/12/10	<0.10	<5.0	<1.2	<0.14	1.1	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-85A	06/09/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-85B	05/12/10	0.12 Jq	<5.0	<1.2	<0.14	0.37 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**32**	1.8 Jq	<0.17	<0.13	<0.36
MW-85B	06/08/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-86A	05/12/10	<0.10	<5.0	<1.2	<0.14	1.6	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-86A	06/08/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-86B	05/12/10	0.74	<5.0	<1.2	<0.14	0.52	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.16 Jq	0.98	0.27 Jq	<0.29	<0.15	<0.22	<0.12	<0.31	**99**	0.21 Jq	<0.17	<0.13	<0.36
MW-86B	06/08/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-87A	05/12/10	**5.5**	<5.0	<1.2	<0.14	0.47 Jq	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.27 Jq	<0.18	<0.10	<0.29	0.59 Jq	<0.22	<0.12	<0.31	0.57	<0.16	<0.17	<0.13	<0.36
MW-87A	06/08/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-87B	05/12/10	**62**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	**8.1**	<0.18	<0.10	<0.29	0.20 Jq	<0.22	<0.12	<0.31	**48**	<0.16	<0.17	<0.13	<0.36
MW-87B	06/08/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-88	06/09/10	0.35	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-89	06/17/10	**7**	<5.0	<1.2	<0.14	0.38 Jq	<0.23	<0.35	<0.36	<0.15	0.71	0.20 Jq	<0.21	4.8	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**7.6**	<0.16	<0.17	<0.13	<0.36
MW-90	06/09/10	0.24	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	0.29 Jq	<0.098	<0.21	2.4	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	2.8	<0.16	<0.17	<0.13	<0.36
MW-91	06/09/10	1.8	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.16 Jq	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-92	06/11/10	0.14 Jq	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**16**	<0.16	<0.17	<0.13	<0.36
MW-93	06/11/10	**12**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.28 Jq	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	1.1	<0.16	<0.17	<0.13	<0.36
MW-94	06/16/10	**4.2**	<5.0	<1.2	<0.14	0.83	<0.23	<0.35	<0.36	<0.15	<0.17	0.21 Jq	<0.21	0.37 Jq	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	1.4	<0.16	<0.17	<0.13	<0.36
MW-95	06/11/10	0.23	<5.0	<1.2	<0.14	1.2	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	14	<0.16	<0.17	<0.13	<0.36
MW-96	06/11/10	<0.10	<5.0	<1.2	<0.14	1.1	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-97	06/11/10	<0.10	<5.0	<1.2	<0.14	1.1	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-98A	06/07/10	0.2	<5.0	<1.2	<0.14	0.53	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-98B	06/07/10	**11**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	2.2	0.64	<0.21	**21**	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	**35**	<0.16	<0.17	<0.13	<0.36
MW-99	06/09/10	1.4	6.5 Jq	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	2.8	<0.18	<0.10	<0.29	<0.15	0.39 Jq	<0.12	<0.31	2	<0.16	<0.17	<0.13	0.44 Jq
MW-100	06/02/10	0.13 Jeq	<5.0	<1.2	<0.14	1.2	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MW-101	05/07/10	**25**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	1.4	0.44 Jq	**48**	**42**	1.4	<0.29	<0.15	<0.22	<0.12	<0.31	**43**	<0.16	<0.17	**1.7**	<0.36
MW-102	05/07/10	**21**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	1.5	0.23 Jq	**20**	**31**	2	<0.29	<0.15	<0.22	<0.12	<0.31	**17**	<0.16	<0.17	**2.8**	<0.36
OW-01	06/18/10	<0.10	<5.0	<1.2	<0.14	1.3	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
OW-02	06/15/10	**14**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.64	<0.21	**25**	<0.18	<0.10	<0.29	<0.15	<0.22	0.41 Jq	<0.31	**23**	<0.16	<0.17	<0.13	<0.36
OW-08	06/14/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
P-02	06/16/10	<0.10	<5.0	<1.2	<0.14	0.61	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
P-03	06/14/10	0.6	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.13 Jq	<0.21	0.92	0.18 Jq	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	0.16 Jq	<0.36
P-05	06/16/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
P-06D	06/17/10	**8.2**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	0.48 Jq	<0.21	3.4	0.44 Jq	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	2.5	<0.16	<0.17	<0.13	<0.36
P-06S	06/17/10	1.3	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
SW-01	05/11/10	<0.10	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.33 BJkq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
SW-02	05/11/10	**13**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	1.7	0.18 Jq	<0.10	<0.29	0.25 BJkq	<0.22	<0.12	<0.31	2.3	<0.16	<0.17	<0.13	<0.36
SW-03	05/11/10	**12**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.27 BJkq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
SW-04	05/11/10	**7.3**	9.8 Jq	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	0.44 Jq	<0.18	<0.10	<0.29	0.25 BJkq	0.51	<0.12	<0.31	0.81	<0.16	<0.17	<0.13	<0.36
SW-06	05/11/10	1.9	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.31 BJkq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
SW-07	05/11/10	1.4	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.34 BJkq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
SW-16	05/11/10	0.98	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.27 BJkq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
SW-18	05/12/10	**3.2**	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	<0.15	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
SW-19	05/11/10	2.2	<5.0	<1.2	<0.14	<0.36	<0.23	<0.35	<0.36	<0.15	<0.17	<0.098	<0.21	<0.12	<0.18	<0.10	<0.29	0.33 BJkq	<0.22	<0.12	<0.31	<0.17	<0.16	<0.17	<0.13	<0.36
MDL (µg/L)		0.10	5	1.2	0.14	0.36	0.23	0.35	0.36	0.15	0.17	0.098	0.21	0.12	0.18	0.10	0.29	0.15	0.22	0.12	0.31	0.17	0.16	0.17	0.13	0.36
MCL/DWNL (µg/L)		3 (1)	-	-	1	160 (1)	-	-	-	0.5	-	5	0.5	6	6	10	13	5	150	200	5	5	150	5	0.5	1750

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.
µg/L - micrograms per liter.
MDL - Method detection limit
DWNL - California Department of Public Health drinking water notification level.
MCL - California Department of Public Health Maximum Contaminant Level
(1) DWNL
"-" - MCL or DWNL not available.
Bold - MCL or DWNL exceeded.
<# - Analyte not detected, method detection limit concentration is shown.

B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable
J - The analyte was positively identified, but the analyte concentration is an estimated value.
a - The analyte was found in the method blank.
e - a holding time violation occurred.
f - The duplicate Relative Percent Difference was outside the control limit.
k - The analyte was found in a field blank.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-7 Summary of Validated Detected Inorganic, Natural Attenuation, and General Minerals Analytes - Second Quarter 2010

Sample Location	Sample Date	Per chlorate - µg/L	Chlorate - ug/L	Ethene- ug/L	Ethane - ug/L	Methane - ug/L	Dissolved Organic Carbon - mg/L	Total Organic Carbon - mg/L	Alkalinity, Total -mg/L	Bicarbonate - mg/L	Carbonate - mg/L	Hydroxide - mg/L	Chloride - mg/L	Nitrate - mg/L	Nitrite - mg/L	Sulfate - mg/L	Iron - ug/L	Lead - mg/L	Dissolved Manganese - ug/L	Sulfide - mg/L	Fe2+ - mg/L
EW-13	06/18/10	**1,100**	2.7	81	57	79	4.0 Bk	NA	52	63	<1.7	<1.7	120	<0.11	<0.017	5.2	NA	NA	17 Jq	0.01	0.03
EW-15	06/18/10	**23,000**	170	68	68	51	9.3	NA	53	65	<1.7	<1.7	80	<0.11	<0.017	7.8	NA	NA	210	0.02	1.91
F33-TW2	05/06/10	<0.071	NA	<0.02	<0.01	94	2.8	2.8	NA	NA	NA	NA	NA	<0.11	NA	51	**1900 Jd**	NA	NA	0.01	1.35
F33-TW2	06/11/10	NA	<1.0	NA	NA	NA	NA	NA	300	360	<1.7	<1.7	62	NA	<0.017	NA	NA	NA	470	NA	NA
F33-TW3	05/06/10	<0.071	NA	<0.02	<0.01	130	2.1	1.9	NA	NA	NA	NA	NA	<0.11	NA	57	270 Jd	NA	NA	0.00	0.28
F33-TW3	06/11/10	NA	<1.0	NA	NA	NA	NA	NA	270	330	<1.7	<1.7	70	NA	<0.017	NA	NA	NA	**500**	NA	NA
F33-TW6	05/06/10	<0.071	NA	<0.02	<0.01	0.53	2.2	2.1	NA	NA	NA	NA	NA	<0.11	NA	72	**300 Jd**	NA	NA	0.00	0.27
F33-TW6	06/10/10	NA	<1.0	NA	NA	NA	NA	NA	280	340	<1.7	<1.7	62	NA	<0.017	NA	NA	NA	**250**	NA	NA
F33-TW7	05/07/10	<0.071	NA	<0.02	<0.01	24	3.2	3	NA	NA	NA	NA	NA	<0.11	NA	54	**1,100 Jd**	NA	NA	0.02	0.56
F33-TW7	06/10/10	NA	<1.0	NA	NA	NA	NA	NA	320	390	<1.7	<1.7	60	NA	<0.017	NA	NA	NA	**650**	NA	NA
F34-TW1	06/11/10	<0.071	<1.0	<0.02	<0.01	32	2.7	NA	160	200	<1.7	<1.7	35	<0.11	<0.017	110	NA	NA	56	0.36	0.34
IW-04	06/14/10	0.11	<1.0	2.1	9.8	7,200	1	NA	3	4	<1.7	<1.7	74	0.12 Jq	<0.017	0.75	NA	NA	**660**	0.01	3.30
MW-01	06/10/10	**770 Jd**	<1000	0.05 Jq	<0.01	0.08 Jq	0.63 Jq	NA	81	99	<1.7	<1.7	7.3	2.4	<0.017	19	NA	NA	<1.2	0.01	0.02
MW-02	06/09/10	**3,100**	<1000	<0.02	<0.01	0.06 Jq	7.5	NA	57	70	<1.7	<1.7	6.5	11	<0.017	7.6	NA	NA	<1.2	0.00	0.03
MW-03	06/09/10	0.56	<1.0	<0.02	<0.01	0.49	0.82	NA	110	100	14	<1.7	11	<0.11	<0.017	12	NA	NA	<1.2	0.01	0.03
MW-05	06/15/10	**2,600**	<500	<0.02	0.02 Jq	0.12 Ba	0.72	NA	130	160	<1.7	<1.7	7.8	7.2	0.040 Jq	11	NA	NA	<2.5	0.03	0.01
MW-06	06/15/10	**12**	<1.0	<0.02	0.02 Jq	55	3.4	NA	99	120	<1.7	<1.7	7.3	<0.11	<0.017	8.6	NA	NA	140	0.10	0.57
MW-07	06/15/10	**210**	<50	<0.02	<0.01	3 Jf	0.58 Jq	NA	55	67	<1.7	<1.7	6.5	2.7	<0.017	7	NA	NA	<2.5	0.02	0.00
MW-08	06/15/10	<0.071	<1.0	<0.02	<0.01	0.25	1.3 Jf	NA	99	120	<1.7	<1.7	3.9	<0.11	<0.017	9.5	NA	NA	160	0.00	0.08
MW-09	06/15/10	<0.071	<1.0	0.03 Jq	<0.01	0.62	0.43 Jq	NA	93	110	<1.7	<1.7	5.6	<0.11	<0.017	19	NA	NA	43	0.00	0.08
MW-11	06/16/10	3	<1.0	<0.02	<0.01	0.03 Jq	0.83	NA	190	230	<1.7	<1.7	22	12	<0.017	66	NA	NA	<2.5	0.01	0.02
MW-12	06/17/10	<0.071	<1.0	<0.02	0.04 Jq	23	2.6	NA	400	480	<1.7	<1.7	22	<0.11	<0.017	**450**	NA	NA	**2,600**	0.00	1.41
MW-13	06/16/10	<0.071	<1.0	<0.02	0.04 Jq	16	0.97	NA	260	310	<1.7	<1.7	11	<0.11	<0.017	77	NA	NA	280	0.00	0.02
MW-14	06/16/10	1.6	<1.0	<0.02	0.03 Jq	0.1	0.83	NA	300	360	<1.7	<1.7	8.3	0.5	<0.017	24	NA	NA	<2.5	0.01	0.00
MW-15	06/14/10	<0.071	<1.0	<0.02	<0.01	1.1	2.3	NA	180	210	<1.7	<1.7	10	<0.11	<0.017	40	NA	NA	110	0.02	0.02
MW-17	06/17/10	**440**	<100	0.03 BJkq	0.03 Jq	0.23 Bk	0.9	NA	92	110	<1.7	<1.7	4.7	3.8	<0.017	7	NA	NA	3.3 Jq	0.00	0.00
MW-18	05/05/10	2.5	NA	<0.02	<0.01	0.65	1	0.74	NA	NA	NA	NA	NA	0.27	NA	44	<12	NA	NA	0.00	0.03
MW-18	06/14/10	NA	<1.0	NA	NA	NA	NA	NA	260	310	<1.7	<1.7	14	NA	<0.017	NA	NA	NA	150	NA	NA
MW-19	06/17/10	**170**	<25	<0.02	0.02 Jq	0.16 Bk	0.82	NA	86	100	<1.7	<1.7	6	0.11 Jq	<0.017	7.4	NA	NA	2.8 Jq	0.00	0.06
MW-22	06/18/10	**250**	<50	<0.02	<0.01	0.04 Jq	0.92	NA	58	71	<1.7	<1.7	3.6	11	<0.017	6.6	NA	NA	<2.5	0.01	0.05
MW-23	06/18/10	**100**	<1.0	<0.02	<0.01	0.04 Jq	0.71	NA	68	83	<1.7	<1.7	4.4	14	<0.017	7.4	NA	NA	<2.5	0.02	0.08
MW-26	06/15/10	**6,600**	<1000	<0.02	<0.01	0.07 Jq	1.1	NA	60	73	<1.7	<1.7	34	14	<0.017	10	NA	NA	<1.2	0.00	0.08
MW-27	06/21/10	0.89	<1.0	0.09 BJkq	0.37	39	0.84 Bk	NA	41	50	<1.7	<1.7	16	0.58	<0.017	1.9	NA	NA	290	0.09	1.40
MW-28	06/15/10	**200**	<50	0.03 Jq	<0.01	0.08 BJaq	2.5	NA	66	81	<1.7	<1.7	5.8	2.4	<0.017	13	NA	NA	<2.5	0.05	0.03
MW-29	06/17/10	**25**	<1.0	0.03 BJkq	0.03 Jq	2.4	0.93 Bk	NA	220	270	<1.7	<1.7	6.8	<0.11	<0.017	29	NA	NA	18 Jq	0.00	0.01
MW-31	06/14/10	2.6	<1.0	<0.02	<0.01	0.09 BJaq	2.1	NA	110	110	10	<1.7	13	<0.11	<0.017	16	NA	NA	<1.2	NA	NA
MW-32	06/10/10	0.081 Jdq	<1.0	<0.02	<0.01	0.16	2.3	NA	100	130	<1.7	<1.7	8.9	<0.11	<0.017	16	NA	NA	<1.2	0.01	0.01
MW-34	06/17/10	**61**	<1.0	<0.02	<0.01	0.03 BJkq	0.92	NA	210	260	<1.7	<1.7	17	19	<0.017	20	NA	NA	<2.5	0.01	0.00
MW-35	06/14/10	0.24	<1.0	<0.02	<0.01	0.05 Jq	0.8	NA	52	63	<1.7	<1.7	6.3	1.3	<0.017	4.3	NA	NA	<1.2	0.00	0.00
MW-36	06/14/10	0.35	<1.0 UJc	<0.02	<0.01	0.03 BJaq	0.93	NA	65	79	<1.7	<1.7	8.5	6.5	<0.017	8	NA	NA	<1.2	0.02	0.06
MDL		<0.071	1.0	0.02	0.01	0.01	0.14	0.16	1.7	1.7	1.7	1.7	0.50	0.11	0.017	0.37	12	0.000084	1.2	-	-
MCL/DWNL		6	800 (1)	-	-	-	-	-	-	-	-	-	250	45	1	250	300	0.015	500 (1)	-	-

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.
Sulfide and ferrous iron sample analysis was performed in the field using a Hach DR 850 colorimeter.
MDL - Method detection limit
MCL - California Department of Public Health Maximum Contaminant Level
DWNL - California Department of Public Health drinking water notification level.
"-" - MCL or DWNL not available.
(1) DWNL
Bold - MCL or DWNL exceeded.
µg/L - micrograms per liter.
mg/L - milligrams per liter
NA - not analyzed

<# - Analyte not detected, method detection limit concentration is shown.
B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable
J - The analyte was positively identified, but the analyte concentration is an estimated value.
R - The sample result is rejected and not usable for any purpose. The presence or absence of the analyte cannot be verified.
U - The analyte was not detected above the MDL.
a - The analyte was found in the method blank.
c - The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recoveries were outside control limits.
d - The Laboratory Control Sample (LCS) recovery was outside control limits.
e - a holding time violation occurred.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-7 Summary of Validated Detected Inorganic, Natural Attenuation, and General Minerals Analytes - Second Quarter 2010 (continued)

Sample Location	Sample Date	Per chlorate - µg/L	Chlorate - ug/L	Ethene- ug/L	Ethane - ug/L	Methane - ug/L	Dissolved Organic Carbon - mg/L	Total Organic Carbon - mg/L	Alkalinity, Total -mg/L	Bicarbonate - mg/L	Carbonate - mg/L	Hydroxide - mg/L	Chloride - mg/L	Nitrate - mg/L	Nitrite - mg/L	Sulfate - mg/L	Iron - ug/L	Lead - mg/L	Dissolved Manganese - ug/L	Sulfide - mg/L	Fe2+ - mg/L
MW-40	06/16/10	**750**	<200	<0.02	<0.01	0.06 Jq	0.66 Jq	NA	110	140	<1.7	<1.7	6.9	5.8	<0.017	18	NA	NA	<2.5	0.01	0.00
MW-43	06/10/10	**65 Jd**	<1.0	<0.02	<0.01	230	0.95	NA	83	100	<1.7	<1.7	5.7	0.94 Je	<0.017	11	NA	NA	4.1 Jq	0.00	0.30
MW-45	06/15/10	**160**	<1.0	<0.02	<0.01	0.08 BJaq	0.27 Jq	NA	73	89	<1.7	<1.7	4.6	1.6	<0.017	9.2	NA	NA	<1.2	NA	0.00
MW-46	06/16/10	0.22	<1.0	0.03 Jq	<0.01	5.7	2.7	NA	110	140	<1.7	<1.7	6.3	0.14 Jq	<0.017	12	NA	NA	23	0.02	0.00
MW-47	06/16/10	4.8	<1.0	<0.02	<0.01	2.7	0.31 Jq	NA	82	100	<1.7	<1.7	3.8	1.9	<0.017	9.8	NA	NA	<2.5	0.02	0.06
MW-48	06/10/10	<0.071 Rd	<1.0	<0.02	0.06 Jq	1,900	3.2	NA	150	180	<1.7	<1.7	4.9	<0.11	<0.017	<0.37	NA	NA	180	0.00	1.49
MW-49	06/10/10	**790 Jd**	<10	<0.02	<0.01	0.08 Jq	6.7	NA	71	87	<1.7	<1.7	4.7	4.3	<0.017	6	NA	NA	<1.2	0.00	0.06
MW-53	06/16/10	**74**	<1.0	<0.02	<0.01	0.03 Jq	0.73	NA	55	67	<1.7	<1.7	4.5	2.2	<0.017	4.7	NA	NA	<2.5	0.01	0.05
MW-54	06/18/10	**1,000**	<200	<0.02	<0.01	0.06 Jq	0.59 Jq	NA	68	83	<1.7	<1.7	6.3	11	<0.017	9.2	NA	NA	<2.5	0.01	0.07
MW-55	06/15/10	**2,500**	<500	<0.02	<0.01	0.06 Jq	1	NA	52	63	<1.7	<1.7	7	9.8	<0.017	6.7	NA	NA	<1.2	0.00	0.04
MW-56A	06/03/10	0.98	<1.0	<0.03	0.14 Jq	21	0.26 Jq	NA	100	110	8.4	<1.7	12	<0.11	<0.017	12	NA	NA	1.7 Jq	0.01	0.07
MW-56B	06/03/10	**460**	<1.0	<0.03	0.02 Jq	0.14 Jq	3.6	NA	96	120	<1.7	<1.7	7.8	10	<0.017	9.6	NA	NA	7.8 Jq	0.00	0.05
MW-56C	06/03/10	**1,000**	<1.0	<0.03	<0.01	0.73	0.83	NA	65	79	<1.7	<1.7	5.7	9.2	<0.017	8.3	NA	NA	<1.2	0.01	0.07
MW-59A	06/10/10	**1,400 Jd**	<1000	0.04 Jq	0.15	0.42	1.5	NA	97	120	<1.7	<1.7	11	0.63	0.28	9.2	NA	NA	<1.2	0.02	0.06
MW-59B	06/10/10	**4,400 Jd**	<1000	0.04 Jq	0.14	0.25	1	NA	62	76	<1.7	<1.7	5.9	14	0.030 Jq	9.8	NA	NA	1.8 Jq	0.01	0.01
MW-59D	06/10/10	**6,300 Jd**	<1000	0.04 Jq	0.15	0.11	0.71	NA	55	67	<1.7	<1.7	7.9	15	<0.017	9.5	NA	NA	<1.2	0.00	0.04
MW-60A	06/08/10	**5,400 Jd**	<1000	<0.02	<0.01	0.05 BJaq	0.31 Jq	NA	79	96	<1.7	<1.7	11	8.8	<0.017	8	NA	0.012	<1.2	0.01	0.05
MW-60B	06/08/10	**1,100 Jd**	<1000	0.08 Jq	0.02 Jq	0.07 BJaq	0.53 Jq	NA	100	<1.7	56	2.0 Jq	8.5	3.7	<0.017	9.7	NA	NA	<1.2	0.01	0.08
MW-61A	06/07/10	**12,000 Jd**	<100	0.29	0.06 Jq	0.2 Ba	3.7	NA	450	<1.7	230	26	13	2.3	0.99	14	NA	NA	16	0.80	0.38
MW-61B	06/07/10	**77,000 Jd**	<1000	NA	NA	NA	1.2 Jf	NA	56	68	<1.7	<1.7	50	21	<0.017	22	NA	NA	<1.2	0.00	0.05
MW-61B	06/18/10	NA	NA	0.04 Jq	0.31	0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-61C	06/07/10	**2,800 Jd**	<100	NA	NA	NA	3.8	NA	98	120	<1.7	<1.7	14	<0.11	<0.017	12	NA	NA	<1.2	0.01	0.00
MW-61C	06/18/10	NA	NA	0.04 Jq	0.45	0.24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-62A	06/17/10	**1,400**	<200	<0.02	<0.01	0.32 Bk	5.1	NA	100	130	<1.7	<1.7	8.7	16	<0.017	12	NA	NA	<2.5	0.01	0.03
MW-66	06/17/10	**1,200**	<200	0.04 BJkq	0.02 Jq	0.14 Bk	3.2	NA	140	170	<1.7	<1.7	8.7	6.7	<0.017	12	NA	NA	94	0.02	0.07
MW-67	05/07/10	<0.071	NA	<0.02	<0.01	25	6.2	5.6	NA	NA	NA	NA	NA	<0.11	NA	100	210 Jd	NA	NA	0.01	0.08
MW-67	06/14/10	NA	<1.0	NA	NA	NA	NA	NA	410	500	<1.7	<1.7	51		<0.017		NA	NA	220	NA	NA
MW-68	06/17/10	**9,600**	<2000	<0.02	<0.01	0.08 BJkq	1.6 Bk	NA	310	380	<1.7	<1.7	100	5	<0.017	45	NA	NA	<2.5	0.01	0.05
MW-69	06/09/10	**1,200**	<10	<0.02	<0.01	6.7	0.89	NA	290	360	<1.7	<1.7	26	11	<0.017	20	NA	NA	<1.2	0.00	0.04
MW-70	05/05/10	**15**	NA	<0.02	<0.01	0.07 BJaq	2.7	2.2	NA	NA	NA	NA	NA	<0.11	NA	55	<12	NA	NA	0.02	0.02
MW-70	06/10/10	NA	<1.0	NA	NA	NA	NA	NA	290	350	<1.7	<1.7	57	NA	<0.017	NA	NA	NA	<1.2	NA	NA
MW-71A	06/07/10	<0.071 Rd	<1.0	<0.03	<0.01	56	0.61 Jq	NA	110	130	<1.7	<1.7	13	<0.11	<0.017	19	NA	NA	5.4 BJaq	0.01	0.08
MW-71C	06/07/10	0.28 Jd	<1.0	0.18	0.02 Jq	12	0.50 Jq	NA	100	130	<1.7	<1.7	8.3	2	0.060 Jq	10	NA	NA	<1.2	0.00	0.03
MW-72A	06/04/10	<0.071	<1.0	0.07 Jq	<0.01	7.8	1.9	NA	98	120	<1.7	<1.7	6.1	<0.11	<0.017	31	NA	NA	4.1 Jq	0.02	0.11
MW-72B	06/04/10	1.2	<1.0	<0.03	<0.01	0.18 Jq	0.71 Ba	NA	96	120	<1.7	<1.7	5.8	2.5	<0.017	42	NA	NA	3.0 Jq	0.00	0.10
MW-72C	06/04/10	0.22	<1.0	<0.03	<0.01	0.25	1.7	NA	54	66	<1.7	<1.7	6.1	3.9	<0.017	10	NA	NA	<1.2	0.00	0.00
MW-73A	06/07/10	2.2 Jd	<1.0	<0.02	<0.01	0.04 BJaq	1	NA	93	110	<1.7	<1.7	5.1	1.1	<0.017	16	NA	NA	<1.2	NA	0.04
MW-73B	06/07/10	4.6 Jd	<1.0	<0.02	<0.01	0.05 BJaq	1.5	NA	120	150	<1.7	<1.7	9.5	0.97	<0.017	110	NA	NA	<1.2	0.00	0.00
MW-73C	06/08/10	0.49 Jd	<100	<0.02	<0.01	0.13 Ba	0.77	NA	120	140	<1.7	<1.7	6.2	3.5	<0.017	18	NA	NA	<1.2	0.01	0.03
MW-74A	06/04/10	0.45	<1.0	0.05 Jq	<0.01	0.26	1.1 Ba	NA	120	150	<1.7	<1.7	15	<0.11	<0.017	18	NA	NA	<1.2	0.00	0.00
MDL		<0.071	1.0	0.02	0.01	0.01	0.14	0.16	1.7	1.7	1.7	1.7	0.50	0.11	0.017	0.37	12	0.000084	1.2	-	-
MCL/DWNL		6	800 (1)	-	-	-	-	-	-	-	-	-	250	45	1	250	300	0.015	500 (1)	-	-

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.

