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Fiscal Year 2007

Annual Groundwater Monitoring Report






Prepared by
Sandia National Laboratories, Albuquerque, New Mexico

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Groundwater Protection Program

Sandia National Laboratories, New Mexico

March 2008

Prepared by:
Environmental Planning Department (4131) and
Environmental Programs and Assurance Department (4133)
Groundwater Protection Program (GWPP) in coordination
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Groundwater Sampling Operations

Subject Areas

GWPP, SNL/NM site and hydrogeological setting

Chemical Waste Landfill (CWL)

Mixed Waste Landfill (MWL)

Tijeras Arroyo Groundwater (TAG) Investigation, Technical Area V (TA-V), and Burn Site Groundwater Area

ABSTRACT

Sandia National Laboratories, New Mexico (SNL/NM) is a government-owned/contractor-operated laboratory. Sandia Corporation, a wholly-owned subsidiary of Lockheed Martin Corporation, manages and operates the laboratory for the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA). The DOE/NNSA Sandia Site Office (SSO) administers the contract and oversees contractor operations at the site. This annual report summarizes data and the compliance status of the Sandia Corporation environmental protection and monitoring programs through December 31, 2007. Major environmental programs include air quality, water quality, groundwater protection, terrestrial surveillance, waste management, pollution prevention (P2), environmental restoration (ER), oil and chemical spill prevention, and the National Environmental Policy Act (NEPA). Environmental monitoring and surveillance programs are required by DOE Order 450.1, *Environmental Protection Program* (DOE 2005) and DOE Order 231.1A, *Environment, Safety, and Health Reporting* (DOE 2004).

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Abbreviations and Acronyms

AOC	area of concern
AIA	Albuquerque International Airport
bgs	below ground surface
CFR	Code of Federal Regulations
$CaCO_3$	calcium carbonate
CAMU	Corrective Action Management Unit
CME	Corrective Measures Evaluation
CMS	Corrective Measures Study
CWL	Chemical Waste Landfill
COA	City of Albuquerque
COC	Contaminant of Concern
COOC	Compliance Order on Consent
DCG	derived concentration guide (established by DOE)
DOE	U.S. Department of Energy
DU	depleted uranium
EOD	Explosive Ordnance Disposal
E_H	oxidation-reduction potential (redox)
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ERCL	Environmental Restoration Chemistry Laboratory
FOP	field operating procedure
FY	Fiscal Year
GEL	General Engineering Labs
GIP	Groundwater Investigation Plan
GIS	Geographical Information System
GWPP	Groundwater Protection Program
GWS	groundwater system
HE	high explosives
HPT	High Performance Team
HSWA	Hazardous and Solid Waste Amendments
HWB	Hazardous Waste Bureau
IMWP	Interim Measures Work Plan
IRP	Installation Restoration Program (Air Force)
"J"	data qualifier (indicating an estimated constituent concentration that was detected but is below the laboratory practical quantification limit)
KAFB	Kirtland Air Force Base
LCS	laboratory control sample
LE VCM	Landfill Excavation Voluntary Corrective Measure
LWDS	Liquid Waste Disposal System
MAC	maximum allowable concentration (established by the NMED)
MCL	maximum contaminant level
MDA	minimum detectable activity
MDL	maximum detection limits
MWL	Mixed Waste Landfill
Ma	Mega Annum
NFA	No Further Action
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMWQCC	New Mexico Water Quality Control Commission
NNSA	National Nuclear Security Administration
NPN	Nitrate Plus Nitrite
NOV	Notice of Violation
NTU	nephelometric turbidity units
OU	Operable Unit
PCBs	polychlorinated biphenyls
PCE	tetrachloroethene
PGWS	Perched Groundwater System

pH	potential of hydrogen (hydrogen ion concentration)
PQL	practical quantification limit
PVC	Polyvinyl chloride
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SAP	Sampling and Analysis Plan
SC	specific conductance
SERF	Sandia Experimental Reactor Facility
SGWS	Shallow Groundwater System
SMO	Sample Management Office
SNL/NM	Sandia National Laboratories/New Mexico
SVOC	semi-volatile organic compound
SWMU	Solid Waste Management Unit
SWHC	Site-Wide Hydrologic Characterization (Task)
TA	Technical Area
TAG	Tijeras Arroyo Groundwater (Investigation)
TAL	Target Analyte List
TCE	trichloroethene (equivalent to trichlorethylene)
TDS	total dissolved solids
TKN	total kjeldahl nitrogen
TPH-DRO	Total Petroleum Hydrocarbons-Diesel Range Organics
TPH-GRO	Total Petroleum Hydrocrbons-Gasoline Range Organics
TOX	total halogenated organics
USAF	United States Air Force
USGS	United States Geological Survey
VCM	Voluntary Corrective Measure
VE	Vapor Extraction
VOC	volatile organic compound
WQ	water quality
WL	water level

Monitor Well Location Descriptions

AVN-#	Area V (North)	SFR-#	South Fence Road
CTF-#	Coyote Test Field	STW-#	Solar Tower (West)
CWL-#	Chemical Waste Landfill	SWTA-#	Southwest Tech Area III
CYN-#	Lurance Canyon	TA1-W-#	Tech Area I (Well)
LWDS-#	Liquid Waste Disposal	TA2-NW-#	Tech Area II (Northwest)
MP-#	Montessa Park	TA2-SW-#	Tech Area II (Southwest)
MRN-#	Magazine Road North	TA2-W-#	Tech Area II (Well)
MVMWJ	Mountain View Monitor Well J	TAV-#	Tech Area V
MVMWK	Mountain View Monitor Well K	TJA-#	Tijeras Arroyo
MWL-#	Mixed Waste Landfill	TRE-#	Thunder Road East
NMED-#	New Mexico Environment Department	TRN-#	Target Road North
		TRS-#	Target Road South
NWTA3-#	Northwest Tech Area III	TSA-#	Transportation Safeguards Academy
PGS-#	Parade Ground South	WYO-#	Wyoming
PL-#	Power Line Road	12AUP-#	ER Site 12A Underflow Piezometer

**** Meteorological Towers***

* SC1	School House	* A-36	TA III and V
* A-21	TA I		

Units

°C	degree Celsius
% Sat	percent saturation
ac/ft	acre feet
Ci	Curie
Ci/yr	curies per year
fbtoc	feet below top of casing
ft, ft^3	foot, cubic feet
ft/yr	feet per year
gal	gallon
gpm	gallons per minute
in	inches
in/yr	inches per year
km	kilometer
m	meter
ft	feet
mg/L	milligram per liter
ml	milliliter
mRem/yr	millirem per year
mV	millivolt
NTU	nephelometric turbidity units
pCi/g	picocuries per gram
pCi/L	picocuries per liter
pH	potential of hydrogen
PL-3*	last measurement prior to well going dry
ppb	part(s) per billion, equivalent to µg/L in water
µg/L	microgram per liter
µmho/cm	micromhos per centimeter (unit of specific conductance)
yd, yd^3	yard, cubic yards

Annual Groundwater Report

Document Summary

Sandia National Laboratories, New Mexico (SNL/NM), managed and operated for the U.S. Department of Energy, National Nuclear Security Administration (DOE/NNSA) by Sandia Corporation, a wholly-owned subsidiary of Lockheed Martin Corporation, is located on Kirtland Air Force Base (KAFB). The purpose of this Annual Groundwater Monitoring Report is to document the groundwater monitoring results conducted in Fiscal Year 2007 (FY07), which extended from October 1, 2006 to September 30, 2007. This includes both water quality sampling results and water level measurements.

SNL/NM Groundwater Monitoring Tasks

Three groups that conduct groundwater monitoring at SNL/NM are (1) the Environmental Restoration (ER) Project, (2) the Groundwater Protection Program (GWPP), and (3) Long-Term Stewartship (LTS). The ER Project conducts groundwater monitoring at five ER Project areas where there is groundwater contamination or the potential for groundwater contamination from surface or near-surface legacy hazardous waste sources. The GWPP conducts general site-wide groundwater surveillance. Additionally, water level data is gathered from DOE/NNSA-owned wells and outside agency wells to determine trends in the regional water table. In FY07, water level measurements were obtained from 121 wells within and immediately outside the boundaries of KAFB, which were used to construct a regional water table elevation map.

SNL/NM's groundwater monitoring is divided into the following project areas:

- GWPP
- Chemical Waste Landfill (CWL)

- Mixed Waste Landfill (MWL)
- Technical Area V (TA-V)
- Tijeras Arroyo Groundwater (TAG) Investigation - (TAs I and II and Tijeras Arroyo)
- Burn Site Groundwater (formerly Canyons Area)

Site Location and Geologic Setting
The regional aquifer supplying the City of Albuquerque (COA) and KAFB is located within the Albuquerque Basin. The basin was created by the extension of the Rio Grande Rift that began forming approximately 30 Mega Annum (Ma) and has since filled with almost three miles of unconsolidated fluvial, alluvial, and windblown sediments. Almost all of the basin fill sediments belong to the Santa Fe Group, which is divided into three units (lower, middle, and upper). The regional aquifer is mostly contained within the upper unit and, to some extent, the middle unit of the Santa Fe Group. The edge of the basin on the east side is defined by the Sandia, Manzanita, and Manzano Mountains, which have uplifted along normal faults. KAFB straddles the east side of the basin and is divided approximately in half by bounding faults. On KAFB, the basin is primarily defined by the north-south trending Sandia fault and the Hubbell Springs fault. The Tijeras fault, a strike-slip fault that trends northeast-southwest, intersects the Sandia and Hubbell Springs faults forming a system of faults collectively referred to as the Tijeras fault complex. The faults form a distinct hydrogeological boundary between the regional aquifer within the basin (approximately 500 feet [ft] below ground surface [bgs]) and the more shallow bedrock aquifer systems within the uplifted areas (generally between 50 to 250 ft bgs).

Groundwater Water Quality Monitoring Results
In FY07, water samples were collected and analyzed from 65 monitoring wells and one spring at SNL/NM by the GWPP and the ER Project. Results from both groups are compared to maximum contaminant levels (MCLs) established by the U.S. Environmental Protection Agency (EPA). GWPP results were also compared to maximum allowable concentrations (MACs) per human health standards for groundwater promulgated by the State of New Mexico Water Quality Control Commission (NMWQCC). All results are discussed in detail in Chapter 4, and data is presented in the attached appendices of this report.

- **GWPP –** Annual sampling was conducted in 11 wells and one spring in FY07. Samples were analyzed for dissolved metals, total mercury, volatile organic compounds (VOCs), inorganics (including total alkalinity, major anions, nitrate plus nitrite (NPN), and total cyanide), total phenols, total halogenated organics (TOX), gross alpha and beta, and isotopic radium (-226 and -228). As required by the Compliance Order on Consent (COOC) between the New Mexico Environment Department (NMED) and DOE/NNSA and Sandia Corporation, the last quarterly groundwater sample from SWTA3-MW4 was collected and analyzed for perchlorate using EPA Method 314. No perchlorate was detected above the screening level of 4 micrograms per liter (µg/L). Naturally occurring fluoride in excess of the NMWQCC standard of 1.6 milligrams per liter (mg/L) were detected in four monitoring wells. The National Drinking Water Standard for fluoride is 4 mg/L. A beryllium concentration of 6.39 µg/L in the Coyote Springs water sample exceeded the EPA Primary Drinking Water Standard MCL of 4.0 µg/L. Elevated beryllium concentrations have been consistently detected at this level in the springs and are assumed to be of natural origin.

- **CWL –** Groundwater monitoring in FY07 was performed during October 2006 and April/May 2007. Samples were collected from nine monitoring wells. Analytes included Appendix IX VOCs and Appendix IX metals plus iron. Of the sample analyses conducted at the CWL, none yielded values above established MCLs.

- **MWL –** Groundwater sampling in FY07 consisted of an annual event in April for five wells, a sixth well was sampled in June. Samples were analyzed for Total Analyte List (TAL) metals including uranium, manganese II and ferrous iron, VOCs, major anions including nitrate plus nitrite, total organic carbon (TOC) and total dissolved solids (TDS). The radiological measurements performed included gross alpha, gross beta, tritium, and gamma-emitting radionuclides of concern. The only VOCs detected were acetone and toluene. Acetone was detected in the associated laboratory method blank. Toluene was detected below the Practical Quantitation Limit (PQL) in groundwater samples from two wells. The only analyte, whose value exceeded an established MCL was the chromium result of 0.426 mg/L from the MWL-MW1 sample. The EPA MCL for chromium is 0.1 mg/L. The most likely source of chromium is corrosion of the stainless steel screens in the monitoring well.

- **TA-V –** Quarterly sampling was conducted at 12 wells in FY07. VOC and NPN analyses were conducted on samples for all four quarters. Metals and radiological measurements were conducted only on samples collected in the fourth quarter. Radiological measurements includes gross alpha, gross beta gamma spectroscopic evaluation, and tritium. Trichloroethene (TCE) was consistently detected in wells LWDS-MW1 and TAV-MW6 in excess of the MCL of 5 µg/L, with a maximum concentration of 17 µg/L in LWDS-MW1 during the first quarterly sampling in November of FY07. In FY07, NPN levels were elevated above the nitrate MCL of 10 mg/L in all LWDS-MW1 samples with a maximum concentration of 13.8 mg/L. No metals concentrations or radiological measurements exceeded applicable MCLs.

- **TAG –** Wells in the TAG Investigation area are completed either in the regional aquifer or a localized perched groundwater system (GWS). Ten perched GWS wells and eleven regional monitoring wells were sampled either quarterly, semi-annually, or annually in FY07. All samples were analyzed for VOCs and nitrite-plus-nitrate. In addition, 4th quarter samples were analyzed for metals, and radiological parameters. The radiological parameters include gross alpha, gross beta, gamma spectroscopy and tritium. TCE was identified in two of the perched GWS wells at a level slightly above the MCL of 5.0 µg/L. A maximum concentration of 8.56 µg/L was found in WYO-4, and a maximum concentration of 5.63 µg/L was found in well TA2-W-19. Nitrate is also a contaminant of concern (COC) in the TAG Investigation area, and samples from five wells (four perched, one regional) showed nitrate concentrations exceeding the MCL of 10 mg/L. The maximum nitrate concentration detected was 38.4 mg/L in TJA-4.

- **Burn Site Groundwater** – In FY07, six monitoring wells were sampled either quarterly or semi-annually. The Burn Site Groundwater study includes the general vicinity associated with the active Burn Site Facility in Lurance Canyon. This facility conducts thermal tests using jet fuel, gasoline, and diesel fuel. Low levels of high explosives (HE), petroleum products (diesel-range organics and gasoline-range organics), and semi-volatile organic compounds (SVOCs) have been detected in monitoring wells on site. Additional analytes included VOCs, metals, radionuclides, major ions, perchlorate, and nitrate. Nitrate was detected above the MCL in CYN-MW6 and CYN-MW3. In FY07, the highest concentration of nitrate was in CYN-MW6 at 32.1 mg/L, as compared to the MCL of 10 mg/L. All detected SVOCs, and petroleum products have been at trace levels and below standards, where established. The samples from CYN-MW4 and CYN-MW8 exceeded the MCL for gross alpha at corrected activity values of 16.4 pCi/Land 22.3 pCi/L, respectively. Samples for perchlorate analysis were collected in three wells as required by the COOC. Perchlorate was detected in CYN-MW6 for each sampling period with a maximum concentration of 0.00846 mg/L. The action level for perchlorate established in the COOC is 0.004 mg/L

Water Level Elevation Monitoring
Water levels measured in 121 wells owned by the DOE/NNSA, KAFB, the COA, and the State of New Mexico were analyzed, and 55 representative values were used to construct a contour map of the regional water table for KAFB and its immediate vicinity. The contour map represents the regional water table in September and October of 2007. In addition, water levels from the same period of the previous year were used to construct a map of changes in the regional water table over the previous 12 months. A prominent water table depression or trough is present on the west side of KAFB extending southward from the water supply well fields located along the northern KAFB boundary to the northern boundary of the Pueblo of Isleta reservation. Water table declines of up to 1.2 feet per year (ft/yr) occur in the southern part of the trough. The groundwater elevation gradients demonstrated by the contour lines indicate groundwater flow westward from the direction of TA-III toward the axis of the trough, and then northward to the groundwater withdrawal areas along the northern KAFB boundary.

A similar procedure was used to construct a contour map of the elevation of the first water encountered in the perched GWS that underlies the north-central part of KAFB. Water level measurements obtained from 15 monitor wells completed in the perched GWS were used to create a first water elevation map. The shape and location of the contours for the 2007 water level elevation differ very little from those of the previous year. The contours indicate groundwater flow in the perched GWS is to the southeast. Similarly, the differences in water elevations between the same periods in 2006 and 2007 in the same wells were contoured to demonstrate the changes in the perched GWS over the previous 12 month period. Water level changes indicate continued draining of the system to the southeast where the system likely merges with the regional GWS.

Hydrographs for 97 monitor wells are presented to demonstrate the trend in water level elevations over the previous three years. The data are analyzed using a linear regression trending procedure to provide a quantitative measure for the changes in water level elevation.

The precipitation recorded at the Albuquerque International Airport (AIA) during the FY07 period was 11.87 inches (in.). The 30 year annual norm for precipitation at the same location adjacent to KAFB is 9.47 in. Measurements for three locations on KAFB are presented to demonstrate the variable distribution of precipitation on KAFB.

The water supply for SNL/NM is provided by KAFB production wells located in the northern portion of the KAFB reservation. Groundwater withdrawal from the KAFB wells and a large COA well field immediately north of KAFB dominate the dynamics of the groundwater system under KAFB. During the period of FY07, annual groundwater production by KAFB was 970 million gallons (gal) (2.976 acres per feet [ac/ft]).

Sandia National Laboratories, New Mexico (SNL/NM) is managed and operated for the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA). DOE/NNSA and Sandia Corporation conduct general groundwater surveillance on a site-wide basis and specific groundwater monitoring at Environmental Restoration (ER) Project sites with groundwater issues. The purpose of this document is to report SNL/NM groundwater monitoring results for Fiscal Year 2007 (FY07), which extended from October 1, 2006 to September 30, 2007.

Chapter One

Introduction

SNL/NM is located on Kirtland Air Force Base (KAFB). The groundwater regime at KAFB is divided into two distinct areas. The regional groundwater underlying the majority of KAFB is within the Albuquerque Basin (also known as the Middle Rio Grande Basin) and is the primary aquifer supplying KAFB and the City of Albuquerque (COA). A separate shallow bedrock Groundwater System (GWS) exists within the foothills and mountains on the east side of KAFB where the basin margin is delineated by uplifted blocks along north and northeast trending faults. DOE/NNSA and Sandia Corporation conducts groundwater monitoring within both groundwater regimes to determine potential impacts to groundwater sources resulting from its current operations or past activities. The following two groups conduct groundwater monitoring at SNL/NM.

Manzano Foothills

The **ER Project** conducts groundwater monitoring at five ER Project areas where there is groundwater contamination or the potential for groundwater contamination from surface or near surface contamination. ER Project groundwater monitoring wells are located upgradient and downgradient of known surface contamination and potential sources for groundwater contamination.

The Groundwater Protection Program (**GWPP)** conducts general groundwater surveillance monitoring through a network of wells on KAFB, most of which are located in areas near SNL/NM past and/or present operational sites. General groundwater surveillance monitoring allows for a determination of the impact, if any, of operations at SNL/NM facilities.

Regulatory Drivers and DOE Orders

Groundwater monitoring performed by the GWPP and the ER Project are directed by three different sets of regulations and requirements. General groundwater surveillance conducted by the GWPP is directed by

DOE Order 450.1, Environmental Protection Program (DOE 2005). This DOE order establishes the criteria and guidelines for developing general Groundwater Protection Management Programs for all DOE facilities. Groundwater monitoring results from both the GWPP and the ER Project are compared to federal and state water quality standards and DOE drinking water guidelines, where established.

In addition to DOE orders, ER sites at SNL/NM are identified, characterized, and remediated (if required) under Resource Conservation and Recovery Act (RCRA) regulations. In 1984, RCRA was supplemented by the Hazardous and Solid Waste Amendments (HSWA), which specifically addressed Solid Waste Management Units (SWMUs).

At SNL/NM, SWMUs are regulated under the HSWA module of the RCRA permit. In the HSWA module, a SWMU is defined as "any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste." Monitoring and/or corrective action requirements generally are determined on a SWMU-specific basis following a site investigation. Some groundwater monitoring activities (e.g., TAG, Burn Site, and TA-V investigations) are more regional in nature and have historically been conducted by the ER Project as Voluntary Corrective Measures (VCM).

Three of the ER Project groundwater investigations are under the direction of the Compliance Order on Consent (COOC) between New Mexico Environment Department (NMED), Sandia Corporation and DOE (NMED 2004). The TAG, TA-V, and Burn Site Groundwater area investigations must comply with requirements set forth in the COOC for site characterization and the development of a Corrective Measure Evaluation (CME) for each of these sites. The COOC also contains schedules that define dates for the delivery of plans and reports related to the TAG, TA-V, and Burn Site Groundwater areas, and, accordingly, DOE/NNSA and Sandia Corporation were required to complete a CME Report for the TAG, TA-V, and Burn Site Groundwater areas by September 30, 2005. NMED is the regulatory agency responsible for enforcing the requirements identified in the COOC for each of the three CMEs. In FY04, CME Work Plans were submitted to the NMED for each of these three sites that summarize prior work, identify potential source areas, and conduct screening of technologies that result in identification of remedial alternatives that will undergo a full evaluation during the CME process.

Groundwater Levels

Monthly and quarterly measurements of depth to water are taken at wells owned by DOE/NNSA, the Air Force Installation Restoration Program (IRP), COA, and others. These data are converted to water level elevations. Water table surface maps of KAFB and the immediate vicinity are constructed from the water level elevation data. Water level data are also used to interpret the groundwater system characteristics, such as groundwater flow directions, groundwater gradients, and regional water level declines. Currently, water levels at a few KAFB wells within the Albuquerque Basin are declining at an average rate of 1.2 ft/yr. This rate fluctuates significantly in areas near production wells where heavy production varies with seasonal water demand. Water level data are also used to identify the extent of the perched GWS present on KAFB that lies above the regional aquifer.

1.1 Report Organization

The six chapters of this report cover the following topics:

Chapter 1 – The purpose and overview of SNL/NM groundwater monitoring activities;

Chapter 2 – The regional geologic and hydrologic settings as they pertain to the groundwater regime in the vicinity of KAFB;

Chapter 3 – The well networks of SNL/NM including location maps, sampling protocol overviews, well monitoring histories, and pertinent regulatory drivers;

Chapter 4 – Groundwater monitoring results, including trend graphs for the GWPP and the ER Project that note any results exceeding established standards in federal or state regulations or DOE guidelines;

Chapter 5 – Construction of groundwater surface elevation maps for the regional aquifer and perched GWS at KAFB. Interpretation and implication of water level elevation contours. Construction and discussion of contour maps of changes in water level elevations from the preceding FY. Analysis of groundwater level trends, presented as hydrographs, over the past 36 months for specific locations throughout KAFB; and

Chapter 6 – References.

1.2 Groundwater Monitoring at SNL/NM

The GWPP works in concert with the ER Project as part of the SNL/NM corporate-wide Groundwater Protection Management Program. An overview of the groundwater monitoring activities conducted by the GWPP and the ER Project are described below.

1.2.1 GWPP Scope

The primary function of the GWPP is groundwater surveillance monitoring, which is conducted by the Groundwater Surveillance Task. Groundwater surveillance serves the following purposes:

- Establishes baseline water quality and groundwater flow information for the groundwater system at SNL/NM;
- Determines the impact, if any, of SNL/NM operations on the quality and quantity of groundwater; and
- Demonstrates compliance with all federal, state, and local groundwater requirements and DOE orders.

Generally, from year to year, the GWPP samples from the same or nearby surveillance wells. Occasionally, wells may be added or removed from the surveillance network based on operational changes, such as facility start-ups or closures. All groundwater samples collected by the GWPP are sent to off-site laboratories for analysis. Analytical laboratory procedures are consistent with EPA analytical methods (EPA 2006). Analytical results for groundwater samples are compared to regulatory standards established by the EPA (40 CFR 141) and the State of New Mexico (20 NMAC 6.2). Groundwater sample results from each year are compared to historical values to determine if there are differences that may indicate a trend of increasing or decreasing contaminant levels. Early detection of increasing trends—even changes that are far below regulatory action levels—allow for proactive identification of potential contaminant sources and institute mitigation measures, as needed. In turn, trends showing decreasing levels or unchanging baseline levels demonstrate the success of SNL/NM groundwater management practices. In FY07, the GWPP sampled 11 wells and one spring.

The GWPP also provides well tracking, routine inspections, and oversight for all DOE/NNSA-owned wells. This includes ER Project wells, GWPP surveillance wells, and characterization boreholes. Working in cooperation with the ER Project, wells are tracked in a Well File Database to record pertinent information such as well location, well ownership, maintenance history, completion date, and other construction information. Annual well inspections verify that wells are being properly maintained and in good working order. If a well is found in need of repair, the owner is contacted and corrections are made; or, the well may be proposed for plugging and abandonment.

1.2.2 ER Project

The SNL/NM ER Project was established to identify, assess, and remediate sites potentially contaminated by past spill, release, or disposal activities. Additionally, the ER Project identifies the nature and extent of contamination present at a site. As part of this process, groundwater characterization is implemented at ER sites where there is a potential for groundwater contamination. ER Project wells are monitored on a quarterly, semi-annual, or annual basis, depending on the site and the nature of the contaminant.

Groundwater monitoring and characterization activities are grouped into the following project areas:

- CWL
- TAG Investigation
- MWL
- Burn Site Groundwater (formerly Canyons)
- TA-V

Regulatory Oversight

The NMED Hazardous Waste Bureau (HWB) provides regulatory oversight of the ER Project, as well as implements and enforces federal regulations mandated by RCRA. NMED has adopted federal regulations by reference. The management of ER sites are permitted on the SNL/NM RCRA Part B Operating Permit, "Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA for Sandia National Laboratory" (NMED 1993). The COOC between NMED, DOE and Sandia Corporation was finalized in April 2004 and transferred regulatory authority for the investigation of SWMUs and areas with groundwater contamination from the HWSA module to the COOC. Following the receipt of an NMED certificate of completion for a SWMU, or group of SWMUs, is the submission of a request for a Class 3 Permit Modification for Corrective Action Complete. Where NMED identifies controls (e.g., institutional controls, engineered barriers, and long-term monitoring, operation and maintenance) for Corrective Action Complete, those controls are enforceable under the Permit.

This chapter provides an overview of the important features of the geology and hydrology relevant to the groundwater system at Kirtland Air Force Base (KAFB), with a focus on operational areas at Sandia National Laboratories, New Mexico (SNL/NM). Because surface and subsurface geologic features play an important role in the occurrence and movement of groundwater, as well as influencing potential pathways for contaminant migration, the characterization of the hydrogeologic system at KAFB has received extensive study. The Environmental Restoration (ER) Project has compiled an in depth study of the hydrogeologic setting at KAFB. The findings are detailed in the *Sandia National Laboratories, Site-Wide Hydrogeologic Characterization Project Report* (SNL 1998).

Chapter Two

Hydrogeological Setting

2.1 Geologic Setting

Albuquerque Basin

The Albuquerque Basin (also known as the Middle Rio Grande Basin) is one of a series of north-south trending basins that was formed during the extension of the Rio Grande Rift. Rift formation initiated in the late Oligocene and continued into the early Pleistocene, with the primary period of extension occurring between 30 and 5 Ma. Tectonic activity, which began uplifting the Sandia, Manzanita, and Manzano Mountains, was most prevalent from about 15 to 5 Ma (Thorn et al. 1993). The rift today extends from southern Colorado to northern Mexico. The vertical displacement between the rock units exposed at the top of Sandia Crest and the equivalent units located at the bottom of the basin is over three miles.

Mixed Waste Landfill Drilling Operations

As shown in Figure 2-1, the structural boundaries of the Albuquerque Basin are (1) the Nacimiento uplift and the Jemez Mountains to the north; (2) the La Bajada Escarpment to the northeast; (3) the Sandia, Manzanita, Manzano, and Los Pinos uplifts to the east; (4) the Joyita and Socorro uplifts to the south; (5) the Ladron and Lucero uplifts to the southwest; and (6) the Rio Puerco Fault belt to the west. The basin is approximately 3,000 square miles (sq mi) in area.

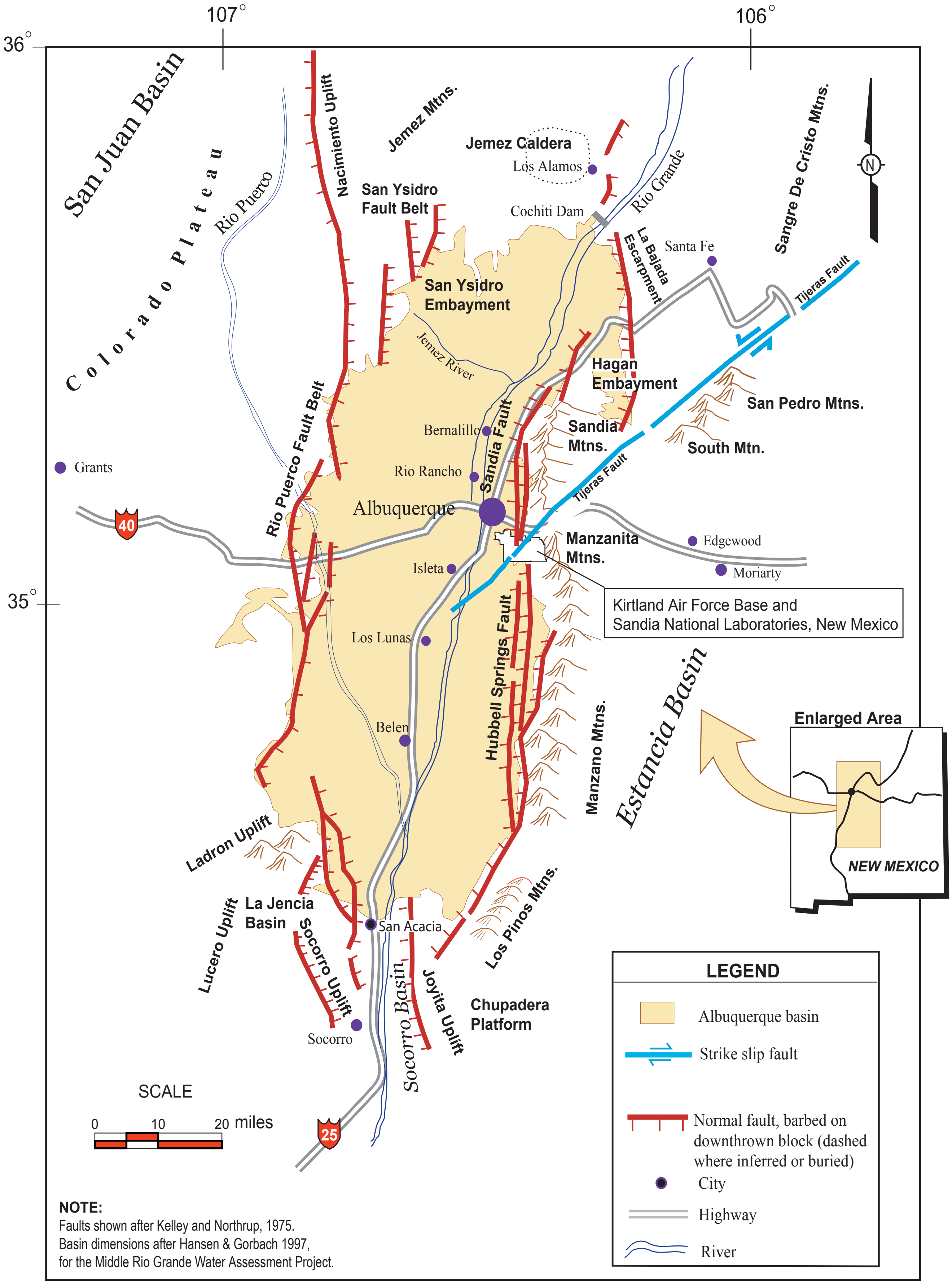

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FIGURE 2-1. Albuquerque Basin, North Central New Mexico

Over the last 30 Ma, the ancestral Rio Grande has meandered across the valley depositing sediments in broad stream channels and flood plains derived from sources to the north. The basin also filled with eolian deposits and alluvial materials shed from surrounding uplifts (Hawley and Haase 1992).

Santa Fe Group

As the Rio Grande Rift continued to form, the Albuquerque Basin subsided and filled with a sequence of sediments several miles thick, almost all of which belongs to the Santa Fe Group. The Santa Fe Group was deposited contemporaneously with rift formation (Oligocene through Pleistocene) and is up to 14,500 ft (4,420 meters [m]) thick at the center of the basin. The entire sequence consists of unconsolidated sediments, which thin toward the edge of the basin and are truncated by normal faults at the bounding uplifts. Units overlying the Santa Fe Group include Pliocene Ortiz gravel and Rio Grande fluvial deposits, which are inter-bedded with Tertiary and Quaternary basaltic and pyroclastic materials.

The Santa Fe Group is divided into three units.

The **lower unit** (Hawley and Haase 1992) was deposited from 30 to 15 Ma and is dominated by piedmont-slope (sediment debris flows and alluvial fan material), eolian, and basin floor deposits. The deposition of the lower unit occurred within an internally drained (closed) basin and before significant uplift of adjacent mountain ranges.

The **middle unit** (Hawley and Haase 1992) was deposited from 15 to 5 Ma during the tectonically active period that resulted in the uplift of the ranges flanking the basin. Several major river systems from the north, northeast, and southwest carried in significant fluvial deposits and terminated within the basin. These rivers probably flowed into playa lakes at the southern end of the basin (Lozinsky et al. 1991).

The **upper unit** (Hawley and Haase 1992) was deposited 5 to 1 Ma and is characterized by piedmont-slope deposits inter-tonguing with ancestral river and flood plain (basin floor) deposits. The fluvial deposits mark the boundary 5 Ma when the ancestral Rio Grande became a through-flowing river system and formed a large aggradational plain in the central basin area. This upper unit is a heterogeneous mix of coarse to fine-grained sands, silts, and clays with highly variable bed thicknesses.

Regional Basin Aquifer

The upper unit of the Santa Fe Group, and to some extent the middle unit, contain the most productive portion of the regional aquifer that supplies groundwater to the City of Albuquerque (COA) and KAFB. In general, the high degree of heterogeneity and anisotropy within the upper unit results in a wide variety of hydraulic properties on a local scale. Groundwater flow rates and directional hydraulic conductivity are controlled in large part by buried channels and other bedding features (SNL 1998).

Faults

As shown in Figure 2-2 and Figure 2-3, the four primary faults on the east side of KAFB are (1) the Sandia fault, (2) the West Sandia fault, (3) the Hubbell Springs fault, and (4) the Tijeras fault. The Sandia fault is thought to be the primary boundary between the Sandia Mountains and the Albuquerque Basin and shows evidence of Quaternary motion (Kelley 1977). The Hubbell Springs fault extends northward from Socorro County and terminates on KAFB in the vicinity of the Tijeras fault. It forms a very recognizable fault scarp called the Hubbell Bench with offsets of 15 to 100 ft (5 to 30 m) (Machette 1982). The Sandia and the Hubbell Springs faults are north-south trending, down-to-the-west, en-echelon normal faults bounding the east side of the Albuquerque Basin. Field observations indicate Quaternary movement along the Hubbell Springs Fault (Lozinsky et al. 1991, Woodward 1982, Kelley and Northrup 1975, and Kelly 1977). The Tijeras fault is an

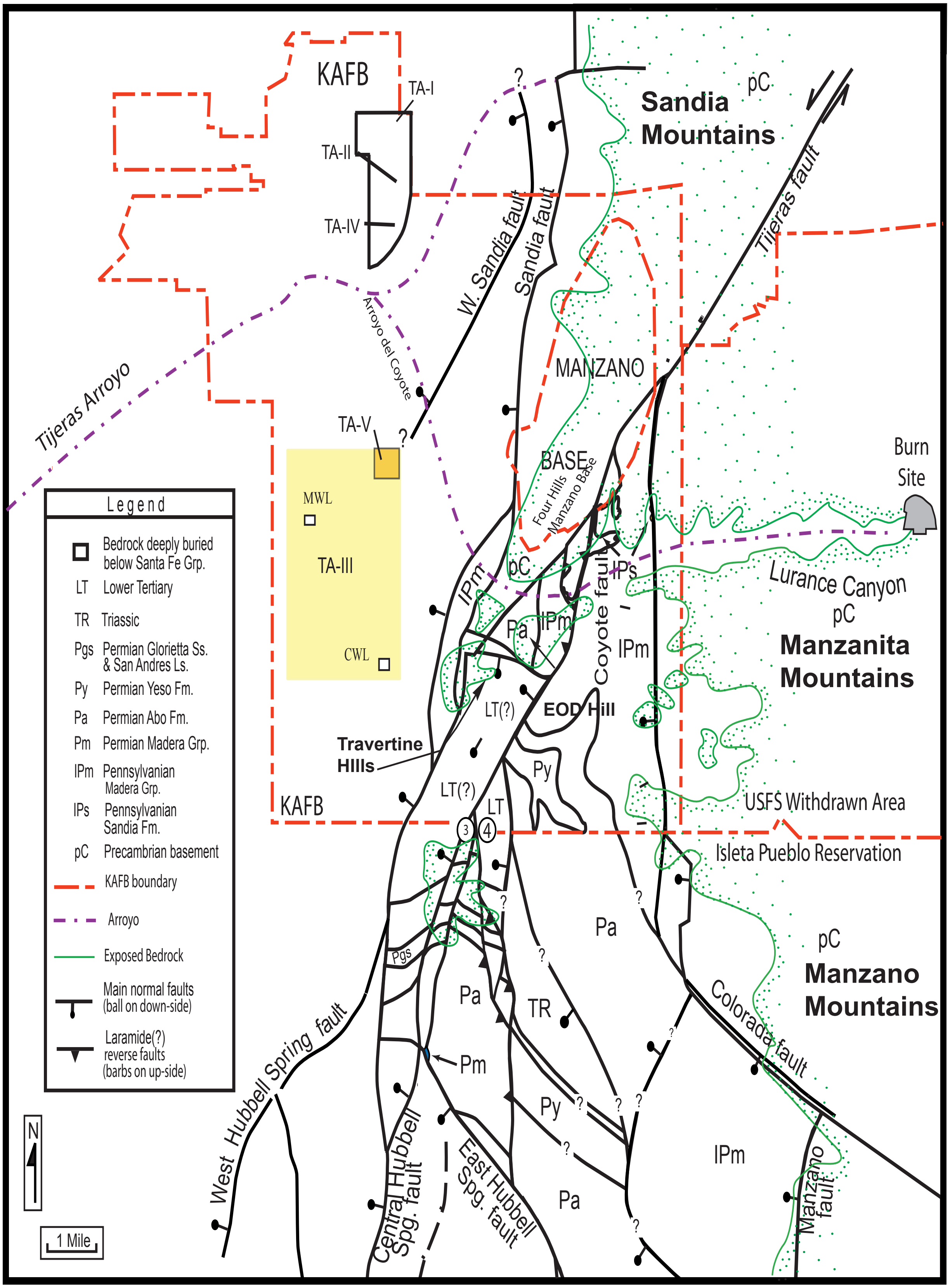
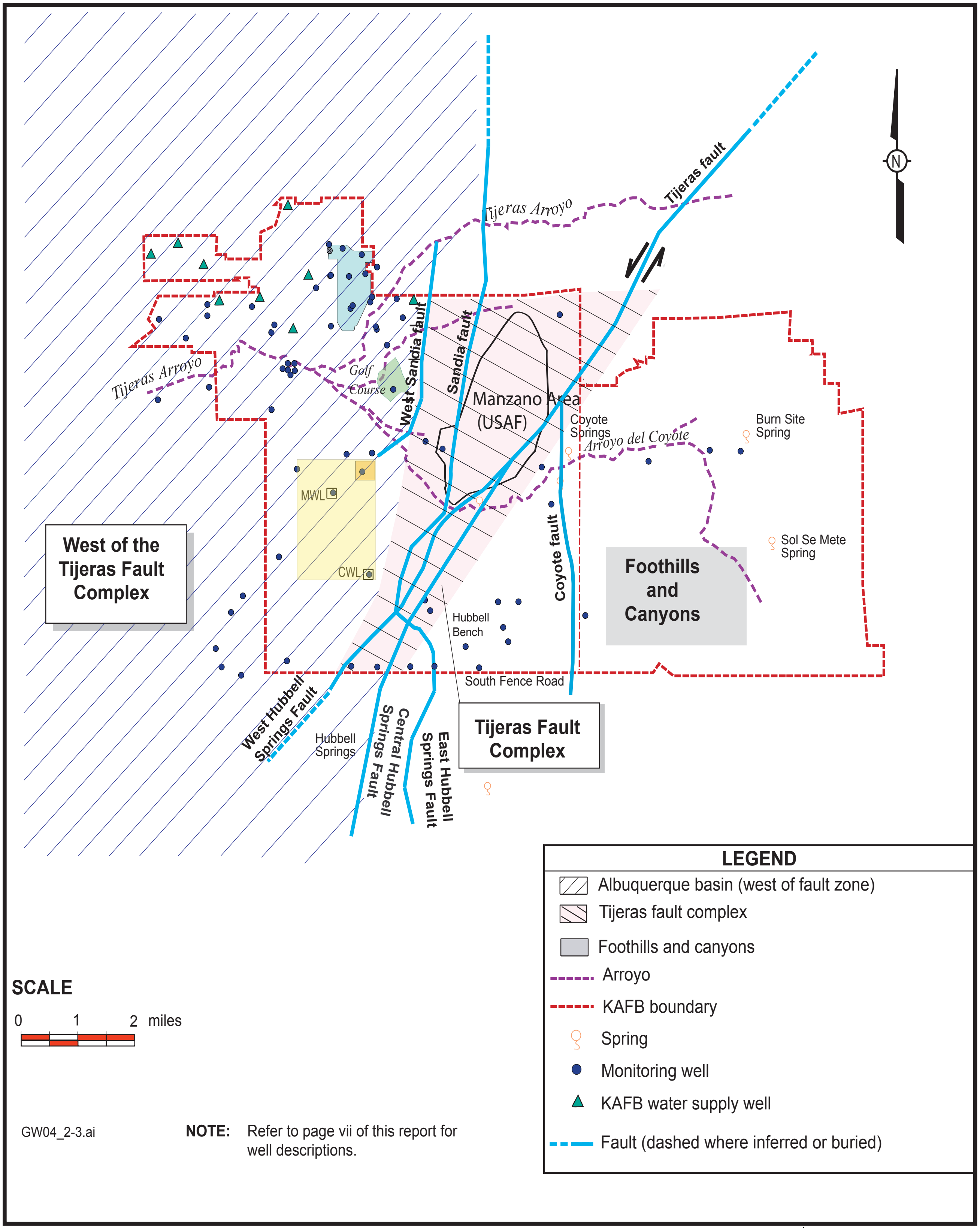


FIGURE 2-2. Generalized Geology in the Vicinity of SNL/KAFB



NOTE: Refer to page vii of this report for well descriptions.

FIGURE 2-3. Hydrogeologically Distinct Areas Primarily Controlled by Faults ancient strike-slip fault that developed in the Precambrian or early Paleozoic (approximately 600 Ma) and was reactivated in association with the Laramide Orogeny during the Cretaceous (Kelley 1977). The fault also demonstrates Quaternary movement (Kelson et al 1999; GRAM 1995). This fault has been traced at least as far north as Madrid, New Mexico and continues into the Sangre de Cristo Mountains as the Cañoncito fault. Preferential erosion along the fault formed Tijeras Canyon, which divides the Sandia and Manzanita Mountains. The fault trends southwest from Tijeras Canyon, intersects the northwest boundary of KAFB, and crosses KAFB east of Manzano Base. (Manzano Base occupies an uplift of four peaks defined by the Tijeras fault on the east side and the Sandia fault on the west side.) Strike-slip motion along the Tijeras fault is thought to be expressed by southwesterly movement of the northern block (left lateral). The Sandia, Hubbell Springs, and Tijeras faults converge near the south end of TA III. This complicated system of faults, defining the east edge of the basin, is referred to collectively as the Tijeras fault complex.

2.2 Groundwater Hydrology

Groundwater Systems

Figure 2-3 shows three different hydrogeologic regions: the Albuquerque Basin, the Tijeras fault complex, and the foothills and canyons region. The primary division is between the east and west sides of the Tijeras fault complex. The Tijeras fault complex is a transitional zone. This division marks the boundary between the two regional aquifer systems. It is important to note that the boundaries shown on the map are somewhat arbitrary, but identify the approximate hydrologic settings.

A deep aquifer is present within the Albuquerque Basin where the regional water table lies at approximately 500 ft (152 m) below the surface.

There are also multiple perched groundwater systems (GWSs) lying above the regional aquifer in the TAG study area. The perched GWSs extend south to the KAFB Golf Course area, north to portions of TA I, west of TA II, and east of the KAFB Landfill. Possible explanations for the existence of perched GWSs are inter-arroyo recharge, irrigation of the golf course and other vegetated areas, water leakage from utility distribution lines, and infiltration from an unlined sewage lagoon system (SNL 1998).

East of the Tijeras fault complex, a thin layer of alluvium covers the bedrock. The hydrogeology in this area is poorly understood due to the complicated geology created by the fault systems. On the east side of the Tijeras fault complex the depth to groundwater ranges from about 50 to 200 ft (15 to 61 m). Most of the water supply and monitoring wells east of the faults are completed in fractured bedrock at relatively shallow levels and produce modest yields of groundwater (SNL 1998).

Groundwater Flow

Groundwater in the bedrock aquifers on the east side of KAFB generally flows west out of the canyons toward the Tijeras fault complex. The groundwater gradient is relatively steep, 0.03 ft/ft, crossing the Tijeras fault complex from east to west. The elevation change in the water levels is 350 ft (106 m) over 15,840 ft (4,828 m). Within the sediments of the Albuquerque Basin, the gradient flattens out quickly to about 0.005 ft/ft.

The historic direction of regional groundwater flow within the basin was westward from the mountains toward the Rio Grande. However, due to groundwater pumping by KAFB and COA, a depression in the water table has created a broad trough directing flow towards the well fields at the northwest end of KAFB. The impact of the seasonal variation in water production by both KAFB and COA wells can be observed as fluctuations in the water levels of some SNL/NM and KAFB monitoring wells as far east and south as TA III. A water table surface map and examination of water level trends are discussed in Chapter 5 of this report.

2.3 Surface Water Hydrology

The Rio Grande, located approximately eight miles west of KAFB, is the major surface hydrologic feature in central New Mexico. The Rio Grande originates in the San Juan Mountains of Colorado and terminates at the Gulf of Mexico, near Brownsville, Texas. The Rio Grande has a total length of 1,760 miles (2,832 kilometers [km]) and is the third longest river system in North America.

Surface water (with the exception of several springs) within the boundaries of KAFB is found only as ephemeral streams that flow for short periods from runoff after storm events or during the spring melt of mountain snowpacks. The primary surface water feature that drains the eastern foothills on KAFB is the Tijeras Arroyo. The Arroyo del Coyote joins Tijeras Arroyo just south of TA IV (about one mile west of the golf course [Figure 2-3]). Both Tijeras Arroyo and Arroyo del Coyote carry significant runoff after heavy storms that usually occur from July through October. The Tijeras Arroyo, above the confluence with Arroyo del Coyote, drains about 80 sq mi (207 sq km), while Arroyo del Coyote drains about 39 sq mi (101 sq km) (U.S. Army Corps of Engineers 1979). The total watershed for the Tijeras Arroyo, which includes the Sandia and Manzanita Mountains and portions of KAFB, is approximately 126 sq mi (336 sq km). All active SNL/NM facilities are located outside the 100 year floodplain of both Tijeras Arroyo and Arroyo del Coyote (U.S. Army Corps of Engineers 1979).

Springs

Several springs on KAFB are associated with the uplifts on the east side of the basin: (1) Coyote Springs and G-Spring within Arroyo del Coyote, (2) Burn Site Spring in Lurance Canyon, and (3) Sol se Mete Spring within the Manzanita Mountains. Coyote Springs and Sol se Mete are perennial springs (continuously flowing), while the others are ephemeral springs. Hubbell Springs (a perennial spring) is located just south of KAFB on Isleta Pueblo. The wetland areas created by these springs, though very limited in extent, provide a unique ecological niche in an otherwise arid habitat.

Groundwater Recharge

Groundwater recharge in the vicinity of KAFB is primarily derived from the eastern mountain front and within the major arroyos. However, the amount of recharge occurring in the foothills and canyons is not well characterized. The estimated recharge for that portion of Tijeras Arroyo on KAFB is estimated to be up to 2.2 million ft^3/yr (50 ac-ft/yr) (SNL 1998). The best estimate for the groundwater recharge associated with Arroyo del Coyote is 0.4 million ft^3/yr (9.2 ac-ft/yr). Infiltration studies conducted by the ER Site-Wide Hydrologic Characterization (SWHC) Task determined that recharge is negligible due to the high rate of evapotranspiration for most other areas on KAFB, generally alluvial slopes and flat areas within the basin (SNL 1998).

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This chapter provides background information for the groundwater monitoring and surveillance programs conducted by the Groundwater Protection Program (GWPP) and the Environmental Restoration (ER) Project at Sandia National Laboratories, New Mexico (SNL/NM). An overview of the regulatory drivers, site and groundwater monitoring histories, current well networks, and sampling protocols are described in each section. Figure 3-1 shows the locations of active U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA) monitoring wells. The map also shows monitoring wells and water production wells owned by Kirtland Air Force Base (KAFB) and City of Albuquerque (COA).

Chapter Three
Monitoring Network Information and Sampling Protocols

3.1 Groundwater Protection Program

Principal Contaminants of Concern (COCs) for Groundwater Contamination - Primary drinking water contaminants, New Mexico Water Quality Control Commission (NMWQCC) groundwater contaminants, and perchlorate (SWTA3-MW4).
Monitoring Network - Eleven wells and one spring were monitored during Fiscal Year2007 (FY07).
Sampling Frequency - Annually.

3.1.1 Groundwater Surveillance Task Well Network

The Groundwater Surveillance Task, which is a component of the GWPP, collects data to determine and document the effects of the SNL/NM operations on groundwater quality and quantity. Groundwater surveillance monitoring allows SNL/NM to detect potential contaminants in groundwater, which may derive from SNL/NM facilities, off-site sources, or naturally-occurring materials present in the local rocks and soils. Proactive monitoring allows for the detection of contaminants before exceeding regulatory thresholds and allows for corrective actions prior to regulatory interventions. Figure 3-2 shows the location of the current surveillance network of 11 wells and one spring. The surveillance wells and the spring are located on DOE/NNSA and KAFB property. Table 3-1 lists the installation date for each well and the type of surveillance conducted at the well in FY07.

The Groundwater Surveillance Task began quarterly groundwater sampling in 1991. Starting in March 1995, quarterly surveillance monitoring was changed to annual surveillance monitoring. Prior to each annual sampling event, the Sampling and Analysis Plan (SAP) is updated to

Snowy day at a SNL/NM monitoring well

provide specific guidance on sampling methods, selected sampling parameters, and selected wells (SNL 2006a).

3.1.2 Regulations

Sandia is required by DOE Order 450.1 to develop and implement a Groundwater Protection Management Program (DOE 2005). Groundwater surveillance is one element within the DOE Environmental Protection Program. The DOE order lists the following requirements for groundwater monitoring programs:

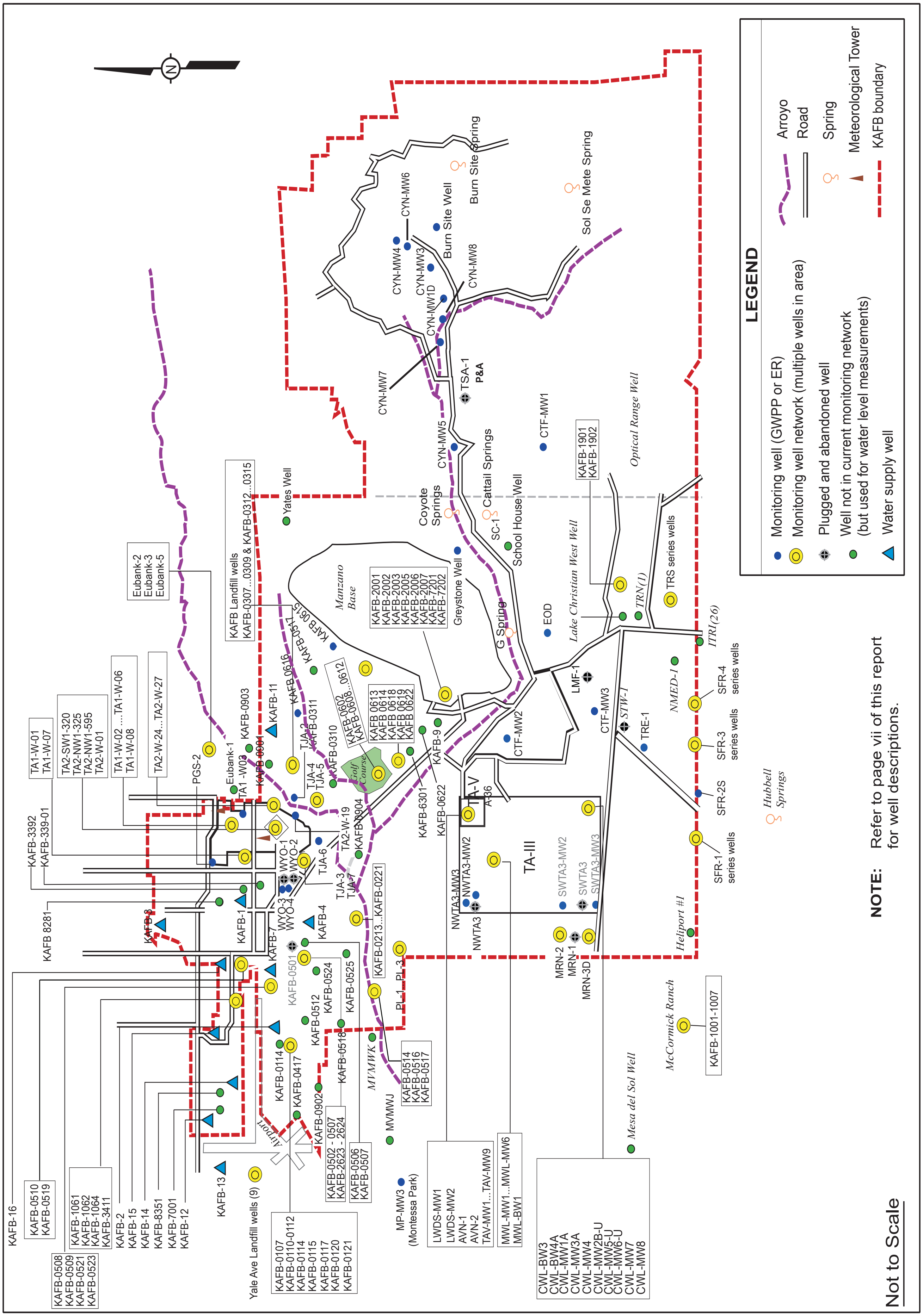
- Obtain data to determine **baseline conditions** of groundwater quality and quantity;
- Demonstrate compliance with and implementation of all applicable **regulations** and DOE orders;
- Provide **data** to detect groundwater pollution or contamination;
- Provide a **reporting mechanism** for detected groundwater pollution or contamination;
- Identify existing and potential groundwater **contamination sources** and maintain surveillance of these sources; and
- Provide data for decisions concerning **land disposal practices** and the management and protection of groundwater sources.

In addition to numerous other requirements, SNL GWPP is required by the Compliance Order on Consent (COOC) to conduct groundwater sampling and analysis for perchlorate in monitoring well SWTA3-MW4. The protocol stipulates U.S. Environmental Protection Agency (EPA) Method 314 for the analysis and establishes a screening level of 4 µg/L. If the sample results indicate the presence of perchlorate at or in excess of 4 µg/L, SNL/NM is required to evaluate the nature and extent of perchlorate contamination and report the results in a Resource Conservation and Recovery Act (RCRA) Corrective Measures Evaluation (CME). Sampling and analysis of the non-compliant well will continue until at least four consecutive non-detects are obtained. SWTA3-MW4 was the first well installed subsequent to the implementation of the COOC and compliance requirements were completed in December 2006. (NMED 2004)

TABLE 3-1. Monitoring Wells in the GWPP Network for FY07

Well [1]	Installation Year	WQ	WL	Owner	Comments
Coyote Springs	--	√	N/A	KAFB	Perennial spring in Arroyo del Coyote, east of Manzano Base
Eubank-1	Unknown	√	√	COA	East boundary TA-I
Greystone MW-2	2002	√	√	DOE/NNSA	West of Coyote Springs at the Greystone Ranch Site
MRN-2	1995	√	√	DOE/NNSA	Magazine Road North - Well 2
NWTA3-MW3D	2003	√	√	DOE/NNSA	West boundary TA-III
PL-2	1994	√	√	DOE/NNSA	Deep Well Adjacent to PL-3
SFR-2S	1992	√	√	DOE/NNSA	South Fence Road – Well 2, shallow
SFR-4T	1993	√	√	DOE/NNSA	South Fence Road – east of Tijeras Fault
SWTA3-MW2	2002	√	√	DOE/NNSA	SW Corner TA-III
SWTA3-MW3	2004	√	√	DOE/NNSA	SW Corner TA-III
SWTA3-MW4	2005	√	√	DOE/NNSA	SW Corner TA-III, water table
TRE-1	1995	√	√	DOE/NNSA	Thunder Road East – Well 1

NOTE [1] Refer to page xi of this report for well descriptions.
Checkmarks in the water quality (WQ) and water level (WL) columns indicate WQ sampling and WL measurements in FY07.
COA = City of Albuquerque
KAFB = Kirtland Air Force Base
N/A = not applicable
SNL/NM = Sandia National Laboratories, New Mexico
GWPP = Groundwater Protection Program



NOTE: Refer to page vii of this report for well descriptions.

FIGURE 3-1. Wells and Springs on SNL/NM and KAFB

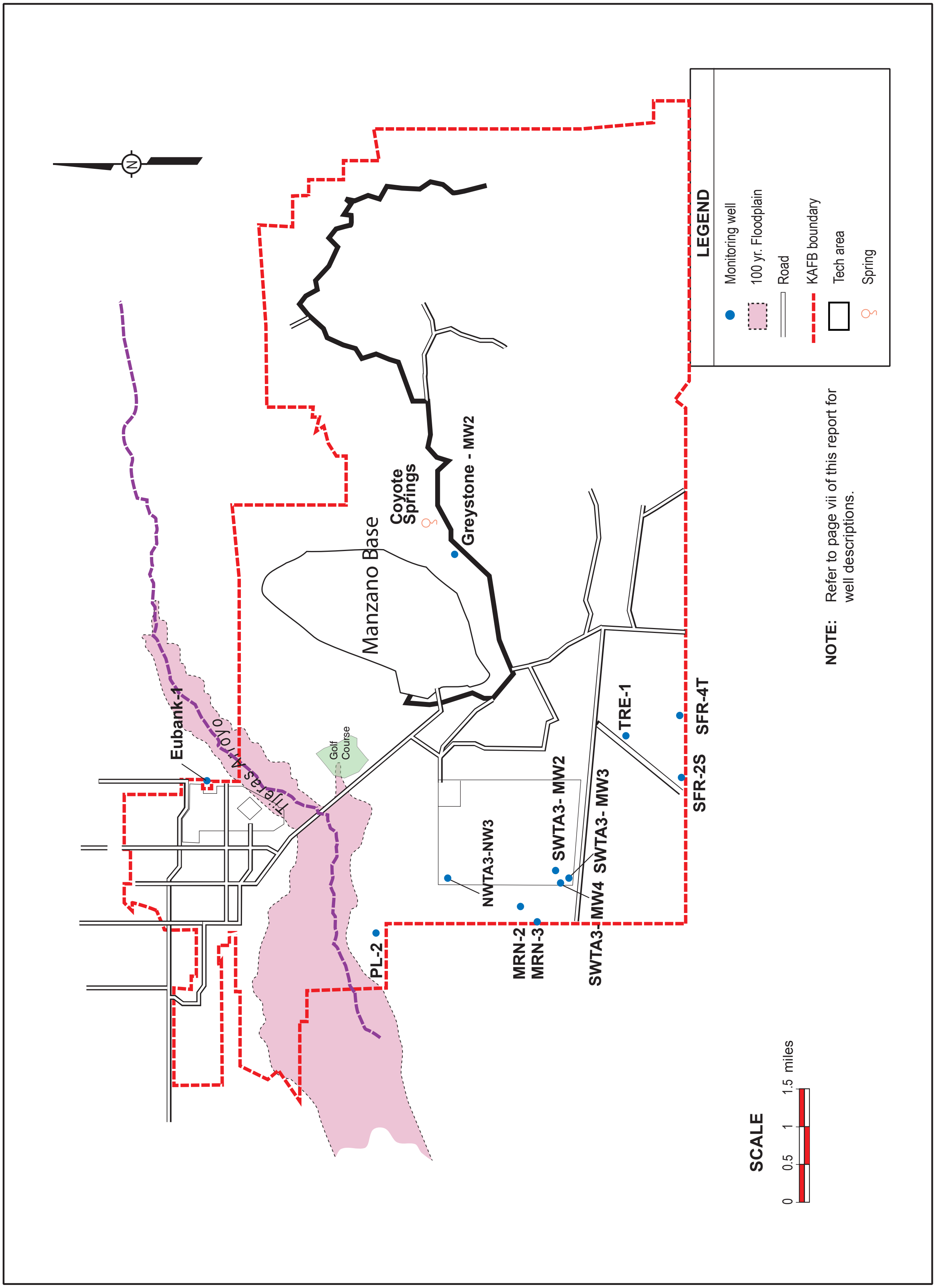


FIGURE 3-2. Groundwater Protection Program (GWPP) Water Quality Network

3.1.3 Sampling Protocols

The GWPP monitoring procedures, as conducted by the Groundwater Surveillance Task, are consistent with procedures identified in the EPA technical enforcement guidance document (EPA 1986). An overview of the GWPP sampling and data collection procedures is discussed in the following pages.

Field Water Quality Measurements

Field water quality measurements are made at the time of sample collection (Table 3-2). Groundwater is pumped to the surface and through a flow-through cell containing measurement probes for various field instruments. Consecutive measurements are made of temperature, potential of hydrogen (pH), and specific conductivity (SC) until these values are within the acceptance range of the stabilization parameters shown in Table 3-2. Stability indicates the effectiveness of the well purge in removing stagnant water from the well, and a representative groundwater sample can then be collected. In addition to groundwater stability measurements, other field parameters measured include turbidity, alkalinity, dissolved oxygen, and oxidation-reduction potential (E_H).

Sample Collection and Analysis

Groundwater samples are collected using a nitrogen gas powered portable piston pump (Bennett™). With the exception of samples collected for volatile organic compound (VOC), mercury, and perchlorate analysis, samples are filtered through a 0.45-micron cartridge filter inserted in the pump discharge line. Samples are filtered to determine dissolved constituents in the groundwater to compare to NMWQCC groundwater standards, which are based on dissolved contaminants (20 NMAC 6.2). Annual sampling is conducted for metals, VOCs, inorganics including nitrates, and radiological constituents. One well SWTA3-MW4 was analyzed for perchlorate in accordance with the requirements of the COOC. Results are listed in Appendix A and discussed in Section 4.2.

Quality Assurance (QA) and Quality Control (QC) Procedures

SNL/NM's Sample Management Office (SMO) processes environmental samples collected by both the GWPP and the ER Project. The SMO reviews the SAP, orders sample containers, issues sample control and tracking numbers, tracks the chain-of-custody, and reviews analytical results returned from the labs for laboratory contract compliance (SNL 2003a). All groundwater samples are analyzed by off-site laboratories using EPA specified protocols.

TABLE 3-2. Field Parameters Measured at the Well Head

Field Parameter	Comments
•Potential of hydrogen (pH)	Stability measure: Four consecutive measures within 0.1 pH units
•Temperature (°C)	Stability measure: Four consecutive measures within 1° Celsius
•Specific Conductance (SC) (mmho/cm)	Stability measure: Four consecutive measurements within 5%
•Turbidity (NTU)	Measured in nephelometric turbidity units (NTUs)
•Alkalinity*	Measured in milliliters of calcium carbonate (ml CaCO3). Alkalinity titrations are performed in the field at the time of sample collection.
•Dissolved Oxygen (DO)	Percentage of saturation value and/or measured in milligrams per liter (mg/L)
•Oxidation-Reduction Potential (EH)	Measured in millivolts (mV)

NOTE: *Alkalinity results for field measurements are provided in Appendix A, Table GWS-A1 and laboratory derived alkalinity values are reported in Table GWS-A3 for comparison.

QC samples are collected in the field at the time of environmental sample collection. Field QC samples may include equipment blanks, duplicate samples, split samples, and trip blanks. Field QC samples are used to monitor the sampling process. Equipment blanks are used to verify sampling equipment decontamination procedures. Duplicate samples are used to measure the precision of the sampling process. Split samples are used to verify the performance of the analytical laboratory. Trip blanks are used to determine if VOCs contaminated the sample during preparation, transportation, or handling prior to receipt by the analytical laboratory. QC samples are also prepared at the laboratory to determine if contaminant chemicals are introduced in laboratory processes and procedures. These include method blanks, laboratory control samples (LCSs), and matrix/surrogate spikes. Table 3-3 shows the seven types of QC samples that accompany groundwater quality samples in the sampling and analysis process. Laboratory analytical methods and QC processes are reviewed for conformity with the terms of the analytical contract with the laboratory performing the analyses. Reported laboratory analytical and QC data are reviewed against QA requirements specified in the data validation procedure (SNL 2003b).

3.2 Chemical Waste Landfill (CWL)

Primary COCs **-** TCE and chromium.
Monitoring Network **-** Nine monitoring wells were sampled in FY07.
Sampling Frequency **-** Semi-annual (modified): October 2006 and April/May 2007.

3.2.1 Site Background and Well Network

Site Background Information

The CWL is a 1.9-acre former disposal site at the southeast corner of Technical Area (TA)-III. From 1962 until 1981, the CWL was used for the disposal of chemical, radioactive, and solid waste generated by SNL/NM research activities. From 1981 through 1985, only solid waste was disposed of at CWL. In addition, the CWL was used as a hazardous waste drum storage facility from 1981 to 1989. A comprehensive summary of

TABLE 3-3. QC Sample Types for Groundwater Sample and Analysis

QC Sample Type	Description
FIELD QC	
Equipment blanks*	Determine the effectiveness of decontamination of the portable sampling pump (Bennett™) to ensure that cross-contamination did not occur between wells.
Duplicate samples	Establish the precision of sampling process.
Trip blanks	Deionized water samples submitted along with environmental samples to determine if contamination by VOC occurred during sample handling, shipment, or storage.
Field Blanks	To assess whether contamination of the VOC samples had resulted from ambient field conditions.
LABORATORY QC	
Method blanks	Determines contaminants introduced during the sample preparation and handling process in the laboratory.
Laboratory Control Samples (LCS)	Monitors the accuracy and precision of the lab's analytical method using laboratory prepared samples spiked with a known concentration of an analyte. These samples are analyzed in the same batch with the groundwater samples. LCS results are reported as a percent recovery.
Batch matrix spike samples and duplicate matrix spike samples	Measures the effects of chemical spikes added to an existing sample to determine the sample matrix effect. (The matrix is the groundwater.)

NOTE: *Equipment blanks are done for selected wells only.
QC = Quality Control
VOC = volatile organic compounds

the CWL disposal history is presented in the NMED-approved Closure Plan (SNL/NM 1992) and Landfill Excavation Voluntary Corrective Measure (LE VCM) Final Report (SNL/NM 2003c).

As part of the LE VCM, the CWL was excavated from September 1998 through February 2002. All former disposal areas were completely excavated, which resulted in the removal of more than 52,000 cubic yards of contaminated soil and debris. A final risk assessment, presented in the LE VCM Final Report (SNL. NM 2003c), demonstrates that the excavation and backfill materials meet the NMED-approved risk-based cleanup standards designed to protect human health and the environment (SNL/NM 2000). The LE VCM Final Report was approved by NMED on December 16, 2003.