Sulfide and ferrous iron sample analysis was performed in the field using a Hach DR 850 colorimeter.
MDL - Method detection limit
MCL - California Department of Public Health Maximum Contaminant Level
DWNL - California Department of Public Health drinking water notification level.
"-" - MCL or DWNL not available.
(1) DWNL
Bold - MCL or DWNL exceeded.
µg/L - micrograms per liter.
mg/L - milligrams per liter
NA - not analyzed

<# - Analyte not detected, method detection limit concentration is shown.
B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable
J - The analyte was positively identified, but the analyte concentration is an estimated value.
R - The sample result is rejected and not usable for any purpose. The presence or absence of the analyte cannot be verified.
U - The analyte was not detected above the MDL.
a - The analyte was found in the method blank.
c - The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recoveries were outside control limits.
d - The Laboratory Control Sample (LCS) recovery was outside control limits.
e - a holding time violation occurred.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-7 Summary of Validated Detected Inorganic, Natural Attenuation, and General Minerals Analytes - Second Quarter 2010 (continued)

Sample Location	Sample Date	Per chlorate - µg/L	Chlorate - ug/L	Ethene- ug/L	Ethane - ug/L	Methane - ug/L	Dissolved Organic Carbon - mg/L	Total Organic Carbon - mg/L	Alkalinity, Total -mg/L	Bicarbonate - mg/L	Carbonate - mg/L	Hydroxide - mg/L	Chloride - mg/L	Nitrate - mg/L	Nitrite - mg/L	Sulfate - mg/L	Iron - ug/L	Lead - mg/L	Dissolved Manganese - ug/L	Sulfide - mg/L	Fe2+ - mg/L
MW-74B	06/04/10	1.8	<10	0.06 Jq	0.02 Jq	0.27	1.6	NA	200	210	18	<1.7	38	2.1	0.030 Jq	220	NA	NA	210	0.80	0.11
MW-74C	06/04/10	1.1	<1.0	<0.03	<0.01	0.17 Jq	1.9	NA	150	190	<1.7	<1.7	3.3	16	<0.017	11	NA	NA	<1.2	0.01	0.02
MW-75A	06/02/10	<0.071	<1.0	0.07 Jq	<0.01	0.32 Ba	2.8	NA	110	87	24	<1.7	8.5	<0.11	<0.017	20	NA	NA	<1.2	0.01	0.07
MW-75B	06/02/10	1.7	<1.0	<0.03	<0.01	0.12 BJaq	0.82	NA	110	140	<1.7	<1.7	6.1	3.1	<0.017	8.7	NA	NA	<1.2	0.01	0.05
MW-75C	06/02/10	0.42	<1.0	0.04 Jq	0.19 Jq	500	0.94	NA	110	140	<1.7	<1.7	5.2	0.29	<0.017	14	NA	NA	250	0.02	0.01
MW-76A	06/03/10	<0.071	<1.0	0.15 Jq	<0.01	0.31	0.57 Jq	NA	110	120	4.8	<1.7	5.6	<0.11	<0.017	28	NA	NA	<1.2	0.03	0.00
MW-76B	06/03/10	<0.071	<1.0	<0.03	<0.01	0.99	1.5	NA	96	120	<1.7	<1.7	4	<0.11	<0.017	8.6	NA	NA	11	0.02	0.20
MW-76C	06/03/10	<0.071	<1.0	<0.03	<0.01	25	0.96	NA	79	96	<1.7	<1.7	5.4	<0.11	<0.017	21	NA	NA	52	0.01	0.19
MW-77A	05/12/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-77A	06/09/10	NA	<1.0	0.49	0.54	6.3	0.93	NA	64	78	<1.7	<1.7	30	<0.11	<0.017	**280**	NA	NA	2.9 Jq	0.75	0.00
MW-77B	05/12/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-77B	06/09/10	NA	<1.0	<0.02	<0.01	1.8	1.2	NA	88	110	<1.7	<1.7	25	<0.11	<0.017	180	NA	NA	<1.2	0.01	0.00
MW-78	06/08/10	**7.4 Jd**	<10	5.8	0.17	4	2	NA	150	27	79	<1.7	7.5	1.9	<0.017	7.3	NA	NA	<1.2	0.32	0.05
MW-79A	06/09/10	<0.071 Rd	<1.0	0.29	0.02 Jq	1.7	0.35 Jq	NA	100	130	<1.7	<1.7	5.9	<0.11	<0.017	20	NA	NA	3.4 Jq	0.09	0.00
MW-79C	06/09/10	**74 Jd**	<100	<0.02	<0.01	0.06 BJaq	2.9	NA	70	85	<1.7	<1.7	4.7	5.7	<0.017	10	NA	NA	<1.2	-	0.05
MW-80	06/15/10	<0.071	<1.0	0.43	<0.01	0.67	0.40 Jq	NA	100	130	<1.7	<1.7	5.1	<0.11	<0.017	14	NA	NA	5.4 Jq	0.14	0.03
MW-81	06/14/10	<0.071	<1.0	0.15	0.14	2.3	0.60 Jq	NA	87	74	16	<1.7	24	<0.11	<0.017	37	NA	NA	<1.2	0.03	0.01
MW-82	05/06/10	<0.071	NA	<0.02	<0.01	0.35	2.4	1.9	NA	NA	NA	NA	NA	<0.11	NA	73	21 Jd	NA	NA	0.01	0.01
MW-82	06/10/10	NA	<1.0 UJc	NA	NA	NA	NA	NA	280	340	<1.7	<1.7	66	NA	<0.017	NA	NA	NA	41	NA	NA
MW-83	05/05/10	0.4	NA	<0.02	<0.01	<0.02	2.6	2	NA	NA	NA	NA	NA	<0.11	NA	58	<12	NA	NA	0.00	0.05
MW-83	06/10/10	NA	<1.0	NA	NA	NA	NA	NA	270	330	<1.7	<1.7	57	NA	<0.017		NA	NA	<1.2	NA	NA
MW-84A	06/11/10	<0.071	<1.0	1.9	0.74	170	3.6	NA	150	180	<1.7	<1.7	75	<0.11	<0.017	66	NA	NA	44	0.11	0.11
MW-84B	06/11/10	<0.071	<1.0	0.78	0.34	24	0.75	NA	75	92	<1.7	<1.7	34	<0.11	<0.017	170	NA	NA	16	0.29	0.05
MW-85A	05/12/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-85A	06/09/10	NA	<1.0	2	0.04 Jq	1.7	0.82	NA	63	77	<1.7	<1.7	27	<0.11	<0.017	93	NA	NA	4.8 Jq	0.17	0.04
MW-85B	05/12/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-85B	06/08/10	NA	<1.0	<0.02	<0.01	4.5	1.8	NA	88	100	<1.7	<1.7	30	<0.11	<0.017	97	NA	NA	2.7 BJaq	0.02	0.01
MW-86A	05/12/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-86A	06/08/10	NA	<1.0	0.16	<0.01	4.5	1	NA	63	62	7.2	<1.7	28	<0.11	<0.017	110	NA	NA	<1.2	0.05	0.04
MW-86B	05/12/10	0.080 Jq	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-86B	06/08/10	NA	<1.0	0.13	0.13	620	2.1	NA	130	160	<1.7	<1.7	58	<0.11	<0.017	110	NA	NA	120	0.00	1.38
MW-87A	05/12/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-87A	06/08/10	NA	<1.0	0.06 Jq	<0.01	6.5	1.5	NA	90	90	9.6	<1.7	30	<0.11	<0.017	110	NA	NA	<1.2	0.03	0.02
MW-87B	05/12/10	**62**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-87B	06/08/10	NA	<10	0.04 Jq	0.09 Jq	0.37	2.1	NA	290	350	<1.7	<1.7	60	25	<0.017	130	NA	NA	1.2 BJaq	0.00	0.04
MW-88	06/09/10	**1,100**	<100	<0.02	<0.01	0.03 Jq	1.4	NA	300	360	<1.7	<1.7	79	10	<0.017	50	NA	NA	1.7 Jq	0.00	0.00
MW-89	06/17/10	**2,200**	<500	0.04 BJkq	0.18	0.31 Bk	1.5	NA	340	410	<1.7	<1.7	58	11	0.040 Jq	36	NA	NA	59	0.00	0.04
MW-90	06/09/10	**220 Jd**	<100	0.03 Jq	0.04 Jq	0.21	2	NA	380	400	31	<1.7	5	0.95	0.040 Jq	13	NA	NA	<1.2	0.01	0.03
MW-91	06/09/10	**1,900 Jd**	<1000	<0.02	<0.01	0.05 Jq	1.9	NA	310	380	<1.7	<1.7	94	5.7	<0.017	45	NA	NA	5.1 Jq	0.00	0.06
MW-92	06/11/10	**24 Jd**	<1.0	<0.02	<0.01	0.08 Jq	6	NA	160	190	<1.7	<1.7	50	11	<0.017	85	NA	NA	5.0 Jq	0.13	0.11
MDL		<0.071	1.0	0.02	0.01	0.01	0.14	0.16	1.7	1.7	1.7	1.7	0.50	0.11	0.017	0.37	12	0.000084	1.2	-	-
MCL/DWNL		6	800 (1)	-	-	-	-	-	-	-	-	-	250	45	1	250	300	0.015	500 (1)	-	-

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.
Sulfide and ferrous iron sample analysis was performed in the field using a Hach DR 850 colorimeter.
MDL - Method detection limit
MCL - California Department of Public Health Maximum Contaminant Level
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<# - Analyte not detected, method detection limit concentration is shown.
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J - The analyte was positively identified, but the analyte concentration is an estimated value.
R - The sample result is rejected and not usable for any purpose. The presence or absence of the analyte cannot be verified.
U - The analyte was not detected above the MDL.
a - The analyte was found in the method blank.
c - The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recoveries were outside control limits.
d - The Laboratory Control Sample (LCS) recovery was outside control limits.
e - a holding time violation occurred.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-7 Summary of Validated Detected Inorganic, Natural Attenuation, and General Minerals Analytes - Second Quarter 2010 (continued)

Sample Location	Sample Date	Per chlorate - µg/L	Chlorate - ug/L	Ethene- ug/L	Ethane - ug/L	Methane - ug/L	Dissolved Organic Carbon - mg/L	Total Organic Carbon - mg/L	Alkalinity, Total -mg/L	Bicarbonate - mg/L	Carbonate - mg/L	Hydroxide - mg/L	Chloride - mg/L	Nitrate - mg/L	Nitrite - mg/L	Sulfate - mg/L	Iron - ug/L	Lead - mg/L	Dissolved Manganese - ug/L	Sulfide - mg/L	Fe2+ - mg/L
MW-93	06/11/10	**10 Jd**	<1.0	<0.02	0.02 Jq	0.43	3.7	NA	310	380	<1.7	<1.7	82	3.6	0.050 Jq	120	NA	NA	6.1 Jq	0.01	0.03
MW-94	06/16/10	0.23	<1.0	0.05 Jq	0.1	1.1	1.5	NA	130	160	<1.7	<1.7	47	<0.11	<0.017	81	NA	NA	4.5 Jq	0.04	0.12
MW-95	06/11/10	<0.071	<1.0	<0.02	<0.01	4.4	0.65 Jq	NA	63	65	6	<1.7	29	<0.11	<0.017	110	NA	NA	<1.2	0.00	0.03
MW-96	06/11/10	<0.071	<1.0	0.63	0.07 Jq	55	2.1	NA	140	170	<1.7	<1.7	69	<0.11	<0.017	110	NA	NA	9.2 Jq	0.06	0.02
MW-97	06/11/10	<0.071	<1.0	2.3	0.12	72	2.5	NA	160	190	<1.7	<1.7	66	<0.11	<0.017	76	NA	NA	10	0.10	0.05
MW-98A	06/07/10	<0.071 Rd	<10	0.15	<0.01	4.7	0.55 Jq	NA	150	130	25	<1.7	10	<0.11	<0.017	7.1	NA	NA	<1.2	0.10	0.10
MW-98B	06/07/10	**1,400 Jd**	<1000	<0.02	<0.01	1.6	0.55 Jq	NA	240	290	<1.7	<1.7	25	15	<0.017	20	NA	NA	<1.2	0.00	0.07
MW-99	06/09/10	**850**	<1000	1.9	0.65	3.3	2.4	NA	580	<6.8	29	180	38	<0.11	<0.017	24	NA	NA	<1.2	0.00	1.23
MW-100	06/02/10	0.072 Jq	<1.0 UJc	0.08 Jq	0.1 Jq	8.6	2.3	NA	20	17	3.6	<1.7	81	<0.11	<0.017	**300**	NA	NA	<1.2	0.01	0.06
MW-101	05/07/10	<0.071	NA	0.05 Jq	<0.01	0.22	0.98	0.40 Jq	NA	NA	NA	NA	NA	<0.11	NA	29	170 Jd	NA	NA	0.02	0.02
MW-101	06/10/10	NA	<1.0	NA	NA	NA	NA	NA	75	92	<1.7	<1.7	28	NA	<0.017	NA	NA	NA	120	NA	NA
MW-102	05/07/10	<0.071	NA	0.09 Jq	0.03 Jq	180	4.4	0.44 Jq	NA	NA	NA	NA	NA	<0.11	NA	16	44 Jd	NA	NA	0.00	0.00
MW-102	06/16/10	NA	<1.0	NA	NA	NA	NA	NA	120	140	<1.7	<1.7	5.2	NA	<0.017	NA	NA	NA	190	0.01	0.03
OW-01	06/18/10	<0.071	<1.0	<0.02	<0.01	0.18	1.2	NA	68	83	<1.7	<1.7	3.9	0.14 Jq	<0.017	620	NA	NA	480	0.00	0.04
OW-02	06/15/10	**390**	<1.0	<0.02	<0.01	0.05 BJaq	1.5	NA	67	82	<1.7	<1.7	4.7	3.1	<0.017	6.9	NA	NA	<1.2	0.01	0.05
OW-08	06/14/10	0.39	<1.0	<0.02	<0.01	7.7	0.9	NA	180	210	<1.7	<1.7	32	3.7	<0.017	230	NA	NA	<1.2	0.00	0.05
P-02	06/16/10	<0.071	<1.0	<0.02	<0.01	1.4	1.6	NA	240	290	<1.7	<1.7	55	<0.11	<0.017	250	NA	NA	**1,300**	0.00	0.01
P-03	06/14/10	<71	<1000	<0.02	0.03 Jq	18	1.8	NA	150	180	<1.7	<1.7	6.4	<0.11	<0.017	240	NA	NA	370	0.03	0.67
P-05	06/16/10	**6.2**	<1.0	<0.02	<0.01	33	1.2	NA	90	110	<1.7	<1.7	3.5	3.4	<0.017	7	NA	NA	<2.5	0.00	0.03
P-06D	06/17/10	2.1	<1.0	<0.02	<0.01	0.19 Bk	0.46 BJkq	NA	130	150	<1.7	<1.7	7.2	<0.11	<0.017	23	NA	NA	2.9 Jq	0.00	0.05
P-06S	06/17/10	<0.071	<1.0	<0.02	<0.01	0.13 Bk	1.7 Bk	NA	380	470	<1.7	<1.7	21	0.18 Jq	<0.017	110	NA	NA	87	0.01	0.04
SW-01	05/11/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-02	05/11/10	**19**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-03	05/11/10	**60**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-04	05/11/10	**41**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-06	05/11/10	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-07	05/11/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-16	05/11/10	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-18	05/12/10	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-19	05/11/10	<0.071	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MDL		<0.071	1.0	0.02	0.01	0.01	0.14	0.16	1.7	1.7	1.7	1.7	0.50	0.11	0.017	0.37	12	0.000084	1.2	-	-
MCL/DWNL		6	800 (1)	-	-	-	-	-	-	-	-	-	250	45	1	250	300	0.015	500 (1)	-	-

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.

Sulfide and ferrous iron sample analysis was performed in the field using a Hach DR 850 colorimeter.
MDL - Method detection limit
MCL - California Department of Public Health Maximum Contaminant Level
DWNL - California Department of Public Health drinking water notification level.
"-" - MCL or DWNL not available.
(1) DWNL
Bold - MCL or DWNL exceeded.
µg/L - micrograms per liter.
mg/L - milligrams per liter
NA - not analyzed

<# - Analyte not detected, method detection limit concentration is shown.
B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable
J - The analyte was positively identified, but the analyte concentration is an estimated value.
R - The sample result is rejected and not usable for any purpose. The presence or absence of the analyte cannot be verified.
U - The analyte was not detected above the MDL.
a - The analyte was found in the method blank.
c - The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recoveries were outside control limits.
d - The Laboratory Control Sample (LCS) recovery was outside control limits.
e - a holding time violation occurred.
q - The analyte detection was below the Practical Quantitation Limit (PQL).

Table 3-8 Summary Statistics of Validated Organic and Inorganic Analytes Detected in Groundwater - First Quarter 2010

Organic Analytes Detected	Total Number of Samples Analyzed	Total Number of Detections (1)	Number of Detections Exceeding MCL or DWNL (1)	MCL / DWNL		Minimum Concentration Detected		Maximum Concentration Detected	
1,4-Dioxane	18	13	7	3 (2)	µg/L	0.17	µg/L	82	µg/L
Acetone	18	3	0	-	µg/L	5.1	µg/L	7.9	µg/L
Benzene	18	2	0	1	µg/L	0.14	µg/L	0.36	µg/L
Carbon Disulfide	18	1	1.8	160 (2)	µg/L	1.8	µg/L	1.8	µg/L
Chloroform	18	1	0	-	µg/L	0.62	µg/L	0.62	µg/L
1,1-Dichloroethane	18	4	1	5	µg/L	0.37	µg/L	21	µg/L
1,2-Dichloroethane	18	3	1	5	µg/L	0.33	µg/L	33	µg/L
1,1-Dichloroethene	18	6	3	6	µg/L	0.12	µg/L	570	µg/L
cis-1,2-Dichloroethene	18	5	3	6	µg/L	0.23	µg/L	47	µg/L
trans-1,2-Dichloroethene	18	3	0	10	µg/L	0.40	µg/L	2.3	µg/L
Methylene Chloride	18	1	0	5	µg/L	0.35	µg/L	0.35	µg/L
1,1,2-Trichloroethane	18	1	0	5	µg/L	0.98	µg/L	0.98	µg/L
Trichloroethene	18	4	3	5	µg/L	1.9	µg/L	120	µg/L
Tetrachloroethene	18	1	0	5	µg/L	0.25	µg/L	0.25	µg/L
Vinyl chloride	18	3	3	0.5	µg/L	0.89	µg/L	3.3	µg/L
Ethene	7	2	0	-	µg/L	0.02	µg/L	0.02	µg/L
Ethane	7	1	0	-	µg/L	0.01	µg/L	0.01	µg/L
Methane	7	5	0	-	µg/L	0.74	µg/L	170	µg/L
Acetic Acid	7	6	0	-	mg/L	0.035	mg/L	0.066	mg/L
Propionic Acid	7	1	0	-	mg/L	0.011	mg/L	0.011	mg/L
Total Organic Carbon	7	7	0	-	mg/L	2.0	mg/L	3.6	mg/L
Dissolved Organic Carbon	7	4	0	-	mg/L	2.6	mg/L	3.8	mg/L
Inorganic Analytes Detected	**Total Number of Samples Analyzed**	**Total Number of Detections (1)**	**Number of Detections Exceeding MCL or DWNL (1)**	**MCL / DWNL**		**Minimum Concentration Detected**		**Maximum Concentration Detected**	
Perchlorate	18	5	2	6	µg/L	0.33	µg/L	480	µg/L
Hydrogen	7	7	0	-	nM	2.9	nM	6.3	nM
Iron	7	5	2	0.3	mg/L	0.033	mg/L	1.7	mg/L
Sulfate	7	7	0	250	mg/L	61	mg/L	80	mg/L

Notes:
DWNL - California Department of Public Health drinking water notification level.
MCL - California Department of Public Health Maximum Contaminant Level
" - " - MCL or DWNL not established.
(1) - Number of detections exclude sample duplicates, trip blanks and equipment blanks.
(2) - DWNL.
mg/L - Milligrams per liter.
µg/L - Micrograms per liter.
nM - Nanomoles

Table 3-9 Summary Statistics of Validated Organic and Inorganic Analytes Detected in Groundwater - Second Quarter 2010

Organic Analytes Detected	Total Number of Samples Analyzed	Total Number of Detections (1)	Number of Detections Exceeding MCL or DWNL (1)	MCL / DWNL		Minimum Concentration Detected		Maximum Concentration Detected	
1,4-Dioxane	129	91	56	3 (2)	µg/L	0.110	µg/L	4,400	µg/L
Acetone	129	4	0	-	µg/L	5.1	µg/L	16	µg/L
2-Butanone	129	1	0	-	µg/L	1.4	µg/L	1.4	µg/L
Benzene	129	7	3	1	µg/L	0.18	µg/L	3.7	µg/L
Carbon disulfide	129	32	0	160 (2)	µg/L	0.37	µg/L	3.9	µg/L
Chlorobenzene	129	2	0	-	µg/L	0.24	µg/L	0.59	µg/L
Chloroethane	129	3	0	-	µg/L	0.66	µg/L	1	µg/L
Chloromethane	129	2	0	-	µg/L	0.37	µg/L	1.5	µg/L
Carbon tetrachloride	129	5	3	0.5	µg/L	0.28	µg/L	6.4	µg/L
Chloroform	129	25	0	-	µg/L	0.17	µg/L	28	µg/L
1,1-Dichloroethane	129	48	9	5	µg/L	0.13	µg/L	170	µg/L
1,2-Dichloroethane	129	26	18	5	µg/L	0.23	µg/L	380	µg/L
1,1-Dichloroethene	129	65	37	6	µg/L	0.13	µg/L	10,000	µg/L
cis-1,2-Dichloroethene	129	30	6	6	µg/L	0.2	µg/L	430	µg/L
trans-1,2-Dichloroethene	129	11	0	10	µg/L	0.15	µg/L	3.3	µg/L
Methyl tert-butyl ether	129	1	0	13	µg/L	0.38	µg/L	0.38	µg/L
Methylene Chloride	129	14	0	5	µg/L	0.15	µg/L	3	µg/L
Toluene	129	5	0	150	µg/L	0.23	µg/L	1.2	µg/L
1,1,1-Trichloroethane	129	22	0	200	µg/L	0.12	µg/L	7.6	µg/L
1,1,2-Trichloroethane	129	11	2	5	µg/L	0.35	µg/L	56	µg/L
Trichloroethene	129	66	42	5	µg/L	0.18	µg/L	3,100	µg/L
Trichlorofluoromethane	129	2	0	150	µg/L	0.21	µg/L	2	µg/L
Tetrachloroethene	129	12	2	5	µg/L	0.23	µg/L	8.6	µg/L
Vinyl chloride	129	15	7	0.5	µg/L	0.13	µg/L	26	µg/L
m, p-Xylene	129	1	0	1750	µg/L	0.44	µg/L	0.44	µg/L
Ethene	120	42	0	-	µg/L	0.03	µg/L	81	µg/L
Ethane	120	45	0	-	µg/L	0.02	µg/L	68	µg/L
Methane	120	94	0	-	µg/L	0.03	µg/L	7,200	µg/L
Hexanoic Acid	11	1	0	-	mg/L	0.1	mg/L	0.1	mg/L
Total Organic Carbon	11	11	0	-	mg/L	0.4	mg/L	5.6	mg/L
Dissolved Organic Carbon	120	112	0	-	mg/L	0.26	mg/L	9.3	mg/L
Inorganic Analytes Detected	**Total Number of Samples Analyzed**	**Total Number of Detections (1)**	**Number of Detections Exceeding MCL or DWNL (1)**	**MCL / DWNL**		**Minimum Concentration Detected**		**Maximum Concentration Detected**	
Perchlorate	129	86	53	6	µg/L	0.072	µg/L	77,000	µg/L
Chlorate	120	2	0	800 (2)	µg/L	2.7	µg/L	170	µg/L
Hydrogen	11	11	0	-	nM	0.61	nM	6.3	nM
Iron	11	8	3	0.3	mg/L	0.021	mg/L	1.9	mg/L
Lead	1	1	0	0.015	mg/L	0.012	mg/L	0.012	mg/L
Manganese (dissolved)	120	57	6	500 (2)	µg/L	1.7	µg/L	2,600	µg/L
Alkalinity (total)	120	120	0	-	mg/L	3	mg/L	580	mg/L
Bicarbonate	120	117	0	-	mg/L	4	mg/L	500	mg/L
Carbonate	120	17	0	-	mg/L	3.6	mg/L	230	mg/L
Hydroxide	120	3	0	-	mg/L	2	mg/L	180	mg/L
Chloride	120	120		250	mg/L	3.3	mg/L	120	mg/L
Nitrate	120	65	0	45	mg/L	0.11	mg/L	25	mg/L
Nitrite	120	9	0	1	mg/L	0.03	mg/L	0.99	mg/L
Sulfate	120	119	3	250	mg/L	0.75	mg/L	450	mg/L

Notes:
DWNL - California Department of Public Health drinking water notification level.
MCL - California Department of Public Health Maximum Contaminant Level
" - " - MCL or DWNL not established.
(1) - Number of detections exclude sample duplicates, trip blanks and equipment blanks.
(2) - DWNL.
mg/L - Milligrams per liter.
µg/L - Micrograms per liter.
nM - Nanomoles

3.4.1 Data Quality Review

The quality control samples were reviewed as described in the Revised Groundwater Sampling and Analysis Plan (Tetra Tech, 2003b). The data for the groundwater sampling activities were contained in analytical data packages generated by EMAX Laboratories Inc, Microseeps Laboratories Inc, and E.S. Babcock and Sons Laboratories Inc. These data packages were reviewed using the latest versions of the National Functional Guidelines for Organic and Inorganic Data Review documents from the EPA (EPA, 2008 and 2005).

Preservation criteria, holding times, field blanks, laboratory control samples (LCS), method blanks, duplicate environmental samples, spiked samples, and surrogate and spike recovery data were reviewed. Within each environmental sample the sample specific quality control spike recoveries were examined. These data examinations include comparing statistically calculated control limits to percent recoveries of all spiked analytes and duplicate spiked analytes. Relative Percent Difference (RPD) control limits are compared to actual spiked (MS/MSD) RPD results. Surrogate recoveries were examined for all organic compound analyses and compared to their control limits.

Environmental samples were analyzed by the following methods: Method SM 2320 for alkalinity, Method AM23G for volatile fatty acids, Method AM20GAX for hydrogen, Method E300.0 for nitrate, sulfate, and chloride, Method SM4500B for nitrite, Method E332.0 for perchlorate, Method A5310 for total organic carbon, Method RSK-175 for methane, ethane, ethene, Method SW8270C SIM for 1,4-dioxane, Methods SW6010B, E200.7, and SW6020 for metals, and Methods SW8260B and SW524.2 for VOCs. Unless otherwise noted below, all data results met required criteria, are of known precision and accuracy, did not require qualification, and may be used as reported.