Current Monitoring Network

In FY07, the monitoring network at CWL consisted of 13 active wells, as shown in Figure 3-3 and listed in Table 3-4. A total of nine monitoring network wells were sampled in FY07, including two background wells and seven downgradient monitoring wells.

Monitoring History

To comply with RCRA interim permit groundwater monitoring requirements (40 Code of Federal Regulation (CFR) 265 Subpart F), DOE and Sandia Corporation installed five groundwater monitor wells during the summer of 1985. In response to a Notice of Violation (NOV) from NMED with regard to the inadequate design and construction of the 1985 wells, four of these wells were plugged and abandoned in 1997. In 1988, four additional monitoring wells were installed. In 1990, an additional downgradient well was installed. In 1994, seven more monitoring wells were installed. To complete the on-going chromium assessment, NMED requested installing two additional deep monitoring wells to be monitored for eight quarters. These wells were installed in March and April 2003 with NMED direction regarding location, construction, and well screen placement in the regional aquifer. Monitoring well CWL-MW2A was plugged and abandoned on June 8, 2004 due to well integrity issues.

Until 1990, all groundwater sampling at CWL was conducted on a quarterly basis in accordance with 40 CFR 265.92(c)(1). In 1990, NMED granted a reduction in the sampling frequency from quarterly to semi-annually for groundwater contamination indicator parameters and annually for groundwater quality parameters, as allowed by 40 CFR 265.92(d)(2), since no contaminants had been detected above EPA drinking water standards in any well. In the following sampling quarter (March 1990), trichloroethene (TCE) was detected above the drinking water standard of 5 micrograms per liter (µg/L) in CWL-MW2A. Additionally, two indicator parameters (pH and SC) also exceeded state guidelines. Two months later, VOCs were re-sampled and the presence of TCE was confirmed. NMED reinstated the quarterly sampling requirement, and, thereafter, all indicator parameters were re-sampled in accordance with 40 CFR 265.93(c)(2).

In 1995, Appendix G of the Closure Plan was revised and updated as part of a Closure Plan Modification Request submitted to NMED on June 30, 1995. In May 2000, NMED partially approved the revised Appendix G, which included reducing the groundwater sampling frequency from quarterly to semi-annually at CWL for VOCs and metals and reducing Appendix IX sampling from annually to bi-annually. This eliminated sampling for pesticides, dioxins, and furans from the semi-annual Appendix IX sampling event.

In December 2003, NMED presented general groundwater characterization requirements (Kieling 2003). In March 2004, these requirements were further discussed, and it was agreed that seven sampling events will use the conventional sampling method (on all CWL monitoring wells with a large enough diameter to accommodate the conventional method equipment). The original NMED comments and the negotiated agreements regarding the required number of events are documented in the CWL Corrective Measures Study (CMS) Comment Response Document (SNL 2004a).

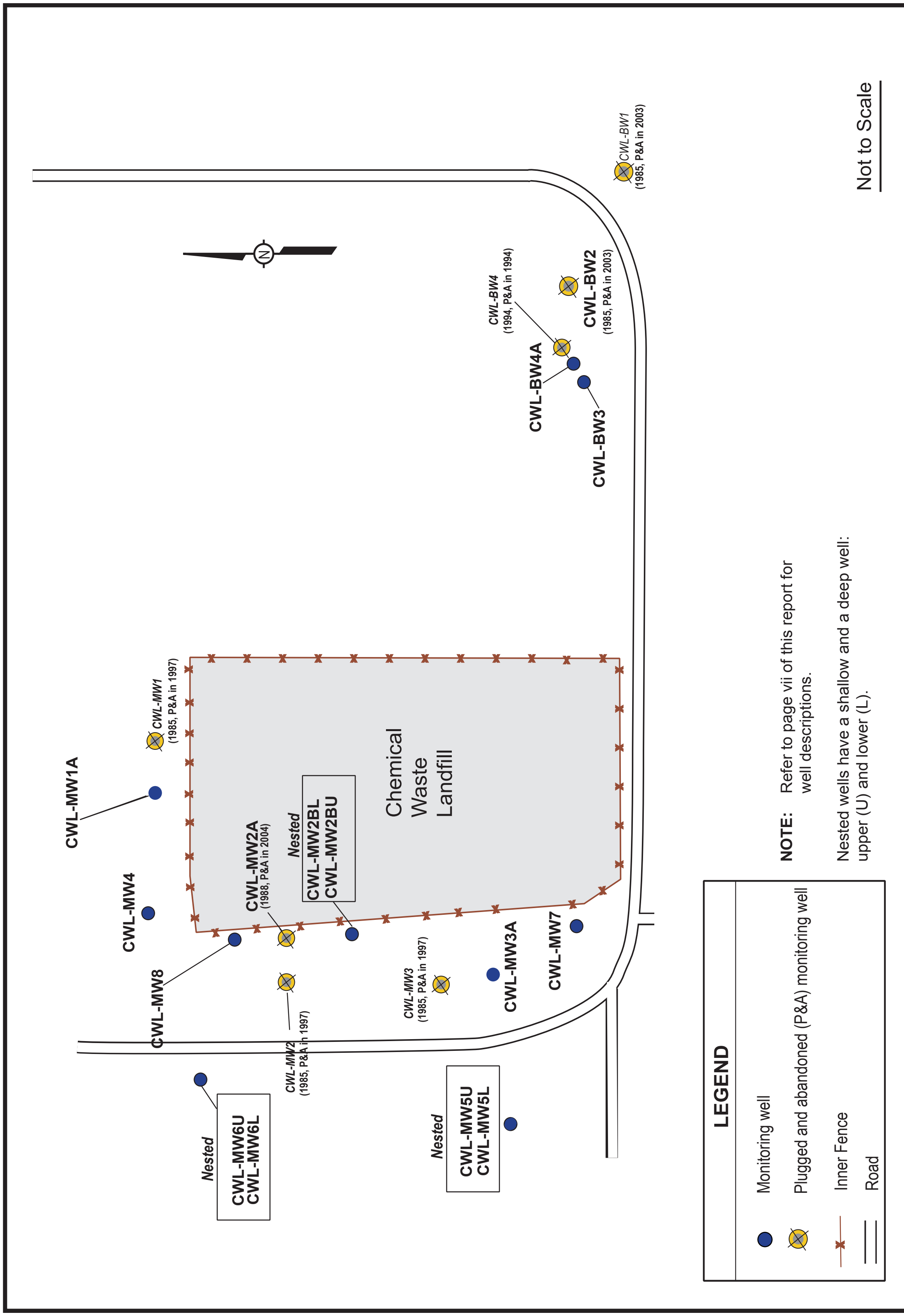


FIGURE 3-3. Chemical Waste Landfill (CWL) Monitoring Well Locations (11 active wells)

TABLE 3-4. Monitoring Wells at the CWL

Well[(1)]	Installation Year	WQ	WL	Comments
CWL-MW1A	1988			Dry well (filled with sediment during VE VCM)
CWL-MW3A	1988			Dry well (filled with sediment during VE VCM)
CWL-BW3	1988	✓	✓	Background well
CWL-MW4	1990	✓	✓	
CWL-MW2BU	1994	✓	✓	Upper section of nested well
CWL-MW2BL	1994	✓	✓	Lower section of nested well
CWL-MW5U	1994	✓	✓	Upper section of nested well
CWL-MW5L	1994	✓	✓	Lower section of nested well
CWL-MW6U	1994	✓	✓	Upper section of nested well
CWL-MW6L	1994	✓	✓	Lower section of nested well
CWL-BW4A	1994	✓	✓	Background well
CWL-MW7	2003		✓	Deep monitoring well
CWL-MW8	2003		✓	Deep monitoring well

NOTE: (1) Refer to page xi of this report for well descriptions.
Checkmarks in the water quality (WQ) and water level (WL) columns indicate WQ sampling and WL measurements in FY07.
CWL = Chemical Waste Landfill

3.2.2 Regulations

The CWL at SNL/NM is an interim status landfill being closed under 20.4.1.600 New Mexico Administrative Code (NMAC), incorporating 40 CFR 265 Subpart G and the CWL Final Closure Plan and Postclosure Permit Application ([Closure Plan], SNL 2003d). Monitoring details, such as specific analytes and sampling frequencies, are defined in Appendix G of the Post Closure Permit document, SAP for Groundwater Assessment Monitoring at the CWL, and Chemical Waste Landfill Corrective Measures Study, Remedial Action Proposal, Post Closure Plan (SNL 2003e).

3.2.3 Sampling Protocols

Sampling at CWL is conducted on a semi-annual basis. An overview of the sampling protocols for CWL is discussed below.

QA and QC Procedures

Sample QA procedures for groundwater samples are managed through SNL/NM's SMO, as described in Section 3.1.3. QC field samples and QC laboratory samples that were conducted for CWL samples are described in Table 3-3.

Field Water Quality Measurements

Field water quality parameters are measured prior to sampling. A subset of these measurements are used to determine the effectiveness of well purging. In accordance with Appendix G of the CWL Final Closure Plan, wells are pumped until parameters fall within a specified stability range. Field quality parameters include temperature, SC, oxidation-reduction, pH, turbidity, and dissolved oxygen.

Sample Collection and Analysis

A portable Bennett™ groundwater sampling system was used to collect samples in all wells, except CWL-MW2BU, CWL-MW5L, and CWL-MW6L. Since these are small diameter wells, less than 2-inches, dedicated low-flow sampling systems (manufactured by QED Micro Purge™) were used to collect samples.

During FY07, groundwater samples were submitted for Appendix IX VOCs and Appendix IX metals plus iron. All analytical results are listed in Appendix B and discussed in Section 4.3.

3.3 Mixed Waste Landfill (MWL)

Primary COC - The primary COC in soils at MWL is tritium. Tritium has not been detected in the groundwater at the MWL.
Monitoring Network - Seven monitoring wells, including one background well, five downgradient wells, and one on-site well.
Sampling Frequency - Samples are collected annually during April and June 2007.

3.3.1 Site Background and Well Network

Site Background Information

MWL is located at TA-III, four miles south of SNL/NM central facilities and five miles southeast of AIA. The landfill is a fenced, 2.6-acre area in the north-central portion of TA-III. MWL was established in 1959 as a disposal area for low-level radioactive waste generated by SNL/NM research facilities. The landfill accepted low-level radioactive waste and minor amounts of mixed waste from March 1959 through December 1988. Approximately 100,000 cubic feet of low-level radioactive waste containing approximately 6300 curies (Ci) of activity were disposed of in the landfill.

MWL consists of two distinct disposal areas: the classified area (occupying 0.6 acres) and the unclassified area (occupying 2.0 acres). Low-level radioactive and mixed waste was disposed of in each of these areas. Classified wastes were buried in unlined, cylindrical pits in the classified area. Unclassified wastes were buried in shallow, unlined trenches in the unclassified area.

A Phase 1 RCRA Facility Investigation (RFI) was conducted in 1989 and 1990 to determine if a release of RCRA contaminants had occurred at the MWL. The Phase 1 RFI indicated that tritium had been released to the environment. A Phase 2 RFI was conducted from 1992 to 1995 to determine the contaminant source, define the nature and extent of contamination, identify potential contaminant transport pathways, evaluate potential risks, and provide remedial action alternatives for the landfill.

The Phase 2 RFI confirmed tritium as the COC. Tritium occurs in surface and near surface soils in and around the classified area of the landfill. Tritium levels range from 1100 picocuries per gram (pCi/g) in surface soils to 206 pCi/g in subsurface soils. The highest tritium levels have been found within 30 ft below ground surface (bgs) in soils adjacent to and directly below classified area disposal pits. At depths greater than 30 ft bgs, tritium levels decrease rapidly. Tritium has also been identified as a diffuse air emission from the landfill and is emitted from the landfill at a rate of 0.09 pCi/yr (Anderson 2004).

Current Monitoring Network

MWL has a monitoring network of seven wells as illustrated in Figure 3-4 and listed in Table 3-5. The monitoring network includes one background well, five downgradient wells, and one on-site well. Six of the seven wells were sampled during the FY07 monitoring event. The background monitoring well MWL-BW1 was not sampled due to an insufficient amount of water in the well. There has been a continuously declining water table in the regional aquifer since the installation of all the monitoring wells at the MWL.

The on-site well MWL-MW4 was drilled at a six-degree angle from vertical and is screened in two completion zones directly beneath Trench D, a trench in the northern half of the unclassified area of the landfill. The lower zone is sealed off with an inflatable packer, which hydraulically isolates the two zones. The upper completion zone is currently monitored for water quality and water levels; the lower zone is not monitored at this time.

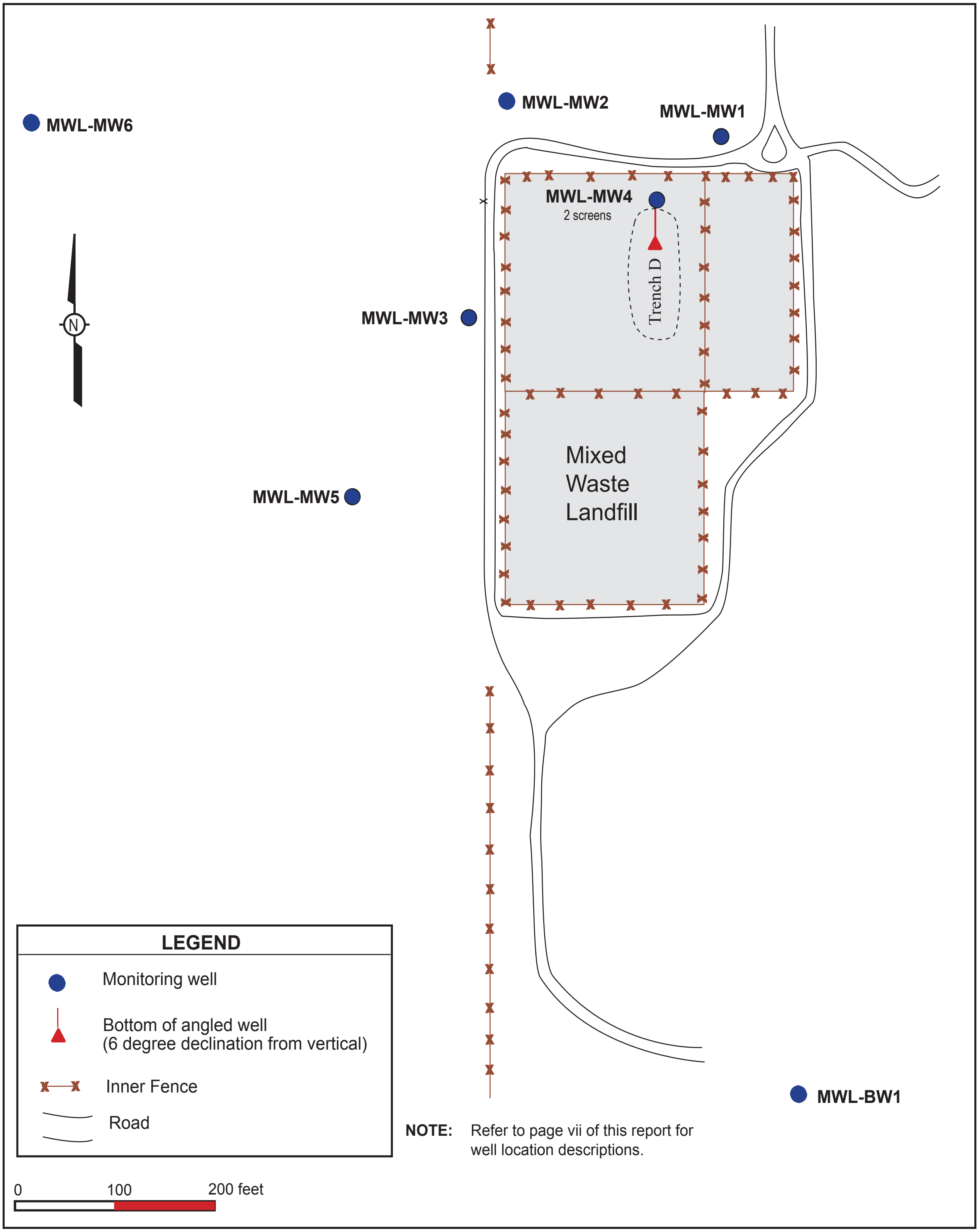


FIGURE 3-4. Mixed Waste Landfill (MWL) Monitoring Well Locations

TABLE 3-5. Monitoring Wells at the MWL

Well (1)	Installation Year	Water Quallity (WQ)	Water Level (WL)	Comments
MWL-BW1	1989		✓	Background well (Cross-gradient). An insufficient amount of water in this well prevented water quality sampling FY07. Installed with a stainless steel well screen.
MWL-MW1	1988	✓	✓	Installed with a stainless steel well screen.
MWL-MW2	1989	✓	✓	Installed with a stainless steel well screen.
MWL-MW3	1989	✓	✓	Installed with a stainless steel well screen.
MWL-MW4	1993	✓	✓	On-site well, 6 degree angled, dual completion, installed with PVC well screens.
MWL-MW5	2000	✓	✓	Installed with PVC well screen.
MWL-MW6	2000	✓	✓	Installed with PVC well screen.

NOTE: Checks in the water quality (WQ) and water level (WL) columns indicate WQ sampling and WL measurements in FY07.
(1) Refer to page xi of this report for well descriptions.
MWL = Mixed Waste Landfill
PVC= Polyvinyl chloride

Monitoring History

Quarterly sampling was conducted from September 1990 through January 1992. Semi-annual sampling was conducted from January 1992 through 1995. Annual sampling has been conducted from April 1996 to present. Wells MWL-MW5 and MWL-MW6 were installed in 2000 and were sampled quarterly for eight quarters through October 2002, prior to switching to annual sampling. Since 2002, all seven MWL wells have been sampled annually in April, with the exception of MWL-BW1 this year (FY07).

3.3.2 Regulations

MWL is regulated by NMED as a Solid Waste Management Unit (SWMU) in accordance with the protocols given in 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities." Subpart F, "Releases From Solid Waste Management Units," describes groundwater monitoring activities. The requirements for corrective action at the MWL, including those for groundwater monitoring, are established through the corrective measures process.

The NMED issued the COOC in April 2004, and transferred the regulatory authority for groundwater sampling at the MWL from the HSWA Module to the COOC (NMED 2004).

3.3.3 Sampling Protocols

Six of the seven wells were sampled during the FY07 monitoring event. An overview of MWL sampling and data collection procedures is discussed in the following sections.

Field Water Quality Measurements

Field water quality parameters are measured prior to sampling to determine the effectiveness of well purging. As discussed in Section 3.1.3 and listed in Table 3-2, the wells are purged until parameters are consistent within a specified stability range.

Sample Collection and Analysis

With the exception of MWL-MW4, which has a dedicated Bennett™ pump, MWL wells are sampled with a portable Bennett™ pump. The pump and tubing bundle are decontaminated prior to sampling each well. Each well is either purged to dryness (if recovery is slow) or purged until select water quality parameters stabilize (typically two to three casing volumes). Samples were collected at the MWL wells for analyses of VOCs, target analyte list (TAL) metals and total uranium, nitrate plus nitrite (NPN), major ions, gross alpha/beta radioactivity, tritium, and gamma-emitting radionuclides of concern (e.i., americium-241, cesium-137, cobablt-60, and potassium-40). Also included in the chemical analyses were total organic carbon, carbon dioxide, total dissolved solids, and biological oxygen demand.

Groundwater samples from MWL wells were collected and shipped to offsite laboratories using analysis request/chain of custody protocol. Groundwater analytical results from FY07 are listed in Appendix C and discussed in Section 4.4.

QA and QC Procedures

Sample QA procedures for groundwater samples are managed through the SNL/NM SMO as described in Section 3.1.3. QC field samples and QC laboratory samples are described in Table 3-3.

3.4 TA-V

Principal COCs for Groundwater Contamination - TCE and nitrate.
Monitoring Network - 12 wells were sampled in FY07.
Sampling Frequency - Quarterly: November/December 2006, February/March 2007, June 2007, and August/September 2007.

3.4.1 Site Background and Well Network

Site Background Information

The two primary areas of investigation in TA-V are the TA-V Seepage Pits and the Liquid Waste Disposal System (LWDS), which are shown in Figure 3-5. The TA-V Seepage Pits (SWMU 275) are comprised of two septic tanks connected to six seepage pits. In the past, at least six buildings at the south end of TA-V had sewer lines connected to the seepage pits. The system operated from the early 1960s up to 1992, at which time the sewer lines were connected to the COA sewer system. It is estimated that as much as 3,000 to 5,000 gallons (gals) of water were disposed of at the pits on a daily basis. After extensive investigation the TA-V Seepage Pits have been proposed and accepted by NMED for No Further Action (NFA).

The LWDS was designed to receive, monitor, and discharge radioactive effluent from the Sandia Experimental Reactor Facility (SERF) in TA-V. The system consists of three individual SWMUs: LWDS Holding Tanks (SWMU 52); LWDS Drainfield (SWMU 5); and LWDS Surface Impoundments, including the discharge lines connecting to the impoundments (SWMU 4). The LWDS Surface Impoundments consist of two unlined impoundments. Starting in 1963, radioactive discharges drained to the LWDS Holding Tanks, where they were monitored, then pumped to the LWDS Drainfield. When the drainfield collapsed in 1967, discharges were directed to the LWDS Surface Impoundments. Radioactive discharges continued until 1971 when SERF was decommissioned. Non-radioactive discharges continued until 1992. From 1963 until 1971, the system received about 19 million gals of wastewater contaminated with 35 Ci of radionuclides. Approximately 6.5 million gallons went to the drainfield, with the remainder going to the surface impoundments. The LWDS Drainfield (SWMU 5) and the LWDS Surface Impoundments (SWMU 4) have been accepted for NFA. The LWDS Holding Tanks (SWMU 52) are still in use and on the active site list.

Current Network

The 12 wells in the TA-V monitoring network are used to monitor water quality and/or water levels (Figure 3-5, Table 3-6).

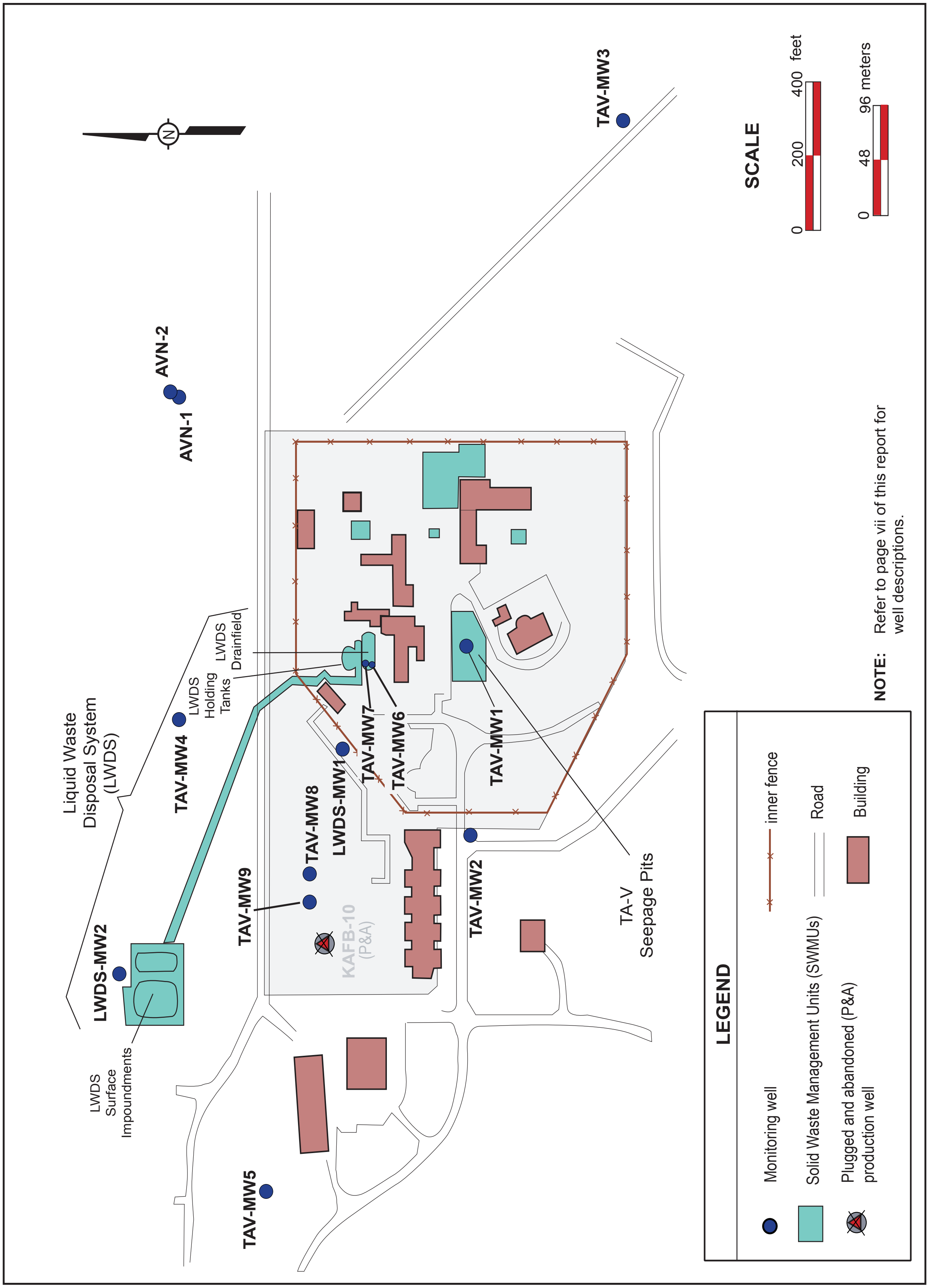


FIGURE 3-5. Tech Area V Monitoring Well Locations (13 Active Wells)

GW99-3-5.ai

TABLE 3-6. Monitoring Wells at TA-V

Well [1]	Installation Year	WQ	WL	Comments
LWDS-MW2	1992	✓	✓	Regional aquifer
LWDS-MW1	1993	✓	✓	Regional aquifer
AVN-1	1995	✓	✓	Regional aquifer
AVN-2	1995			Regional aquifer (dry)
TAV-MW1	1995	✓	✓	Regional aquifer
TAV-MW2	1995	✓	✓	Regional aquifer
TAV-MW3	1997	✓	✓	Regional aquifer
TAV-MW4	1997	✓	✓	Regional aquifer
TAV-MW5	1997	✓	✓	Regional aquifer
TAV-MW6	2001	✓	✓	Regional aquifer, water table completion
TAV-MW7	2001	✓	✓	Regional aquifer, deep completion (597-617 ft)
TAV-MW8	2001	✓	✓	Regional aquifer, water table completion
TAV-MW9	2001	✓	✓	Regional aquifer, deep completion (582-602 ft)

NOTE: [1] Refer to page xi of this report for well descriptions.
Checkmarks in the water quality (WQ) and water level (WL) columns indicate WQ sampling and WL measurements made in FY07.

Monitoring History

Groundwater monitoring at TA-V began in October 1992. TCE was first detected in LWDS-MW1 in October 1993 and was later detected in TAV-MW1 in September 1995. TCE concentrations in LWDS-MW1 have consistently exceeded the maximum contaminant level (MCL) of 5 micrograms per liter (µg/L). In FY98, TCE was detected at very low, non-quantifiable levels in TAV-MW4. In FY07, TCE was detected above the MCL in LWDS-MW1 and TAV-MW6 during all four sampling events. Levels of nitrate above the MCL have been detected in LWDS-MW1 during all four FY07 sampling events. Potential sources for TCE in groundwater include both the LWDS and the TA-V Seepage Pits.

3.4.2 Regulations

Groundwater monitoring activities at TA-V are conducted in accordance with the protocols in 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities." Subpart F, "Releases from Solid Waste Management Units," defines the groundwater monitoring activities. Groundwater monitoring at TA-V was initiated to satisfy the requirements of the SNL/NM Hazardous and Solid Waste Amendments (HSWA) permit for characterization of SWMUs and is currently conducted per the requirements of the COOC. The groundwater monitoring activities for the TA-V investigation are not associated with a single SWMU, but are more regional in nature and have historically been conducted on a voluntary basis by the ER Project. Initially, groundwater monitoring activities at TA-V were implemented to satisfy the requirements of the SNL/NM HSWA permit for characterization of SWMUs.

The COOC, effective April 29, 2004, transferred regulatory authority for corrective action of SWMU and areas with groundwater contamination from the HWSA module to the COOC. The TA-V investigation must comply with requirements set forth in the COOC for site characterization and the development of a CME for this groundwater area of concern (AOC). The COOC also contains schedules that define dates for the delivery of plans and reports related to TA-V. NMED Hazardous Waste Bureau (HWB) is the regulatory agency responsible for enforcing the requirements identified in the COOC for the TA-V CME.

In response to the requirement for completing a CME, DOE/NNSA and Sandia Corporation submitted the following TA-V documents to NMED: (1) Current Conceptual Model of Groundwater Flow and Contaminant Transport at Sandia National Laboratories Technical Area-V (SNL 2004b), (2) Corrective Measures Evaluation Work Plan Technical Area-V (SNL2004c), and (3) Corrective Measures Evaluation Report for Technical Area-V Groundwater (SNL 2005a).

The Current Conceptual Model of Groundwater Flow and Contaminant Transport at Sandia National Laboratories Technical Area-V document provided site-specific characteristics by which remedial alternatives were evaluated. The CME Work Plan Technical Area-V document was completed to comply with requirements set forth in the COOC, with the guidance of the RCRA Corrective Action Plan (EPA 1994). This work plan provided a description and justification by which remedial alternatives were considered, and the methods and criteria used in the evaluation were to be determined.

In support of the selected remedy, the CME Report included the following documents as attachments: (1) Conceptual Model Update: Contaminant Distribution in Groundwater, (2) Remedial Alternatives Data Gaps Review, (3) Evaluation of Contaminant Transport in Groundwater, (4) Investigation of Contaminant Biodegradation, and (5) Evaluation of Intrinsic Aerobic Degradation Mechanism (SNL2005a).

3.4.3 Sampling Protocols

Sampling at TA-V is conducted on a quarterly basis. An overview of the sampling protocols is discussed below.

Field Water Quality Measurements

Field water quality parameters are measured prior to sampling. Select measurments are used to determine the effectiveness of well purging. As discussed in Section 3.1.3 and listed in Table 3-2, the wells are pumped until the parameters fall within a specified stability range.

Sample Collection and Analysis

All wells in the TA-V investigation were sampled using conventional purging/sampling techniques (using a Bennett™ pump) and following procedures outlined in the COOC. In accordance with SNL/NM Field Operating Procedure (FOP) 05-01 (SNL 2007), each monitoring well was purged to remove stagnant well casing water prior to sample collection. Quarterly groundwater samples collected from all wells were analyzed for VOCs and NPN (as nitrogen). Additional samples were collected from various wells and analyzed for TAL metals, tritium, gross alpha, gross beta, and gamma spectroscopy. All results are listed in Appendix D and discussed in Section 4.5.

QA and QC Procedures

Sample QA procedures for groundwater samples are managed through the SNL/NM SMO as described in Section 3.1.3. QC field samples and QC laboratory samples that were conducted for TA-V samples are described in Table 3-3.

3.5 Tijeras Arroyo Groundwater (TAG) Investigation

Principal COCs for Groundwater Contamination - TCE and nitrate.
Monitoring Network - 27 wells screened within the perched groundwater system (GWS) or regional aquifer (including COA monitoring wells: Eubank-1, Eubank-2, Eubank-3, and Eubank-5).
Sampling Frequency - Quarterly/semi-annually/annually: October/November 2006, January 2007, May/June 2007, and July/August 2007.

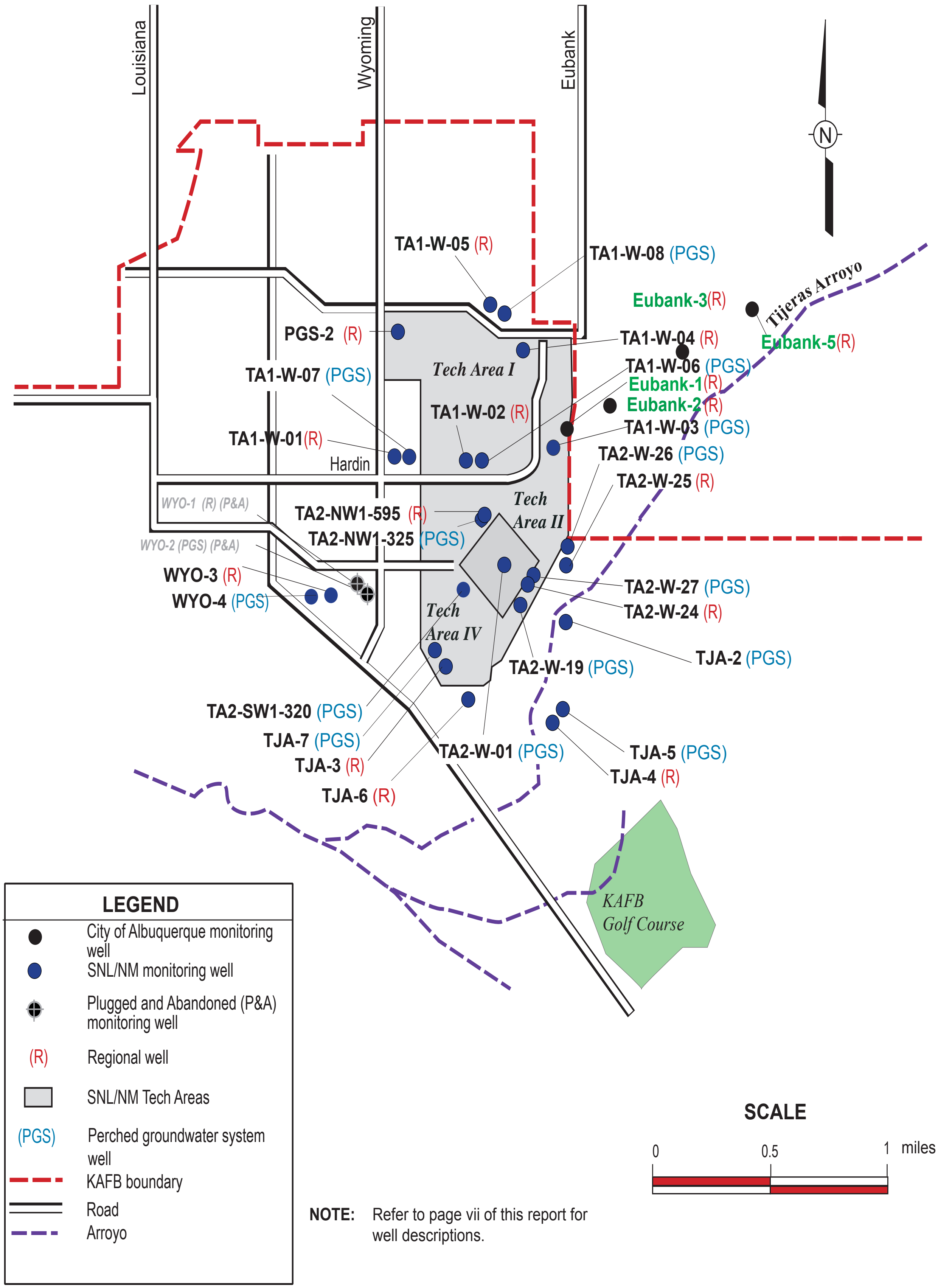


FIGURE 3-6. Tijeras Arroyo Groundwater (TAG) Investigation Monitoring Well Locations (30 active wells)

TABLE 3-7. Monitoring Wells in the TAG Investigation Area

Well [1]	Installation Year	WQ	WL	Comments
Eubank-1	1988		✓	Regional aquifer (COA well)
Eubank-2	1997		✓	Regional aquifer (COA well)
Eubank-3	1997		✓	Regional aquifer (COA well)
Eubank-5	1997		✓	Regional aquifer (COA well)
PGS-2	1995	✓	✓	Regional aquifer
TA1-W-01	1997	✓	✓	Regional aquifer
TA1-W-02	1998	✓	✓	Regional aquifer
TA1-W-03	1998	✓	✓	Perched aquifer
TA1-W-04	1998	✓	✓	Regional aquifer
TA1-W-05	1998	✓	✓	Regional aquifer
TA1-W-06	1998	✓	✓	Perched GWS
TA1-W-08	2001	✓	✓	Perched GWS
TA2-NW1-595	1993	✓	✓	Regional aquifer
TA2-SW1-320	1992	✓	✓	Perched GWS
TA2-W-01	1994	✓	✓	Perched GWS
TA2-W-19	1995	✓	✓	Perched GWS
TA2-W-25	1997		✓	Regional aquifer
TA2-W-26	1998	✓	✓	Perched GWS
TA2-W-27	1998	✓	✓	Perched GWS
TJA-2	1994	✓	✓	Perched GWS
TJA-3	1998	✓	✓	Regional GWS
TJA-4	1998	✓	✓	Regional aquifer
TJA-5	1998		✓	Perched GWS
TJA-6	2001	✓	✓	Regional aquifer
TJA-7	2001	✓	✓	Perched GWS
WYO-3	2001	✓	✓	Regional aquifer
WYO-4	2001	✓	✓	Perched GWS

NOTE: [1] Refer to page xi of this report for well descriptions.
Checkmarks in the water quality (WQ) and water level (WL) columns indicate WQ sampling and WL measurements in FY07.

3.5.1 Site Background and Well Network

Site Background Information

The TAG investigation collectively includes sites located in TAs I, II, IV, and along Tijeras Arroyo, including neighboring property owned by KAFB and COA. The site history of the TAG investigation area is complex. Since the late 1920s, there have been multiple tenants and facilities located in the area that have conducted a wide variety of activities. Many had the potential to contribute to groundwater contamination, which makes determining the sources of contaminants in the groundwater difficult, if not impossible. Source determination is further complicated by past operations at KAFB and by COA, as well as COA sewer lines currently in use.

In early 1928, the first airport in Albuquerque was constructed where TAs I and II are currently located. In 1945 to 1947, during a dismantling operation, 2,250 military aircraft were dismantled adjacent to the runways. In July 1945, the "Z Division" of the Manhattan Engineers District, an extension of the original Los Alamos Laboratories, was established as the forerunner of SNL/NM. At that time, the primary mission of Z Division was to provide engineering, production, stockpiling, and testing support for nuclear weapons components and systems. In the summer of 1949, the major weapons production was transferred to other manufacturing facilities, and the early work of SNL/NM was concentrated on prototype research and the manufacture of experimental devices. Since 1949, SNL/NM has grown from a factory-style ordnance facility to a national laboratory dedicated to research, development, and testing of both defense and non-defense components. The current work performed in TAs I and II can be divided into four main types: nuclear weapon, non-nuclear weapon, technical support, and special research and development. Numerous SNL/NM facilities may have had a potential to release hazardous materials to the soil and groundwater; however, the current research-oriented mission of most SNL/NM laboratories has resulted in an inventory of numerous chemicals in small quantities, which are generally stored and used indoors.

Current Monitoring Network

The TAG Investigation has a monitoring network of 27 active wells as listed in Table 3-7 and shown in Figure 3-6. Twelve wells are completed in the PGWS, and 15 wells are completed in the regional aquifer. The wells in the TAG monitoring network are used to monitor water quality and/or water levels as listed in Table 3-7.

Beginning in October 2000, meetings of the TAG High Performance Team (HPT) served as a forum for discussing TAG issues. During these meetings, members of the HPT declared that all groundwater analytical results previously collected using low-flowing sampling devices are suspect. Based on this perceived inadequacy of the sampling method, TAG quarterly groundwater sampling was suspended until an alternative sampling method could be implemented. In June 2003, SNL/NM submitted the TAG Investigation Work Plan (SNL 2003f) to NMED. This work plan presented a comprehensive scope of work for groundwater investigations that are being jointly conducted by SNL/NM, KAFB, and COA. Based on the requirements of the work plan, quarterly groundwater sampling resumed in July 2003 using conventional groundwater purging/sampling techniques. NMED approved the TAG Investigation Work Plan in September 2003 (NMED 2003). The six quarterly sampling events required by the work plan were completed at the end of FY05. Since that time, TAG wells have been sampled quarterly, semi-annually, or annually; however, all FY07 sampling continued to follow the procedures outlined in the NMED-approved work plan.

Monitoring History

In 1992 and 1993, three monitoring wells were installed as part of the groundwater quality investigations initiated in TA-II. A perched groundwater system (GWS) was encountered at a depth of approximately 320 ft bgs. Two of the original wells were completed in this perched GWS. The third well was completed in the regional aquifer at a depth of approximately 530 ft bgs. In October 1994, analytical results from a perched GWS well identified TCE at a concentration of 1.0 µg/L, as compared to the MCL of 5.0 µg/L. In 1995, TCE was again identified in a perched GWS well at a concentration of 1.6 µg/L. Subsequently, a groundwater sample from a well located west of TA-II (on KAFB property) produced a TCE concentration of 8.1 µg/L. Additional investigations were prompted to identify the source of TCE. The ER Project established a separate task called Sandia North (since changed to the current name of Tijeras Arroyo Groundwater) to plan and conduct groundwater characterization activities in the vicinity of TAs I and II, and Tijeras Arroyo. The investigation plans are documented in the Sandia North Groundwater Investigation Plan (GIP) (SNL 1996a). The results of the investigation were reported in the Tijeras Arroyo Groundwater Continuing Investigation Report (SNL 2002a).

3.5.2 Regulations

These activities are directed by the provisions of the SNL/NM HSWA permit. Groundwater characterization activities were originally conducted voluntarily as proposed in the GIP (SNL 1996a) and are currently conducted per requirements of the NMED-approved TAG Investigation Work Plan (SNL 2003f) and the COOC. The groundwater monitoring activities for the TAG investigation are not associated with a single SWMU, but are more regional in nature and have historically been conducted by the ER Project. Groundwater characterization activities for TAG were originally conducted voluntarily as proposed in the GIP (SNL/NM 1996a). More recently TAG activities were conducted per requirements of the NMED-approved TAG Investigation Work Plan (SNL/NM 2003f).

The COOC transferred regulatory authority for the investigation of SWMUs and areas with groundwater contamination from the HWSA module to the COOC. The TAG investigation must comply with requirements set forth in the COOC for site characterization and the development of a CME for this groundwater AOC.

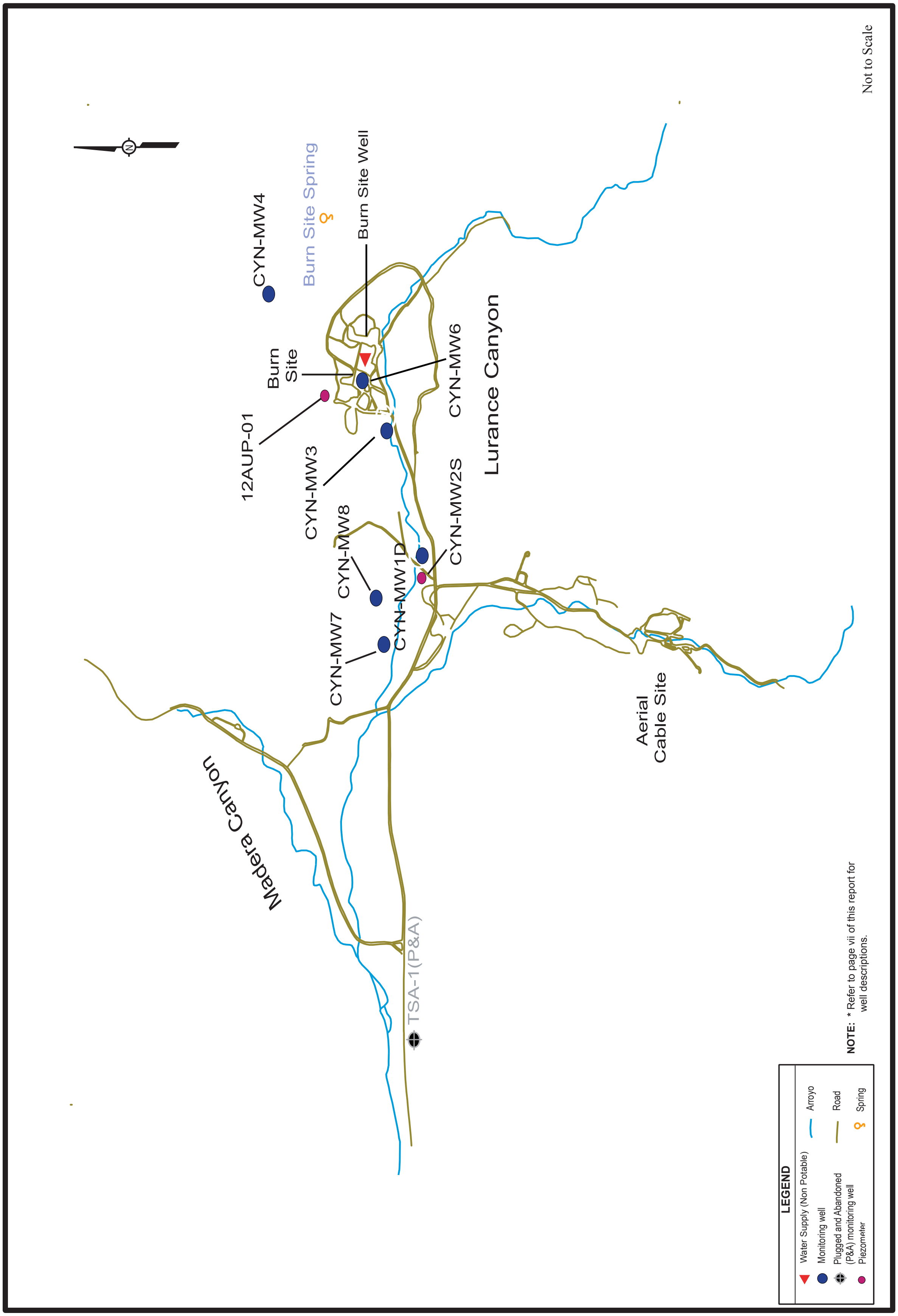


FIGURE 3-7. Wells and Piezometers in the Burn Site Groundwater Study Area (six active wells)

TABLE 3-8. Wells and Piezometers at the Burn Site Groundwater Area

Well [1]	Installation Year	WQ	WL	Comments
12AUP-01	1997			Underflow piezometer (dry)
Burn Site Well*	1986			Utility water supply well
CYN-MW1D	1997	✓	✓	Bedrock groundwater well
CYN-MW2S	1997			Underflow piezometer (dry)
CYN-MW3	1999	✓	✓	Bedrock groundwater well
CYN-MW4	1999	✓	✓	Bedrock groundwater well
CYN-MW6	2006	✓	✓	Bedrock groundwater well
CYN-MW7	2006	✓	✓	Bedrock groundwater well
CYN-MW8	2006	✓	✓	Bedrock groundwater well

NOTE: *Not an Environmental Restoration (ER) well.
[1] Refer to page xi of this report for well descriptions.
Checkmarks in the water quality (WQ) and water level (WL) columns indicate WQ sampling and WL measurements in FY07.
CYN = Lurance Canyon

The COOC also contains schedules that define dates for the delivery of plans and reports related to TAG. The NMED HWB is the regulatory agency responsible for enforcing the requirements identified in the COOC for the TAG CME. (NMED 2004)

In response to the requirements for completing a CME, SNL/NM submitted the following TAG documents to the NMED: (1) CME Work Plan Tijeras Arroyo Groundwater (SNL 2004c) and (2) CME Report for Tijeras Arroyo Groundwater (SNL 2005b).

The CME Wok Plan for Tijeras Arroyo Groundwater document was completed to comply with requirements set forth in the COOC, with the guidance of the RCRA Corrective Action Plan (EPA 1994). The work plan provided a description and justification by which remedial alternatives were considered, and the methods and criteria to be used in the evaluation were determined.

In support of the selected remedy, the CME Report included the following documents as attachments: (1) Contaminant Distribution in Groundwater, (2) Remedial Alternatives Data Gaps Review, (3) Evaluation of Contaminant Transport in Groundwater, (4) Investigation of Anaerobic Biodegradation, and (5) Evaluation of Intrinsic Aerobic Degradation Mechanism (SNL 2005b).

3.5.3 Sampling Protocols

Sampling in the TAG Investigation area is conducted on a quarterly/semi-annual/annual basis. An overview of the sampling protocols is discussed below.

Field Water Quality Measurements

Field water quality parameters are measured prior to sampling to ensure that formation water is being sampled. As discussed in Section 3.1.3 and listed in Table 3-2, the wells are pumped until parameters fall within the specified stability range.

Sample Collection and Analysis

Wells in the TAG investigation were sampled using conventional purging/sampling techniques (using a Bennett™ pump) and following procedures originally outlined in the TAG Investigation Work Plan (SNL

2003f). Due to well completion restrictions, wells PGS-2 and TA2-SW1-320 could not be purged and sampled by conventional methods. Low-flow sampling methods were used to purge and sample groundwater at these two locations. Groundwater samples were analyzed for VOCs, NPN (as nitrogen), anions, total metals, tritium, gross alpha, gross beta, and gamma spectroscopy. All analytical results are listed in Appendix E and discussed in Section 4-6.

QA and QC Procedures

Sample QA procedures for groundwater samples are managed by SMO as described in Section 3.1.3. QC field samples and QC laboratory samples that were collected and analyzed for the TAG investigation are described in Table 3-3.

3.6 Burn Site Goundwater

Principal COCs for Groundwater Contamination - Nitrate and petroleum hydrocarbons.
Monitoring Network - Six monitoring wells, one production well, and two alluvial piezometers.
Sampling Frequency - Quarterly: December 2006, March 2007, June 2007, and September 2007.

3.6.1 Site Background and Well Network

Site Background Information

The Burn Site Groundwater (formerly know as Canyons) Study Area centers around the active Burn Site Facility in Lurance Canyon. This facility is used to conduct thermal testing using JP-4 fuel. Large burns are performed in lined pools on various components, such as very large shipping containers. A release of petroleum hydrocarbons from the area is indicated by groundwater monitoring results, although no petroleum constituents presently exceed MCLs.

Current Monitoring Network

There are six groundwater monitoring wells completed in a bedrock aquifer, one non-potable production well completed in a bedrock aquifer, and two alluvial piezometers in the monitoring network for the Burn Site Groundwater Area, as shown on Figure 3-7. The wells in the Burn Site Groundwater monitoring network used to monitor water quality and/or water levels are listed in Table 3-8.

Monitoring History

In 1996, elevated nitrate readings of 27 milligrams per liter (mg/L) were first encountered in the Burn Site water supply well. CYN-MW1D was installed in 1997 to determine the extent of the potential contamination. This monitoring well has revealed nitrate levels up to 28 mg/L in FY04 and detectable levels of petroleum hydrocarbons, but less than MCLs, where applicable. Two shallow piezometers (12AUP-01 and CYN-MW2S) were installed in 1997 to determine if any ephemeral flow was occurring at the alluvium-bedrock interface. Both piezometers have been predominately dry since they were installed. A downgradient well, CYN-MW3, and an upgradient well, CYN-MW4, were installed in 1999 to better define the nature and extent of the contamination at the site. In 2005 and 2006, three additional wells (CYN-MW6, CYN-MW7, and CYN-MW8) were installed at the request of NMED (discussed below). CYN-MW3 has revealed a maximum of 22 mg/L nitrate (as nitrogen) in FY01 and low levels of petroleum hydrocarbons. CYN-MW4 has revealed low levels of petroleum hydrocarbons and has not had any nitrate (as nitrogen) levels above the MCL. CYN-MW6 has revealed a maximum of 32.6 mg/L nitrate (as nitrogen) in FY06. Perchlorate in excess of the NMED screening level of 4 mg/L was discovered in CYN-MW6 during FY06 sampling. Details of monitoring results for FY07 are presented in Chapter 4.

3.6.2 Regulations

Groundwater monitoring activities at the Burn Site Groundwater Study Area are conducted in accordance with the protocols in 40 CFR 264, “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.” Subpart F, “Releases From Solid Waste Management Units,” defines the groundwater monitoring activities. Groundwater monitoring was initiated at the request of NMED and is currently a requirement of the COOC.

The groundwater monitoring activities for the Burn Site Groundwater Study Area are not associated with a single SWMU, but are more regional in nature and have historically been conducted by the ER Project on a voluntary basis. Initially, groundwater monitoring at Burn Site was initiated to satisfy the requirements of the SNL/NM HSWA permit for characterization of SWMUs.

The COOC transferred regulatory authority for the investigation of SWMUs and areas with groundwater contamination from the HWSA module to the COOC. Burn Site Groundwater must comply with requirements set forth in the COOC for site characterization and the development of a CME for this groundwater AOC. The COOC also contains schedules that define dates for the delivery of plans and reports related to Burn Site Groundwater, TAG, and TA-V. NMED HWB is the regulatory agency responsible for enforcing the requirements identified in the COOC for the Burn Site Groundwater CME.

In response to the requirement for completing a CME, SNL/NM submitted the following two Burn Site Groundwater documents to NMED: (1) Current Conceptual Model of Groundwater Flow and Contaminant Transport at Sandia National Laboratories/New Mexico Burn Site (SNL 2004e), and (2) Corrective Measures Evaluation Work Plan for Sandia National Laboratories/New Mexico Burn Site (SNL 2004f). The Current Conceptual Model document provided site-specific characteristics by which remedial alternatives were evaluated. The CME Work Plan document provided a description and justification by which remedial alternatives were considered and the methods and criteria used in the evaluation were determined. The CME Work Plan was completed to comply with requirements set forth in the COOC, with the guidance of the RCRA Corrective Action Plan (EPA 1994).

On March 1, 2005, the DOE/NNSA and Sandia Corporation received a letter from NMED (NMED 2005), which rejected the CME Work Plan and stipulated the following requirements:

•DOE/NNSA and Sandia Corporation must prepare and submit an Interim Measures Work Plan (IMWP) within 90 days from the receipt of the letter (by May 30, 2005).

•NMED requires additional characterization of the nitrate-contaminated groundwater near the Burn Site; specifically, the downgradient extent of groundwater with nitrate concentrations >10 mg/L shall be determined.

•NMED does not accept the CME Work Plan for SNL/NM Burn Site (SNL 2004f) because they are not satisfied with the existing characterization of nitrate-contaminated groundwater near the Burn Site.

•NMED also required the installation of one additional monitoring well "adjacent to SWMU-94F in order to establish groundwater conditions in this petroleum contamination source area."

DOE/NNSA and Sandia Corporation submitted an IMWP to NMED in May 2005 that proposed the installation of additional groundwater monitoring wells to characterize the extent of nitrate contamination in the aquifer downgradient of CYN-MW1D and fuel-related compounds downgradient of SWMU 94F (SNL2005c). Data derived from NMED required groundwater monitoring wells be used to support a revised conceptual model and revised CME Work Plan. The selected interim measures described in the IMWP included additional well installation, groundwater monitoring, and institutional controls. These interim measures were proposed to serve three purposes: 1) provide data to support the CME, 2) monitor the migration of the nitrate plume in order to provide an early warning system to trigger an action if a danger to downgradient ecological receptors (Coyote Springs) becomes apparent, and 3) protect human health and the environment by limiting exposure to contaminated groundwater by restricting access to the monitoring wells by means of locks and posting warning signs near well heads.

In support of the selected interim measures, the IMWP included the following reports as attachments: (1)

Remedial Alternatives Data Gaps Review, (2) Nitrate Source Evaluation, and (3) Evaluation of Contaminant Transport. The Data Gaps Review document included detailed definitions of remedial alternatives and a preliminary evaluation of remedial alternatives with the purpose of identifying data gaps. One of the data gaps identified included determining background nitrate concentrations and evaluating the potential for a residual source of nitrate in the vadose zone. The investigation initiated to fill this data gap and the analytical results were presented in the Nitrate Source Evaluation report. The Evaluation of Contaminant Transport report consisted of a simplified cross-sectional modeling approach to simulate transport and dilution of nitrate between the current location of nitrate in Burn Site groundwater and potential human and ecological receptors (SNL 2005c).

3.6.3 Sampling Protocols

Sampling is conducted quarterly. An overview of the sampling protocol is discussed below.

Field Water Quality Analysis

Field water quality parameters are measured prior to sampling to determine the effectiveness of well purging. As discussed in Section 3.1.3 and listed in Table 3-2, the wells are pumped until the parameters fall within a specified stability range.

Sample Collection and Analysis

For the FY07 quarterly sampling events, all six monitoring wells in the Burn Site Groundwater Area were sampled by conventional purging/sampling techniques using a Bennett™ pump. The production well has a dedicated submersible pump, but this well was not sampled in FY07. The alluvial piezometers have continued to be predominately dry, and no groundwater samples have been collected from these wells. Samples are analyzed for NPN (as nitrogen), VOCs, semi-volatile organic compounds (SVOCs), diesel-range organics, gasoline-range organics, perchlorate, metals, radionuclides, anions, and total dissolved solids. All results are listed in Appendix F and discussed in Section 4.7.

QA and QC Procedures

Sample QA procedures for groundwater samples are managed through SNL/NM SMO, as described in Section 3.1.3. QC field samples and QC laboratory samples that were conducted for the Burn Site Groundwater are described in Table 3-3.

This chapter details the analytical results for groundwater monitoring activities conducted by the Groundwater Protection Program (GWPP) and the Environmental Restoration (ER) Project in Fiscal Year 2007(FY07). A table within each section lists the specific wells that were sampled in each sampling period and the type of analyses that were conducted (e.g., metals, organics, and radionuclides). Any analytical results exceeding parameter-specific maximum contaminant levels (MCL) established by the U. S. Environmnetal Protection Agency (EPA), maximum allowable concentrations (MAC) established by the New Mexico Water Quiality Control Commission (NMWQCC), and/or U. S. Department of Energy (DOE) drinking water guidelines are presented in tables within each section, and trend graphs in Section 4-8. DOE drinking water guidelines are calculated as four percent of the published derived concentration guide (DCG) for ingested water (DOE 1993). All analytical results are presented in Appendices A through G.

Chapter Four
Groundwater Water Quality Monitoring Results

4.1 Regulatory Criteria

Groundwater sample analytical results are compared to one or more federal, state, or DOE standards as shown in Table 4-1.

4.2 GWPP Results

Annual groundwater sampling was conducted by the Groundwater Surveillance Task under the GWPP during the period of January 29 to February 16, 2007. In

Installation of the Pneumatic Packer into a monitoring well

GWPP Surveillance Network		
Coyote Springs	Eubank 1	Greystone-MW2
MRN-2	NWTA3-MW3D	PL-2
SFR-2S	SFR-4T	SWTA3-MW2
SWTA3-MW3	SWTA3-MW4	TRE-1

NOTE: Refer to page xi of this report for well descriptions.

TABLE 4-1. Regulations and Requirements Pertinent to Groundwater Contaminant Levels

Regulation/Requirements	Standards and Guides	Regulating Agency
National Primary Drinking Water Regulations (this is an enforceable health standard) (40 CFR 141)	Maximum Contaminant Level (MCL)	U.S. Environmental Protection Agency (EPA)
New Mexico Water Quality Control Commission (NMWQCC) [1] Standards for Groundwater (20 NMAC 6.2)	Maximum Allowable Concentration (MAC) for Human Health Standards	NMWQCC

NOTE: [1] MACs for Human Health Standards are identified in the analytical results tables in the appendices.

addition, perchlorate sampling was performed during December 2006 per requirements of the New Mexico Environment Department (NMED) Order. Well locations are shown in Figure 3-1.

Analytes Sampled

Analytical results are presented in Appendix A, Tables GWPP-A1 through GWPP-A8. Field water quality parameters measured at the time of sample collection and field alkalinity titrations are provided in Table GWPP-A9. All GWPP groundwater samples were sent to an off-site laboratory and analyzed using EPA approved analytical methods.

- VOCs – EPA SW-846 Method 8260 B Target Compound List plus 1, 2, 4-trichlorobenzene, 1, 2-dichlorobenzene and 1, 4-dichlorobenzene
- Total phenols
- Metals
- Inorganic chemicals (major anions including nitrate and cyanide)
- Gross alpha and beta activity
- Radioisotope activity by gamma spectroscopy
- Alkalinity
- TOX
- Radium-226 and -228 by radiochemistry & alpha spectroscopy

The samples collected by the Groundwater Surveillance Task for metals, radionuclides, and inorganic chemicals were passed through a 0.45 µm filter and analyzed for the dissolved analyte fraction to conform to NMWQCC standards for groundwater (20 [New Nexico Administrative Code NMAC] 6.2). The samples collected for volatile organic compounds (VOC), mercury, and perchlorate determination were not filtered.

4.2.1 VOC Analyses

Results for detected VOCs are presented in Appendix A, Table GWPP-A1 and associated minimum detection limits (MDL) are listed on Table GWPP-A2. No volatile organic compound (VOC) were detected at concentrations above established MCLs or MACs from any groundwater sample. Acetone was detected in the groundwater sample from SFR-2S at a concentration of 1.99 micrograms per liter (µg/L). Other acetone and all chloroform concentrations were qualified during data validation as not detected in various samples due to associated laboratory method blank sample, trip blank sample, or equipment blank sample contamination.

4.2.2 Inorganic Compounds and Phenolics

Non-metallic inorganic constituents analyzed in groundwater samples included phenolics and TOX, total cyanide, alkalinity, and ions (including bromide, chloride, fluoride, sulfate, and Nitrate Plus Nitrite (NPN) [reported as nitrogen]). Perchlorate analysis was conducted on the samples collected from SWTA3-MW4 only. Analytical results are given in Appendix A, Tables GWPP-A3 and GWPP-A4, with MCLs and MACs included for comparison.

None of the analytes exceeded the MCL associated with drinking water standards at any of the wells sampled. Fluoride concentrations in two wells exceeded the MAC of 1.6 milligrams pre liter (mg/L) as established by the NMWQCC as the human health standard for groundwater. Fluoride was detected in SFR-4T, SWTA3-MW4, and SWTA3-MW4 duplicate sample at concentrations of 2.66 mg/L, 1.66 mg/L, and 1.64 mg/L, respectively (Figures 4-1 through 4-2). Historically, monitoring wells located east of the Tijeras fault zone have fluoride concentrations near or slightly above the MAC. None of the groundwater samples exceeded the NMED Drinking MCL of 4 mg/L. Perchlorate was not detected greater than MDL in the well sampled per the Compliance Order on Consent (COOC).

4.2.3 Metals

Dissolved metals and total mercury results are listed in Appendix A, Tables GWPP-A5 and GWPP-A6. Results are consistent with results reported for the same locations in previous years. Starting in March 1996, groundwater samples for inorganics were filtered and analyzed for dissolved metals as required by NMWQCC standards for groundwater. Prior to 1996, metals analyses were performed on unfiltered groundwater, giving a total metals content. Dissolved metals analysis results generally report concentrations comparable to or lower than concentrations reported for total metals analysis, since the total metals analysis may include natural constituents present such as undissolved, suspended particles. Dissolved metals usually occur as natural trace concentrations and are significantly below regulatory limits.

No metal parameters were detected above established regulatory limits in any groundwater sample, except beryllium. Beryllium was detected above the MCL of 0.004 mg/L in Coyote Springs at a concentration of 0.00639 mg/L. Elevated beryllium has been consistently detected in the water from Coyote Springs (Figure 4-3) and is deemed to be of natural origin as a consequence of groundwater in contact with the bedrock in this highly faulted location. Total mercury was not detected above laboratory MDL for any groundwater sample.

4.2.4 Radionuclide Activities

Gamma Spectroscopy

Analytical results for radionuclides using gamma spectroscopy are presented in Appendix A, Table GWPP-A7. The analyses were limited to americium-241, cesium-137, cobalt-60, and potassium-40. All isotope activities were less than associated minimum detectable activity (MDA), except for potassium-40. Potassium-40 was reported above the MDA in samples from SFR-2S, SWTA3-MW4, and TRE-1, but all activities were qualified as usable during data validation due to low abundance in gamma spectroscopy analysis. No specific MCLs or MACs are established for these isotopes; however, EPA drinking water standards limit the effective dose for drinking water to 4 mrem/year. The calculated maximum activity level using this standard is 1.2 picocuries per liter (pCi/L) for americium-241, 120 pCi/L for cesium-137, 200 pCi/L for cobalt-60, and 280 pCi/L for potassium-40. None of the activity levels from the groundwater samples exceed these values within the uncertainty level reported.

Radioisotopic Analysis

Radiometric analyses were conducted for gross alpha, gross beta, radium-226, and radium-228. Results are reported as activity levels in Appendix A, Table GWPP-A8 and compared to EPA MCLs, where established. These radiological parameters were not detected above established MCL or MAC limits in any sample, except for gross alpha.

Uncorrected gross alpha activities for samples from SFR-2S and TRE-1 exceeded the MCL of 15 pCi/L. In this region, groundwater contacts bedrock, which contains materials that are high in naturally occurring uranium. Values of corrected Gross Alpha (by subtracting the uranium activities) are below the 15 pCi/L MCL value as shown in Table 4-2. Gross alpha results for SFR-2S and TRE-1 are consistent with historical activities.

TABLE 4-2. Gross Alpha

Gross Alpha			
Well	Gross Alpha pCi/L	Total Uraniun Activity pCi/L*	Corrected Gross Alpha pCi/L
SFR-2S	25.2	14.9	10.33
TRE-1	24.5	15.7	8.8
TRE-1 (Dup)	21.4	15.7	5.7

*Total uranium activity is obtained by multiplying uranium concentration in μg/L by 0.9 pCi/μg (40 CFR Parts 9, 141, 142 National Primary Drinking Water Regulations, Radionuclides; Final Rule)

4.2.5 Conclusions

Groundwater samples were analyzed for VOCs, general inorganic chemicals, and selected radioisotopes. Analytical results are comparable with historical data for all detected values. Fluoride was detected slightly above the MAC of 1.6 mg/L in monitoring wells SFR-4T and SWTA3-MW4. Beryllium was the only metal detected above established MCL. Elevated beryllium has been consistently detected in water from Coyote Springs, and is attributed to groundwater in contact with the bedrock in this highly faulted location.

TABLE 4-3. Parameters Analyzed at CWL Wells for Each Sampling Period

Parameter	Oct 06		April /May 07	
Appendix IX VOCs	CWL-BW3 CWL-MW2BL CWL-MW4 CWL-MW5U CWL-MW6U CWL-MW5U (dul)	CWL-BW4A CWL-MW2BU CWL-MW5L CWL-MW6L CWL-MW4 (dup)	CWL-BW3 CWL-MW2BL CWL-MW4 CWL-MW5U CWL-MW6U CWL-MW6U (dup)	CWL-BW4A CWL-MW2BU CWL-MW5L CWL-MW6L CWL-BW4A (dup)
Total Metals (Appendix IX plus iron)	CWL-BW3 CWL-MW2BL CWL-MW4 CWL-MW5U CWL-MW6U CWL-MW5U (dup)	CWL-BW4A CWL-MW2BU CWL-MW5L CWL-MW6L CWL-MW4 (dup)	CWL-BW3 CWL-MW2BL CWL-MW4 CWL-MW5U CWL-MW6U CWL-MW6U (dup)	CWL-BW4A CWL-MW2BU CWL-MW5L CWL-MW6L CWL-BW4A (dup)

NOTE: Refer to page xi of this report for well descriptions. U and L denote upper and lower completions for nested wells in the same borehole.

4.3 Chemical Waste Landfill (CWL) Results

Groundwater monitoring at CWL was performed during October 2006 and April/May 2007. Groundwater samples were collected from nine monitoring wells. Table 4-3 lists the parameters and wells sampled.

Analytes Sampled

Analytical results are presented in Appendix B, Tables CWL-B1 through CWL-B4. In addition, the Quarterly Closure Progress Reports (SNL 2006b) for CWL provide full details of each sampling event. All analytical results were compared with MCLs. During FY07, groundwater samples were submitted for Appendix IX VOCs and Appendix IX metals plus iron.

4.3.1 Appendix IX VOC Analyses

Detected VOC results are presented in Appendix B, Table CWL-B1. Associated MDLs for these compounds are provided in Table CWL B-2. No VOCs were detected above established MCLs during FY07.