Method SW8270C SIM for 1,4-dioxane had field duplicate RPD errors that qualified as estimated 1.2 percent of the total SW8270C SIM data. Holding time errors caused 3.0 percent of the total SW8270C SIM data to be qualified as estimated. These holding time errors were caused by laboratory delays due to instrument failure. The laboratory's SOP requires that an extra column be kept onsite, but a spare was not available. A new column was installed the next day but the sample holding times had passed. The samples were analyzed one day past their holding time. The data was reviewed and found to be consistent with historic results. The laboratory reviewed their SOP with the analysts to ensure future compliance with the SOP. The data qualified as estimated is usable for the intended purpose.

Blank contamination caused 3.0 percent of the total SW8270C SIM data to be qualified for blank contamination. The blank qualified results should be considered not detected.

In addition to being detected by method SW8270C SIM, if high enough concentrations are encountered, 1,4-dioxane will also be detected by Method SW8260B. However, Method SW8270C SIM is a more reliable method for measuring 1,4-dioxane at the required detection limits than Method SW8260B. Therefore, where available, the SW8270C SIM result will be used in data presentation and analysis as the best and correct result for the analyte. All data is validated and reported in Appendix F.

Method SM5310B for total organic carbon had field duplicate errors that qualified as estimated in 2.5 percent of the total SM5319B data. Blank contamination caused 3.8 percent of the total SM5310B data to be qualified for blank contamination. The data qualified as estimated is usable for the intended purpose. The blank qualified results should be considered not detected.

Method SW8260B for VOCs had field duplicate RPD and surrogate errors that qualified as estimated in 0.4 percent of the total SW8260B data. Blank contamination caused 0.2 percent of the total SW8260B data to be qualified for blank contamination. The data qualified as estimated is usable for the intended purpose. The blank qualified results should be considered not detected.

Method SW6010B for metals had LCS errors that qualified as estimated 45 percent of the total SW6010B data. Method 6010B analysis for iron had a total of 20 samples for analyses that were analyzed in two runs. In one of the runs, the LCS result for iron was above the quality control limits by 5 percent. This one LCS error caused the nine iron samples in that run to be qualified as an estimated value (45percent of all iron data in Second Quarter 2010). As a result of being out of compliance, the results from these nine samples may be biased slightly high (105 versus 100 ppm). The data qualified as estimated is usable for the intended purpose.

Method E200.7 for metals had blank contamination that caused 2.3 percent of the total E200.7 data to be qualified for blank contamination. The blank qualified results should be considered not detected.

Method RSK-175 for methane, ethane, and ethene had field duplicate RPD errors that qualified as estimated in 0.5 percent of the total RSK-175 data. The data qualified as estimated is usable for the intended purpose. Method RSK-175 had blank contamination that caused 4.8 percent of the total RSK-175 data to be qualified for blank contamination. The blank qualified results should be considered not detected.

Method AM23G for volatile fatty acids had matrix spike recovery errors that qualified as estimated in 5.0 percent of the total AM23G data. The data qualified as estimated is usable for the intended purpose. Method AM23G had blank contamination that caused 15 percent of the total AM23G data to be qualified for blank contamination. The blank qualified results should be considered not detected.

Method E332.0 for perchlorate had LCS and matrix spike recovery errors that qualified as estimated in 8.9 percent of the total E332.0 data. The data qualified as estimated is usable for the intended purpose. Method E332.0 had LCS errors that qualified as rejected 1.4 percent of the total E332.0 data. Rejected data are not usable for any purpose. Method E332.0 had blank contamination that caused 0.3 percent of the total E332.0 data to be qualified for blank contamination. The blank qualified results should be considered not detected.

3.5 CHEMICALS OF POTENTIAL CONCERN

The identification of COPCs is an ongoing process that takes place annually as part of the Second Quarter sampling. The purpose of identifying COPCs is to establish a list of analytes that best represents the extent and magnitude of affected groundwater and to focus more detailed analysis on those analytes. The analytes were organized and evaluated in two groups, organic and inorganic analytes, and divided into primary and secondary COPCs. Tables 3-5, 3-6, and 3-7 present summaries of the organic and inorganic analytes detected during the First Quarter 2010 and Second Quarter 2010 monitoring events. Data that is “B” qualified because of its association with either laboratory blank or field cross contamination is not included in the COPC evaluation.

The COPC process does not eliminate analytes from testing but reduces the number of analytes that are evaluated and discussed during reporting. While all of the secondary COPCs will continue to be tested for in future monitoring events because of their association with other analytes that are listed as primary COPCs, they are detected on a more limited or inconsistent, and/or their detection below a regulatory threshold, therefore the secondary COPCs will not be discussed further in the later sections of this report. Additionally, the standard list of analytes for each method will continue to be tested for and screened annually to insure that the appropriate COPCs are being identified and evaluated as specified in the Site 1 Revised Groundwater Sampling and Analysis Plan (Tetra Tech, Inc., 2003b).

3.5.1 Identification of Chemicals of Potential Concern

COPCs have been selected to include compounds that consistently have been detected in groundwater samples collected from the Site at concentrations above regulatory limits and that can be used to assess the extent of affected groundwater. Primary COPCs are parent products such as TCE and 1,1,1-TCA and are always present with a secondary COPC. Secondary COPCs are breakdown products such as 1,1-DCA and 1,1-DCE and are detected at lower concentrations than their parent products. At this site 1,1-DCE, a breakdown product of 1,1,1-TCA, is detected at higher concentrations than 1,1,1-TCA so it is considered the Primary COPC, and 1,1,1-TCA is considered a secondary COPC.

As discussed above, the COPC analysis is intended to streamline and focus the evaluation of the contaminant data collected during monitoring events. It is not intended to trivialize or dismiss the analytes screened out as part of the process. Therefore, to ensure that all analytes detected receive the proper attention this analysis is performed annually.

Laboratory analytical results from the First Quarter 2010 and Second Quarter 2010 monitoring events were reviewed to develop a consolidated list of analytes detected. The results were then screened against the MCLs and DWNLs (if an MCL has not been established).

3.5.2 Organic Analytes

Twenty five organic analytes were detected in the groundwater and/or surface water samples. Eleven organic analytes were detected at concentrations above their respective MCLs/DWNLs: benzene, carbon tetrachloride, 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), 1,1-DCE, cis-1,2-dichloroethene (cis-1,2-DCE), 1,4-dioxane, TCE, PCE, 1,1,2-trichloroethane (1,1,2-TCA) and vinyl chloride.

TCE was disposed of at the Site and has been routinely detected in groundwater samples collected from the Site. Observed concentrations of TCE breakdown products have been generally lower than TCE concentrations observed, therefore TCE is classified as a primary COPC. While 1,1,1-TCA was reportedly disposed of at the Site, it has not been detected at elevated concentrations in recent groundwater samples collected. However, in general, 1,1,1-TCA is not stable in the subsurface (Bielefeldt et al., 1995; Vogel et al, 1987); therefore it is assumed that concentrations of 1,1-DCE detected in groundwater samples collected from the Site resulted from the breakdown of 1,1,1-TCA. Since observed concentrations of 1,1-DCE are higher than the parent product, 1,1-DCE is classified as a primary COPC. Similarly, because detected concentrations of 1,1,1-TCA are relatively low and the distribution of 1,1,1-TCA is within the 1,1-DCE plume, 1,1,1-TCA is regarded as a secondary COPC.

It is assumed that 1,4-dioxane was introduced into the subsurface along with the solvent 1,1,1-TCA, since it is commonly used as a stabilizer in 1,1,1-TCA (Archer, 1996; Mohr, 2001). Because of the concentration and distribution of 1,4-dioxane and because its behavior in the environment are different than the other organic COPCs identified, 1,4-dioxane is also classified as a primary COPC.

The compounds 1,1-DCA, 1,2-DCA, 1,1-DCE, and cis-1,2-DCE could have been introduced into the environment as a primary product (solvent) but they are more commonly introduced as an impurity in a more common solvent such as TCE or 1,1,1-TCA, or as a breakdown product of TCE or 1,1,1-TCA. In groundwater samples collected, concentrations of 1,1-DCA, 1,2-DCA, and cis-1,2-DCE are detected at 1 to 2 orders of magnitude less than concentrations of TCE and 1,1-DCE. Until 1,1-DCA, 1,2-DCA or cis-1,2-DCE are detected in groundwater samples where a primary chlorinated COPC is absent or the concentration of 1,1-DCA, 1,2-DCA or cis-1,2-DCE is higher than the primary COPC, these analytes will continue to be classified as secondary COPCs.

Vinyl chloride, which likely was introduced into the environment as a breakdown product of TCE or 1,1,1-TCA, was reported in 15 groundwater samples collected, 7 of which exceeded the MCL of 0.5 µg/L. The compound is always found with one or more of the primary COPCs and generally detected at one to two orders of magnitude less than concentrations of TCE and 1,1-DCE. Previously vinyl chloride has not been considered a primary or secondary COPC at the Site but recent data shows the frequency of the detections are becoming more consistent and widespread. Until vinyl chloride is detected in groundwater samples where a primary chlorinated COPC is absent or the concentration of vinyl chloride is higher than the primary COPC, it will now be classified as a secondary COPC.

1,1,2-TCA, which likely was introduced into the environment as an isomeric impurity of 1,1,1-TCA, was reported in 11 groundwater samples collected, of which two exceeded the MCL of 5 µg/L. The distribution of 1,1,2-TCA is limited to the BPA and just downgradient of the BPA. The compound is always found with one or more of the primary COPCs and generally detected at one to two orders of magnitude less than concentrations of TCE and 1,1-DCE. Previously 1,1,2-TCA has not been considered a primary or secondary COPC at the Site but recent data shows the frequency of the detections becoming more consistent. Until 1,1,2-TCA is detected in groundwater samples where a primary chlorinated COPC is absent or the concentration of 1,1,2-TCA is higher than the primary COPC, it will be classified as a secondary COPC.

Three additional analytes; benzene, carbon tetrachloride, and tetrachloroethene (PCE) were detected at concentrations which exceed their respective MCLs. The analytes are infrequently detected from one sampling event to the next, the concentrations are relatively low with respect to the MCLs, and they are always detected with a primary COPC. Therefore, these analytes are not proposed as primary or secondary COPCs.

1,1,1-TCA, a secondary COPC was not detected above its MCL of 200 µg/L. The remaining 13 organic analytes detected in the groundwater samples collected include: acetone, 2-butanone (MEK), carbon disulfide, chlorobenzene, chloroethane, chloromethane, chloroform, trans 1,2-DCE, methyl tert-butyl ether (MTBE), methylene chloride, toluene, trichlorofluoromethane, and m, p-xylenes. None of these organic analytes were detected at concentrations above their respective MCL/DWNL.

3.5.3 Inorganic Analytes

Based on the number of detections, the concentrations, and the distribution of perchlorate reported in groundwater samples collected from the Site, perchlorate has been identified as a primary COPC. Perchlorate is the only inorganic analyte identified as a COPC at the Site.

Previously, groundwater samples collected from well MW-60A showed lead concentrations exceeding the MCL of 0.015 mg/L. As proposed in the Semiannual Groundwater Monitoring Report First Quarter 2009 and Second Quarter 2009 (Tetra Tech, 2009f) a groundwater sample was collected from MW-60A for total lead analysis during Second Quarter 2010. Lead was detected at a concentration of 0.012 mg/L. In general, the reported concentration of lead is limited in distribution and relatively close to its MCL. Lead, therefore is not considered a primary or secondary COPC at the Site.

3.5.4 Chemicals of Potential Concern Conclusions

Table 3-10 presents those groundwater analytes that have been identified as COPCs. Time-series graphs of primary and secondary COPCs are provided in Appendix E. 1,1,2-TCA and vinyl chloride have been added as secondary COPCs since the previous analysis (Tetra Tech, 2009f).

Table 3-10 Groundwater Chemicals of Potential Concern

Analyte	Classification	Comments
Perchlorate	Primary	Parent product (propellant), widely detected at Site.
1,1-Dichloroethene	Primary	Breakdown product of 1,1,1-TCA, detected at higher concentrations than 1,1,1-TCA at Site.
Trichloroethene	Primary	Parent product (solvent), widely detected at Site.
1,4-Dioxane	Primary	Stabilizer in 1,1,1-TCA, widely detected at Site.
1,1-Dichloroethane	Secondary	Breakdown product of 1,1,1-TCA.
1,2-Dichloroethane	Secondary	Breakdown product of 1,1,1-TCA.
1,1,1-Trichloroethane	Secondary	Parent product (solvent), detected at lower concentrations than breakdown product (1,1-DCE) at Site.
1,1,2-Trichloroethane	Secondary	Isomeric impurity of 1,1,1-TCA
cis-1,2-Dichloroethene	Secondary	Breakdown product of TCE.
Vinyl chloride	Secondary	Breakdown product of TCE and/or 1,1,1-TCA.

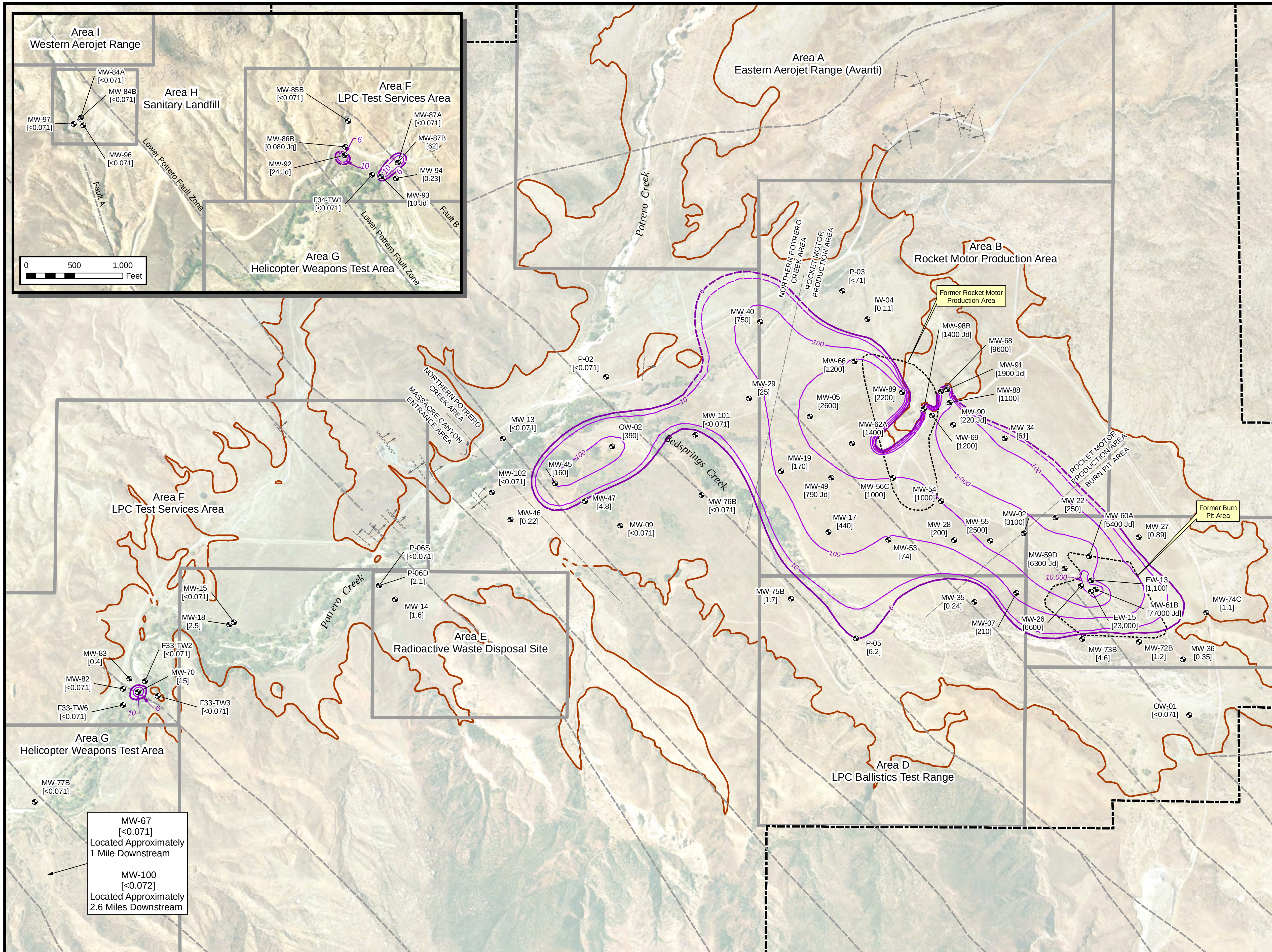
3.6 DISTRIBUTION OF THE PRIMARY CHEMICALS OF POTENTIAL CONCERN

The distribution of the COPCs in the alluvium and shallow Mount Eden formation groundwater zones are described in the following subsections and illustrated in Figures 3-10 through 3-13. The figures were generated from the Second Quarter 2010 groundwater monitoring analytical results and the latest analytical results for the other wells.

3.6.1 Perchlorate

Concentrations of perchlorate reported in groundwater samples collected from the Second Quarter 2010 event ranged from not detected above the MDL to 77,000 µg/L (MW-61B). The MCL for perchlorate is 6 µg/L. Concentrations of perchlorate above the MDL were reported in 86 of the 129 groundwater samples collected, of which 53 groundwater samples exceeded the perchlorate MCL.

Based on the data collected during this reporting period, the highest concentrations of perchlorate have been reported in groundwater samples collected from monitoring wells screened in the alluvium and shallow Mount Eden formation located in the former BPA. Groundwater concentrations decrease by several orders of magnitude outside, and downgradient of the footprint of the former BPA. Downgradient of the former BPA, perchlorate concentrations decrease to below 1,000 µg/L. Further downgradient in the RMPA the concentrations of perchlorate increase. Groundwater samples collected in the former RMPA exceed 3,000 µg/L. Downgradient of the RMPA the concentrations decrease to below 1,000 µg/L again. The plume continues its migration downgradient of the RMPA toward Massacre Canyon. The primary source area appears to be the former BPA, but secondary sources are present in the former RMPA.



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Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- MW-22 [340] — Well ID, Perchlorate Concentration
- Perchlorate Concentration Contour (µg/L) - Dashed where inferred
- MCL Contour (6.0 µg/L) - Dashed where inferred
- Bedrock/Alluvium Surface Contact, Dashed where inferred
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Notes:

MCL - Maximum Contaminant Level.
Concentrations shown are in microgram per liter (µg/L)

Highest concentration shown is contoured for clustered or nested well locations.

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-10
Perchlorate Isoconcentration Map (µg/L) for Alluvium and Shallow Mount Eden Formation Second Quarter 2010

TETRA TECH

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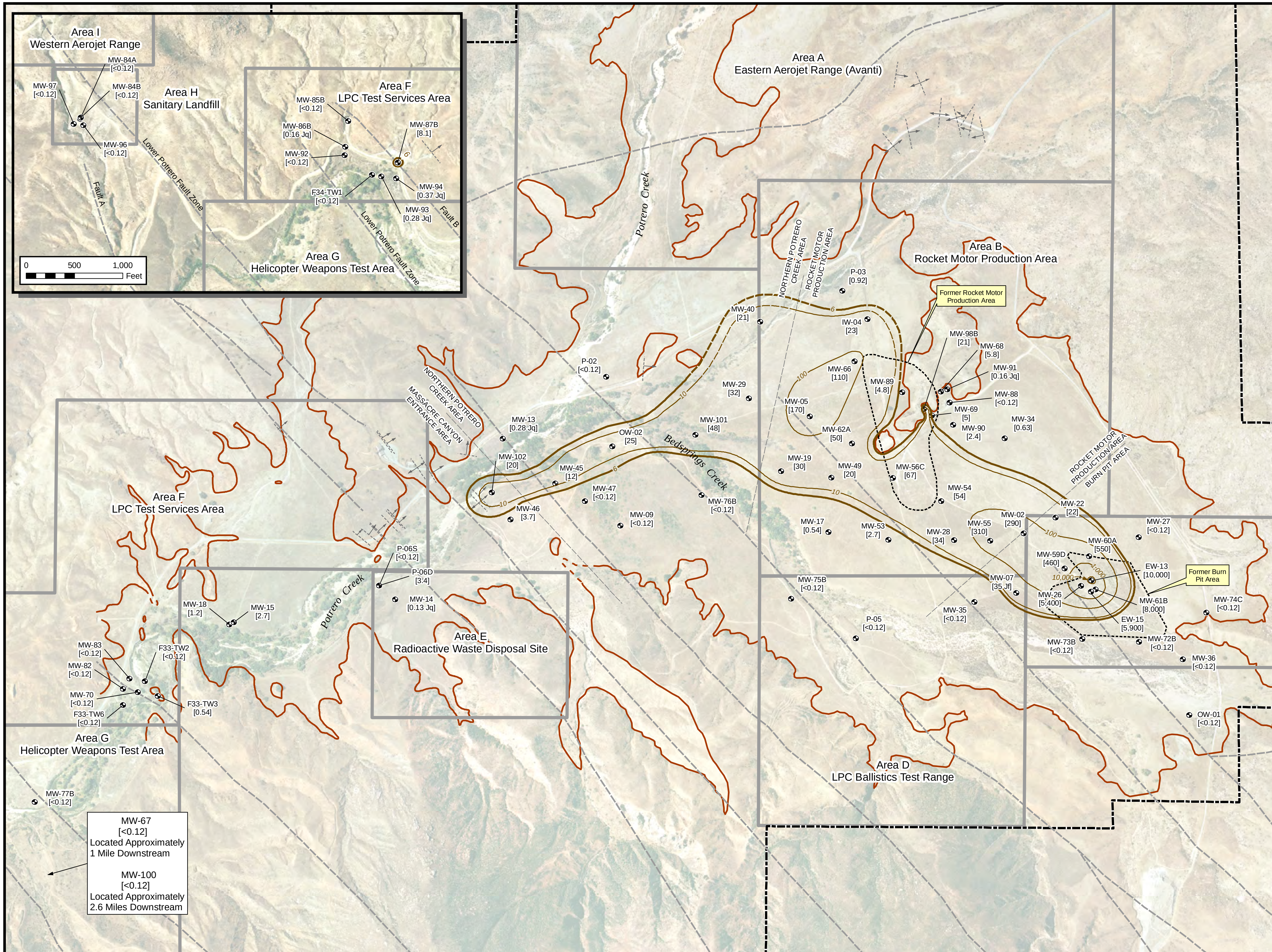

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Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- MW-22 [340] — Well ID, 1,1-DCE Concentration
- 1,1-DCE Concentration Contour (µg/L) - Dashed where inferred
- MCL Contour (6.0 µg/L) - Dashed where inferred
- Fault, Approximately Located
- Fault, Accurately Located Showing Dip
- Bedrock/Alluvium Surface Contact, Dashed where inferred
- Beaumont Site 1 Property Boundary
- Historical Operational Area Boundary

Notes:

MCL - Maximum contaminant level.

1,1-DCE - 1,1-Dichloroethene.

Concentrations shown are in micrograms per liter (µg/L).

Highest concentration shown is contoured for clustered or nested well loc

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-11

1,1-DCE Isoconcentration Map (µg/L) for Alluvium and Shallow Mount Eden Formation Second Quarter 2010

TETRA TECH

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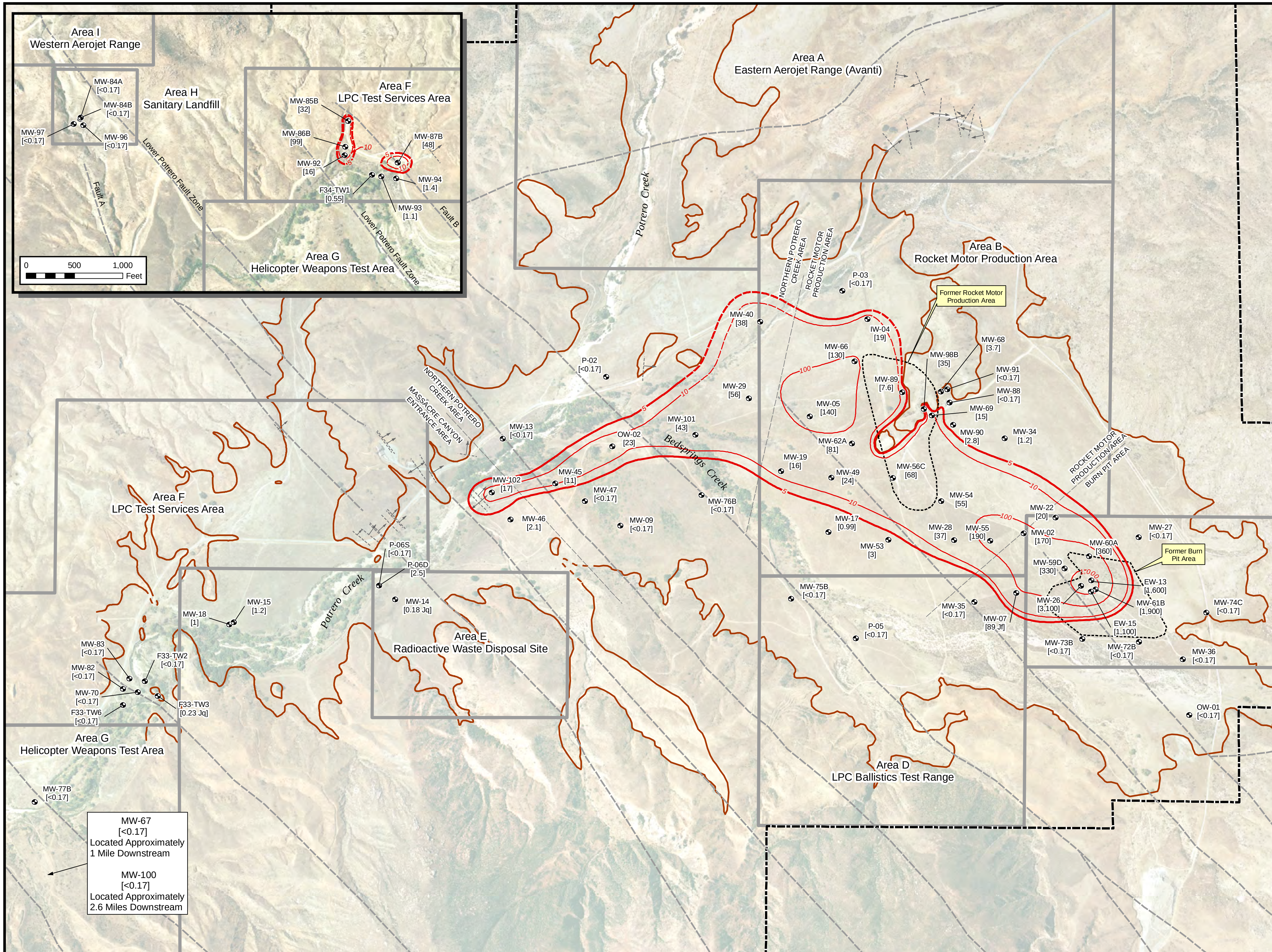

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Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- MW-22 [340] — Well ID, TCE Concentration
- TCE Concentration Contour (µg/L) - Dashed where inferred
- MCL Contour (5.0 µg/L) - Dashed where inferred
- Bedrock/Alluvium Surface Contact, Dashed where inferred
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Beaumont Site 1 Property Boundary
- Historical Operational Area Boundary

Notes:

MCL - Maximum Contaminant Level. Concentrations shown are in microgram per liter (µg/L)

TCE - Trichloroethene.