4.3.2 Total Metals

No metals parameters were detected above established MCLs. Detected metals concentrations were comparable to historical values. Results for metals parameters are presented in Appendix B, Table CWL-B3.

4.3.3 Water Quality Parameters

Appendix B, Table CWL-B4 summarizes field water quality measurements prior to sampling and includes temperature, specific conductivity (SC), oxidation-reduction, potential of hydrogen (pH), turbidity, and dissolved oxygen.

4.3.4 Conclusions

All detected analytes from FY07 groundwater samples were at concentrations comparable to historical values.

4.4 Mixed Waste Landfill (MWL) Results

Analytical results for MWL groundwater samples are presented in Appendix C, Tables MWL-C1 through MWL-C6. MWL groundwater samples were analyzed for target analyte list (TAL) metals, total uranium, VOCs, nitrate plus nitrite, bromide, fluoride, chloride, sulfate, manganese II, total organic carbon, carbon dioxide, total dissolved solids, ferrous iron, and biochemical oxygen demand. Alkalinity titrations were performed in the field on groundwater collected at each well. Radiochemical analysis performed included gross alpha/beta radioactivity, tritium, and gamma-emitting radionuclides of concern (i.e., americium-241, cesium-137, cobablt-60, and potassium-40). Sampling results were compared with MCLs, where established. Table 4-4 lists the parameters and wells sampled. Water quality parameters measured at the time of sample collection are provided in Appendix C, Table MWL-C7.

4.4.1 VOC Analyses

Appendix C, Table MWL-C1 presents detected VOCs in MWL groundwater for FY07. Table MWL-C2 presents the MDLs for VOCs analyzed. Groundwater samples from the MWL monitoring wells revealed detections of acetone and toluene greater than MDLs but less than or equal to the practical quantitation limits (PQL), and some results are reported with data validation qualifiers. Acetone was detected in all samples above the MDL but these results were associated with laboratory blank contamination and qualified as not detected at the PQL. Toluene was detected above the MDL in samples collected from MWL-MW3 and MWL-MW4 but the results were below the PQL and were not qualified during data validation

4.4.2 Nitrate plus Nitrite (NPN)

Nitrate plus nitrite NPN (as nitrogen) concentrations ranged from 1.57 mg/L at MWL-MW6 to 5.21 mg/L at MWL-MW1. No sample results exceeded the established MCL of 10 mg/L. Analytical results for NPN are presented in Appendix C, Table MWL-C3.

TABLE 4-4. Parameters Sampled at the MWL

Parameter	April and June 2007 (Annual Sampling)
VOCs	MWL-MW1 MWL-MW2 MWL-MW2 (dup) MWL-MW3 MWL-MW4 MWL-MW5 MWL-MW6
NPN (as Nitrogen)	
TAL Metals and Total Uranium	
Major Anions	
Gross Alpha/Beta	
Tritium	
Gamma-Emitting Radionuclides (americium-241,cesium-137, cobablt-60, and potassium-40)	

NOTE: Refer to page xi of this report for well descriptions.
dup= duplicate
MWL= Mixed Waste Landfill
NPN = Nitrate plus nitrite (as nitrogen)
TAL= Target analyte list
VOC= Volatile Organic Compound

4.4.3 Major Anions and Alkalinity

Appendix C, Table MWL-C3 summarizes major anions and alkalinity results for MWL groundwater samples collected during FY07. Fluoride, the only ion included in the analysis with a regulatory limit, was detected below the MCL of 4.0 mg/L at concentrations ranging from 0.733 mg/L at MWL-MW5 to 1.04 mg/L at MWL-MW3.

4.4.4 Metals

Appendix C, Table MWL-C4. summarizes the metals parameters from all unfiltered groundwater samples. Samples were analyzed for total TAL metals. The chromium concentration in the sample from MWL-MW1 (0.426 mg/L) exceeded the EPA MCL of 0.1 mg/L.

Total uranium results from the unfiltered samples were consistent with data from previous sampling events and are well within the range of total uranium concentrations established by the U.S. Geological Survey (USGS) for the Middle Rio Grande Basin (USGS 2002).

The uranium isotopes uranium-235 and uranium-238 were determined as mass concentrations during metals analysis on the inductively-coupled plasma mass spectrometer using EPA Method 6020. The isotopic mass concentrations are reported in mg/L and are included in Table MWL-C4 with the other unfiltered samples analyzed by this method. No corresponding uranium-235 and -238 MCLs are established for comparison. Uranium-235 values ranged from 0.000034 mg/L in MWL-MW3 to 0.000069 mg/L in MWL-MW5. Uranium-238 values ranged from 0.00489 mg/L MWL-MW3 to 0.00954 mg/L in MWL-MW5. These values are consistent with past results.

Appendix C, Table MWL-C5 summarizes the results for TAL metals analysis for the filtered samples collected during the FY07 monitoring event. No detections of any metals exceeded the respective MCL.

4.4.5 Radionuclide Activities

Groundwater samples from the MWL monitoring wells were analyzed for gross alpha/beta activity, tritium, and gamma-emitting radionuclides. The results are presented in Appendix C, Table MWL-C6 and are compared with the established EPA MCLs. No radiological parameters were detected above established MCLs.

Gross alpha/beta activity levels were detected above laboratory reporting limits in all environmental samples. Gross alpha activity levels range from 5.56 ± 01.36 picocuries per liter (pCi/L) in the MWL-MW3 sample to 12.0 ± 2.55 pCi/L in the MWL-MW6 sample. Gross beta activity levels range from 3.92 ± 1.16 pCi/L in the MWL-MW5 sample to 8.94 ± 1.21 pCi/L in the MWL-MW2 sample.

Tritium, analyzed by EPA Method 906.0, was not detected above the MDA in any of the samples.

The gamma-emitting radionuclides of concern (i.e., americium-241, cesium-137, cobablt-60, potassium-40), analyzed by EPA Method 901.1, were not detected above the MDA in any of the samples.

4.4.6 Conclusions

Annual groundwater sampling was conducted at the MWL during FY07. Chromium in the unfiltered sample from MWL-MW1 at a concentration of 0.426 mg/L exceeded the EPA MCL of 0.1 mg/L. No other inorganic or organic parameters were detected above the corresponding MCLs in any of the groundwater samples.

Groundwater samples collected for the FY07 sampling event from the MWL monitoring wells showed no detected organic compounds greater than the PQL after data validation and assignment of qualifiers. Toluene was detected at concentrations less than the PQL but greater than the MDL in two samples.

The only metals analytical result greater than the established MCL occurred for chromium in the unfiltered groundwater sample from MWL-MW1 for the FY07 monitoring event suggesting the chromium is associated with particulate in the groundwater sample. Figure 4-4 shows chromium concentrations. The chromium concentration is attributed to corrosion of the stainless-steel screen in the monitoring well (Oakley and

Korte 1996, SNL2002). Total uranium results from the FY07 samples were consistent with data from previous sampling events, and are well within the range of total uranium concentrations established by the USGS for the Middle Rio Grande Basin (USGS 2002).

No general chemistry parameters exceeded the established MCLs in any of the groundwater samples. The analytical results for radioactivity and radionuclides showed no levels greater than the corresponding MCLs. The results of the MWL FY07 monitoring event show that constituent concentrations are within the historical ranges for the site

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4.5 TA-V Results

Quarterly groundwater sampling at Technical Area (TA) V was performed in November/December 2006, February/March 2007, June 2007, and August/September 2007. Monitoring well locations are shown in Figure 3-5.

Analytes Sampled

Analytical results from all TA-V wells are presented in Appendix D, Tables TAV-D1 through TAV-D6. Table 4-5 lists the wells and the parameters that were sampled for each quarter in FY07.

4.5.1 VOC Analyses

VOC results are listed in Appendix D, Table TAV-D1, and the VOC MDLs are listed in Table TAV-D2. VOCs were detected in samples from TA-V wells at concentrations exceeding MCLs in monitoring wells LWDS-MW1 and TAV-MW6. (Figures 4-5 and 4-6) Table 4-9 lists wells that exceeded the trichloroethene (TCE) MCL of 5 µg/L in FY07. Figure 4-5 shows that the TCE concentrations in LWDS-MW1 are slightly decreasing over time and Figure 4-6 shows that the TCE concentrations in TAV-MW6 are increasing over time.

4.5.2 Nitrate Plus Nitrite (NPN) Analyses

NPN (reported as nitrogen) results are shown in Appendix D, Table TAV-D3. Table 4-9 shows that nitrate concentrations exceeded the MCL of 10 mg/L in LWDS-MW1 for all four quarters of FY07. Figure 4-7 shows that the nitrate in LWDS-MW1 has consistently exceeded the MCL over the past six years, and the nitrate concentrations appear to be slightly decreasing over time.

4.5.3 Metals

In FY07, total metals analyses were conducted for all wells during the fourth quarter as shown in Table 4-5. No metals were detected above established MCLs. Results for all metals analyses are shown in Appendix D, Table TAV-D4.

4.5.4 Radionuclide Activities

Gamma spectroscopy, gross alpha/beta, and tritium analyses were conducted on all wells in the fourth quarter of FY07. All radionuclide activities were below MCLs, where established. Results for gross alpha/beta and tritium are presented in Appendix D, Table TAV-D5.

4.5.5 Field Water Quality Measurements

Field water quality parameters are measured during pre-sample purging of each well and include temperature, specific conductivity, oxidation-reduction potential, pH, turbidity, and dissolved oxygen. The parameter measurements made immediately before collecting the sample are presented in Appendix D, Table TAV-D6.

4.5.6 Conclusions

The TA-V groundwater investigation continues to monitor for the site specific Contaminants of Concern (COC) of TCE and nitrate. Analytical results from samples collected during FY07 are similar to results from previous years:

- TCE was detected in samples from two TA-V wells at concentrations exceeding the MCL of 5 ug/L. TCE

TABLE 4-5. Parameters Sampled at TA-V Wells for Each Sampling Quarter

Parameter	Nov/Dec 2006	Parameter	Feb/Mar/2006
NPN (reported as Nitrogen) VOCs	AVN-1 LWDS-MW1 LWDS-MW2 TAV-MW1 TAV-MW1 (dup) TAV-MW2 TAV-MW3 TAV-MW4 TAV-MW5 TAV-MW6 TAV-MW6 (dup) TAV-MW7 TAV-MW8 TAV-MW9	NPN (reported as Nitrogen) VOCs	AVN-1 LWDS-MW1 LWDS-MW1 (dup) LWDS-MW2 TAV-MW1 TAV-MW2 TAV-MW3 TAV-MW4 TAV-MW5 TAV-MW6 TAV-MW7 TAV-MW8 TAV-MW8 (dup) TAV-MW9
Parameter	**June 2007**	**Parameter**	**Aug/Sep 2007**
NPN (reported as Nitrogen) VOCs	AVN-1 AVN-1 (dup) LWDS-MW1 LWDS-MW2 LWDS-MW2 (dup) TAV-MW1 TAV-MW2 TAV-MW3 TAV-MW4 TAV-MW5 TAV-MW6 TAV-MW7 TAV-MW8 TAV-MW9	Gamma Spec Gross Alpha/Beta Metals NPN (reported as Nitrogen) Total Uranium Tritium VOCs	AVN-1 LWDS-MW1 LWDS-MW2 TAV-MW1 TAV-MW2 TAV-MW2 (dup) TAV-MW3 TAV-MW4 TAV-MW5 TAV-MW6 TAV-MW7 TAV-MW8 TAV-MW8 (dup) TAV-MW8 (dup) TAV-MW9

NOTE: Refer to page xi of this report for well descriptions.
VOCs = Voatile organic compounds
NPN = Nitrate plus Nitrite
dup = duplicate

concentrations in these wells vary from slightly decreasing over time to increasing over time; and

- Nitrate concentrations exceeded the MCL of 10 mg/L in one TA-V well, and concentrations appear to be slightly decreasing.

DOE/NNSA and Sandia Corporation currently are implementing a Corrective Measures Evaluation (CME) process to address these COCs in TA-V groundwater. A draft CME Report has been submitted to NMED and is awaiting regulatory review and approval.

4.6 Tijeras Arroyo Groundwater (TAG) Investigation Results

TAG wells are either screened in the regional aquifer or within a perched GWS several hundred feet above the regional aquifer. COCs include TCE and nitrate, which have been detected at concentrations exceeding the EPA established MCLs for drinking water. Samples were collected from 21 wells as shown in Figure 3-6, including ten perched GWS wells and eleven regional aquifer wells listed in Table 3-6. Based on the requirements of the TAG Investigation Work Plan, five TAG wells (TA1-W-07, TA2-NW1-325, TA2-W-24, TA2-W-25, and TJA-5) that were sampled prior to FY03 are no longer sampled.

Analytes Sampled

Analytical results are presented in Appendix E, Tables TAG-E1 through TAG-E6. Detailed results of the TAG investigation, including the most recent hydrogeologic conceptual model, are presented in the Tijeras Arroyo Groundwater Continuing Investigation Report (SNL 2002a). Field water quality measurements were taken at each well before samples were collected. Table 4-6 lists the analytical parameters for each well sampled.

4.6.1 VOC Analyses

Results for detected VOCs are presented in Appendix E, Table TAG-E1, and the VOC MDLs are listed in Table TAG-E2. TCE was detected in groundwater samples from two wells in the perched GWS. Table 4-9 lists wells that exceeded the TCE MCL of 5 µg/L in FY07. Monitoring well WYO-4 (perched GWS) consistently had TCE concentrations above the MCL (5.0 µg/L) with a maximum TCE concentration of 8.56 µg/L. Figure 4-8 shows that TCE concentrations in well WYO-4 have been consistent to slightly increasing over time. In addition, monitoring well TA2-W-19 (perched GWS) consistently had TCE concentrations above the MCL, with a maximum concentration of 5.63 µg/L. Figure 4-9 shows that the TCE concentrations in well TA2-W-19 have been generally increasing over the life of the well, but are relatively consistent over the last three years.

4.6.2 Inorganic Chemical Analyses

Inorganic chemical analyses of quarterly groundwater samples consisted of NPN (reported as nitrogen) and total metals. The results are presented in Appendix E, Table TAG-E3 and TAG-E4.

During FY07 sampling, nitrate exceeded the MCL in five wells. This is shown in Table 4-9. TJA-7, TA2-SW1-320, and TJA-4 had nitrate concentrations two to three times the MCL; whereas, TA2-W-19 and TJA-2 had nitrate concentrations that only slightly exceeded the MCL. Figures 4-10 through 4-14 show that nitrate concentrations in these five wells are generally slightly increasing to slightly decreasing over time. All other inorganic analytes were below MCLs, where established.

4.6.3 Radionuclide Activities

Gamma spectroscopy, gross alpha/beta, and tritium analyses were conducted on 21 wells in FY07. All radionuclide activities were below MCLs, where established. Results for tritium, gross alpha/beta, and gamma spectroscopy are presented in Appendix E, Table E-5.

4.6.4 Field Water Quality Measurements

Field water quality parameters are measured during pre-sample purging of each well and include temperature, specific conductivity, oxidation-reduction potential, pH, turbidity, and dissolved oxygen. The parameter measurements made immediately before collecting the sample are presented in Appendix E, Table TAG-E6.

4.6.5 Conclusions

The TAG groundwater investigation continues to monitor for the site specific COCs of TCE and nitrate. Analytical results from samples collected during FY07 are similar to results from previous years.

•TCE was detected in samples from two TAG wells at concentrations exceeding the MCL of 5 ug/L. TCE concentrations in these wells vary from stable over time to slightly increasing over time; and

•Nitrate concentrations exceeded the MCL of 10 mg/L in five TAG wells, and concentrations range from slightly decreasing to slightly increasing over time.

DOE/NNSA and Sandia Corporation currently are implementing a CME process to address these COCs in TAG groundwater. A Draft CME Report has been submitted to NMED and is awaiting regulatory review and approval.

4.7 Burn Site Groundwater Results

Quarterly sampling at Burn Site Groundwater monitoring wells in Lurance Canyon was conducted in December 2006, March 2007, June 2007, and September 2007.

Analytes Sampled

Analytical results from all Burn Site Groundwater wells are presented in Appendix F, Tables CYN-F1 through CYN-F9. Table 4-8 lists the wells and the parameters that were sampled for each quarter in FY07.

4.7.1 VOCs and Other Organic Compounds

A summary of detected VOCs and semi-volatile organic compounds (SVOC) results are presented in Appendix F, Table CYN-F1. The MDLs for VOCs and SVOCs are listed in Table CYN-F2. Results are listed for the diesel-range organics and gasoline-range organics in Appendix F, Table CYN-F4.

No VOCs or SVOCs were detected above MCLs. Other organics found in groundwater samples included low levels of diesel-range organics in all wells, with up to 66.0 µg/L in a sample from CYN-MW6. The majority of the detections of diesel-range organics were qualified as non-detect during the data validation process. All analyses of samples from monitor wells for gasoline-range organics were non-detect. MCLs have not been established for diesel-range organics or gasoline-range organics.

4.7.2 Inorganic and Other Chemical Analyses

Quarterly analytical results for NPN (reported as nitrogen), perchlorate, and major ions are presented in Appendix F, Tables CYN-F3, CYN-F6, and CYN-F5, respectively.

NPN results exceeded the MCL of 10 mg/L in all samples from CYN-MW6 in all sampling events as shown in Table 4-9. Figure 4-15 shows that nitrate concentrations in this well have consistently exceeded the MCL. NPN results exceeded the MCL of 10 mg/L from CYN-MW3 in two sampling events shown in Table 4-9. Figure 4-16 shows that the nitrate concentrations in this well are relatively stable. The samples from well CYN-MW6 consistently had perchlorate above the 0.004 mg/L detection limit. No MCL currently exists for perchlorate in groundwater. All other major ion results were below established MCLs.

4.7.3 Metals

Metal analysis results are presented in Appendix F, Table CYN-F7. There were no metal results that exceeded established MCLs.

4.7.4 Radionuclide Activities

Groundwater samples were analyzed for gross alpha, gross beta, tritium, and gamma spectroscopy. Results for gross alpha, gross beta, and tritium are presented in the table in Appendix F, CYN-F8. All radionuclide activities were below MCLs, except for gross alpha in wells CYN-MW4, CYN-MW7, and CYN-MW8 shown in Table 4-9. Corrected gross alpha values obtained by subtracting the uranium alpha contribution are shown in Table 4-7. After applying the correction for urnaium contribution CYN-MW4 and CYN-MW7 still exceed the MCL. Figure 4-17 and Figure 4-18 illustrate the gross alpha trends for these wells. Gamma spectroscopy analysis did not detect any isotopes above associated MDAs.

TABLE 4-7. Gross Alpha Burn Site Groundwater

Well Name	Measured Gross Alpha pCi/L	Total Uraniun Activity pCi/L*	Corrected Gross Alpha pCi/L
CYN-MW4	29.0	12.6	16.4
CYN-MW7	29.6	7.32	22.3
CYN-MW8	20.7	8.46	12.2

*Total uranium activity is obtained by multiplying uranium concentration in µg/L by 0.9 pCi/µg (40 CFR Parts 9, 141, 142 National Primary Drinking Water Regulations, Radionuclides; Final Rule)

4.7.5 Field Water Quality Measurements

Field water quality parameters are measured during pre-sample purging of each well and include temperature, SC, oxidation-reduction potential, pH, turbidity, and dissolved oxygen. The parameter measurements made immediately before collecting the sample are presented in Appendix F, Table CYN-F9.

4.7.6 Conclusions

The Burn Site Groundwater investigation continues to monitor for the site-specific COC of nitrate. Analytical results from samples collected during FY07 are considerably different from previous years. Nitrate concentrations exceeded the MCL of 10 mg/L in two Burn Site Groundwater Area wells, and concentrations appear to be stable to slightly decreasing over time. Perchlorate was detected above the NMED screening level of 4 µg/L in CYN-MW6 during FY07.

DOE/NNSA and Sandia Corporation currently are implementing an Interim Measures and CME process to address these COCs in Burn Site Groundwater. A Draft Interim Measures Work Plan has been submitted to NMED and is currently awaiting regulatory review and approval.

TABLE 4-6. Parameters Sampled at the TAG Wells

Parameter	Oct/Nov 2006	Parameter	Jan 2007	Parameter	May/June 2007	Parameter	July/Aug 2007
Nitrate plus Nitrite (reported as Nitrogen) VOCs	TA2-SW1-320 (QED) TA2-W-19 TA2-W-26 TJA-2 TJA-4 TJA-7 TJA-7 (dup) WYO-4	Nitrate plus Nitrite (reported as Nitrogen) VOCs	TA2-SW1-320 (QED) TA2-W-01 TA2-W-19 TA2-W-26 TA2-W-27 TJA-2 TJA-3 TJA-3 (dup) TJA-4 TJA-6 TJA-7 WYO-4 WYO-4 (dup)	Nitrate plus Nitrite (reported as Nitrogen) VOCs	TA2-SW1-320 (QED) TA2-W-01 TA2-W-19 TA2-W-26 TA2-W-27 TJA-2 TJA-3 TJA-4 TJA-4 (dup) TJA-6 TJA-7 WYO-4	Gamma spec Gross alpha/beta Metals Nitrate plus Nitrite (reported as Nitrogen) Tritium Total Uranium VOCs	PGS-2 (QED) TA1-W-01 TA1-W-02 TA1-W-03 TA1-W-04 TA1-W-05 TA1-W-06 TA1-W-08 TA2-NW1-595 TA2-SW1-320 (QED) TA2-W-01 TA2-W-19 TA2-W-19 (dup) TA2-W-26 TA2-W-27 TA2-W-27 (dup) TJA-2 TJA-3 TJA-4 TJA-6 TJA-7 WYO-3 WYO-3 (dup) WYO-4

NOTE: Refer to page xi of this report for well descriptions.
VOC = Volatile Organic Compound; TAG = Tijeras Arroyo Groundwater; dup = duplicate, QED = micro-purge, low-flow sampling method

TABLE 4-8. Parameters Sampled at Burn Site Groundwater Wells for Each Sampling Quarter

Parameter	Dec 2006	Parameter	Mar 2007
Nitrate plus Nitrite (reported as Nitrogen) Perchlorate	CYN-MW6 CYN-MW6 (dup) CYN-MW7 CYN-MW8	Nitrate plus Nitrite (reported as Nitrogen) TPH—DRO TPH—GRO	CYN-MW1D CYN-MW3 CYN-MW4 CYN-MW6 CYN-MW7 CYN-MW7 (dup) CYN-MW8
		VOCs SVOCs Anions Cations Perchlorate	CYN-MW6
TPH—DRO TPH—GRO	CYN-MW6 CYN-MW6 (dup)	TPH—DRO TPH—GRO	CYN-MW6 CYN-MW6 (dup)
Parameter	**June 2007**	**Parameter**	**Sep 2007**
Nitrate plus Nitrite (reported as Nitrogen) TPH—DRO TPH—GRO	CYN-MW6 CYN-MW7 CYN-MW8 CYN-MW8 (dup)	Nitrate plus Nitrite (reported as Nitrogen) TPH—DRO TPH—GRO VOCs Metals Gamma Spec Gross Alpha/Beta Tritium	CYN-MW1D CYN-MW1D (dup) CYN-MW3 CYN-MW3 (dup) CYN-MW4 CYN-MW6 CYN-MW7 CYN-MW8
VOCs SVOCs Anions Cations Perchlorate	CYN-MW6	SVOCs Anions Cations Perchlorate	CYN-MW6

NOTE: Refer to page xi of this report for well descriptions.
TPH-DRO = Total Petroleum Hydrocarbons-Diesel Range Organics
TPH-GRO = Total Petroleum Hydrocarbons-Gasoline Range Organics
VOC = Volatile Organic Compound
SVOC = Semi-volatile Organic Compound
NPN = Nitrate Plus Nitrite
dup = duplicate

TABLE 4-9. Summary of Exceedances at Sampling Wells in Fiscal Year 2007

Analyte	Wells	Exceedance	Date
BERYLLIUM MCL = 0.004 mg/L	Coyote Springs	0.00639 mg/L	January/February 2007
FLUORIDE MAC = 1.6 mg/L	SFR-4T	2.66 mg/L	January/February 2007
	SWTA3-MW4	1.66 mg/L	January/February 2007
	SWTA3-MW4 (dup)	1.64 mg/L	January/February 2007
CHROMIUM MCL = 0.1 mg/L	MWL-MW1	0.426 mg/L	April 2007
TRICHLOROETHENE (TCE) MCL = 5 µg/L	LWDS-MW1	17.0 µg/L	November/December 2006
	LWDS-MW1	16.6 µg/L	February/March 2007
	LWDS-MW1 (dup)	16.0 µg/L	February/March 2007
	LWDS-MW1	12.7 µg/L	June 2007
	LWDS-MW1	13.9 µg/L	August/September 2007
	TAV-MW6	7.38 µg/L	November/December 2006
	TAV-MW6 (dup)	6.68 µg/L	November/December 2006
	TAV-MW6	6.88 µg/L	February/March 2007
	TAV-MW6	7.39 µg/L	June 2007
	TAV-MW6	8.23 µg/L	August/September 2007
	TA2-W-19	5.63 µg/L	October/November 2006
	TA2-W-19	5.60 µg/L	January 2007
	TA2-W-19	5.15 µg/L	May/June 2007
	TA2-W-19	5.29 µg/L	July/August 2007
	TA2-W-19 (dup)	5.22 µg/L	July/August 2007
	WYO-4	6.45 µg/L	October/November 2005
	WYO-4	7.26 µg/L	January 2007
	WYO-4 (dup)	6.10 µg/L	January 2007
	WYO-4	8.56 µg/L	May/June2007
	WYO-4	6.55 µg/L	July/August 2007

TABLE 4-9. Summary of Exceedances at Sampling Wells in Fiscal Year 2007 (concluded)

Analyte	Wells	Exceedance	Date
NPN (AS NITROGEN) MCL = 10 mg/L	LWDS-MW1	13.8 mg/L	March 2007
	LWDS-MW1(dup)	12.7 mg/L	March 2007
	LWDS-MW1	11.4 mg/L	June 2007
	LWDS-MW1	13.1 mg/L	August 2007
	TA2-SW1-320	15.3 mg/L	October/November 2006
	TA2-SW1-320	27.8 mg/L	January2007
	TA2-SW1-320	17.9 mg/L	May/June 2007
	TA2-SW1-320	21.3 mg/L	July/August 2007
	TA2-W-19	10.1 mg/L	October/November 2006
	TA2-W-19	11.8 mg/L	January 2007
	TA2-W-19	11.9 mg/L	May/June 2007
	TJA-2	11.2 mg/L	October/November 2006
	TJA-2	12.6 mg/L	January 2007
	TJA-2	10.4 mg/L	May/June 2007
	TJA-7	22.4 mg/L	October/November 2006
	TJA-7 (dup)	2.9.9 mg/L	October/November 2006
	TJA-7	24.1mg/L	January 2007
	TJA-7	25.6 mg/L	May/June 2007
	TJA-7	22.6 mg/L	July/August 2007
	TJA-4	20.8 mg/L	October/November 2006
	TJA-4	34.3 mg/L	January2007
	TJA-4	38.4 mg/L	May/June 2007
	TJA-4 (dup)	29.9 mg/L	May/June 2007
	TJA-4	28.7 mg/L	July/August 2006
	CYN-MW3	14.5 mg/L	March 2007
	CYN-MW3	14.7 mg/L	September 2007
	CYN-MW3	12.2 mg/L	September 2007
	CYN-MW6	22.9 mg/L	December 2006
	CYN-MW6 (dup)	26.8 mg/L	December 2006
	CYN-MW6	32.1 mg/L	March 2007
	CYN-MW6 (split)	23.9 mg/L	March 2007
	CYN-MW6 (Method 300)	22.2 mg/L	March 2007
	CYN-MW6	23.6 mg/L	June 2007
	CYN-MW6	23.1 mg/L	September 2007

NOTES: dup = duplicate
mg/L = milligrams per liter
MCL = maximum contaminant level
NPN = Nitrate Plus Nitrite
µg/L = micrograms per liter
pCi/L = picocuries per liter
MAC = maximum allowable concentration

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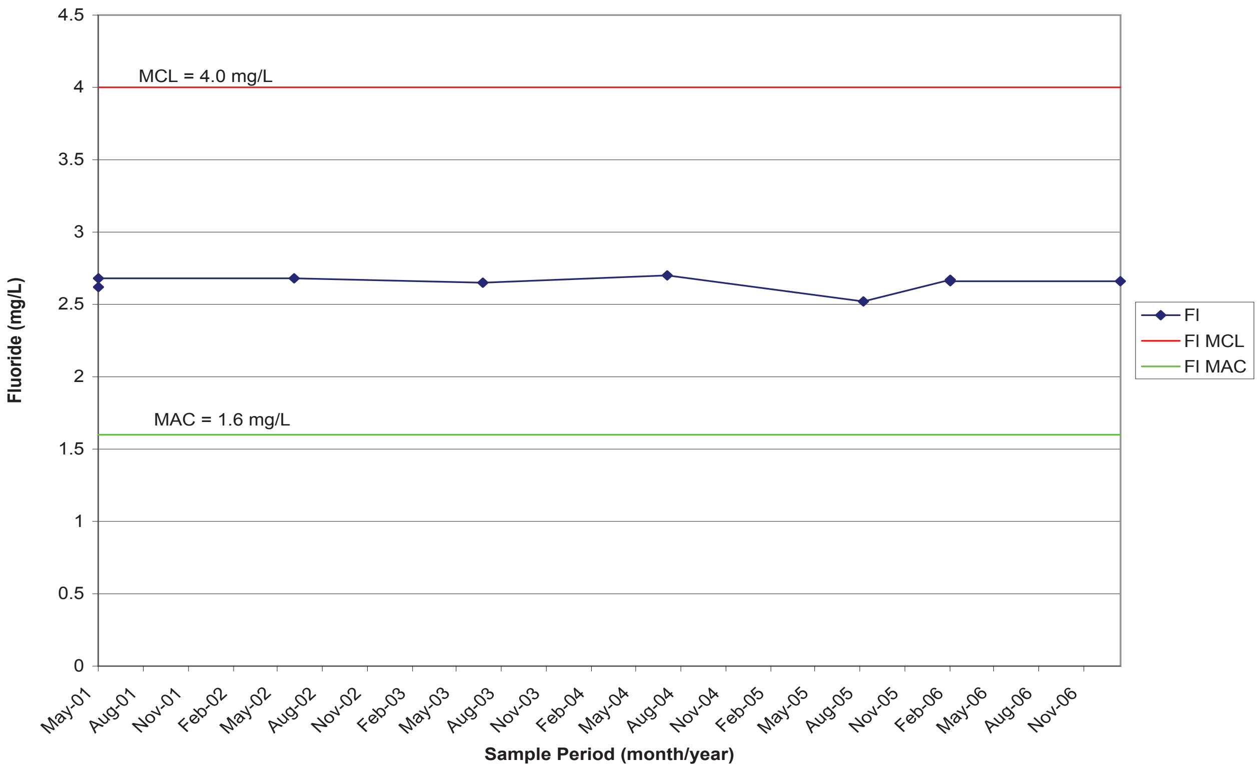

FIGURE 4-1. Fluoride Concentrations, SFR-4T

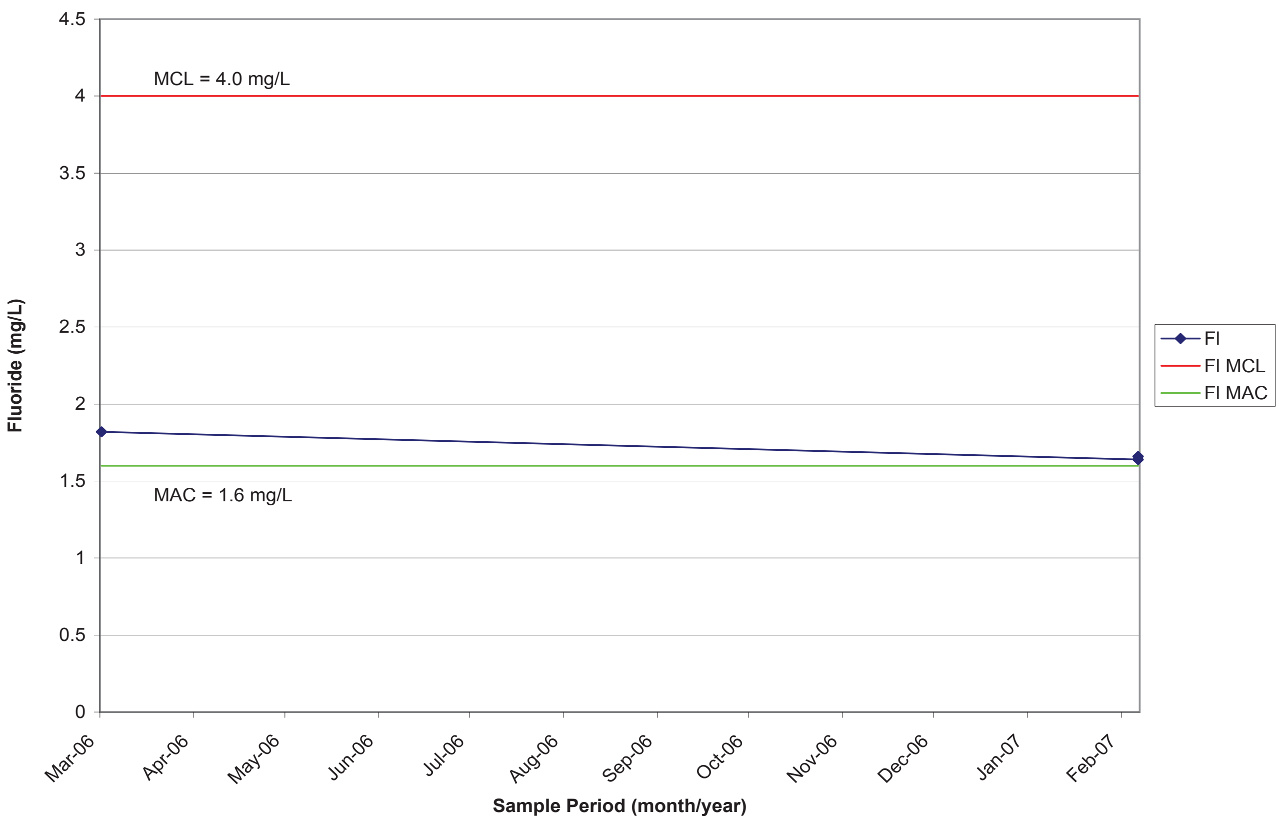

FIGURE 4-2 Fluoride Concentrations, SWTA3-MW4

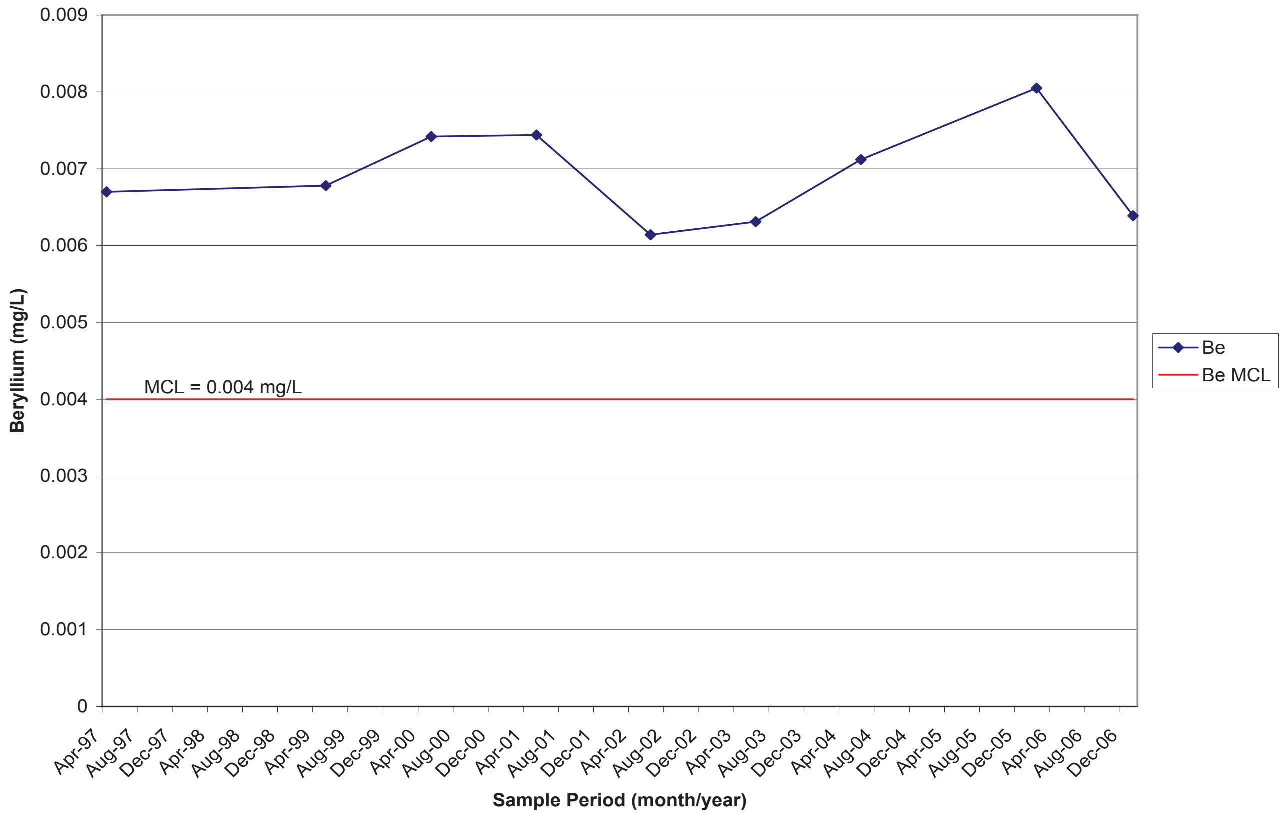

FIGURE 4-3 Beryllium Concentrations, Coyote Springs

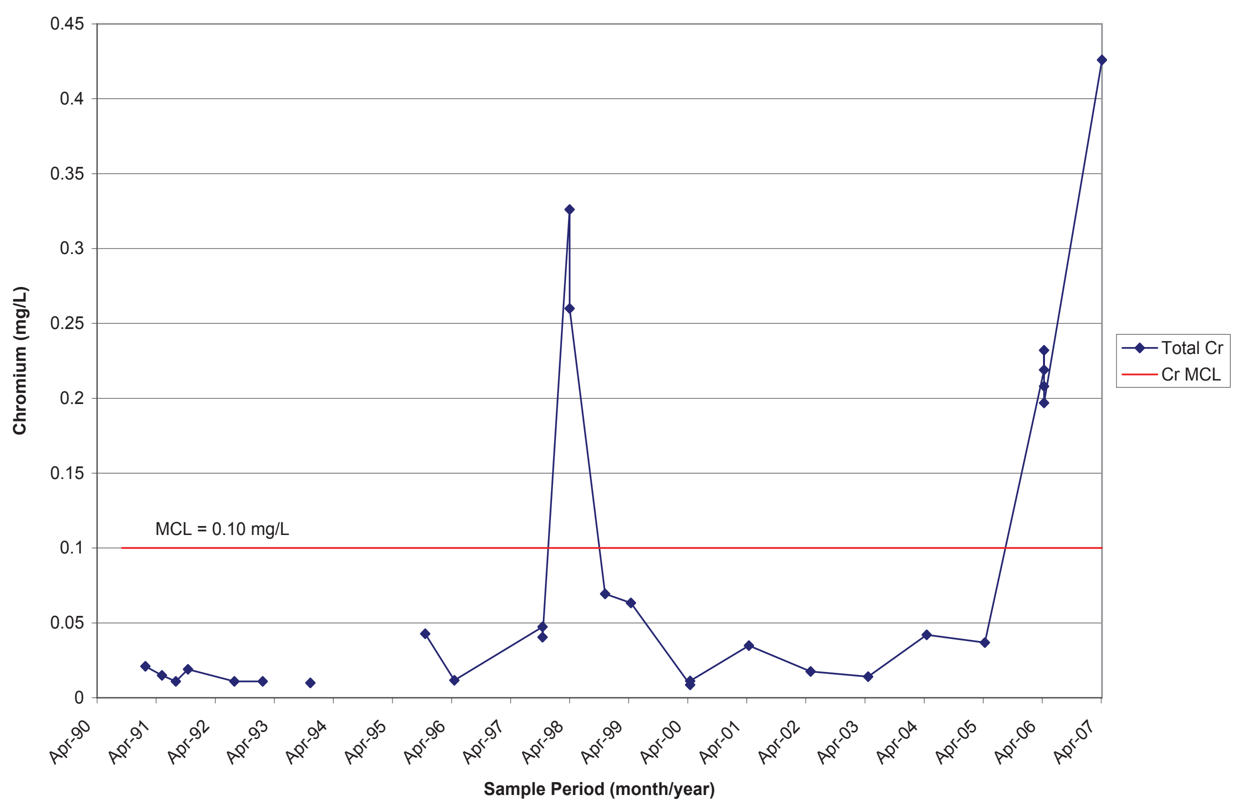

FIGURE 4-4. Total Chromium Concentrations, MWL-MW1

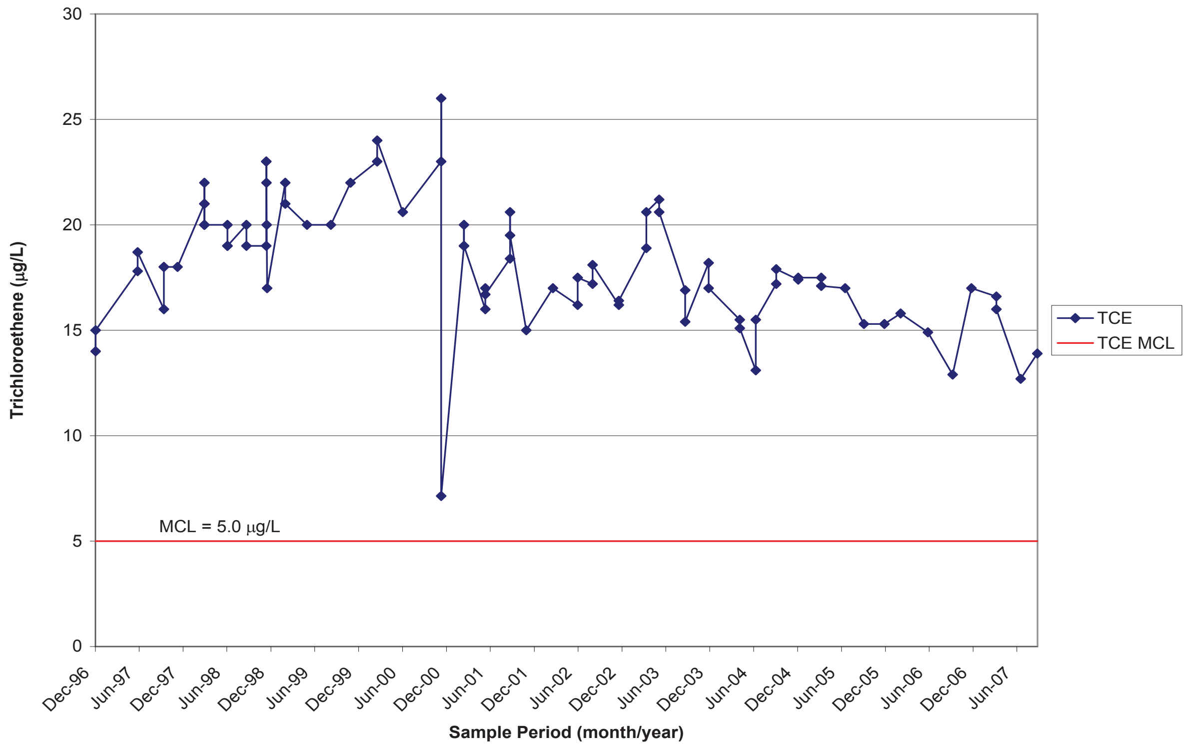

FIGURE 4-5. TCE Concentrations, LWDS-MW1

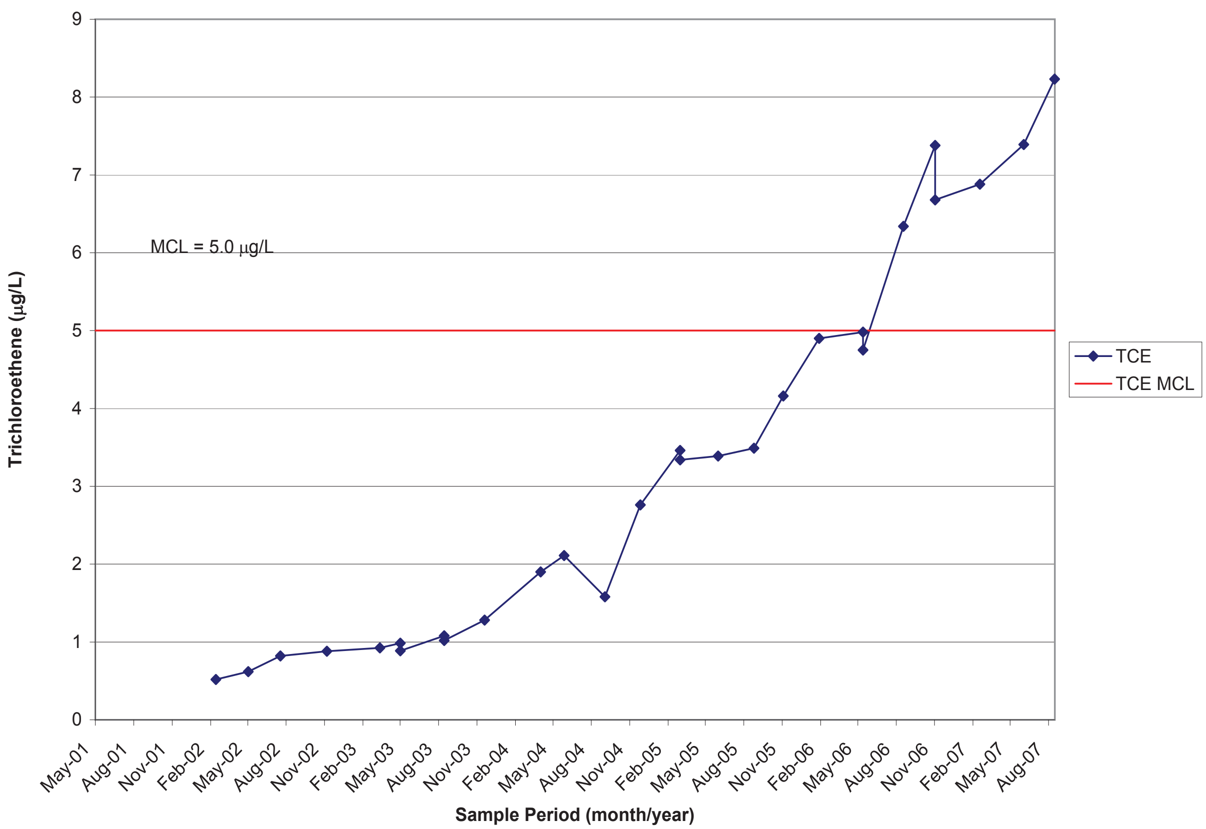

FIGURE 4-6. TCE Concentrations, TAV-MW6

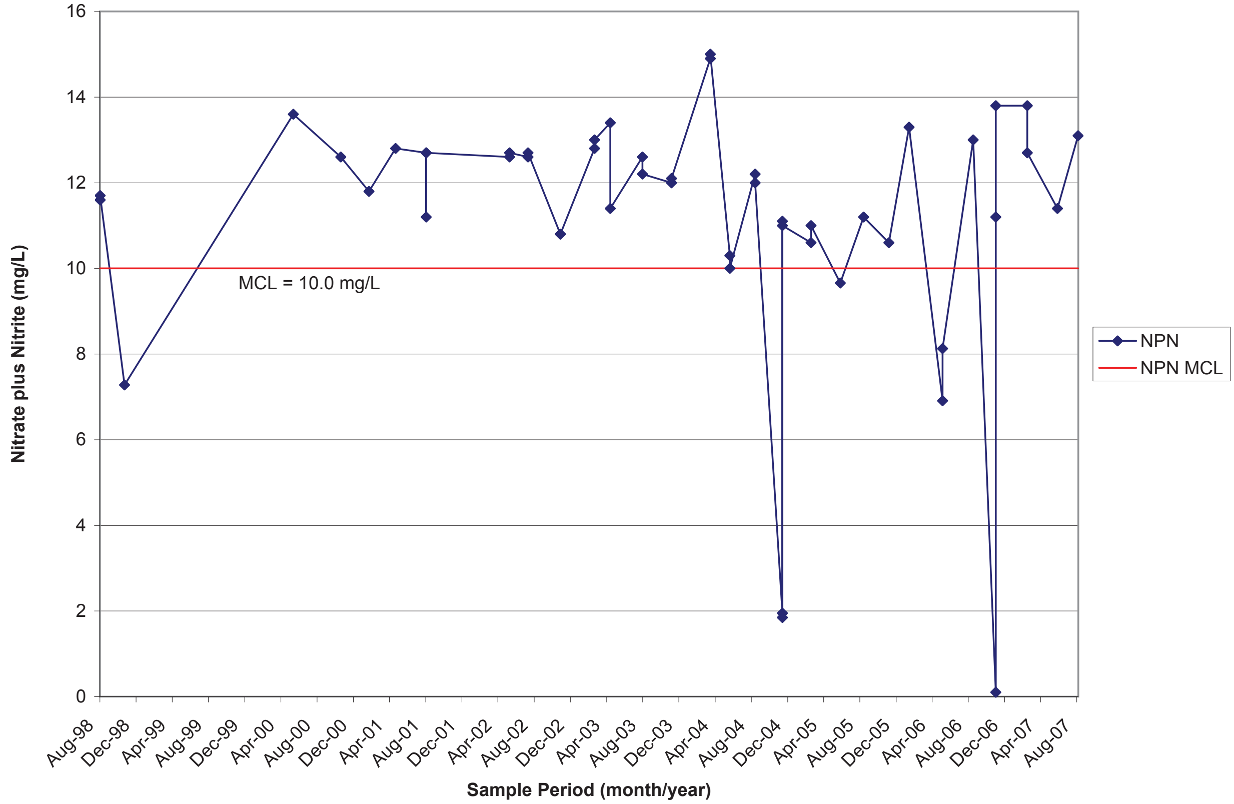

FIGURE 4-7. Nitrate plus Nitrite Concentrations, LWDS-MW1

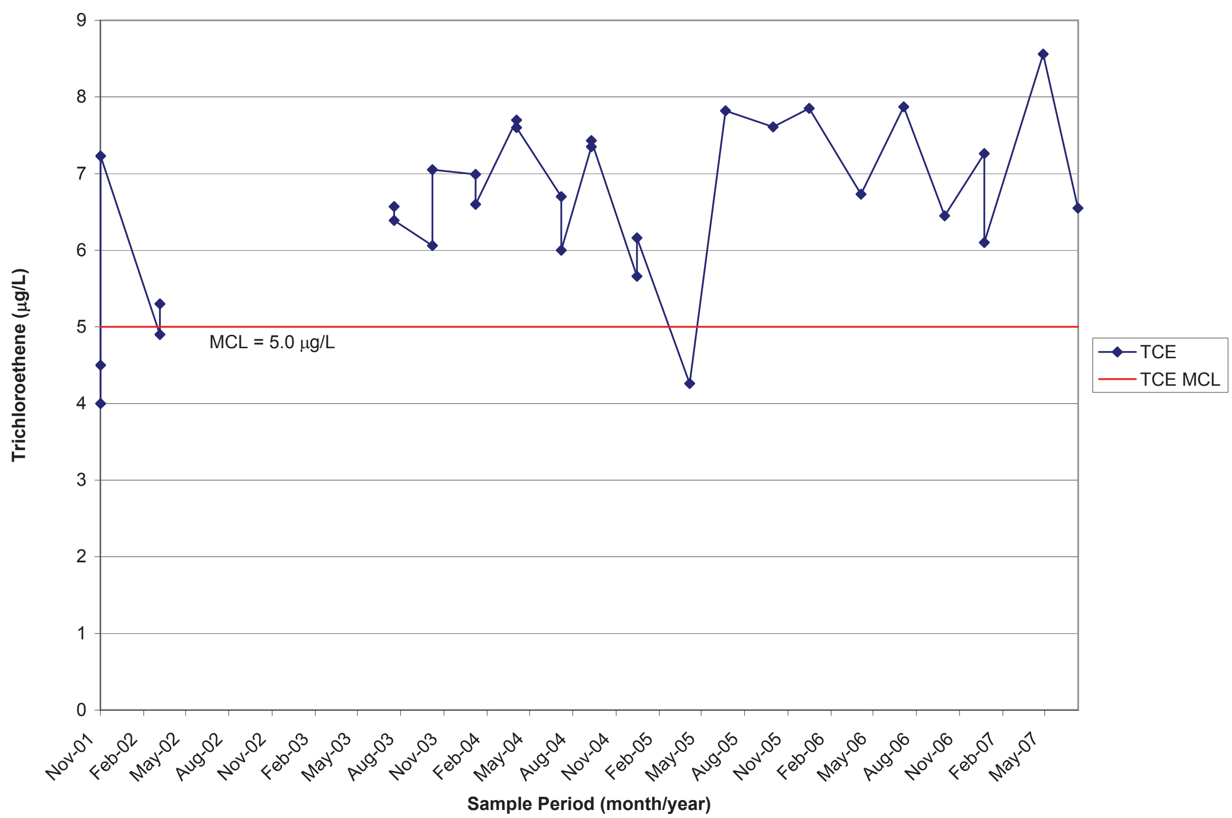

FIGURE 4-8. TCE Concentrations, WYO-4

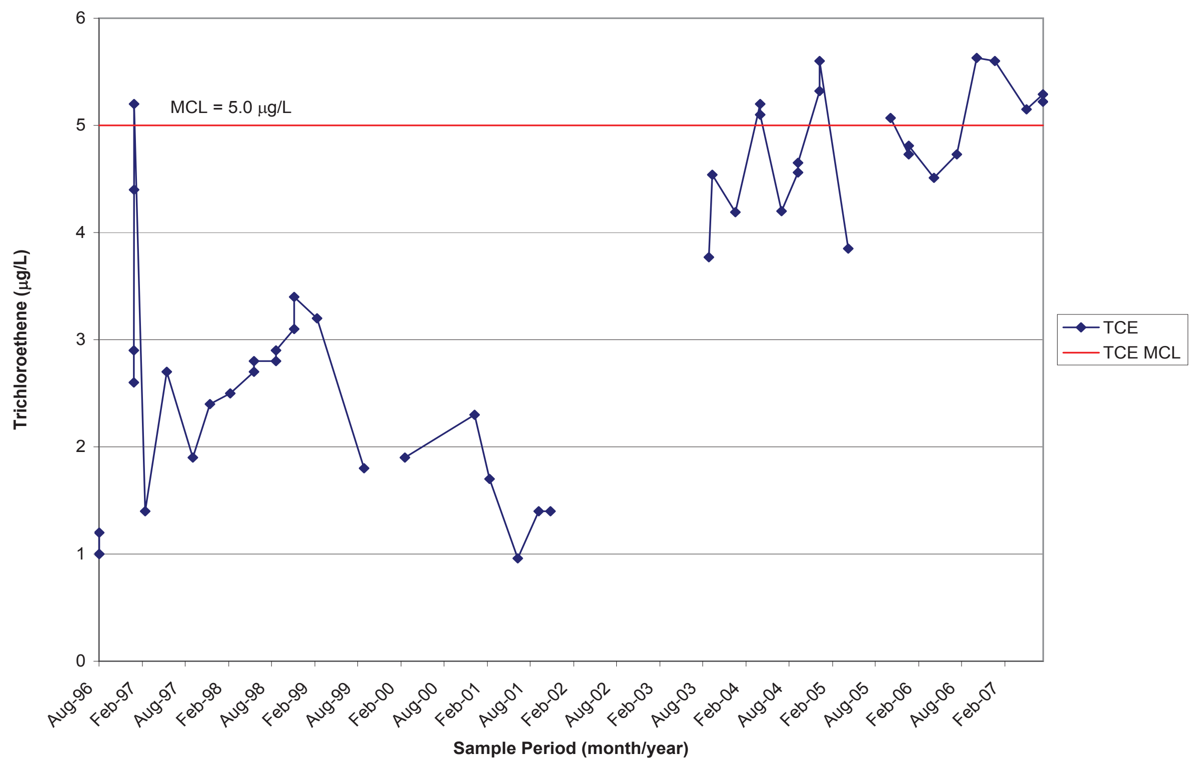

FIGURE 4-9. TCE Concentrations, TA2-W-19

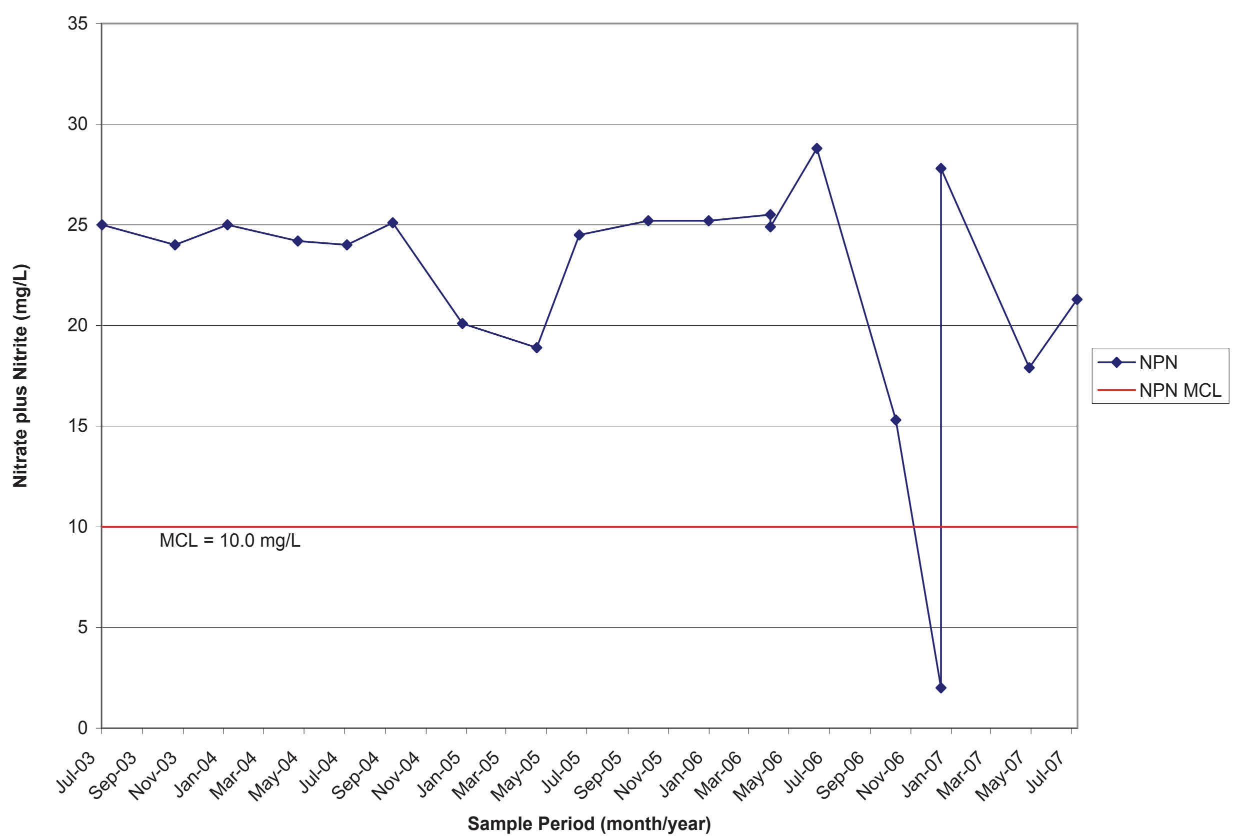

FIGURE 4-10. Nitrate plus Nitrite Concentrations, TA2-SW1-320

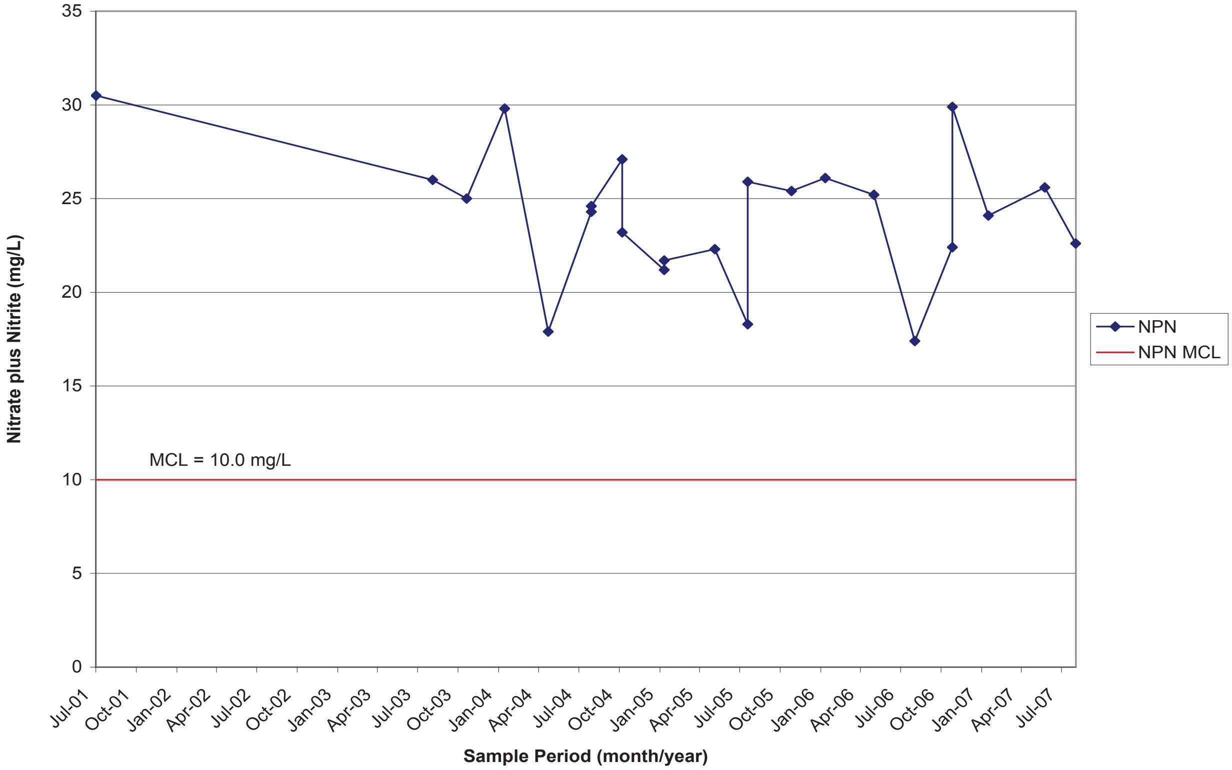

FIGURE 4-11. Nitrate Plus Nitrite Concentrations, TJA-7

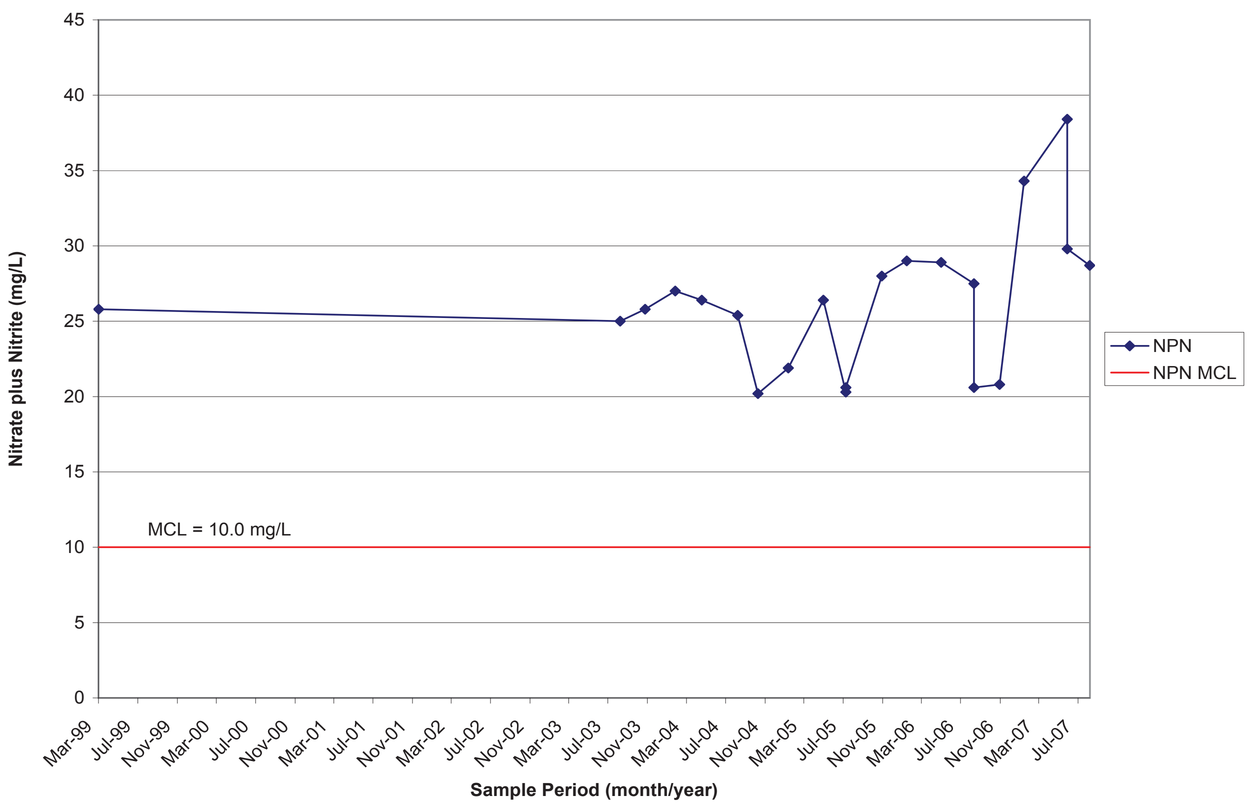

FIGURE 4-12. Nitrate plus Nitrite Concentrations, TJA-4

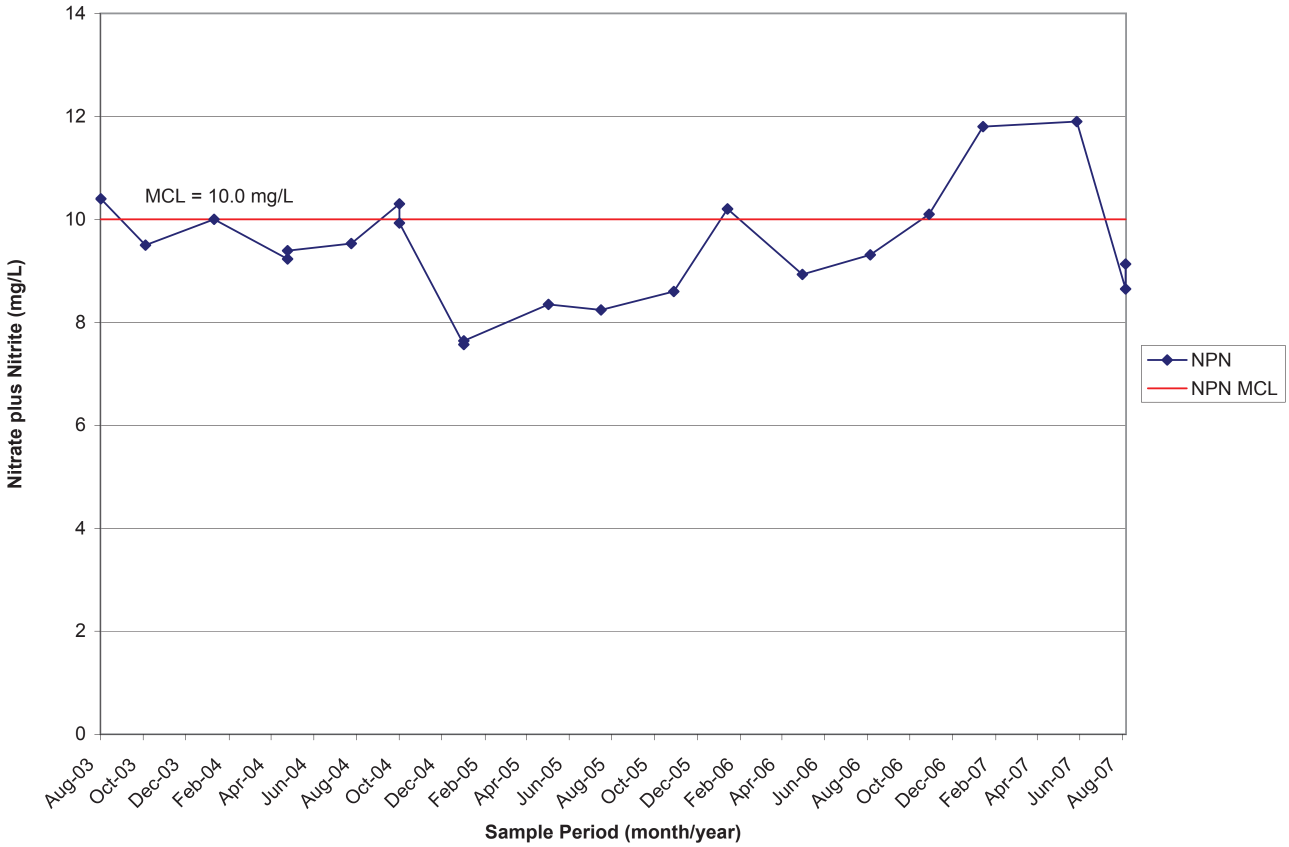

FIGURE 4-13. Nitrate plus Nitrite Concentrations, TA2-W-19

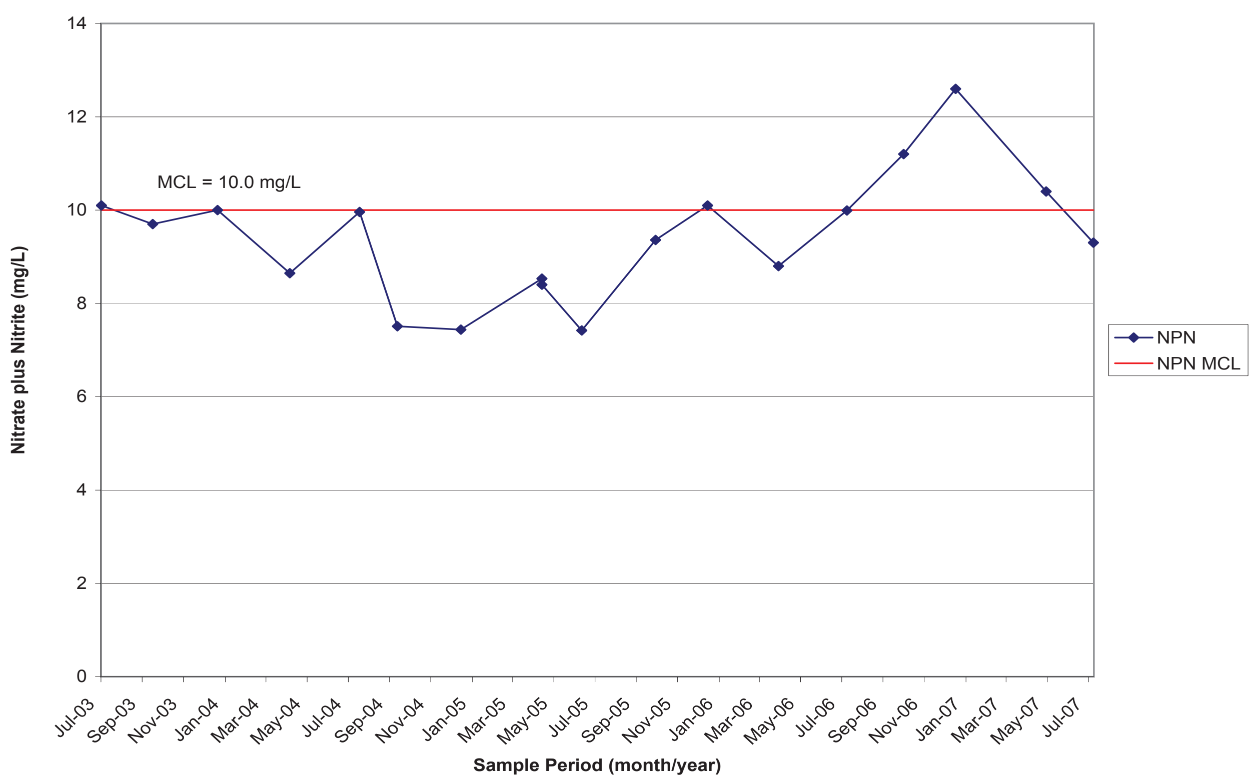

FIGURE 4-14. Nitrate Plus Nitrite Concentrations, TJA-2

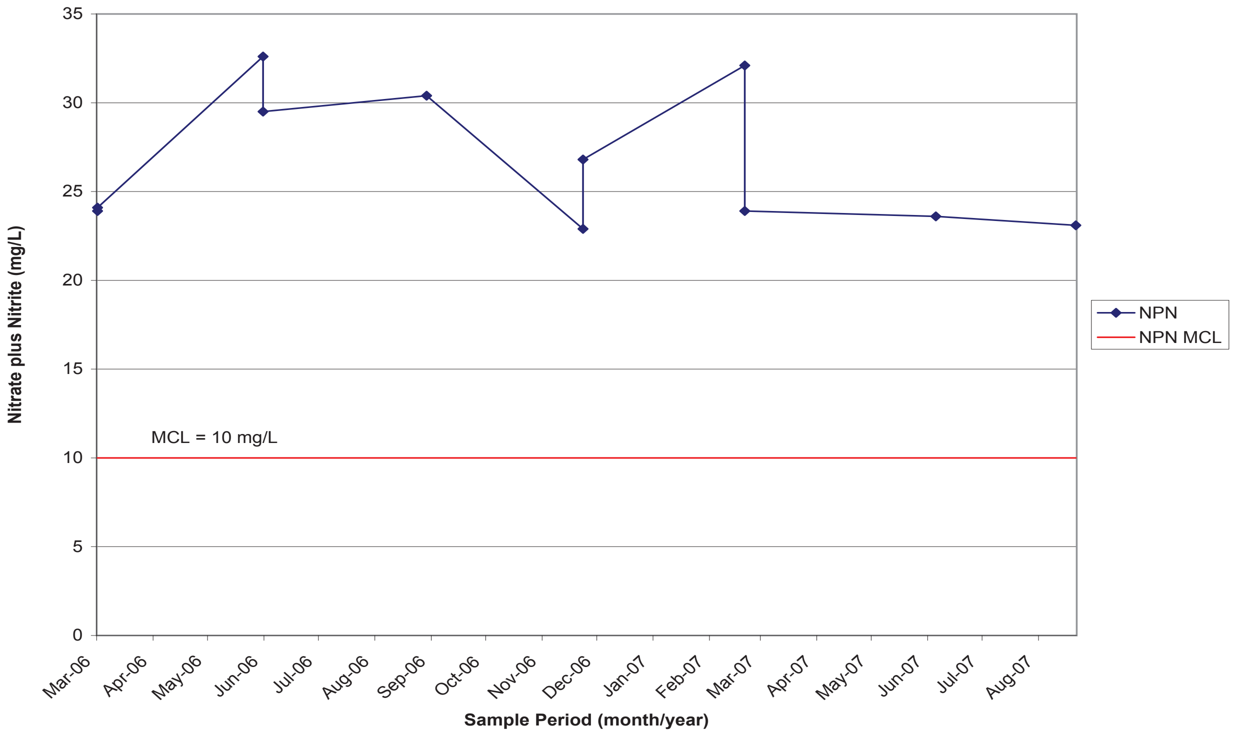

FIGURE 4-15. Nitrate plus Nitrite Concentrations, CYN-MW6

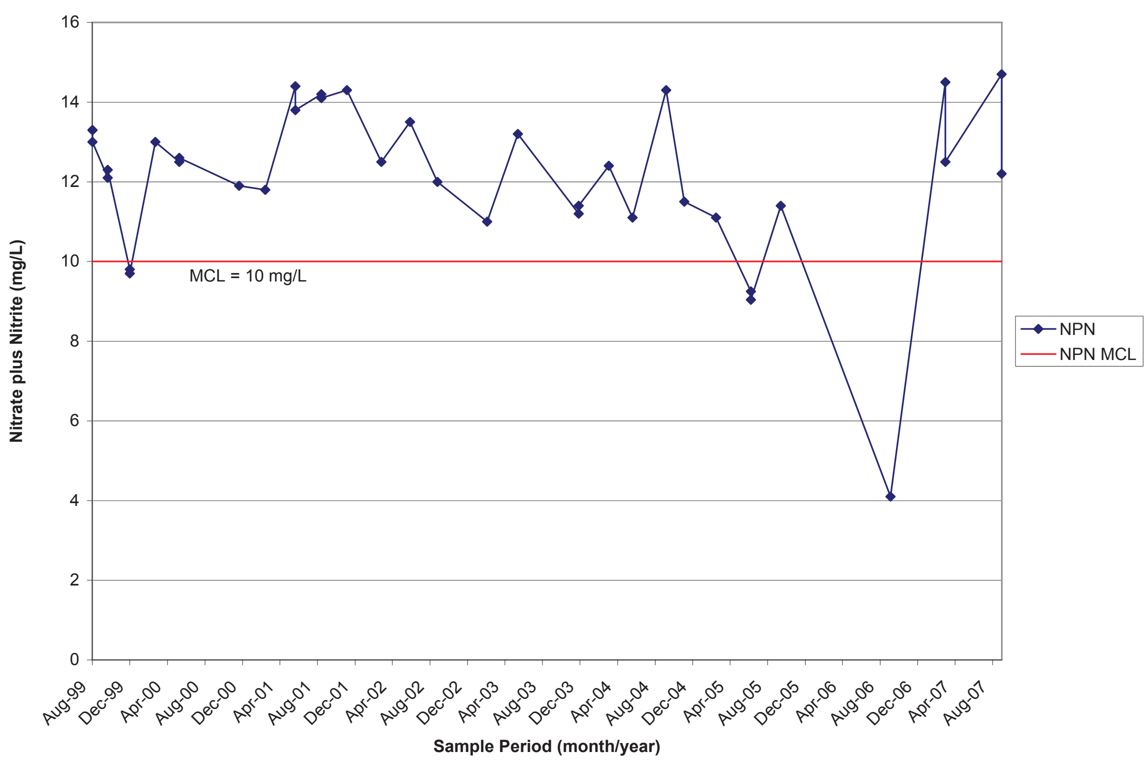

FIGURE 4-16. Nitrate plus Nitrite Concentrations, CYN-MW3

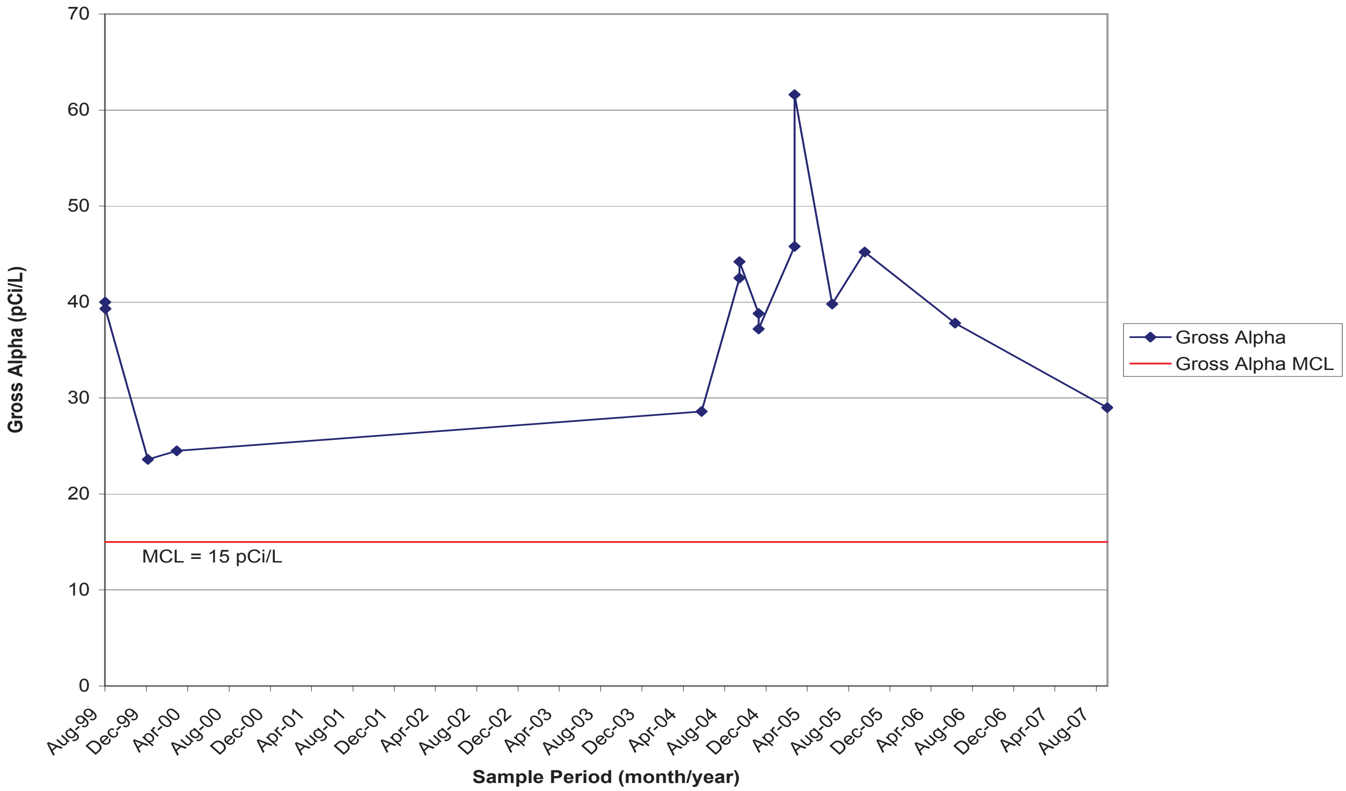

FIGURE 4-17. Gross Alpha Activities, CYN-MW4

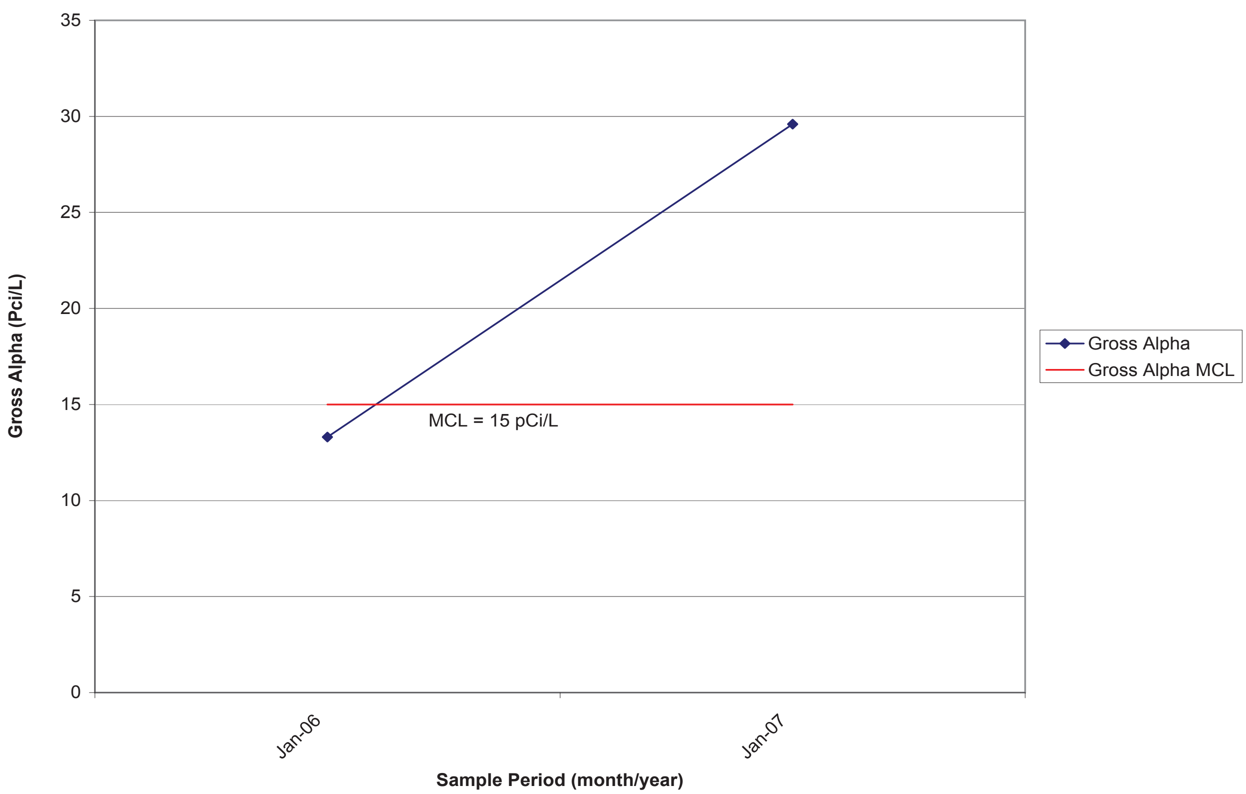

FIGURE 4-18. Gross Alpha Activities, CYN-MW7

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Groundwater level elevations obtained from monitor wells are used to map the water table. The water table is the surface that represents the top of the saturated portion of the subsurface media. This is the top of the aquifer that contains the groundwater we currently use as our drinking water source for Albuquerque metropolitan area including Kirtland Air Force Base (KAFB) and Sandia. Changes in the water table elevation are a measure of the state of the water balance of the groundwater system. The water table elevation provides a direct measure of the amount of water in storage in the aquifer. Changing water table elevations reflect the difference between recharge and withdrawal from the aquifer. In addition, the rate of change of water levels at a monitor well screened across the water table provides a reliable measure of the useful lifetime of the well. Groundwater recharge is difficult to measure directly. Precipitation can be used as an indirect measure of recharge potential. Available precipitation also impacts demand on groundwater withdrawal. Water quantities pumped by KAFB and the City of Albuquerque (COA) wells are the principle measure

Chapter Five

Water Level Measurements

of groundwater withdrawal. During Fiscal Year 2007 (FY 07), water level measurements were obtained from 121 wells within, and immediately outside, the boundaries of KAFB to determine the water table elevation beneath KAFB. From the water table slope groundwater flow directions can be obtained, and horizontal hydraulic gradients determined. Local changes in the water table are reflected in the water levels in monitoring wells. These changes in water level over time at a specific well when plotted on a graph are called the well hydrograph. Frequency of measurement of water levels in wells may be quarterly or monthly, depending on the data source and well characteristics. This chapter describes precipitation, water well production, water table changes, and well hydrographs to better understand the dynamic nature of the groundwater system in the vicinity of Sandia National Laboratories, New Mexico (SNL/NM).

Drilling Operations at SNL/NM

In FY07, the Groundwater Protection Program (GWPP) measured water levels in 69 monitoring wells on a monthly or quarterly basis, depending on the specific well. Additional water level data were obtained from the 52 wells that are owned by either KAFB, the COA, or the New Mexico State Engineers Office. Table 5-1 shows the number of wells for each contributing organization.

5.1 Groundwater Recharge & Withdrawal

Factors influencing water level elevation changes include potential recharge from precipitation and groundwater withdrawal by production wells.

5.1.1 Annual Precipitation

The regional climate for the Albuquerque Basin area is semi-arid. Long-term average precipitation ranges from 9.47 inches per year (in/yr) (30 year norm) at Albuquerque International Airport (AIA) to up to 35 in/yr at the crest of the Sandia Mountains. The normal seasonal distribution of precipitation in the Albuquerque area is for the majority to occur during the period of June through August. Precipitation data significant to KAFB hydrogeology are available from four locations. Three meteorological towers are used to measure precipitation on-site at KAFB: the A21 tower in Technical Area (TA) II, the A36 tower located in TA-III, and the SC1 tower located near Schoolhouse Well in the foothills of the Manzanita Mountains. The fourth source is the National Weather Service (NWS) station at AIA, adjacent to KAFB (Figure 3-7). FY07 annual precipitation at the four sites is shown in Table 5-2. The table also shows the precipitation amounts in FY06 for comparison The 11.87 inches of precipitation measured at AIA from October 2006 to September 2007 is 0.31 inches greater than the corresponding period of the previous year and is 2.4 inches above the 30 year norm of 9.47 inches for the same period. . The FY07 monthly precipitation data for all four locations is illustrated in Appendix G, Figure G-1. Figure G-2 illustrates annual precipitation patterns for the KAFB area for the last nine years.

TABLE 5-1. Water Levels Measured by SNL/NM and Other Agencies

Total Wells (1)	Measuring Agency	Well Owner	Location
20	GWPP	DOE/NNSA	Site-wide surveillance network wells
49	ER Project	DOE/NNSA	CWL, MWL, TA-V, TAG Investigation, and Burn Site Groundwater Area
40	USAF IRP Program	KAFB	IRP Long-term Monitoring Program
10	COA	COA	Eubank Landfill north of KAFB and Yale Avenue Landfill west of KAFB
1	USGS	New Mexico State Engineers Office	Mesa del Sol well
1	USGS	COA	MP-MW3 (Montessa Park) well

NOTE: (1) Refer to page xi of this report for well descriptions.
IRP = Installation Restoration Program
USGS = United States Geological Survey
GWPP = Groundwater Protection Program
ER = Environmental Restoration
SNL/NM = Sandia National Laboratories, New Mexico
KAFB = Kirtland Air Force Base
USAF = United States Air Force
COA = City of Albuquerque
DOE = U. S. Department of Energy
NNSA = National Nuclear Security Administration

TABLE 5-2. FY06-07 Precipitation Data at KAFB

Site	A21	A36	SC1	AIA
FY06	12.92	13.57	12.15	11.56
FY07	8.57	9.65	14.63	11.87

NOTE: AIA = Albuquerque International Airport
Data are in inches of rainfall

5.1.2 Groundwater Withdrawal

KAFB production wells (Figure 3-1) are screened over a depth from about 500 to 2,000 feet (ft) below ground surface (bgs) and extract groundwater from the upper and middle unit of the Santa Fe Group. During FY07, KAFB pumped groundwater primarily from six water supply wells. Four water supply wells at KAFB were shut down during the year. A new well was installed but is not yet in production. KAFB annual groundwater production in FY06 and FY07 is shown in Table 5-3.

KAFB-3	KAFB-15	KAFB-14
KAFB-7(1)	KAFB-4	KAFB-16

NOTE: (1)Water used for Golf Course Irrigation only

TABLE 5-3. Total KAFB Groundwater Production

	FY06	FY07
Million gals	1,083	970
Acre-feet	3,323	2,976

Note: gals = gallons

KAFB supplies all the water for SNL/NM and other U.S. Department of Energy (DOE) facilities located on KAFB. Appendix G, Figure G-3 shows the FY07 monthly production for KAFB water supply wells. The highest level of production was 132,834,000 gallons (gals) in July 2007; the lowest occurred in February 38,999,000 gals. The variability production is in response to demand is reflected in the cyclic fluctuation of water level in monitoring wells within the region of influence of these pumping wells and is evident on the hydrographs. Appendix G, Figure G-4 shows the FY07 monthly production for each KAFB water supply well. Appendix G, Figure G-5 shows the trend of total annual groundwater production at KAFB by all wells, starting with 1997. Reductions in water demand have been achieved through conservation. In addition in FY07, a portion of the base housing was switched to the COA drinking water supply, reducing demand on the KAFB system.

5.2 Water Table Elevations

5.2.1 Construction of Regional Water Table Elevation Map

Water level data from monitor wells installed by DOE and Sandia Corporation, KAFB Installation Restoration Program (IRP), COA, and the State of New Mexico were used to construct the FY07 regional water table elevation contour map shown in Figure 5-1. The extent of the contoured area was constructed using September and October FY07 static water level data from 55 wells completed in the regional aquifer underlying KAFB. These wells are screened across the regional water table in the upper unit of the Santa Fe Group. They penetrate different depths into the aquifer and have different lengths of screened interval. Although most of the water level data represent an unconfined water table, some water levels measured in a few wells may represent semi-confined aquifer conditions.

5.2.2 Regional Groundwater Flow System

Contouring regional water level elevations provides information on groundwater dynamics and changes in the available amount of groundwater. The direction of groundwater flow is the same as the potentiometric gradient. The orientation of the gradient is perpendicular to the contour lines. The gradient is in the direction from the higher water level contour to the lower contour level. Groundwater flow directions inferred from Figure 5-1 may not accurately represent small-scale, localized groundwater flow patterns; however, the regional water level contours indicate the large-scale horizontal direction of groundwater movement across the KAFB area. In general, the open-to-the-north, U-shaped contour lines depicted in Figure 5-1 define an elongated depression in the water table with a north-south orientation. This depression or trough extends as far south as Isleta Pueblo Reservation. The KAFB and COA Ridgecrest production well fields are located near the northern boundary of KAFB. The depression of the water table is the result of the large amount of groundwater withdrawal by the water supply wells.

The contour line gradient indicates groundwater flow towards these supply wells. The flat gradient in the middle of the trough is characteristic of flow through the highly permeable sediments of the ancestral Rio Grande fluvial deposits, which are the most productive aquifer material in this area. The contours define the collective zones of influence of these large well fields. The direction of groundwater flow in the vicinity of KAFB (west of the Tijeras fault complex), as inferred from the contour lines, is west and northwest. This is a radical change from the historical southwesterly direction before Albuquerque entered into a significant period of population growth (Bjorklund and Maxwell 1961). This change in flow direction is a direct result of the dramatic increase in groundwater pumping. The steep gradients in the water table along the eastern edge of the map are partially due to increased ground surface elevation defining the eastern extent of the Albuquerque Basin and the presence of faults, shown in Figure 2-2, and Figure 2-3. The vertical offset along the faults is manifested in the topographic relief. The fault also presents a hydrologic barrier to the westward movement of groundwater. This phenomenon is clearly evident in the southeast corner of Figure 5-1 where the Tijeras Fault trace cuts across the map area. Note that the contour interval at this location has been extended to 100 ft of elevation between contour lines. Otherwise the density of contour lines associated with the steep gradient would obscure the details of the individual lines.

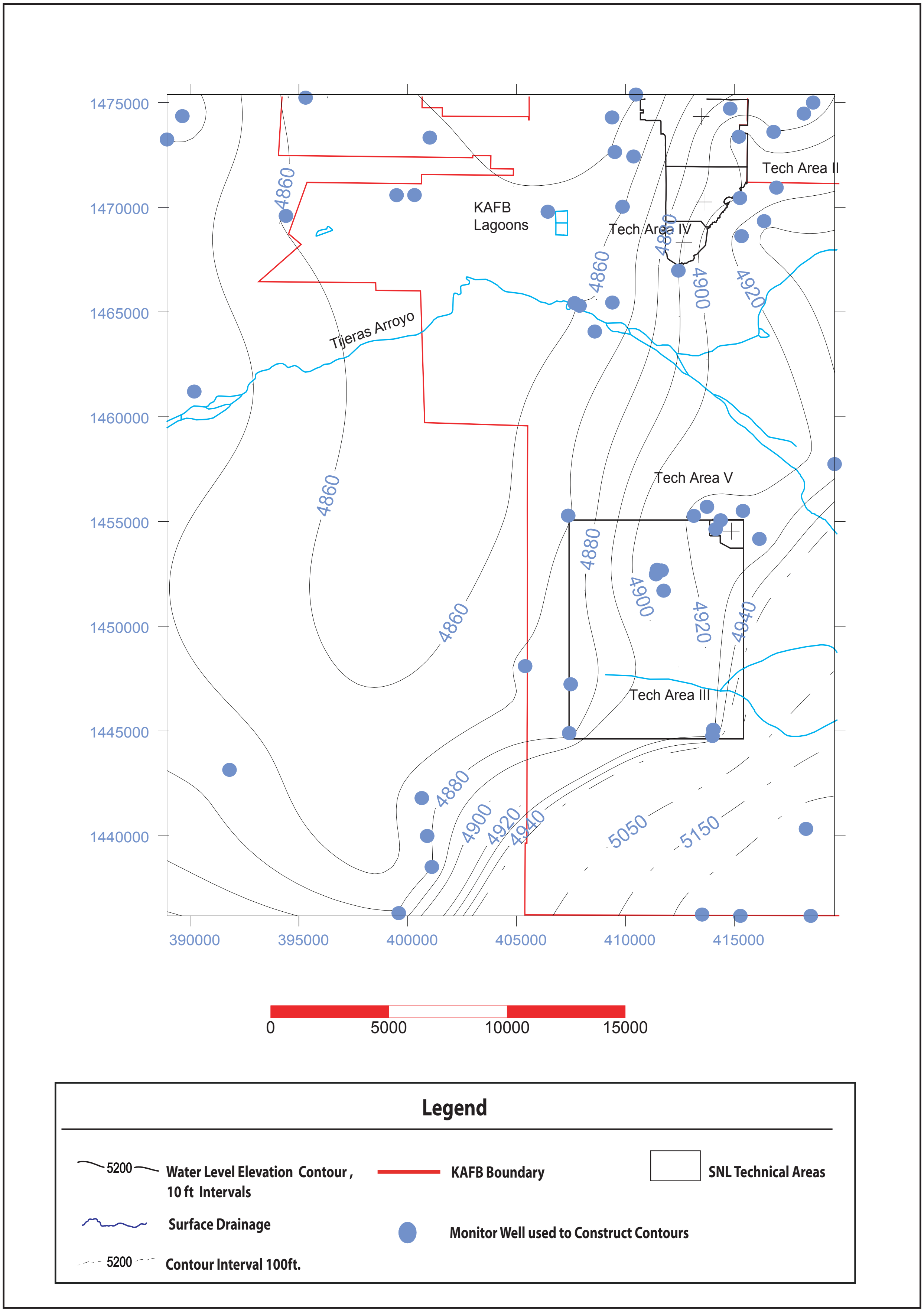

FIGURE 5-1. Regional Groundwater Elevation Map for SNL/KAFB, FY07

A comparison between the FY06 and FY07 water table maps reveals that the contour lines defining the trough continue slowly to migrate to the south, indicating an ongoing decline of the water table in this region. The rate of decline in water levels over the past FY continues at a rate of 1.2 ft over the previous year, as illustrated in the Figure 5-2, which represents the change in the FY07 water table water minus the corresponding values for the FY06 water table elevation. Increases in the elevation of the water table in the northeast quadrant of the figure during the period of FY06 are likely due to local groundwater recharge from the Tijeras Arroyo.

5.2.3 Perched Groundwater System (PGWS)

During monitor well installation for groundwater characterization in TA-II in 1993, a shallow water bearing zone was encountered at a depth of 300 ft bgs. This was 200 ft above the regional water table at this location. The installation of additional wells to the PGWS defined the boundaries of the PGWS to its current definition. The extent of the PGWS is approximately 3.5 square miles (sq mi). The western extent is to the west side of the former KAFB sewage lagoons. The northern limits coincide with the northern edge of TA-I. To the east, the PGWS has been confirmed in the KAFB IRP monitor wells east of the KAFB Landfill. The southern extent appears to be to the south edge of the golf course.

The elevation data to the first water of the PGWS are contoured on Figure 5-3. The contours indicate a gradient in the PGWS to the east-southeast. Correlation of lithologic information obtained from boreholes drilled during monitor well installations has indicated a layer of fine sediments that dips to the southeast (Van Hart 2001) and may serve as the perching horizon. No water is produced from the PGWS. Figure 5-4 illustrates the changing water level elevations in the PGWS. In general, the elevation of the water table of the upper most layer is decreasing in the northwestern quadrant and increasing toward the south and eastern portion. The contours along the southern part of the map are dominated by the increases in water levels observed in monitor wells KAFB-0506 (Figure G-28) and KAFB-0608. In the vicinity of KAFB-0506 are wells KAFB-2622 and KAFB-2624. The hydrographs for the latter wells are decreasing where as the hydrograph for KAFB-0506 is increasing (Figure G-28). This contrary condition illustrates the local variability of the PGWS. Water level elevations in the extreme eastern portion of the PGWS are difficult to distinguish from regional water table elevations in this area. The merging of the PGWS into the regional aquifer may explain the increasing water level elevations in this area. The major source of water along the western portion of to the PGWS was the KAFB sewage lagoons. The lagoons were closed in 1987. Other major contributors are Tijeras Arroyo and turf irrigation at the KAFB Golf Course. Minor potential sources of recharge to the PGWS are landscape irrigation and, leaking water distribution and sewage collection lines. The general pattern that may be inferred from the evaluation of water level declines indicates a general draining of the PGWS toward the southeast coupled with a decrease of recharge in the northwest. A more detailed discussion of the PGWS can be found in the Corrective Measures Evaluation Report (CME) for Tijeras Arroyo Groundwater (SNL 2005b).

5.3 Monitor Well Hydrographs

This section discusses recent trends in water levels in the vicinity of SNL/NM. Regional water level elevation changes over the current FY are discussed in Section 5.2.2 and illustrated in Figure 5-2. Changes in water level elevations in the PGWS over the past year are discussed in Section 5.2.3 and illustrated in Figure 5-4. Hydrographs are graphical plots of water levels at a monitoring location over time. Data from quarterly and monthly water level measurements are used to construct the hydrographs in Appendix G. These hydrographs illustrate water level changes over the time period from September 2004 to October 2007. The figures depicting the hydrographs are ordered into groups representing the regional aquifer and the perched GWS on and in the vicinity of SNL/NM and KAFB.

Well hydrographs are presented in Appendix G, Figures G-6 through G-30. (Data for wells that provide redundant trend information are not plotted.) Each figure contains representative hydrographs for monitor wells located in the same general area and demonstrate similar overall water level elevations and trends. One or more representative hydrographs were selected in each group to demonstrate the mean behavior of

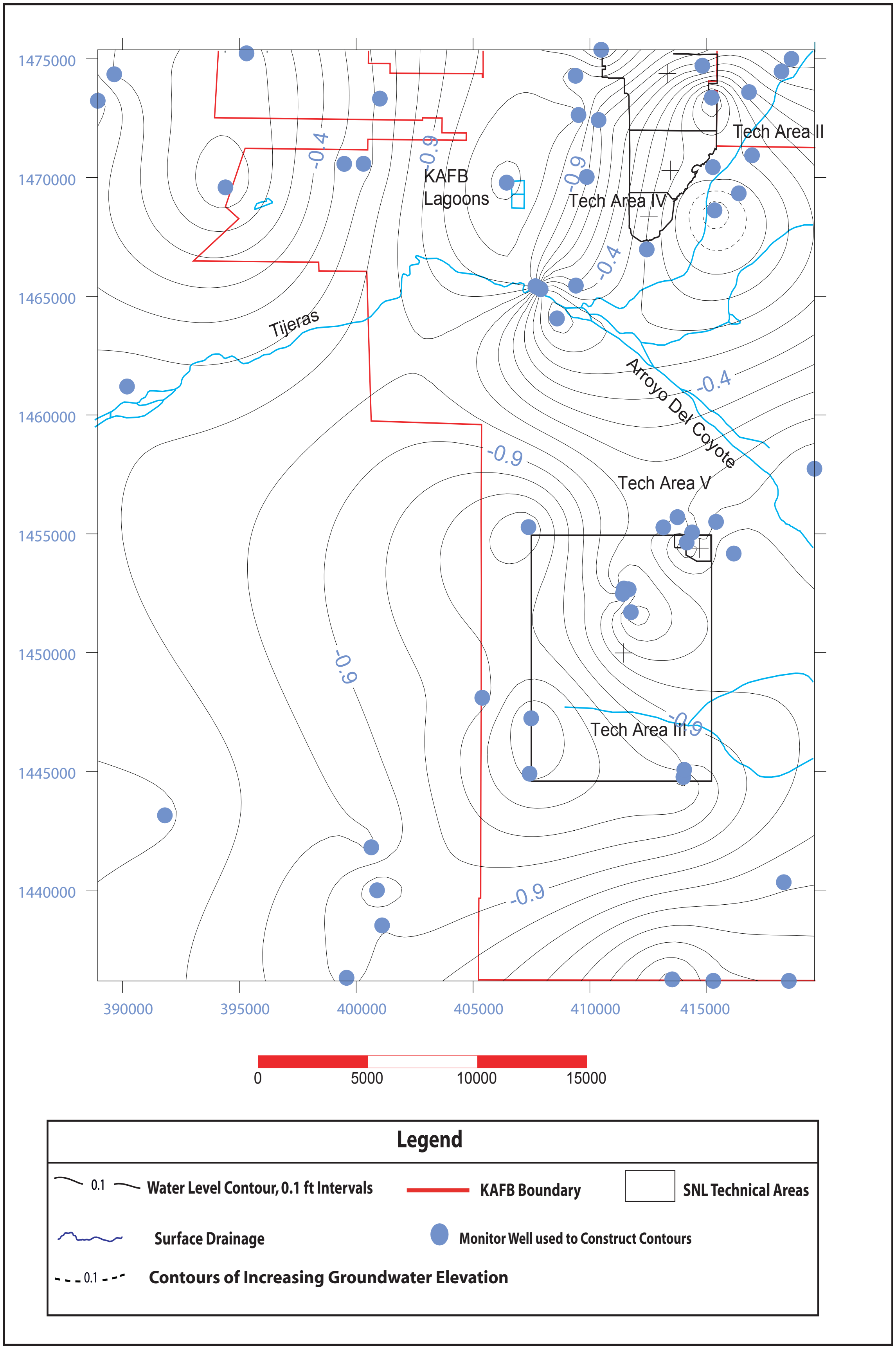

FIGURE 5-2. Annual Regional Groundwater Elevation Difference For SNL/KAFB, FY06-FY07

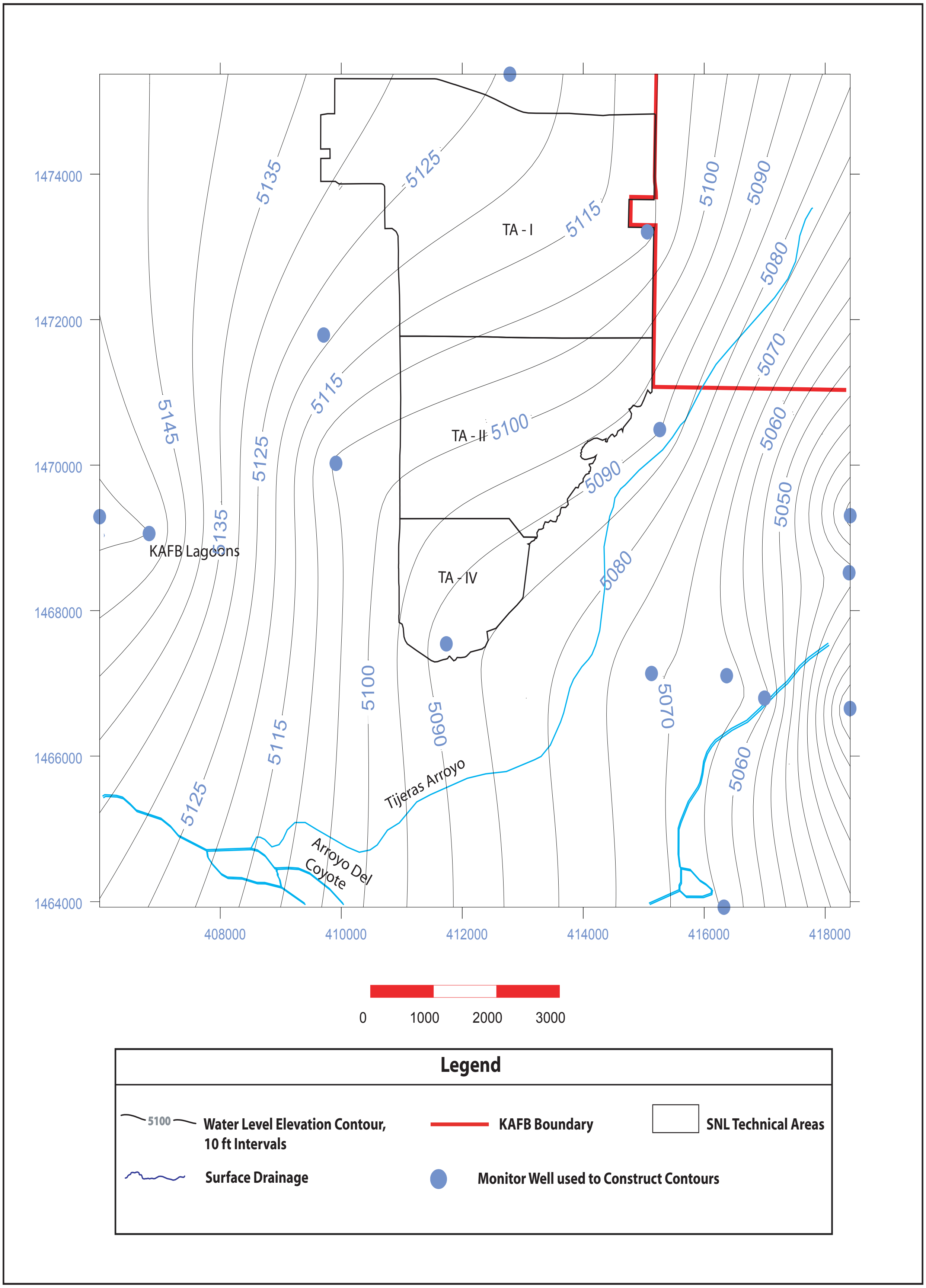

FIGURE 5-3. Perched Groundwater System Water Elevation Map

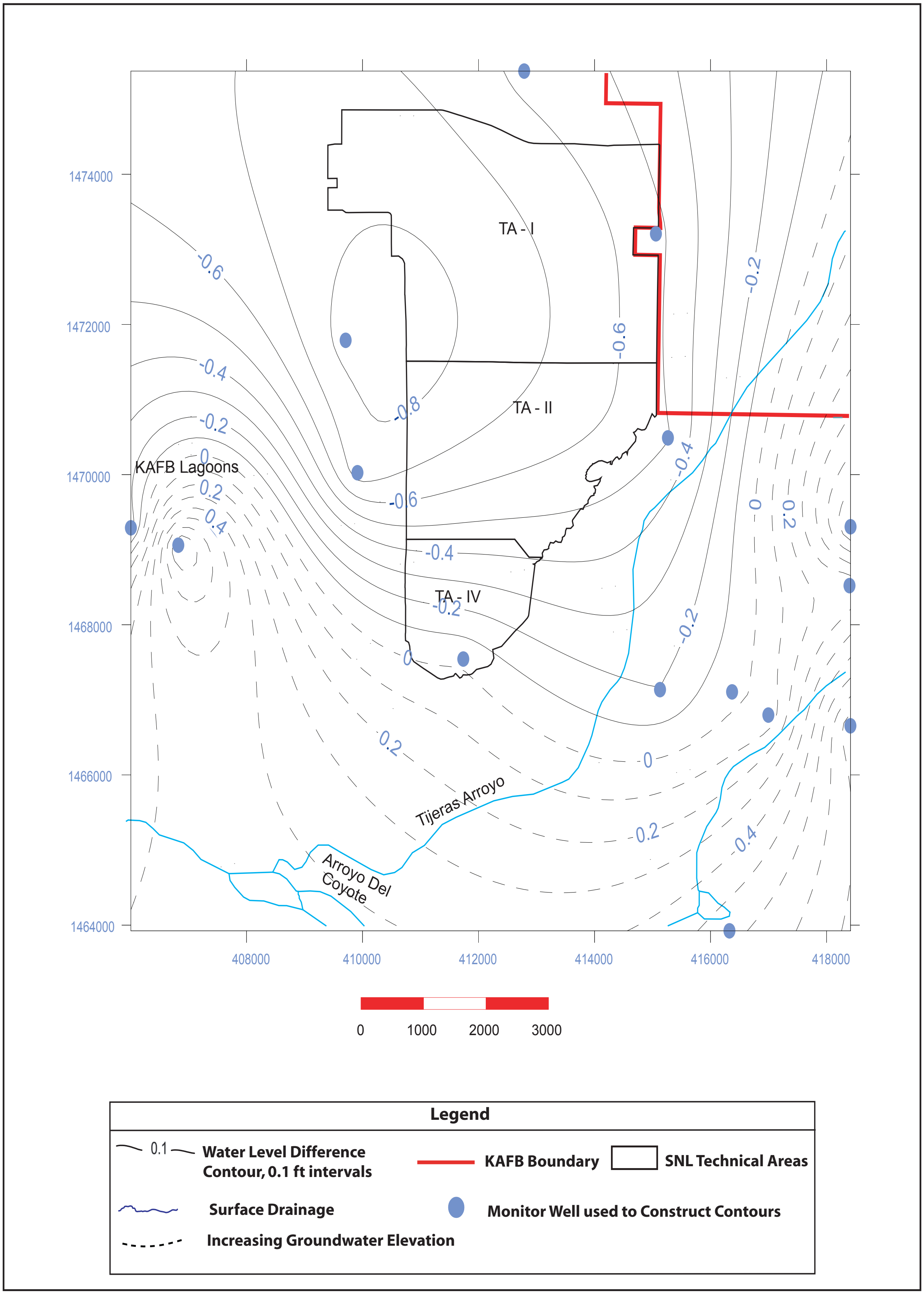

FIGURE 5-4 Perched Groundwater System Elevation Changes, FY06 - FY07

groundwater levels in the area. A trend line (dashed) was constructed for the representative hydrographs using a linear regression of data for the recent 36-month period. The trend lines are superimposed on each representative hydrograph and are defined by the linear equation y = ax + y intercept, where the coefficient of x is the slope of the line and represents water level changes in ft/day. The slope value multiplied by 365 days is the annual change in ft/yr based on a 3 yr trend. The hydrograph trend lines generally exhibit relatively good fit to the linear models as demonstrated by R2 coefficient values near one. R2 values near zero indicate a poor linear model representation. Most well hydrographs plot as a linear trend. On some hydrographs oscillations are prominent. These oscillations correlate with changes in the rate of groundwater pumping at the supply wells in response to seasonal water demand. Generally wells closer to the water supply wells demonstrate the greatest response. Unsymmetrical excursions from the prevailing trend of certain hydrographs require explanation. Downward dips in some of the hydrographs (Figure G-15 and Figure G-23) indicate delayed recovery of the water level from the drawdown resulting from purging associated with groundwater sampling. The water yield in these well is insufficient to recover to the prevailing water level in the time interval between water level measurements. The upward spikes in the MWL-MW4 hydrograph in Figure G-16 are water level fluctuations associated with the effectiveness of the packer seal between the upper and lower screens of the well. These screens are located within different groundwater strata. When the seal between screens is effective the two zones are isolated and water level rises in the well to the level of the local water table. When the packer is not properly inflated and the seal between the two screened intervals is ineffective the resultant water level reflects the influence of the lower zone on the measured water level in the well. Since water levels drop in the well when the two zones are allowed to communicate it implies the pressure in the lower zone is less and a downward groundwater gradient exists at the MWL-4 location.

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Chapter Six

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APPENDIX A

SNL/NM Groundwater Protection Program Groundwater Surveillance Task

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Table GWPP A-1
Summary of Detected Volatile Organic Compounds (EPA Method[g] SW846-8260)
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL / MAC[d] (µg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.
Coyote Springs 31-Jan-07	Acetone	2.48	1.25	5.00	NE	NE	J	5.0U, B1	084035-001
Eubank-1 09-Feb-07	Acetone	1.86	1.25	5.00	NE	NE	B, J	5.0U, B	084037-001
Greystone-MW2 16-Feb-07	Acetone	2.18	1.25	5.00	NE	NE	J	5.0U, B1	084039-001
NWTA3-MW3D 01-Feb-07	Acetone	1.95	1.25	5.00	NE	NE	J	5.0U, B1	084047-001
PL-2 13-Feb-07	Acetone	2.62	1.25	5.00	NE	NE	J	5.0U, B1	084049-001
SFR-2S 30-Jan-07	Acetone	1.99	1.25	5.00	NE	NE	J		084051-001
SWTA3-MW2 02-Feb-07	Acetone	2.03	1.25	5.00	NE	NE	J	5.0UJ, B1	084056-001
SWTA3-MW3 05-Feb-07	Acetone	2.27	1.25	5.00	NE	NE	J	5.0UJ, B1	084058-001
SWTA3-MW4 06-Feb-07	Acetone	1.97	1.25	5.00	NE	NE	J	5.0U, B2	084062-001
TRE-1 15-Feb-07	Acetone	4.76	1.25	5.00	NE	NE	J	5.0U, B1, B2	084067-001
	Chloroform	0.975	0.250	1.00	NE	100	J	1.0U, B2	084067-001
TRE-1 (Duplicate) 15-Feb-07	Acetone	5.13	1.25	5.00	NE	NE		5.13U, B1, B2	084068-001
	Chloroform	0.904	0.250	1.00	NE	100	J	1.0U, B2	084068-001

Refer to footnotes on page A-35.

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Table GWPP A-2
Method Detection Limits for Volatile Organic Compounds (EPA Method[g] SW846-8260)
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Analyte	Method Detection Limit (µg/L)
1,1,1-Trichloroethane	0.300
1,1,2,2-Tetrachloroethane	0.250
1,1,2-Trichloroethane	0.250
1,1-Dichloroethane	0.300
1,1-Dichloroethene	0.300
1,2,4-Trichlorobenzene	0.300
1,2-Dichlorobenzene	0.250
1,2-Dichloroethane	0.250
1,2-Dichloropropane	0.250
1,4-Dichlorobenzene	0.250
2-Butanone	1.25
2-Hexanone	1.25
4-methyl-, 2-Pentanone	1.25
Acetone	1.25
Benzene	0.300
Bromodichloromethane	0.250
Bromoform	0.250
Bromomethane	0.500
Carbon disulfide	1.25
Carbon tetrachloride	0.250
Chlorobenzene	0.250
Chloroethane	0.500
Chloroform	0.250
Chloromethane	0.500
Dibromochloromethane	0.250
Ethyl benzene	0.250
Methylene chloride	2.00
Styrene	0.250
Tetrachloroethene	0.250
Toluene	0.250
Trichloroethene	0.250
Vinyl acetate	1.50
Vinyl chloride	0.500
Xylene	0.250
cis-1,2-Dichloroethene	0.300
cis-1,3-Dichloropropene	0.250
trans-1,2-Dichloroethene	0.300
trans-1,3-Dichloropropene	0.250

Refer to footnotes on page A-35.

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Table GWPP A-3
Summary of Perchlorate Results (EPA Method[g] 314.0)
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Perchlorate Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	`MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.
SWTA3-MW4 19-Dec-06	ND	0.004	0.012	NE	NE	U		083862-020
SWTA3-MW4 (Duplicate) 19-Dec-06	ND	0.004	0.012	NE	NE	U		083863-020

Refer to footnotes on page A-35.

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Table GWPP A-4
Summary of Alkalinity, Anions, Nitrate plus Nitrate, Total Organic Halogens, Total Phenols, and Total Cyanide Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
Coyote Springs 31-Jan-07	Alkalinity as CACO3	1,060	1.45	2.0	NE	NE	B		084035-016	EPA 310.1
	Bromide	2.40	0.066	0.2	NE	NE			084035-016	SW846 9056
	Chloride	469	3.3	10	NE	NE			084035-016	SW846 9056
	Fluoride	1.50	0.033	0.1	4.0	1.6			084035-016	SW846 9056
	Sulfate	122	1.0	4.0	NE	NE			084035-016	SW846 9056
	Nitrate plus nitrite as N	0.311	0.01	0.05	10	10			084035-018	EPA 353.2
	Total Organic Halogens	0.043	0.002	0.01	NE	NE		B3, J	084035-003	SW846 9020
	Total Phenols	ND	0.00154	0.00512	NE	NE	U	A2, UJ	084035-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084035-027	SW846 9012
Eubank-1 09-Feb-07	Alkalinity as CACO3	158	0.725	1.0	NE	NE	B		084037-016	EPA 310.1
	Bromide	0.183	0.066	0.2	NE	NE	J		084037-016	SW846 9056
	Chloride	12.8	0.066	0.2	NE	NE			084037-016	SW846 9056
	Fluoride	0.402	0.033	0.1	4.0	1.6			084037-016	SW846 9056
	Sulfate	177	0.5	2.0	NE	NE			084037-016	SW846 9056
	Sulfate	70.5	0.5	2.0	NE	NE	H	HT, J	084037-R16	SW846 9056
	Nitrate plus nitrite as N	2.92	0.1	0.5	10	10			084037-018	EPA 353.2
	Total Organic Halogens	0.00666	0.002	0.01	NE	NE	J	B3, J	084037-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	B, U	B3, UJ	084037-026	SW846 9066
	Total Cyanide	0.00291	0.0015	0.005	0.2	0.2	J	B3, J	084037-027	SW846 9012
Greystone-MW2 16-Feb-07	Alkalinity as CACO3	452	0.725	1.0	NE	NE	B		084039-016	EPA 310.1
	Bromide	0.614	0.066	0.2	NE	NE			084039-016	SW846 9056
	Chloride	117	0.66	0.2	NE	NE			084039-016	SW846 9056
	Fluoride	0.684	0.033	0.1	4.0	1.6			084039-016	SW846 9056
	Sulfate	77.6	1.0	4.0	NE	NE			084039-016	SW846 9056
	Sulfate	47.7	1.0	4.0	NE	NE	H	HT, J	084039-R16	SW846 9056
	Nitrate plus nitrite as N	4.59	0.05	0.25	10	10			084039-018	EPA 353.2
	Total Organic Halogens	ND	0.002	0.01	NE	NE	U		084039-003	SW846 9020
	Total Phenols	ND	0.00167	0.00558	NE	NE	U	B3, UJ	084039-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084039-027	SW846 9012
MRN-2 07-Feb-07	Alkalinity as CACO3	158	0.725	1.0	NE	NE	B		084041-016	EPA 310.1
	Bromide	0.195	0.066	0.2	NE	NE	J		084041-016	SW846 9056
	Chloride	14.8	0.066	0.2	NE	NE			084041-016	SW846 9056
	Fluoride	0.599	0.033	0.1	4.0	1.6			084041-016	SW846 9056
	Sulfate	53.7	0.2	0.8	NE	NE			084041-016	SW846 9056
	Nitrate plus nitrite as N	5.78	0.1	0.5	10	10			084041-018	EPA 353.2
	Total Organic Halogens	0.0022	0.002	0.01	NE	NE	J	B3, J	084041-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084041-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084041-027	SW846 9012

Refer to footnotes on page A-35.

Table GWPP A-4
Summary of Alkalinity, Anions, Nitrate plus Nitrate, Total Organic Halogens, Total Phenols, and Total Cyanide Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
NWTA3-MW3D 01-Feb-07	Alkalinity as CACO3	141	0.725	1.0	NE	NE	B		084047-016	EPA 310.1
	Bromide	0.158	0.066	0.2	NE	NE	J		084047-016	SW846 9056
	Chloride	10.8	0.132	0.4	NE	NE			084047-016	SW846 9056
	Fluoride	0.754	0.033	0.1	4.0	1.6			084047-016	SW846 9056
	Sulfate	49.7	0.2	0.8	NE	NE			084047-016	SW846 9056
	Nitrate plus nitrite as N	0.827	0.01	0.05	10	10			084047-018	EPA 353.2
	Total Organic Halogens	0.0167	0.002	0.01	NE	NE		B3, J	084047-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084047-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084047-027	SW846 9012
PL-2 13-Feb-07	Alkalinity as CACO3	139	0.725	1.0	NE	NE	B		084049-016	EPA 310.1
	Bromide	0.2	0.066	0.2	NE	NE	J		084049-016	SW846 9056
	Chloride	13.5	0.066	0.2	NE	NE			084049-016	SW846 9056
	Fluoride	0.544	0.033	0.1	4.0	1.6			084049-016	SW846 9056
	Sulfate	107	0.5	2.0	NE	NE			084049-016	SW846 9056
	Sulfate	63.4	0.5	2.0	NE	NE	H	HT, J	084049-R16	SW846 9056
	Nitrate plus nitrite as N	2.13	0.05	0.25	10	10		B3, J	084049-018	EPA 353.2
	Total Organic Halogens	0.0115	0.002	0.01	NE	NE		B3, J	084049-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	B, U	B3, UJ	084049-026	SW846 9066
	Total Cyanide	0.00513	0.0015	0.005	0.2	0.2		B3, J	084049-027	SW846 9012
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	H, h, U	B3, HT, UJ	084049-R27	SW846 9012
SFR-2S 30-Jan-07	Alkalinity as CACO3	395	0.725	1.0	NE	NE	B		084051-016	EPA 310.1
	Bromide	0.611	0.066	0.2	NE	NE			084051-016	SW846 9056
	Chloride	125	0.66	2.0	NE	NE			084051-016	SW846 9056
	Fluoride	1.57	0.033	0.1	4.0	1.6			084051-016	SW846 9056
	Sulfate	69.2	1.0	4.0	NE	NE			084051-016	SW846 9056
	Nitrate plus nitrite as N	0.948	0.02	0.1	10	10			084051-018	EPA 353.2
	Total Organic Halogens	0.0109	0.002	0.01	NE	NE		B3, J	084051-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U		084051-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084051-027	SW846 9012
SFR-4T 29-Jan-07	Alkalinity as CACO3	108	0.725	1.0	NE	NE	B		084053-016	EPA 310.1
	Bromide	1.46	0.066	0.2	NE	NE			084053-016	SW846 9056
	Chloride	195	1.32	4.0	NE	NE			084053-016	SW846 9056
	Fluoride	**2.66**	0.033	0.1	4.0	1.6			084053-016	SW846 9056
	Sulfate	1,900	10.0	40.0	NE	NE			084053-016	SW846 9056
	Nitrate plus nitrite as N	0.194	0.01	0.05	10	10			084053-018	EPA 353.2
	Total Organic Halogens	0.0271	0.002	0.01	NE	NE		B3, J	084053-003	SW846 9020
	Total Phenols	ND	0.00152	0.00506	NE	NE	U		084053-026	SW846 9066
	Total Cyanide	0.00234	0.0015	0.005	0.2	0.2	J	B3, J	084053-027	SW846 9012

Refer to footnotes on page A-35.

Table GWPP A-4
Summary of Alkalinity, Anions, Nitrate plus Nitrate, Total Organic Halogens, Total Phenols, and Total Cyanide Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SWTA3-MW2 02-Feb-07	Alkalinity as CACO3	171	0.725	1.0	NE	NE	B		084056-016	EPA 310.1
	Bromide	0.144	0.066	0.2	NE	NE	J		084056-016	SW846 9056
	Chloride	14.4	0.066	0.2	NE	NE			084056-016	SW846 9056
	Fluoride	0.928	0.033	0.1	4.0	1.6			084056-016	SW846 9056
	Sulfate	53.5	1.0	4.0	NE	NE			084056-016	SW846 9056
	Nitrate plus nitrite as N	0.954	0.02	0.1	10	10			084056-018	EPA 353.2
	Total Organic Halogens	0.00928	0.002	0.01	NE	NE	J	B3, J	084056-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084056-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084056-027	SW846 9012
SWTA3-MW3 05-Feb-07	Alkalinity as CACO3	165	0.725	1.0	NE	NE	B		084058-016	EPA 310.1
	Bromide	ND	0.066	0.2	NE	NE	U		084058-016	SW846 9056
	Chloride	14.9	0.066	0.2	NE	NE			084058-016	SW846 9056
	Fluoride	1.24	0.033	0.1	4.0	1.6			084058-016	SW846 9056
	Sulfate	62.4	1.0	4.0	NE	NE			084058-016	SW846 9056
	Nitrate plus nitrite as N	0.407	0.01	0.05	10	10			084058-018	EPA 353.2
	Total Organic Halogens	0.00442	0.002	0.01	NE	NE	J	B3, J	084058-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084058-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084058-027	SW846 9012
SWTA3-MW4 06-Feb-07	Alkalinity as CACO3	244	0.725	1.0	NE	NE	B		084062-016	EPA 310.1
	Bromide	0.164	0.066	0.2	NE	NE	J		084062-016	SW846 9056
	Chloride	15.8	0.066	0.2	NE	NE			084062-016	SW846 9056
	Fluoride	**1.66**	0.033	0.1	4.0	1.6			084062-016	SW846 9056
	Sulfate	52.9	0.5	2.0	NE	NE			084062-016	SW846 9056
	Nitrate plus nitrite as N	0.581	0.01	0.05	10	10			084062-018	EPA 353.2
	Total Organic Halogens	0.00826	0.002	0.01	NE	NE	J	B3, J	084062-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084062-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084062-027	SW846 9012
SWTA3-MW4 (Duplicate) 06-Feb-07	Alkalinity as CACO3	163	0.725	1.0	NE	NE	B		084063-016	EPA 310.1
	Bromide	ND	0.066	0.2	NE	NE	U		084063-016	SW846 9056
	Chloride	15.3	0.066	0.2	NE	NE			084063-016	SW846 9056
	Fluoride	**1.64**	0.033	0.1	4.0	1.6			084063-016	SW846 9056
	Sulfate	52.7	0.5	2.0	NE	NE			084063-016	SW846 9056
	Nitrate plus nitrite as N	0.593	0.01	0.05	10	10			084063-018	EPA 353.2
	Total Organic Halogens	ND	0.002	0.01	NE	NE	U		084063-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084063-026	SW846 9066
	Total Cyanide	0.00221	0.0015	0.005	0.2	0.2	J	B3, J	084063-027	SW846 9012

Refer to footnotes on page A-35.

Table GWPP A-4 (Concluded)
Summary of Alkalinity, Anions, Nitrate plus Nitrate, Total Organic Halogens, Total Phenols, and Total Cyanide Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TRE-1	Alkalinity as CACO3	492	0.725	1.0	NE	NE	B		084067-016	EPA 310.1
15-Feb-07	Bromide	0.825	0.066	0.2	NE	NE			084067-016	SW846 9056
	Chloride	149	0.66	2.0	NE	NE			084067-016	SW846 9056
	Fluoride	1.48	0.033	0.1	4.0	1.6			084067-016	SW846 9056
	Sulfate	137	1.0	4.0	NE	NE			084067-016	SW846 9056
	Nitrate plus nitrite as N	3.13	0.05	0.25	10	10			084067-018	EPA 353.2
	Nitrate plus nitrite as N	3.04	0.1	0.5	10	10	H	HT, J	084067-R18	EPA 353.2
	Total Organic Halogens	0.0154	0.002	0.01	NE	NE	B	B2, B3, J	084067-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084067-026	SW846 9066
	Total Cyanide	ND	0.0015	0.005	0.2	0.2	U	B3, UJ	084067-027	SW846 9012
TRE-1 (Duplicate)	Alkalinity as CACO3	492	0.725	1.0	NE	NE	B		084068-016	EPA 310.1
15-Feb-07	Bromide	0.838	0.066	0.2	NE	NE			084068-016	SW846 9056
	Chloride	150	0.66	2.0	NE	NE			084068-016	SW846 9056
	Fluoride	1.50	0.033	0.1	4.0	1.6			084068-016	SW846 9056
	Sulfate	137	1.0	4.0	NE	NE			084068-016	SW846 9056
	Nitrate plus nitrite as N	2.85	0.05	0.25	10	10			084068-018	EPA 353.2
	Nitrate plus nitrite as N	2.82	0.05	0.25	10	10	H	HT, J	084068-R18	EPA 353.2
	Total Organic Halogens	0.0153	0.002	0.01	NE	NE	B	B2, B3, J	084068-003	SW846 9020
	Total Phenols	ND	0.0015	0.005	NE	NE	U	B3, UJ	084068-026	SW846 9066
	Total Cyanide	0.0108	0.0015	0.005	0.2	0.2			084068-027	SW846 9012

Refer to footnotes on page A-35.