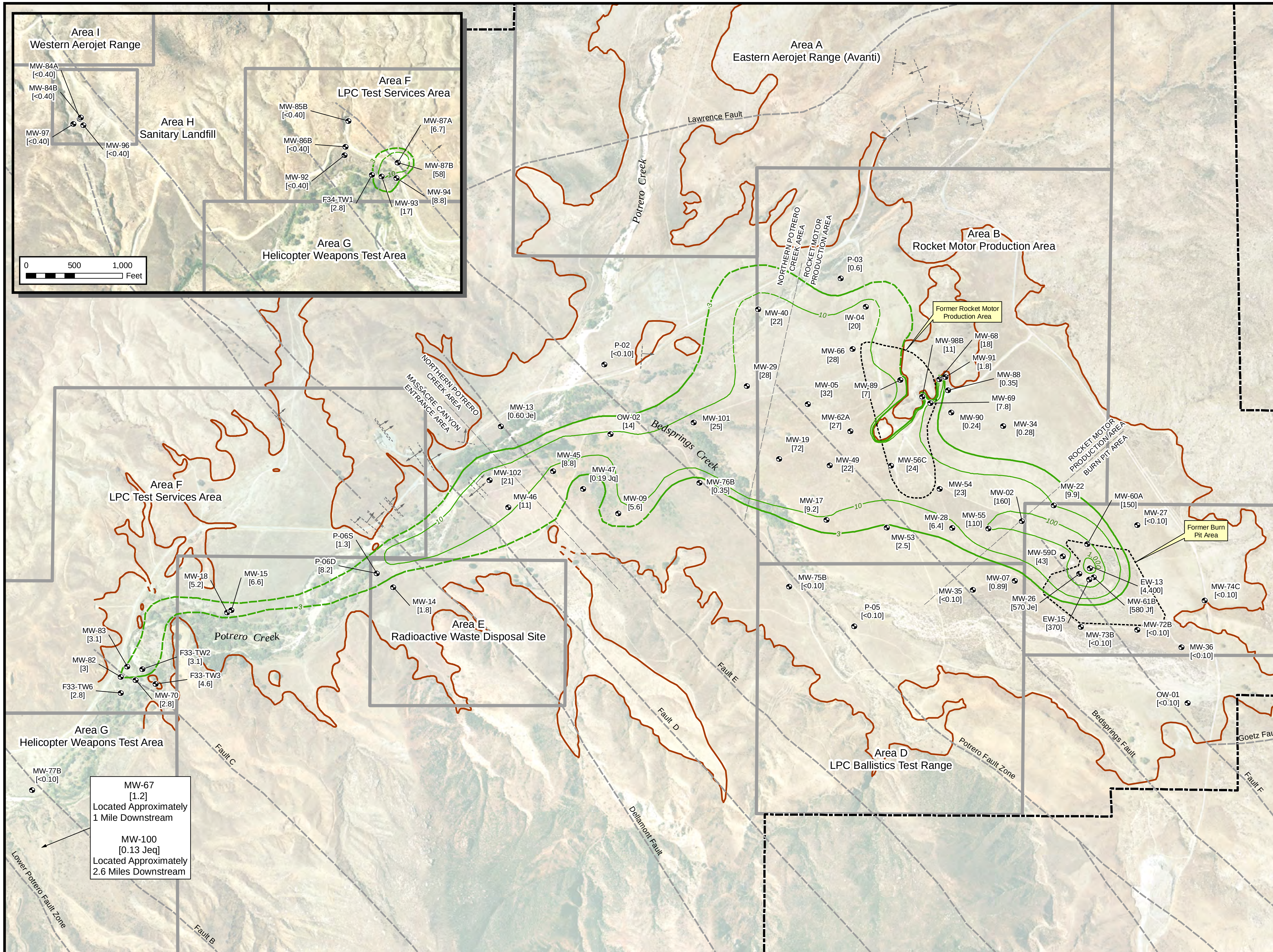
Highest concentration shown is contoured for clustered or nested well locations.

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-12
TCE Isoconcentration Map (µg/L) for Alluvium and Shallow Mount Eden Formation Second Quarter 2010

TETRA TECH



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Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- MW-22 [16] — Well ID, Perchlorate Concentration
- 1,4-Dioxane Concentration Contour (µg/L) - Dashed where inferred
- DWNL Contour (3.0 µg/L) - Dashed where inferred
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Bedrock/Alluvium Surface Contact, Dashed where inferred
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Notes:

DWNL - Drinking Water Notification Level.

Concentrations shown are in micrograms per liter (µg/L).

Highest concentration shown is contoured for clustered or nested well locations.

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-13
1,4-Dioxane Isoconcentration Map (µg/L) for Alluvium and Shallow Mount Eden Formation Second Quarter 2010

TETRA TECH

Concentrations of perchlorate were not detected above the MDL in groundwater samples collected from alluvial/shallow Mount Eden formation guard wells MW-15 and MW-67. The perchlorate concentration reported in the groundwater sample collected from alluvial/shallow Mount Eden formation guard well MW-18 remained unchanged at 2.5 µg/L between First and Second Quarter 2010. Perchlorate was detected in MW-100, the offsite guard well, just above the MDL at 0.072 µg/L.

In Area F, concentrations of perchlorate in monitoring well MW-70 located at the Large Motor Washout Area (Feature F-33) decreased from a concentration of 21 µg/L to 15 µg/L between First and Second Quarter 2010. Concentrations of perchlorate in monitoring well MW-87B located in the Test Instrument Bunker area (Feature F-34) increased from a concentration of 28 µg/L to 62 µg/L between First and Second Quarter 2010. Concentrations of perchlorate in monitoring well MW-92 located in the Large Motor Test Bay area (Feature F-39) decreased from a concentration 26 µg/L to 24 µg/L between First and Second Quarter 2010. Figure 3-10 presents the lateral distribution of perchlorate based on recent Second Quarter 2010 groundwater sampling results collected from alluvium and shallow Mount Eden formation screened wells.

3.6.2 1,1-Dichloroethene

Concentrations of 1,1-DCE reported in groundwater samples collected from the Second Quarter 2010 monitoring event ranged from not detected above the MDL to 10,000 µg/L (EW-13). The MCL for 1,1-DCE is 6 µg/L. Concentrations of 1,1-DCE above the MDL were reported in 65 of the 129 groundwater samples collected from wells, of which 37 groundwater samples exceeded the 1,1-DCE MCL.

Based on the data collected during this reporting period, the highest concentrations of 1,1-DCE have been reported in groundwater samples collected from monitoring wells screened in the alluvium and shallow Mount Eden formation located in the former BPA. 1,1-DCE has the highest VOC concentration detected at the Site. Approximately 3,000 feet downgradient of the former RMPA, groundwater concentrations have generally decreased to around 10 µg/L. The primary source area appears to be the former BPA.

The concentration of 1,1-DCE was not detected above the MDL in the groundwater sample collected from alluvial/shallow Mount Eden formation guard well MW-67. The 1,1-DCE concentration reported in the groundwater samples collected from alluvial/shallow Mount Eden formation guard well MW-15 increased from a concentration of 2.3 µg/L to 2.7 µg/L between First and Second Quarter 2010 and in the alluvial/shallow Mount Eden formation guard well MW-18 the concentration of 1,1-DCE decreased from a concentration of 1.6 µg/L to 1.2 µg/L between First and Second Quarter 2010. Figure 3-11 presents the lateral distribution of 1,1-DCE based on recent Second Quarter 2010 groundwater sampling results collected from alluvium and shallow Mount Eden formation screened wells.

In Area F, concentrations of 1,1-DCE in monitoring well MW-87B located in the F-34 area increased from a concentration of 2.9 µg/L to 8.1 µg/L between First and Second Quarter 2010. Concentrations of 1,1-DCE in monitoring wells MW-93 an MW-94 decreased from concentrations of 0.87 µg/L and 0.46 µg/L to 0.28 µg/L and 0.37 µg/L respectively between First and Second Quarter 2010.

3.6.3 Trichloroethene

Concentrations of TCE reported in groundwater samples collected from the Second Quarter 2010 monitoring event ranged from not detected above the MDL to 3,100 µg/L (MW-26). The MCL of TCE is 5 µg/L. Concentrations of TCE above the MDL were reported in 66 of the 129 groundwater samples collected from wells, of which 42 groundwater samples exceeded the TCE MCL.

Based on the data collected during this reporting period, the highest concentrations of TCE have been reported in groundwater samples collected from monitoring wells screened in the alluvial/shallow Mount Eden formation located in the former BPA. Groundwater concentrations of TCE generally decrease to around 100 µg/L approximately 2,000 feet downgradient of the former BPA. Approximately 3,000 feet downgradient of the former RMPA, TCE concentrations decrease to near 10 µg/L. The primary source area appears to be the former BPA.

The concentration of TCE was not detected above the MDL in the groundwater sample collected from alluvial/shallow Mount Eden formation guard well MW-67. The TCE concentration reported in the groundwater samples collected from alluvial/shallow Mount Eden formation guard wells MW-15 and MW-18 decreased slightly from concentrations of 1.5 µg/L and 1.5 µg/L to 1.2 µg/L and 1.0 µg/L respectively between First and Second Quarter 2010.

In Area F, concentrations of TCE in monitoring wells MW-87A and MW-87B located in the F-34 area increased from a concentration of 0.45 µg/L to 0.57 µg/L and 17 µg/L to 48 µg/L respectively. TCE decreased slightly from a concentration of 2.3 µg/L to 1.1 µg/L and 1.6 µg/L to 1.4 µg/L in monitoring wells MW-93 and MW-94 respectively between First and Second Quarter 2010. Concentrations of TCE in monitoring wells MW-85B and MW-86B located in the F-39 area increased from a concentration of 24 µg/L to 32 µg/L and 46 µg/L to 99 µg/L respectively between First and Second Quarter 2010. TCE was not detected above the MDL in monitoring wells MW-85A and MW-86A during First or Second Quarter 2010. The concentration of TCE in monitoring wells MW-92 and MW-95 decreased from a concentration of 17 µg/L to 16 µg/L and 15 µg/L to 14 µg/L, respectively between First and Second Quarter 2010. Figure 3-12 presents the lateral distribution of TCE based on recent Second Quarter 2010 groundwater sampling results collected from alluvium and shallow Mount Eden formation screened wells.

3.6.4 1,4-Dioxane

Concentrations of 1,4-dioxane reported in groundwater samples collected from the Second Quarter 2010 monitoring event ranged from not detected above the MDL to 4,400 µg/L (EW-13). The DWNL for 1,4-dioxane is 3 µg/L. Concentrations of 1,4-dioxane above the MDL were reported in 91 of the 129 groundwater samples collected from wells, of which 56 groundwater samples exceeded the 1,4-dioxane DWNL.

Based on the data collected during this reporting period, the highest concentrations of 1,4-dioxane have been reported in groundwater samples collected from monitoring wells screened in the alluvial/shallow Mount Eden formation located in the former BPA. Groundwater concentrations generally decreased to less than 50 µg/L approximately 1,500 feet downgradient of the former BPA. The primary source area appears to be the former BPA.

The 1,4-dioxane concentration reported in the groundwater samples collected from alluvial/shallow Mount Eden formation guard wells MW-15 and MW-18 decreased slightly from 7.7 µg/L to 6.6 µg/L and 5.4 µg/L to 5.2 µg/L in the Second Quarter 2010. The 1,4-dioxane concentration reported in the groundwater sample collected from alluvial/shallow Mount Eden formation guard well MW-67 increased from 0.89 µg/L to 1.2 µg/L between Fourth Quarter 2009 and Second Quarter 2010.

In Area F, concentrations of 1,4-dioxane in monitoring wells MW-70, MW-82, and MW-83 located at F-33 remained relatively stable between First and Second Quarter 2010 with concentrations ranging from 2.8 µg/L to 3.1 µg/L. Concentrations of 1,4-dioxane in monitoring wells MW-87A and 87-B located in the F-34 area increased from 4.7 µg/L to 5.5 µg/L and 15 µg/L to 62 µg/L in the Second Quarter 2010. Concentrations of 1,4-dioxane in monitoring wells MW-93 and MW-94 decreased from 13 µg/L to 12 µg/L and 5.7 µg/L to 4.2 µg/L between First and Second Quarter 2010. Figure 3-13 presents the lateral distribution of 1,4-dioxane based on recent Second Quarter 2010 groundwater sampling results collected from alluvium and shallow Mount Eden formation screened wells.

3.6.5 Private Production Wells

Four offsite private production wells (one upgradient and three downgradient) were scheduled to be sampled during the Second Quarter 2010 sampling event. The three downgradient wells were sampled on 4 May 2010 and the one upgradient well was sampled on 14 July 2010. Samples were analyzed for VOCs by Method 524.2, 1,4-dioxane by Method 8270C SIM, and perchlorate by Method 332.0. No site COPCs were detected in samples collected from the offsite private production wells.

3.6.6 Surface Water

Surface water samples were collected during First Quarter 2010 during a storm event and during Second Quarter 2010 during the routine groundwater sampling event. Table 3-11 presents concentrations of COPCs reported in surface water samples collected from these sampling events.

First Quarter 2010

During First Quarter 2010 surface water samples were collected during a storm event from five locations located along the Potrero and Bedsprings Creek drainages (SW-12, SW-13, SW-14, SW-15, and SW-16). The remaining seven locations could not be accessed due to heavy storm water flow at the Potrero Creek crossing. Two primary COPCs, perchlorate and 1,4-dioxane, and no secondary COPCs were detected in the surface water samples. Figure 3-14 illustrates concentrations of COPCs reported in surface water samples collected from the First Quarter 2010 monitoring event.

Second Quarter 2010

During Second Quarter 2010 surface water samples were collected from nine locations (SW-01, SW-02, SW-03, SW-04, SW-06, SW-07, SW-16, SW-18, and SW-19) along the Potrero and Bedsprings Creek drainages. The remaining eight locations were dry at the time of sampling. Surface water location SW-16 was sampled so the alternate location, SW-17, was not sampled. The 4 primary COPCs, 1,4-dioxane, 1,1-DCE, TCE, and perchlorate, and one secondary COPC, cis-1,2-dichloroethene, were detected in surface water samples collected from locations SW-02, SW-03, and SW-04; these samples were collected from springs and or spring fed ponds located outside of the stream beds but near the intersection of Bedsprings and Potrero Creeks.

Two of the primary COPCs, 1,4-dioxane and perchlorate, and no secondary COPCs were detected in the surface water samples collected from locations SW-06, SW-07, SW-16, SW-18, and SW-19. These samples were collected from water flowing in Potrero Creek and are located topographically downgradient of the springs discussed in the previous paragraph. Figure 3-15 presents concentrations of COPCs reported in surface water samples collected from the Second Quarter 2010 monitoring event.

Table 3-11 Summary of Detected COPCs in Surface Water - First Quarter 2010 and Second Quarter 2010

Sample Location	Sample Date	1,4-Dioxane	1,1-Dichloro ethene	c-1,2-Dichloro ethene	Trichloro ethene	Perchlorate
All results reported in µg/L unless otherwise stated						
SW-12	1/21/2010	<0.10	<0.12	<0.18	<0.17	<0.071
SW-13	1/21/2010	0.17 Jq	<0.12	<0.18	<0.17	<0.071
SW-14	1/21/2010	<0.10	<0.12	<0.18	<0.17	0.33
SW-15	1/21/2010	<0.10	<0.12	<0.18	<0.17	<0.071
SW-16	1/21/2010	0.13 BJaq	<0.12	<0.18	<0.17	0.34
SW-01	5/11/2010	<0.10	<0.12	<0.18	<0.17	<0.071
SW-02	5/11/2010	**13**	1.7	0.18 Jq	2.3	**19**
SW-03	5/11/2010	**12**	<0.12	<0.18	<0.17	**60**
SW-04	5/11/2010	**7.3**	0.44 Jq	<0.18	0.81	**41**
SW-06	5/11/2010	1.9	<0.12	<0.18	<0.17	0.15
SW-07	5/11/2010	1.4	<0.12	<0.18	<0.17	<0.071
SW-16	5/11/2010	0.98	<0.12	<0.18	<0.17	0.13
SW-18	5/12/2010	**3.2**	<0.12	<0.18	<0.17	0.2
SW-19	5/11/2010	2.2	<0.12	<0.18	<0.17	<0.071
Method Detection Limit (µg/L)		0.10	0.20	0.18	0.20	0.071
MCL/DWNL (µg/L)		3 (1)	6	6	5	6

Notes: Only analytes positively detected are presented in this table.
For a complete list, refer to the laboratory data package.

µg/L - micrograms pre liter.

MCL - California Department of Public Health Maximum Contaminant Level

DWNL - California Department of Public Health drinking water notification level.

(1) DWNL

Bold - MCL or DWNL exceeded.

<# - Analyte not detected, method detection limit concentration is shown.

B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable

J - The analyte was positively identified, but the analyte concentration is an estimated value.

a - The analyte was found in the method blank.

q - The analyte detection was below the Practical Quantitation Limit (PQL).

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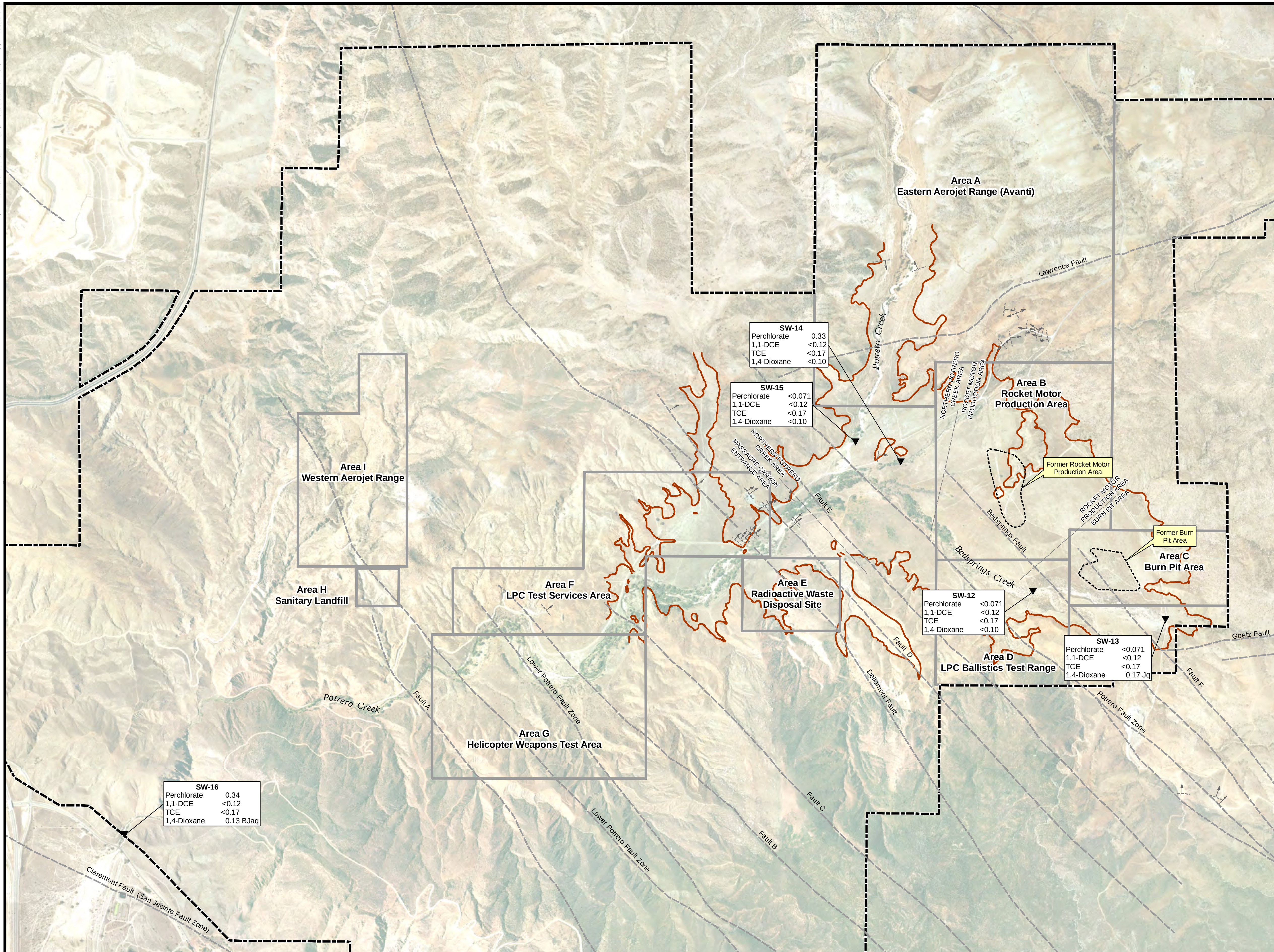

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Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- *Surface Water Sample Location*
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Bedrock/Alluvium Surface Contact
  Dashed where inferred
- Burn Pit and Rocket Motor Production Area
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Notes:

DCE - Dichloroethene.

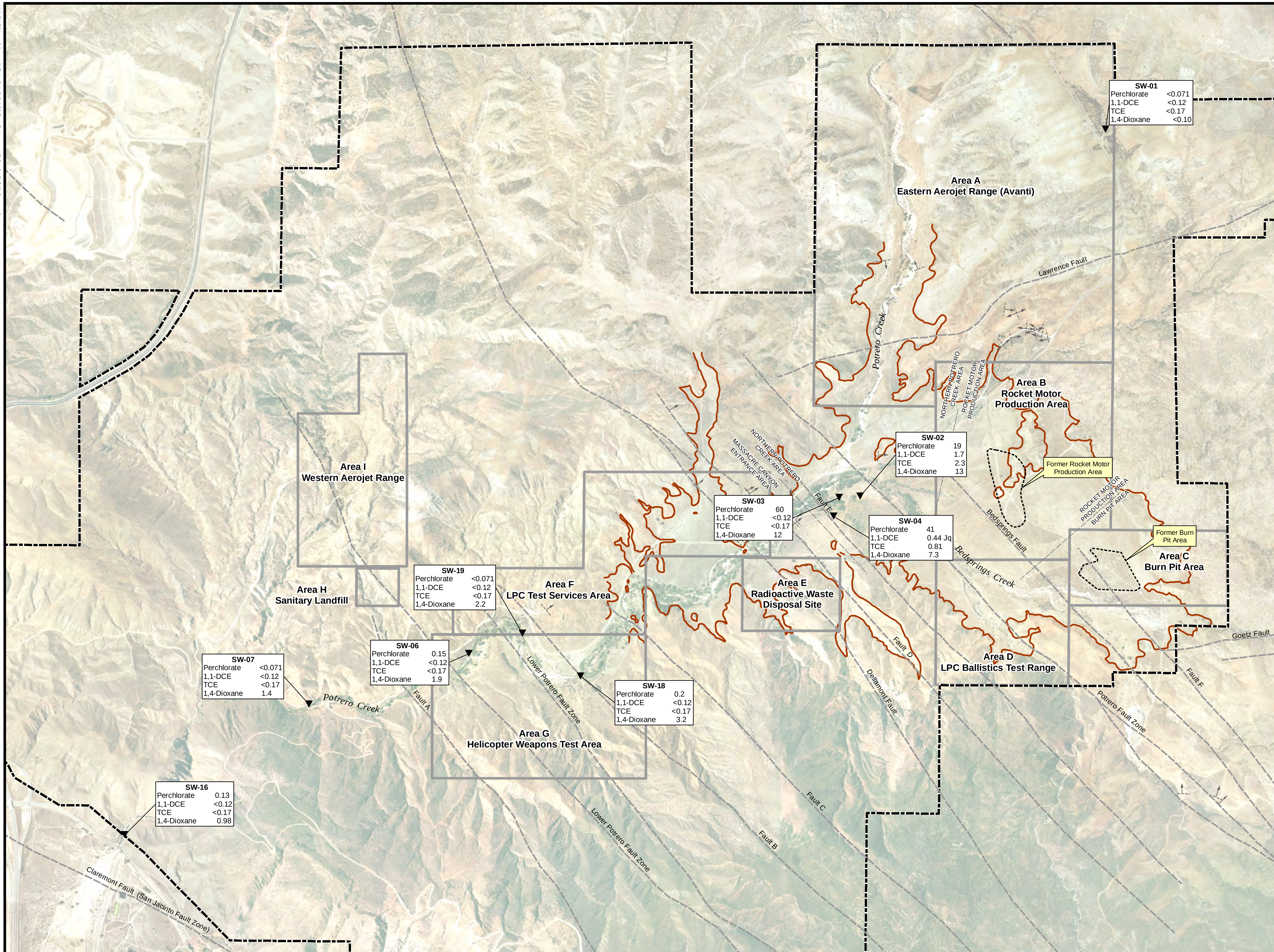
TCE - Trichloroethene

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-14
Surface Water Primary COPC Sampling Results (µg/L)
First Quarter 2010

TETRA TECH



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Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Surface Water Sample Location
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Bedrock/Alluvium Surface Contact Dashed where inferred
- Burn Pit and Rocket Motor Production Area
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Notes:

DCE - Dichloroethene.

TCE - Trichloroethene

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-15
Surface Water Primary COPC Sampling Results (µg/L)
Second Quarter 2010

TETRA TECH

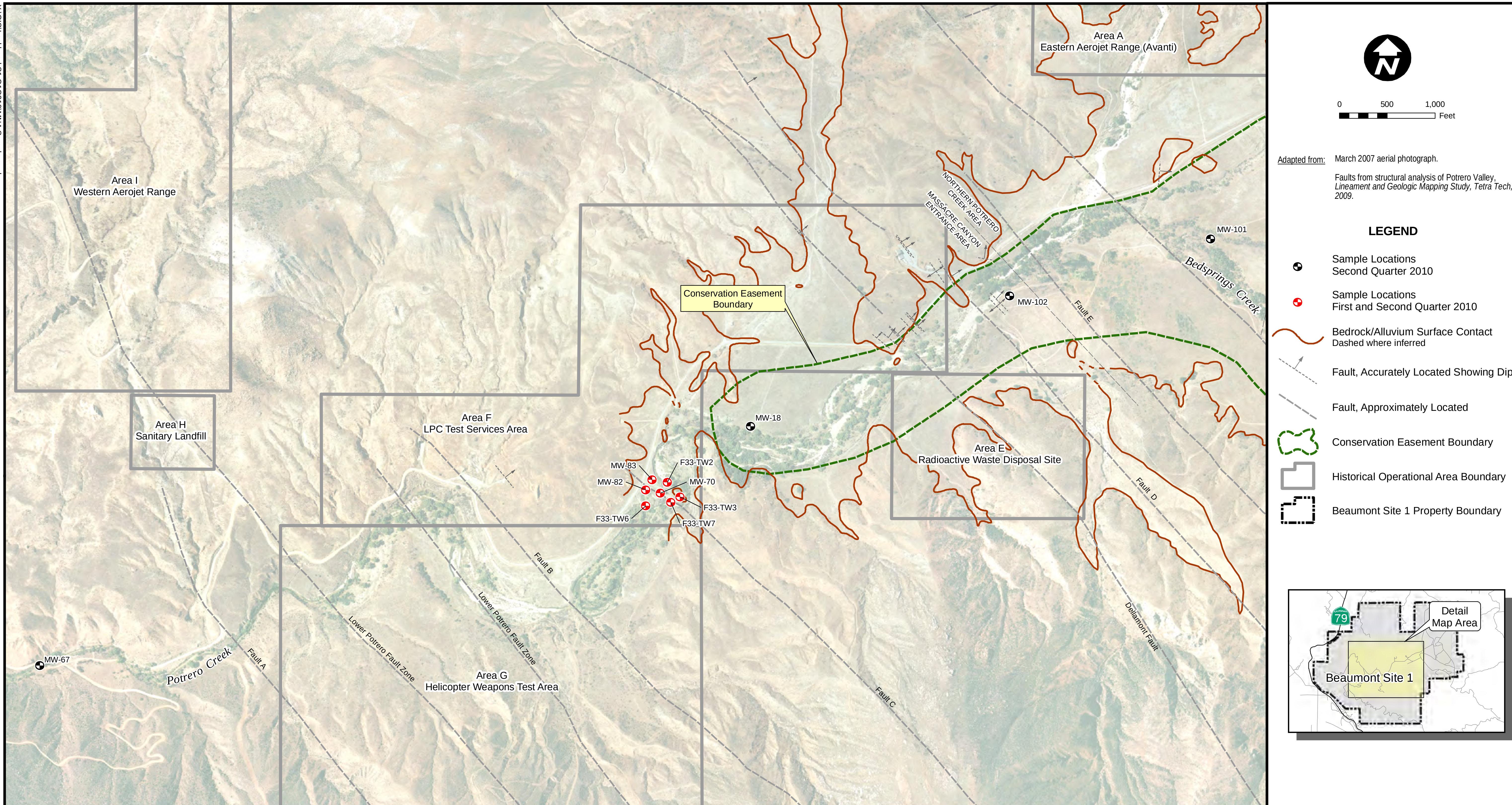
3.7 F-33 MONITORED NATURAL ATTENUATION SAMPLING

Seven monitoring wells (F33-TW2, F33-TW3, F33-TW6, F33-TW7, MW-70, MW-82, and MW-83) located in the F-33 area were sampled for monitored natural attenuation parameters (MNA) during the First Quarter 2010 monitoring event. During the Second Quarter 2010 monitoring event the seven F-33 monitoring wells and four additional site wells (MW-18, MW-67, MW101, and MW-102) located in riparian areas of the Bedsprings and Potrero Creek drainages, were sampled for MNA parameters. Samples for laboratory analysis were collected for total organic carbon (TOC), dissolved organic carbon (DOC), total iron, ferrous iron, sulfide, sulfate, methane, hydrogen, and volatile fatty acids (VFAs). DO and ORP were monitored with field instruments during purging and sampling and ferrous iron and sulfide were analyzed using a field instrument prior to sample collection during these sampling events. Figure 3-16 presents monitoring well locations sampled for MNA during the First Quarter 2010 and Second Quarter 2010 monitoring events. Table 3-12 presents a summary of detected analytes and field measurements.

As part of a site wide natural attenuation study, all monitored site wells were sampled for alkalinity, chlorate, chloride, DOC, methane, ethane, ethene, nitrate, nitrite, sulfate, and dissolved manganese during the Second Quarter 2010 sampling event. The site wide data will be used to help determine which areas of the site may be conducive to natural biodegradation of perchlorate, chlorinated solvents, and 1,4-dioxane and will help guide additional work planned for the Fourth Quarter 2010 monitoring event and further refine the CSM.

Perchlorate

Perchlorate concentrations have been at or below detection limits in all monitoring wells within the F-33 area except for MW-70 where concentrations appear to increase seasonally with increased rainfall and higher groundwater levels (Figure 3-17). During First Quarter 2010 and Second Quarter 2010 perchlorate concentrations in MW-70 were 21 µg/L and 15 µg/L respectively. Perchlorate concentrations have ranged from below the MDL to 48.5 µg/L (First Quarter 2008). Based on the high concentrations of perchlorate in the Feature F-33 vadose zone soil and the fact that perchlorate was below the detection limit in all other area wells supports that geochemical conditions in groundwater are generally conducive to natural biodegradation.



Beaumont Site 1

Figure 3-16
MNA Sample Locations
First Quarter 2010 and
Second Quarter 2010

TETRA TECH

Table 3-12 Summary of Validated Detected Natural Attenuation Analytes and Field Measurements - First Quarter 2010 and Second Quarter 2010

		Field Parameters				Analytes											
Sample Location	Sample Date	DO - mg/L	ORP - mVs	Sulfide -mg/L (1)	Ferrous Iron -mg/L (1)	Per chlorate -ug/L	Acetic Acid -mg/L	Hexanoic Acid -mg/L	Lactic Acid and HIBA -mg/L	Propionic Acid -mg/L	Dissolved Organic Carbon -mg/L	Total Organic Carbon -mg/L	Hydrogen -nM	Methane -ug/L	Nitrate (as N) -mg/L	Sulfate -mg/L	Iron -mg/L
F33-TW2	03/31/10	0.22	-45.1	0.00	**0.99**	<0.071	<0.015	<0.007	0.13 Ba	<0.002	3.4	3.4	3.9	71	<0.11	61	**1.7**
F33-TW2	05/06/10	0.31	-79.4	0.01	**1.35**	<0.071	0.063 BJacq	<0.006 UJcf	<0.01 UJc	0.031 BJacq	2.8	2.8	0.61	94	<0.11	51	**1.9 Jd**
F33-TW3	03/31/10	0.23	0.0	0.00	0.24	<0.071	0.061 Jq	<0.007	<0.042	<0.002	3.2	2.7	3.5	170	<0.11	62	0.20
F33-TW3	05/06/10	0.24	-21.9	0.00	0.28	<0.071	0.037 BJaq	<0.006	<0.01	0.031 BJaq	2.1	1.9	0.88	130	<0.11	57	0.27 Jd
F33-TW6	03/31/10	0.18	-4.2	0.01	0.24	<0.071	0.065 Jq	<0.007	<0.042	<0.002	2.6	2.5	3	0.74	<0.11	80	0.27
F33-TW6	05/06/10	0.24	-33.0	0.00	0.27	<0.071	0.067 BJaq	<0.006	<0.01	0.033 BJaq	2.2	2.1	0.86	0.53	<0.11	72	**0.30 Jd**
F33-TW7	03/31/10	0.22	-40.4	0.01	**0.74**	<0.071	0.066 Jq	<0.007	<0.042	<0.002	3.8	3.6	2.9	42	<0.11	64	**0.72**
F33-TW7	05/07/10	0.33	-22.5	0.02	**0.56**	<0.071	0.06 BJaq	<0.006	<0.01	0.036 BJaq	3.2	3	1.6	24	<0.11	54	**1.10 Jd**
MW-18	05/05/10	0.44	4.2	0.00	0.03	**2.5**	0.04 BJaq	0.1	<0.01	0.042 BJaq	1	0.74	5.7	0.65	0.27	44	<0.012
MW-67	05/07/10	0.15	13.9	0.01	0.08	<0.071	0.061 BJaq	<0.006	<0.01	0.032 BJaq	6.2	5.6	2.6	25	<0.11	100	0.21 Jd
MW-70	03/30/10	0.98	155.7	0.00	0.00	**21**	0.049 Jq	<0.007	<0.042	<0.002	2.8 Ba	2.5	6.3	0.07 BJaq	<0.11	65	<0.012
MW-70	05/05/10	0.24	-55.5	0.02	0.02	**15**	0.074 Ba	<0.006	<0.01	0.075 Ba	2.7	2.2	6.3	0.07 BJaq	<0.11	55	<0.012
MW-82	03/30/10	0.12	-32.4	0.00	0.00	<0.071	0.054 Jq	<0.007	0.38 Ba	<0.002	2.1 Ba	2	4.6	0.74	<0.11	73	0.033
MW-82	05/06/10	0.35	-11.0	0.01	0.01	<0.071	0.058 BJaq	<0.006	<0.01	0.031 BJaq	2.4	1.9	3.9	0.35	<0.11	73	0.021 Jd
MW-83	03/30/10	1.63	36.9	0.00	0.02	0.55	0.035 Jq	<0.007	<0.042	0.011 Jq	2.6 Ba	2.4	3.1	<0.02	<0.11	68	<0.012
MW-83	05/05/10	1.11	-56.1	0.00	0.05	0.4	0.047 BJaq	<0.006	<0.01	0.032 BJaq	2.6	2	4.6	<0.02	<0.11	58	<0.012
MW-101	05/07/10	0.19	-23.4	0.02	0.02	<0.071	0.029 BJaq	<0.006	<0.01	0.028 BJaq	0.98	0.40 Jq	1.2	0.22	<0.11	29	0.17 Jd
MW-102	05/07/10	0.29	-63.5	0.00	0.00	<0.071	0.035 BJaq	<0.006	<0.01	0.031 BJaq	4.4	0.44 Jq	1.1	180	<0.11	16	0.044 Jd
MDL		-	-	-	-	0.5	0.07	0.10	0.10	0.07	0.5	0.5	0.6	0.6	0.05	1.25	0.04
MCL/DWNL (µg/L)		-	-	-	0.3	6	-	-	-	-	-	-	-	-	10	250	0.3

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.

(1) - Sulfide and ferrous iron sample analysis was performed in the field using a Hach DR 850 colorimeter.

mg/L - milligrams per liter

µg/L - micrograms per liter.

nM – nanomoles

MDL - Method Detection Limit

MCL - California Department of Public Health Maximum Contaminant Level

DWNL - California Department of Public Health drinking water notification level.

Bold - MCL or DWNL exceeded.

"-" - Not available.

<# - Analyte not detected, method detection limit concentration is shown.

B - The result is < 5 times the blank contamination. Cross contamination is suspected and the data is considered unusable

J - The analyte was positively identified, but the analyte concentration is an estimated value.

U - The analyte was not detected above the MDL.

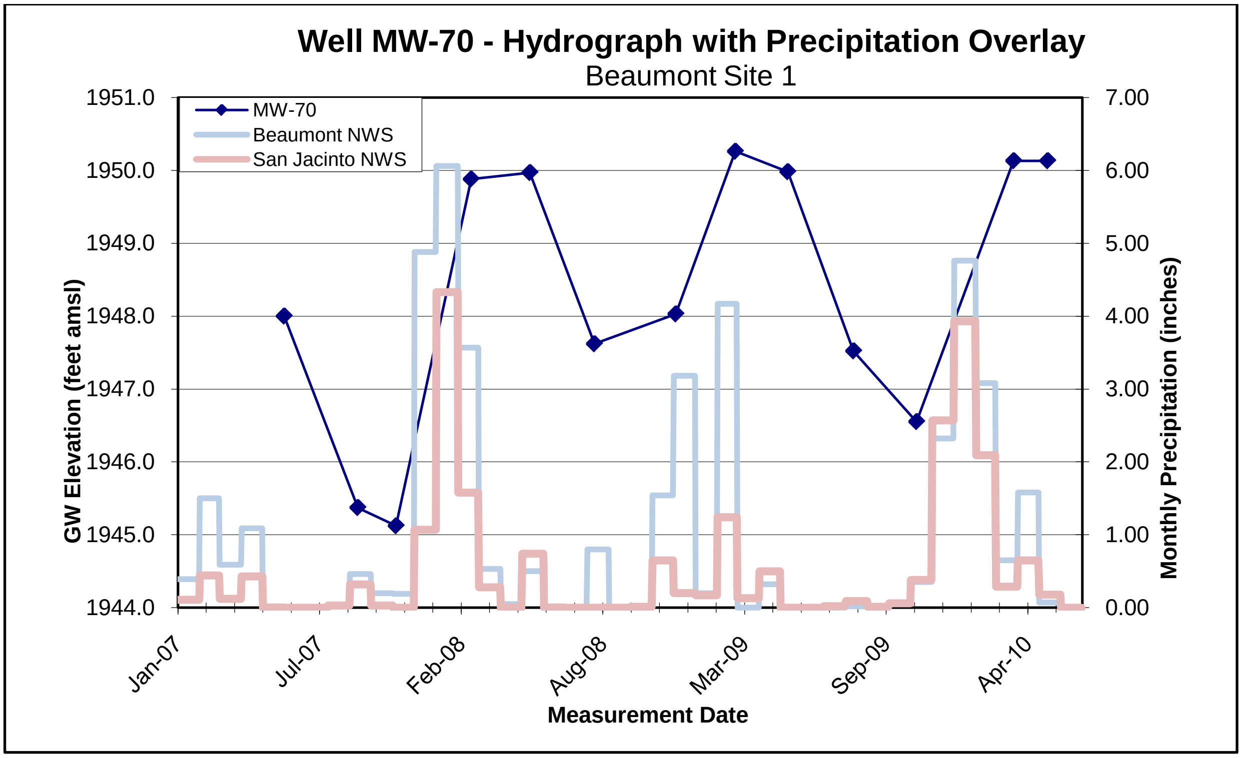
a - The analyte was found in the method blank.

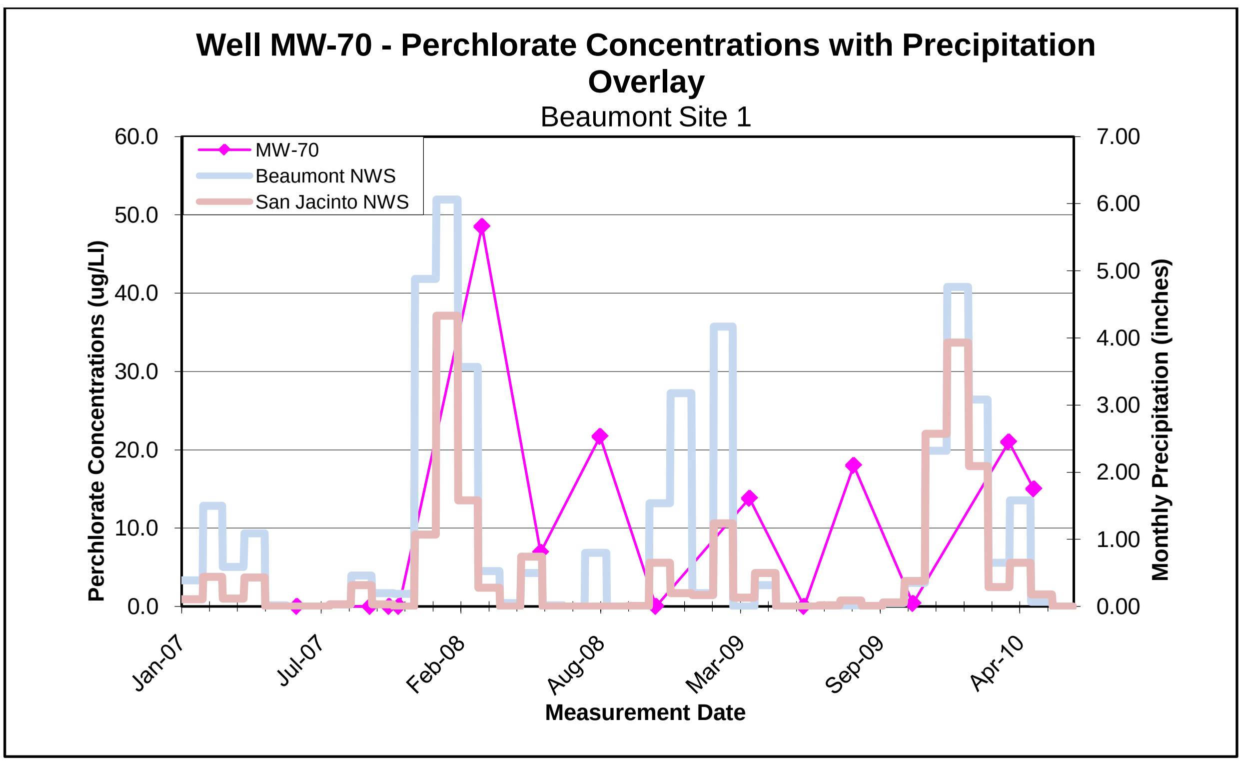
c - The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recoveries were outside control limits.

d - The Laboratory Control Sample (LCS) recovery was outside control limits.

q - The analyte detection was below the Practical Quantitation Limit (PQL).

Figure 3-17 Water Level Elevation and Perchlorate Concentrations with Precipitation Overlay





NWS – National Weather Service

The concentration of perchlorate in soil samples collected in the vicinity of the surrounding and downgradient wells is much lower than the perchlorate concentrations in soil samples collected adjacent to MW-70. Therefore, even though geochemical conditions appear to support natural attenuation in the entire vicinity, seasonal increases in surface water infiltration and groundwater elevation result in an increase in perchlorate concentrations in groundwater in the vicinity of MW-70. Perchlorate movement from soil into groundwater appears to be limited or halted completely by biodegradation as perchlorate is not observed in the surrounding and downgradient wells.

Nitrate

Nitrate was not detected above the MDL during the First Quarter 2010 and Second Quarter 2010 monitoring events. Nitrate is often considered the most critical electron acceptor competitor to perchlorate. Its absence in the aquifer permits native groundwater microorganisms to utilize perchlorate as an electron acceptor in the respiratory process. The absence of nitrate is also significant because it means that natural organic carbon that exists in the aquifer does not get consumed for denitrification.

DO and ORP

DO measurements are used to assess whether the aquifer is aerobic or anaerobic. In F-33 monitoring wells the DO concentrations have generally been less than 1.0 mg/L, which is considered to be anaerobic and provides an environment that could sustain natural perchlorate biodegradation. However, following periods of precipitation, MW-70 has shown DO levels greater than 1.0 mg/L. This increase in DO measurements corresponds with elevated perchlorate detections.

With the exception of MW-70 during the First Quarter 2010 sampling event, ORP values in the F-33 monitoring wells are generally measured below 50 mV. These results are indicative of anaerobic conditions. Therefore, the DO and the ORP values are in tandem, suggesting a redox environment that encourages natural perchlorate biodegradation.

Total Iron and Ferrous Iron

Both forms of iron were measured and were either not detected or detected at very low levels in the groundwater. Therefore, it appears that there is almost no oxidized or reduced iron in the aquifer. Oxidized iron could have consumed natural organic carbon in the process of biological iron reduction. In the vicinity of F-33 this does not appear to be the case, leaving the available organic carbon for direct consumption by native perchlorate reducing microorganisms.

Sulfate and Sulfide

During First Quarter 2010 and Second Quarter 2010 sulfate was detected at concentrations up to 80 mg/L in F-33 monitoring wells, and sulfide was generally absent or detected at very low concentrations. Very little biological sulfate reduction appears to be occurring in the vicinity of F-33, primarily because redox conditions do not strongly support such an occurrence. In general, sulfate is not a major competitor for perchlorate as an electron acceptor, in comparison with nitrate. However, it is important to note that sulfate does exist at high enough concentrations where it could consume natural organic carbon that would otherwise be used for perchlorate biodegradation.

Methane

Methane concentrations ranged from below the MDL to a high of 170 µg/L (F33-TW3). Methanogenesis generally occurs when the aquifer becomes strongly anaerobic and, as a result, methane is found in the 1,000 µg/L range. Under moderately anaerobic conditions, methane may generally be greater than 500 µg/L; and under mildly methanogenic conditions, methane is generally measured at concentrations greater than 100 µg/L. These results indicate that conditions are mildly anaerobic and sufficiently reducing to support perchlorate biodegradation.

Hydrogen

Hydrogen concentrations were greater than 1.0 nanoMoles (nM) in all monitoring wells where it was analyzed during First Quarter 2010. Hydrogen concentrations were greater than 1.0 nanoMoles (nM) in three of the seven locations where it was analyzed during Second Quarter 2010. Hydrogen above 1.0 nM is indicative of anaerobic conditions with the likelihood of the onset of mildly sulfate-reducing conditions. This level of hydrogen is supportive of natural perchlorate biodegradation. Hydrogen is considered a more reliable indicator of redox conditions than ORP because it is easier to measure to a high degree of accuracy and ORP measurements using field instruments can be impacted by the various redox pairs in the groundwater. In this area, redox measurements from ORP field instruments and hydrogen concentrations match fairly closely, making deductions about the geochemical environment in the aquifer more accurate. In general, hydrogen measurements in the F-33 monitoring wells point to anaerobic conditions that are reducing enough to support perchlorate biodegradation.

TOC and DOC

TOC and DOC in the F-33 monitoring wells were both generally measured at concentrations ranging from 2.1 mg/L to 3.8 mg/L. Although these levels are not suggestive of an aquifer rich in natural organic carbon, they are likely to be sufficient to sustain natural biodegradation of low levels of perchlorate. However, as seen in MW-70, perchlorate concentrations tend to increase in groundwater following periods of heavy precipitation as perchlorate from the vadose zone migrates into the aquifer. Increasing perchlorate concentrations in the groundwater do not appear to coincide with higher amounts of organic carbon, which would be required to keep perchlorate concentrations below detectable levels. Hence, we see perchlorate in MW-70 where the natural processes are not able to degrade the increased perchlorate with fluctuating groundwater levels; and a continuing absence in surrounding and downgradient wells where perchlorate degradation can still be sustained.

Therefore, the current natural biodegradation potential may not be sufficient to sustain perchlorate degradation in the immediate vicinity of MW-70 during periods of heavy precipitation or elevated groundwater levels but it is attenuated before it can migrate to other F-33 monitoring wells. This may be the case even though other electron acceptors such as iron and nitrate do not appear to be competing for organic carbon in the aquifer.

VFAs

VFAs are a more direct indication of the carbon substrate form which is immediately available to native microorganisms involved in biodegradation. Perhaps the most important of the VFAs is acetic acid, which plays a key and direct role in metabolism and energy generation. Acetic acid, when present even in small amounts, indicates that there is an excess that is available for consumption by perchlorate reducing microorganisms. In the Feature F-33 vicinity, acetic acid concentrations generally range up to 0.74 mg/L. These concentrations appear to be sufficient to sustain natural biodegradation of perchlorate except during periods of heavy precipitation.

3.8 GROUNDWATER QUALITY STATISTICAL TEMPORAL TREND ANALYSIS

All groundwater and surface water monitoring locations sampled and tested in 2010 were included in the trend analyses. Samples were collected from 123 monitoring wells and 14 fixed surface water locations. Temporal trend analyses were performed on the primary COPCs (perchlorate, 1,1-DCE, TCE, and 1,4-dioxane). The temporal trend analyses were performed using data from Second Quarter 2002 to Second Quarter 2010. The start of this period spans the shutdown of the groundwater extraction system located in the RMPA. The system was shut down in late 2002. While including data from Second Quarter (May) 2002 represents a time of active remediation, it was near the end of the active phase and should represent initial concentrations at the termination of active remediation.

The temporal trends were analyzed using Mann-Kendall and linear regression methods. Brief descriptions of the methods follow:

- Mann Kendall Analysis – This statistical procedure was used to evaluate the data for trends. It is a non parametric statistical procedure that is well suited for analyzing trends in data over time that does not require assumptions as to the statistical distribution of the data and can be used with irregular sampling intervals and missing data. The Mann-Kendall test for trend is suitable for analyzing data that follows a normal or non-normal distribution pattern. The Mann-Kendall test has no distributional assumptions and allows for irregularly spaced measurement periods. The advantage with this approach involves the cases where outliers in the data would produce biased estimates of the least squares estimated slope.

- Linear Regression Analysis – This parametric statistical procedure was used to calculate the magnitude of the trends. A parametric statistical procedure is typically used for analyzing trends in data over time and requires a normal statistical distribution of the data.

There are six statistical concentration trend types derived from Mann-Kendall analysis: 1) decreasing, 2) increasing 3) no trend [displaying two sets of conditions], 4) probably decreasing, 5) probably increasing, and 6) stable. These statistical concentration trend types are determined by the following conditions summarized in Table 3-13 (AFCEE, 2004).

The Mann-Kendall statistic (S) measures the trend in the data. Positive values indicate an increase in constituent concentrations over time, whereas negative values indicate a decrease in constituent concentrations over time. The strength of the trend is proportional to the magnitude of the Mann-Kendall Statistic (i.e., large magnitudes indicate a strong trend).

The Coefficient of Variation (COV) is a statistical measure of how the individual data points vary about the mean value. Values less than or near 1.00 indicate that the data form a relatively close group about the mean value. Values larger than 1.00 indicate that the data show a greater degree of scatter about the mean.

The "Confidence in Trend" is the statistical confidence that the constituent concentration is increasing (S>0) or decreasing (S<0).

Table 3-13 Mann-Kendall Concentration Trend Matrix

Mann-Kendall Statistic (S)	Confidence in Trend	Concentration Trend
S > 0	> 95%	Increasing
S > 0	90 - 95%	Probably Increasing
S > 0	< 90%	No Trend
S ≤ 0	< 90% and COV ≥ 1	No Trend
S ≤ 0	< 90% and COV < 1	Stable
S < 0	90 - 95%	Probably Decreasing
S < 0	> 95%	Decreasing

Notes:

> - Greater than.
≥ - Greater than or equal to.
< - Less than.
≤ - Less than or equal to.
COV - Coefficient of Variation.

The four primary COPCs were analyzed for temporal trends at 123 monitoring wells and 14 surface water sample locations. If there is insufficient data, less than four sampling events, then not applicable (NA) would be applied to the results.