Table GWPP A-5
Summary of Dissolved (Filtered) Metal Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
Coyote Springs 31-Jan-07	Aluminum	0.160	0.005	0.015	NE	NE	B		084035-009	SW846 6020
	Antimony	ND	0.0005	0.002	0.006	NE	U		084035-009	SW846 6020
	Arsenic	0.00464	0.0015	0.005	0.01	0.1	J		084035-009	SW846 6020
	Barium	0.0429	0.0005	0.002	2	1			084035-009	SW846 6020
	Beryllium	**0.00639**	0.0001	0.0005	0.004	NE			084035-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084035-009	SW846 6020
	Calcium	275	0.5	2.5	NE	NE	B		084035-009	SW846 6020
	Chromium	ND	0.001	0.003	0.1	0.05	U		084035-009	SW846 6020
	Cobalt	0.0106	0.0001	0.001	NE	NE			084035-009	SW846 6020
	Copper	0.00234	0.0002	0.001	NE	NE			084035-009	SW846 6020
	Iron	1.69	0.01	0.025	NE	NE	B		084035-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084035-009	SW846 6020
	Magnesium	64.9	0.125	0.375	NE	NE		J	084035-009	SW846 6020
	Manganese	1.48	0.025	0.125	NE	NE			084035-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084035-009	SW846 7470
	Nickel	0.0318	0.0005	0.002	NE	NE			084035-009	SW846 6020
	Potassium	29.6	0.08	0.3	NE	NE			084035-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084035-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084035-009	SW846 6020
	Sodium	404	2.0	6.25	NE	NE			084035-009	SW846 6020
	Thallium	0.00188	0.0004	0.001	0.002	NE			084035-009	SW846 6020
	Uranium	0.00676	0.00005	0.0002	0.03	.03			084035-009	SW846 6020
	Uranium-235	0.000049	0.00001	0.00007	0.03	.03	J		084035-009	SW846 6020
	Uranium-238	0.00671	0.00005	0.0002	0.03	.03			084035-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084035-009	SW846 6020
	Zinc	0.0468	0.002	0.01	NE	NE	B		084035-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-5
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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
Eubank-1	Aluminum	0.00504	0.005	0.015	NE	NE	B, J	B, J	084037-009	SW846 6020
09-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	U		084037-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084037-009	SW846 6020
	Barium	0.0394	0.0005	0.002	2	1			084037-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084037-009	SW846 6020
	Cadmium	0.000152	0.0001	0.001	0.005	0.01	J		084037-009	SW846 6020
	Calcium	72.6	0.1	0.5	NE	NE	B		084037-009	SW846 6020
	Chromium	ND	0.001	0.003	0.1	0.05	U		084037-009	SW846 6020
	Cobalt	0.000182	0.0001	0.001	NE	NE	J		084037-009	SW846 6020
	Copper	0.000986	0.0002	0.001	NE	NE	J		084037-009	SW846 6020
	Iron	0.292	0.01	0.025	NE	NE			084037-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084037-009	SW846 6020
	Magnesium	10.5	0.005	0.015	NE	NE			084037-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084037-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U		084037-009	SW846 7470
	Nickel	0.00209	0.0005	0.002	NE	NE			084037-009	SW846 6020
	Potassium	1.78	0.08	0.30	NE	NE			084037-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084037-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084037-009	SW846 6020
	Sodium	24.0	0.08	0.25	NE	NE			084037-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	NE	U		084037-009	SW846 6020
	Uranium	0.00296	0.00005	0.0002	0.03	.03			084037-009	SW846 6020
	Uranium-235	0.000021	0.00001	0.00007	0.03	.03	J		084037-009	SW846 6020
	Uranium-238	0.00294	0.00005	0.0002	0.03	.03			084037-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084037-009	SW846 6020
	Zinc	0.00331	0.002	0.01	NE	NE	B, J	B, J	084037-009	SW846 6020

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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
Greystone-MW2	Aluminum	0.00532	0.005	0.015	NE	NE	J		084039-009	SW846 6020
16-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	B, U		084039-009	SW846 6020
	Arsenic	0.00251	0.0015	0.005	0.01	0.1	J		084039-009	SW846 6020
	Barium	0.145	0.0005	0.002	2	1			084039-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084039-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084039-009	SW846 6020
	Calcium	149	0.1	0.5	NE	NE	B		084039-009	SW846 6020
	Chromium	ND	0.001	0.003	0.1	0.05	U		084039-009	SW846 6020
	Cobalt	0.000664	0.0001	0.001	NE	NE	J		084039-009	SW846 6020
	Copper	0.000853	0.0002	0.001	NE	NE	B, J	B, J	084039-009	SW846 6020
	Iron	0.577	0.01	0.025	NE	NE	B		084039-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084039-009	SW846 6020
	Magnesium	28.7	0.005	0.015	NE	NE			084039-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084039-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084039-009	SW846 7470
	Nickel	0.00253	0.0005	0.002	NE	NE			084039-009	SW846 6020
	Potassium	4.48	0.08	0.3	NE	NE			084039-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084039-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084039-009	SW846 6020
	Sodium	93.6	0.4	1.25	NE	NE			084039-009	SW846 6020
	Thallium	0.000449	0.0004	0.001	0.002	NE	J		084039-009	SW846 6020
	Uranium	0.00767	0.00005	0.0002	0.03	.03	B		084039-009	SW846 6020
	Uranium-235	0.000054	0.00001	0.00007	0.03	.03	J		084039-009	SW846 6020
	Uranium-238	0.00761	0.00005	0.0002	0.03	.03	B		084039-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084039-009	SW846 6020
	Zinc	0.00477	0.002	0.01	NE	NE	B, J	B, J	084039-009	SW846 6020

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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MRN-2	Aluminum	ND	0.005	0.015	NE	NE	B, U		084041-009	SW846 6020
07-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	B, U		084041-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084041-009	SW846 6020
	Barium	0.0544	0.0005	0.002	2	1			084041-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084041-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084041-009	SW846 6020
	Calcium	53.3	0.1	0.5	NE	NE			084041-009	SW846 6020
	Chromium	0.00132	0.001	0.003	0.1	0.05	J		084041-009	SW846 6020
	Cobalt	0.000167	0.0001	0.001	NE	NE	J		084041-009	SW846 6020
	Copper	0.000587	0.0002	0.001	NE	NE	J		084041-009	SW846 6020
	Iron	0.204	0.01	0.025	NE	NE			084041-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084041-009	SW846 6020
	Magnesium	15.6	0.005	0.015	NE	NE		J	084041-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084041-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U		084041-009	SW846 7470
	Nickel	0.00114	0.0005	0.002	NE	NE	J		084041-009	SW846 6020
	Potassium	3.55	0.08	0.3	NE	NE			084041-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084041-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084041-009	SW846 6020
	Sodium	23.8	0.08	0.25	NE	NE			084041-009	SW846 6020
	Thallium	0.000659	0.0004	0.001	0.002	NE	J		084041-009	SW846 6020
	Uranium	0.00323	0.00005	0.0002	0.03	.03			084041-009	SW846 6020
	Uranium-235	0.000023	0.00001	0.00007	0.03	.03	J		084041-009	SW846 6020
	Uranium-238	0.0032	0.00005	0.0002	0.03	.03			084041-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084041-009	SW846 6020
	Zinc	0.00286	0.002	0.01	NE	NE	B, J	B, J	084041-009	SW846 6020

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Table GWPP A-5
Summary of Dissolved (Filtered) Metal Results
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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
NWTA3-MW3D	Aluminum	0.00719	0.005	0.015	NE	NE	J		084047-009	SW846 6020
01-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	U		084047-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084047-009	SW846 6020
	Barium	0.0875	0.0005	0.002	2	1			084047-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084047-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084047-009	SW846 6020
	Calcium	38.5	0.02	0.1	NE	NE			084047-009	SW846 6020
	Chromium	0.00268	0.001	0.003	0.1	0.05	B, J	B, J	084047-009	SW846 6020
	Cobalt	0.000125	0.0001	0.001	NE	NE	J		084047-009	SW846 6020
	Copper	0.000999	0.0002	0.001	NE	NE	J		084047-009	SW846 6020
	Iron	0.187	0.01	0.025	NE	NE			084047-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084047-009	SW846 6020
	Magnesium	8.18	0.005	0.015	NE	NE		J	084047-009	SW846 6020
	Manganese	0.00196	0.001	0.005	NE	NE	J		084047-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U		084047-009	SW846 7470
	Nickel	0.00111	0.0005	0.002	NE	NE	J		084047-009	SW846 6020
	Potassium	4.00	0.08	0.3	NE	NE			084047-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084047-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084047-009	SW846 6020
	Sodium	39.4	0.08	0.25	NE	NE		J	084047-009	SW846 6020
	Thallium	0.000584	0.0004	0.001	0.002	NE	J		084047-009	SW846 6020
	Uranium	0.00345	0.00005	0.0002	0.03	.03			084047-009	SW846 6020
	Uranium-235	0.000023	0.00001	0.00007	0.03	.03	J		084047-009	SW846 6020
	Uranium-238	0.00343	0.00005	0.0002	0.03	.03			084047-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084047-009	SW846 6020
	Zinc	0.00243	0.002	0.01	NE	NE	J		084047-009	SW846 6020

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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
PL-2	Aluminum	0.0066	0.005	0.015	NE	NE	J		084049-009	SW846 6020
13-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	B, U		084049-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084049-009	SW846 6020
	Barium	0.0683	0.0005	0.002	2	1			084049-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084049-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084049-009	SW846 6020
	Calcium	47.5	0.02	0.1	NE	NE			084049-009	SW846 6020
	Chromium	0.00269	0.001	0.003	0.1	0.05	B, J	B, J	084049-009	SW846 6020
	Cobalt	0.000148	0.0001	0.001	NE	NE	J		084049-009	SW846 6020
	Copper	0.000933	0.0002	0.001	NE	NE	J		084049-009	SW846 6020
	Iron	0.211	0.01	0.025	NE	NE			084049-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084049-009	SW846 6020
	Magnesium	8.23	0.005	0.015	NE	NE			084049-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084049-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084049-009	SW846 7470
	Nickel	0.00643	0.0005	0.002	NE	NE			084049-009	SW846 6020
	Potassium	3.34	0.08	0.3	NE	NE			084049-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084049-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084049-009	SW846 6020
	Sodium	25.8	0.08	0.25	NE	NE			084049-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	NE	U		084049-009	SW846 6020
	Uranium	0.00316	0.00005	0.0002	0.03	.03	B		084049-009	SW846 6020
	Uranium-235	0.000022	0.00001	0.00007	0.03	.03	J		084049-009	SW846 6020
	Uranium-238	0.00313	0.00005	0.0002	0.03	.03	B		084049-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084049-009	SW846 6020
	Zinc	0.019	0.002	0.01	NE	NE	B		084049-009	SW846 6020

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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SFR-2S	Aluminum	ND	0.005	0.015	NE	NE	B, U		084051-009	SW846 6020
30-Jan-07	Antimony	ND	0.0005	0.002	0.006	NE	U		084051-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084051-009	SW846 6020
	Barium	0.0599	0.0005	0.002	2	1			084051-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084051-009	SW846 6020
	Cadmium	0.000235	0.0001	0.001	0.005	0.01	J		084051-009	SW846 6020
	Calcium	142	0.4	2.0	NE	NE			084051-009	SW846 6020
	Chromium	0.00219	0.001	0.003	0.1	0.05	B, J	B, J	084051-009	SW846 6020
	Cobalt	0.00067	0.0001	0.001	NE	NE	J		084051-009	SW846 6020
	Copper	0.00121	0.0002	0.001	NE	NE			084051-009	SW846 6020
	Iron	0.648	0.01	0.025	NE	NE			084051-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084051-009	SW846 6020
	Magnesium	40.7	0.005	0.015	NE	NE			084051-009	SW846 6020
	Manganese	0.00743	0.001	0.005	NE	NE			084051-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084051-009	SW846 7470
	Nickel	0.0563	0.0005	0.002	NE	NE			084051-009	SW846 6020
	Potassium	7.25	0.08	0.3	NE	NE			084051-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084051-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084051-009	SW846 6020
	Sodium	99.6	1.6	5.0	NE	NE			084051-009	SW846 6020
	Thallium	0.000602	0.0004	0.001	0.002	NE	J		084051-009	SW846 6020
	Uranium	0.0165	0.00005	0.0002	0.03	.03			084051-009	SW846 6020
	Uranium-235	0.000115	0.00001	0.00007	0.03	.03			084051-009	SW846 6020
	Uranium-238	0.0164	0.00005	0.0002	0.03	.03			084051-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084051-009	SW846 6020
	Zinc	0.00373	0.002	0.01	NE	NE	B, J	B, J	084051-009	SW846 6020

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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SFR-4T	Aluminum	0.0109	0.005	0.015	NE	NE	J		084053-009	SW846 6020
29-Jan-07	Antimony	ND	0.0005	0.002	0.006	NE	U		084053-009	SW846 6020
	Arsenic	0.00197	0.0015	0.005	0.01	0.1	J		084053-009	SW846 6020
	Barium	0.0105	0.0005	0.002	2	1			084053-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084053-009	SW846 6020
	Cadmium	0.000295	0.0001	0.001	0.005	0.01	J		084053-009	SW846 6020
	Calcium	64.0	0.1	0.5	NE	NE	B		084053-009	SW846 6020
	Chromium	ND	0.001	0.003	0.1	0.05	U	B3, UJ	084053-009	SW846 6020
	Cobalt	0.000189	0.0001	0.001	NE	NE	J		084053-009	SW846 6020
	Copper	0.00536	0.0002	0.001	NE	NE	B		084053-009	SW846 6020
	Iron	0.232	0.01	0.025	NE	NE			084053-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084053-009	SW846 6020
	Magnesium	3.27	0.005	0.015	NE	NE		J	084053-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084053-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084053-009	SW846 7470
	Nickel	0.00344	0.0005	0.002	NE	NE			084053-009	SW846 6020
	Potassium	2.45	0.08	0.3	NE	NE			084053-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084053-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084053-009	SW846 6020
	Sodium	1,090	2.0	6.25	NE	NE			084053-009	SW846 6020
	Thallium	0.000663	0.0004	0.001	0.002	NE	J		084053-009	SW846 6020
	Uranium	0.000281	0.00005	0.0002	0.03	.03			084053-009	SW846 6020
	Uranium-235	ND	0.00001	0.00007	0.03	.03	U		084053-009	SW846 6020
	Uranium-238	0.000279	0.00005	0.0002	0.03	.03			084053-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084053-009	SW846 6020
	Zinc	0.0254	0.002	0.01	NE	NE			084053-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-5
Summary of Dissolved (Filtered) Metal Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SWTA3-MW2	Aluminum	0.0125	0.005	0.015	NE	NE	B, J	B, J	084056-009	SW846 6020
02-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	U		084056-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084056-009	SW846 6020
	Barium	0.0718	0.0005	0.002	2	1			084056-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084056-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084056-009	SW846 6020
	Calcium	44.3	0.02	0.1	NE	NE			084056-009	SW846 6020
	Chromium	0.00269	0.001	0.003	0.1	0.05	J		084056-009	SW846 6020
	Cobalt	0.00016	0.0001	0.001	NE	NE	J		084056-009	SW846 6020
	Copper	0.000944	0.0002	0.001	NE	NE	J		084056-009	SW846 6020
	Iron	0.232	0.01	0.025	NE	NE	B		084056-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084056-009	SW846 6020
	Magnesium	13.4	0.005	0.015	NE	NE			084056-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084056-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084056-009	SW846 7470
	Nickel	0.00106	0.0005	0.002	NE	NE	J		084056-009	SW846 6020
	Potassium	4.41	0.08	0.3	NE	NE			084056-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084056-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084056-009	SW846 6020
	Sodium	34.0	0.08	0.25	NE	NE			084056-009	SW846 6020
	Thallium	0.000552	0.0004	0.001	0.002	NE	J		084056-009	SW846 6020
	Uranium	0.00322	0.00005	0.0002	0.03	.03			084056-009	SW846 6020
	Uranium-235	0.000022	0.00001	0.00007	0.03	.03	J		084056-009	SW846 6020
	Uranium-238	0.0032	0.00005	0.0002	0.03	.03			084056-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084056-009	SW846 6020
	Zinc	0.0023	0.002	0.01	NE	NE	J		084056-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-5
Summary of Dissolved (Filtered) Metal Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SWTA3-MW3	Aluminum	0.00531	0.005	0.015	NE	NE	B, J	B, J	084058-009	SW846 6020
05-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	U		084058-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084058-009	SW846 6020
	Barium	0.0588	0.0005	0.002	2	1			084058-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084058-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084058-009	SW846 6020
	Calcium	37.2	0.02	0.1	NE	NE			084058-009	SW846 6020
	Chromium	0.00177	0.001	0.003	0.1	0.05	J		084058-009	SW846 6020
	Cobalt	0.000116	0.0001	0.001	NE	NE	J		084058-009	SW846 6020
	Copper	0.000771	0.0002	0.001	NE	NE	J		084058-009	SW846 6020
	Iron	0.206	0.01	0.025	NE	NE	B		084058-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084058-009	SW846 6020
	Magnesium	11.1	0.005	0.015	NE	NE			084058-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084058-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084058-009	SW846 7470
	Nickel	0.000851	0.0005	0.002	NE	NE	J		084058-009	SW846 6020
	Potassium	5.02	0.08	0.3	NE	NE			084058-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084058-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084058-009	SW846 6020
	Sodium	47.4	0.08	0.25	NE	NE			084058-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	NE	U		084058-009	SW846 6020
	Uranium	0.00237	0.00005	0.0002	0.03	.03			084058-009	SW846 6020
	Uranium-235	0.000017	0.00001	0.00007	0.03	.03	J		084058-009	SW846 6020
	Uranium-238	0.00235	0.00005	0.0002	0.03	.03			084058-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084058-009	SW846 6020
	Zinc	ND	0.002	0.01	NE	NE	U		084058-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-5
Summary of Dissolved (Filtered) Metal Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SWTA3-MW4	Aluminum	0.00655	0.005	0.015	NE	NE	J		084062-009	SW846 6020
06-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	U		084062-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084062-009	SW846 6020
	Barium	0.049	0.0005	0.002	2	1			084062-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084062-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084062-009	SW846 6020
	Calcium	33.9	0.02	0.1	NE	NE			084062-009	SW846 6020
	Chromium	0.00137	0.001	0.003	0.1	0.05	J		084062-009	SW846 6020
	Cobalt	ND	0.0001	0.001	NE	NE	U		084062-009	SW846 6020
	Copper	0.000688	0.0002	0.001	NE	NE	J	B2, J	084062-009	SW846 6020
	Iron	0.154	0.01	0.025	NE	NE			084062-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084062-009	SW846 6020
	Magnesium	9.83	0.005	0.015	NE	NE			084062-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084062-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084062-009	SW846 7470
	Nickel	0.00094	0.0005	0.002	NE	NE	J		084062-009	SW846 6020
	Potassium	4.14	0.08	0.3	NE	NE			084062-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084062-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084062-009	SW846 6020
	Sodium	59.7	0.4	1.25	NE	NE			084062-009	SW846 6020
	Thallium	0.000585	0.0004	0.001	0.002	NE	J		084062-009	SW846 6020
	Uranium	0.00233	0.00005	0.0002	0.03	.03			084062-009	SW846 6020
	Uranium-235	0.000016	0.00001	0.00007	0.03	.03	J		084062-009	SW846 6020
	Uranium-238	0.00231	0.00005	0.0002	0.03	.03			084062-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084062-009	SW846 6020
	Zinc	0.00893	0.002	0.01	NE	NE	J	B2, J	084062-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-5
Summary of Dissolved (Filtered) Metal Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SWTA3-MW4 (Duplicate) 06-Feb-07	Aluminum	0.00669	0.005	0.015	NE	NE	J		084063-009	SW846 6020
	Antimony	ND	0.0005	0.002	0.006	NE	U		084063-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084063-009	SW846 6020
	Barium	0.0482	0.0005	0.002	2	1			084063-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	NE	U		084063-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084063-009	SW846 6020
	Calcium	34.1	0.02	0.1	NE	NE			084063-009	SW846 6020
	Chromium	0.00114	0.001	0.003	0.1	0.05	J		084063-009	SW846 6020
	Cobalt	0.000111	0.0001	0.001	NE	NE	J		084063-009	SW846 6020
	Copper	0.000675	0.0002	0.001	NE	NE	J	B2, J	084063-009	SW846 6020
	Iron	0.172	0.01	0.025	NE	NE			084063-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084063-009	SW846 6020
	Magnesium	9.98	0.005	0.015	NE	NE			084063-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084063-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084063-009	SW846 7470
	Nickel	0.00108	0.0005	0.002	NE	NE	J		084063-009	SW846 6020
	Potassium	3.93	0.08	0.3	NE	NE			084063-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084063-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084063-009	SW846 6020
	Sodium	54.4	0.4	1.25	NE	NE			084063-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	NE	U		084063-009	SW846 6020
	Uranium	0.0023	0.00005	0.0002	0.03	.03			084063-009	SW846 6020
	Uranium-235	0.000015	0.00001	0.00007	0.03	.03	J		084063-009	SW846 6020
	Uranium-238	0.00228	0.00005	0.0002	0.03	.03			084063-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084063-009	SW846 6020
	Zinc	0.00887	0.002	0.01	NE	NE	J	B2, J	084063-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-5
Summary of Dissolved (Filtered) Metal Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TRE-1	Aluminum	0.00649	0.005	0.015	NE	NE	J		084067-009	SW846 6020
15-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	B, U		084067-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084067-009	SW846 6020
	Barium	0.0458	0.0005	0.002	2	1			084067-009	SW846 6020
	Beryllium	0.000188	0.0001	0.0005	0.004	NE	J		084067-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084067-009	SW846 6020
	Calcium	190	0.2	1.0	NE	NE	B		084067-009	SW846 6020
	Chromium	0.0016	0.001	0.003	0.1	0.05	B, J	B, B2, J	084067-009	SW846 6020
	Cobalt	0.000303	0.0001	0.001	NE	NE	J		084067-009	SW846 6020
	Copper	0.00109	0.0002	0.001	NE	NE	B	B, B2, J	084067-009	SW846 6020
	Iron	0.765	0.01	0.025	NE	NE			084067-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084067-009	SW846 6020
	Magnesium	38.5	0.005	0.015	NE	NE			084067-009	SW846 6020
	Manganese	0.00102	0.001	0.005	NE	NE	J		084067-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084067-009	SW846 7470
	Nickel	0.00266	0.0005	0.002	NE	NE			084067-009	SW846 6020
	Potassium	6.58	0.08	0.3	NE	NE			084067-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084067-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084067-009	SW846 6020
	Sodium	122	0.8	2.5	NE	NE			084067-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	NE	U		084067-009	SW846 6020
	Uranium	0.0175	0.00005	0.0002	0.03	.03	B		084067-009	SW846 6020
	Uranium-235	0.000125	0.00001	0.00007	0.03	.03			084067-009	SW846 6020
	Uranium-238	0.0174	0.00005	0.0002	0.03	.03	B		084067-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084067-009	SW846 6020
	Zinc	0.00545	0.002	0.01	NE	NE	B, J	B, B2, J	084067-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-5 (Concluded)
Summary of Dissolved (Filtered) Metal Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TRE-1 (Duplicate)	Aluminum	ND	0.005	0.015	NE	NE	U		084068-009	SW846 6020
15-Feb-07	Antimony	ND	0.0005	0.002	0.006	NE	B, U		084068-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.01	0.1	U		084068-009	SW846 6020
	Barium	0.0461	0.0005	0.002	2	1			084068-009	SW846 6020
	Beryllium	0.000138	0.0001	0.0005	0.004	NE	J		084068-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	0.01	U		084068-009	SW846 6020
	Calcium	190	0.2	1.0	NE	NE	B		084068-009	SW846 6020
	Chromium	0.00143	0.001	0.003	0.1	0.05	B, J	B, B2, J	084068-009	SW846 6020
	Cobalt	0.000302	0.0001	0.001	NE	NE	J		084068-009	SW846 6020
	Copper	0.00174	0.0002	0.001	NE	NE	B	B, B2, J	084068-009	SW846 6020
	Iron	0.584	0.01	0.025	NE	NE			084068-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	0.05	U		084068-009	SW846 6020
	Magnesium	36.9	0.005	0.015	NE	NE			084068-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	NE	U		084068-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084068-009	SW846 7470
	Nickel	0.00268	0.0005	0.002	NE	NE			084068-009	SW846 6020
	Potassium	6.68	0.08	0.3	NE	NE			084068-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	0.05	U		084068-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	0.05	U		084068-009	SW846 6020
	Sodium	126	0.8	2.5	NE	NE			084068-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	NE	U		084068-009	SW846 6020
	Uranium	0.0175	0.00005	0.0002	0.03	.03	B		084068-009	SW846 6020
	Uranium-235	0.000126	0.00001	0.00007	0.03	.03			084068-009	SW846 6020
	Uranium-238	0.0174	0.00005	0.0002	0.03	.03	B		084068-009	SW846 6020
	Vanadium	ND	0.01	0.03	NE	NE	U		084068-009	SW846 6020
	Zinc	0.00388	0.002	0.01	NE	NE	B, J	B, B2, J	084068-009	SW846 6020

Refer to footnotes on page A-35.

Table GWPP A-6
Summary of Total (Unfiltered) Mercury Results (EPA Method[g] SW846-7470)
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Sample Date	Mercury Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL / MAC[d] (mg/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.
Coyote Springs	31-Jan-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084035-010
Eubank-1	09-Feb-07	ND	0.00006	0.0002	0.002	0.002	U		084037-010
Greystone-MW2	16-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084039-010
MRN-2	07-Feb-07	ND	0.00006	0.0002	0.002	0.002	U		084041-010
NWTA3-MW3D	01-Feb-07	ND	0.00006	0.0002	0.002	0.002	U		084047-010
PL-2	13-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084049-010
SFR-2S	30-Jan-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084051-010
SFR-4T	29-Jan-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084053-010
SWTA3-MW2	02-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084056-010
SWTA3-MW3	05-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084058-010
SWTA3-MW4	06-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084062-010
SWTA3-MW4 (Duplicate)	06-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084063-010
TRE-1	15-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084067-010
TRE-1 (Duplicate)	15-Feb-07	ND	0.00006	0.0002	0.002	0.002	U	B3, UJ	084068-010

Refer to footnotes on page A-35.

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Table GWPP A-7
Summary of Gamma-Emitting Radionuclides/Short List (EPA Method[g] 901.0)
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[b] (pCi/L)	Critical Level[c] (pCi/L)	MCL/ MAC[d] (pCi/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.
Coyote Springs 31-Jan-07	Americium-241	-3.03 ± 12.4	17.2	8.62	NE	NE	U		084035-033
	Cesium-137	-1.07 ± 3.42	3.07	1.54	NE	NE	U		084035-033
	Cobalt-60	2.11 ± 2.15	3.81	1.90	NE	NE	U		084035-033
	Potassium-40	22.3 ± 39.5	29.5	14.8	NE	NE	U		084035-033
Eubank-1 09-Feb-07	Americium-241	-10.2 ± 10.7	17.7	8.87	NE	NE	U		084037-033
	Cesium-137	2.23 ± 1.66	2.98	1.49	NE	NE	U		084037-033
	Cobalt-60	1.40 ± 1.77	3.14	1.57	NE	NE	U		084037-033
	Potassium-40	-3.81 ± 27.4	33.3	16.7	NE	NE	U		084037-033
Greystone-MW2 16-Feb-07	Americium-241	-11.1 ± 11.3	16.9	8.47	NE	NE	U		084039-033
	Cesium-137	0.202 ± 2.63	3.30	1.65	NE	NE	U		084039-033
	Cobalt-60	-0.61 ± 1.99	3.29	1.65	NE	NE	U		084039-033
	Potassium-40	-11.0 ± 38.4	46.7	23.4	NE	NE	U		084039-033
MRN-2 07-Feb-07	Americium-241	2.79 ± 8.87	11.5	5.74	NE	NE	U		084041-033
	Cesium-137	-0.298 ± 1.75	2.87	1.44	NE	NE	U		084041-033
	Cobalt-60	0.522 ± 1.90	3.22	1.61	NE	NE	U		084041-033
	Potassium-40	20.1 ± 46.8	29.6	14.8	NE	NE	U		084041-033
NWTA3-MW3D 01-Feb-07	Americium-241	4.85 ± 13.0	16.9	8.44	NE	NE	U		084047-033
	Cesium-137	0.636 ± 1.93	3.24	1.62	NE	NE	U		084047-033
	Cobalt-60	-0.899 ± 1.95	3.10	1.55	NE	NE	U		084047-033
	Potassium-40	15.2 ± 46.6	49.4	24.7	NE	NE	U		084047-033
PL-2 13-Feb-07	Americium-241	-2.02 ± 15.2	19.3	9.66	NE	NE	U		084049-033
	Cesium-137	-0.499 ± 1.65	2.69	1.35	NE	NE	U		084049-033
	Cobalt-60	-0.384 ± 2.04	2.84	1.42	NE	NE	U		084049-033
	Potassium-40	-23.6 ± 37.5	36.0	18.0	NE	NE	U		084049-033
SFR-2S 30-Jan-07	Americium-241	-24.2 ± 11.0	17.5	8.77	NE	NE	U		084051-033
	Cesium-137	-3.32 ± 5.02	3.22	1.61	NE	NE	U		084051-033
	Cobalt-60	0.626 ± 2.01	3.41	1.71	NE	NE	U		084051-033
	Potassium-40	40.8 ± 51.9	26.4	13.2	NE	NE	X	R	084051-033
SFR-4T 29-Jan-07	Americium-241	-5.53 ± 10.9	16.0	8.01	NE	NE	U		084053-033
	Cesium-137	3.00 ± 2.23	3.50	1.75	NE	NE	U		084053-033
	Cobalt-60	1.17 ± 2.07	3.58	1.79	NE	NE	U		084053-033
	Potassium-40	20.5 ± 44.8	32.4	16.2	NE	NE	U		084053-033
SWTA3-MW2 02-Feb-07	Americium-241	5.24 ± 11.2	17.2	8.58	NE	NE	U		084056-033
	Cesium-137	0.774 ± 2.07	3.48	1.74	NE	NE	U		084056-033
	Cobalt-60	1.05 ± 2.28	3.91	1.95	NE	NE	U		084056-033
	Potassium-40	11.6 ± 43.9	28.6	14.3	NE	NE	U		084056-033

Refer to footnotes on page A-35.

Table GWPP A-7 (Concluded)
Summary of Detected Gamma-Emitting Radionuclides Exceeding the MDA (EPA Method[g] 901.0)
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[b] (pCi/L)	Critical Level[c] (pCi/L)	MCL/ MAC[d] (pCi/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.
SWTA3-MW3	Americium-241	-1.27 ± 12.5	15.8	7.92	NE	NE	U		084058-033
05-Feb-07	Cesium-137	1.75 ± 1.77	3.26	1.63	NE	NE	U		084058-033
	Cobalt-60	0.359 ± 1.97	3.31	1.66	NE	NE	U		084058-033
	Potassium-40	4.49 ± 39.1	33.6	16.8	NE	NE	U		084058-033
SWTA3-MW4	Americium-241	9.88 ± 11.1	16.1	8.03	NE	NE	U		084062-033
06-Feb-07	Cesium-137	0.261 ± 1.86	3.10	1.55	NE	NE	U		084062-033
	Cobalt-60	1.98 ± 1.91	3.39	1.70	NE	NE	U		084062-033
	Potassium-40	70.9 ± 22.3	70.9	21.4	NE	NE	U		084062-033
SWTA3-MW4 (Duplicate)	Americium-241	0.632 ± 10.2	11.8	5.91	NE	NE	U		084063-033
06-Feb-07	Cesium-137	0.726 ± 2.01	3.04	1.52	NE	NE	U		084063-033
	Cobalt-60	-0.333 ± 2.21	3.08	1.54	NE	NE	U		084063-033
	Potassium-40	38.4 ± 39.2	31.0	15.5	NE	NE	X	R	084063-033
TRE-1	Americium-241	6.17 ± 4.77	7.43	3.72	NE	NE	U		084067-033
15-Feb-07	Cesium-137	-1.08 ± 2.84	4.59	2.30	NE	NE	U		084067-033
	Cobalt-60	0.877 ± 2.76	4.69	2.35	NE	NE	U		084067-033
	Potassium-40	2.54 ± 61.6	42.6	21.3	NE	NE	U		084067-033
TRE-1 (Duplicate)	Americium-241	2.01 ± 3.51	6.19	3.10	NE	NE	U		084068-033
15-Feb-07	Cesium-137	0.0751 ± 2.97	4.87	2.44	NE	NE	U		084068-033
	Cobalt-60	-0.0252 ± 2.97	4.86	2.43	NE	NE	U		084068-033
	Potassium-40	42.0 ± 68.5	41.9	20.9	NE	NE	X	R	084068-033

Refer to footnotes on page A-35.

Table GWPP A-8
Summary of Radioisotopic Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/ New Mexico

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[b] (pCi/L)	Critical Level[c] (pCi/L)	MCL/ MAC[d] (pCi/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
Coyote Springs	Gross Alpha	13.6 ± 5.23	6.49	2.88	15	NE			084035-034	EPA 900.0
31-Jan-07	Gross Beta	36.9 ± 10.3	15.1	7.21	4mrem/yr	NE			084035-034	EPA 900.0
	Radium-226	0.0528 ± 0.427	0.854	0.348	5	30	U		084035-038	EPA 903.1
	Radium-228	0.690 ± 0.565	0.890	0.382	5	30	U		084035-039	EPA 904.0
Eubank-1	Gross Alpha	2.68 ± 0.764	0.787	0.349	15	NE			084037-034	EPA 900.0
09-Feb-07	Gross Beta	4.28 ± 1.75	2.54	1.17	4mrem/yr	NE			084037-034	EPA 900.0
	Radium-226	0.478 ± 0.368	0.552	0.225	5	30	U		084037-038	EPA 903.1
	Radium-228	0.544 ± 0.448	0.700	0.296	5	30	U		084037-039	EPA 904.0
Greystone-MW2	Gross Alpha	14.2 ± 2.55	1.78	0.754	15	NE			084039-034	EPA 900.0
16-Feb-07	Gross Beta	6.43 ± 3.92	6.33	3.03	4mrem/yr	NE			084039-034	EPA 900.0
	Radium-226	0.944 ± 0.740	1.11	0.447	5	30	U		084039-038	EPA 903.1
	Radium-228	0.254 ± 0.374	0.650	0.277	5	30	U		084039-039	EPA 904.0
MRN-2	Gross Alpha	4.60 ± 1.45	1.42	0.600	15	NE			084041-034	EPA 900.0
07-Feb-07	Gross Beta	5.33 ± 2.00	2.68	1.23	4mrem/yr	NE			084041-034	EPA 900.0
	Radium-226	0.344 ± 0.413	0.695	0.283	5	30	U		084041-038	EPA 903.1
	Radium-228	0.0521 ± 0.328	0.631	0.267	5	30	U		084041-039	EPA 904.0
NWTA3-MW3D	Gross Alpha	3.38 ± 1.41	1.59	0.643	15	NE			084047-034	EPA 900.0
01-Feb-07	Gross Beta	4.86 ± 1.33	1.95	0.933	4mrem/yr	NE			084047-034	EPA 900.0
	Radium-226	0.353 ± 0.300	0.423	0.145	5	30	U		084047-038	EPA 903.1
	Radium-228	0.218 ± 0.383	0.682	0.286	5	30	U		084047-039	EPA 904.0
PL-2	Gross Alpha	3.22 ± 0.651	0.482	0.205	15	NE			084049-034	EPA 900.0
13-Feb-07	Gross Beta	4.86 ± 1.10	1.49	0.710	4mrem/yr	NE			084049-034	EPA 900.0
	Radium-226	0.296 ± 0.356	0.599	0.244	5	30	U		084049-038	EPA 903.1
	Radium-228	0.642 ± 0.510	0.798	0.342	5	30	U		084049-039	EPA 904.0
SFR-2S	**Gross Alpha**	**25.2 ± 3.58**	1.03	0.417	15	NE			084051-034	EPA 900.0
30-Jan-07	Gross Beta	11.1 ± 1.95	2.66	1.28	4mrem/yr	NE			084051-034	EPA 900.0
	Radium-226	0.580 ± 0.697	1.17	0.477	5	30	U		084051-038	EPA 903.1
	Radium-228	0.350 ± 0.354	0.577	0.242	5	30	U		084051-039	EPA 904.0
SFR-4T	Gross Alpha	0.682 ± 3.26	5.98	2.58	15	NE	U		084053-034	EPA 900.0
29-Jan-07	Gross Beta	6.46 ± 6.08	10.1	4.87	4mrem/yr	NE	U		084053-034	EPA 900.0
	Radium-226	0.122 ± 0.348	0.658	0.268	5	30	U		084053-038	EPA 903.1
	Radium-228	0.194 ± 0.314	0.553	0.233	5	30	U		084053-039	EPA 904.0

Refer to footnotes on page A-35.

Table GWPP A-8 (Concluded)
Summary of Radioisotopic Results
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[b] (pCi/L)	Critical Level[c] (pCi/L)	MCL/ MAC[d] (pCi/L)		Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
SWTA3-MW2	Gross Alpha	4.09 ± 1.42	1.32	0.504	15	NE			084056-034	EPA 900.0
02-Feb-07	Gross Beta	5.70 ± 1.33	1.86	0.890	4mrem/yr	NE			084056-034	EPA 900.0
	Radium-226	0.244 ± 0.374	0.657	0.268	5	30	U		084056-038	EPA 903.1
	Radium-228	1.10 ± 0.545	0.750	0.322	5	30			084056-039	EPA 904.0
SWTA3-MW3	Gross Alpha	3.88 ± 1.50	1.52	0.582	15	NE			084058-034	EPA 900.0
05-Feb-07	Gross Beta	4.70 ± 1.28	1.84	0.880	4mrem/yr	NE			084058-034	EPA 900.0
	Radium-226	0.271 ± 0.365	0.627	0.255	5	30	U		084058-038	EPA 903.1
	Radium-228	-0.0984 ± 0.306	0.652	0.274	5	30	U		084058-039	EPA 904.0
SWTA3-MW4	Gross Alpha	3.48 ± 1.40	1.37	0.573	15	NE			084062-034	EPA 900.0
06-Feb-07	Gross Beta	4.43 ± 1.86	2.68	1.23	4mrem/yr	NE			084062-034	EPA 900.0
	Radium-226	0.112 ± 0.320	0.604	0.246	5	30	U		084062-038	EPA 903.1
	Radium-228	0.444 ± 0.440	0.718	0.306	5	30	U		084062-039	EPA 904.0
SWTA3-MW4 (Duplicate)	Gross Alpha	3.14 ± 1.25	1.31	0.543	15	NE			084063-034	EPA 900.0
06-Feb-07	Gross Beta	3.59 ± 1.73	2.56	1.17	4mrem/yr	NE			084063-034	EPA 900.0
	Radium-226	0.222 ± 0.341	0.599	0.244	5	30	U		084063-038	EPA 903.1
	Radium-228	1.54 ± 0.644	0.806	0.341	5	30		B2, J	084063-039	EPA 904.0
TRE-1	**Gross Alpha**	**24.5 ± 5.96**	3.52	1.63	15	NE			084067-034	EPA 900.0
15-Feb-07	Gross Beta	8.41 ± 4.16	6.36	3.01	4mrem/yr	NE			084067-034	EPA 900.0
	Radium-226	0.969 ± 0.503	0.645	0.259	5	30			084067-038	EPA 903.1
	Radium-228	0.405 ± 0.387	0.626	0.265	5	30	U		084067-039	EPA 904.0
TRE-1 (Duplicate)	**Gross Alpha**	**21.4 ± 3.60**	2.54	1.13	15	NE			084068-034	EPA 900.0
15-Feb-07	Gross Beta	8.97 ± 3.95	6.03	2.84	4mrem/yr	NE			084068-034	EPA 900.0
	Radium-226	0.886 ± 0.542	0.754	0.307	5	30			084068-038	EPA 903.1
	Radium-228	0.390 ± 0.397	0.647	0.268	5	30	U		084068-039	EPA 904.0

Refer to footnotes on page A-35.

Table GWPP A-9
Summary of Field Water Quality Measurements[h]
Groundwater Protection Program Groundwater Surveillance Task, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Sample Date	Sampling Type	Initial Depth to water (fbtoc)	Sampling Depth (fbtoc)	Purge Volume (gal)	Temperature (^{0}C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (%Sat)	Alkalinity (mg/L $CaCO_3$ at 4.5 pH)
Coyote Springs	31-Jan-07	n/a	n/a	n/a	n/a	11.36	2,897	290.2	6.03	1.55	31.0	916
Eubank-1	09-Feb-07	Bennett Pump	552.83	609	107	16.75	467	235.8	7.47	0.14	77.4	174
Greystone-MW2	16-Feb-07	Bennett Pump	50.81	82	57	14.49	1,127	219.8	7.09	0.17	72.1	450
MRN-2	07-Feb-07	Bennett Pump	432.63	442	34	17.85	409	369.9	6.96	0.20	72.3	157
NWTA3-MW3D	01-Feb-07	Bennett Pump	464.89	675	62	16.95	351	259.3	7.51	2.50	34.0	142
PL-2	13-Feb-07	Bennett Pump	467.67	599	57	16.03	401	241.3	7.76	0.18	60.0	134
SFR-2S	30-Jan-07	Bennett Pump	99.42	118	43	14.00	1,034	235.2	6.76	3.47	81.3	389
SFR-4T	29-Jan-07	Bennett Pump	147.12	361	73	15.79	3,909	228.8	7.94	0.47	11.4	97
SWTA3-MW2	02-Feb-07	Bennett Pump	447.44	476	57	16.93	399	257.4	7.49	0.21	54.0	161
SWTA3-MW3	05-Feb-07	Bennett Pump	444.97	641	56	19.11	412	356.9	7.03	1.53	43.8	155
SWTA3-MW4	19-Dec-06	Bennett Pump	445.11	453	23	13.15	414	302.4	7.50	0.52	63.8	NM
	06-Feb-07	Bennett Pump	445.37	453	23	17.62	417	365.6	7.00	0.52	66.5	171
TRE-1	15-Feb-07	Bennett Pump	174.97	296	114	16.40	1,302	265.6	6.76	0.16	69.3	434

Refer to footnotes on page A-35.

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[a]Result and/or Activity
- Values in bold exceed the established MCL and/or MAC.
- ND = not detected (at method detection limit).
- Activities of zero or less are considered to be not detected.
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- pCi/L = picocuries per liter

[b]MDL or MDA
Method detection limit. The minimum concentration or activity that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.

The minimal detectable activity or minimum measured activity in a sample required to ensure a 95% probability that the measured activity is accurately quantified above the critical level

[c]PQL or Critical Level
Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.

The minimum activity that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific

[d]MCL/MAC
Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations (40 CFR 141.11(b)), and subsequent amendments or the New Mexico Environmental Improvement Board in Title 20, Chapter 7, Part 1 of the New Mexico Administrative Code (20MAC 7.1).
Maximum Allowable Concentration in groundwater for the contaminants specified in 20 NMAC 6.2, Sec 3103, Human Health Standards.
NE = not established.
15 pCi/L = the maximum gross alpha activity, including radium-226, but excluding radon and total uranium.
4 mrem/yr = any combination of beta and/or gamma emitting radionuclides (as dose rate).
5 pCi/L = combined radium-226 and radium-228 activities.
30 pCi/L = combined radium-226 and radium-228 activities.

[e]Lab Qualifier
B = Analyte is detected in associated laboratory method blank.
J = Amount detected is below the practical quantitation limit (PQL).
h = Analytical prep holding time was exceeded.
H = Analytical holding time was exceeded.
U = Analyte is absent or below the method detection limit.
X = Data rejected due to low abundance.

[f]Validation Qualifier
If cell is blank, then all quality control samples meet acceptance criteria with respect to submitted samples.
A2 = Laboratory accuracy and/or bias measurements for the associated matrix spike and/or matrix spike duplicate do not meet acceptance criteria.
B = Analyte present in associated laboratory method blank.
B1 = Analyte present in associated trip blank sample.
B2 = Analyte present in associated equipment blank.
B3 = Analyte present in associated continuing calibration blank.
J = The associate value is an estimated quantity.
HT = The holding time was exceeded for the associated sample analysis.

[f]Validation Qualifier (continued)

R = The data are unusable for their intended purpose. The analyte may or may not be present.
#U = Analyte was qualified as not detected at the listed value.
#UJ = Analyte was qualified as not detected at the listed value. The value is an estimate.
UJ = Analyte not detected above laboratory method detection limit, but associated value is an estimate and may be inaccurate or imprecise.

[g]Analytical Method

U.S. Environmental Protection Agency, 1990, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd ed.
U.S. Environmental Protection Agency, 1983, "The Determination of Inorganic Anions in Water by Ion Chromatography-Method 300.0,"
EPA-600/4-84-017.
U.S. Environmental Protection Agency, 1999, "Perchlorate in Drinking Water Using Ion Chromatography," EPA 815/R-00-014.
U.S. Environmental Protection Agency, 1990, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd ed.
U.S. Environmental Protection Agency, 1980, "Prescribed Procedures for Measurement of Radioactivity in Drinking Water,"
EPA-600/4-80-032.

[h]Field Water Quality Measurements

Field measurements collected prior to sampling.
^{O}C = degrees Celsius
% Sat = percent saturation
fbtoc = feet below top of casing
gal = gallons
µmho/cm = micromhos per centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = nephelometric turbidity units
pH = potential of hydrogen (negative logarithm of the hydrogen ion concentration)
PL-3* = last measurement prior to well going dry

APPENDIX B

Chemical Waste Landfill Groundwater Surveillance Task

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Footnotes for Chemical Waste Landfill Groundwater Monitoring B-21

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Table CWL B-1
Summary of Detected Volatile Organic Compounds
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-BW3 09-Oct-06	Acetone	1.58	1.25	5.00	NE	J		083040-001	SW846 8260
	Toluene	1.45	0.250	1.00	1,000			083040-001	SW846 8260
CWL-BW4A 05-Oct-06	Acetone	3.50	1.25	5.00	NE	J	5.0UJ	083037-001	SW846 8260
	Toluene	1.28	0.250	1.00	1,000			083037-001	SW846 8260
	Trichloroethene	0.280	0.250	1.00	5.00	J		083037-001	SW846 8260
CWL-MW2BL 03-Oct-06	Acetone	2.37	1.25	5.00	NE	J	5.0U, B1	083035-001	SW846 8260
CWL-MW2BU 20-Oct-06	Acetone	2.39	1.25	5.00	NE	J		083049-001	SW846 8260
	Carbon disulfide	4.28	1.25	5.00	NE	B, J	5.0UJ, B	083049-001	SW846 8260
	Trichloroethene	0.256	0.250	1.00	5.00	J		083049-001	SW846 8260
CWL-MW5L 19-Oct-06	Trichloroethene	0.579	0.250	1.00	5.00	J		083058-001	SW846 8260
CWL-MW5U 13-Oct-06	Toluene	0.435	0.250	1.00	1,000	J		083046-001	SW846 8260
	Trichloroethene	2.36	0.250	1.00	5.00			083046-001	SW846 8260
CWL-MW5U (Duplicate) 13-Oct-06	Carbon disulfide	24.8	1.25	5.00	NE		A, A2, J	083047-001	SW846 8260
	Toluene	0.423	0.250	1.00	1,000	J		083047-001	SW846 8260
	Trichloroethene	2.32	0.250	1.00	5.00			083047-001	SW846 8260
CWL-MW6L 18-Oct-06	Acetone	2.11	1.25	5.00	NE	J		083056-001	SW846 8260
	Trichloroethene	0.804	0.250	1.00	5.00	J		083056-001	SW846 8260
CWL-MW6U 11-Oct-06	Toluene	0.347	0.250	1.00	1,000	J		083042-001	SW846 8260
	Trichloroethene	0.421	0.250	1.00	5.00	J		083042-001	SW846 8260
CWL-BW3 30-Apr-07	Trichloroethene	0.345	0.250	1.00	5.00	J		084572-001	SW846 8260
CWL-BW4A 07-May-07	1,2,4-Trichlorobenzene	0.434	0.300	1.00	70.0	J		084566-001	SW846 8260
CWL-MW2BU 08-May-07	Trichloroethene	3.59	0.250	1.00	5.00			084559-001	SW846 8260
CWL-MW4 09-May-07	Acetone	2.74	1.25	5.00	NE	J	5.0U	084579-001	SW846 8260
CWL-MW5L 01-May-07	Trichloroethene	0.738	0.250	1.00	5.00	J		084568-001	SW846 8260
CWL-MW5U 03-May-07	Trichloroethene	2.31	0.250	1.00	5.00			084574-001	SW846 8260

Refer to footnotes on page B-21.

Table CWL B-1 (Concluded)
Summary of Detected Volatile Organic Compounds
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW6L	Acetone	5.68	1.25	5.00	NE			084561-001	SW846 8260
26-Apr-07	Trichloroethene	0.374	0.250	1.00	5.00	J		084561-001	SW846 8260
CWL-MW6U 11-May-07	Trichloroethene	0.410	0.250	1.00	5.00	J		084576-001	SW846 8260
CWL-MW6U (Duplicate)	Acetone	1.44	1.25	5.00	NE	J	5.0UJ, A2, B2	084577-001	SW846 8260
11-May-07	Trichloroethene	0.387	0.250	1.00	5.00	J		084577-001	SW846 8260

Refer to footnotes on page B-21.

Table CWL B-2
Method Detection Limits for Appendix IX Volatile Organic Compounds
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Analyte	MDL[b] (µg/L)	Analytical Method[g]	Analyte	MDL[b] (µg/L)	Analytical Method[g]
1,1,1,2-Tetrachloroethane	0.250	SW846 8260	Chloroform	0.250	SW846 8260
1,1,1-Trichloroethane	0.300	SW846 8260	Chloromethane	0.500	SW846 8260
1,1,2,2-Tetrachloroethane	0.250	SW846 8260	Chloroprene	0.300	SW846 8260
1,1,2-Trichloroethane	0.250	SW846 8260	Dibromochloromethane	0.250	SW846 8260
1,1-Dichloroethane	0.300	SW846 8260	Dibromomethane	0.300	SW846 8260
1,1-Dichloroethene	0.300	SW846 8260	Dichlorodifluoromethane	0.500	SW846 8260
1,2,3-Trichloropropane	0.300	SW846 8260	Ethyl benzene	0.250	SW846 8260
1,2,4-Trichlorobenzene	0.300	SW846 8260	Ethyl cyanide	1.50	SW846 8260
1,2-Dibromo-3-chloropropane	0.500	SW846 8260	Ethyl methacrylate	1.00	SW846 8260
1,2-Dibromoethane	0.250	SW846 8260	Iodomethane	1.25	SW846 8260
1,2-Dichloroethane	0.250	SW846 8260	Isobutanol	12.5	SW846 8260
1,2-Dichloropropane	0.250	SW846 8260	Methacrylonitrile	1.00	SW846 8260
2-Butanone	1.25	SW846 8260	Methyl methacrylate	1.00	SW846 8260
2-Hexanone	1.25	SW846 8260	Methylene chloride	2.00	SW846 8260
4-methyl-, 2-Pentanone	1.25	SW846 8260	Pentachloroethane	1.00	SW846 8260
Acetone	1.25	SW846 8260	Styrene	0.250	SW846 8260
Acetonitrile	6.25	SW846 8260	Tetrachloroethene	0.250	SW846 8260
Acrolein	3.00	SW846 8260	Toluene	0.250	SW846 8260
Acrylonitrile	1.00	SW846 8260	Trichloroethene	0.250	SW846 8260
Allyl chloride	3.70	SW846 8260	Trichlorofluoromethane	0.310	SW846 8260
Benzene	0.300	SW846 8260	Vinyl acetate	1.50	SW846 8260
Bromodichloromethane	0.250	SW846 8260	Vinyl chloride	0.500	SW846 8260
Bromoform	0.250	SW846 8260	Xylene	0.250	SW846 8260
Bromomethane	0.500	SW846 8260	bis-Chloroisopropyl ether	1.50	SW846 8260
Carbon disulfide	1.25	SW846 8260	cis-1,3-Dichloropropene	0.250	SW846 8260
Carbon tetrachloride	0.250	SW846 8260	trans-1,2-Dichloroethene	0.300	SW846 8260
Chlorobenzene	0.250	SW846 8260	trans-1,3-Dichloropropene	0.250	SW846 8260
Chloroethane	0.500	SW846 8260	trans-1,4-Dichloro-2-butene	1.00	SW846 8260

Refer to footnotes on page B-21.

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Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-BW3 09-Oct-06	Antimony	ND	0.0005	0.002	0.006	U		083040-009	SW846 6020
	Arsenic	0.0031	0.0015	0.005	0.010	J		083040-009	SW846 6020
	Barium	0.0550	0.0005	0.002	2.00			083040-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083040-009	SW846 6020
	Cadmium	0.00143	0.0001	0.001	0.005			083040-009	SW846 6020
	Chromium	0.0342	0.001	0.003	0.100	B		083040-009	SW846 6020
	Cobalt	0.000399	0.0001	0.001	NE	J		083040-009	SW846 6020
	Copper	0.00416	0.0002	0.001	NE			083040-009	SW846 6020
	Iron	0.485	0.010	0.025	NE			083040-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		083040-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	083040-009	SW846 7470
	Nickel	0.0890	0.0005	0.002	NE			083040-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		083040-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083040-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083040-009	SW846 6020
	Tin	0.108	0.001	0.005	NE			083040-009	SW846 6020
	Vanadium	0.00691	0.002	0.030	NE	B, J	B, J	083040-009	SW846 6020
	Zinc	0.00947	0.002	0.010	NE	B, J	B, J	083040-009	SW846 6020
CWL-BW3 30-Apr-07	Antimony	0.000503	0.0005	0.002	0.006	B, J	B, B3, J	084572-009	SW846 6020
	Arsenic	0.00192	0.0015	0.005	0.010	B, J	B, J	084572-009	SW846 6020
	Barium	0.0634	0.0005	0.002	2.00			084572-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084572-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084572-009	SW846 6020
	Chromium	0.00914	0.001	0.003	0.100			084572-009	SW846 6020
	Cobalt	0.000191	0.0001	0.001	NE	J		084572-009	SW846 6020
	Copper	0.00121	0.0002	0.001	NE			084572-009	SW846 6020
	Iron	0.316	0.010	0.025	NE			084572-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084572-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084572-009	SW846 7470
	Nickel	0.0692	0.0005	0.002	NE			084572-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084572-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084572-009	SW846 6020
	Thallium	0.000564	0.0004	0.001	0.002	J		084572-009	SW846 6020
	Tin	0.00104	0.001	0.005	NE	J		084572-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084572-009	SW846 6020
	Zinc	0.00557	0.002	0.010	NE	J		084572-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-BW4A 05-Oct-06	Antimony	ND	0.0005	0.002	0.006	U		083037-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		083037-009	SW846 6020
	Barium	0.0519	0.0005	0.002	2.00			083037-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083037-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		083037-009	SW846 6020
	Chromium	0.00234	0.001	0.003	0.100	B, J	B, J	083037-009	SW846 6020
	Cobalt	0.000254	0.0001	0.001	NE	J		083037-009	SW846 6020
	Copper	0.00117	0.0002	0.001	NE			083037-009	SW846 6020
	Iron	0.582	0.010	0.025	NE	B		083037-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		083037-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083037-009	SW846 7470
	Nickel	0.00246	0.0005	0.002	NE			083037-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		083037-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083037-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083037-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		083037-009	SW846 6020
	Vanadium	ND	0.002	0.030	NE	U		083037-009	SW846 6020
	Zinc	0.00838	0.002	0.010	NE	B, J	B, J	083037-009	SW846 6020
CWL-BW4A 07-May-07	Antimony	ND	0.0005	0.002	0.006	B, U		084565-009	SW846 6020
	Arsenic	0.00168	0.0015	0.005	0.010	B, J	B, J	084565-009	SW846 6020
	Barium	0.0595	0.0005	0.002	2.00			084565-009	SW846 6020
	Beryllium	0.000111	0.0001	0.0005	0.004	B, J	B, B3, J	084565-009	SW846 6020
	Cadmium	0.000334	0.0001	0.001	0.005	J		084565-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084565-009	SW846 6020
	Cobalt	0.000303	0.0001	0.001	NE	J		084565-009	SW846 6020
	Copper	0.00117	0.0002	0.001	NE			084565-009	SW846 6020
	Iron	0.805	0.010	0.025	NE			084565-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084565-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084565-009	SW846 7470
	Nickel	0.00376	0.0005	0.002	NE			084565-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084565-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084565-009	SW846 6020
	Thallium	0.00041	0.0004	0.001	0.002	J		084565-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084565-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084565-009	SW846 6020
	Zinc	0.00816	0.002	0.010	NE	J		084565-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-BW4A (Duplicate) 07-May-07	Antimony	ND	0.0005	0.002	0.006	B, U		084566-009	SW846 6020
	Arsenic	0.00174	0.0015	0.005	0.010	B, J	B, J	084566-009	SW846 6020
	Barium	0.0595	0.0005	0.002	2.00			084566-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	B, U		084566-009	SW846 6020
	Cadmium	0.000328	0.0001	0.001	0.005	J		084566-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084566-009	SW846 6020
	Cobalt	0.000284	0.0001	0.001	NE	J		084566-009	SW846 6020
	Copper	0.00118	0.0002	0.001	NE			084566-009	SW846 6020
	Iron	0.811	0.010	0.025	NE			084566-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084566-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084566-009	SW846 7470
	Nickel	0.00392	0.0005	0.002	NE			084566-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084566-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084566-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084566-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084566-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084566-009	SW846 6020
	Zinc	0.0102	0.002	0.010	NE			084566-009	SW846 6020
CWL-MW2BL 03-Oct-06	Antimony	0.000704	0.0005	0.002	0.006	B, J	B, B3, J	083035-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		083035-009	SW846 6020
	Barium	0.0627	0.0005	0.002	2.00			083035-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083035-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		083035-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		083035-009	SW846 6020
	Cobalt	0.000237	0.0001	0.001	NE	J		083035-009	SW846 6020
	Copper	0.00107	0.0002	0.001	NE			083035-009	SW846 6020
	Iron	0.446	0.010	0.025	NE			083035-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		083035-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083035-009	SW846 7470
	Nickel	0.00234	0.0005	0.002	NE			083035-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		083035-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083035-009	SW846 6020
	Thallium	0.000569	0.0004	0.001	0.002	J	B3, J	083035-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		083035-009	SW846 6020
	Vanadium	ND	0.002	0.030	NE	U		083035-009	SW846 6020
	Zinc	0.00322	0.002	0.010	NE	B, J	B, J	083035-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW2BL 08-May-07	Antimony	ND	0.0005	0.002	0.006	U		084563-009	SW846 6020
	Arsenic	0.00334	0.0015	0.005	0.010	B, J	B, J	084563-009	SW846 6020
	Barium	0.0618	0.0005	0.002	2.00			084563-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084563-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084563-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084563-009	SW846 6020
	Cobalt	0.000337	0.0001	0.001	NE	J		084563-009	SW846 6020
	Copper	0.000887	0.0002	0.001	NE	J		084563-009	SW846 6020
	Iron	0.686	0.010	0.025	NE		J	084563-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084563-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084563-009	SW846 7470
	Nickel	0.00349	0.0005	0.002	NE			084563-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084563-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084563-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084563-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084563-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084563-009	SW846 6020
	Zinc	ND	0.002	0.010	NE	B, U		084563-009	SW846 6020
CWL-MW2BU 20-Oct-06	Antimony	0.000716	0.0005	0.002	0.006	J	B3, J	083049-009	SW846 6020
	Arsenic	0.00485	0.0015	0.005	0.010	J		083049-009	SW846 6020
	Barium	0.0550	0.0005	0.002	2.00			083049-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083049-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		083049-009	SW846 6020
	Chromium	0.0116	0.001	0.003	0.100			083049-009	SW846 6020
	Cobalt	0.000471	0.0001	0.001	NE	J		083049-009	SW846 6020
	Copper	0.00306	0.0002	0.001	NE			083049-009	SW846 6020
	Iron	0.912	0.010	0.025	NE			083049-009	SW846 6020
	Lead	0.00107	0.0005	0.002	NE	J		083049-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083049-009	SW846 7470
	Nickel	0.0158	0.0005	0.002	NE			083049-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		083049-009	SW846 6020
	Silver	0.000411	0.0002	0.001	NE	J		083049-009	SW846 6020
	Thallium	0.000546	0.0004	0.001	0.002	J		083049-009	SW846 6020
	Tin	0.00119	0.001	0.005	NE	J		083049-009	SW846 6020
	Vanadium	0.00273	0.002	0.030	NE	J		083049-009	SW846 6020
	Zinc	0.0171	0.002	0.010	NE			083049-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW2BU 08-May-07	Antimony	ND	0.0005	0.002	0.006	U		084559-009	SW846 6020
	Arsenic	0.00627	0.0015	0.005	0.010	B	B, J	084559-009	SW846 6020
	Barium	0.0584	0.0005	0.002	2.00			084559-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084559-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084559-009	SW846 6020
	Chromium	0.00759	0.001	0.003	0.100			084559-009	SW846 6020
	Cobalt	0.000553	0.0001	0.001	NE	J		084559-009	SW846 6020
	Copper	0.0026	0.0002	0.001	NE			084559-009	SW846 6020
	Iron	1.27	0.010	0.025	NE		J	084559-009	SW846 6020
	Lead	0.00173	0.0005	0.002	NE	J		084559-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084559-009	SW846 7470
	Nickel	0.017	0.0005	0.002	NE			084559-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084559-009	SW846 6020
	Silver	0.000773	0.0002	0.001	NE	J		084559-009	SW846 6020
	Thallium	0.000572	0.0004	0.001	0.002	J		084559-009	SW846 6020
	Tin	0.00113	0.001	0.005	NE	J		084559-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084559-009	SW846 6020
	Zinc	0.0175	0.002	0.010	NE	B		084559-009	SW846 6020
CWL-MW4 17-Oct-06	Antimony	ND	0.0005	0.002	0.006	U		083053-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		083053-009	SW846 6020
	Barium	0.060	0.0005	0.002	2.00			083053-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083053-009	SW846 6020
	Cadmium	0.000216	0.0001	0.001	0.005	J	B3, J	083053-009	SW846 6020
	Chromium	0.00504	0.001	0.003	0.100			083053-009	SW846 6020
	Cobalt	0.0036	0.0001	0.001	NE			083053-009	SW846 6020
	Copper	0.00182	0.0002	0.001	NE			083053-009	SW846 6020
	Iron	0.765	0.010	0.025	NE			083053-009	SW846 6020
	Lead	0.0005	0.0005	0.002	NE	J	B2, J	083053-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083053-009	SW846 7470
	Nickel	0.334	0.0005	0.002	NE			083053-009	SW846 6020
	Selenium	0.00338	0.0025	0.005	0.050	J		083053-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083053-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083053-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		083053-009	SW846 6020
	Vanadium	ND	0.002	0.030	NE	U		083053-009	SW846 6020
	Zinc	0.00461	0.002	0.010	NE	J	B2, J	083053-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW4 (Duplicate) 17-Oct-06	Antimony	ND	0.0005	0.002	0.006	U		083054-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		083054-009	SW846 6020
	Barium	0.0588	0.0005	0.002	2.00			083054-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083054-009	SW846 6020
	Cadmium	0.000214	0.0001	0.001	0.005	J	B3, J	083054-009	SW846 6020
	Chromium	0.00484	0.001	0.003	0.100			083054-009	SW846 6020
	Cobalt	0.00339	0.0001	0.001	NE			083054-009	SW846 6020
	Copper	0.00137	0.0002	0.001	NE			083054-009	SW846 6020
	Iron	0.733	0.010	0.025	NE			083054-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		083054-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083054-009	SW846 7470
	Nickel	0.313	0.0005	0.002	NE			083054-009	SW846 6020
	Selenium	0.0032	0.0025	0.005	0.050	J		083054-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083054-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083054-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		083054-009	SW846 6020
	Vanadium	ND	0.002	0.030	NE	U		083054-009	SW846 6020
	Zinc	0.00384	0.002	0.010	NE	J	B2, J	083054-009	SW846 6020
CWL-MW4 09-May-07	Antimony	ND	0.0005	0.002	0.006	U		084579-009	SW846 6020
	Arsenic	0.00426	0.0015	0.005	0.010	B, J	B, J	084579-009	SW846 6020
	Barium	0.0635	0.0005	0.002	2.00			084579-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084579-009	SW846 6020
	Cadmium	0.000257	0.0001	0.001	0.005	J		084579-009	SW846 6020
	Chromium	0.0053	0.001	0.003	0.100			084579-009	SW846 6020
	Cobalt	0.00332	0.0001	0.001	NE			084579-009	SW846 6020
	Copper	0.00144	0.0002	0.001	NE			084579-009	SW846 6020
	Iron	0.840	0.010	0.025	NE		J	084579-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084579-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084579-009	SW846 7470
	Nickel	0.242	0.0005	0.002	NE			084579-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084579-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084579-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084579-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084579-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084579-009	SW846 6020
	Zinc	0.00367	0.002	0.010	NE	B, J	B, J	084579-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW5L 19-Oct-06	Antimony	ND	0.0005	0.002	0.006	U		083058-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		083058-009	SW846 6020
	Barium	0.0581	0.0005	0.002	2.00			083058-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083058-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		083058-009	SW846 6020
	Chromium	0.00205	0.001	0.003	0.100	J		083058-009	SW846 6020
	Cobalt	0.000225	0.0001	0.001	NE	J		083058-009	SW846 6020
	Copper	0.00134	0.0002	0.001	NE			083058-009	SW846 6020
	Iron	0.457	0.010	0.025	NE			083058-009	SW846 6020
	Lead	0.000721	0.0005	0.002	NE	J		083058-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083058-009	SW846 7470
	Nickel	0.00247	0.0005	0.002	NE			083058-009	SW846 6020
	Selenium	0.00333	0.0025	0.005	0.050	J		083058-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083058-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083058-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		083058-009	SW846 6020
	Vanadium	0.00217	0.002	0.030	NE	J		083058-009	SW846 6020
	Zinc	0.0106	0.002	0.010	NE			083058-009	SW846 6020
CWL-MW5L 01-May-07	Antimony	ND	0.0005	0.002	0.006	B, U	B3, UJ	084569-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	B, U		084569-009	SW846 6020
	Barium	0.068	0.0005	0.002	2.00			084569-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084569-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084569-009	SW846 6020
	Chromium	0.0064	0.001	0.003	0.100			084569-009	SW846 6020
	Cobalt	0.000344	0.0001	0.001	NE	J		084569-009	SW846 6020
	Copper	0.00285	0.0002	0.001	NE			084569-009	SW846 6020
	Iron	0.548	0.010	0.025	NE			084569-009	SW846 6020
	Lead	0.00057	0.0005	0.002	NE	J		084569-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084569-009	SW846 7470
	Nickel	0.00436	0.0005	0.002	NE			084569-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084569-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084569-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084569-009	SW846 6020
	Tin	0.00214	0.001	0.005	NE	J		084569-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084569-009	SW846 6020
	Zinc	0.0261	0.002	0.010	NE			084569-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW5U 13-Oct-06	Antimony	0.00138	0.0005	0.002	0.006	J	B3, J	083046-009	SW846 6020
	Arsenic	0.00192	0.0015	0.005	0.010	J		083046-009	SW846 6020
	Barium	0.0706	0.0005	0.002	2.00			083046-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083046-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		083046-009	SW846 6020
	Chromium	0.00359	0.001	0.003	0.100		B2, J	083046-009	SW846 6020
	Cobalt	0.000187	0.0001	0.001	NE	J		083046-009	SW846 6020
	Copper	0.00194	0.0002	0.001	NE			083046-009	SW846 6020
	Iron	0.351	0.010	0.025	NE			083046-009	SW846 6020
	Lead	0.000624	0.0005	0.002	NE	J		083046-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083046-009	SW846 7470
	Nickel	0.00464	0.0005	0.002	NE			083046-009	SW846 6020
	Selenium	0.00288	0.0025	0.005	0.050	J		083046-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083046-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083046-009	SW846 6020
	Tin	0.00309	0.001	0.005	NE	J		083046-009	SW846 6020
	Vanadium	ND	0.002	0.030	NE	U		083046-009	SW846 6020
	Zinc	0.0367	0.002	0.010	NE			083046-009	SW846 6020
CWL-MW5U (Duplicate) 13-Oct-06	Antimony	0.000543	0.0005	0.002	0.006	J	B3, J	083047-009	SW846 6020
	Arsenic	0.00203	0.0015	0.005	0.010	J		083047-009	SW846 6020
	Barium	0.0693	0.0005	0.002	2.00			083047-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083047-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		083047-009	SW846 6020
	Chromium	0.00345	0.001	0.003	0.100		B2, J	083047-009	SW846 6020
	Cobalt	0.000197	0.0001	0.001	NE	J		083047-009	SW846 6020
	Copper	0.00205	0.0002	0.001	NE			083047-009	SW846 6020
	Iron	0.362	0.010	0.025	NE			083047-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		083047-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083047-009	SW846 7470
	Nickel	0.00456	0.0005	0.002	NE			083047-009	SW846 6020
	Selenium	0.00342	0.0025	0.005	0.050	J		083047-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083047-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083047-009	SW846 6020
	Tin	0.00273	0.001	0.005	NE	J		083047-009	SW846 6020
	Vanadium	ND	0.002	0.030	NE	U		083047-009	SW846 6020
	Zinc	0.0371	0.002	0.010	NE			083047-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW5U 03-May-07	Antimony	ND	0.0005	0.002	0.006	U		084574-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084574-009	SW846 6020
	Barium	0.0728	0.0005	0.002	2.00			084574-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084574-009	SW846 6020
	Cadmium	0.000421	0.0001	0.001	0.005	J		084574-009	SW846 6020
	Chromium	0.00159	0.001	0.003	0.100	J		084574-009	SW846 6020
	Cobalt	0.000339	0.0001	0.001	NE	J		084574-009	SW846 6020
	Copper	0.00181	0.0002	0.001	NE	B		084574-009	SW846 6020
	Iron	0.241	0.010	0.025	NE			084574-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084574-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084574-009	SW846 7470
	Nickel	0.00337	0.0005	0.002	NE			084574-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084574-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084574-009	SW846 6020
	Thallium	0.000599	0.0004	0.001	0.002	J		084574-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084574-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084574-009	SW846 6020
	Zinc	0.0369	0.002	0.010	NE			084574-009	SW846 6020
CWL-MW6L 18-Oct-06	Antimony	ND	0.0005	0.002	0.006	U		083056-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		083056-009	SW846 6020
	Barium	0.0569	0.0005	0.002	2.00			083056-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083056-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		083056-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		083056-009	SW846 6020
	Cobalt	0.000161	0.0001	0.001	NE	J		083056-009	SW846 6020
	Copper	0.000555	0.0002	0.001	NE	J		083056-009	SW846 6020
	Iron	0.424	0.010	0.025	NE			083056-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		083056-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		083056-009	SW846 7470
	Nickel	0.00222	0.0005	0.002	NE			083056-009	SW846 6020
	Selenium	0.00327	0.0025	0.005	0.050	J		083056-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083056-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083056-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		083056-009	SW846 6020
	Vanadium	ND	0.002	0.030	NE	U		083056-009	SW846 6020
	Zinc	0.00209	0.002	0.010	NE	J		083056-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW6L 26-Apr-07	Antimony	ND	0.0005	0.002	0.006	B, U		084561-009	SW846 6020
	Arsenic	0.00171	0.0015	0.005	0.010	J		084561-009	SW846 6020
	Barium	0.0574	0.0005	0.002	2.00			084561-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084561-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084561-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084561-009	SW846 6020
	Cobalt	0.000204	0.0001	0.001	NE	J		084561-009	SW846 6020
	Copper	0.000665	0.0002	0.001	NE	J		084561-009	SW846 6020
	Iron	0.281	0.010	0.025	NE			084561-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084561-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084561-009	SW846 7470
	Nickel	0.00136	0.0005	0.002	NE	J		084561-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084561-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084561-009	SW846 6020
	Thallium	0.00041	0.0004	0.001	0.002	J	B3, J	084561-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084561-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084561-009	SW846 6020
	Zinc	ND	0.002	0.010	NE	U		084561-009	SW846 6020
CWL-MW6U 11-Oct-06	Antimony	ND	0.0005	0.002	0.006	U		083042-009	SW846 6020
	Arsenic	0.00295	0.0015	0.005	0.010	J		083042-009	SW846 6020
	Barium	0.0730	0.0005	0.002	2.00			083042-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		083042-009	SW846 6020
	Cadmium	0.000108	0.0001	0.001	0.005	J		083042-009	SW846 6020
	Chromium	0.0067	0.001	0.003	0.100	B		083042-009	SW846 6020
	Cobalt	0.000257	0.0001	0.001	NE	J		083042-009	SW846 6020
	Copper	0.00153	0.0002	0.001	NE			083042-009	SW846 6020
	Iron	0.352	0.010	0.025	NE			083042-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		083042-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	083042-009	SW846 7470
	Nickel	0.00539	0.0005	0.002	NE			083042-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		083042-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		083042-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		083042-009	SW846 6020
	Tin	0.00183	0.001	0.005	NE	J	B3, J	083042-009	SW846 6020
	Vanadium	0.00485	0.002	0.030	NE	B, J	B, J	083042-009	SW846 6020
	Zinc	0.0101	0.002	0.010	NE	B	B, J	083042-009	SW846 6020

Refer to footnotes on page B-21.

Table CWL B-3 (Concluded)
Summary of Total Metal Results
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CWL-MW6U 11-May-07	Antimony	ND	0.0005	0.002	0.006	U		084576-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084576-009	SW846 6020
	Barium	0.0702	0.0005	0.002	2.00			084576-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084576-009	SW846 6020
	Cadmium	0.000166	0.0001	0.001	0.005	J		084576-009	SW846 6020
	Chromium	0.00538	0.001	0.003	0.100			084576-009	SW846 6020
	Cobalt	0.000215	0.0001	0.001	NE	J		084576-009	SW846 6020
	Copper	0.00135	0.0002	0.001	NE		B2, J	084576-009	SW846 6020
	Iron	0.279	0.010	0.025	NE	B		084576-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084576-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084576-009	SW846 7470
	Nickel	0.00405	0.0005	0.002	NE	B		084576-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084576-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084576-009	SW846 6020
	Thallium	0.000461	0.0004	0.001	0.002	J		084576-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084576-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084576-009	SW846 6020
	Zinc	0.00679	0.002	0.010	NE	J	B2, J	084576-009	SW846 6020
CWL-MW6U (Duplicate) 11-May-07	Antimony	ND	0.0005	0.002	0.006	U		084577-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084577-009	SW846 6020
	Barium	0.0746	0.0005	0.002	2.00			084577-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084577-009	SW846 6020
	Cadmium	0.000157	0.0001	0.001	0.005	J		084577-009	SW846 6020
	Chromium	0.00614	0.001	0.003	0.100			084577-009	SW846 6020
	Cobalt	0.00026	0.0001	0.001	NE	J		084577-009	SW846 6020
	Copper	0.00155	0.0002	0.001	NE		B2, J	084577-009	SW846 6020
	Iron	0.356	0.010	0.025	NE	B		084577-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084577-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084577-009	SW846 7470
	Nickel	0.0049	0.0005	0.002	NE	B		084577-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084577-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084577-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084577-009	SW846 6020
	Tin	ND	0.001	0.005	NE	U		084577-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084577-009	SW846 6020
	Zinc	0.00703	0.002	0.010	NE	J	B2, J	084577-009	SW846 6020

Refer to footnotes on page B-21.

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Table CWL B-4
Summary of Field Water Quality Measurements[i]
Chemical Waste Landfill Groundwater Monitoring, Sandia National Laboratories/New Mexico

Fiscal Year 2007

Well ID	Sample Date	Temperature (^0C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (% Sat)	Dissolved Oxygen (mg/L)
CWL-BW3	09-Oct-06	15.18	859	218.6	7.79	2.83	90.2	9.21
	30-Apr-07	14.13	902	297.4	7.85	0.50	57.2	5.84
CWL-BW4A	05-Oct-06	17.82	978	245.7	7.25	0.69	79.3	7.59
	07-May-07	15.66	1,024	342.5	7.18	0.34	69.7	6.90
CWL-MW2BL	03-Oct-06	22.86	1,042	298.5	6.87	0.57	80.0	6.85
	08-May-07	21.30	1,092	310.9	6.88	0.24	82.2	7.26
CWL-MW2BU	20-Oct-06	15.00	890	234.4	7.81	12.8	84.5	8.48
	08-May-07	13.88	906	270.6	8.28	12.2	83.7	8.61
CWL-MW4	17-Oct-06	18.09	913	185.6	7.05	3.32	59.0	6.16
	09-May-07	19.41	955	50.0	7.02	1.19	63.9	5.87
CWL-MW5L	19-Oct-06	15.19	1,012	276.2	6.87	3.30	71.8	7.19
	01-May-07	19.60	1,002	340.0	6.97	4.52	64.2	5.80
CWL-MW5U	13-Oct-06	16.96	882	242.0	7.15	0.47	61.6	5.90
	03-May-07	17.84	922	350.1	7.13	0.29	62.7	6.00
CWL-MW6L	18-Oct-06	13.13	990	274.8	6.93	0.59	73.4	7.69
	26-Apr-07	18.45	1,040	300.4	6.99	0.22	77.8	7.26
CWL-MW6U	11-Oct-06	16.20	876	228.9	7.22	0.79	56.8	5.55
	11-May-07	20.94	921	9.7	7.16	0.27	68.9	6.14

Refer to footnotes on page B-21.

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[a]Result
- Values in bold exceed the established MCL.
- ND = not detected (at method detection limit).
- µg/L = micrograms per liter
- mg/L = milligrams per liter

[b]MDL
Method detection limit. The minimum concentration that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.

[c]PQL
Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.

[d]MCL
MCL = Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations (40 CFR 141.11(b)), and subsequent amendments or the New Mexico Environmental Improvement Board in Title 20, Chapter 7, Part 1 of the New Mexico Administrative Code (20 NMAC 7.1).
NE = not established.

[e]Lab Qualifier
B = Analyte is detected in associated laboratory method blank.
J = Amount detected is below the practical quantitation limit (PQL).
U = Analyte is absent or below the method detection limit.

[f]Validation Qualifier
If cell is blank, then all quality control samples met acceptance criteria with respect to submitted samples.
A = Laboratory accuracy and/or bias measurements for the laboratory control and/or duplicate samples do not acceptance criteria.
A2 = Laboratory accuracy and/or bias measurements for the matrix spike and/or matrix spike duplicate samples do not acceptance criteria.
B = Method blank contamination at concentration greater than PQL.
B1 = Trip blank contamination at concentration greater than PQL.
B2 = Field/equipment blank contamination at concentration greater than PQL.
B3 = Calibration blank contamination at concentration greater than PQL.
J = The associate value is an estimated quantity.
U = The analyte was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
UJ = The analyte was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

[g]Analytical Method
U.S. Environmental Protection Agency, 1990, “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” SW-846, 3rd ed.
U.S. Environmental Protection Agency, 1983, “The Determination of Inorganic Anions in Water by Ion Chromatography-Method 300.0,”
EPA-600/4-84-017.

[h]**Field Water Quality Measurements**

Field measurements collected prior to sampling.

^{O}C	= degrees Celsius
% Sat	= percent Saturation
µmho/cm	= micromhos per centimeter
mg/L	= milligrams per liter
mV	= millivolts
NTU	= nephelometric turbidity units
pH	= potential of hydrogen (negative logarithm of the hydrogen ion concentration)

APPENDIX C
Mixed Waste Landfill Groundwater Monitoring Surveillance Task

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Table MWL C-1
Summary of Detected Volatile Organic Compounds
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW1 05-Apr-07	Acetone	2.34	1.25	5.00	NE	B, J	5.0U, B	084453-001	SW846 8260
MWL-MW2 06-Apr-07	Acetone	2.06	1.25	5.00	NE	B, J	5.0U, B	084455-001	SW846 8260
MWL-MW2 (Duplicate) 06-Apr-07	Acetone	1.68	1.25	5.00	NE	B, J	5.0U, B	084456-001	SW846 8260
MWL-MW3	Acetone	1.68	1.25	5.00	NE	B, J	5.0U, B	084458-001	SW846 8260
11-Apr-07	Toluene	0.275	0.250	1.00	1,000	J		084458-001	SW846 8260
MWL-MW4	Acetone	1.48	1.25	5.00	NE	B, J	5.0UJ, B	084460-001	SW846 8260
05-Jun-07	Toluene	0.321	0.250	1.00	1,000	J		084460-001	SW846 8260
MWL-MW5 10-Apr-07	Acetone	1.90	1.25	5.00	NE	B, J	5.0U, B	084462-001	SW846 8260
MWL-MW6 12-Apr-07	Acetone	2.48	1.25	5.00	NE	B, J	5.0U, B	084464-001	SW846 8260

Refer to footnotes on page C-31.

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Table MWL C-2
Method Detection Limits for Volatile Organic Compounds
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Analyte	MDL[b] (µg/L)	Analytical Method[g]
1,1,1-Trichloroethane	0.300	SW846-8260
1,1,2,2-Tetrachloroethane	0.250	SW846-8260
1,1,2-Trichloroethane	0.250	SW846-8260
1,1-Dichloroethane	0.300	SW846-8260
1,1-Dichloroethene	0.300	SW846-8260
1,2-Dichloroethane	0.250	SW846-8260
1,2-Dichloropropane	0.250	SW846-8260
2-Butanone	1.25	SW846-8260
2-Hexanone	1.25	SW846-8260
4-methyl-, 2-Pentanone	1.25	SW846-8260
Acetone	1.25	SW846-8260
Benzene	0.300	SW846-8260
Bromodichloromethane	0.250	SW846-8260
Bromoform	0.250	SW846-8260
Bromomethane	0.500	SW846-8260
Carbon disulfide	1.25	SW846-8260
Carbon tetrachloride	0.250	SW846-8260
Chlorobenzene	0.250	SW846-8260
Chloroethane	0.500	SW846-8260
Chloroform	0.250	SW846-8260
Chloromethane	0.500	SW846-8260
Dibromochloromethane	0.250	SW846-8260
Ethyl benzene	0.250	SW846-8260
Methylene chloride	2.00	SW846-8260
Styrene	0.250	SW846-8260
Tetrachloroethene	0.250	SW846-8260
Toluene	0.250	SW846-8260
Trichloroethene	0.250	SW846-8260
Vinyl acetate	1.50	SW846-8260
Vinyl chloride	0.500	SW846-8260
Xylene	0.250	SW846-8260
cis-1,2-Dichloroethene	0.300	SW846-8260
cis-1,3-Dichloropropene	0.250	SW846-8260
trans-1,2-Dichloroethene	0.300	SW846-8260
trans-1,3-Dichloropropene	0.250	SW846-8260

Refer to footnotes on page C-31.

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Table MWL C-3
General Chemistry Analytical Results
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW1	Alkalinity, Total	220	0.725	1.00	NE			084453-016	EPA 310.1
05-Apr-07	Bromide	0.400	0.066	0.200	NE			084453-016	SW846 9056
	Chloride	33.0	0.330	1.00	NE			084453-016	SW846 9056
	Fluoride	0.845	0.033	0.100	4.00			084453-016	SW846 9056
	Sulfate	43.4	0.500	2.00	NE			084453-016	SW846 9056
	Nitrate plus Nitrite, as N	5.21	0.100	0.500	10.0			084453-018	EPA 353.2
	Total Organic Carbon, Average	0.738	0.330	1.00	NE	J		084453-004	SW846 9060
	Carbon Dioxide, Free	13.9	0.725	1.00	NE	B	B, J	084453-007	SM 4500 CO
	Carbon Dioxide, Total	207	0.725	1.00	NE	B		084453-007	SM 4500 CO
	Total Dissolved Solids	384	2.38	10.0	NE			084453-013	EPA 160.1
	Biochemical Oxygen Demand	ND	2.00	4.00	NE	U	None	084453-031	EPA 405.1
	Ferrous Iron	ND	0.028	0.100	NE	U	None	084453-012	3500M
	Manganese II	ND	0.320	NR	NE	U	None	084453-011	C2-100 Mn2
	Alkalinity, field measurement	195	NA	1.00	NE	None	None	Field	HACH 8203
MWL-MW2	Alkalinity, Total	233	1.45	2.00	NE			084455-016	EPA 310.1
06-Apr-07	Bromide	0.418	0.066	0.200	NE			084455-016	SW846 9056
	Chloride	42.9	0.330	1.00	NE			084455-016	SW846 9056
	Fluoride	0.866	0.033	0.100	4.00			084455-016	SW846 9056
	Sulfate	38.0	0.500	2.00	NE			084455-016	SW846 9056
	Nitrate plus Nitrite, as N	3.49	0.100	0.500	10.0			084455-018	EPA 353.2
	Total Organic Carbon, Average	0.672	0.330	1.00	NE	J		084455-004	SW846 9060
	Carbon Dioxide, Free	6.52	0.725	1.00	NE	B	B, J	084455-007	SM 4500 CO
	Carbon Dioxide, Total	206	0.725	1.00	NE	B		084455-007	SM 4500 CO
	Total Dissolved Solids	359	2.38	10.0	NE			084455-013	EPA 160.1
	Biochemical Oxygen Demand	15.8	2.00	4.00	NE		None	084455-031	EPA 405.1
	Ferrous Iron	ND	0.028	0.100	NE	U	None	084455-012	3500M
	Manganese II	ND	0.320	NR	NE	U	None	084455-011	C2-100 Mn2
	Alkalinity, field measurement	199	NA	1.00	NE	None	None	Field	HACH 8203

Refer to footnotes on page C-31.

Table MWL C-3
General Chemistry Analytical Results
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW2 (Duplicate)	Alkalinity, Total	229	0.725	1.00	NE			084456-016	EPA 310.1
06-Apr-07	Bromide	0.487	0.066	0.200	NE			084456-016	SW846 9056
	Chloride	42.5	0.330	1.00	NE			084456-016	SW846 9056
	Fluoride	0.878	0.033	0.100	4.00			084456-016	SW846 9056
	Sulfate	37.6	0.500	2.00	NE			084456-016	SW846 9056
	Nitrate plus Nitrite, as N	3.16	0.100	0.500	10.0			084456-018	EPA 353.2
	Total Organic Carbon, Average	0.622	0.330	1.00	NE	J		084456-004	SW846 9060
	Carbon Dioxide, Free	9.16	0.725	1.00	NE	B	B, J	084456-007	SM 4500 CO
	Carbon Dioxide, Total	207	0.725	1.00	NE	B		084456-007	SM 4500 CO
	Total Dissolved Solids	379	2.38	10.0	NE			084456-013	EPA 160.1
MWL-MW3	Alkalinity, Total	190	0.725	1.00	NE	B		084458-016	EPA 310.1
11-Apr-07	Bromide	0.251	0.066	0.200	NE		B, J	084458-016	SW846 9056
	Chloride	32.1	0.660	2.00	NE			084458-016	SW846 9056
	Fluoride	1.04	0.033	0.100	4.00			084458-016	SW846 9056
	Sulfate	35.5	1.00	4.00	NE			084458-016	SW846 9056
	Nitrate plus Nitrite, as N	3.75	0.100	0.500	10.0			084458-018	EPA 353.2
	Total Organic Carbon, Average	0.354	0.330	1.00	NE	J		084458-004	SW846 9060
	Carbon Dioxide, Free	3.97	0.725	1.00	NE			084458-007	SM 4500 CO
	Carbon Dioxide, Total	184	0.725	1.00	NE	B		084458-007	SM 4500 CO
	Total Dissolved Solids	308	2.38	10.0	NE			084458-013	EPA 160.1
	Biochemical Oxygen Demand	ND	2.00	4.00	NE	U	None	084458-031	EPA 405.1
	Ferrous Iron	ND	0.028	0.100	NE	U	None	084458-012	3500M
	Manganese II	ND	0.320	NR	NE	U	None	084458-011	C2-100 Mn2
	Alkalinity, field measurement	179	NA	1.00	NE	None	None	Field	HACH 8203

Refer to footnotes on page C-31.

Table MWL C-3
General Chemistry Analytical Results
Mixed Waste Landfill, Sandia National Laboratories/New Mexico
Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW4	Alkalinity, Total	208	1.45	2.00	NE	B		084460-016	EPA 310.1
05-Jun-07	Bromide	0.329	0.066	0.200	NE			084460-016	SW846 9056
	Chloride	50.2	0.330	1.00	NE			084460-016	SW846 9056
	Fluoride	0.948	0.033	0.100	4.00			084460-016	SW846 9056
	Sulfate	35.3	0.100	0.400	NE			084460-016	SW846 9056
	Nitrate plus Nitrite, as N	2.27	0.100	0.500	10.0			084460-018	EPA 353.2
	Total Organic Carbon, Average	0.713	0.330	1.00	NE	J		084460-004	SW846 9060
	Carbon Dioxide, Free	10.7	0.725	1.00	NE	B	B, J	084460-007	SM 4500 CO
	Carbon Dioxide, Total	195	0.725	1.00	NE	B		084460-007	SM 4500 CO
	Total Dissolved Solids	396	2.38	10.0	NE			084460-013	EPA 160.1
	Biochemical Oxygen Demand	18.2	2.00	4.00	NE		None	084460-031	EPA 405.1
	Ferrous Iron	ND	0.028	0.100	NE	U	None	084460-012	3500M
	Manganese II	ND	0.320	NR	NE	U	None	084460-011	C2-100 Mn2
MWL-MW5	Alkalinity, Total	363	1.45	2.00	NE	B		084462-016	EPA 310.1
10-Apr-07	Bromide	0.466	0.066	0.200	NE			084462-016	SW846 9056
	Chloride	82.2	0.660	2.00	NE			084462-016	SW846 9056
	Fluoride	0.733	0.033	0.100	4.00			084462-016	SW846 9056
	Sulfate	51.5	1.00	4.00	NE			084462-016	SW846 9056
	Nitrate plus Nitrite, as N	1.67	0.100	0.500	10.0			084462-018	EPA 353.2
	Total Organic Carbon, Average	0.706	0.330	1.00	NE	J		084462-004	SW846 9060
	Carbon Dioxide, Free	11.3	0.725	1.00	NE			084462-007	SM 4500 CO
	Carbon Dioxide, Total	173	0.725	1.00	NE	B		084462-007	SM 4500 CO
	Total Dissolved Solids	545	2.38	10.0	NE			084462-013	EPA 160.1
	Biochemical Oxygen Demand	ND	2.00	4.00	NE	U	None	084462-031	EPA 405.1
	Ferrous Iron	ND	0.028	0.100	NE	U	None	084462-012	3500M
	Manganese II	ND	0.320	NR	NE	U	None	084462-011	C2-100 Mn2
	Alkalinity, field measurement	298	NA	1.00	NE	None	None	Field	HACH 8203

Refer to footnotes on page C-31.

Table MWL C-3
General Chemistry Analytical Results
Mixed Waste Landfill, Sandia National Laboratories/New Mexico
Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW6	Alkalinity, Total	123	0.725	1.00	NE	B		084464-016	EPA 310.1
12-Apr-07	Bromide	0.616	0.066	0.200	NE			084464-016	SW846 9056
	Chloride	75.8	0.660	2.00	NE			084464-016	SW846 9056
	Fluoride	0.751	0.033	0.100	4.00			084464-016	SW846 9056
	Sulfate	50.0	1.00	4.00	NE			084464-016	SW846 9056
	Nitrate plus Nitrite, as N	1.57	0.100	0.500	10.0			084464-018	EPA 353.2
	Total Organic Carbon, Average	0.418	0.330	1.00	NE	J		084464-004	SW846 9060
	Carbon Dioxide, Free	13.4	0.725	1.00	NE			084464-007	SM 4500 CO
	Carbon Dioxide, Total	168	0.725	1.00	NE	B		084464-007	SM 4500 CO
	Total Dissolved Solids	578	2.38	10.0	NE			084464-013	EPA 160.1
	Biochemical Oxygen Demand	ND	2.00	4.00	NE	U	None	084464-031	EPA 405.1
	Ferrous Iron	ND	0.028	0.100	NE	U	None	084464-012	3500M
	Manganese II	ND	0.320	NR	NE	U	None	084464-011	C2-100 Mn2
	Alkalinity, field measurement	290	NA	1.00	NE	None	None	Field	HACH 8203

Refer to footnotes on page C-31.

Table MWL C-4
Summary of Total Metal Results (Unfiltered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW1	Aluminum	0.0469	0.005	0.015	NE			084453-009	SW846 6020
05-Apr-07	Antimony	ND	0.0005	0.002	0.006	U		084453-009	SW846 6020
	Arsenic	0.00156	0.0015	0.005	0.010	B, J	B, J	084453-009	SW846 6020
	Barium	0.0792	0.0005	0.002	2.00			084453-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084453-009	SW846 6020
	Cadmium	0.000576	0.0001	0.001	0.005	J		084453-009	SW846 6020
	Calcium	50.0	0.100	0.500	NE	B		084453-009	SW846 6020
	Chromium	**0.426**	0.001	0.003	0.100	B		084453-009	SW846 6020
	Cobalt	0.00404	0.0001	0.001	NE			084453-009	SW846 6020
	Copper	0.0244	0.0002	0.001	NE			084453-009	SW846 6020
	Iron	6.10	0.010	0.025	NE	B		084453-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084453-009	SW846 6020
	Magnesium	18.4	0.025	0.075	NE			084453-009	SW846 6020
	Manganese	0.0586	0.001	0.005	NE			084453-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084453-009	SW846 7470
	Nickel	0.436	0.0005	0.002	NE		J	084453-009	SW846 6020
	Potassium	3.13	0.080	0.300	NE			084453-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	U		084453-009	SW846 6020
	Silver	0.000824	0.0002	0.001	NE	J		084453-009	SW846 6020
	Sodium	46.4	0.400	1.25	NE			084453-009	SW846 6020
	Thallium	0.000431	0.0004	0.001	0.002	J		084453-009	SW846 6020
	Uranium	0.00595	0.00005	0.0002	0.030	B		084453-009	SW846 6020
	Uranium-235	0.000044	0.00001	0.00007	NE	J		084453-009	SW846 6020
	Uranium-238	0.0059	0.00005	0.0002	NE	B		084453-009	SW846 6020
	Vanadium	ND	0.050	0.150	NE	U	A2, UJ	084453-009	SW846 6020
	Zinc	0.0178	0.002	0.010	NE			084453-009	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-4
Summary of Total Metal Results (Unfiltered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW2	Aluminum	0.0251	0.005	0.015	NE		B2, J	084455-009	SW846 6020
06-Apr-07	Antimony	ND	0.0005	0.002	0.006	B, U		084455-009	SW846 6020
	Arsenic	0.00169	0.0015	0.005	0.010	B, J	B, J	084455-009	SW846 6020
	Barium	0.105	0.0005	0.002	2.00			084455-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084455-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084455-009	SW846 6020
	Calcium	58.3	0.100	0.500	NE	B		084455-009	SW846 6020
	Chromium	0.013	0.001	0.003	0.100			084455-009	SW846 6020
	Cobalt	0.00051	0.0001	0.001	NE	J		084455-009	SW846 6020
	Copper	0.00156	0.0002	0.001	NE		B2, J	084455-009	SW846 6020
	Iron	0.351	0.010	0.025	NE	B		084455-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084455-009	SW846 6020
	Magnesium	20.9	0.005	0.015	NE			084455-009	SW846 6020
	Manganese	0.00342	0.001	0.005	NE	J		084455-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084455-009	SW846 7470
	Nickel	0.00734	0.0005	0.002	NE			084455-009	SW846 6020
	Potassium	4.65	0.400	1.50	NE			084455-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	U		084455-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084455-009	SW846 6020
	Sodium	49.8	0.400	1.25	NE			084455-009	SW846 6020
	Thallium	0.000437	0.0004	0.001	0.002	J		084455-009	SW846 6020
	Uranium	0.00651	0.00005	0.0002	0.030			084455-009	SW846 6020
	Uranium-235	0.000047	0.00001	0.00007	NE	J		084455-009	SW846 6020
	Uranium-238	0.00646	0.00005	0.0002	NE			084455-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084455-009	SW846 6020
	Zinc	0.0118	0.002	0.010	NE			084455-009	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-4
Summary of Total Metal Results (Unfiltered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW2 (Duplicate)	Aluminum	0.0208	0.005	0.015	NE		B2, J	084456-009	SW846 6020
06-Apr-07	Antimony	ND	0.0005	0.002	0.006	B, U		084456-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	B, U		084456-009	SW846 6020
	Barium	0.102	0.0005	0.002	2.00			084456-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084456-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084456-009	SW846 6020
	Calcium	57.1	0.100	0.500	NE	B		084456-009	SW846 6020
	Chromium	0.0135	0.001	0.003	0.100			084456-009	SW846 6020
	Cobalt	0.000518	0.0001	0.001	NE	J		084456-009	SW846 6020
	Copper	0.00157	0.0002	0.001	NE		B2, J	084456-009	SW846 6020
	Iron	0.330	0.010	0.025	NE	B		084456-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084456-009	SW846 6020
	Magnesium	21.4	0.005	0.015	NE			084456-009	SW846 6020
	Manganese	0.00331	0.001	0.005	NE	J		084456-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084456-009	SW846 7470
	Nickel	0.00706	0.0005	0.002	NE			084456-009	SW846 6020
	Potassium	4.31	0.080	0.300	NE			084456-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	U		084456-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084456-009	SW846 6020
	Sodium	49.1	0.400	1.25	NE			084456-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084456-009	SW846 6020
	Uranium	0.00639	0.00005	0.0002	0.030			084456-009	SW846 6020
	Uranium-235	0.000043	0.00001	0.00007	NE	J		084456-009	SW846 6020
	Uranium-238	0.00634	0.00005	0.0002	NE			084456-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084456-009	SW846 6020
	Zinc	0.0126	0.0020	0.010	NE			084456-009	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-4
Summary of Total Metal Results (Unfiltered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW3	Aluminum	0.0232	0.005	0.015	NE			084458-009	SW846 6020
11-Apr-07	Antimony	ND	0.0005	0.002	0.006	U		084458-009	SW846 6020
	Arsenic	0.00152	0.0015	0.005	0.010	J		084458-009	SW846 6020
	Barium	0.0833	0.0005	0.002	2.00			084458-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084458-009	SW846 6020
	Cadmium	0.000115	0.0001	0.001	0.005	J		084458-009	SW846 6020
	Calcium	41.0	0.020	0.100	NE	B		084458-009	SW846 6020
	Chromium	0.0113	0.001	0.003	0.100			084458-009	SW846 6020
	Cobalt	0.000347	0.0001	0.001	NE	J		084458-009	SW846 6020
	Copper	0.00116	0.0002	0.001	NE			084458-009	SW846 6020
	Iron	0.269	0.010	0.025	NE			084458-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084458-009	SW846 6020
	Magnesium	13.5	0.005	0.015	NE			084458-009	SW846 6020
	Manganese	0.00327	0.001	0.005	NE	J		084458-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084458-009	SW846 7470
	Nickel	0.0848	0.0005	0.002	NE			084458-009	SW846 6020
	Potassium	3.46	0.080	0.300	NE			084458-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	U		084458-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084458-009	SW846 6020
	Sodium	44.2	0.080	0.250	NE			084458-009	SW846 6020
	Thallium	0.00055	0.0004	0.001	0.002	J		084458-009	SW846 6020
	Uranium	0.00493	0.00005	0.0002	0.030			084458-009	SW846 6020
	Uranium-235	0.000034	0.00001	0.00007	NE	J		084458-009	SW846 6020
	Uranium-238	0.00489	0.00005	0.0002	NE			084458-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084458-009	SW846 6020
	Zinc	0.00649	0.002	0.010	NE	J		084458-009	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-4
Summary of Total Metal Results (Unfiltered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW4	Aluminum	0.0139	0.005	0.015	NE	J		084460-009	SW846 6020
05-Jun-07	Antimony	ND	0.0005	0.002	0.006	B, U		084460-009	SW846 6020
	Arsenic	0.00381	0.0015	0.005	0.010	B, J	B, B3, J	084460-009	SW846 6020
	Barium	0.0965	0.0005	0.002	2.00			084460-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084460-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084460-009	SW846 6020
	Calcium	63.6	0.100	0.500	NE			084460-009	SW846 6020
	Chromium	0.0013	0.001	0.003	0.100	B, J	B, J, P1	084460-009	SW846 6020
	Cobalt	0.000888	0.0001	0.001	NE	J		084460-009	SW846 6020
	Copper	0.000385	0.0002	0.001	NE	J		084460-009	SW846 6020
	Iron	0.250	0.010	0.025	NE	B		084460-009	SW846 6020
	Lead	0.00051	0.0005	0.002	NE	J		084460-009	SW846 6020
	Magnesium	23.2	0.025	0.075	NE		J	084460-009	SW846 6020
	Manganese	0.0299	0.001	0.005	NE			084460-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084460-009	SW846 7470
	Nickel	0.00805	0.0005	0.002	NE			084460-009	SW846 6020
	Potassium	4.81	0.080	0.300	NE			084460-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	U		084460-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084460-009	SW846 6020
	Sodium	55.0	0.400	1.25	NE			084460-009	SW846 6020
	Thallium	0.000432	0.0004	0.001	0.002	J		084460-009	SW846 6020
	Uranium	0.00571	0.00005	0.0002	0.030			084460-009	SW846 6020
	Uranium-235	0.000038	0.00001	0.00007	NE	J		084460-009	SW846 6020
	Uranium-238	0.00567	0.00005	0.0002	NE			084460-009	SW846 6020
	Vanadium	0.0136	0.010	0.030	NE	J		084460-009	SW846 6020
	Zinc	0.0193	0.0020	0.010	NE			084460-009	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-4
Summary of Total Metal Results (Unfiltered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW5	Aluminum	0.0114	0.005	0.015	NE	J	B2, J	084462-009	SW846 6020
10-Apr-07	Antimony	ND	0.0005	0.002	0.006	B, U		084462-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084462-009	SW846 6020
	Barium	0.128	0.0005	0.002	2.00			084462-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084462-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084462-009	SW846 6020
	Calcium	88.8	0.100	0.500	NE	B		084462-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	B, U		084462-009	SW846 6020
	Cobalt	0.000202	0.0001	0.001	NE	B, J	B, J	084462-009	SW846 6020
	Copper	0.000787	0.0002	0.001	NE	B, J	B, J	084462-009	SW846 6020
	Iron	0.346	0.010	0.025	NE	B		084462-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084462-009	SW846 6020
	Magnesium	30.7	0.005	0.015	NE			084462-009	SW846 6020
	Manganese	0.00677	0.001	0.005	NE			084462-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084462-009	SW846 7470
	Nickel	0.00143	0.0005	0.002	NE	B, J	B, B2, J	084462-009	SW846 6020
	Potassium	5.46	0.080	0.300	NE			084462-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	U		084462-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084462-009	SW846 6020
	Sodium	68.5	0.400	1.25	NE			084462-009	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084462-009	SW846 6020
	Uranium	0.00961	0.00005	0.0002	0.030	B		084462-009	SW846 6020
	Uranium-235	0.000069	0.00001	0.00007	NE	J		084462-009	SW846 6020
	Uranium-238	0.00954	0.00005	0.0002	NE	B		084462-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084462-009	SW846 6020
	Zinc	0.00491	0.002	0.010	NE	B, J	B, J	084462-009	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-4 (Concluded)
Summary of Total Metal Results (Unfiltered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW6 12-Apr-07	Aluminum	0.0094	0.005	0.015	NE	B, J	B, B2, J	084464-009	SW846 6020
	Antimony	ND	0.0005	0.002	0.006	U		084464-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084464-009	SW846 6020
	Barium	0.128	0.0005	0.002	2.00			084464-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084464-009	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084464-009	SW846 6020
	Calcium	88.7	0.200	1.00	NE	B		084464-009	SW846 6020
	Chromium	0.00114	0.001	0.003	0.100	J	B2, J	084464-009	SW846 6020
	Cobalt	0.000198	0.0001	0.001	NE	J		084464-009	SW846 6020
	Copper	0.000871	0.0002	0.001	NE	J	B2, J	084464-009	SW846 6020
	Iron	0.344	0.010	0.025	NE			084464-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084464-009	SW846 6020
	Magnesium	26.5	0.005	0.015	NE			084464-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084464-009	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084464-009	SW846 7470
	Nickel	0.00114	0.0005	0.002	NE	J		084464-009	SW846 6020
	Potassium	5.03	0.08	0.300	NE			084464-009	SW846 6020
	Selenium	ND	0.0025	0.005	0.05	U		084464-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084464-009	SW846 6020
	Sodium	60.2	0.800	2.50	NE			084464-009	SW846 6020
	Thallium	0.000499	0.0004	0.001	0.002	J		084464-009	SW846 6020
	Uranium	0.00942	0.00005	0.0002	0.030			084464-009	SW846 6020
	Uranium-235	0.000068	0.00001	0.00007	NE	J		084464-009	SW846 6020
	Uranium-238	0.00935	0.00005	0.0002	NE			084464-009	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084464-009	SW846 6020
	Zinc	0.00477	0.002	0.010	NE	B, J	B, B2, J	084464-009	SW846 6020

Refer to footnotes on page C-31.

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Table MWL C-5
Summary of Metal Results (Filtered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW1	Aluminum	0.00922	0.005	0.015	NE	J		084453-010	SW846 6020
05-Apr-07	Antimony	ND	0.0005	0.002	0.006	U		084453-010	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	B, U		084453-010	SW846 6020
	Barium	0.0669	0.0005	0.002	2.00			084453-010	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084453-010	SW846 6020
	Cadmium	0.000244	0.0001	0.001	0.005	J		084453-010	SW846 6020
	Calcium	49.2	0.100	0.500	NE	B		084453-010	SW846 6020
	Chromium	0.00381	0.001	0.003	0.100	B	B, J	084453-010	SW846 6020
	Cobalt	0.000255	0.0001	0.001	NE	J		084453-010	SW846 6020
	Copper	0.00372	0.0002	0.001	NE			084453-010	SW846 6020
	Iron	0.231	0.010	0.025	NE	B		084453-010	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084453-010	SW846 6020
	Magnesium	17.8	0.025	0.075	NE			084453-010	SW846 6020
	Manganese	0.00211	0.001	0.005	NE	J		084453-010	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084453-010	SW846 7470
	Nickel	0.284	0.0005	0.002	NE		J	084453-010	SW846 6020
	Potassium	3.02	0.080	0.300	NE			084453-010	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084453-010	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084453-010	SW846 6020
	Sodium	47.0	0.400	1.25	NE			084453-010	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084453-010	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U	A2, UJ	084453-010	SW846 6020
	Zinc	0.00668	0.002	0.010	NE	J		084453-010	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-5
Summary of Metal Results (Filtered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW2	Aluminum	0.00702	0.005	0.015	NE	J		084455-010	SW846 6020
06-Apr-07	Antimony	ND	0.0005	0.002	0.006	B, U		084455-010	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	B, U		084455-010	SW846 6020
	Barium	0.102	0.0005	0.002	2.00			084455-010	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084455-010	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084455-010	SW846 6020
	Calcium	58.6	0.100	0.500	NE	B		084455-010	SW846 6020
	Chromium	0.00174	0.001	0.003	0.100	J		084455-010	SW846 6020
	Cobalt	0.000138	0.0001	0.001	NE	J		084455-010	SW846 6020
	Copper	0.000902	0.0002	0.001	NE	J		084455-010	SW846 6020
	Iron	0.217	0.010	0.025	NE	B		084455-010	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084455-010	SW846 6020
	Magnesium	21.3	0.005	0.015	NE			084455-010	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084455-010	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084455-010	SW846 7470
	Nickel	0.00541	0.0005	0.002	NE			084455-010	SW846 6020
	Potassium	4.22	0.080	0.300	NE			084455-010	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084455-010	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084455-010	SW846 6020
	Sodium	50.3	0.400	1.25	NE			084455-010	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084455-010	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084455-010	SW846 6020
	Zinc	0.00729	0.002	0.010	NE	J		084455-010	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-5
Summary of Metal Results (Filtered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW2 (Duplicate)	Aluminum	ND	0.005	0.015	NE	U		084456-010	SW846 6020
06-Apr-07	Antimony	ND	0.0005	0.002	0.006	B, U		084456-010	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	B, U		084456-010	SW846 6020
	Barium	0.108	0.0005	0.002	2.00			084456-010	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084456-010	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084456-010	SW846 6020
	Calcium	56.1	0.100	0.500	NE	B		084456-010	SW846 6020
	Chromium	0.00189	0.001	0.003	0.100	J		084456-010	SW846 6020
	Cobalt	0.000148	0.0001	0.001	NE	J		084456-010	SW846 6020
	Copper	0.000944	0.0002	0.001	NE	J		084456-010	SW846 6020
	Iron	0.239	0.010	0.025	NE	B		084456-010	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084456-010	SW846 6020
	Magnesium	21.5	0.005	0.015	NE			084456-010	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084456-010	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084456-010	SW846 7470
	Nickel	0.00558	0.0005	0.002	NE			084456-010	SW846 6020
	Potassium	4.18	0.080	0.300	NE			084456-010	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084456-010	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084456-010	SW846 6020
	Sodium	48.5	0.400	1.25	NE			084456-010	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084456-010	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084456-010	SW846 6020
	Zinc	0.00734	0.002	0.010	NE	J		084456-010	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-5
Summary of Metal Results (Filtered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW3	Aluminum	0.00588	0.005	0.015	NE	J		084458-010	SW846 6020
11-Apr-07	Antimony	ND	0.0005	0.002	0.006	U		084458-010	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084458-010	SW846 6020
	Barium	0.0802	0.0005	0.002	2.00			084458-010	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084458-010	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084458-010	SW846 6020
	Calcium	41.0	0.020	0.100	NE	B		084458-010	SW846 6020
	Chromium	0.00452	0.001	0.003	0.100			084458-010	SW846 6020
	Cobalt	0.000433	0.0001	0.001	NE	J		084458-010	SW846 6020
	Copper	0.000896	0.0002	0.001	NE	J		084458-010	SW846 6020
	Iron	0.137	0.010	0.025	NE			084458-010	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084458-010	SW846 6020
	Magnesium	14.1	0.005	0.015	NE			084458-010	SW846 6020
	Manganese	0.00416	0.001	0.005	NE	J		084458-010	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U	B3, UJ	084458-010	SW846 7470
	Nickel	0.12	0.0005	0.002	NE			084458-010	SW846 6020
	Potassium	3.74	0.080	0.300	NE			084458-010	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084458-010	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084458-010	SW846 6020
	Sodium	48.9	0.400	1.25	NE			084458-010	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084458-010	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084458-010	SW846 6020
	Zinc	0.0038	0.002	0.010	NE	J		084458-010	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-5
Summary of Metal Results (Filtered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW4	Aluminum	0.00547	0.005	0.015	NE	J		084460-010	SW846 6020
05-Jun-07	Antimony	ND	0.0005	0.002	0.006	B, U		084460-010	SW846 6020
	Arsenic	0.00312	0.0015	0.005	0.010	B, J	B, B3, J	084460-010	SW846 6020
	Barium	0.0925	0.0005	0.002	2.00			084460-010	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084460-010	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084460-010	SW846 6020
	Calcium	62.9	0.100	0.500	NE			084460-010	SW846 6020
	Chromium	0.00162	0.001	0.003	0.100	B, J	B, J, P1	084460-010	SW846 6020
	Cobalt	0.000903	0.0001	0.001	NE	J		084460-010	SW846 6020
	Copper	ND	0.0002	0.001	NE	U		084460-010	SW846 6020
	Iron	0.230	0.010	0.025	NE	B		084460-010	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084460-010	SW846 6020
	Magnesium	25.7	0.025	0.075	NE		J	084460-010	SW846 6020
	Manganese	0.0302	0.001	0.005	NE			084460-010	SW846 6020
	Nickel	0.00778	0.0005	0.002	0.002			084460-010	SW846 6020
	Potassium	4.59	0.080	0.300	NE			084460-010	SW846 6020
	Selenium	ND	0.0025	0.005	NE	U		084460-010	SW846 6020
	Silver	ND	0.0002	0.001	0.050	U		084460-010	SW846 6020
	Sodium	52.8	0.400	1.25	NE			084460-010	SW846 6020
	Thallium	ND	0.0004	0.001	NE	U		084460-010	SW846 6020
	Vanadium	0.0132	0.010	0.030	0.002	J		084460-010	SW846 6020
	Zinc	0.0181	0.002	0.010	NE			084460-010	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-5
Summary of Metal Results (Filtered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW5	Aluminum	0.0078	0.005	0.015	NE	J		084462-010	SW846 6020
10-Apr-07	Antimony	ND	0.0005	0.002	0.006	B, U		084462-010	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084462-010	SW846 6020
	Barium	0.131	0.0005	0.002	2.00			084462-010	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084462-010	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084462-010	SW846 6020
	Calcium	89.1	0.100	0.500	NE	B		084462-010	SW846 6020
	Chromium	0.00113	0.001	0.003	0.100	B, J	B, J	084462-010	SW846 6020
	Cobalt	0.000194	0.0001	0.001	NE	B, J	B, J	084462-010	SW846 6020
	Copper	0.000807	0.0002	0.001	NE	B, J	B, J	084462-010	SW846 6020
	Iron	0.340	0.010	0.025	NE	B		084462-010	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084462-010	SW846 6020
	Magnesium	29.3	0.005	0.015	NE			084462-010	SW846 6020
	Manganese	0.00576	0.001	0.005	NE			084462-010	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084462-010	SW846 7470
	Nickel	0.00164	0.0005	0.002	NE	B, J	B, J	084462-010	SW846 6020
	Potassium	5.42	0.080	0.300	NE			084462-010	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084462-010	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084462-010	SW846 6020
	Sodium	65.7	0.400	1.25	NE			084462-010	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084462-010	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084462-010	SW846 6020
	Zinc	0.00741	0.002	0.010	NE	B, J	B, J	084462-010	SW846 6020

Refer to footnotes on page C-31.

Table MWL C-5 (Concluded)
Summary of Metal Results (Filtered)
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW6	Aluminum	0.00809	0.005	0.015	NE	B, J	B, J	084464-010	SW846 6020
12-Apr-07	Antimony	ND	0.0005	0.002	0.006	U		084464-010	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084464-010	SW846 6020
	Barium	0.120	0.0005	0.002	2.00			084464-010	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084464-010	SW846 6020
	Cadmium	ND	0.0001	0.001	0.005	U		084464-010	SW846 6020
	Calcium	86.3	0.200	1.00	NE	B		084464-010	SW846 6020
	Chromium	0.0012	0.001	0.003	0.100	J		084464-010	SW846 6020
	Cobalt	0.000169	0.0001	0.001	NE	J		084464-010	SW846 6020
	Copper	0.000842	0.0002	0.001	NE	J		084464-010	SW846 6020
	Iron	0.341	0.010	0.025	NE			084464-010	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084464-010	SW846 6020
	Magnesium	28.8	0.005	0.015	NE			084464-010	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084464-010	SW846 6020
	Mercury	ND	0.00006	0.0002	0.002	U		084464-010	SW846 7470
	Nickel	0.00111	0.0005	0.002	NE	J		084464-010	SW846 6020
	Potassium	4.54	0.080	0.300	NE			084464-010	SW846 6020
	Selenium	ND	0.0025	0.005	0.050	U		084464-010	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084464-010	SW846 6020
	Sodium	59.0	0.800	2.50	NE			084464-010	SW846 6020
	Thallium	ND	0.0004	0.001	0.002	U		084464-010	SW846 6020
	Vanadium	ND	0.010	0.030	NE	U		084464-010	SW846 6020
	Zinc	0.00462	0.002	0.010	NE	B, J	B, J	084464-010	SW846 6020

Refer to footnotes on page C-31.

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Table MWL C-6
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW1 05-Apr-07	Tritium	4.46 ± 114	196	95.4	NE	U		084453-036	EPA 906.0 M
	Gross Alpha	9.92 ± 2.09	1.64	0.746	15			084453-034	EPA 900.0
	Gross Beta	7.91 ± 1.18	1.49	0.716	4mrem/yr			084453-034	EPA 900.0
	Americium-241	1.96 ± 11.4	17.6	8.81	NE	U	P1, R	084453-033	EPA 901.1
	Cesium-137	0.344 ± 2.04	3.48	1.74	NE	U		084453-033	EPA 901.1
	Cobalt-60	-1.08 ± 2.26	3.64	1.82	NE	U		084453-033	EPA 901.1
	Potassium-40	-17.5 ± 47.2	52.6	26.3	NE	U		084453-033	EPA 901.1
MWL-MW2 06-Apr-07	Tritium	-33.8 ± 114	198	96.2	NE	U		084455-036	EPA 906.0 M
	Gross Alpha	9.68 ± 2.00	1.45	0.650	15			084455-034	EPA 900.0
	Gross Beta	8.94 ± 1.21	1.46	0.699	4mrem/yr			084455-034	EPA 900.0
	Americium-241	1.05 ± 3.70	5.86	2.93	NE	U		084455-033	EPA 901.1
	Cesium-137	1.91 ± 3.23	4.83	2.42	NE	U		084455-033	EPA 901.1
	Cobalt-60	2.85 ± 2.95	5.23	2.62	NE	U		084455-033	EPA 901.1
	Potassium-40	-65.3 ± 75.4	50.2	25.1	NE	U		084455-033	EPA 901.1
MWL-MW2 (Duplicate) 06-Apr-07	Tritium	-29.1 ± 113	197	95.5	NE	U		084456-036	EPA 906.0 M
	Gross Alpha	9.33 ± 1.89	1.23	0.544	15			084456-034	EPA 900.0
	Gross Beta	4.67 ± 1.14	1.65	0.794	4mrem/yr			084456-034	EPA 900.0
	Americium-241	-23.6 ± 14.4	16.7	8.35	NE	U		084456-033	EPA 901.1
	Cesium-137	-0.19 ± 1.92	3.15	1.58	NE	U		084456-033	EPA 901.1
	Cobalt-60	2.03 ± 2.15	3.81	1.90	NE	U		084456-033	EPA 901.1
	Potassium-40	19.1 ± 40.8	30.8	15.4	NE	U		084456-033	EPA 901.1
MWL-MW3 11-Apr-07	Tritium	126 ± 99.6	159	70.4	NE	U		084458-036	EPA 906.0 M
	Gross Alpha	5.56 ± 1.36	1.06	0.461	15			084458-034	EPA 900.0
	Gross Beta	5.35 ± 1.18	1.70	0.821	4mrem/yr			084458-034	EPA 900.0
	Americium-241	-17.1 ± 7.89	12.2	6.11	NE	U		084458-033	EPA 901.1
	Cesium-137	-2.28 ± 1.68	2.60	1.30	NE	U		084458-033	EPA 901.1
	Cobalt-60	-0.695 ± 1.90	3.12	1.56	NE	U		084458-033	EPA 901.1
	Potassium-40	-19.4 ± 34.1	38.1	19.1	NE	U		084458-033	EPA 901.1
MWL-MW4 05-Jun-07	Tritium	-41.8 ± 97.9	173	83.5	NE	U		084460-036	EPA 906.0 M
	Gross Alpha	7.69 ± 2.81	1.83	0.641	15			084460-034	EPA 900.0
	Gross Beta	6.64 ± 2.12	2.16	0.975	4mrem/yr			084460-034	EPA 900.0
	Americium-241	0.0192 ± 3.62	5.69	2.84	NE	U	P1, R	084460-033	EPA 901.1
	Cesium-137	-1.01 ± 3.00	4.82	2.41	NE	U		084460-033	EPA 901.1
	Cobalt-60	0.823 ± 3.31	4.81	2.41	NE	U		084460-033	EPA 901.1
	Potassium-40	43.0 ± 35.7	45.2	22.6	NE	U		084460-033	EPA 901.1

Refer to footnotes on page C-31.

Table MWL C-6
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
MWL-MW5	Tritium	42.9 ± 89.9	159	70.7	NE	U		084462-036	EPA 906.0 M
10-Apr-07	Gross Alpha	9.20 ± 1.98	1.49	0.665	15			084462-034	EPA 900.0
	Gross Beta	3.92 ± 1.16	1.75	0.845	4mrem/yr			084462-034	EPA 900.0
	Americium-241	-30.8 ± 7.83	11.4	5.68	NE	U		084462-033	EPA 901.1
	Cesium-137	0.814 ± 1.71	2.88	1.44	NE	U		084462-033	EPA 901.1
	Cobalt-60	1.50 ± 1.88	3.28	1.64	NE	U		084462-033	EPA 901.1
	Potassium-40	2.26 ± 42.7	22.4	11.2	NE	U		084462-033	EPA 901.1
MWL-MW6	Tritium	98.0 ± 96.8	160	70.8	NE	U		084464-036	EPA 906.0 M
12-Apr-07	Gross Alpha	12.0 ± 2.55	2.33	1.08	15			084464-034	EPA 900.0
	Gross Beta	6.19 ± 1.02	1.26	0.599	4mrem/yr			084464-034	EPA 900.0
	Americium-241	9.40 ± 4.79	4.95	2.47	NE	X	R	084464-033	EPA 901.1
	Cesium-137	1.22 ± 2.36	3.96	1.98	NE	U		084464-033	EPA 901.1
	Cobalt-60	-0.0887 ± 2.46	4.01	2.01	NE	U		084464-033	EPA 901.1
	Potassium-40	-24.5 ± 74.7	50.9	25.5	NE	U		084464-033	EPA 901.1

Refer to footnotes on page C-31.

Table MWL C-7
Summary of Field Water Quality Measurements[i]
Mixed Waste Landfill, Sandia National Laboratories/New Mexico

Annual Groundwater Monitoring, April – June 2007

Well ID	Sample Date	Temperature (^0C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (% Sat)	Dissolved Oxygen (mg/L)
MWL-MW1	05-Apr-07	19.56	560	188.5	7.62	47.5	64.1	5.89
MWL-MW2	06-Apr-07	18.75	565	248.1	7.69	1.24	39.5	3.67
MWL-MW3	11-Apr-07	14.11	458	317.6	7.83	1.97	87.1	8.93
MWL-MW4	05-Jun-07	19.80	577	377.8	7.19	0.43	17.4	1.58
MWL-MW5	10-Apr-07	19.50	849	216.0	7.13	0.44	26.6	2.43
MWL-MW6	12-Apr-07	18.62	794	249.6	7.30	0.41	28.1	2.61

Refer to footnotes on page C-31.

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[a]Result and/or Activity
- Values in bold exceed the established MCL.
- ND = not detected (at method detection limit).
- Activities of zero or less are considered to be not detected.
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- pCi/L = picocuries per liter

[b]MDL or Critical level
Method detection limit. The minimum concentration or activity that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.
- N/A = not applicable

[c]PQL
Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.
- N/A = not applicable

[d]MCL
MCL = Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations (40 CFR 141.11(b)), and subsequent amendments or the New Mexico Environmental Improvement Board in Title 20, Chapter 7, Part 1 of the New Mexico Administrative Code (20 NMAC 7.1).
NE = not established.
The following are the MCLs for gross alpha particles and beta particles in community water systems:
15 pCi/L = Gross alpha particle activity (including radium-226 but excluding radon and total uranium).
4 mrem/yr = any combination of beta and/or gamma emitting radionuclides (as dose rate).

[e]Lab Qualifier
B = Analyte is detected in associated laboratory method blank.
J = Amount detected is below the practical quantitation limit (PQL).
U = Analyte is absent or below the method detection limit.
X = Data rejected due to low abundance.
None = No qualifiers for field analysis.

[f]Validation Qualifier
If cell is blank, then all quality control samples met acceptance criteria with respect to submitted samples.
A2 = Laboratory accuracy and/or bias measurements for the matrix spike and/or matrix spike duplicate samples do not acceptance criteria.
B = Analyte present in associated laboratory method blank.
B1 = Analyte present in associated trip blank sample.
B2 = Analyte present in associated equipment blank sample.
B3 = Analyte present in associated continuing calibration blank.
J = Associate value is an estimated quantity.
P1 =Laboratory precision measurements for the matrix spike and matrix spike duplicate do not meet acceptance criteria.
R = The data are unusable for their intended purpose. The analyte may or may not be present.
UJ = Analyte not detected above laboratory method detection limit, but associated value is an estimate and may be inaccurate or imprecise.
#U = Analyte was qualified as not detected at listed value.
None = Data was not validated.

[g]**Analytical Method**

U.S. Environmental Protection Agency, 1990, "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods," SW-846, 3rd ed.
U.S. Environmental Protection Agency, 1983, "The Determination of Inorganic Anions in Water by Ion Chromatography-Method 300.0,"
EPA-600/4-84-017.
Analytical method used to detect radionuclides is HASL 300 4.5.2.3;
U.S. Department of Energy, Environmental Measurements Laboratory, 1997, "EML Procedures Manual," 27th ed., Vol. 1, HASL-300.
EPA 903.0/904.0: U.S. Environmental Protection Agency, 1980, "Prescribed Procedures for Measurement of Radioactivity in Drinking Water," EPA-600/4-80-032.

[h]**MDA**

The minimal detectable activity or minimum measured activity in a sample required to ensure a 95% probability that the measured activity is accurately quantified above the critical level.

[i]**Field Water Quality Measurements**

Field measurements collected prior to sampling.
^{O}C = degrees Celsius
% Sat = percent Saturation
µmho/cm = micromhos per centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = nephelometric turbidity units
pH = potential of hydrogen (negative logarithm of the hydrogen ion concentration)

APPENDIX D
Tech Area V
Groundwater Monitoring
Surveillance Task

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Table TAV D-1
Summary of Detected Volatile Organic Compounds
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
LWDS-MW1	Acetone	1.46	1.25	5.00	NE	J		083653-001	SW846 8260
28-Nov-06	**Trichloroethene**	**17.0**	0.250	1.00	5.0			083653-001	SW846 8260
	cis-1,2-Dichloroethene	3.32	0.300	1.00	70			083653-001	SW846 8260
LWDS-MW2 13-Nov-06	Acetone	1.61	1.25	5.00	NE	J	5.0U	083634-001	SW846 8260
TAV-MW1	Acetone	19.8	1.25	5.00	NE		19.8U, B2	083650-001	SW846 8260
04-Dec-06	Toluene	0.262	0.250	1.00	1,000	J	1.0U, B1	083650-001	SW846 8260
	Trichloroethene	2.40	0.250	1.00	5.0			083650-001	SW846 8260
TAV-MW1 (Duplicate)	Acetone	12.8	1.25	5.00	NE		12.8U, B2	083651-001	SW846 8260
04-Dec-06	Trichloroethene	2.36	0.250	1.00	5.0			083651-001	SW846 8260
TAV-MW2 29-Nov-06	Trichloroethene	1.09	0.250	1.00	5.0			083630-001	SW846 8260
TAV-MW4 09-Nov-06	Trichloroethene	0.504	0.250	1.00	5.0	J		083632-001	SW846 8260
TAV-MW6	Acetone	2.19	1.25	5.00	NE	J	5.0 UJ, A, B2	083641-001	SW846 8260
15-Nov-06	**Trichloroethene**	**7.38**	0.250	1.00	5.0			083641-001	SW846 8260
	cis-1,2-Dichloroethene	1.03	0.300	1.00	70			083641-001	SW846 8260
TAV-MW6 (Duplicate)	**Trichloroethene**	**6.68**	0.250	1.00	5.0			083642-001	SW846 8260
15-Nov-06	cis-1,2-Dichloroethene	0.867	0.300	1.00	70	J		083642-001	SW846 8260
TAV-MW7 05-Dec-06	Acetone	2.86	1.25	5.00	NE	J		083628-001	SW846 8260
TAV-MW8 14-Nov-06	Trichloroethene	1.16	0.250	1.00	5.0			083637-001	SW846 8260
TAV-MW9	Carbon Disulfide	1.98	1.25	5.00	NE	J	J	083626-001	SW846 8260
16-Nov-06	Methylene Chloride	2.87	2.00	5.00	5.0	B, J	5.0U, B	083626-001	SW846 8260
AVN-1 05-Mar-07	Acetone	1.90	1.25	5.00	NE	J		084201-001	SW846 8260
LWDS-MW1	Acetone	2.03	1.25	5.00	NE	J		084209-001	SW846 8260
12-Mar-07	Chloroform	0.279	0.250	1.00	NE	J	1.0U, B2	084209-001	SW846 8260
	Trichloroethene	**16.6**	0.250	1.00	5.0			084209-001	SW846 8260
	cis-1,2-Dichloroethene	3.38	0.300	1.00	70			084209-001	SW846 8260
LWDS-MW1 (Duplicate)	Acetone	2.33	1.25	5.00	NE	J		084210-001	SW846 8260
12-Mar-07	Chloroform	0.253	0.250	1.00	NE	J	1.0U, B2	084210-001	SW846 8260
	Trichloroethene	**16.0**	0.250	1.00	5.0			084210-001	SW846 8260
	cis-1,2-Dichloroethene	3.24	0.300	1.00	70			084210-001	SW846 8260

Refer to footnotes on page D-29.

Table TAV D-1
Summary of Detected Volatile Organic Compounds
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
LWDS-MW2 01-Mar-07	Acetone	1.79	1.25	5.00	NE	J	5.0U, B1	084192-001	SW846 8260
TAV-MW1 07-Mar-07	Trichloroethene	2.57	0.250	1.00	5.0			084205-001	SW846 8260
TAV-MW2	Acetone	1.88	1.25	5.00	NE	J	5.0U, B1	084188-001	SW846 8260
26-Feb-07	Trichloroethene	0.435	0.250	1.00	5.0	J		084188-001	SW846 8260
TAV-MW3 21-Feb-07	Acetone	1.85	1.25	5.00	NE	J	5.0U, B1	084181-001	SW846 8260
TAV-MW4	Acetone	2.07	1.25	5.00	NE	J	5.0U, B1	084190-001	SW846 8260
28-Feb-07	Trichloroethene	0.605	0.250	1.00	5.0	J		084190-001	SW846 8260
TAV-MW6	Acetone	1.87	1.25	5.00	NE	J	5.0U, B1	084199-001	SW846 8260
02-Mar-07	**Trichloroethene**	**6.88**	0.250	1.00	5.0			084199-001	SW846 8260
	cis-1,2-Dichloroethene	1.09	0.300	1.00	70			084199-001	SW846 8260
TAV-MW7 27-Feb-07	Acetone	1.83	1.25	5.00	NE	J	5.0U, B1	084186-001	SW846 8260
TAV-MW8	Acetone	1.95	1.25	5.00	NE	J	5.0U, B1	084196-001	SW846 8260
22-Feb-07	Carbon Disulfide	2.26	1.25	5.00	NE	J	5.0U, B2	084196-001	SW846 8260
	Trichloroethene	1.17	0.250	1.00	5.0			084196-001	SW846 8260
TAV-MW8 (Duplicate)	Acetone	1.90	1.25	5.00	NE	J	5.0U, B1	084197-001	SW846 8260
22-Feb-07	Trichloroethene	1.42	0.250	1.00	5.0			084197-001	SW846 8260
TAV-MW9 23-Feb-07	Acetone	2.14	1.25	5.00	NE	J	5.0U, B1	084184-001	SW846 8260
AVN-1 18-Jun-07	Acetone	1.74	1.25	5.00	NE	J	5.0U, B2	084734-001	SW846 8260
LWDS-MW1	**Trichloroethene**	**12.7**	0.250	1.00	5.0			084741-001	SW846 8260
21-Jun-07	cis-1,2-Dichloroethene	2.51	0.300	1.00	70			084741-001	SW846 8260
TAV-MW1	Trichloroethene	4.13	0.250	1.00	5.0			084739-001	SW846 8260
22-Jun-07	cis-1,2-Dichloroethene	0.466	0.300	1.00	70	J		084739-001	SW846 8260
TAV-MW2 11-Jun-07	Trichloroethene	0.738	0.250	1.00	5.0	J		084718-001	SW846 8260
TAV-MW3 06-Jun-07	Acetone	2.00	1.25	5.00	NE	B, J	5.0 UJ, B	084712-001	SW846 8260
TAV-MW4	Acetone	1.38	1.25	5.00	NE	B, J	5.0UJ, B, MS3	084720-001	SW846 8260
12-Jun-07	Chloroform	0.399	0.250	1.00	NE	J		084720-001	SW846 8260
	Trichloroethene	0.822	0.250	1.00	5.0	J		084720-001	SW846 8260
TAV-MW5 19-Jun-07	Acetone	2.16	1.25	5.00	NE	J		084737-001	SW846 8260

Refer to footnotes on page D-29.

Table TAV D-1 (Concluded)
Summary of Detected Volatile Organic Compounds
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW6 15-Jun-07	Acetone	2.41	1.25	5.00	NE	J		084730-001	SW846 8260
	Trichloroethene	**7.39**	0.250	1.00	5.0			084730-001	SW846 8260
	cis-1,2-Dichloroethene	1.03	0.300	1.00	70			084730-001	SW846 8260
TAV-MW8 14-Jun-07	Trichloroethene	1.35	0.250	1.00	5.0			084727-001	SW846 8260
LWDS-MW1 30-Aug-07	**Trichloroethene**	**13.9**	0.250	1.00	5.0			085196-001	SW846-8260B
	cis-1,2-Dichloroethene	3.35	0.300	1.00	70			085196-001	SW846-8260B
TAV-MW1 05-Sep-07	Trichloroethene	4.48	0.250	1.00	5.0			085198-001	SW846-8260B
	cis-1,2-Dichloroethene	0.572	0.300	1.00	70	J		085198-001	SW846-8260B
TAV-MW2 06-Sep-07	Trichloroethene	0.777	0.250	1.00	5.0	J		085177-001	SW846-8260B
TAV-MW2 (Duplicate) 06-Sep-07	Trichloroethene	0.812	0.250	1.00	5.0	J		085178-001	SW846-8260B
TAV-MW3 20-Aug-07	Acetone	2.57	1.25	5.00	NE	J	5.0UJ	085169-001	SW846-8260B
	Carbon Disulfide	1.33	1.25	5.00	NE	J		085169-001	SW846-8260B
TAV-MW4 22-Aug-07	Acetone	2.83	1.25	5.00	NE	J	J-	085180-001	SW846-8260B
	Chloroform	0.316	0.250	1.00	NE	J		085180-001	SW846-8260B
	Trichloroethene	0.580	0.250	1.00	5.0	J		085180-001	SW846-8260B
TAV-MW6 28-Aug-07	**Trichloroethene**	**8.23**	0.250	1.00	5.0			085189-001	SW846-8260B
	cis-1,2-Dichloroethene	1.25	0.300	1.00	70			085189-001	SW846-8260B
TAV-MW8 07-Sep-07	Methylene Chloride	4.56	2.00	5.00	5.0	J	5.0U	085186-001	SW846-8260B
	Trichloroethene	0.283	0.250	1.00	5.0	J		085186-001	SW846-8260B
TAV-MW8 (Duplicate) 07-Sep-07	Methylene Chloride	3.46	2.00	5.00	5.0	J	5.0U	085187-001	SW846-8260B
	Trichloroethene	0.653	0.250	1.00	5.0	J		085187-001	SW846-8260B

Refer to footnotes on page D-29.

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Table TAV D-2
Method Detection Limits for Volatile Organic Compounds (EPA Method[g] 8260)
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Analyte	MDL[b] (µg/L)
1,1,1-Trichloroethane	0.300
1,1,2,2-Tetrachloroethane	0.250
1,1,2-Trichloroethane	0.250
1,1-Dichloroethane	0.300
1,1-Dichloroethene	0.300
1,2-Dichloroethane	0.250
1,2-Dichloropropane	0.250
2-Butanone	1.25
2-Hexanone	1.25
4-methyl-, 2-Pentanone	1.25
Acetone	1.25
Benzene	0.300
Bromodichloromethane	0.250
Bromoform	0.250
Bromomethane	0.500
Carbon disulfide	1.25
Carbon tetrachloride	0.250
Chlorobenzene	0.250
Chloroethane	0.500
Chloroform	0.250
Chloromethane	0.500
Dibromochloromethane	0.250
Ethyl benzene	0.250
Methylene chloride	2.00
Styrene	0.250
Tetrachloroethene	0.250
Toluene	0.250
Trichloroethene	0.250
Vinyl acetate	1.50
Vinyl chloride	0.500
Xylene	0.250
cis-1,2-Dichloroethene	0.300
cis-1,3-Dichloropropene	0.250
trans-1,2-Dichloroethene	0.300
trans-1,3-Dichloropropene	0.250

Refer to footnotes on page D-29.

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Table TAV D-3
Summary of Nitrate and Nitrate plus Nitrite Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Sample Date	Nitrate plus Nitrite Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
AVN-1	30-Nov-06	8.57	0.070	0.250	10			083644-018	EPA 353.1
	05-Mar-07	10.0	0.100	0.500	10			084201-018	EPA 353.2
	18-Jun-07	7.68	0.200	1.00	10			084734-018	EPA 353.2
	24-Aug-07	9.73	0.250	1.25	10			085191-018	EPA 353.2
AVN-1 (Duplicate)	18-Jun-07	8.55	0.500	2.50	10			084735-018	EPA 353.2
AVN-1 (Re-analysis)	05-Mar-07	9.12	0.100	0.500	10	H	HT, J	084201-R18	EPA 353.2
LWDS-MW1	28-Nov-06	0.102	0.014	0.050	10			083653-018	EPA 353.1
	12-Mar-07	**13.8**	0.100	0.500	10			084209-018	EPA 353.2
	21-Jun-07	**11.4**	0.250	1.25	10			084741-018	EPA 353.2
	30-Aug-07	**13.1**	0.250	1.25	10			085196-018	EPA 353.2
LWDS-MW1 (Duplicate)	12-Mar-07	**12.7**	0.100	0.500	10			084210-018	EPA 353.2
LWDS-MW1 (Re-analysis)	28-Nov-06	**11.2**	0.070	0.250	10	H	J, HT	083653-R18	EPA 353.1
	28-Nov-06	**13.8**	0.100	0.500	10	H	J, HT	083653-S18	EPA 353.2
LWDS-MW2	13-Nov-06	8.13	0.070	0.250	10			083634-018	EPA 353.1
	01-Mar-07	8.09	0.100	0.500	10			084192-018	EPA 353.2
	13-Jun-07	7.20	0.100	0.500	10			084724-018	EPA 353.2
	27-Aug-07	8.65	0.250	1.25	10			085182-018	EPA 353.2
LWDS-MW2 (Duplicate)	13-Jun-07	7.28	0.100	0.500	10			084725-018	EPA 353.2
TAV-MW1	04-Dec-06	7.83	0.070	0.250	10			083650-018	EPA 353.1
	07-Mar-07	8.09	0.100	0.500	10			084205-018	EPA 353.2
	22-Jun-07	7.90	0.200	1.00	10	B		084739-018	EPA 353.2
	05-Sep-07	9.01	0.100	0.500	10			085198-018	EPA 353.2
TAV-MW1 (Duplicate)	04-Dec-06	8.03	0.070	0.250	10			083651-018	EPA 353.1
TAV-MW2	29-Nov-06	2.38	0.070	0.250	10	B		083630-018	EPA 353.1
	26-Feb-07	3.52	0.100	0.500	10			084188-018	EPA 353.2
	11-Jun-07	5.51	0.100	0.500	10		J+, MS2	084718-018	EPA 353.2
	06-Sep-07	3.26	0.100	0.500	10			085177-018	EPA 353.2
TAV-MW2 (Duplicate)	06-Sep-07	2.95	0.100	0.500	10			085178-018	EPA 353.2
TAV-MW2 (Re-analysis)	11-Jun-07	3.14	0.100	0.500	10	B, H	H1, J	084718-R18	EPA 353.2
TAV-MW3	08-Nov-06	ND	0.014	0.050	10	U	B3, UJ	083624-018	EPA 353.1
	21-Feb-07	3.97	0.100	0.500	10			084181-018	EPA 353.2
	06-Jun-07	5.54	0.100	0.500	10			084712-018	EPA 353.2
	20-Aug-07	5.51	0.100	0.500	10			085169-018	EPA 353.2
TAV-MW3 (Re-analysis)	08-Nov-06	4.24	0.070	0.250	10	H	J, HT	083624-R18	EPA 353.1
	08-Nov-06	5.92	0.100	0.500	10	H	J, HT	083624-S18	EPA 353.2

Refer to footnotes on page D-29.