Any one well location may have a different trend for each of the four analytes evaluated. For the 123 monitoring well locations, 492 trends were evaluated. Of the 492 trends that were evaluated: 31 had insufficient data, 221 had no trend, 34 had a decreasing trend, 11 had a probably decreasing trend, 153 had a stable trend, 15 had a probably increasing trend, and 27 had an increasing trend. A summary of the Mann-Kendall trend analysis is presented in Table 3-14

Table 3-14 Summary of Mann-Kendall Trend Analysis of COPCs for 2010 Sampled Monitoring Wells

Analyte	Wells Tested	Insufficient Data	No Trend	Decreasing Trend	Probably Decreasing Trend	Stable Trend	Probably Increasing Trend	Increasing Trend
Perchlorate	123	7	50	12	5	40	2	7
1,1-Dichloroethene	123	9	62	3	3	36	4	6
Trichloroethene	123	8	66	4	0	33	5	7
1,4-Dioxane	123	7	43	15	3	44	4	7
Total Analysis	492	31	221	34	11	153	15	27

Notes:

COPC - Chemicals of Potential Concern.

The 42 probably increasing or increasing trends were detected in 24 groundwater monitoring locations. The portion of the site where they are located, the location identification, and the COPC that has the increasing trend are listed below:

Nine wells located in the BPA:

- EW-13: 1,4-dioxane,
- MW-07: TCE,
- MW-26: 1,1-DCE,
- MW-31: perchlorate,
- MW-59D: perchlorate and 1,1-DCE,
- MW-60A: perchlorate, TCE, 1,1-DCE, and 1,4-dioxane,
- MW-60B: 1,4-dioxane,
- MW-61C: TCE and 1,1-DCE, and
- MW-71B: perchlorate.

Nine wells located in the RMPA:

- IW-04: TCE and 1,1-DCE,
- MW-19: 1,1-DCE, TCE,
- MW-28: perchlorate, TCE, 1,1-DCE, and 1,4-dioxane,
- MW-55: perchlorate and TCE,
- MW-68: perchlorate and 1,4-dioxane,
- MW-89: perchlorate,
- MW-90: TCE,

- MW-91: 1,4-dioxane, and
- MW-98B: TCE and 1,1-DCE.

Three wells located in the NPCA:

- MW-40: TCE,
- MW-76A: 1,4-dioxane, and
- MW-76C: TCE.

Three wells located in the MCEA:

- MW-46: TCE.
- MW-67: 1,4-dioxane, and
- MW-70: 1,4-dioxane.

A summary of the magnitude of the trends (ug/L/yr) determined by linear regression analyses and the percent change that represents with respect to the mean of the data used in the linear regression are presented in Table 3-15. Figures 3-18 through 3-21 present a spatial representation of the results of the trend analysis for monitoring well locations. Appendix J presents a summary of the results of the Mann-Kendall and linear regression analyses.

Table 3-15 Magnitude of Trends Detected for COPC 2010 Sampled Monitoring Wells

	Decreasing Trend		Probably Decreasing Trend		Probably Increasing Trend				Increasing Trend			
Analyte	Number	Magnitude (ug/L/yr)	Number	Magnitude (ug/L/yr)	Number	Location	Magnitude (ug/L/yr)	Magnitude (percent/yr)	Number	Location	Magnitude (ug/L/yr)	Magnitude (%/yr)
Perchlorate	13	0.43 to 713.6	5	1.76 to 121.7	2	MW-07	20.37	17.0	7	MW-28	14.3	10.2
						MW-89	103.48	4.9		MW-31	0.15	6.0
										MW-55	134.1	8.9
										MW-59D	110.9	1.8
										MW-68	1182.6	21.9
										MW-60A	1511.1	32.9
										MW-71B	38.5	12.4
1,1-Dichloroethene	6	0.00 to 8.76	3	0.01 to 0.40	4	MW-19	0.46	1.8	6	IW-04	2.85	23.7
						MW-26	204.4	5.8		MW-28	3.32	16.6
						MW-55	13.96	8.2		MW-59D	21.9	5.5
						MW-68	5.22	47.5		MW-61C	12.1	13.3
										MW-60A	20.5	6.0
										MW-98B	5.04	42.0
Trichloroethene	7	0.00 to 1.89	0	NA	5	MW-07	7.23	21.9	7	IW-04	1.51	13.7
						MW-19	0.4	3.1		MW-28	2.85	11.0
						MW-40	1.64	5.8		MW-55	7.35	5.7
						MW-46	0.12	8.4		MW-60A	15.3	7.3
						MW-76C	0.08	12.2		MW-61C	1.87	10.4
										MW-90	0.46	20.1
										MW-98B	10.5	45.6
1,4-Dioxane	16	0.03 to 3.76	3	0.03 to 1.16	5	EW-13	268.28	12.78	7	MW-28	0.48	10.6
						MW-26	8.76	2.2		MW-60A	7.03	6.4
						MW-55	4.87	7.8		MW-60B	1.02	25.6
						MW-70	0.24	8.4		MW-67	0.05	7.3
										MW-68	2.3	36.5
										MW-76A	0.46	25.6
										MW-91	0.25	17.0

Notes:

ug/L/yr - Micrograms per liter per year.

%/yr - Percent change per year with respect to the sample mean.

NA - Not applicable.

COPC - Chemicals of Potential Concern.

For the 14 surface water locations, 56 trends were evaluated. Of the 56 trends that were evaluated: 20 had insufficient data, 11 had no trend, 8 had a decreasing trend, 0 had a probably decreasing trend, 16 had a stable trend, 1 had a probably increasing trend, and 0 had an increasing trend. A summary of the Mann-Kendall trend analysis is presented in Table 3-16.

Table 3-16 Summary of Mann-Kendall Trend Analysis of COPCs for 2010 Sampled Surface Water Locations

Analyte	Locations Tested	Insufficient Data	No Trend	Decreasing Trend	Probably Decreasing Trend	Stable Trend	Probably Increasing Trend	Increasing Trend
Perchlorate	14	5	3	1	0	5	0	0
1,1-Dichloroethene	14	5	4	3	0	2	0	0
Trichloroethene	14	5	3	3	0	3	0	0
1,4-Dioxane	14	5	1	1	0	6	1	0
Total Analysis	56	20	11	8	0	16	1	0

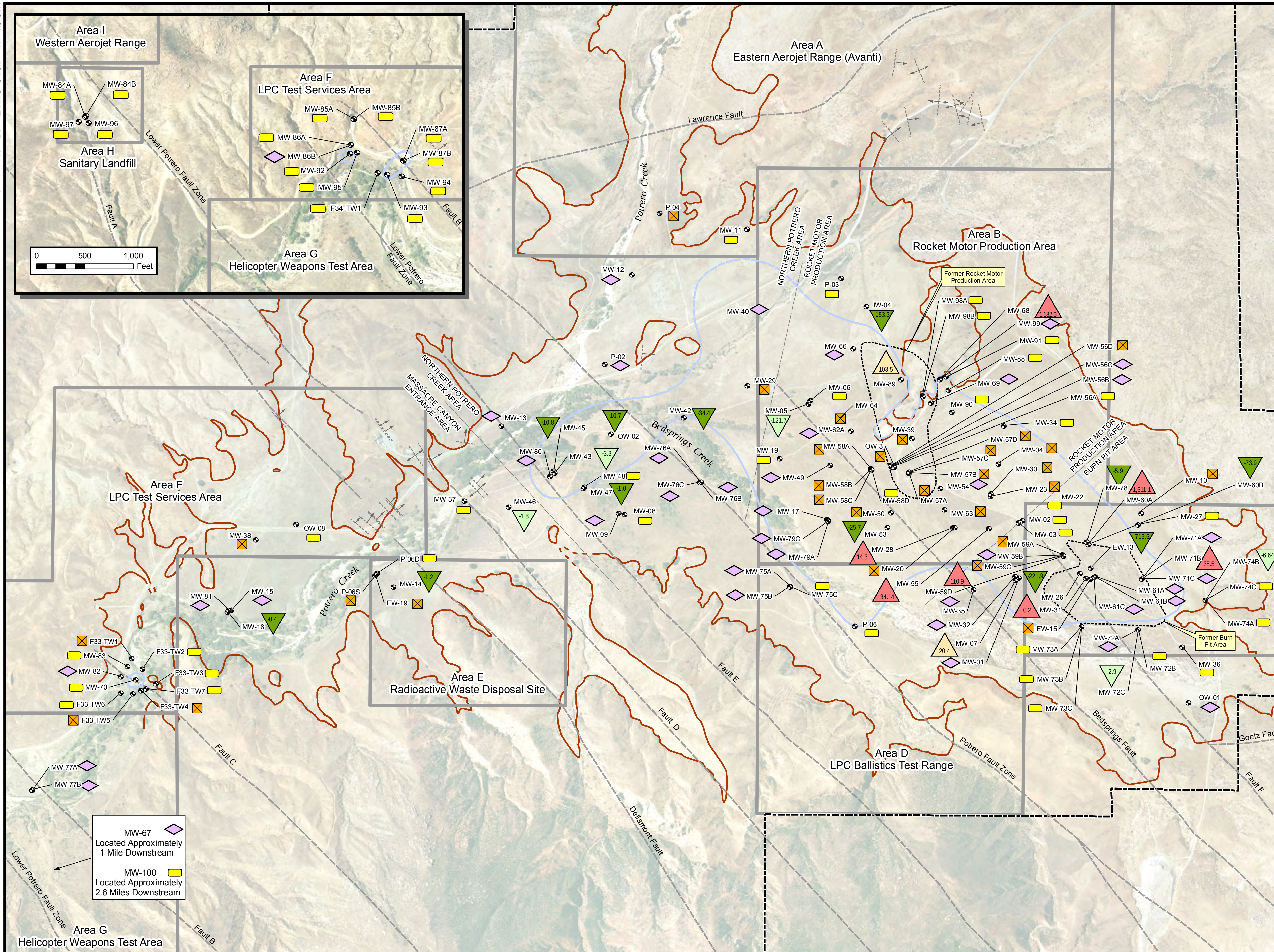
Notes:

COPC - Chemicals of Potential Concern.

The one probably increasing trend was detected at surface water location SW-07 located in the MCEA. The trend had a magnitude of 0.04 µg/L/yr and a 4.7 percent change with respect to the mean of the data used in the linear regression.

Surface water locations SW-01, SW-02, SW-03, SW-04 SW-06, SW-09, SW-16, and SW-18 displayed either no trend, a stable trend, or a decreasing COPC trend. The remaining surface water locations had insufficient data for Mann-Kendall trend analysis. Figure 3-22 presents a spatial representation of the results of the trend analysis for surface water locations.

X:\GIS\Lockheed S1 Q1Q2\10\Trend Perchlorate.mxd



0 500 1,000
Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Well Location
- MCL Contour
  Dashed where inferred
- Bedrock/Alluvium Surface Contact
  Dashed where inferred
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Analyte Trend Results

- Increasing
  Confidence in trend >95%
  (change shown in micrograms per liter per year (μg/L/yr)
- Probably Increasing
  Confidence between 90 and 95%
  (change shown in μg/L/yr)
- Probably Decreasing
  Confidence betwee 90 and 95%
  (change shown in μg/L/yr)
- Decreasing
  Confidence in trend >95%
  (change shown in μg/L/yr)
- Stable
  Confidence in trend <90, coefficient of variation <1 and Mann-Kendall statistic ≤0
- No Trend
  Confidence in trend >90% and Mann-Kendall statistic >0 or confidence in trend <90%, coefficient of variation ≥1 and Mann-Kendall statistic ≤0
- Insufficient Data for Statistical Analysis

Notes:

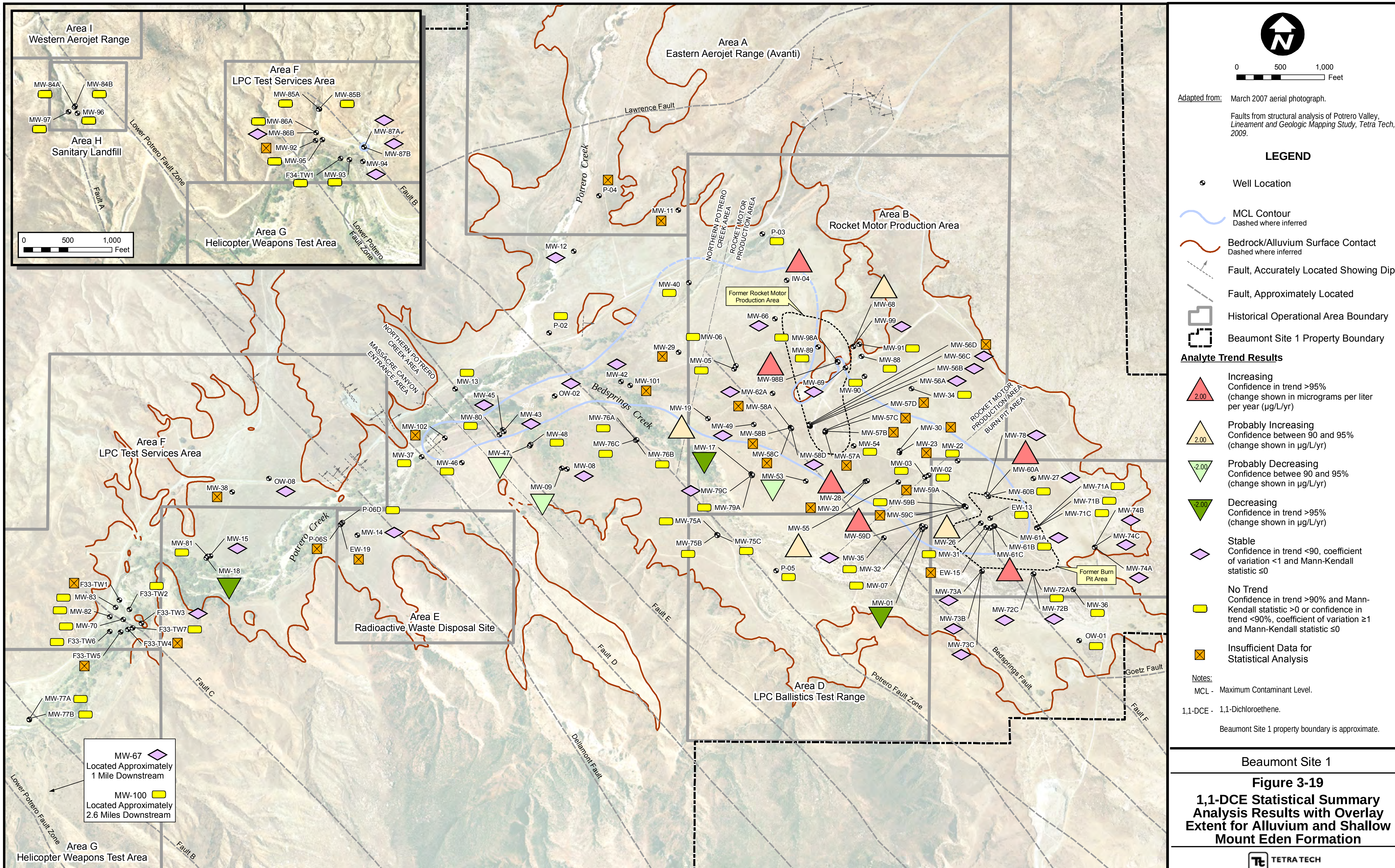
MCL - Maximum Contaminant Level.

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-18
Perchlorate Statistical Summary Analysis Results with Overlay Extent for Alluvium and Shallow Mount Eden Formation

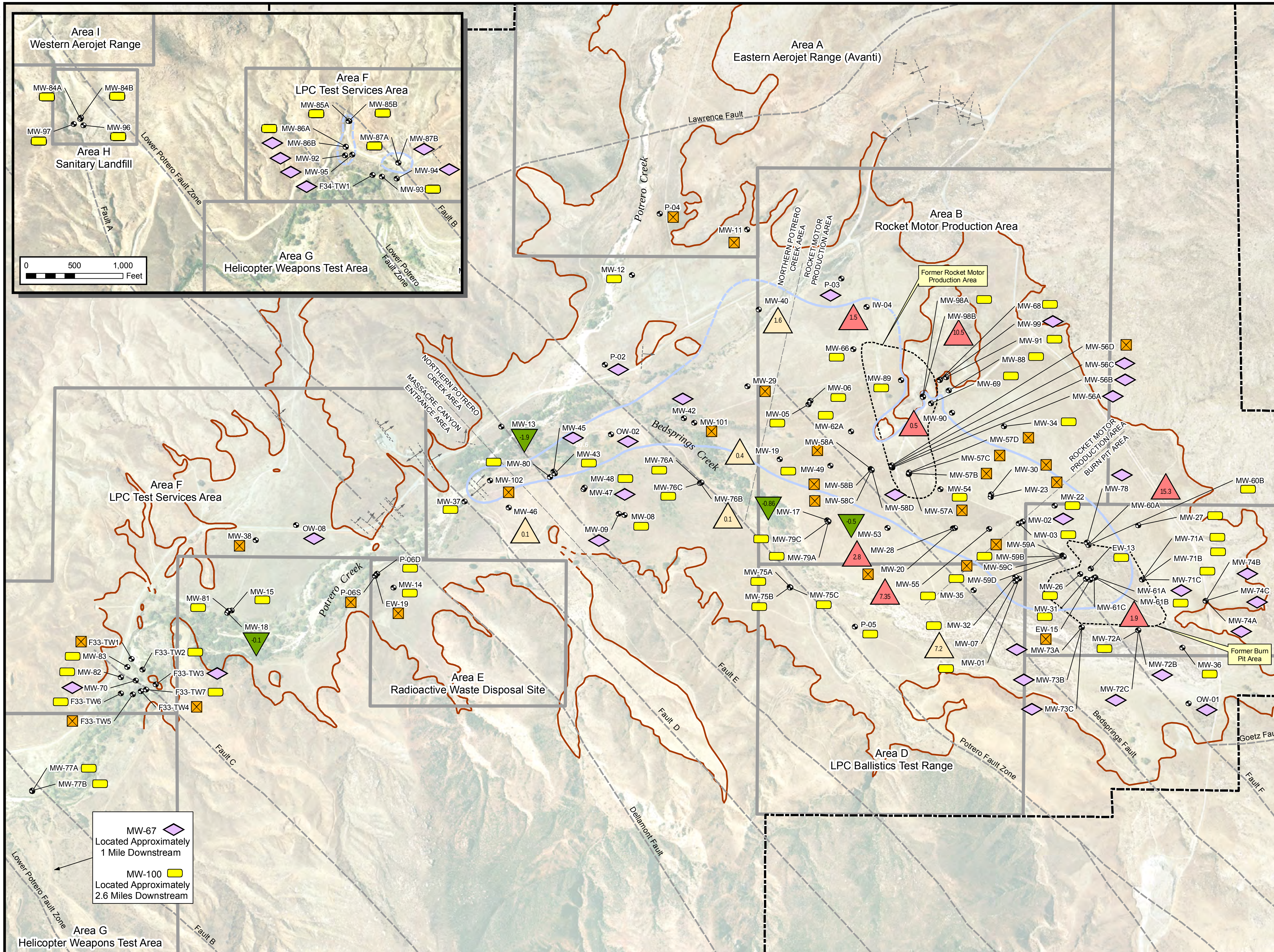
TETRA TECH



Beaumont Site 1

Figure 3-19

1,1-DCE Statistical Summary Analysis Results with Overlay Extent for Alluvium and Shallow Mount Eden Formation



0 500 1,000 Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Well Location
- MCL Contour (Dashed where inferred)
- Bedrock/Alluvium Surface Contact (Dashed where inferred)
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Analyte Trend Results

- Increasing: Confidence in trend >95% (change shown in micrograms per liter per year (µg/L/yr))
- Probably Increasing: Confidence between 90 and 95% (change shown in µg/L/yr)
- Decreasing: Confidence in trend >95% (change shown in µg/L/yr)
- Stable: Confidence in trend <90, coefficient of variation <1 and Mann-Kendall statistic ≤0
- No Trend: Confidence in trend >90% and Mann-Kendall statistic >0 or confidence in trend <90%, coefficient of variation ≥1 and Mann-Kendall statistic ≤0
- Insufficient Data for Statistical Analysis

Notes:

MCL - Maximum Contaminant Level.

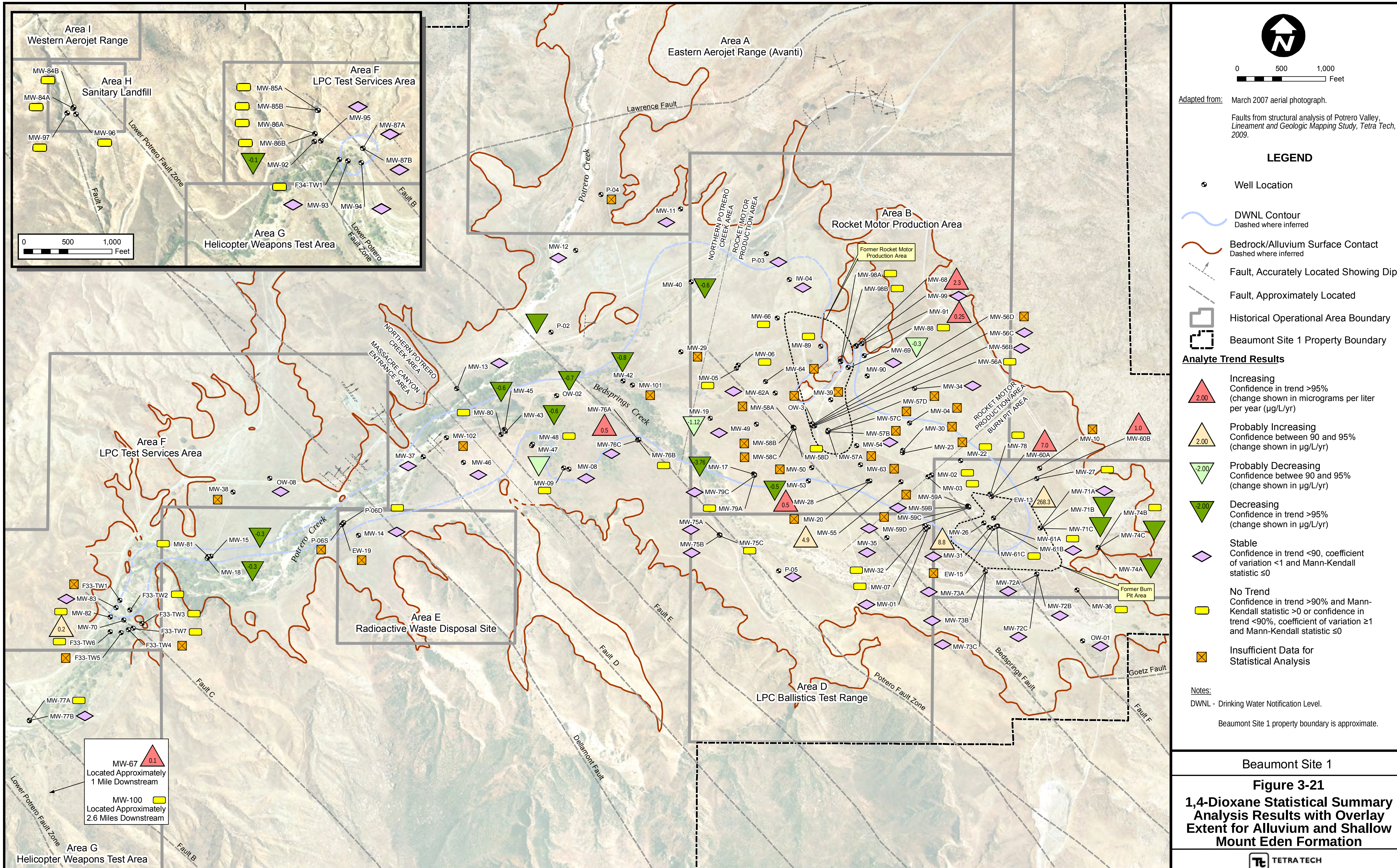
Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-20

TCE Statistical Summary Analysis Results with Overlay Extent for Alluvium and Shallow Mount Eden Formation

TETRA TECH



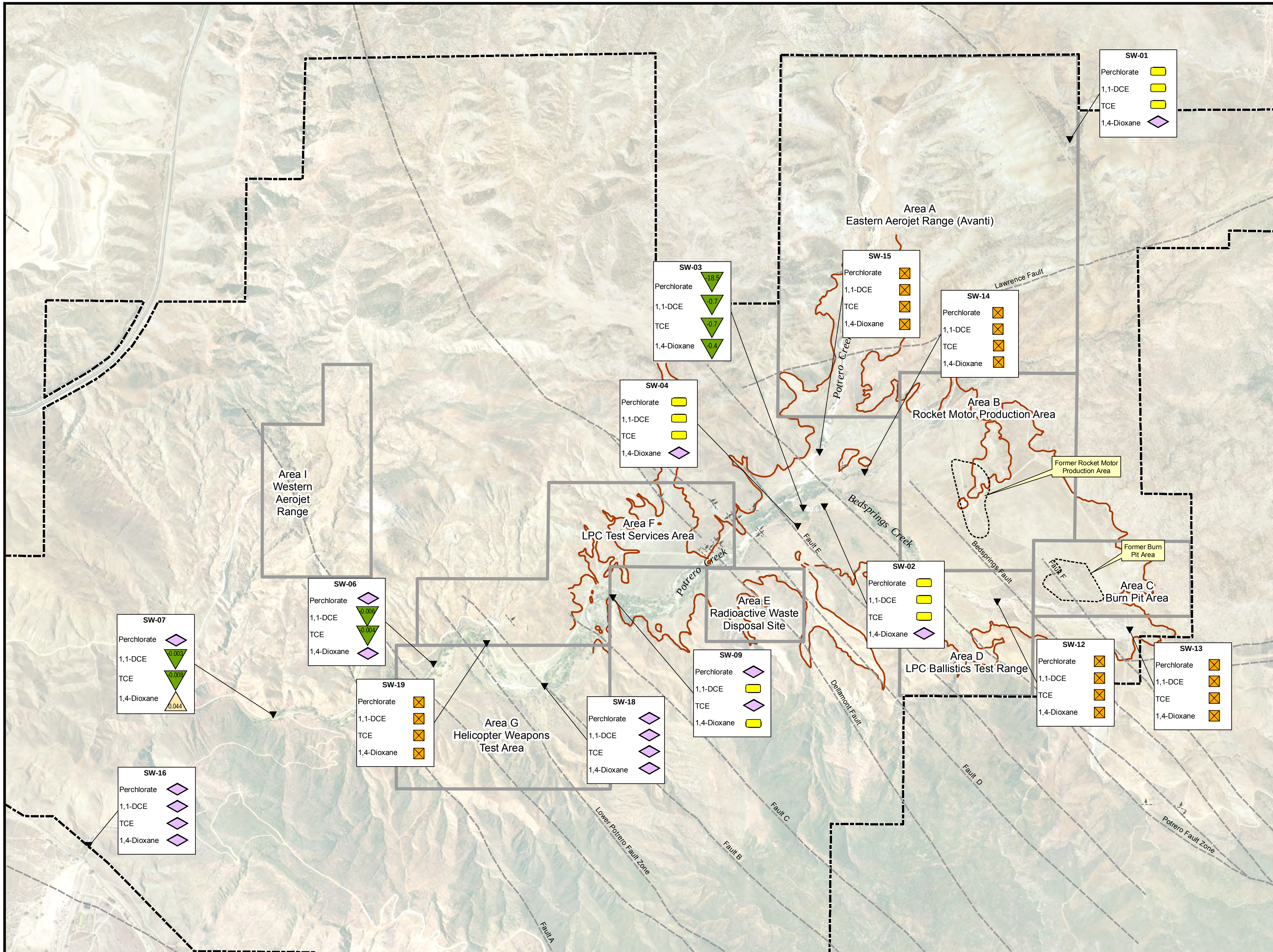
Beaumont Site 1

Figure 3-21

1,4-Dioxane Statistical Summary Analysis Results with Overlay Extent for Alluvium and Shallow Mount Eden Formation

TETRA TECH

X:\GIS\Lockheed S1 Q1Q2'10\Trend Surface H2O.mxd



N

0 1,000 2,000
Feet

Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

LEGEND

- Surface Water Sample Location
- Bedrock/Alluvium Surface Contact (Dashed where inferred)
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Historical Operational Area Boundary
- Beaumont Site 1 Property Boundary

Analyte Trend Results

- Decreasing — Confidence in trend >95% (change shown in µg/L/yr)
- Probably Increasing — Confidence between 90 and 95% (change shown in µg/L/yr)
- Stable — Confidence in trend <90, coefficient of variation <1 and Mann-Kendall statistic ≤0
- No Trend — Confidence in trend >90% and Mann-Kendall statistic >0 or confidence in trend <90%, coefficient of variation ≥1 and Mann-Kendall statistic ≤0
- Insufficient Data for Statistical Analysis

Notes:

Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 3-22

COPC Statistical Summary Analysis Results for Surface Water Samples

TETRA TECH

3.9 HABITAT CONSERVATION

Consistent with the U.S. Fish and Wildlife Service approved HCP (USFWS, 2005) and subsequent clarifications (LMC, 2006a, 2006b and 2006c) of the HCP describing activities for environmental remediation at the Site, field activities were performed under the supervision of a USFWS approved biologist. As a result, no impact to SKR occurred during the performance of the field activities related to the First Quarter 2010 and Second Quarter 2010 monitoring events.