Table TAV D-3 (Concluded)
Summary of Nitrate and Nitrate plus Nitrite Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Sample Date	Nitrate plus Nitrite Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW4	09-Nov-06	ND	0.014	0.050	10	U	B3, UJ	083632-018	EPA 353.1
	28-Feb-07	7.59	0.100	0.500	10			084190-018	EPA 353.2
	12-Jun-07	6.53	0.100	0.500	10			084720-018	EPA 353.2
	22-Aug-07	8.79	0.100	0.500	10			085180-018	EPA 353.2
TAV-MW4 (Re-analysis)	09-Nov-06	6.97	0.070	0.250	10	H	J, HT	083632-R18	EPA 353.1
	09-Nov-06	9.53	0.100	0.500	10	H	J, HT	083632-S18	EPA 353.2
TAV-MW5	17-Nov-06	7.22	0.070	0.250	10			083646-018	EPA 353.1
	06-Mar-07	7.84	0.200	1.00	10			084203-018	EPA 353.2
	19-Jun-07	5.86	0.200	1.00	10			084737-018	EPA 353.2
	23-Aug-07	8.98	0.200	1.00	10			085194-018	EPA 353.2
TAV-MW6	15-Nov-06	7.94	0.070	0.250	10			083641-018	EPA 353.1
	02-Mar-07	8.87	0.100	0.500	10			084199-018	EPA 353.2
	15-Jun-07	9.06	0.200	1.00	10			084730-018	EPA 353.2
	28-Aug-07	9.43	0.250	1.25	10			085189-018	EPA 353.2
TAV-MW6 (Duplicate)	15-Nov-06	7.54	0.070	0.250	10			083642-018	EPA 353.1
TAV-MW7	05-Dec-06	3.91	0.070	0.250	10			083628-018	EPA 353.1
	27-Feb-07	4.25	0.100	0.500	10			084186-018	EPA 353.2
	08-Jun-07	4.27	0.100	0.500	10		J+, MS2	084716-018	EPA 353.2
	04-Sep-07	4.83	0.100	0.500	10			085173-018	EPA 353.2
TAV-MW8	14-Nov-06	ND	0.014	0.050	10	U	B3, UJ	083637-018	EPA 353.1
	22-Feb-07	6.42	0.100	0.500	10			084196-018	EPA 353.2
	14-Jun-07	5.24	0.100	0.500	10			084727-018	EPA 353.2
	07-Sep-07	5.85	0.100	0.500	10			085186-018	EPA 353.2
TAV-MW8 (Duplicate)	22-Feb-07	7.00	0.100	0.500	10			084197-018	EPA 353.2
	07-Sep-07	5.72	0.100	0.500	10			085187-018	EPA 353.2
TAV-MW8 (Re-analysis)	14-Nov-06	4.84	0.070	0.250	10	H	J, HT	083637-R18	EPA 353.1
	14-Nov-06	6.94	0.100	0.500	10	H	J, HT	083637-S18	EPA 353.2
TAV-MW9	16-Nov-06	3.69	0.070	0.250	10			083626-018	EPA 353.1
	23-Feb-07	4.10	0.100	0.500	10			084184-018	EPA 353.2
	07-Jun-07	4.11	0.100	0.500	10			084714-018	EPA 353.2
	21-Aug-07	5.15	0.100	0.500	10			085171-018	EPA 353.2

Refer to footnotes on page D-29.

Table TAV D-4
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
AVN-1	Aluminum	0.0444	0.005	0.015	NE			085191-009	SW846 6020
24-Aug-07	Antimony	ND	0.0005	0.002	0.006	U	UJ	085191-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085191-009	SW846 6020
	Barium	0.0715	0.0005	0.002	2.00			085191-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085191-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085191-009	SW846 6020
	Calcium	39.8	0.020	0.100	NE			085191-009	SW846 6020
	Chromium	0.00231	0.001	0.003	0.100	J		085191-009	SW846 6020
	Cobalt	ND	0.0001	0.001	NE	U		085191-009	SW846 6020
	Copper	0.00188	0.0002	0.001	NE			085191-009	SW846 6020
	Iron	0.190	0.010	0.025	NE			085191-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085191-009	SW846 6020
	Magnesium	9.03	0.005	0.015	NE			085191-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085191-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085191-009	SW846 7470
	Nickel	0.000957	0.0005	0.002	NE	J		085191-009	SW846 6020
	Potassium	3.26	0.080	0.300	NE			085191-009	SW846 6020
	Selenium	0.00198	0.001	0.005	0.050	J		085191-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085191-009	SW846 6020
	Sodium	35.9	0.080	0.250	NE			085191-009	SW846 6020
	Thallium	0.000433	0.0003	0.001	0.002	J		085191-009	SW846 6020
	Uranium	0.00242	0.00005	0.0002	0.030			085191-009	SW846 6020
	Vanadium	0.00564	0.003	0.010	NE	J		085191-009	SW846 6020
	Zinc	0.00348	0.0026	0.010	NE	J		085191-009	SW846 6020

Refer to footnotes on page D-29.

Table TAV D-4
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
LWDS-MW1	Aluminum	0.0117	0.005	0.015	NE	J		085196-009	SW846 6020
30-Aug-07	Antimony	ND	0.0005	0.002	0.006	U	UJ	085196-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085196-009	SW846 6020
	Barium	0.0784	0.0005	0.002	2.00			085196-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085196-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085196-009	SW846 6020
	Calcium	65.9	0.100	0.500	NE			085196-009	SW846 6020
	Chromium	0.0022	0.001	0.003	0.100	J		085196-009	SW846 6020
	Cobalt	0.000159	0.0001	0.001	NE	J		085196-009	SW846 6020
	Copper	0.00115	0.0002	0.001	NE			085196-009	SW846 6020
	Iron	0.287	0.010	0.025	NE			085196-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085196-009	SW846 6020
	Magnesium	21.1	0.005	0.015	NE			085196-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085196-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085196-009	SW846 7470
	Nickel	0.00162	0.0005	0.002	NE	J		085196-009	SW846 6020
	Potassium	2.95	0.080	0.300	NE			085196-009	SW846 6020
	Selenium	0.00493	0.001	0.005	0.050	J		085196-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085196-009	SW846 6020
	Sodium	67.0	0.400	1.25	NE			085196-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085196-009	SW846 6020
	Uranium	0.00396	0.00005	0.0002	0.030			085196-009	SW846 6020
	Vanadium	0.0049	0.003	0.010	NE	J		085196-009	SW846 6020
	Zinc	0.00491	0.0026	0.010	NE	J		085196-009	SW846 6020

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Table TAV D-4
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
LWDS-MW2	Aluminum	0.00695	0.005	0.015	NE	J		085182-009	SW846 6020
27-Aug-07	Antimony	ND	0.0005	0.002	0.006	U	UJ	085182-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085182-009	SW846 6020
	Barium	0.0677	0.0005	0.002	2.00			085182-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085182-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085182-009	SW846 6020
	Calcium	44.5	0.020	0.100	NE			085182-009	SW846 6020
	Chromium	0.00349	0.001	0.003	0.100			085182-009	SW846 6020
	Cobalt	ND	0.0001	0.001	NE	U		085182-009	SW846 6020
	Copper	0.00247	0.0002	0.001	NE			085182-009	SW846 6020
	Iron	0.195	0.010	0.025	NE			085182-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085182-009	SW846 6020
	Magnesium	12.7	0.005	0.015	NE			085182-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085182-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085182-009	SW846 7470
	Nickel	0.000905	0.0005	0.002	NE	J		085182-009	SW846 6020
	Potassium	2.58	0.080	0.300	NE			085182-009	SW846 6020
	Selenium	0.00228	0.001	0.005	0.050	J		085182-009	SW846 6020
	Silver	0.000455	0.0002	0.001	NE	J		085182-009	SW846 6020
	Sodium	46.5	0.080	0.250	NE			085182-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085182-009	SW846 6020
	Uranium	0.00368	0.00005	0.0002	0.030			085182-009	SW846 6020
	Vanadium	0.00617	0.003	0.010	NE	J		085182-009	SW846 6020
	Zinc	0.00412	0.0026	0.010	NE	J		085182-009	SW846 6020

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Table TAV D-4
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW1	Aluminum	0.557	0.005	0.015	NE			085198-009	SW846 6020
05-Sep-07	Antimony	ND	0.0005	0.002	0.006	U		085198-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085198-009	SW846 6020
	Barium	0.0716	0.0005	0.002	2.00			085198-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085198-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085198-009	SW846 6020
	Calcium	52.2	0.100	0.500	NE			085198-009	SW846 6020
	Chromium	0.00405	0.001	0.003	0.100			085198-009	SW846 6020
	Cobalt	0.000337	0.0001	0.001	NE	J		085198-009	SW846 6020
	Copper	0.00136	0.0002	0.001	NE			085198-009	SW846 6020
	Iron	0.698	0.010	0.025	NE			085198-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085198-009	SW846 6020
	Magnesium	16.5	0.005	0.015	NE			085198-009	SW846 6020
	Manganese	0.0129	0.001	0.005	NE			085198-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	085198-009	SW846 7470
	Nickel	0.0016	0.0005	0.002	NE	J		085198-009	SW846 6020
	Potassium	3.65	0.080	0.300	NE			085198-009	SW846 6020
	Selenium	0.00197	0.001	0.005	0.050	J		085198-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085198-009	SW846 6020
	Sodium	48.5	0.080	0.250	NE			085198-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085198-009	SW846 6020
	Uranium	0.00433	0.00005	0.0002	0.030			085198-009	SW846 6020
	Vanadium	0.00449	0.003	0.010	NE	J		085198-009	SW846 6020
	Zinc	0.00691	0.0026	0.010	NE	J		085198-009	SW846 6020

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Table TAV D-4
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW2	Aluminum	0.0131	0.005	0.015	NE	B, J	0.029U	085177-009	SW846 6020
06-Sep-07	Antimony	ND	0.0005	0.002	0.006	B, U		085177-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085177-009	SW846 6020
	Barium	0.0554	0.0005	0.002	2.00			085177-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085177-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085177-009	SW846 6020
	Calcium	74.5	0.200	1.00	NE	B		085177-009	SW846 6020
	Chromium	0.00134	0.001	0.003	0.100	J		085177-009	SW846 6020
	Cobalt	0.000127	0.0001	0.001	NE	J		085177-009	SW846 6020
	Copper	0.000741	0.0002	0.001	NE	J		085177-009	SW846 6020
	Iron	0.218	0.010	0.025	NE			085177-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085177-009	SW846 6020
	Magnesium	25.2	0.050	0.150	NE		J	085177-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085177-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	085177-009	SW846 7470
	Nickel	0.00125	0.0005	0.002	NE	J		085177-009	SW846 6020
	Potassium	3.39	0.080	0.300	NE			085177-009	SW846 6020
	Selenium	0.00253	0.001	0.005	0.050	J		085177-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085177-009	SW846 6020
	Sodium	67.8	0.800	2.50	NE			085177-009	SW846 6020
	Thallium	0.00037	0.0003	0.001	0.002	J		085177-009	SW846 6020
	Uranium	0.00712	0.00005	0.0002	0.030			085177-009	SW846 6020
	Vanadium	0.00505	0.003	0.010	NE	J		085177-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		085177-009	SW846 6020

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Table TAV D-4
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Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW3	Aluminum	ND	0.005	0.015	NE	U		085169-009	SW846 6020
20-Aug-07	Antimony	ND	0.0005	0.002	0.006	U		085169-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085169-009	SW846 6020
	Barium	0.044	0.0005	0.002	2.00			085169-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085169-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085169-009	SW846 6020
	Calcium	53.5	0.100	0.500	NE			085169-009	SW846 6020
	Chromium	0.00142	0.001	0.003	0.100	J		085169-009	SW846 6020
	Cobalt	0.000131	0.0001	0.001	NE	J		085169-009	SW846 6020
	Copper	0.000886	0.0002	0.001	NE	J		085169-009	SW846 6020
	Iron	0.217	0.010	0.025	NE			085169-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085169-009	SW846 6020
	Magnesium	13.6	0.005	0.015	NE		J	085169-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085169-009	SW846 6020
	Mercury	0.000049	0.00003	0.0002	0.002	B, J	0.00025U	085169-009	SW846 7470
	Nickel	0.00119	0.0005	0.002	NE	J		085169-009	SW846 6020
	Potassium	4.38	0.080	0.300	NE			085169-009	SW846 6020
	Selenium	0.0023	0.001	0.005	0.050	J		085169-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085169-009	SW846 6020
	Sodium	52.7	0.400	1.25	NE			085169-009	SW846 6020
	Thallium	0.000447	0.0003	0.001	0.002	J		085169-009	SW846 6020
	Uranium	0.00386	0.00005	0.0002	0.030			085169-009	SW846 6020
	Vanadium	0.00395	0.003	0.010	NE	J		085169-009	SW846 6020
	Zinc	0.00282	0.0026	0.010	NE	J		085169-009	SW846 6020

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Table TAV D-4
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Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW4	Aluminum	ND	0.005	0.015	NE	U		085180-009	SW846 6020
22-Aug-07	Antimony	ND	0.0005	0.002	0.006	U		085180-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085180-009	SW846 6020
	Barium	0.0812	0.0005	0.002	2.00			085180-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085180-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085180-009	SW846 6020
	Calcium	46.9	0.020	0.100	NE			085180-009	SW846 6020
	Chromium	0.0114	0.001	0.003	0.100			085180-009	SW846 6020
	Cobalt	0.000109	0.0001	0.001	NE	J		085180-009	SW846 6020
	Copper	0.00074	0.0002	0.001	NE	J		085180-009	SW846 6020
	Iron	0.212	0.010	0.025	NE			085180-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085180-009	SW846 6020
	Magnesium	14.2	0.005	0.015	NE		J	085180-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085180-009	SW846 6020
	Mercury	0.00005	0.00003	0.0002	0.002	B, J	0.00025U	085180-009	SW846 7470
	Nickel	0.00112	0.0005	0.002	NE	J		085180-009	SW846 6020
	Potassium	3.12	0.080	0.300	NE			085180-009	SW846 6020
	Selenium	0.00296	0.001	0.005	0.050	J		085180-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085180-009	SW846 6020
	Sodium	46.3	0.080	0.250	NE			085180-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085180-009	SW846 6020
	Uranium	0.00359	0.00005	0.0002	0.030			085180-009	SW846 6020
	Vanadium	0.00674	0.003	0.010	NE	J		085180-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		085180-009	SW846 6020

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Table TAV D-4
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW5	Aluminum	0.0185	0.005	0.015	NE			085194-009	SW846 6020
23-Aug-07	Antimony	ND	0.0005	0.002	0.006	U		085194-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085194-009	SW846 6020
	Barium	0.0613	0.0005	0.002	2.00			085194-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085194-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085194-009	SW846 6020
	Calcium	45.2	0.020	0.100	NE			085194-009	SW846 6020
	Chromium	0.00306	0.001	0.003	0.100			085194-009	SW846 6020
	Cobalt	ND	0.0001	0.001	NE	U		085194-009	SW846 6020
	Copper	0.000344	0.0002	0.001	NE	J		085194-009	SW846 6020
	Iron	0.179	0.010	0.025	NE			085194-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085194-009	SW846 6020
	Magnesium	14.4	0.005	0.015	NE		J	085194-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085194-009	SW846 6020
	Mercury	0.00005	0.00003	0.0002	0.002	B, J	0.00025U	085194-009	SW846 7470
	Nickel	0.000727	0.0005	0.002	NE	J		085194-009	SW846 6020
	Potassium	2.95	0.080	0.300	NE			085194-009	SW846 6020
	Selenium	0.00318	0.001	0.005	0.050	J		085194-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085194-009	SW846 6020
	Sodium	44.1	0.080	0.250	NE			085194-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085194-009	SW846 6020
	Uranium	0.00252	0.00005	0.0002	0.030			085194-009	SW846 6020
	Vanadium	0.00579	0.003	0.010	NE	J		085194-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		085194-009	SW846 6020

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Technical Area V Groundwater Monitoring

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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW6	Aluminum	ND	0.005	0.015	NE	U		085189-009	SW846 6020
28-Aug-07	Antimony	ND	0.0005	0.002	0.006	U	UJ	085189-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085189-009	SW846 6020
	Barium	0.0557	0.0005	0.002	2.00			085189-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085189-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085189-009	SW846 6020
	Calcium	59.0	0.100	0.500	NE			085189-009	SW846 6020
	Chromium	0.00235	0.001	0.003	0.100	J		085189-009	SW846 6020
	Cobalt	0.000126	0.0001	0.001	NE	J		085189-009	SW846 6020
	Copper	0.000935	0.0002	0.001	NE	J		085189-009	SW846 6020
	Iron	0.251	0.010	0.025	NE			085189-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085189-009	SW846 6020
	Magnesium	17.4	0.005	0.015	NE			085189-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085189-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085189-009	SW846 7470
	Nickel	0.00119	0.0005	0.002	NE	J		085189-009	SW846 6020
	Potassium	3.34	0.080	0.300	NE			085189-009	SW846 6020
	Selenium	0.00323	0.001	0.005	0.050	J		085189-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085189-009	SW846 6020
	Sodium	60.6	0.400	1.25	NE			085189-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085189-009	SW846 6020
	Uranium	0.00461	0.00005	0.0002	0.030			085189-009	SW846 6020
	Vanadium	0.00486	0.003	0.010	NE	J		085189-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		085189-009	SW846 6020

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Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW7	Aluminum	0.0388	0.005	0.015	NE			085173-009	SW846 6020
04-Sep-07	Antimony	ND	0.0005	0.002	0.006	U		085173-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085173-009	SW846 6020
	Barium	0.0504	0.0005	0.002	2.00			085173-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085173-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085173-009	SW846 6020
	Calcium	56.2	0.100	0.500	NE			085173-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		085173-009	SW846 6020
	Cobalt	0.000129	0.0001	0.001	NE	J		085173-009	SW846 6020
	Copper	0.000753	0.0002	0.001	NE	J		085173-009	SW846 6020
	Iron	0.286	0.010	0.025	NE			085173-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085173-009	SW846 6020
	Magnesium	16.6	0.005	0.015	NE			085173-009	SW846 6020
	Manganese	0.00179	0.001	0.005	NE	J		085173-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	085173-009	SW846 7470
	Nickel	0.00111	0.0005	0.002	NE	J		085173-009	SW846 6020
	Potassium	3.65	0.080	0.300	NE			085173-009	SW846 6020
	Selenium	0.00151	0.001	0.005	0.050	J		085173-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085173-009	SW846 6020
	Sodium	46.5	0.080	0.250	NE			085173-009	SW846 6020
	Thallium	0.000464	0.0003	0.001	0.002	J		085173-009	SW846 6020
	Uranium	0.00479	0.00005	0.0002	0.030			085173-009	SW846 6020
	Vanadium	0.00559	0.003	0.010	NE	J		085173-009	SW846 6020
	Zinc	0.00355	0.0026	0.010	NE	J		085173-009	SW846 6020

Refer to footnotes on page D-29.

Table TAV D-4
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW8	Aluminum	0.0428	0.005	0.015	NE			085186-009	SW846 6020
07-Sep-07	Antimony	ND	0.0005	0.002	0.006	B, U		085186-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085186-009	SW846 6020
	Barium	0.0554	0.0005	0.002	2.00			085186-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085186-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085186-009	SW846 6020
	Calcium	57.4	0.200	1.00	NE			085186-009	SW846 6020
	Chromium	0.00206	0.001	0.003	0.100	J		085186-009	SW846 6020
	Cobalt	0.000203	0.0001	0.001	NE	J		085186-009	SW846 6020
	Copper	0.00115	0.0002	0.001	NE			085186-009	SW846 6020
	Iron	0.332	0.010	0.025	NE	B		085186-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085186-009	SW846 6020
	Magnesium	17.3	0.005	0.015	NE			085186-009	SW846 6020
	Manganese	0.00122	0.001	0.005	NE	J		085186-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	085186-009	SW846 7470
	Nickel	0.00145	0.0005	0.002	NE	J		085186-009	SW846 6020
	Potassium	3.83	0.080	0.300	NE			085186-009	SW846 6020
	Selenium	0.00241	0.001	0.005	0.050	J		085186-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085186-009	SW846 6020
	Sodium	53.7	0.800	2.50	NE			085186-009	SW846 6020
	Thallium	0.000423	0.0003	0.001	0.002	J	0.0015U	085186-009	SW846 6020
	Uranium	0.00375	0.00005	0.0002	0.030			085186-009	SW846 6020
	Vanadium	0.00515	0.003	0.010	NE	J		085186-009	SW846 6020
	Zinc	0.0161	0.0026	0.010	NE			085186-009	SW846 6020

Refer to footnotes on page D-29.

Table TAV D-4 (Concluded)
Summary of Total Metal Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW9	Aluminum	0.0953	0.005	0.015	NE			085171-009	SW846 6020
21-Aug-07	Antimony	ND	0.0005	0.002	0.006	U		085171-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085171-009	SW846 6020
	Barium	0.0612	0.0005	0.002	2.00			085171-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085171-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085171-009	SW846 6020
	Calcium	59.8	0.100	0.500	NE			085171-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		085171-009	SW846 6020
	Cobalt	0.000349	0.0001	0.001	NE	J		085171-009	SW846 6020
	Copper	0.00127	0.0002	0.001	NE			085171-009	SW846 6020
	Iron	0.308	0.010	0.025	NE			085171-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085171-009	SW846 6020
	Magnesium	19.8	0.005	0.015	NE		J	085171-009	SW846 6020
	Manganese	0.00297	0.001	0.005	NE	J		085171-009	SW846 6020
	Mercury	0.000049	0.00003	0.0002	0.002	B, J	0.00025U	085171-009	SW846 7470
	Nickel	0.00167	0.0005	0.002	NE	J		085171-009	SW846 6020
	Potassium	4.06	0.080	0.300	NE			085171-009	SW846 6020
	Selenium	0.00192	0.001	0.005	0.050	J		085171-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085171-009	SW846 6020
	Sodium	59.1	0.400	1.25	NE			085171-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085171-009	SW846 6020
	Uranium	0.00629	0.00005	0.0002	0.030			085171-009	SW846 6020
	Vanadium	0.00515	0.003	0.010	NE	J		085171-009	SW846 6020
	Zinc	0.00481	0.0026	0.010	NE	J		085171-009	SW846 6020

Refer to footnotes on page D-29.

Table TAV D-5
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
AVN-1	Tritium	-24.2 ± 141	250	120	NE	U	BD	085191-036	EPA 906.0 M
24-Aug-07	Gross Alpha	3.72 ± 1.28	1.07	0.449	15			085191-034	EPA 900.0
	Gross Beta	5.77 ± 2.96	4.27	1.98	4mrem/yr		J	085191-034	EPA 900.0
	Americium-241	4.78 ± 11.8	18.1	9.06	NE	U	BD	085191-033	EPA 901.1
	Cesium-137	0.153 ± 2.97	4.06	2.03	NE	U	BD	085191-033	EPA 901.1
	Cobalt-60	2.42 ± 2.23	3.99	2.00	NE	U	BD	085191-033	EPA 901.1
	Potassium-40	57.6 ± 25.4	57.6	23.6	NE	U	BD	085191-033	EPA 901.1
LWDS-MW1	Tritium	0.00 ± 143	251	120	NE	U	BD	085196-036	EPA 906.0 M
30-Aug-07	Gross Alpha	6.51 ± 3.30	3.58	1.39	15		J	085196-034	EPA 900.0
	Gross Beta	4.73 ± 1.62	2.13	1.03	4mrem/yr		J	085196-034	EPA 900.0
	Americium-241	2.48 ± 10.2	15.0	7.52	NE	U	BD	085196-033	EPA 901.1
	Cesium-137	-2.12 ± 1.83	2.86	1.43	NE	U	BD	085196-033	EPA 901.1
	Cobalt-60	0.135 ± 2.15	3.07	1.54	NE	U	BD	085196-033	EPA 901.1
	Potassium-40	-20.3 ± 36.7	42.8	21.4	NE	U	BD	085196-033	EPA 901.1
LWDS-MW2	Tritium	58.9 ± 145	248	119	NE	U	BD	085182-036	EPA 906.0 M
27-Aug-07	Gross Alpha	7.63 ± 3.38	3.05	1.13	15		J	085182-034	EPA 900.0
	Gross Beta	5.94 ± 2.79	3.88	1.79	4mrem/yr		J	085182-034	EPA 900.0
	Americium-241	3.60 ± 7.18	11.0	5.50	NE	U	BD	085182-033	EPA 901.1
	Cesium-137	-0.364 ± 1.69	2.76	1.38	NE	U	BD	085182-033	EPA 901.1
	Cobalt-60	1.26 ± 1.77	3.09	1.54	NE	U	BD	085182-033	EPA 901.1
	Potassium-40	-7.05 ± 34.4	41.8	20.9	NE	U	BD	085182-033	EPA 901.1
TAV-MW1	Tritium	107 ± 143	240	114	NE	U	BD	085198-036	EPA 906.0 M
05-Sep-07	Gross Alpha	11.6 ± 6.66	6.79	2.29	15		J	085198-034	EPA 900.0
	Gross Beta	17.0 ± 3.90	3.96	1.94	4mrem/yr			085198-034	EPA 900.0
	Americium-241	-2.56 ± 5.04	5.61	2.81	NE	U	BD	085198-033	EPA 901.1
	Cesium-137	1.19 ± 3.32	4.84	2.42	NE	U	BD	085198-033	EPA 901.1
	Cobalt-60	0.293 ± 3.26	5.37	2.69	NE	U	BD	085198-033	EPA 901.1
	Potassium-40	-64.7 ± 63.1	53.9	27.0	NE	U	BD	085198-033	EPA 901.1
TAV-MW2	Tritium	94.4 ± 142	240	114	NE	U	BD	085177-036	EPA 906.0 M
06-Sep-07	Gross Alpha	12.3 ± 6.01	4.99	1.60	15		J	085177-034	EPA 900.0
	Gross Beta	5.62 ± 2.49	3.71	1.81	4mrem/yr		J	085177-034	EPA 900.0
	Americium-241	-1.59 ± 3.08	5.22	2.61	NE	U	BD	085177-033	EPA 901.1
	Cesium-137	-0.804 ± 2.31	3.76	1.88	NE	U	BD	085177-033	EPA 901.1
	Cobalt-60	-1.62 ± 2.63	4.26	2.13	NE	U	BD	085177-033	EPA 901.1
	Potassium-40	17.1 ± 53.6	38.3	19.1	NE	U	BD	085177-033	EPA 901.1

Refer to footnotes on page D-29.

Table TAV D-5
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW3	Tritium	53.1 ± 146	252	120	NE	U	BD	085169-036	EPA 906.0 M
20-Aug-07	Gross Alpha	3.75 ± 2.77	3.69	1.38	15		J	085169-034	EPA 900.0
	Gross Beta	6.24 ± 2.99	4.20	1.94	4mrem/yr		J	085169-034	EPA 900.0
	Americium-241	3.45 ± 9.41	14.0	6.98	NE	U	BD	085169-033	EPA 901.1
	Cesium-137	1.67 ± 2.17	3.55	1.77	NE	U	BD	085169-033	EPA 901.1
	Cobalt-60	0.428 ± 2.28	3.86	1.93	NE	U	BD	085169-033	EPA 901.1
	Potassium-40	24.3 ± 43.6	33.7	16.9	NE	U	BD	085169-033	EPA 901.1
TAV-MW4	Tritium	15.3 ± 143	249	119	NE	U	BD	085180-036	EPA 906.0 M
22-Aug-07	Gross Alpha	5.64 ± 1.76	1.67	0.745	15			085180-034	EPA 900.0
	Gross Beta	3.94 ± 1.72	2.54	1.24	4mrem/yr		J	085180-034	EPA 900.0
	Americium-241	-23.1 ± 7.61	11.2	5.62	NE	U	R	085180-033	EPA 901.1
	Cesium-137	0.462 ± 1.73	2.89	1.45	NE	U	BD	085180-033	EPA 901.1
	Cobalt-60	1.71 ± 1.91	3.31	1.65	NE	U	BD	085180-033	EPA 901.1
	Potassium-40	-24.9 ± 34.3	38.6	19.3	NE	U	BD	085180-033	EPA 901.1
TAV-MW5	Tritium	-6.63 ± 143	251	120	NE	U	BD	085194-036	EPA 906.0 M
23-Aug-07	Gross Alpha	4.92 ± 2.74	3.05	1.15	15		J	085194-034	EPA 900.0
	Gross Beta	6.16 ± 2.95	4.10	1.88	4mrem/yr		J	085194-034	EPA 900.0
	Americium-241	-6.55 ± 11.1	16.8	8.41	NE	U	BD	085194-033	EPA 901.1
	Cesium-137	0.138 ± 1.80	3.06	1.53	NE	U	BD	085194-033	EPA 901.1
	Cobalt-60	-0.317 ± 1.93	2.94	1.47	NE	U	BD	085194-033	EPA 901.1
	Potassium-40	16.0 ± 47.1	32.5	16.3	NE	U	BD	085194-033	EPA 901.1
TAV-MW6	Tritium	-66.2 ± 140	251	120	NE	U	BD	085189-036	EPA 906.0 M
28-Aug-07	Gross Alpha	8.93 ± 3.62	2.46	0.818	15			085189-034	EPA 900.0
	Gross Beta	5.44 ± 2.71	3.85	1.77	4mrem/yr		J	085189-034	EPA 900.0
	Americium-241	-4.36 ± 10.9	15.5	7.78	NE	U	BD	085189-033	EPA 901.1
	Cesium-137	-0.637 ± 2.09	3.27	1.64	NE	U	BD	085189-033	EPA 901.1
	Cobalt-60	1.44 ± 2.09	3.71	1.85	NE	U	BD	085189-033	EPA 901.1
	Potassium-40	43.3 ± 23.8	44.2	22.1	NE	U	BD	085189-033	EPA 901.1
TAV-MW7	Tritium	134 ± 146	241	114	NE	U	BD	085173-036	EPA 906.0 M
04-Sep-07	Gross Alpha	8.23 ± 3.96	4.38	1.75	15		J	085173-034	EPA 900.0
	Gross Beta	3.97 ± 1.53	2.13	1.03	4mrem/yr		J	085173-034	EPA 900.0
	Americium-241	-4.10 ± 2.99	4.91	2.46	NE	U	BD	085173-033	EPA 901.1
	Cesium-137	-0.527 ± 2.35	3.86	1.93	NE	U	BD	085173-033	EPA 901.1
	Cobalt-60	2.80 ± 3.26	4.32	2.16	NE	U	BD	085173-033	EPA 901.1
	Potassium-40	37.2 ± 49.0	37.6	18.8	NE	U	BD	085173-033	EPA 901.1

Refer to footnotes on page D-29.

Table TAV D-5 (Concluded)
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TAV-MW8	Tritium	78.7 ± 141	239	114	NE	U	BD	085186-036	EPA 906.0 M
07-Sep-07	Gross Alpha	4.04 ± 1.36	1.10	0.444	15			085186-034	EPA 900.0
	Gross Beta	4.32 ± 2.01	2.92	1.39	4mrem/yr		J	085186-034	EPA 900.0
	Americium-241	-3.58 ± 5.10	5.68	2.84	NE	U	BD	085186-033	EPA 901.1
	Cesium-137	3.75 ± 3.18	4.88	2.44	NE	U	BD	085186-033	EPA 901.1
	Cobalt-60	7.52 ± 5.90	4.64	2.32	NE	X	R	085186-033	EPA 901.1
	Potassium-40	-56.8 ± 63.3	55.6	27.8	NE	U	BD	085186-033	EPA 901.1
TAV-MW9	Tritium	8.85 ± 144	252	120	NE	U	BD	085171-036	EPA 906.0 M
21-Aug-07	Gross Alpha	10.7 ± 4.44	3.71	1.37	15		J	085171-034	EPA 900.0
	Gross Beta	4.71 ± 3.09	4.71	2.20	4mrem/yr		J	085171-034	EPA 900.0
	Americium-241	1.01 ± 3.22	5.05	2.53	NE	U	BD	085171-033	EPA 901.1
	Cesium-137	1.15 ± 2.20	3.78	1.89	NE	U	BD	085171-033	EPA 901.1
	Cobalt-60	1.25 ± 2.56	4.52	2.26	NE	U	BD	085171-033	EPA 901.1
	Potassium-40	-45.5 ± 42.9	53.3	26.6	NE	U	BD	085171-033	EPA 901.1

Refer to footnotes on page D-29.

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Table TAV D-6
Summary of Field Water Quality Measurements[i]
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Sample Date	Temperature (^0C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (mg/L)
AVN-1	30-Nov-06	16.99	380	287.4	7.52	3.60	3.80
	05-Mar-07	19.81	404	357.0	7.71	0.88	3.83
	18-Jun-07	23.89	400	234.6	7.71	0.85	3.82
	24-Aug-07	23.63	364	350.3	7.47	0.68	3.80
LWDS-MW1	28-Nov-06	16.24	665	312.0	7.31	0.70	6.62
	12-Mar-07	18.04	706	249.1	7.37	1.89	7.09
	21-Jun-07	24.11	708	214.1	7.49	0.99	6.05
	30-Aug-07	22.55	637	402.1	7.27	0.43	6.45
LWDS-MW2	13-Nov-06	18.60	445	300.3	7.42	0.17	4.75
	01-Mar-07	17.69	468	320.1	7.63	0.33	5.00
	13-Jun-07	21.63	460	225.0	7.59	0.23	4.46
	27-Aug-07	22.57	421	383.5	7.36	0.39	4.70
TAV-MW1	04-Dec-06	16.40	522	263.4	7.51	14.9	5.02
	07-Mar-07	19.54	591	281.2	7.57	4.91	4.56
	22-Jun-07	23.81	609	249.1	7.65	2.63	4.25
	05-Sep-07	25.03	560	372.4	7.40	5.33	4.86
TAV-MW2	29-Nov-06	15.71	668	317.6	7.19	0.36	5.38
	26-Feb-07	17.99	711	228.7	7.33	0.53	5.33
	11-Jun-07	22.84	567	230.7	7.31	0.53	5.01
	06-Sep-07	22.20	640	393.0	7.14	0.21	5.24
TAV-MW3	08-Nov-06	20.35	510	291.9	7.40	0.52	7.71
	21-Feb-07	20.36	536	169.9	7.55	0.83	7.12
	06-Jun-07	23.14	527	402.4	7.22	0.48	7.20
	20-Aug-07	23.89	482	257.3	7.35	0.43	7.01
TAV-MW4	09-Nov-06	20.93	466	294.1	7.42	0.24	5.59
	28-Feb-07	18.18	492	313.0	7.60	0.26	6.48
	12-Jun-07	21.39	488	218.0	7.56	0.28	5.37
	22-Aug-07	22.79	446	265.9	7.37	0.56	5.58
TAV-MW5	17-Nov-06	20.48	456	283.1	7.42	0.17	4.59
	06-Mar-07	19.96	482	361.9	7.60	0.13	4.54
	19-Jun-07	25.19	484	253.8	7.60	0.26	4.39
	23-Aug-07	24.41	433	229.7	7.34	0.33	4.51

Refer to footnotes on page D-29.

Table TAV D-6 (Concluded)
Summary of Field Water Quality Measurements[i]
Technical Area V Groundwater Monitoring

Fiscal Year 2007

Well ID	Sample Date	Temperature (^0C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (mg/L)
TAV-MW6	15-Nov-06	17.96	594	301.6	7.31	0.63	6.42
	02-Mar-07	16.20	630	340.4	7.50	0.39	6.53
	15-Jun-07	21.69	633	248.9	7.48	0.24	6.00
	28-Aug-07	21.61	574	401.9	7.24	0.31	6.59
TAV-MW7	05-Dec-06	18.31	556	292.4	7.31	0.50	0.24
	27-Feb-07	18.10	586	200.0	7.44	0.27	0.30
	08-Jun-07	20.69	500	93.7	7.36	1.53	0.24
	04-Sep-07	21.80	532	362.3	7.23	1.03	0.34
TAV-MW8	14-Nov-06	19.45	524	305.7	7.38	0.35	6.60
	22-Feb-07	19.28	555	172.6	7.52	0.45	6.40
	14-Jun-07	22.60	552	238.8	7.55	0.77	5.68
	07-Sep-07	23.90	505	395.3	7.35	3.67	6.34
TAV-MW9	16-Nov-06	20.49	610	267.9	7.23	0.55	1.60
	23-Feb-07	19.59	620	70.1	7.37	13.8	1.27
	07-Jun-07	19.68	541	228.3	7.28	3.47	1.56
	21-Aug-07	23.81	584	154.0	7.15	2.71	1.91

Refer to footnotes on page D-29.

[a]Result
- Values in bold exceed the established MCL.
- ND = not detected (at method detection limit).
- Activities of zero or less are considered to be not detected.
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- pCi/L = pico curies per liter

[b]MDL or Critical level
Method detection limit. The minimum concentration or activity that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.

[c]PQL
Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.

[d]MCL
Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations (40 CFR 141.11(b)), National Primary Drinking Water Standards, EPA, July 2002.
NE = not established.
The following are the MCLs for gross alpha particles and beta particles in community water systems:
15 pCi/L = Gross alpha particle activity (including radium-226 but excluding radon and total uranium).
4 mrem/yr = any combination of beta and/or gamma emitting radionuclides (as dose rate).

[e]Lab Qualifier
B = Analyte is detected in associated laboratory method blank.
J = Amount detected is below the practical quantitation limit (PQL).
H = Analytical holding time was exceeded.
U = Analyte is absent or below the method detection limit.
X = Data rejected due to low abundance.

[f]Validation Qualifier
If cell is blank, then all quality control samples met acceptance criteria with respect to submitted samples.
A = Laboratory accuracy and/or bias measurements for the associated laboratory control sample and/or duplicate do not meet acceptance criteria.
B = Analyte present in associated laboratory method blank sample.
B1 = Analyte present in associated trip blank sample.
B2 = Analyte present in associated equipment blank sample.
B3 = Analyte present in associated laboratory calibration blank sample.
BD = Below detection limit as used in radiochemistry to identify results that are not statistically different from zero.
HT = Holding time was exceeded for the associated sample analysis.
H1 = Holding time was exceeded for the associated sample analysis.
J = The associate value is an estimated quantity.
J- = Tha associated numerical value is an estimated quantity with a suspected negative bias.
J+ = The associated numerical value is an estimated quantity with a suspected negative bias.

[f]Validation Qualifier (continued)
MS2 = Matrix spike analyte(s) recovery failed high.
MS3 = Matrix spike analyte(s) recovery failed low.
U = The analyte was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
UJ = The analyte was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R = The data are unusable (compound may or may not be present). Re-sampling and reanalysis are necessary for verification.

[g]Analytical Method
U.S. Environmental Protection Agency, 1990, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd ed.
U.S. Environmental Protection Agency, 1983, "The Determination of Inorganic Anions in Water by Ion Chromatography-Method 300.0,"
EPA-600/4-84-017.
U.S. Environmental Protection Agency, 1980, "Prescribed Procedures for Measurement of Radioactivity in Drinking Water,"
EPA-600/4-80-032.

[h]MDA
The minimal detectable activity or minimum measured activity in a sample required to ensure a 95% probability that the measured activity is accurately quantified above the critical level.

[i]Field Water Quality Measurements
Field measurements collected prior to sampling.
^{O}C = degrees Celsius
µmho/cm = micromhos per centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = nephelometric turbidity units
pH = potential of hydrogen (negative logarithm of the hydrogen ion concentration)

APPENDIX E
Tijeras Arroyo Groundwater Monitoring Surveillance Task

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Table TAG E-1
Summary of Detected Volatile Organic Compounds
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-SW1-320 01-Nov-06	Acetone	1.47	1.25	5.00	NE	J		083423-001	SW846 8260
TA2-W-19 31-Oct-06	1,1-Dichloroethane	0.667	0.300	1.00	NE	J		083432-001	SW846 8260
	Acetone	1.28	1.25	5.00	NE	J		083432-001	SW846 8260
	Trichloroethene	**5.63**	0.250	1.00	5.0			083432-001	SW846 8260
	cis-1,2-Dichloroethene	0.864	0.300	1.00	70	J		083432-001	SW846 8260
TA2-W-26 25-Oct-06	Chloroform	0.343	0.250	1.00	NE	J		083425-001	SW846 8260
	Tetrachloroethene	1.35	0.250	1.00	5.0			083425-001	SW846 8260
	Trichloroethene	1.32	0.250	1.00	5.0			083425-001	SW846 8260
	cis-1,2-Dichloroethene	0.411	0.300	1.00	70	J		083425-001	SW846 8260
TJA-2 30-Oct-06	1,1-Dichloroethane	0.533	0.300	1.00	NE	J		083430-001	SW846 8260
	Acetone	1.37	1.25	5.00	NE	J		083430-001	SW846 8260
	Carbon Disulfide	2.45	1.25	5.00	NE	J	J	083430-001	SW846 8260
	Trichloroethene	3.61	0.250	1.00	5.0			083430-001	SW846 8260
	cis-1,2-Dichloroethene	0.509	0.300	1.00	70	J		083430-001	SW846 8260
TJA-4 02-Nov-06	Acetone	1.36	1.25	5.00	NE	J		083434-001	SW846 8260
TJA-7 03-Nov-06	Trichloroethene	0.451	0.250	1.00	5.0	J		083438-001	SW846 8260
TJA-7 (Duplicate) 03-Nov-06	Trichloroethene	0.462	0.250	1.00	5.0	J		083439-001	SW846 8260
WYO-4 27-Oct-06	1,1-Dichloroethane	0.784	0.300	1.00	NE	J		083427-001	SW846 8260
	Acetone	1.27	1.25	5.00	NE	J	5.0U	083427-001	SW846 8260
	Trichloroethene	**6.45**	0.250	1.00	5.0			083427-001	SW846 8260
	cis-1,2-Dichloroethene	1.44	0.300	1.00	70			083427-001	SW846 8260
TA2-W-01 23-Jan-07	Trichloroethene	1.62	0.250	1.00	5.0			083946-001	SW846 8260
TA2-W-19 16-Jan-07	1,1-Dichloroethane	0.639	0.300	1.00	NE	J		083958-001	SW846 8260
	Acetone	1.66	1.25	5.00	NE	J	5.0U, B1	083958-001	SW846 8260
	Trichloroethene	**5.60**	0.250	1.00	5.0			083958-001	SW846 8260
	cis-1,2-Dichloroethene	0.674	0.300	1.00	70	J		083958-001	SW846 8260
TA2-W-26 22-Jan-07	Chloroform	0.322	0.250	1.00	NE	J		083948-001	SW846 8260
	Tetrachloroethene	1.13	0.250	1.00	5.0			083948-001	SW846 8260
	Trichloroethene	1.08	0.250	1.00	5.0			083948-001	SW846 8260
	cis-1,2-Dichloroethene	0.321	0.300	1.00	70	J		083948-001	SW846 8260

Refer to footnotes on page E-41.

Table TAG E-1
Summary of Detected Volatile Organic Compounds
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-W-27	Tetrachloroethene	0.936	0.250	1.00	5.0	J		083944-001	SW846 8260
12-Jan-07	Trichloroethene	0.657	0.250	1.00	5.0	J		083944-001	SW846 8260
TJA-2	1,1-Dichloroethane	0.676	0.300	1.00	NE	J		083956-001	SW846 8260
15-Jan-07	Trichloroethene	4.14	0.250	1.00	5.0			083956-001	SW846 8260
	cis-1,2-Dichloroethene	0.666	0.300	1.00	70	J		083956-001	SW846 8260
TJA-3 11-Jan-07	Trichloroethene	0.380	0.250	1.00	5.0	J		083941-001	SW846 8260
TJA-3 (Duplicate) 11-Jan-07	Trichloroethene	0.410	0.250	1.00	5.0	J		083942-001	SW846 8260
TJA-4 17-Jan-07	Acetone	3.40	1.25	5.00	NE	J	5.0U, B1	083960-001	SW846 8260
TJA-6 09-Jan-07	Toluene	0.323	0.250	1.00	1,000	J		083936-001	SW846 8260
TJA-7	Acetone	1.86	1.25	5.00	NE	J		083962-001	SW846 8260
24-Jan-07	Trichloroethene	0.329	0.250	1.00	5.0	J		083962-001	SW846 8260
WYO-4	1,1-Dichloroethane	0.953	0.300	1.00	NE	J	A1, J	083953-001	SW846 8260
19-Jan-07	**Trichloroethene**	**7.26**	0.250	1.00	5.0		A1, J	083953-001	SW846 8260
	cis-1,2-Dichloroethene	1.73	0.300	1.00	70		A1, J	083953-001	SW846 8260
WYO-4 (Duplicate)	1,1-Dichloroethane	0.666	0.300	1.00	NE	J		083954-001	SW846 8260
19-Jan-07	**Trichloroethene**	**6.10**	0.250	1.00	5.0			083954-001	SW846 8260
	cis-1,2-Dichloroethene	1.48	0.300	1.00	70			083954-001	SW846 8260
TA2-W-19	1,1-Dichloroethane	0.677	0.300	1.00	NE	J		084685-001	SW846 8260
30-May-07	**Trichloroethene**	**5.15**	0.250	1.00	5.0			084685-001	SW846 8260
	cis-1,2-Dichloroethene	0.706	0.300	1.00	70	J		084685-001	SW846 8260
TA2-W-26	Chloroform	0.402	0.250	1.00	NE	J		084678-001	SW846 8260
22-May-07	Tetrachloroethene	0.979	0.250	1.00	5.0	J		084678-001	SW846 8260
	Trichloroethene	1.16	0.250	1.00	5.0			084678-001	SW846 8260
	cis-1,2-Dichloroethene	0.314	0.300	1.00	70	J		084678-001	SW846 8260
TJA-2	1,1-Dichloroethane	0.613	0.300	1.00	NE	J		084683-001	SW846 8260
29-May-07	Trichloroethene	3.27	0.250	1.00	5.0			084683-001	SW846 8260
	cis-1,2-Dichloroethene	0.600	0.300	1.00	70	J		084683-001	SW846 8260
TJA-7	Acetone	1.51	1.25	5.00	NE	J		084692-001	SW846 8260
01-Jun-07	Trichloroethene	0.512	0.250	1.00	5.0	J		084692-001	SW846 8260
WYO-4	1,1-Dichloroethane	0.973	0.300	1.00	NE	J		084681-001	SW846 8260
24-May-07	**Trichloroethene**	**8.56**	0.250	1.00	5.0			084681-001	SW846 8260
	cis-1,2-Dichloroethene	2.07	0.300	1.00	70			084681-001	SW846 8260

Refer to footnotes on page E-41.

Table TAG E-1
Summary of Detected Volatile Organic Compounds
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-03 27-Jul-07	Chloroform	0.417	0.250	1.00	NE	J		084884-001	SW846 8260
TA1-W-04	Acetone	1.50	1.25	5.00	NE	J	5.0UJ	084873-001	SW846 8260
18-Jul-07	Toluene	0.252	0.250	1.00	1,000	B, J	1.0U	084873-001	SW846 8260
TA1-W-05 11-Jul-07	Acetone	1.28	1.25	5.00	NE	J	J-	084859-001	SW846 8260
TA1-W-06	Chloroform	0.272	0.250	1.00	NE	J		084878-001	SW846 8260
23-Jul-07	Methylene Chloride	4.08	2.00	5.00	5.0	J	5.0U	084878-001	SW846 8260
TA1-W-08 30-Jul-07	Carbon Disulfide	1.83	1.25	5.00	NE	J		084886-001	SW846 8260
TA2-NW1-595	Chloroform	0.254	0.250	1.00	NE	J		084866-001	SW846 8260
16-Jul-07	Toluene	0.364	0.250	1.00	1,000	B, J	1.0U	084866-001	SW846 8260
TA2-SW1-320 01-Aug-07	Methylene Chloride	2.03	2.00	5.00	5.0	J		084890-001	SW846 8260
TA2-W-01 26-Jul-07	Trichloroethene	1.61	0.250	1.00	5.0			084882-001	SW846 8260
TA2-W-19	1,1-Dichloroethane	0.676	0.300	1.00	NE	J		084901-001	SW846 8260
08-Aug-07	**Trichloroethene**	**5.29**	0.250	1.00	5.0			084901-001	SW846 8260
	cis-1,2-Dichloroethene	0.799	0.300	1.00	70	J		084901-001	SW846 8260
TA2-W-19 (Duplicate)	1,1-Dichloroethane	0.690	0.300	1.00	NE	J		084902-001	SW846 8260
08-Aug-07	Trichloroethene	5.22	0.250	1.00	5.0			084902-001	SW846 8260
	cis-1,2-Dichloroethene	0.794	0.300	1.00	70	J		084902-001	SW846 8260
TA2-W-26	Chloroform	0.290	0.250	1.00	NE	J		084892-001	SW846 8260
02-Aug-07	Tetrachloroethene	0.717	0.250	1.00	5.0	J		084892-001	SW846 8260
	Trichloroethene	1.02	0.250	1.00	5.0			084892-001	SW846 8260
TA2-W-27	Chloroform	0.284	0.250	1.00	NE	J		084870-001	SW846 8260
17-Jul-07	Tetrachloroethene	0.673	0.250	1.00	5.0	J		084870-001	SW846 8260
	Toluene	0.268	0.250	1.00	1,000	B, J	1.0U	084870-001	SW846 8260
	Trichloroethene	0.601	0.250	1.00	5.0	J		084870-001	SW846 8260
TA2-W-27 (Duplicate)	Chloroform	0.276	0.250	1.00	NE	J		084871-001	SW846 8260
17-Jul-07	Tetrachloroethene	0.616	0.250	1.00	5.0	J		084871-001	SW846 8260
	Toluene	0.272	0.250	1.00	1,000	B, J	1.0U	084871-001	SW846 8260
	Trichloroethene	0.579	0.250	1.00	5.0	J		084871-001	SW846 8260

Refer to footnotes on page E-41.

Table TAG E-1 (Concluded)
Summary of Detected Volatile Organic Compounds
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-2 07-Aug-07	1,1-Dichloroethane	0.628	0.300	1.00	NE	J		084896-001	SW846 8260
	Trichloroethene	3.56	0.250	1.00	5.0			084896-001	SW846 8260
	cis-1,2-Dichloroethene	0.638	0.300	1.00	70	J		084896-001	SW846 8260
TJA-3 25-Jul-07	Trichloroethene	0.693	0.250	1.00	5.0	J		084880-001	SW846 8260
TJA-7 10-Aug-07	Trichloroethene	0.634	0.250	1.00	5.0	J		084906-001	SW846 8260
WYO-4 06-Aug-07	1,1-Dichloroethane	0.947	0.300	1.00	NE	J		084894-001	SW846 8260
	Toluene	0.377	0.250	1.00	1,000	J		084894-001	SW846 8260
	Trichloroethene	**6.55**	0.250	1.00	5.0			084894-001	SW846 8260
	cis-1,2-Dichloroethene	1.97	0.300	1.00	70			084894-001	SW846 8260

Refer to footnotes on page E-41.

Table TAG E-2
Method Detection Limits for Volatile Organic Compounds (EPA Method[g] 8260)
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Analyte	MDL[b] (µg/L)
1,1,1-Trichloroethane	0.300
1,1,2,2-Tetrachloroethane	0.250
1,1,2-Trichloroethane	0.250
1,1-Dichloroethane	0.300
1,1-Dichloroethene	0.300
1,2-Dichloroethane	0.250
1,2-Dichloropropane	0.250
2-Butanone	1.25
2-Hexanone	1.25
4-methyl-, 2-Pentanone	1.25
Acetone	1.25
Benzene	0.300
Bromodichloromethane	0.250
Bromoform	0.250
Bromomethane	0.500
Carbon disulfide	1.25
Carbon tetrachloride	0.250
Chlorobenzene	0.250
Chloroethane	0.500
Chloroform	0.250
Chloromethane	0.500
Dibromochloromethane	0.250
Ethyl benzene	0.250
Methylene chloride	2.0
Styrene	0.250
Tetrachloroethene	0.250
Toluene	0.250
Trichloroethene	0.250
Vinyl acetate	1.5
Vinyl chloride	0.500
Xylene	0.250
cis-1,2-Dichloroethene	0.300
cis-1,3-Dichloropropene	0.250
trans-1,2-Dichloroethene	0.300
trans-1,3-Dichloropropene	0.250

Refer to footnotes on page E-41.

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Table TAG E-3
Summary of Nitrate plus Nitrite Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Sample Date	Nitrate plus Nitrite Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
PGS-2	09-Jul-07	1.15	0.050	0.250	10	B		084855-018	EPA 353.2
TA1-W-01	31-Jul-07	3.03	0.050	0.250	10			084888-018	EPA 353.2
TA1-W-02	10-Jul-07	1.01	0.050	0.250	10	B		084857-018	EPA 353.2
TA1-W-03	27-Jul-07	7.38	0.250	1.25	10			084884-018	EPA 353.2
TA1-W-04	18-Jul-07	1.67	0.050	0.250	10			084873-018	EPA 353.2
TA1-W-05	11-Jul-07	1.20	0.050	0.250	10	B		084859-018	EPA 353.2
TA1-W-06	23-Jul-07	3.11	0.050	0.250	10			084878-018	EPA 353.2
TA1-W-08	30-Jul-07	7.38	0.250	1.25	10			084886-018	EPA 353.2
TA2-NW1-595	16-Jul-07	3.49	0.100	0.500	10			084866-018	EPA 353.2
TA2-SW1-320	01-Nov-06	**15.3**	0.700	2.50	10			083423-018	EPA 353.1
	08-Jan-07	2.00	0.140	0.500	10			083964-018	EPA 353.1
	21-May-07	**17.9**	0.400	2.00	10			084676-018	EPA 353.2
	01-Aug-07	**21.3**	0.200	1.00	10			084890-018	EPA 353.2
TA2-SW1-320 (Re-analysis)	08-Jan-07	**27.8**	0.500	2.50	10	H	HT, J	083964-R18	EPA 353.2
TA2-W-01	23-Jan-07	6.17	0.050	0.250	10			083946-018	EPA 353.2
	26-Jul-07	4.85	0.100	0.500	10			084882-018	EPA 353.2
TA2-W-19	31-Oct-06	**10.1**	0.070	0.250	10			083432-018	EPA 353.1
	16-Jan-07	**11.8**	0.100	0.500	10			083958-018	EPA 353.2
	30-May-07	**11.9**	0.100	0.500	10			084685-018	EPA 353.2
	08-Aug-07	8.65	0.100	0.500	10	B		084901-018	EPA 353.2
TA2-W-19 (Duplicate)	08-Aug-07	9.13	0.100	0.500	10	B		084902-018	EPA 353.2
TA2-W-26	25-Oct-06	4.20	0.070	0.250	10	B		083425-018	EPA 353.1
	22-Jan-07	5.63	0.100	0.500	10			083948-018	EPA 353.2
	22-May-07	6.23	0.100	0.500	10			084678-018	EPA 353.2
	02-Aug-07	4.75	0.050	0.250	10			084892-018	EPA 353.2
TA2-W-27	12-Jan-07	5.59	0.100	0.500	10			083944-018	EPA 353.2
	17-Jul-07	4.47	0.100	0.500	10			084870-018	EPA 353.2
TA2-W-27 (Duplicate)	17-Jul-07	4.43	0.100	0.500	10			084871-018	EPA 353.2

Refer to footnotes on page E-41.

Table TAG E-3 (Concluded)
Summary of Nitrate plus Nitrite Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Sample Date	Nitrate plus Nitrite Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-2	30-Oct-06	**11.2**	0.070	0.250	10			083430-018	EPA 353.1
	15-Jan-07	**12.6**	0.200	1.00	10			083956-018	EPA 353.2
	29-May-07	**10.4**	0.500	2.50	10			084683-018	EPA 353.2
	07-Aug-07	9.30	0.100	0.500	10	B		084896-018	EPA 353.2
TJA-3	11-Jan-07	2.21	0.070	0.250	10			083941-018	EPA 353.1
	25-Jul-07	2.67	0.100	0.500	10			084880-018	EPA 353.2
TJA-3 (Duplicate)	11-Jan-07	2.59	0.070	0.250	10			083942-018	EPA 353.1
TJA-4	02-Nov-06	**20.8**	0.700	2.50	10			083434-018	EPA 353.1
	17-Jan-07	**34.3**	0.500	2.50	10			083960-018	EPA 353.2
	31-May-07	**38.4**	0.500	2.50	10			084689-018	EPA 353.2
	09-Aug-07	**28.7**	0.500	2.50	10	B		084904-018	EPA 353.2
TJA-4 (Duplicate)	31-May-07	**29.8**	0.500	2.50	10			084690-018	EPA 353.2
TJA-6	09-Jan-07	3.08	0.014	0.050	10			083936-018	EPA 353.1
	19-Jul-07	2.56	0.100	0.500	10			084876-018	EPA 353.2
TJA-7	03-Nov-06	**22.4**	0.140	0.500	10	B, H	HT, J	083438-018	EPA 353.1
	24-Jan-07	**24.1**	0.100	0.500	10			083962-018	EPA 353.2
	01-Jun-07	**25.6**	0.500	2.50	10			084692-018	EPA 353.2
	10-Aug-07	**22.6**	0.500	2.50	10	B		084906-018	EPA 353.2
TJA-7 (Duplicate)	03-Nov-06	**29.9**	0.140	0.500	10	B, H	HT, J	083439-018	EPA 353.1
WYO-3	12-Jul-07	2.36	0.050	0.250	10	B		084863-018	EPA 353.2
WYO-3 (Duplicate)	12-Jul-07	1.79	0.050	0.250	10	B		084864-018	EPA 353.2
WYO-4	27-Oct-06	2.32	0.070	0.250	10			083427-018	EPA 353.1
	19-Jan-07	3.74	0.050	0.250	10			083953-018	EPA 353.2
	24-May-07	3.78	0.100	0.500	10			084681-018	EPA 353.2
	06-Aug-07	3.23	0.050	0.250	10			084894-018	EPA 353.2
WYO-4 (Duplicate)	19-Jan-07	4.07	0.050	0.250	10			083954-018	EPA 353.2

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
PGS-2	Aluminum	0.113	0.005	0.015	NE			084855-009	SW846 6020
09-Jul-07	Antimony	0.000506	0.0005	0.002	0.006	B, J	0.0082U	084855-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084855-009	SW846 6020
	Barium	0.0626	0.0005	0.002	2.00			084855-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084855-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084855-009	SW846 6020
	Calcium	47.8	0.020	0.100	NE		J	084855-009	SW846 6020
	Chromium	0.0383	0.001	0.003	0.100	B		084855-009	SW846 6020
	Cobalt	0.00118	0.0001	0.001	NE			084855-009	SW846 6020
	Copper	0.00343	0.0002	0.001	NE			084855-009	SW846 6020
	Iron	0.752	0.010	0.025	NE			084855-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084855-009	SW846 6020
	Magnesium	9.49	0.005	0.015	NE		J	084855-009	SW846 6020
	Manganese	0.020	0.001	0.005	NE			084855-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084855-009	SW846 7470
	Nickel	0.0224	0.0005	0.002	NE			084855-009	SW846 6020
	Potassium	2.18	0.080	0.300	NE			084855-009	SW846 6020
	Selenium	0.00132	0.001	0.005	0.050	J		084855-009	SW846 6020
	Silver	0.00103	0.0002	0.001	NE			084855-009	SW846 6020
	Sodium	28.6	0.080	0.250	NE		J	084855-009	SW846 6020
	Thallium	0.000651	0.0003	0.001	0.002	J	0.0025U	084855-009	SW846 6020
	Uranium	0.00137	0.00005	0.0002	0.030			084855-009	SW846 6020
	Vanadium	0.00643	0.003	0.010	NE	J		084855-009	SW846 6020
	Zinc	0.0215	0.0026	0.010	NE	B		084855-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-01	Aluminum	ND	0.005	0.015	NE	U		084888-009	SW846 6020
31-Jul-07	Antimony	ND	0.0005	0.002	0.006	U		084888-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084888-009	SW846 6020
	Barium	0.0474	0.0005	0.002	2.00			084888-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084888-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084888-009	SW846 6020
	Calcium	71.8	0.100	0.500	NE			084888-009	SW846 6020
	Chromium	0.0036	0.001	0.003	0.100	B	0.0075U	084888-009	SW846 6020
	Cobalt	0.000127	0.0001	0.001	NE	J		084888-009	SW846 6020
	Copper	0.00118	0.0002	0.001	NE			084888-009	SW846 6020
	Iron	0.428	0.010	0.025	NE			084888-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084888-009	SW846 6020
	Magnesium	13.3	0.005	0.015	NE			084888-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084888-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084888-009	SW846 7470
	Nickel	0.0015	0.0005	0.002	NE	J		084888-009	SW846 6020
	Potassium	2.36	0.080	0.300	NE			084888-009	SW846 6020
	Selenium	0.00104	0.001	0.005	0.050	J		084888-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084888-009	SW846 6020
	Sodium	26.1	0.080	0.250	NE			084888-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084888-009	SW846 6020
	Uranium	0.00337	0.00005	0.0002	0.030			084888-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084888-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		084888-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-02	Aluminum	0.0221	0.005	0.015	NE			084857-009	SW846 6020
10-Jul-07	Antimony	ND	0.0005	0.002	0.006	B, U		084857-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084857-009	SW846 6020
	Barium	0.0445	0.0005	0.002	2.00			084857-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084857-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084857-009	SW846 6020
	Calcium	70.3	0.100	0.500	NE		J	084857-009	SW846 6020
	Chromium	0.00188	0.001	0.003	0.100	B, J	0.012U	084857-009	SW846 6020
	Cobalt	0.000155	0.0001	0.001	NE	J		084857-009	SW846 6020
	Copper	0.000913	0.0002	0.001	NE	J		084857-009	SW846 6020
	Iron	0.293	0.010	0.025	NE			084857-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084857-009	SW846 6020
	Magnesium	11.3	0.005	0.015	NE		J	084857-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084857-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084857-009	SW846 7470
	Nickel	0.00139	0.0005	0.002	NE	J		084857-009	SW846 6020
	Potassium	1.84	0.080	0.300	NE			084857-009	SW846 6020
	Selenium	0.00102	0.001	0.005	0.050	J		084857-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084857-009	SW846 6020
	Sodium	20.2	0.080	0.250	NE		J	084857-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084857-009	SW846 6020
	Uranium	0.0032	0.00005	0.0002	0.030			084857-009	SW846 6020
	Vanadium	0.00715	0.003	0.010	NE	J		084857-009	SW846 6020
	Zinc	0.00314	0.0026	0.010	NE	B, J	0.017U	084857-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
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Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-03	Aluminum	0.0118	0.005	0.015	NE	J		084884-009	SW846 6020
27-Jul-07	Antimony	ND	0.0005	0.002	0.006	U		084884-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084884-009	SW846 6020
	Barium	0.0277	0.0005	0.002	2.00			084884-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084884-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084884-009	SW846 6020
	Calcium	286	1.00	5.00	NE			084884-009	SW846 6020
	Chromium	0.0037	0.001	0.003	0.100	B	0.0075U	084884-009	SW846 6020
	Cobalt	0.00054	0.0001	0.001	NE	J		084884-009	SW846 6020
	Copper	0.00292	0.0002	0.001	NE			084884-009	SW846 6020
	Iron	1.58	0.010	0.025	NE			084884-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084884-009	SW846 6020
	Magnesium	31.3	0.005	0.015	NE			084884-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084884-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084884-009	SW846 7470
	Nickel	0.00492	0.0005	0.002	NE			084884-009	SW846 6020
	Potassium	2.79	0.080	0.300	NE			084884-009	SW846 6020
	Selenium	0.0313	0.001	0.005	0.050			084884-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084884-009	SW846 6020
	Sodium	47.2	0.080	0.250	NE			084884-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084884-009	SW846 6020
	Uranium	0.00123	0.00005	0.0002	0.030			084884-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084884-009	SW846 6020
	Zinc	0.00329	0.0026	0.010	NE	J		084884-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-04	Aluminum	0.0260	0.005	0.015	NE			084873-009	SW846 6020
18-Jul-07	Antimony	ND	0.0005	0.002	0.006	U		084873-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084873-009	SW846 6020
	Barium	0.0471	0.0005	0.002	2.00			084873-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084873-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084873-009	SW846 6020
	Calcium	72.8	0.100	0.500	NE	B	J	084873-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	B, U		084873-009	SW846 6020
	Cobalt	0.000117	0.0001	0.001	NE	J		084873-009	SW846 6020
	Copper	0.000832	0.0002	0.001	NE	J		084873-009	SW846 6020
	Iron	0.321	0.010	0.025	NE			084873-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084873-009	SW846 6020
	Magnesium	10.2	0.005	0.015	NE			084873-009	SW846 6020
	Manganese	0.0011	0.001	0.005	NE	J		084873-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084873-009	SW846 7470
	Nickel	0.00205	0.0005	0.002	NE			084873-009	SW846 6020
	Potassium	1.87	0.080	0.300	NE			084873-009	SW846 6020
	Selenium	ND	0.001	0.005	0.050	U		084873-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084873-009	SW846 6020
	Sodium	20.8	0.080	0.250	NE		J	084873-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084873-009	SW846 6020
	Uranium	0.00367	0.00005	0.0002	0.030			084873-009	SW846 6020
	Vanadium	0.00444	0.003	0.010	NE	J		084873-009	SW846 6020
	Zinc	0.00647	0.0026	0.010	NE	B, J	0.016U	084873-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-05	Aluminum	0.126	0.005	0.015	NE			084859-009	SW846 6020
11-Jul-07	Antimony	ND	0.0005	0.002	0.006	B, U		084859-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084859-009	SW846 6020
	Barium	0.034	0.0005	0.002	2.00			084859-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084859-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084859-009	SW846 6020
	Calcium	82.7	0.100	0.500	NE		J	084859-009	SW846 6020
	Chromium	0.00246	0.001	0.003	0.100	B, J	0.012U	084859-009	SW846 6020
	Cobalt	0.000209	0.0001	0.001	NE	J		084859-009	SW846 6020
	Copper	0.00114	0.0002	0.001	NE			084859-009	SW846 6020
	Iron	0.514	0.010	0.025	NE			084859-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084859-009	SW846 6020
	Magnesium	10.5	0.005	0.015	NE		J	084859-009	SW846 6020
	Manganese	0.0024	0.001	0.005	NE	J		084859-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084859-009	SW846 7470
	Nickel	0.00185	0.0005	0.002	NE	J		084859-009	SW846 6020
	Potassium	1.89	0.080	0.300	NE			084859-009	SW846 6020
	Selenium	0.00128	0.001	0.005	0.050	J		084859-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084859-009	SW846 6020
	Sodium	28.8	0.080	0.250	NE		J	084859-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084859-009	SW846 6020
	Uranium	0.00327	0.00005	0.0002	0.030			084859-009	SW846 6020
	Vanadium	0.00662	0.003	0.010	NE	J		084859-009	SW846 6020
	Zinc	0.00431	0.0026	0.010	NE	B, J	0.017U	084859-009	SW846 6020