SECTION 4 SUMMARY AND CONCLUSIONS

Groundwater level measurements were collected for the First Quarter 2010 and Second Quarter 2010 water quality monitoring events. A total of 169 groundwater level measurements were collected for the First Quarter 2010 monitoring event and a total 169 groundwater level measurements were collected during the Second Quarter 2010 monitoring event. For the First Quarter 2010 monitoring event, three wells were observed to be dry and measurements from two other wells could not be collected due to obstructions in their casings. For the Second Quarter 2010 monitoring event, four wells were observed to be dry.

For the First Quarter 2010 monitoring event, a total of 26 sampling locations (13 storm water, and 13 monitoring wells) were proposed for water quality monitoring. Eight proposed storm water sample locations, SW-06, SW-07, SW-08, SW-09, SW-10, SW-11, SW-18, and SW-19, were not able to be accessed due to safety concerns regarding the high water at the Potrero Creek road crossing and were not sampled. Therefore, water quality data was collected from five surface water and 13 monitoring wells locations.

For the Second Quarter 2010 monitoring event, a total of 143 sampling locations (17 surface water, one alternate surface water, 121 monitoring wells, and four private production wells) were proposed for water quality monitoring. One proposed monitoring well location, MW-71B, and eight proposed surface water sample locations, SW-08, SW-09, SW-10, SW-11, SW-12, SW-13, SW-14, and SW-15, were not sampled because the locations were dry. SW-16 was sampled so SW-17, an alternate surface water location sampled when SW-16 is dry, was not sampled. Therefore, water quality data was collected from nine surface water locations, 120 monitoring wells locations, and four private production wells.

4.1 GROUNDWATER ELEVATIONS

The Beaumont National Weather Station (NWS) reported approximately 8.49 inches of rain between December 2009 (Fourth Quarter 2009) and March 2010 (First Quarter 2010) and approximately 1.65 inches of precipitation between March 2010 (First Quarter 2010) and June 2010 (Second Quarter 2010). During this time period groundwater elevations generally increased across the site. During First Quarter 2010, groundwater elevation increases were seen in wells located in the BPA, the MCEA, and the NPCA and groundwater elevation decreases were seen in wells located in the RMPA. During Second Quarter 2010 groundwater elevation increases were seen in wells located in the BPA and RMPA and groundwater elevation decreases were seen in wells located in the NPCA and the MCEA.

Groundwater elevations during the First Quarter 2010 monitoring event ranged from approximately 2,149 feet above mean sea level (msl) upgradient of the former BPA to approximately 1,795 feet msl in the MCEA. Groundwater elevations during the Second Quarter 2010 monitoring event ranged from approximately 2,150 feet msl upgradient of the former BPA to approximately 1,795 feet msl in the MCEA.

Groundwater elevation differences in all wells from quarter to quarter appear to depend on the short and long-term weather patterns. In general, the greatest differences in quarterly groundwater elevations occur during periods of seasonal precipitation. Wells located within the NPCA and the MCEA appear to respond the quickest to precipitation compared to the former BPA and RMPA, which generally show a one season lag before responding to seasonal precipitation. The response also diminishes within each area with depth and distance from the Potrero and Bedsprings Creeks. The Site has experienced overall groundwater level declines since 2005.

4.2 SURFACE WATER FLOW

During the First Quarter 2010 and Second Quarter 2010, the Potrero and Bedsprings creek riparian corridors were walked to determine the presence, nature, and quantity of surface water within the creek beds. The locations where surface water was encountered were plotted and a determination was made whether the water was flowing or stagnant. At specific locations where flowing water was encountered the flow rate was determined using a modified version of the EPA Volunteer Stream Monitoring: Methods Manual (USEPA 1997).

Four fixed stream locations, SF-1 through SF-4, were chosen for stream flow measurements, SF-1, located near Gilman Hot Springs at the southwest border of the Site, SF-2, located in the vicinity of MW-67, SF-3, located in the vicinity of MW-15 and 18, and SF-4, located near MW-101.

During First Quarter 2010 SF-1 had an average flow rate of 1.11 cfs, SF-2 had an average flow rate of 0.58 cfs, SF-3 had an average flow rate of 0.87 cfs, and SF-4 had insufficient flow for measurement. The average site flow rate for First Quarter 2010 is 0.85 cfs.

During Second Quarter 2010 SF-1 had an average flow rate of 0.84 cfs, SF-2 had an average flow rate of 0.39 cfs, SF-3 had an average flow rate of 0.33 cfs, and SF-4 had insufficient flow for measurement. The average site flow rate for Second Quarter 2010 is 0.52 cfs.

4.3 GROUNDWATER FLOW AND GRADIENTS

Groundwater flow directions from First Quarter 2010 and Second Quarter 2010 were similar to previously observed patterns for a dry period. Generally, groundwater flowed northwest from the southeastern limits of the valley (near the former BPA) beneath the former RMPA, towards Potrero Creek where groundwater flow then changes direction and begins heading southwest, parallel to the flow of Potrero Creek, into Massacre Canyon.

Between December 2009 (Fourth Quarter 2009) and March 2010 (First Quarter 2010), the overall groundwater gradient (approximating a flowline from MW-36, upgradient of the BPA, through the RMPA and NPCA to MW-18, in the MCEA) increased to 0.014 ft/ft. Between March 2010 (First Quarter 2010) and June 2010 (Second Quarter 2010) the overall groundwater gradient through the same flow path remained the same at 0.014 ft/ft. In general the horizontal gradient is lowest between the BPA and the RMPA with a greatly increased flow through the NPCA and the MCEA. The flattening of the gradient in the BPA and RMPA appears to be attributed to the lithology, aquifer transmissivity and aquifer thickness in these areas.

Vertical groundwater gradients between shallow and deeper monitoring well pairs are generally downward (negative) in the BPA, RMPA, and the NPCA, and upward (positive) in the MCEA. The response to seasonal changes in groundwater recharge, although dampened by depth, are consistent within the different vertical well pairs installed at the Site. This suggests that there is vertical hydraulic communication within the aquifer.

4.4 WATER QUALITY

Both groundwater and surface water are collected and sampled as part of the GMP. The GMP has a quarterly/semiannual/annual/biennial frequency. The annual and biennial events are larger major monitoring events and the quarterly and semiannual events are smaller minor events. All new wells are sampled quarterly for one year. The semiannual wells are sampled second and fourth quarter of each year, annual wells are sampled second quarter of each year and the biennial wells are sampled second quarter of even numbered years.

A COPC evaluation is performed annually. The primary COPCs identified for the Site during 2010 monitoring were: perchlorate, 1,1-DCE, TCE and 1,4-dioxane. The secondary COPCs identified for the Site during 2010 monitoring were: 1,1-DCA, 1,2-DCA, 1,1,1-TCA, 1,1,2-TCA, cis-1,2-DCE, and vinyl chloride. 1,1,2-TCA and vinyl chloride were added as secondary COPCs to the list of COPCs identified this year due to the frequency and concentration of their detections becoming more consistent and widespread. The results of surface and groundwater samples collected and tested during the first two quarters of 2010 are discussed below.

4.4.1 Private Production Wells

Samples from select offsite private production wells were collected as part of the Second Quarter 2010 monitoring event. Wells were selected that are in close proximity to the site boundary to monitor for potential impact to offsite water supplies from groundwater leaving the site. No COPCs were detected in the upgradient or downgradient private production wells that were sampled. The private production wells will continue to be monitored annually during the second quarter sampling event.

4.4.2 Surface Water

Surface water samples are collected semiannually during the second and fourth quarter sampling events, and during a storm event. Seventeen surface water sample locations and one alternate sample location have been identified for semiannual surface water sampling at the Site. Sample locations have been chosen to include springs and spring fed ponds, ephemeral ponds, and locations in the Bedsprings and Potrero Creek drainages. Twelve locations within the active drainages have been identified for surface water sampling during a storm event. Surface water samples are collected semiannually during the second and fourth quarters, and following a storm event. Due to the ongoing drought conditions and the ephemeral nature of the ponds and creeks, it is common for many of the locations to be dry at the time of sampling.

During the First Quarter 2010 sampling event, surface water samples were collected from five locations during a storm event. The remaining seven locations were not able to be accessed at the time of sampling due to the heavy flow of storm water in Potrero Creek.

During the Second Quarter 2010 sampling event, surface water samples were collected from nine locations. The remaining eight locations were dry at the time of sampling. Surface water location SW-16 was able to be sampled so the alternate location, SW-17, was not sampled. The sample results from the locations sampled are consistent with previous sample results obtained at the Site.

The four primary COPCs (1,4-dioxane, 1,1-DCE, TCE, and perchlorate) and one secondary COPC (cis-1,2-DCE) were detected in surface water samples collected from locations SW-02, SW-03, and SW-04. These samples were collected from springs and or spring fed ponds located outside of the stream beds but near the intersection of Bedsprings and Potrero Creeks. Only 1,4-dioxane and perchlorate were detected above their respective MCL or DWNL in these locations. The MCLs for 1,1-DCE, TCE, and perchlorate are 6 µg/L, 5 µg/L, and 6 µg/L respectively. The DWNL for 1,4-dioxane is 3 µg/L.

Two of the primary COPCs, 1,4-dioxane, and perchlorate, and no secondary COPCs were detected in the surface water samples collected from locations SW-06, SW-07, SW-16, SW-18, and SW-19. These samples were collected from water flowing in Potrero Creek and are located topographically downgradient of the springs discussed in the previous paragraph. 1,4-dioxane is the only COPC to be detected above the MCL or DWNL.

1,4-Dioxane has been intermittently detected in surface water samples collected at location SW-16 located at the mouth of Massacre Canyon and Gilman Hot Springs Road during or following periods of rainfall. During Second Quarter 2010 1,4-dioxane was detected at a concentration of 0.98 µg/L. Additionally, perchlorate was detected during First Quarter 2010 and Second Quarter 2010 at concentrations of 0.34 µg/L and 0.13 µg/L respectively. Perchlorate has not previously been detected at this location. This is likely a result of a lower detection limit. During previous monitoring events the detection limit for perchlorate was 0.5 µg/L. In 2010 a more sensitive method for testing perchlorate was used and the detection limit was lowered to 0.07 µg/L.

4.4.3 Groundwater

Groundwater monitoring wells were sampled during the first and second quarters. This year the Second Quarter 2010 semiannual groundwater monitoring event is the larger biennial event that includes plume wells, vertical distribution wells, new wells, and guard wells.

Plume Wells

The primary COPCs (perchlorate, 1,1-DCE, TCE and 1,4-dioxane) were reported in groundwater samples collected from the 52 wells designated as plume monitoring wells during the Second Quarter 2010 monitoring event. Perchlorate was detected in 42 of 52 groundwater samples collected at concentrations ranging from 0.22 µg/L to 77,000 µg/L in MW-61B located in the BPA. The perchlorate MCL of 6 µg/L was exceeded in 26 of the groundwater samples collected. 1,1-DCE was detected in 31 of 52 groundwater samples collected at concentrations ranging from 0.13 to 10,000 µg/L in EW-13 located in the BPA. The 1,1-DCE MCL of 6 µg/L was exceeded in 22 of the groundwater samples collected. TCE was detected in 29 of 52 groundwater samples collected at concentrations ranging from 0.18 to 3,100 µg/L in MW-26 located in the BPA. The TCE MCL of 5 µg/L was exceeded in 26 of the groundwater samples collected. 1,4-dioxane was detected in 34 of 52 groundwater samples collected at concentrations ranging from 0.19 to 4,400 µg/L in EW-13 located in the BPA. The 1,4-dioxane DWNL of 3 µg/L was exceeded in 26 of the groundwater samples collected.

In general, plume morphology does not appear to have changed significantly from Second Quarter 2009. The primary contaminant source area for perchlorate, 1,1-DCE, TCE and 1,4-dioxane appears to be the former BPA, but secondary sources are present in the former RMPA and Features F-33, F-34, and F-39.

New Wells

MW-37 and MW-42 were destroyed and replacement wells MW-101 and MW-102 were installed as part of the Site 1 well destruction, rehabilitation, and installation work that was completed in early November 2009. MW-101 and MW-102 were installed as replacements for MW-42 and MW-37, respectively, which were in danger of being damaged due to stream bank erosion. The new wells were designed and installed to mimic the geochemical and hydrogeological characteristics of MW-37 and MW-42 as closely as possible while still being located in protected areas. A complete description of the work performed can be found in the Site 1 Well Destruction, Rehabilitation, and Installation Report (Tetra Tech, 2010a). COPC sample results for MW-101 and MW-102 as well as historic sample results from MW-37 and MW-42 and can be found in Table 4-1.

Table 4-1 Comparison of Old Well and Replacement Well COPC Sample Results

Sample Location	Sample Date	Screen Interval (elevation msl)	Perchlorate	1,4- Dioxane	1,1-Dichloro ethane	1,2-Dichloro ethane	1,1-Dichloro ethene	c-1,2-Dichloro ethene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethene	Vinyl Chloride
All results reported in µg/L unless otherwise stated												
MW-42	06/21/07	2058.35 - 2079.35	4.84	**22**	3.7	0.68 Jq	**48**	1.2	<0.2	<0.2	**50**	**1.1**
MW-42	06/09/08	2058.35 - 2079.35	<0.5	**19**	4.5 Jq	<1	**75**	2.2 Jq	<1	<1	**80**	**1.8 Jq**
MW-42	06/11/09	2058.35 - 2079.35	<0.36	**32**	**5.2**	0.57	**90**	2.7	<0.45	<0.54	**84**	**2.1**
MW-101	11/23/09	2067.40 - 2087.40	<0.071	**23**	1.8	0.56	**55**	**41**	<0.12	<0.31	**48**	**1.4**
MW-101	03/29/10	2067.40 - 2087.40	<0.071	**23**	1.8 Jb	0.57 Jb	**61 Jb**	**47 Jb**	<0.12	<0.31	**47 Jb**	**2.2 Jb**
MW-101	05/07/10	2067.40 - 2087.40	<0.071	**25**	1.4	0.44 Jq	**48**	**42**	<0.12	<0.31	**43**	**1.7**
MW-37	11/08/07	1980.97 - 2000.97	<0.5	**7.3**	0.71 Jq	<0.2	5.1	<0.2	<0.2	<0.2	4.4	<0.2
MW-37	05/29/08	1980.97 - 2000.97	<0.5	**2.6**	<1	<1	1.5 Jq	<1	<1	<1	<1	<1
MW-37	06/11/09	1980.97 - 2000.97	<0.36	**7.2**	0.45 Jq	<0.31	2.5	<0.49	<0.45	<0.54	1.4	<0.33
MW-102	11/19/09	2019.21 - 2039.21	<0.071	**19**	1.9	0.32 Jq	**24**	**32**	<0.12	<0.31	**25**	**3.3**
MW-102	03/29/10	2019.21 - 2039.21	<0.071	**20**	1.8 Jb	0.33 Jbq	**27 Jb**	**34 Jb**	<0.12	<0.31	**18 Jb**	**3.3 Jb**
MW-102	05/07/10	2019.21 - 2039.21	<0.071	**21**	1.5	0.23 Jq	**20**	**31**	<0.12	<0.31	**17**	**2.8**
MCL/DWNL (µg/L)			6	3 (1)	5	5	6	6	200	5	5	0.5

Notes: Only analytes positively detected are presented in this table. For a complete list, refer to the laboratory data package.

msl - mean sea level

MCL - California Department of Public Health Maximum Contaminant Level

DWNL - California Department of Public Health drinking water notification level.

(1) DWNL

µg/L - micrograms per liter.

Bold - MCL or DWNL exceeded.

<# - Analyte not detected, method detection limit concentration is shown.

J - The analyte was positively identified, but the analyte concentration is an estimated value.

b - the surrogate spike recovery was outside control limits.

q - The analyte detection was below the Practical Quantitation Limit (PQL).

Guard Wells

Four monitoring wells are designated as guard wells: MW-15, MW-18, MW-67, and MW-100. Wells MW-15 and MW-18 are a clustered well pair. All guard wells are located along Potrero Creek, downgradient of the BPA and RMPA source areas. Well MW-18 is completed near the top of the alluvial aquifer and MW-15 is completed near the bottom of the alluvial aquifer. These wells are located approximately 3 miles from the southern site boundary and are located above the secondary sources identified at F-33, F-34, and F-39. Well MW-67, the furthest downgradient site well, is located approximately 1 mile upgradient of the southern site boundary and MW-100, an offsite well, is located approximately 500 feet south of the southern site boundary near the mouth of Potrero Creek. Both of these wells are located below the secondary sources identified at F-33, F-34, and F-39. The analyte 1,4-dioxane was detected in monitoring wells MW-15, MW18, MW-67, and MW-100 at concentrations of 6.6 µg/L, 5.2 µg/L, 1.2 µg/L, and 0.13 µg/L respectively. The analyte 1,4-dioxane is the only COPC to be detected above the MCL or DWNL in these guard wells during the First and Second Quarter 2010 sampling events. The MCLs for 1,1-DCE, TCE, and perchlorate are 6 µg/L, 5 µg/L, and 6 µg/L respectively. The DWNL for 1,4-dioxane is 3 µg/L. Sample results for the guard wells from Second Quarter 2010 are consistent with sample results from previous sampling events.

4.5 MONITORED NATURAL ATTENUATION SAMPLING

The objective of the MNA sampling and analyses effort is to understand the geochemical characteristics that appear to be contributing to the natural attenuation of the low level perchlorate in groundwater in 2 areas: the Potrero Creek area that has migrated into the area from the BPA and the RMPA, and the area around the Large Motor Washout Area (F-33). In the F-33 area, elevated perchlorate concentrations (up to 302 mg/kg at 16 feet below ground surface in F33-DP20, July 2008) have been detected in soil samples, while groundwater concentrations in nearby monitoring well MW-70 have fluctuated from below detection limits up to 48.5 µg/L.

The MNA sampling results confirm that the various geochemical parameters (redox conditions, the absence of electron acceptor competition, and the availability of low levels of useable organic carbon), as well as the environmental conditions in the aquifer, are within the required range to promote biodegradation of perchlorate in groundwater in the area. It appears this riparian area and its organic rich lithologic layers observed in the area are contributing to the TOC, which is in turn creating the small amounts of volatile fatty acids that provide the carbon substrate for perchlorate-reducing microorganisms. Seasonal detections of perchlorate in MW-70 may indicate that during periods of heavy rainfall, perchlorate contamination from the overlying soil is being flushed into the aquifer. However, the organic carbon in the aquifer does not appear to be sufficient to completely degrade the increased amount of perchlorate migrating from the vadose zone during periods of heavy rainfall, which results in temporary increases in perchlorate concentrations at MW-70. Perchlorate has not been detected in the wells down gradient of MW-70. Therefore. it would appear biodegradation conditions are sufficient to control the temporary increases observed near MW70. It is likely that seasonal and long term changes in precipitation have an influence on the geochemical conditions observed, impacting the perchlorate reducing conditions. This is likely the reason for the fluctuation in perchlorate concentrations at MW-70.

The data obtained from the F-33 MNA sampling will be combined with the data obtained during the Second Quarter 2010 site-wide natural attenuation study to help refine the CSM and help determine which areas of the site may be conducive to natural attenuation of perchlorate, chlorinated solvents, and 1,4-dioxane. Additionally the data will be used to guide additional work planned for later monitoring events. The data will be presented in the Beaumont Site 1 Monitored Natural Attenuation Summary Report.

4.6 TEMPORAL TREND ANALYSIS

All groundwater and surface water monitoring locations sampled and tested in 2010 were included in the trend analyses. Samples were collected from 123 monitoring wells and 14 fixed surface water locations. Groundwater sampling results from the 123 wells and 14 surface water locations sampled for COPCs during the Second Quarter 2010 were included in a temporal trend analysis of perchlorate, 1,1-DCE, TCE, and 1,4-dioxane (the primary COPCs). The temporal trend analyses were performed using data from Second Quarter 2002 to Second Quarter 2010. This period was chosen because operation of the RMPA PAT was discontinued in 2002. This temporal trend analysis updates the analysis performed following completion of the Second Quarter 2009 monitoring event (Tetra Tech, 2009f). The temporal trends were analyzed using Mann-Kendall and linear regression methods. The magnitude of the trends is presented as a change in concentration per year.

The number of increasing or probably increasing trend wells has increased from 12 wells in 2009 to 24 wells and one surface water location in the 2010 temporal trend analyses. This is likely attributable to the number of new wells that have been installed in the last several years (60 new wells since 2006) and the number of wells that have historically yielded no trend. The number of decreasing trend, probably decreasing trend, and stable trend wells have increased during this period as well. A summary of the trend analysis results for the 24 increasing or probably increasing trend locations is presented in Table 4-2. The percent change that these increases represent with respect to the mean of the data used to calculate each trend is also presented in Table 4-2. Eighteen of the trend magnitudes represent less than a 20 percent change.

Burn Pit Area – The BPA is the primary source area for all of the Site's COPCs. Nine of the 24 locations with increasing trends identified were from monitoring wells located in this area. There were 10 wells with decreasing trend also. Relative to the mass of the contaminants present in the source area and the concentrations detected in the groundwater in this area the changes do not appear unusual. The results are consistent with a continuing source that appears to be at near equilibrium conditions.

Rocket Motor Production Area - The RMPA is a secondary source area for the COPC perchlorate. Nine of the 24 locations with increasing trends were monitoring wells located in this area. There were also six wells with a decreasing trend. The results appear to be consistent with contaminants migrating from the BPA into the RMPA and with a continuing source of perchlorate that is in near equilibrium conditions.

Northern Potrero Creek Area – There are no known contaminant sources in the NPCA. Three of the 24 locations with increasing trends identified were from monitoring wells located in this area. There were nine wells with decreasing trend also. The magnitudes of the trends are relatively small but the decreasing trends are generally larger than the increasing trends. The COPC plumes diminish significantly through this area. It is believed that a significant amount of natural attenuation is occurring in the area. The results appear to be consistent with COPC plumes that are at near equilibrium or possibly decreasing conditions.

Massacre Canyon Entrance Area - The MCEA has secondary source areas for all the COPC's. Three of the 24 locations with increasing trends identified were from monitoring wells located in this area. There were five wells with decreasing trend also. The magnitude of the trends are very small. The magnitudes of the increasing trends are all less than 0.25 µg/L per year. All of the Sites guard wells are located in this area. Guard wells MW-15, MW-18, MW-67 and MW-100 primarily displayed stable or decreasing COPC trends, with the exception of MW-15, in which a TCE trend could not be discerned and MW-67 which had an increasing 1,4-dioxane trend. In 2010, MW-67was the farthest downgradient well with an increasing trend. MW-67 had an increasing 1,4-dioxane trend with a magnitude of 0.05 µg/L/yr. A closer review of the data from MW-67 shows that this trend is likely due to changes in laboratory detection limits. The statistics use one-half the detection limit for tests that are reported as non-detect. For wells with detections near the detection limit, downward changes in detection limits can result in the appearance of an increasing trend. The results appear to be consistent with COPC plumes that are in equilibrium conditions.

Possible reasons for the change in the number of increasing trend wells are 1) an increase in amount of data for the individual locations, the trends become more noticeable due to the ability to better define outliers, and 2) as additional time passes, potential influence from the former extraction system becomes less noticeable. In general, the plume morphology has not changed and the majority of the wells and the surface water locations display a stable trend or no trend.

Table 4-2 Summary of Increasing COPC Trends – Second Quarter 2010

Analyte:	Perchlorate			1,1-Dichloroethene			Trichloroethene			1,4-Dioxane		
Sample Location	**Trend**	**Magnitude (ug/L/yr)**	**Magnitude (%/yr)**	**Trend**	**Magnitude (ug/L/yr)**	**Magnitude (%/yr)**	**Trend**	**Magnitude (ug/L/yr)**	**Magnitude (%/yr)**	**Trend**	**Magnitude (ug/L/yr)**	**Magnitude (%/yr)**
Burn Pit Area												
EW-13	Decreasing	-713.6		No Trend			No Trend			Probably Increasing	268.28	12.78
MW-07	Probably Increasing	20.37	17.0	No Trend			Probably Increasing	7.23	21.9	No Trend		
MW-26	Decreasing	-221.9		Probably Increasing	204.4	5.8	No Trend			Probably Increasing	8.76	2.2
MW-31	Increasing	0.15	6.0	No Trend			No Trend			Stable		
MW-59D	Increasing	110.9	1.8	Increasing	21.9	5.5	No Trend			Stable		
MW-60A	Increasing	1,511.10	32.9	Increasing	20.5	6.0	Increasing	15.3	7.3	Increasing	7.03	6.4
MW-60B	Decreasing	-73.9		No Trend			No Trend			Increasing	1.02	25.6
MW-61C	Stable			Increasing	5.04	13.3	Increasing	1.87	10.4	No Trend		
MW-71B	Increasing	38.5	12.4	No Trend			No Trend			Decreasing	-0.03	
Rocket Motor Production Area												
IW-04	Decreasing	-153.3		Increasing	2.85	23.7	Increasing	1.51	13.7	Stable		
MW-19	No Trend			Probably Increasing	0.46	1.8	Probably Increasing	0.4	3.1	Probably Decreasing	-1.2	
MW-28	Increasing	14.3	10.2	Increasing	3.32	16.6	Increasing	2.85	11.0	Increasing	0.48	10.6
MW-55	Increasing	134.1	8.9	Probably Increasing	13.96	8.2	Increasing	7.35	5.7	Probably Increasing	4.87	7.8
MW-68	Increasing	1,182.60	21.9	Probably Increasing	5.22	47.5	No Trend			Increasing	2.3	36.5
MW-89	Probably Increasing	103.48	4.9	No Trend			No Trend			No Trend		
MW-90	No Trend			No Trend			Increasing	0.46	20.1	Stable		
MW-91	No Trend			No Trend			No Trend			Increasing	0.25	17.0
MW-98B	No Trend			Increasing	5.04	42.0	Increasing	10.5	45.6	No Trend		
Northern Potrero Creek Area												
MW-40	Stable			No Trend			Probably Increasing	1.64	5.8	Decreasing	-0.6	
MW-76A	No Trend			No Trend			Stable			Increasing	0.46	25.6
MW-76C	Stable			No Trend			Probably Increasing	0.08	12.2	Stable		
Massacre Canyon Entrance Area												
MW-46	Probably Decreasing	-1.8		No Trend			Probably Increasing	0.12	8.4	Stable		
MW-67	Stable			Stable			Stable			Increasing	0.05	7.3
MW-70	No Trend			No Trend			Stable			Probably Increasing	0.24	8.4

Notes:

µg/L/yr - microgram per liter per year

%/yr - Percent change per year with respect to the sample mean.

4.7 PROPOSED CHANGES TO THE GROUNDWATER MONITORING PROGRAM

4.7.1 Groundwater Sampling Frequency

The sampling frequency of a monitoring well is based on the well's classification (i.e., function of each well) (Tetra Tech, Inc., 2003b). Groundwater monitoring well classifications are based on the evaluation of the temporal trends, spatial distribution, and other qualitative criteria. There are seven potential well classifications. Because there are nor currently any active remedial actions, there are no wells designated as remedial monitoring wells. A summary of the sampling frequency by well classification is presented in Table 4-3.

Table 4-3 Well Classification and Sampling Frequency

Classification	Sampling Frequency
Horizontal Extent (Plume) Wells	Annual
Vertical Distribution Wells	Biennial
Increasing Trend Wells	Semiannual
Remedial Monitoring Wells	Semiannual
Guard Wells	Semiannual
Redundant Wells	Suspend
New Wells	Quarterly
Note: The New Well classification was not specified in the Revised Groundwater Sampling and Analysis Plan (Tetra Tech Inc., 2003B)	

4.7.2 Proposed Changes

Formerly new monitoring wells MW-84A through MW-100 have now been sampled for a year and reclassifications are proposed. Unless otherwise specified below these changes are listed in table 4-5. MW-100 is proposed as a guard well to be sampled semiannually.

The sampling frequency of vertical distribution wells MW-61A, MW-71A, MW-72A, MW-73A, MW-74A, and MW-78 has been annual since Second Quarter 2008 to facilitate a study of the vertical distribution of COPCs in the BPA. The study showed that in general the deep wells surrounding the BPA have not been impacted by contamination within the BPA. It is proposed to change the sampling frequency of these wells from annual to biennial to be consistent with the sampling frequency presented in the Groundwater Monitoring SAP (Tetra Tech, Inc., 2003b).

The sampling frequency for wells with an increasing trend may be increased to semiannual if the magnitude of the trend and the wells location warrant an increased frequency. Typical laboratory standards for precision and accuracy allow for approximately 20 percent variability in laboratory data. As a result, any increasing trends with a magnitude less than 20 percent of the mean concentration of the data used in the trend determination will be considered minor and will not trigger an increase to semiannual sampling. The monitoring frequency of all other wells exhibiting an increasing trend will be evaluated on a case by case basis with particular attention given to the magnitude of the trend and the location of the well.

Based on the results of the temporal trend analysis and the magnitude of their trends, it is proposed that the frequency of sampling for increasing or probably increasing concentration trend wells MW-07 located in the BPA, MW-90 located in the RMPA, MW-76A located in the NPCA, and MW-98B located in the MCEA be increased from annual to semiannual. It is also proposed to continued semiannual sampling for increasing trend wells IW-04 and MW-68 located in the RMPA, and MW-60A and MW-60B located in the BPA.

Due to the limited magnitude of their trends it is proposed that monitoring wells EW-13 and MW-26 located in the BPA, MW-19, MW-89, and MW-91 located in the RMPA, MW-40 and MW-76C located in the NPCA, and MW-67 and MW-70 located in the MCEA remain at their previously approved sampling frequencies and monitoring wells MW-31, MW-59D, MW-61C, and MW-71B located in the BPA, MW-28 and MW-55 located in the RMPA, and MW-46 located in the MCEA return to their previously approved sampling frequencies.

Monitoring well MW-80, located in the NPCA is no longer identified as an increasing trend well, and it is proposed to change the sampling frequency from semiannual to previously approved biennial sampling frequency. No other changes to the number of wells being sampled or their frequency are proposed.

Surface water sampling is conducted semiannually and soon after a storm event, if possible. No changes to the sampling frequency for surface water sampling are proposed. A general summary of the current and proposed GMP is presented in Table 4-4.

Table 4-4 Summary of 2010 and Proposed 2011 Monitoring Program Well Sampling Status

Program Year	Semiannual Surface Water Samples	Quarterly Groundwater Samples	Semiannual Groundwater Samples	Annual Groundwater Samples	Biennial Groundwater Samples
2010	18	29	15	51	22
2011	17	0	19	54	44

No changes to the analytical program are proposed. All wells and surface water locations will continue to be tested for perchlorate, 1,4-dioxane, and VOCs. Well MW-60A, the one well that had concentrations of lead above the MCL in July 2004, continues to have lead concentrations above the MCL and will continue to be tested for lead annually. A detailed summary of the monitoring program proposed for 2011 is presented in Table 4-5. Figure 4-1 presents the sampling locations and the frequency of the 2011 proposed GMP.

Table 4-5 Groundwater Quality Monitoring Frequency Recommendations

Well	Formation Screened	Well Classification	Monitoring Frequency Q2 2010	Q2 2011	Comments
EW-13	MEF	Plume Monitoring	Annual	Annual	Limited magnitude (probably) increasing trend (1,4-dioxane) (1)
MW-02	MEF	Plume Monitoring	Annual	Annual	
MW-05	QAL	Plume Monitoring	Annual	Annual	
MW-09	QAL	Plume Monitoring	Annual	Annual	
MW-13	QAL	Plume Monitoring	Annual	Annual	
MW-14	QAL	Plume Monitoring	Annual	Annual	
MW-17	QAL	Plume Monitoring	Annual	Annual	
MW-19	QAL	Plume Monitoring	Annual	Annual	Limited magnitude (probably) increasing trend (TCE, 1,1-DCE) (1)
MW-22	QAL	Plume Monitoring	Annual	Annual	
MW-26	MEF	Plume Monitoring	Annual	Annual	Limited magnitude (probably) increasing trend (1,1-DCE) (1)
MW-27	QAL	Plume Monitoring	Annual	Annual	
MW-28	QAL	Plume Monitoring	Semiannual	Annual	Limited magnitude increasing trend (TCE, 1,1-DCE, 1,4-dioxane, perchlorate) (1)
MW-29	MEF	Plume Monitoring	Annual	Annual	
MW-34	QAL	Plume Monitoring	Annual	Annual	
MW-35	QAL	Plume Monitoring	Annual	Annual	
MW-36	QAL	Plume Monitoring	Annual	Annual	
MW-40	MEF	Plume Monitoring	Annual	Annual	Limited magnitude (probably) increasing trend (TCE) (1)
MW-45	QAL	Plume Monitoring	Annual	Annual	
MW-46	QAL	Plume Monitoring	Semiannual	Annual	Limited magnitude (probably) increasing trend (TCE) (1)
MW-47	QAL	Plume Monitoring	Annual	Annual	
MW-49	QAL	Plume Monitoring	Annual	Annual	
MW-53	QAL	Plume Monitoring	Annual	Annual	
MW-54	QAL	Plume Monitoring	Annual	Annual	
MW-56C	QAL	Plume Monitoring	Annual	Annual	
MW-59B	MEF	Plume Monitoring	Annual	Annual	
MW-61B	MEF	Plume Monitoring	Annual	Annual	
MW-62A	QAL	Plume Monitoring	Annual	Annual	
MW-66	QAL	Plume Monitoring	Annual	Annual	
MW-69	QAL	Plume Monitoring	Annual	Annual	
MW-71B	QAL/MEF	Plume Monitoring	Semiannual	Annual	Limited magnitude increasing trend (perchlorate) (1)
MW-71C	MEF	Plume Monitoring	Annual	Annual	
MW-72B	MEF	Plume Monitoring	Annual	Annual	
MW-73B	MEF	Plume Monitoring	Annual	Annual	
MW-74C	MEF	Plume Monitoring	Annual	Annual	
MW-75B	QAL	Plume Monitoring	Annual	Annual	
MW-76B	QAL	Plume Monitoring	Annual	Annual	
MW-77B	MEF	Plume Monitoring	Annual	Annual	
MW-85B	MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-86B	QAL/MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-87B	MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-88	QAL	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-89	QAL	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring, Limited magnitude (probably) increasing trend (Perchlorate) (1)
MW-91	MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring, Limited magnitude increasing trend (1,4-dioxane) (1)
MW-92	MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-93	MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-94	MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-95	MEF	Plume Monitoring	Quarterly	Annual	Reclassification from new well to plume monitoring
MW-101	QAL	Plume Monitoring	NA	Annual	Replacement well for MW-42
MW-102	QAL	Plume Monitoring	NA	Annual	Replacement well for MW-37
OW-01	QAL	Plume Monitoring	Annual	Annual	
OW-02	QAL	Plume Monitoring	Annual	Annual	
P-02	QAL	Plume Monitoring	Annual	Annual	
P-03	QAL	Plume Monitoring	Annual	Annual	
P-05	QAL	Plume Monitoring	Annual	Annual	
MW-01	MEF	Vertical Distribution	Biennial	Biennial	
MW-03	MEF	Vertical Distribution	Biennial	Biennial	
MW-06	QAL	Vertical Distribution	Biennial	Biennial	
MW-08	QAL	Vertical Distribution	Biennial	Biennial	
MW-11	QAL	Plume Monitoring	Biennial	Biennial	Backgorund well
MW-12	QAL	Plume Monitoring	Biennial	Biennial	Background well
MW-23	QAL	Vertical Distribution	Biennial	Biennial	
MW-31	Granite	Vertical Distribution	Semiannual	Biennial	Limited magnitude increasing trend (perchlorate) (1)
MW-32	Granite	Vertical Distribution	Biennial	Biennial	
MW-43	QAL	Vertical Distribution	Biennial	Biennial	
MW-48	QAL	Vertical Distribution	Biennial	Biennial	
MW-55	QAL	Vertical Distribution	Semiannual	Biennial	Limited magnitude increasing trend (TCE, perchlorate), (Probably) Increasing trend (1,1-DCE, 1,4-dioxane) (1)
MW-56A	MEF	Vertical Distribution	Biennial	Biennial	
MW-56B	QAL	Vertical Distribution	Biennial	Biennial	
MW-59A	MEF	Vertical Distribution	Biennial	Biennial	
MW-59D	MEF	Vertical Distribution	Semiannual	Biennial	Limited magnitude increasing trend (1,1-DCE, perchlorate) (1)
MW-61A	MEF	Vertical Distribution	Annual	Biennial	Reclassification from special interest well to vertical distribution
MW-61C	MEF	Vertical Distribution	Semiannual	Biennial	Limited magnitude increasing trend (TCE, 1,1-DCE) (1)
MW-71A	Granite	Vertical Distribution	Annual	Biennial	Reclassification from special interest well to vertical distribution
MW-72A	Granite	Vertical Distribution	Annual	Biennial	Reclassification from special interest well to vertical distribution
MW-72C	QAL	Vertical Distribution	Annual	Biennial	Reclassification from plume monitoring well to vertical distribution
MW-73A	MEF	Vertical Distribution	Annual	Biennial	Reclassification from special interest well to vertical distribution
MW-73C	QAL	Vertical Distribution	Annual	Biennial	Reclassification from plume monitoring well to vertical distribution
MW-74A	Granite	Vertical Distribution	Annual	Biennial	Reclassification from special interest well to vertical distribution
MW-74B	Granite	Vertical Distribution	Annual	Biennial	Reclassification from plume monitoring well to vertical distribution
MW-75A	MEF	Vertical Distribution	Biennial	Biennial	
MW-75C	QAL	Vertical Distribution	Biennial	Biennial	
MW-76C	QAL	Vertical Distribution	Biennial	Biennial	Limited magnitude (probably) increasing trend (TCE) (1)
MW-77A	MEF	Vertical Distribution	Biennial	Biennial	
MW-78	MEF	Vertical Distribution	Annual	Biennial	Reclassification from special interest well to vertical distribution

Notes:

(1) – Limited magnitude increasing or probably increasing trend refers to the change in the magnitude of the trend being less than 20% per year with respect to the sample mean.

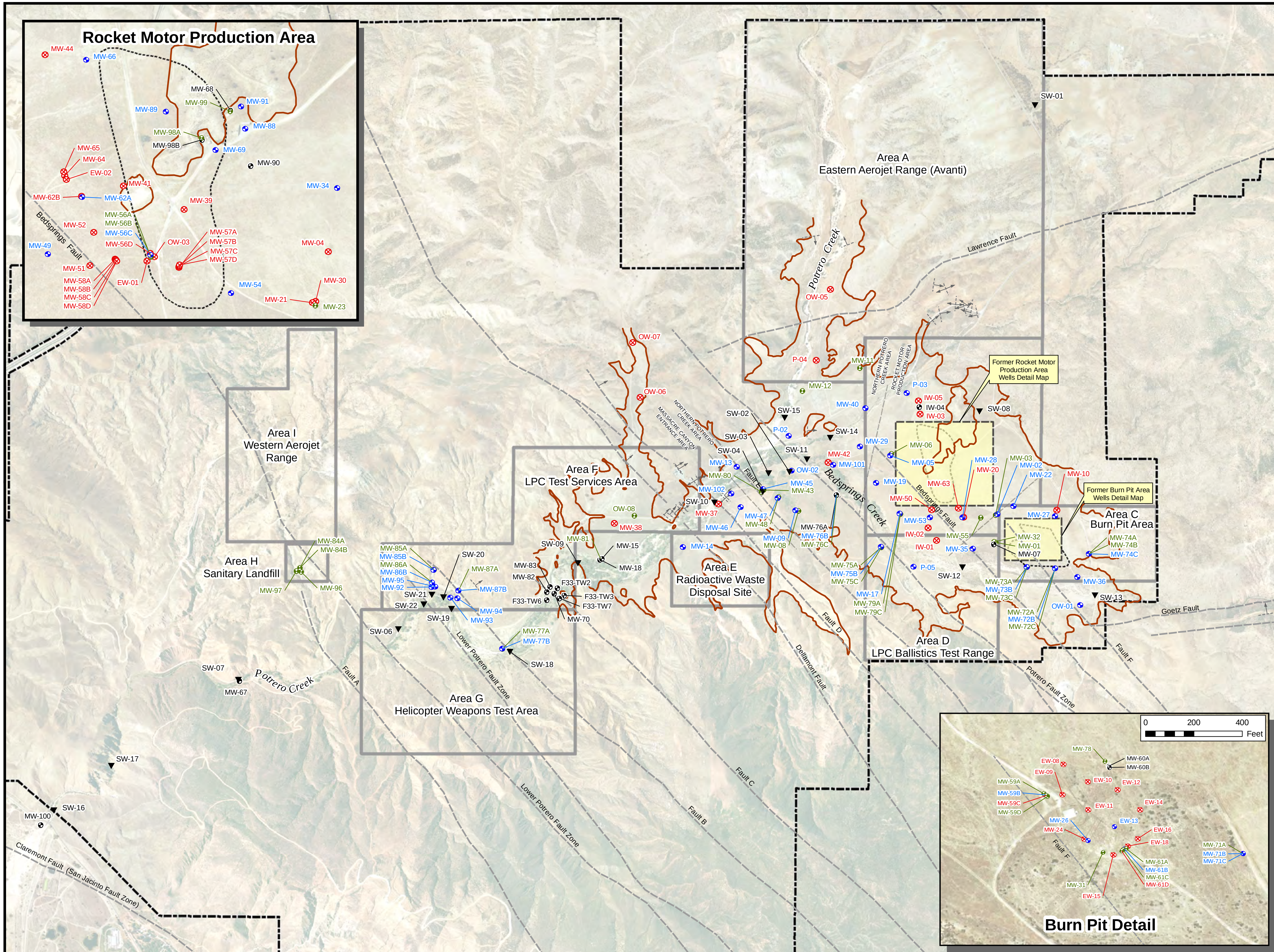
QAL - Quaternary alluvium. MEF - Mount Eden Formation.

QAL/MEF - Quaternary alluvium / Mt Eden. NA - Not available

Table 4-4 Groundwater Quality Monitoring Frequency Recommendations (continued)

Well	Formation	Well	Monitoring Frequency		Comments
	Screened	Classification	2010	2011	
MW-79A	MEF	Vertical Distribution	Biennial	Biennial	
MW-79C	QAL	Vertical Distribution	Biennial	Biennial	
MW-80	MEF	Vertical Distribution	Semiannual	Biennial	TCE concentrations are stable, decrease to biennial
MW-81	MEF	Vertical Distribution	Biennial	Biennial	
MW-84A	MEF	Vertical Distribution	Quarterly	Biennial	Reclassification from new well to vertical distribution. Background well
MW-84B	MEF	Vertical Distribution	Quarterly	Biennial	Reclassification from new well to vertical distribution. Background well
MW-85A	MEF	Vertical Distribution	Quarterly	Biennial	Reclassification from new well to vertical distribution
MW-86A	MEF	Vertical Distribution	Quarterly	Biennial	Reclassification from new well to vertical distribution
MW-87A	MEF	Vertical Distribution	Quarterly	Biennial	Reclassification from new well to vertical distribution
MW-96	MEF	Plume Monitoring	Quarterly	Biennial	Reclassification from new well to plume monitoring well. Background well
MW-97	MEF	Plume Monitoring	Quarterly	Biennial	Reclassification from new well to plume monitoring well. Background well
MW-98A	MEF	Vertical Distribution	Quarterly	Biennial	Reclassification from new well to vertical distribution
MW-99	MEF	Vertical Distribution	Quarterly	Biennial	Reclassification from new well to vertical distribution
OW-08	QAL	Plume Monitoring	Biennial	Biennial	Background well
F33-TW2	QAL	MNA Monitoring	Quarterly	Semiannual	Change in MNA monitoring schedule, F-33 - Large rocket motor washout area
F33-TW3	QAL	MNA Monitoring	Quarterly	Semiannual	Change in MNA monitoring schedule, F-33 - Large rocket motor washout area
F33-TW6	QAL	MNA Monitoring	Quarterly	Semiannual	Change in MNA monitoring schedule, F-33 - Large rocket motor washout area
F33-TW7	QAL	MNA Monitoring	Quarterly	Semiannual	Change in MNA monitoring schedule, F-33 - Large rocket motor washout area
IW-04	QAL	Remedial Well	Semiannual	Semiannual	Increasing trend (TCE, 1,1-DCE)
MW-07	QAL	Plume Monitoring	Annual	Semiannual	(Probably) Increasing trend (TCE, Perchlorate)
MW-15	QAL	Guard Well	Semiannual	Semiannual	
MW-18	QAL	Guard Well	Semiannual	Semiannual	
MW-60A	MEF	Vertical Distribution	Semiannual	Semiannual	Increasing trend (TCE, 1,1-DCE, 1,4-dioxane, perchlorate) and continue to be sampled for lead annually
MW-60B	MEF	Plume Monitoring	Semiannual	Semiannual	Increasing trend (1,4-dioxane)
MW-67	QAL	Guard Well	Semiannual	Semiannual	Increasing trend (1,4-dioxane)
MW-68	QAL	Plume Monitoring	Semiannual	Semiannual	Increasing trend (perchlorate, 1,4-dioxane), (Probably) Increasing trend (1,1-DCE),
MW-70	QAL	MNA Monitoring	Quarterly	Semiannual	Change in MNA monitoring schedule, F-33 - Large rocket motor washout area, (Probably) Increasing trend (1,4-dioxane)
MW-76A	MEF	Vertical Distribution	Biennial	Semiannual	Increasing trend (1,4-dioxane)
MW-82	QAL	MNA Monitoring	Quarterly	Semiannual	Change in MNA monitoring schedule, F-33 - Large rocket motor washout area
MW-83	QAL	MNA Monitoring	Quarterly	Semiannual	Change in MNA monitoring schedule, F-33 - Large rocket motor washout area
MW-90	QAL	Plume Monitoring	Quarterly	Semiannual	Reclassification from new well to plume monitoring, Increasing trend (TCE)
MW-98B	MEF	Plume Monitoring	Quarterly	Semiannual	Reclassification from new well to plume monitoring, Increasing trend (TCE, 1,1-DCE)
MW-100	Granite	Guard Well	Quarterly	Semiannual	Reclassification from new well to guard well
EW-01	QAL	Remedial Well	Suspend	Suspend	Suspend pending GW remedial action
EW-02	QAL	Remedial Well	Suspend	Suspend	Suspend pending GW remedial action
EW-08	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-09	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-10	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-11	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-12	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-14	QAL/MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-15	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-16	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
EW-18	MEF	Redundant	Suspend	Suspend	Redundant with EW-13, MW-24, MW-61B
IW-01	QAL	Remedial Well	Suspend	Suspend	Suspend pending GW remedial action
IW-02	QAL	Remedial Well	Suspend	Suspend	Suspend pending GW remedial action
IW-03	QAL	Remedial Well	Suspend	Suspend	Suspend pending GW remedial action
IW-05	QAL	Remedial Well	Suspend	Suspend	Suspend pending GW remedial action
MW-04	QAL	Redundant	Suspend	Suspend	Redundant with MW-34
MW-10	QAL	Redundant	Suspend	Suspend	Redundant with MW-27
MW-20	QAL	Redundant	Suspend	Suspend	Redundant with location MW-28
MW-21	QAL	Redundant	Suspend	Suspend	Well Destroyed 11/2009
MW-24	MEF	Redundant	Suspend	Suspend	Well Destroyed 11/2009
MW-30	QAL	Redundant	Suspend	Suspend	Redundant with MW-23
MW-37	QAL	Plume Monitoring	Annual	Suspend	Well Destroyed 11/2009, replaced with MW-102
MW-38	MEF	Redundant	Suspend	Suspend	Redundant with OW-08, outside Plume Monitoring Area
MW-39	QAL	Redundant	Suspend	Suspend	Redundant with MW-56C
MW-41	MEF	Redundant	Suspend	Suspend	Redundant with MW-62A
MW-42	QAL	Plume Monitoring	Annual	Suspend	Well Destroyed 11/2009, replaced with MW-101
MW-44	QAL	Redundant	Suspend	Suspend	Redundant with MW-66
MW-50	QAL	Redundant	Suspend	Suspend	Redundant with MW-53
MW-51	QAL	Redundant	Suspend	Suspend	Redundant with MW-58D
MW-52	QAL	Redundant	Suspend	Suspend	Redundant with MW-49
MW-56D	QAL	Redundant	Suspend	Suspend	Redundant with MW-56B and MW-56C
MW-57A	QAL	Redundant	Suspend	Suspend	Redundant with MW-56C
MW-57B	QAL	Redundant	Suspend	Suspend	Redundant with MW-56B
MW-57C	QAL	Redundant	Suspend	Suspend	Redundant with MW-56B
MW-57D	QAL	Redundant	Suspend	Suspend	Redundant with MW-56C
MW-58A	QAL	Redundant	Suspend	Suspend	Redundant with MW-56B and MW-56D
MW-58B	QAL	Redundant	Suspend	Suspend	Redundant with MW-56C
MW-58C	QAL	Redundant	Suspend	Suspend	Redundant with MW-56C
MW-58D	QAL	Redundant	Suspend	Suspend	Redundant with MW-56D
MW-59C	MEF	Redundant	Suspend	Suspend	Redundant with MW-59A
MW-61D	MEF	Redundant	Suspend	Suspend	Redundant, suspend pending GW remedial action
MW-62B	QAL	Redundant	Suspend	Suspend	Redundant with MW-62A
MW-63	QAL	Redundant	Suspend	Suspend	Redundant with MW-28
MW-64	QAL	Remedial Monitoring	Suspend	Suspend	Redundant, suspend pending GW remedial action
MW-65	QAL	Remedial Monitoring	Suspend	Suspend	Redundant, suspend pending GW remedial action
OW-03	QAL	Redundant	Suspend	Suspend	Redundant with MW-56A
OW-05	QAL	Redundant	Suspend	Suspend	Redundant with MW-12
OW-06	QAL	Redundant	Suspend	Suspend	Redundant with MW-08
OW-07	QAL	Redundant	Suspend	Suspend	Redundant with MW-08
P-04	QAL	Redundant	Suspend	Suspend	Redundant with MW-12
Notes:					
	(1) – Limited magnitude increasing or probably increasing trend refers to the change in the magnitude of the trend being less than 20% per year with respect to the sample mean.				
	QAL - Quaternary alluvium.				MEF - Mount Eden Formation.
	QAL/MEF - Quaternary alluvium / Mt Eden.				NA - Not available

X:\GIS\Lockheed S1 Q1Q210\Wells_Sampling Prop.mxd



Adapted from: March 2007 aerial photograph.

Faults from structural analysis of Potrero Valley, *Lineament and Geologic Mapping Study, Tetra Tech, 2009.*

0 1,000 2,000 Feet

LEGEND

- Surface Water Sample Location (sampled at a minimum semiannually)

Well Sampling Frequency

- Semi-annual
- Annual
- Biennial
- Redundant or Replaced (not sampled)

- Bedrock/Alluvium Surface Contact (Dashed where inferred)
- Fault, Accurately Located Showing Dip
- Fault, Approximately Located
- Beaumont Site 1 Property Boundary
- Historical Operational Area Boundary

Notes: Beaumont Site 1 property boundary is approximate.

Beaumont Site 1

Figure 4-1

Proposed 2011 Water Quality Monitoring Locations and Sampling Frequency

TETRA TECH

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REPORT BODY AND APPENDICES A-J ON CD ON THIS DIVIDER