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Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-06	Aluminum	0.0159	0.005	0.015	NE			084878-009	SW846 6020
23-Jul-07	Antimony	ND	0.0005	0.002	0.006	B, U		084878-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084878-009	SW846 6020
	Barium	0.0256	0.0005	0.002	2.00			084878-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084878-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084878-009	SW846 6020
	Calcium	120	0.100	0.500	NE	B		084878-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084878-009	SW846 6020
	Cobalt	0.00027	0.0001	0.001	NE	J		084878-009	SW846 6020
	Copper	0.00141	0.0002	0.001	NE			084878-009	SW846 6020
	Iron	0.657	0.010	0.025	NE			084878-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084878-009	SW846 6020
	Magnesium	14.5	0.005	0.015	NE		J	084878-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084878-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084878-009	SW846 7470
	Nickel	0.00382	0.0005	0.002	NE			084878-009	SW846 6020
	Potassium	1.84	0.080	0.300	NE			084878-009	SW846 6020
	Selenium	0.0076	0.001	0.005	0.050			084878-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084878-009	SW846 6020
	Sodium	30.1	0.080	0.250	NE			084878-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084878-009	SW846 6020
	Uranium	0.00128	0.00005	0.0002	0.030	B		084878-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084878-009	SW846 6020
	Zinc	0.00263	0.0026	0.010	NE	J		084878-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-08	Aluminum	0.0265	0.005	0.015	NE			084886-009	SW846 6020
30-Jul-07	Antimony	ND	0.0005	0.002	0.006	U		084886-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084886-009	SW846 6020
	Barium	0.0208	0.0005	0.002	2.00			084886-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084886-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084886-009	SW846 6020
	Calcium	342	1.00	5.00	NE			084886-009	SW846 6020
	Chromium	0.00525	0.001	0.003	0.100	B	0.0075U	084886-009	SW846 6020
	Cobalt	0.000643	0.0001	0.001	NE	J		084886-009	SW846 6020
	Copper	0.00462	0.0002	0.001	NE			084886-009	SW846 6020
	Iron	1.92	0.010	0.025	NE			084886-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084886-009	SW846 6020
	Magnesium	41.3	0.005	0.015	NE			084886-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084886-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084886-009	SW846 7470
	Nickel	0.00619	0.0005	0.002	NE			084886-009	SW846 6020
	Potassium	3.27	0.080	0.300	NE			084886-009	SW846 6020
	Selenium	0.0255	0.001	0.005	0.050			084886-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084886-009	SW846 6020
	Sodium	74.0	0.400	1.25	NE			084886-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084886-009	SW846 6020
	Uranium	0.00192	0.00005	0.0002	0.030			084886-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084886-009	SW846 6020
	Zinc	0.0039	0.0026	0.010	NE	J		084886-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-NW1-595 16-Jul-07	Aluminum	0.0194	0.005	0.015	NE			084866-009	SW846 6020
	Antimony	ND	0.0005	0.002	0.006	U		084866-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084866-009	SW846 6020
	Barium	0.0453	0.0005	0.002	2.00			084866-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084866-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084866-009	SW846 6020
	Calcium	106	0.100	0.500	NE	B	J	084866-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	B, U		084866-009	SW846 6020
	Cobalt	0.000201	0.0001	0.001	NE	J		084866-009	SW846 6020
	Copper	0.00106	0.0002	0.001	NE			084866-009	SW846 6020
	Iron	0.510	0.010	0.025	NE			084866-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084866-009	SW846 6020
	Magnesium	15.3	0.005	0.015	NE			084866-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084866-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084866-009	SW846 7470
	Nickel	0.00286	0.0005	0.002	NE			084866-009	SW846 6020
	Potassium	2.10	0.080	0.300	NE			084866-009	SW846 6020
	Selenium	0.00737	0.001	0.005	0.050			084866-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084866-009	SW846 6020
	Sodium	26.3	0.080	0.250	NE		J	084866-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084866-009	SW846 6020
	Uranium	0.003	0.00005	0.0002	0.030			084866-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084866-009	SW846 6020
	Zinc	0.00593	0.0026	0.010	NE	B, J	0.016U	084866-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-SW1-320	Aluminum	0.249	0.005	0.015	NE			084890-009	SW846 6020
01-Aug-07	Antimony	ND	0.0005	0.002	0.006	U		084890-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084890-009	SW846 6020
	Barium	0.210	0.0005	0.002	2.00			084890-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084890-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084890-009	SW846 6020
	Calcium	64.8	0.100	0.500	NE			084890-009	SW846 6020
	Chromium	0.00455	0.001	0.003	0.100	B	0.0075U	084890-009	SW846 6020
	Cobalt	0.000203	0.0001	0.001	NE	J		084890-009	SW846 6020
	Copper	0.000765	0.0002	0.001	NE	J		084890-009	SW846 6020
	Iron	0.549	0.010	0.025	NE			084890-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084890-009	SW846 6020
	Magnesium	11.4	0.005	0.015	NE			084890-009	SW846 6020
	Manganese	0.00513	0.001	0.005	NE			084890-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084890-009	SW846 7470
	Nickel	0.00148	0.0005	0.002	NE	J		084890-009	SW846 6020
	Potassium	1.98	0.080	0.300	NE			084890-009	SW846 6020
	Selenium	0.00319	0.001	0.005	0.050	J		084890-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084890-009	SW846 6020
	Sodium	18.4	0.080	0.250	NE			084890-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084890-009	SW846 6020
	Uranium	0.00143	0.00005	0.0002	0.030			084890-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084890-009	SW846 6020
	Zinc	0.00361	0.0026	0.010	NE	J		084890-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-W-01	Aluminum	0.537	0.005	0.015	NE			084882-009	SW846 6020
26-Jul-07	Antimony	ND	0.0005	0.002	0.006	B, U		084882-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084882-009	SW846 6020
	Barium	0.132	0.0025	0.010	2.00			084882-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084882-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084882-009	SW846 6020
	Calcium	87.8	0.100	0.500	NE	B		084882-009	SW846 6020
	Chromium	0.00123	0.001	0.003	0.100	J		084882-009	SW846 6020
	Cobalt	0.000314	0.0001	0.001	NE	J		084882-009	SW846 6020
	Copper	0.00122	0.0002	0.001	NE			084882-009	SW846 6020
	Iron	1.11	0.010	0.025	NE			084882-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084882-009	SW846 6020
	Magnesium	11.9	0.005	0.015	NE		J	084882-009	SW846 6020
	Manganese	0.011	0.001	0.005	NE			084882-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084882-009	SW846 7470
	Nickel	0.00261	0.0005	0.002	NE			084882-009	SW846 6020
	Potassium	1.84	0.080	0.300	NE			084882-009	SW846 6020
	Selenium	0.00599	0.001	0.005	0.050			084882-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084882-009	SW846 6020
	Sodium	21.0	0.080	0.250	NE			084882-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084882-009	SW846 6020
	Uranium	0.00116	0.00005	0.0002	0.030	B		084882-009	SW846 6020
	Vanadium	0.00568	0.003	0.010	NE	J		084882-009	SW846 6020
	Zinc	0.00348	0.0026	0.010	NE	J		084882-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-W-19	Aluminum	0.00867	0.005	0.015	NE	J	0.027U	084901-009	SW846 6020
08-Aug-07	Antimony	ND	0.0005	0.002	0.006	B, U		084901-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084901-009	SW846 6020
	Barium	0.0487	0.0005	0.002	2.00			084901-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084901-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084901-009	SW846 6020
	Calcium	79.9	0.100	0.500	NE	B		084901-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084901-009	SW846 6020
	Cobalt	0.000182	0.0001	0.001	NE	J		084901-009	SW846 6020
	Copper	0.00076	0.0002	0.001	NE	J		084901-009	SW846 6020
	Iron	0.453	0.010	0.025	NE	B		084901-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084901-009	SW846 6020
	Magnesium	12.1	0.005	0.015	NE			084901-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084901-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		084901-009	SW846 7470
	Nickel	0.00242	0.0005	0.002	NE			084901-009	SW846 6020
	Potassium	1.91	0.080	0.300	NE			084901-009	SW846 6020
	Selenium	0.00441	0.001	0.005	0.050	J		084901-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084901-009	SW846 6020
	Sodium	22.0	0.080	0.250	NE			084901-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084901-009	SW846 6020
	Uranium	0.00135	0.00005	0.0002	0.030			084901-009	SW846 6020
	Vanadium	0.00514	0.003	0.010	NE	J		084901-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		084901-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-W-26	Aluminum	0.0243	0.005	0.015	NE			084892-009	SW846 6020
02-Aug-07	Antimony	ND	0.0005	0.002	0.006	U		084892-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084892-009	SW846 6020
	Barium	0.0682	0.0005	0.002	2.00			084892-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084892-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084892-009	SW846 6020
	Calcium	181	0.100	0.500	NE			084892-009	SW846 6020
	Chromium	0.00463	0.001	0.003	0.100	B	0.0075U	084892-009	SW846 6020
	Cobalt	0.000362	0.0001	0.001	NE	J		084892-009	SW846 6020
	Copper	0.00264	0.0002	0.001	NE			084892-009	SW846 6020
	Iron	1.09	0.010	0.025	NE			084892-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084892-009	SW846 6020
	Magnesium	23.2	0.005	0.015	NE			084892-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084892-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084892-009	SW846 7470
	Nickel	0.00341	0.0005	0.002	NE			084892-009	SW846 6020
	Potassium	2.39	0.080	0.300	NE			084892-009	SW846 6020
	Selenium	0.0147	0.001	0.005	0.050			084892-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084892-009	SW846 6020
	Sodium	35.2	0.080	0.250	NE			084892-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084892-009	SW846 6020
	Uranium	0.00134	0.00005	0.0002	0.030			084892-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084892-009	SW846 6020
	Zinc	0.0032	0.0026	0.010	NE	J		084892-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-W-27	Aluminum	0.00526	0.005	0.015	NE	J		084870-009	SW846 6020
17-Jul-07	Antimony	ND	0.0005	0.002	0.006	U		084870-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084870-009	SW846 6020
	Barium	0.0581	0.0005	0.002	2.00			084870-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084870-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084870-009	SW846 6020
	Calcium	127	0.100	0.500	NE	B	J	084870-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	B, U		084870-009	SW846 6020
	Cobalt	0.000209	0.0001	0.001	NE	J		084870-009	SW846 6020
	Copper	0.00101	0.0002	0.001	NE			084870-009	SW846 6020
	Iron	0.541	0.010	0.025	NE			084870-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084870-009	SW846 6020
	Magnesium	14.2	0.005	0.015	NE			084870-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084870-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084870-009	SW846 7470
	Nickel	0.00296	0.0005	0.002	NE			084870-009	SW846 6020
	Potassium	1.90	0.080	0.300	NE			084870-009	SW846 6020
	Selenium	0.00936	0.001	0.005	0.050			084870-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084870-009	SW846 6020
	Sodium	24.4	0.080	0.250	NE		J	084870-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084870-009	SW846 6020
	Uranium	0.00152	0.00005	0.0002	0.030			084870-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084870-009	SW846 6020
	Zinc	0.0027	0.0026	0.010	NE	B, J	0.016U	084870-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-2	Aluminum	0.0126	0.005	0.015	NE	J	0.027U	084896-009	SW846 6020
07-Aug-07	Antimony	ND	0.0005	0.002	0.006	B, U		084896-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084896-009	SW846 6020
	Barium	0.0466	0.0005	0.002	2.00			084896-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084896-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084896-009	SW846 6020
	Calcium	72.2	0.100	0.500	NE	B		084896-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084896-009	SW846 6020
	Cobalt	0.000172	0.0001	0.001	NE	J		084896-009	SW846 6020
	Copper	0.000657	0.0002	0.001	NE	J		084896-009	SW846 6020
	Iron	0.441	0.010	0.025	NE	B		084896-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084896-009	SW846 6020
	Magnesium	11.7	0.005	0.015	NE			084896-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084896-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		084896-009	SW846 7470
	Nickel	0.00237	0.0005	0.002	NE			084896-009	SW846 6020
	Potassium	1.80	0.080	0.300	NE			084896-009	SW846 6020
	Selenium	0.00523	0.001	0.005	0.050			084896-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084896-009	SW846 6020
	Sodium	21.1	0.080	0.250	NE			084896-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084896-009	SW846 6020
	Uranium	0.00146	0.00005	0.0002	0.030			084896-009	SW846 6020
	Vanadium	0.00358	0.003	0.010	NE	J		084896-009	SW846 6020
	Zinc	0.00297	0.0026	0.010	NE	J		084896-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-3	Aluminum	ND	0.005	0.015	NE	U		084880-009	SW846 6020
25-Jul-07	Antimony	ND	0.0005	0.002	0.006	B, U		084880-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084880-009	SW846 6020
	Barium	0.0438	0.0005	0.002	2.00			084880-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084880-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084880-009	SW846 6020
	Calcium	68.4	0.100	0.500	NE	B		084880-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084880-009	SW846 6020
	Cobalt	0.000141	0.0001	0.001	NE	J		084880-009	SW846 6020
	Copper	0.00101	0.0002	0.001	NE			084880-009	SW846 6020
	Iron	0.350	0.010	0.025	NE			084880-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084880-009	SW846 6020
	Magnesium	11.4	0.005	0.015	NE		J	084880-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084880-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084880-009	SW846 7470
	Nickel	0.00161	0.0005	0.002	NE	J		084880-009	SW846 6020
	Potassium	1.77	0.080	0.300	NE			084880-009	SW846 6020
	Selenium	0.00105	0.001	0.005	0.050	J		084880-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084880-009	SW846 6020
	Sodium	24.4	0.080	0.250	NE			084880-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084880-009	SW846 6020
	Uranium	0.00294	0.00005	0.0002	0.030	B		084880-009	SW846 6020
	Vanadium	0.00446	0.003	0.010	NE	J		084880-009	SW846 6020
	Zinc	0.00356	0.0026	0.010	NE	J		084880-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-4	Aluminum	0.0153	0.005	0.015	NE		0.027U	084904-009	SW846 6020
09-Aug-07	Antimony	ND	0.0005	0.002	0.006	B, U		084904-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084904-009	SW846 6020
	Barium	0.187	0.0005	0.002	2.00			084904-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084904-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084904-009	SW846 6020
	Calcium	65.6	0.100	0.500	NE	B		084904-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084904-009	SW846 6020
	Cobalt	0.00017	0.0001	0.001	NE	J		084904-009	SW846 6020
	Copper	0.000758	0.0002	0.001	NE	J		084904-009	SW846 6020
	Iron	0.370	0.010	0.025	NE	B		084904-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084904-009	SW846 6020
	Magnesium	13.2	0.005	0.015	NE			084904-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084904-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		084904-009	SW846 7470
	Nickel	0.00197	0.0005	0.002	NE	J		084904-009	SW846 6020
	Potassium	3.31	0.080	0.300	NE			084904-009	SW846 6020
	Selenium	0.00292	0.001	0.005	0.050	J		084904-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084904-009	SW846 6020
	Sodium	25.3	0.080	0.250	NE			084904-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084904-009	SW846 6020
	Uranium	0.00335	0.00005	0.0002	0.030			084904-009	SW846 6020
	Vanadium	0.00383	0.003	0.010	NE	J		084904-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		084904-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-6	Aluminum	0.0312	0.005	0.015	NE			084876-009	SW846 6020
19-Jul-07	Antimony	ND	0.0005	0.002	0.006	U		084876-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084876-009	SW846 6020
	Barium	0.0641	0.0005	0.002	2.00			084876-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084876-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084876-009	SW846 6020
	Calcium	67.9	0.100	0.500	NE	B	J	084876-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	B, U		084876-009	SW846 6020
	Cobalt	0.000103	0.0001	0.001	NE	J		084876-009	SW846 6020
	Copper	0.000675	0.0002	0.001	NE	J		084876-009	SW846 6020
	Iron	0.309	0.010	0.025	NE			084876-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084876-009	SW846 6020
	Magnesium	10.0	0.005	0.015	NE			084876-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084876-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084876-009	SW846 7470
	Nickel	0.00157	0.0005	0.002	NE	J		084876-009	SW846 6020
	Potassium	1.99	0.080	0.300	NE			084876-009	SW846 6020
	Selenium	0.00122	0.001	0.005	0.050	J		084876-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084876-009	SW846 6020
	Sodium	19.6	0.080	0.250	NE		J	084876-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084876-009	SW846 6020
	Uranium	0.0039	0.00005	0.0002	0.030			084876-009	SW846 6020
	Vanadium	0.00368	0.003	0.010	NE	J		084876-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	B, U		084876-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-7	Aluminum	0.0173	0.005	0.015	NE			084906-009	SW846 6020
10-Aug-07	Antimony	ND	0.0005	0.002	0.006	B, U		084906-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084906-009	SW846 6020
	Barium	0.240	0.0005	0.002	2.00			084906-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084906-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084906-009	SW846 6020
	Calcium	68.2	0.100	0.500	NE	B		084906-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084906-009	SW846 6020
	Cobalt	0.000485	0.0001	0.001	NE	J		084906-009	SW846 6020
	Copper	0.000622	0.0002	0.001	NE	J		084906-009	SW846 6020
	Iron	0.407	0.010	0.025	NE	B		084906-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084906-009	SW846 6020
	Magnesium	13.7	0.005	0.015	NE			084906-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084906-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084906-009	SW846 7470
	Nickel	0.00219	0.0005	0.002	NE			084906-009	SW846 6020
	Potassium	2.03	0.080	0.300	NE			084906-009	SW846 6020
	Selenium	0.00433	0.001	0.005	0.050	J		084906-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084906-009	SW846 6020
	Sodium	20.0	0.080	0.250	NE			084906-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084906-009	SW846 6020
	Uranium	0.002	0.00005	0.0002	0.030			084906-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		084906-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		084906-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
WYO-3	Aluminum	0.464	0.005	0.015	NE			084863-009	SW846 6020
12-Jul-07	Antimony	ND	0.0005	0.002	0.006	B, U		084863-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084863-009	SW846 6020
	Barium	0.0482	0.0005	0.002	2.00			084863-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084863-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084863-009	SW846 6020
	Calcium	65.7	0.100	0.500	NE		J	084863-009	SW846 6020
	Chromium	0.00314	0.001	0.003	0.100	B	0.012U	084863-009	SW846 6020
	Cobalt	0.000234	0.0001	0.001	NE	J		084863-009	SW846 6020
	Copper	0.00132	0.0002	0.001	NE			084863-009	SW846 6020
	Iron	0.570	0.010	0.025	NE			084863-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084863-009	SW846 6020
	Magnesium	10.6	0.005	0.015	NE		J	084863-009	SW846 6020
	Manganese	0.00779	0.001	0.005	NE			084863-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	084863-009	SW846 7470
	Nickel	0.002	0.0005	0.002	NE	J		084863-009	SW846 6020
	Potassium	1.85	0.080	0.300	NE			084863-009	SW846 6020
	Selenium	0.00146	0.001	0.005	0.050	J		084863-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084863-009	SW846 6020
	Sodium	23.2	0.080	0.250	NE		J	084863-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		084863-009	SW846 6020
	Uranium	0.00291	0.00005	0.0002	0.030			084863-009	SW846 6020
	Vanadium	0.00759	0.003	0.010	NE	J		084863-009	SW846 6020
	Zinc	0.00556	0.0026	0.010	NE	B, J	0.017U	084863-009	SW846 6020

Refer to footnotes on page E-41.

Table TAG E-4 (Concluded)
Summary of Total Metal Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
WYO-4	Aluminum	0.0159	0.005	0.015	NE		0.027U	084894-009	SW846 6020
06-Aug-07	Antimony	ND	0.0005	0.002	0.006	B, U		084894-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		084894-009	SW846 6020
	Barium	0.166	0.0005	0.002	2.00			084894-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		084894-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		084894-009	SW846 6020
	Calcium	85.7	0.100	0.500	NE	B		084894-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		084894-009	SW846 6020
	Cobalt	0.000217	0.0001	0.001	NE	J		084894-009	SW846 6020
	Copper	0.000719	0.0002	0.001	NE	J		084894-009	SW846 6020
	Iron	0.462	0.010	0.025	NE	B		084894-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		084894-009	SW846 6020
	Magnesium	14.5	0.005	0.015	NE			084894-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		084894-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		084894-009	SW846 7470
	Nickel	0.00254	0.0005	0.002	NE			084894-009	SW846 6020
	Potassium	1.99	0.080	0.300	NE			084894-009	SW846 6020
	Selenium	0.00491	0.001	0.005	0.050	J		084894-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		084894-009	SW846 6020
	Sodium	18.8	0.080	0.250	NE			084894-009	SW846 6020
	Thallium	0.000484	0.0003	0.001	0.002	J		084894-009	SW846 6020
	Uranium	0.00141	0.00005	0.0002	0.030			084894-009	SW846 6020
	Vanadium	0.00392	0.003	0.010	NE	J		084894-009	SW846 6020
	Zinc	0.00273	0.0026	0.010	NE	J		084894-009	SW846 6020

Refer to footnotes on page E-41.

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Table TAG E-5
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
PGS-2	Tritium	88.9 ± 106	177	85.4	NE	U	BD	084855-036	EPA 906.0 M
09-Jul-07	Gross Alpha	2.16 ± 1.35	2.04	0.949	15		J	084855-034	EPA 900.0
	Gross Beta	3.75 ± 2.02	3.14	1.53	4mrem/yr		J	084855-034	EPA 900.0
	Americium-241	0.655 ± 3.28	4.97	2.49	NE	U	BD	084855-033	EPA 901.1
	Cesium-137	0.323 ± 2.04	3.40	1.70	NE	U	BD	084855-033	EPA 901.1
	Cobalt-60	0.00664 ± 2.45	3.48	1.74	NE	U	BD	084855-033	EPA 901.1
	Potassium-40	-13.7 ± 39.1	46.0	23.0	NE	U	BD	084855-033	EPA 901.1
TA1-W-01	Tritium	-56.9 ± 131	244	114	NE	U	BD	084888-036	EPA 906.0 M
31-Jul-07	Gross Alpha	2.65 ± 0.943	1.08	0.496	15		J	084888-034	EPA 900.0
	Gross Beta	2.90 ± 1.12	1.53	0.740	4mrem/yr		J	084888-034	EPA 900.0
	Americium-241	1.82 ± 13.2	15.4	7.68	NE	U	BD	084888-033	EPA 901.1
	Cesium-137	1.98 ± 1.85	3.23	1.61	NE	U	BD	084888-033	EPA 901.1
	Cobalt-60	0.957 ± 1.87	3.22	1.61	NE	U	BD	084888-033	EPA 901.1
	Potassium-40	12.0 ± 37.6	28.0	14.0	NE	U	BD	084888-033	EPA 901.1
TA1-W-02	Tritium	47.3 ± 140	244	115	NE	U	BD	084857-036	EPA 906.0 M
10-Jul-07	Gross Alpha	2.80 ± 0.922	0.776	0.329	15		J	084857-034	EPA 900.0
	Gross Beta	3.01 ± 1.26	1.86	0.905	4mrem/yr		J	084857-034	EPA 900.0
	Americium-241	-0.0973 ± 7.91	11.1	5.56	NE	U	BD	084857-033	EPA 901.1
	Cesium-137	-0.589 ± 1.80	2.92	1.46	NE	U	BD	084857-033	EPA 901.1
	Cobalt-60	0.921 ± 1.77	3.05	1.53	NE	U	BD	084857-033	EPA 901.1
	Potassium-40	29.3 ± 44.1	28.9	14.5	NE	X	R	084857-033	EPA 901.1
TA1-W-03	Tritium	0.00 ± 125	225	105	NE	U	BD	084884-036	EPA 906.0 M
27-Jul-07	Gross Alpha	-1.01 ± 3.03	5.49	2.60	15	U	BD	084884-034	EPA 900.0
	Gross Beta	4.49 ± 3.60	5.86	2.86	4mrem/yr	U	BD	084884-034	EPA 900.0
	Americium-241	0.157 ± 9.80	16.9	8.47	NE	U	BD	084884-033	EPA 901.1
	Cesium-137	1.17 ± 1.84	3.21	1.60	NE	U	BD	084884-033	EPA 901.1
	Cobalt-60	-1.57 ± 2.08	3.27	1.64	NE	U	BD	084884-033	EPA 901.1
	Potassium-40	27.1 ± 42.9	29.9	15.0	NE	U	BD	084884-033	EPA 901.1
TA1-W-04	Tritium	-87 ± 129	243	114	NE	U	BD	084873-036	EPA 906.0 M
18-Jul-07	Gross Alpha	5.17 ± 3.15	3.42	1.17	15		J	084873-034	EPA 900.0
	Gross Beta	3.39 ± 1.45	2.15	1.05	4mrem/yr		J	084873-034	EPA 900.0
	Americium-241	4.28 ± 12.6	18.2	9.08	NE	U	BD	084873-033	EPA 901.1
	Cesium-137	0.686 ± 2.28	3.81	1.90	NE	U	BD	084873-033	EPA 901.1
	Cobalt-60	1.08 ± 2.20	3.81	1.91	NE	U	BD	084873-033	EPA 901.1
	Potassium-40	6.61 ± 43.8	47.0	23.5	NE	U	BD	084873-033	EPA 901.1

Refer to footnotes on page E-41.

Table TAG E-5
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA1-W-05	Tritium	60.8 ± 140	242	114	NE	U	BD	084859-036	EPA 906.0 M
11-Jul-07	Gross Alpha	3.64 ± 1.18	0.703	0.287	15		J	084859-034	EPA 900.0
	Gross Beta	3.54 ± 1.25	1.73	0.838	4mrem/yr		J	084859-034	EPA 900.0
	Americium-241	-5.07 ± 9.94	16.9	8.47	NE	U	BD	084859-033	EPA 901.1
	Cesium-137	0.871 ± 1.84	3.18	1.59	NE	U	BD	084859-033	EPA 901.1
	Cobalt-60	1.09 ± 1.91	3.33	1.66	NE	U	BD	084859-033	EPA 901.1
	Potassium-40	-25.5 ± 40.4	43.4	21.7	NE	U	BD	084859-033	EPA 901.1
TA1-W-06	Tritium	-25.6 ± 128	222	108	NE	U	BD	084878-036	EPA 906.0 M
23-Jul-07	Gross Alpha	1.85 ± 1.20	1.76	0.790	15		J	084878-034	EPA 900.0
	Gross Beta	3.65 ± 1.98	3.06	1.48	4mrem/yr		J	084878-034	EPA 900.0
	Americium-241	0.446 ± 3.41	5.71	2.86	NE	U	BD	084878-033	EPA 901.1
	Cesium-137	1.11 ± 5.28	4.49	2.25	NE	U	BD	084878-033	EPA 901.1
	Cobalt-60	2.40 ± 2.99	5.23	2.61	NE	U	BD	084878-033	EPA 901.1
	Potassium-40	26.8 ± 30.7	55.5	27.8	NE	U	BD	084878-033	EPA 901.1
TA1-W-08	Tritium	-56 ± 129	240	112	NE	U	BD	084886-036	EPA 906.0 M
30-Jul-07	Gross Alpha	4.51 ± 2.98	4.42	1.98	15		J	084886-034	EPA 900.0
	Gross Beta	5.94 ± 4.36	6.97	3.39	4mrem/yr	U	BD	084886-034	EPA 900.0
	Americium-241	11.7 ± 11.8	16.4	8.18	NE	U	BD	084886-033	EPA 901.1
	Cesium-137	-0.179 ± 3.09	3.29	1.65	NE	U	BD	084886-033	EPA 901.1
	Cobalt-60	-0.75 ± 2.01	3.30	1.65	NE	U	BD	084886-033	EPA 901.1
	Potassium-40	1.18 ± 45.6	47.7	23.9	NE	U	BD	084886-033	EPA 901.1
TA2-NW1-595	Tritium	26.0 ± 137	242	113	NE	U	BD	084866-036	EPA 906.0 M
16-Jul-07	Gross Alpha	3.51 ± 1.34	1.42	0.625	15		J	084866-034	EPA 900.0
	Gross Beta	3.68 ± 1.64	2.43	1.18	4mrem/yr		J	084866-034	EPA 900.0
	Americium-241	3.80 ± 8.19	12.5	6.27	NE	U	BD	084866-033	EPA 901.1
	Cesium-137	-0.924 ± 1.69	2.75	1.37	NE	U	BD	084866-033	EPA 901.1
	Cobalt-60	-0.717 ± 1.84	3.02	1.51	NE	U	BD	084866-033	EPA 901.1
	Potassium-40	-12.1 ± 39.2	40.2	20.1	NE	U	BD	084866-033	EPA 901.1
TA2-SW1-320	Tritium	-37 ± 129	238	111	NE	U	BD	084890-036	EPA 906.0 M
01-Aug-07	Gross Alpha	2.09 ± 0.809	0.978	0.442	15		J	084890-034	EPA 900.0
	Gross Beta	2.82 ± 1.32	2.01	0.982	4mrem/yr		J	084890-034	EPA 900.0
	Americium-241	2.51 ± 8.06	12.3	6.14	NE	U	BD	084890-033	EPA 901.1
	Cesium-137	-2.23 ± 1.68	2.61	1.31	NE	U	BD	084890-033	EPA 901.1
	Cobalt-60	-1.68 ± 1.79	2.80	1.40	NE	U	BD	084890-033	EPA 901.1
	Potassium-40	-5.2 ± 37.7	38.4	19.2	NE	U	BD	084890-033	EPA 901.1

Refer to footnotes on page E-41.

Table TAG E-5
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TA2-W-01	Tritium	-26.9 ± 125	217	106	NE	U	BD	084882-036	EPA 906.0 M
26-Jul-07	Gross Alpha	2.59 ± 1.06	1.22	0.541	15		J	084882-034	EPA 900.0
	Gross Beta	2.73 ± 1.53	2.39	1.17	4mrem/yr		J	084882-034	EPA 900.0
	Americium-241	0.434 ± 12.1	17.4	8.69	NE	U	BD	084882-033	EPA 901.1
	Cesium-137	-2.33 ± 3.51	3.84	1.92	NE	U	BD	084882-033	EPA 901.1
	Cobalt-60	0.664 ± 2.40	3.61	1.80	NE	U	BD	084882-033	EPA 901.1
	Potassium-40	-17.7 ± 47.7	46.9	23.5	NE	U	BD	084882-033	EPA 901.1
TA2-W-19	Tritium	-37 ± 129	238	111	NE	U	BD	084901-036	EPA 906.0 M
08-Aug-07	Gross Alpha	1.47 ± 0.818	0.942	0.376	15		J-	084901-034	EPA 900.0
	Gross Beta	2.65 ± 1.30	1.97	0.958	4mrem/yr		J	084901-034	EPA 900.0
	Americium-241	5.29 ± 7.71	11.1	5.56	NE	U	BD	084901-033	EPA 901.1
	Cesium-137	-2.18 ± 1.74	2.66	1.33	NE	U	BD	084901-033	EPA 901.1
	Cobalt-60	3.18 ± 1.85	3.43	1.71	NE	U	BD	084901-033	EPA 901.1
	Potassium-40	52.5 ± 22.4	28.7	14.4	NE		J	084901-033	EPA 901.1
TA2-W-26	Tritium	-126 ± 119	231	108	NE	U	BD	084892-036	EPA 906.0 M
02-Aug-07	Gross Alpha	1.89 ± 0.989	1.25	0.529	15		J	084892-034	EPA 900.0
	Gross Beta	2.38 ± 2.98	4.96	2.42	4mrem/yr	U	BD	084892-034	EPA 900.0
	Americium-241	-13.3 ± 9.16	14.2	7.08	NE	U	BD	084892-033	EPA 901.1
	Cesium-137	1.03 ± 4.38	3.00	1.50	NE	U	BD	084892-033	EPA 901.1
	Cobalt-60	-0.17 ± 1.81	3.03	1.52	NE	U	BD	084892-033	EPA 901.1
	Potassium-40	15.6 ± 45.6	23.0	11.5	NE	U	BD	084892-033	EPA 901.1
TA2-W-27	Tritium	-13.9 ± 135	243	114	NE	U	BD	084870-036	EPA 906.0 M
17-Jul-07	Gross Alpha	2.42 ± 1.14	1.40	0.611	15		J	084870-034	EPA 900.0
	Gross Beta	2.36 ± 1.58	2.52	1.22	4mrem/yr	U	BD	084870-034	EPA 900.0
	Americium-241	0.362 ± 10.0	17.3	8.65	NE	U	BD	084870-033	EPA 901.1
	Cesium-137	-0.359 ± 1.82	3.06	1.53	NE	U	BD	084870-033	EPA 901.1
	Cobalt-60	0.782 ± 1.96	3.38	1.69	NE	U	BD	084870-033	EPA 901.1
	Potassium-40	-22.9 ± 40.0	42.8	21.4	NE	U	BD	084870-033	EPA 901.1
TJA-2	Tritium	-131 ± 123	240	112	NE	U	BD	084896-036	EPA 906.0 M
07-Aug-07	Gross Alpha	1.81 ± 0.916	1.08	0.444	15		J-	084896-034	EPA 900.0
	Gross Beta	0.826 ± 1.38	2.31	1.13	4mrem/yr	U	BD	084896-034	EPA 900.0
	Americium-241	-0.81 ± 2.71	4.15	2.08	NE	U	BD	084896-033	EPA 901.1
	Cesium-137	-0.669 ± 2.09	3.42	1.71	NE	U	BD	084896-033	EPA 901.1
	Cobalt-60	-0.19 ± 2.09	3.54	1.77	NE	U	BD	084896-033	EPA 901.1
	Potassium-40	28.6 ± 44.2	32.0	16.0	NE	U	BD	084896-033	EPA 901.1

Refer to footnotes on page E-41.

Table TAG E-5
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
TJA-3	Tritium	19.5 ± 125	214	104	NE	U	BD	084880-036	EPA 906.0 M
25-Jul-07	Gross Alpha	3.76 ± 2.55	2.93	0.988	15		J	084880-034	EPA 900.0
	Gross Beta	0.981 ± 1.10	1.83	0.892	4mrem/yr	U	BD	084880-034	EPA 900.0
	Americium-241	2.51 ± 8.07	12.3	6.15	NE	U	BD	084880-033	EPA 901.1
	Cesium-137	1.30 ± 1.75	3.03	1.51	NE	U	BD	084880-033	EPA 901.1
	Cobalt-60	0.819 ± 2.04	3.09	1.55	NE	U	BD	084880-033	EPA 901.1
	Potassium-40	42.0 ± 40.1	30.4	15.2	NE	X	R	084880-033	EPA 901.1
TJA-4	Tritium	0.00 ± 136	245	114	NE	U	BD	084904-036	EPA 906.0 M
09-Aug-07	Gross Alpha	4.79 ± 2.16	2.01	0.909	15		J-	084904-034	EPA 900.0
	Gross Beta	2.42 ± 1.24	1.90	0.922	4mrem/yr		J	084904-034	EPA 900.0
	Americium-241	3.74 ± 3.44	4.77	2.39	NE	U	BD	084904-033	EPA 901.1
	Cesium-137	0.205 ± 3.92	3.81	1.91	NE	U	BD	084904-033	EPA 901.1
	Cobalt-60	3.27 ± 3.08	4.50	2.25	NE	U	BD	084904-033	EPA 901.1
	Potassium-40	0.241 ± 62.7	38.6	19.3	NE	U	BD	084904-033	EPA 901.1
TJA-6	Tritium	159 ± 149	241	113	NE	U	BD	084876-036	EPA 906.0 M
19-Jul-07	Gross Alpha	8.41 ± 3.68	2.38	0.695	15			084876-034	EPA 900.0
	Gross Beta	3.68 ± 1.36	1.93	0.940	4mrem/yr		J	084876-034	EPA 900.0
	Americium-241	-6.41 ± 11.2	16.8	8.40	NE	U	BD	084876-033	EPA 901.1
	Cesium-137	1.47 ± 1.97	3.46	1.73	NE	U	BD	084876-033	EPA 901.1
	Cobalt-60	-5.6 ± 5.26	3.88	1.94	NE	U	BD	084876-033	EPA 901.1
	Potassium-40	-34.7 ± 41.7	51.6	25.8	NE	U	BD	084876-033	EPA 901.1
TJA-7	Tritium	-114 ± 126	243	113	NE	U	BD	084906-036	EPA 906.0 M
10-Aug-07	Gross Alpha	3.25 ± 1.63	2.00	0.902	15		J-	084906-034	EPA 900.0
	Gross Beta	0.544 ± 1.27	2.15	1.05	4mrem/yr	U	BD	084906-034	EPA 900.0
	Americium-241	4.21 ± 9.69	14.4	7.19	NE	U	BD	084906-033	EPA 901.1
	Cesium-137	-0.577 ± 3.12	3.56	1.78	NE	U	BD	084906-033	EPA 901.1
	Cobalt-60	0.160 ± 1.70	2.89	1.45	NE	U	BD	084906-033	EPA 901.1
	Potassium-40	37.0 ± 47.4	27.0	13.5	NE	X	R	084906-033	EPA 901.1
WYO-3	Tritium	-54.3 ± 126	225	108	NE	U	BD	084863-036	EPA 906.0 M
12-Jul-07	Gross Alpha	2.35 ± 1.09	1.34	0.597	15		J	084863-034	EPA 900.0
	Gross Beta	3.20 ± 1.83	2.86	1.39	4mrem/yr		J	084863-034	EPA 900.0
	Americium-241	-8.61 ± 12.2	17.0	8.49	NE	U	BD	084863-033	EPA 901.1
	Cesium-137	2.55 ± 4.46	3.22	1.61	NE	U	BD	084863-033	EPA 901.1
	Cobalt-60	2.53 ± 2.02	3.75	1.87	NE	U	BD	084863-033	EPA 901.1
	Potassium-40	-16.2 ± 47.1	47.7	23.9	NE	U	BD	084863-033	EPA 901.1

Refer to footnotes on page E-41.

Table TAG E-5 (Concluded)
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
WYO-4	Tritium	57.0 ± 141	244	114	NE	U	BD	084894-036	EPA 906.0 M
06-Aug-07	Gross Alpha	1.98 ± 0.802	0.811	0.340	15		J-	084894-034	EPA 900.0
	Gross Beta	1.38 ± 1.38	2.28	1.11	4mrem/yr	U	BD	084894-034	EPA 900.0
	Americium-241	2.07 ± 10.4	15.3	7.63	NE	U	BD	084894-033	EPA 901.1
	Cesium-137	1.14 ± 2.22	3.26	1.63	NE	U	BD	084894-033	EPA 901.1
	Cobalt-60	2.62 ± 2.02	3.73	1.86	NE	U	BD	084894-033	EPA 901.1
	Potassium-40	-21.9 ± 42.2	45.7	22.9	NE	U	BD	084894-033	EPA 901.1

Refer to footnotes on page E-41.

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Table TAG E-6
Summary of Field Water Quality Measurements[i]
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Sample Date	Temperature (^0C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (mg/L)
PGS-2	09-Jul-07	23.07	422	163.2	8.10	0.70	2.34
TA1-W-01	31-Jul-07	21.69	478	240.4	7.44	0.77	6.93
TA1-W-02	10-Jul-07	23.20	465	260.3	7.39	0.85	5.72
TA1-W-03	27-Jul-07	20.70	1,511	170.0	7.45	0.57	8.11
TA1-W-04	18-Jul-07	24.88	438	211.6	7.42	1.55	5.84
TA1-W-05	11-Jul-07	22.45	529	282.5	7.25	3.72	7.16
TA1-W-06	23-Jul-07	23.31	763	216.2	7.60	0.43	7.75
TA1-W-08	30-Jul-07	20.89	1,729	212.7	7.41	0.86	7.53
TA2-NW1-595	16-Jul-07	22.99	700	255.8	7.34	1.00	7.84
TA2-SW1-320	01-Nov-06	17.15	441	254.1	7.59	4.48	7.89
	08-Jan-07	13.10	434	211.3	7.62	1.42	8.29
	21-May-07	18.36	451	245.0	7.44	8.56	7.97
	01-Aug-07	18.59	453	175.5	7.76	4.66	8.10
TA2-W-01	23-Jan-07	16.72	570	273.0	7.44	0.21	8.03
	26-Jul-07	24.28	589	226.0	7.58	11.5	8.04
TA2-W-19	31-Oct-06	19.61	540	272.9	7.48	0.45	7.68
	16-Jan-07	13.50	535	278.5	7.44	0.09	8.37
	30-May-07	22.53	552	180.0	7.35	0.24	8.18
	08-Aug-07	25.86	553	222.5	7.56	0.46	7.02
TA2-W-26	25-Oct-06	16.82	1,000	270.0	7.47	1.09	7.22
	22-Jan-07	13.82	1,005	274.9	7.38	0.28	7.91
	22-May-07	20.18	1,033	208.9	7.18	0.38	8.45
	02-Aug-07	23.38	1,030	217.6	7.50	0.89	7.89
TA2-W-27	12-Jan-07	16.88	756	258.3	7.36	0.21	8.41
	17-Jul-07	24.86	777	254.4	7.48	0.94	8.58
TJA-2	30-Oct-06	17.89	533	284.8	7.48	0.66	7.47
	15-Jan-07	12.80	532	279.6	7.45	0.23	8.86
	29-May-07	21.74	552	189.0	7.31	0.28	8.04
	07-Aug-07	21.89	549	225.0	7.53	0.68	7.09
TJA-3	11-Jan-07	19.00	444	256.5	7.28	0.16	6.82
	25-Jul-07	22.58	458	221.2	7.47	0.44	7.21
TJA-4	02-Nov-06	17.91	487	287.3	7.43	0.51	4.76
	17-Jan-07	14.94	484	268.9	7.37	0.20	5.22
	31-May-07	20.80	502	190.4	7.28	0.22	5.35
	09-Aug-07	21.09	502	239.1	7.47	0.42	5.36

Refer to footnotes on page E-41.

Table TAG E-6 (Concluded)
Summary of Field Water Quality Measurements[i]
Tijeras Arroyo Groundwater Investigation

Fiscal Year 2007

Well ID	Sample Date	Temperature (^0C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (mg/L)
TJA-6	09-Jan-07	16.79	417	231.4	7.30	2.44	5.23
	19-Jul-07	23.50	435	231.0	7.46	0.98	5.89
TJA-7	03-Nov-06	16.76	479	290.5	7.45	2.31	7.89
	24-Jan-07	15.98	474	279.5	7.40	2.39	8.21
	01-Jun-07	22.29	489	220.1	7.34	1.73	8.04
	10-Aug-07	19.92	487	234.1	7.51	0.85	8.10
WYO-3	12-Jul-07	23.81	462	264.5	7.60	7.66	7.51
WYO-4	27-Oct-06	14.07	556	310.7	7.45	0.69	7.80
	19-Jan-07	14.37	556	257.7	7.46	0.48	8.46
	24-May-07	17.42	583	179.3	7.38	0.59	8.19
	06-Aug-07	24.61	586	171.8	7.60	0.49	6.38

Refer to footnotes on page E-41

[a]Result or Activity

- Values in bold exceed the established MCL.
- ND = not detected (at method detection limit).
- Activities of zero or less are considered to be not detected.
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- pCi/L = pico curies per liter

[b]MDL or Critical level

Method detection limit. The minimum concentration or activity that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.

[c]PQL

Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.

[d]MCL

Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations (40 CFR 141.11(b)), National Primary Drinking Water Standards, EPA, July 2002.

NE = not established.

The following are the MCLs for gross alpha particles and beta particles in community water systems:

15 pCi/L = Gross alpha particle activity (including radium-226 but excluding radon and total uranium).

4 mrem/yr = any combination of beta and/or gamma emitting radionuclides (as dose rate).

[e]Lab Qualifier

B	= Analyte is detected in associated laboratory method blank.
J	= Amount detected is below the practical quantitation limit (PQL).
H	= Analytical holding time was exceeded.
U	= Analyte is absent or below the method detection limit.
X	= Data rejected due to low abundance.

[f]Validation Qualifier

If cell is blank, then all quality control samples met acceptance criteria with respect to submitted samples.

A1	= Laboratory accuracy and/or bias measurements for the associated surrogate spike sample do not meet acceptance criteria.
B1	= Analyte present in associated trip blank sample.
BD	= Below detection limit as used in radiochemistry to identify results that are not statistically different from zero.
HT	= The holding time was exceeded for the associated sample analysis.
J	= The associate value is an estimated quantity.
J-	= Tha associated numerical value is an estimated quantity with a suspected negative bias.
U	= The analyte was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
UJ	= The analyte was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	= The data are unusable (compound may or may not be present). Re-sampling and reanalysis are necessary for verification.
None	= Data was not validated.

[g]Analytical Method

U.S. Environmental Protection Agency, 1990, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd ed.

U.S. Environmental Protection Agency, 1983, "The Determination of Inorganic Anions in Water by Ion Chromatography-Method 300.0,"
EPA-600/4-84-017.

U.S. Environmental Protection Agency, 1980, "Prescribed Procedures for Measurement of Radioactivity in Drinking Water,"
EPA-600/4-80-032.

[h]MDA

The minimal detectable activity or minimum measured activity in a sample required to ensure a 95% probability that the measured activity is accurately quantified above the critical level.

[i]Field Water Quality Measurements

Field measurements collected prior to sampling.

^{O}C = degrees Celsius
µmho/cm = micromhos per centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = nephelometric turbidity units
pH = potential of hydrogen (negative logarithm of the hydrogen ion concentration)

APPENDIX F
Burn Site Groundwater Monitoring Surveillance Task

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Table BSG F-1
Summary of Detected Volatile Organic Compounds and Semi-Volatile Organic Compounds
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW6 15-Dec-06	Methylene chloride	4.16	2.00	5.00	5.0	B, J	5.0U, B	083858-001	SW846 8260
CYN-MW6 14-Mar-07	Acetone	2.10	1.25	5.00	NE	J	5.0U, B1	084237-001	SW846 8260
CYN-MW3 14-Sep-07	Acetone	1.40	1.25	5.00	NE	J	J-	085256-001	SW846-8260B

Refer to footnotes on page F-25.

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Table BSG F-2
Method Detection Limits for Volatile Organic Compounds and Semi-Volatile Organic Compounds
Burn Site Groundwater Monitoring

Fiscal Year 2007

Analyte	MDL[b] (µg/L)	Analytical Method[g]	Analyte	MDL[b] (µg/L)	Analytical Method[g]	Analyte	MDL[b] (µg/L)	Analytical Method[g]
1,1,1-Trichloroethane	0.300	8260	1,2,4-Trichlorobenzene	1.90 - 2.38	8270	Di-n-butyl phthalate	1.90 - 2.38	8270
1,1,2,2-Tetrachloroethane	0.250	8260	1,2-Dichlorobenzene	1.90 - 2.38	8270	Di-n-octyl phthalate	2.86 - 3.57	8270
1,1,2-Trichloroethane	0.250	8260	1,3-Dichlorobenzene	1.90 - 2.38	8270	Dibenz[a,h]anthracene	0.190 - 0.238	8270
1,1-Dichloroethane	0.300	8260	1,4-Dichlorobenzene	1.90 - 2.38	8270	Dibenzofuran	1.90 - 2.38	8270
1,1-Dichloroethene	0.300	8260	2,4,5-Trichlorophenol	0.952 - 1.19	8270	Diethylphthalate	1.90 - 2.38	8270
1,2-Dichloroethane	0.250	8260	2,4,6-Trichlorophenol	1.90 - 2.38	8270	Dimethylphthalate	1.90 - 2.38	8270
1,2-Dichloropropane	0.250	8260	2,4-Dichlorophenol	1.90 - 2.38	8270	Dinitro-o-cresol	2.86 - 3.57	8270
2-Butanone	1.25	8260	2,4-Dimethylphenol	1.90 - 2.38	8270	Diphenyl amine	2.86 - 3.57	8270
2-Hexanone	1.25	8260	2,4-Dinitrophenol	9.52 - 11.9	8270	Fluoranthene	0.190 - 0.238	8270
4-methyl-, 2-Pentanone	1.25	8260	2,4-Dinitrotoluene	1.90 - 2.38	8270	Fluorene	0.190 - 0.238	8270
Acetone	1.25	8260	2,6-Dinitrotoluene	1.90 - 2.38	8270	Hexachlorobenzene	1.90 - 2.38	8270
Benzene	0.300	8260	2-Chloronaphthalene	0.333 - 0.417	8270	Hexachlorobutadiene	1.90 - 2.38	8270
Bromodichloromethane	0.250	8260	2-Chlorophenol	1.90 - 2.38	8270	Hexachlorocyclopentadiene	1.90 - 2.38	8270
Bromoform	0.250	8260	2-Methylnaphthalene	0.286 - 0.357	8270	Hexachloroethane	1.90 - 2.38	8270
Bromomethane	0.500	8260	2-Nitroaniline	1.90 - 2.38	8270	Indeno(1,2,3-c,d)pyrene	0.190 - 0.238	8270
Carbon disulfide	1.25	8260	2-Nitrophenol	1.90 - 2.38	8270	Isophorone	1.90 - 2.38	8270
Carbon tetrachloride	0.250	8260	3,3’-Dichlorobenzidine	0.952 - 1.19	8270	Naphthalene	0.286 - 0.357	8270
Chlorobenzene	0.250	8260	3-Nitroaniline	1.90 - 2.38	8270	Nitro-benzene	2.86 - 3.57	8270
Chloroethane	0.500	8260	4-Bromophenyl phenyl ether	1.90 - 2.38	8270	Pentachlorophenol	1.90 - 2.38	8270
Chloroform	0.250	8260	4-Chloro-3-methylphenol	1.90 - 2.38	8270	Phenanthrene	0.190 - 0.238	8270
Chloromethane	0.500	8260	4-Chlorobenzenamine	1.90 - 2.38	8270	Phenol	0.952 - 1.19	8270
Dibromochloromethane	0.250	8260	4-Chlorophenyl phenyl ether	1.90 - 2.38	8270	Pyrene	0.286 - 0.357	8270
Ethyl benzene	0.250	8260	4-Nitroaniline	2.86 - 3.57	8270	bis(2-Chloroethoxy)methane	2.86 - 3.57	8270
Methylene chloride	2.00	8260	4-Nitrophenol	1.90 - 2.38	8270	bis(2-Chloroethyl)ether	1.90 - 2.38	8270
Styrene	0.250	8260	Acenaphthene	0.295 - 0.369	8270	bis(2-Ethylhexyl)phthalate	1.90 - 2.38	8270
Tetrachloroethene	0.250	8260	Acenaphthylene	0.190 - 0.238	8270	bis-Chloroisopropyl ether	1.90 - 2.38	8270
Toluene	0.250	8260	Anthracene	0.190 - 0.238	8270	m,p-Cresol	2.86 - 3.57	8270
Trichloroethene	0.250	8260	Benzo(a)anthracene	0.190 - 0.238	8270	n-Nitrosodipropylamine	1.90 - 2.38	8270
Vinyl acetate	1.50	8260	Benzo(a)pyrene	0.190 - 0.238	8270	o-Cresol	1.90 - 2.38	8270
Vinyl chloride	0.500	8260	Benzo(b)fluoranthene	0.190 - 0.238	8270			
Xylene	0.250	8260	Benzo(ghi)perylene	0.190 - 0.238	8270			
cis-1,2-Dichloroethene	0.300	8260	Benzo(k)fluoranthene	0.190 - 0.238	8270			
cis-1,3-Dichloropropene	0.250	8260	Butylbenzyl phthalate	1.90 - 2.38	8270			
trans-1,2-Dichloroethene	0.300	8260	Carbazole	0.190 - 0.238	8270			
trans-1,3-Dichloropropene	0.250	8260	Chrysene	0.190 - 0.238	8270			

Refer to footnotes on page F-18

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Table BSG F-3
Summary of Nitrate plus Nitrite, Nitrite, and Nitrate Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW6 15-Dec-06	**Nitrate plus nitrite as N**	**22.9**	0.140	0.500	10			083858-018	EPA 353.1
CYN-MW6 (Duplicate) 15-Dec-06	**Nitrate plus nitrite as N**	**26.8**	0.140	0.500	10			083859-018	EPA 353.1
CYN-MW7 11-Dec-06	Nitrate plus nitrite as N	1.15	0.070	0.250	10			083855-018	EPA 353.1
CYN-MW8 12-Dec-06	Nitrate plus nitrite as N	4.64	0.070	0.250	10			083856-018	EPA 353.1
CYN-MW1D 22-Mar-07	Nitrate plus nitrite as N	0.649	0.010	0.050	10			084231-018	EPA 353.2
CYN-MW1D (Sample Split) 22-Mar-07	Nitrate plus nitrite as N	1.80	0.060	0.200	10	B		084232-018	EPA 353.1
CYN-MW3 15-Mar-07	**Nitrate plus nitrite as N**	**14.5**	0.100	0.500	10			084235-018	EPA 353.2
CYN-MW3 (Sample Split) 15-Mar-07	Nitrate plus nitrite as N	12.5	0.310	5.00	10	B		084236-018	EPA 353.1
CYN-MW4 19-Mar-07	Nitrate plus nitrite as N	ND	0.010	0.050	10	U	B, B3, UJ	084233-018	EPA 353.2
CYN-MW4 (Sample Split) 19-Mar-07	Nitrate plus nitrite as N	0.13	0.015	0.050	10	B		084234-018	EPA 353.1
CYN-MW6 14-Mar-07	**Nitrate plus nitrite as N**	32.1	0.500	2.50	10			084237-018	EPA 353.2
CYN-MW6 (Sample Split) 14-Mar-07	**Nitrate plus nitrite as N**	23.9	0.310	5.00	10	B		084239-018	EPA 353.1
CYN-MW6	Nitrite as N	ND	0.033	0.100	1.0	U		084237-019	EPA 300.0
14-Mar-07	**Nitrate as N**	22.2	0.330	1.00	10	H	HT, J	084237-019	EPA 300.0
CYN-MW7 21-Mar-07	Nitrate plus nitrite as N	0.759	0.100	0.500	10			084228-018	EPA 353.2
CYN-MW7 (Duplicate) 21-Mar-07	Nitrate plus nitrite as N	0.936	0.100	0.500	10			084229-018	EPA 353.2
CYN-MW7 (Sample Split) 21-Mar-07	Nitrate plus nitrite as N	2.30	0.060	0.050	10	B		084230-018	EPA 353.1
CYN-MW8 20-Mar-07	Nitrate plus nitrite as N	5.93	0.100	0.500	10			084225-018	EPA 353.2
CYN-MW8 (Sample Split) 20-Mar-07	Nitrate plus nitrite as N	5.30	0.150	0.500	10	B		084226-018	EPA 353.1

Refer to footnotes on page F-25.

Table BSG F-3 (Concluded)
Summary of Nitrate plus Nitrite, Nitrite, and Nitrate Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW6 27-Jun-07	Nitrate plus nitrite as N	**23.6**	0.250	1.25	10			084833-018	EPA 353.2
CYN-MW7 26-Jun-07	Nitrate plus nitrite as N	1.77	0.050	0.250	10	B		084835-018	EPA 353.2
CYN-MW8 25-Jun-07	Nitrate plus nitrite as N	4.70	0.100	0.500	10	B		084837-018	EPA 353.2
CYN-MW8 (Duplicate) 25-Jun-07	Nitrate plus nitrite as N	4.62	0.100	0.500	10	B		084838-018	EPA 353.2
CYN-MW1D 19-Sep-07	Nitrate plus nitrite as N	5.09	0.050	0.250	10	B		085260-018	EPA 353.2
CYN-MW1D (Duplicate) 19-Sep-07	Nitrate plus nitrite as N	4.99	0.050	0.250	10	B		085261-018	EPA 353.2
CYN-MW3 14-Sep-07	**Nitrate plus nitrite as N**	**14.7**	0.200	1.00	10	B		085256-018	EPA 353.2
CYN-MW3 (Duplicate) 14-Sep-07	**Nitrate plus nitrite as N**	**12.2**	0.100	0.500	10	B		085257-018	EPA 353.2
CYN-MW4 11-Sep-07	Nitrate plus nitrite as N	0.180	0.050	0.250	10	B, J	0.11U	085247-018	EPA 353.2
CYN-MW6 12-Sep-07	**Nitrate plus nitrite as N**	**23.1**	0.200	1.00	10			085249-018	EPA 353.2
CYN-MW7 17-Sep-07	Nitrate plus nitrite as N	1.78	0.050	0.250	10	B		085251-018	EPA 353.2
CYN-MW8 18-Sep-07	Nitrate plus nitrite as N	4.92	0.050	0.250	10	B		085253-018	EPA 353.2

Refer to footnotes on page F-25.

Table BSG F-4
Summary of Diesel Range Organics and Gasoline Range Organics Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW6	Diesel Range Organics	21.4	16.7	50.5	NE	J	51U, B2	083858-005	SW846 3510C
15-Dec-06	Gasoline Range Organics	ND	25.0	100	NE	U		083858-006	SW846 8015A
CYN-MW6 (Duplicate)	Diesel Range Organics	41.8	16.7	50.5	NE	J	51U, B2	083859-005	SW846 3510C
15-Dec-06	Gasoline Range Organics	ND	25.0	100	NE	U		083859-006	SW846 8015A
CYN-MW7	Diesel Range Organics	53.4	16.5	50.0	NE	B	53.4U, B	083855-005	SW846 3510C
11-Dec-06	Gasoline Range Organics	ND	25.0	100	NE	U		083855-006	SW846 8015A
CYN-MW8	Diesel Range Organics	46.3	16.5	50.0	NE	B, J	50U, B	083856-005	SW846 3510C
12-Dec-06	Gasoline Range Organics	ND	25.0	100	NE	U		083856-006	SW846 8015A
CYN-MW1D	Diesel Range Organics	57.1	17.6	53.2	NE	B	57.1U, B	084231-005	SW846 3510C
22-Mar-07	Gasoline Range Organics	ND	25.0	100	NE	U		084231-006	SW846 8015A
CYN-MW3	Diesel Range Organics	19.5	16.5	50.0	NE	B, J	50.0U, B	084235-005	SW846 3510C
15-Mar-07	Gasoline Range Organics	ND	25.0	100	NE	U		084235-006	SW846 8015A
CYN-MW4	Diesel Range Organics	27.0	16.5	50.0	NE	B, J	50.0U, B	084233-005	SW846 3510C
19-Mar-07	Gasoline Range Organics	ND	25.0	100	NE	U		084233-006	SW846 8015A
CYN-MW6	Diesel Range Organics	35.7	18.3	55.6	NE	B, J	55.6U, B	084237-005	SW846 3510C
14-Mar-07	Gasoline Range Organics	ND	25.0	100	NE	U		084237-006	SW846 8015A
CYN-MW7	Diesel Range Organics	24.0	17.2	52.1	NE	B, J	52.1U, B	084228-005	SW846 3510C
21-Mar-07	Gasoline Range Organics	ND	25.0	100	NE	U		084228-006	SW846 8015A
CYN-MW7 (Duplicate)	Diesel Range Organics	26.0	17.6	53.2	NE	B, J	53.2U, B	084229-005	SW846 3510C
21-Mar-07	Gasoline Range Organics	ND	25.0	100	NE	U		084229-006	SW846 8015A
CYN-MW8	Diesel Range Organics	30.2	18.1	54.9	NE	B, J	54.9U, B	084225-005	SW846 3510C
20-Mar-07	Gasoline Range Organics	ND	25.0	100	NE	U		084225-006	SW846 8015A
CYN-MW6	Diesel Range Organics	66.0	33.0	100	NE	J		084833-005	SW846 8015A/B
27-Jun-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		084833-006	SW846 8015B
CYN-MW7	Diesel Range Organics	45.5	33.0	100	NE	J		084835-005	SW846 8015A/B
26-Jun-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		084835-006	SW846 8015B
CYN-MW8	Diesel Range Organics	53.1	34.7	105	NE	J	105U, B2	084837-005	SW846 8015A/B
25-Jun-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		084837-006	SW846 8015B
CYN-MW8 (Duplicate)	Diesel Range Organics	48.8	34.4	104	NE	J	104U, B2	084838-005	SW846 8015A/B
25-Jun-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		084838-006	SW846 8015B

Refer to footnotes on page F-25.

Table BSG F-4 (Concluded)
Summary of Diesel Range Organics and Gasoline Range Organics Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW1D	Diesel Range Organics	37.2	32.0	97.1	NE	J		085260-005	SW846 8015A/B
19-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085260-006	SW846 8015B
CYN-MW1D (Duplicate)	Diesel Range Organics	40.7	32.0	97.1	NE	J		085261-005	SW846 8015A/B
19-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085261-006	SW846 8015B
CYN-MW3	Diesel Range Organics	35.0	33.7	102	NE	J		085256-005	SW846 8015A/B
14-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085256-006	SW846 8015B
CYN-MW3 (Duplicate)	Diesel Range Organics	ND	33.0	100	NE	U		085257-005	SW846 8015A/B
14-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085257-006	SW846 8015B
CYN-MW4	Diesel Range Organics	34.1	33.0	100	NE	J		085247-005	SW846 8015A/B
11-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085247-006	SW846 8015B
CYN-MW6	Diesel Range Organics	36.5	31.4	95.2	NE	J		085249-005	SW846 8015A/B
12-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085249-006	SW846 8015B
CYN-MW7	Diesel Range Organics	ND	33.0	100	NE	U		085251-005	SW846 8015A/B
17-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085251-006	SW846 8015B
CYN-MW8	Diesel Range Organics	ND	33.0	100	NE	U		085253-005	SW846 8015A/B
18-Sep-07	Gasoline Range Organics	ND	18.0	50.0	NE	U		085253-006	SW846 8015B

Refer to footnotes on page F-25.

Table BSG F-5
Summary of Anion and Cation Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW6	Bromide	0.824	0.066	0.200	NE			083858-016	SW846 9056
15-Dec-06	Chloride	59.5	0.660	2.00	NE			083858-016	SW846 9056
	Fluoride	0.609	0.033	0.100	4.0			083858-016	SW846 9056
	Sulfate	140	1.00	4.00	NE			083858-016	SW846 9056
	Calcium	148	0.100	0.500	NE	B		083858-017	SW846 6020
	Magnesium	38.0	0.005	0.015	NE			083858-017	SW846 6020
	Potassium	2.06	0.080	0.300	NE			083858-017	SW846 6020
	Sodium	36.0	0.080	0.250	NE		J	083858-017	SW846 6020
CYN-MW6	Bromide	0.924	0.066	0.200	NE			084237-019	EPA 300.0
14-Mar-07	Chloride	60.5	0.660	2.00	NE			084237-019	EPA 300.0
	Fluoride	0.564	0.033	0.100	4.0			084237-019	EPA 300.0
	Sulfate	144	1.00	4.00	NE			084237-019	EPA 300.0
	Calcium	156	0.100	0.500	NE			084237-016	SW846-6020
	Magnesium	40.2	0.005	0.015	NE			084237-016	SW846-6020
	Potassium	2.22	0.080	0.300	NE			084237-016	SW846-6020
	Sodium	41.7	0.080	0.250	NE			084237-016	SW846-6020
CYN-MW6	Bromide	0.925	0.066	0.200	NE			084833-016	SW846 9056
27-Jun-07	Chloride	55.3	0.660	2.00	NE			084833-016	SW846 9056
	Fluoride	0.732	0.033	0.100	4.0			084833-016	SW846 9056
	Sulfate	128	1.00	4.00	NE			084833-016	SW846 9056
	Calcium	148	0.100	0.500	NE	B		084833-017	SW846 6020
	Magnesium	36.5	0.005	0.015	NE			084833-017	SW846 6020
	Potassium	2.16	0.080	0.300	NE			084833-017	SW846 6020
	Sodium	39.2	0.080	0.250	NE			084833-017	SW846 6020
CYN-MW6	Bromide	0.847	0.066	0.200	NE			085249-016	SW846 9056
12-Sep-07	Chloride	54.6	0.660	2.00	NE			085249-016	SW846 9056
	Fluoride	0.651	0.033	0.100	4.0			085249-016	SW846 9056
	Sulfate	128	1.00	4.00	NE			085249-016	SW846 9056
	Calcium	153	0.400	2.00	NE	B		085429-017	SW846 6020
	Magnesium	45.1	0.100	0.300	NE			085429-017	SW846 6020
	Potassium	2.13	0.080	0.300	NE			085429-017	SW846 6020
	Sodium	43.9	1.60	5.00	NE			085429-017	SW846 6020

Refer to footnotes on page F-25.

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Table BSG F-6
Summary of Perchlorate Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Perchlorate Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW6 15-Dec-06	**0.00846**	0.004	0.012	NE	J		083858-020	EPA 314.0
CYN-MW6 (Duplicate) 15-Dec-06	**0.00893**	0.004	0.012	NE	J		083859-020	EPA 314.0
CYN-MW7 11-Dec-06	ND	0.004	0.012	NE	U		083855-020	EPA 314.0
CYN-MW8 12-Dec-06	ND	0.004	0.012	NE	U		083856-020	EPA 314.0
CYN-MW6 14-Mar-07	**0.00812**	0.004	0.012	NE	J		084237-020	EPA 314.0
CYN-MW6	**0.00657**	0.004	0.012	NE	J	J-, X1	084833-020	EPA 314.0
27-Jun-07	**0.00594**	0.0005	0.002	NE			084833-R20	SW846-6850
CYN-MW6	**0.00774**	0.004	0.012	NE	J		085249-020	EPA 314.0
12-Sep-07	**0.00646**	0.0005	0.002	NE	H, h	J	085249-R20	SW846-6850

Refer to footnotes on page F-25.

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Table BSG F-7
Summary of Total Metal Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW1D	Aluminum	0.0149	0.005	0.015	NE	J		085260-009	SW846 6020
19-Sep-07	Antimony	ND	0.0005	0.002	0.006	U		085260-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085260-009	SW846 6020
	Barium	0.0438	0.0005	0.002	2.00			085260-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085260-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085260-009	SW846 6020
	Calcium	55.1	0.100	0.500	NE			085260-009	SW846 6020
	Chromium	0.00282	0.001	0.003	0.100	J		085260-009	SW846 6020
	Cobalt	0.000271	0.0001	0.001	NE	J		085260-009	SW846 6020
	Copper	0.000922	0.0002	0.001	NE	J		085260-009	SW846 6020
	Iron	2.59	0.010	0.025	NE			085260-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085260-009	SW846 6020
	Magnesium	12.6	0.005	0.015	NE			085260-009	SW846 6020
	Manganese	0.0778	0.001	0.005	NE			085260-009	SW846 6020
	Mercury	0.000034	0.00003	0.0002	0.002	B, J	0.00027U	085260-009	SW846 7470
	Nickel	0.00159	0.0005	0.002	NE	J		085260-009	SW846 6020
	Potassium	2.31	0.080	0.300	NE			085260-009	SW846 6020
	Selenium	0.00176	0.001	0.005	0.050	J		085260-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085260-009	SW846 6020
	Sodium	29.2	0.080	0.250	NE			085260-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085260-009	SW846 6020
	Uranium	0.000693	0.00005	0.0002	0.030			085260-009	SW846 6020
	Vanadium	0.00414	0.003	0.010	NE	J		085260-009	SW846 6020
	Zinc	ND	0.0026	0.010	NE	U		085260-009	SW846 6020

Refer to footnotes on page F-25.

Table BSG F-7
Summary of Total Metal Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW3	Aluminum	0.00926	0.005	0.015	NE	J		085256-009	SW846 6020
14-Sep-07	Antimony	ND	0.0005	0.002	0.006	U		085256-009	SW846 6020
	Arsenic	0.00198	0.0015	0.005	0.010	J		085256-009	SW846 6020
	Barium	0.0565	0.0005	0.002	2.00			085256-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085256-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085256-009	SW846 6020
	Calcium	150	0.100	0.500	NE	B		085256-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		085256-009	SW846 6020
	Cobalt	0.000444	0.0001	0.001	NE	J		085256-009	SW846 6020
	Copper	0.00218	0.0002	0.001	NE			085256-009	SW846 6020
	Iron	0.670	0.010	0.025	NE			085256-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085256-009	SW846 6020
	Magnesium	37.2	0.005	0.015	NE			085256-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085256-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085256-009	SW846 7470
	Nickel	0.00294	0.0005	0.002	NE			085256-009	SW846 6020
	Potassium	2.03	0.080	0.300	NE			085256-009	SW846 6020
	Selenium	0.00976	0.001	0.005	0.050			085256-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085256-009	SW846 6020
	Sodium	42.1	0.020	0.250	NE	B		085256-009	SW846 6020
	Thallium	0.000491	0.0003	0.001	0.002	J	0.0018U	085256-009	SW846 6020
	Uranium	0.00814	0.00005	0.0002	0.030			085256-009	SW846 6020
	Vanadium	0.00768	0.003	0.010	NE	B, J	0.022U	085256-009	SW846 6020
	Zinc	0.00269	0.0026	0.010	NE	J		085256-009	SW846 6020

Refer to footnotes on page F-25.

Table BSG F-7
Summary of Total Metal Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW4	Aluminum	0.0173	0.005	0.015	NE		J	085247-009	SW846 6020
11-Sep-07	Antimony	0.000621	0.0005	0.002	0.006	B, J	0.0093U	085247-009	SW846 6020
	Arsenic	0.00191	0.0015	0.005	0.010	J		085247-009	SW846 6020
	Barium	0.0523	0.0005	0.002	2.00			085247-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085247-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085247-009	SW846 6020
	Calcium	72.1	0.020	1.00	NE			085247-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		085247-009	SW846 6020
	Cobalt	0.000292	0.0001	0.001	NE	J		085247-009	SW846 6020
	Copper	0.00115	0.0002	0.001	NE			085247-009	SW846 6020
	Iron	0.310	0.010	0.025	NE			085247-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085247-009	SW846 6020
	Magnesium	32.6	0.005	0.015	NE			085247-009	SW846 6020
	Manganese	ND	0.001	0.005	NE	U		085247-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U	UJ	085247-009	SW846 7470
	Nickel	0.00198	0.0005	0.002	NE	J		085247-009	SW846 6020
	Potassium	6.38	0.080	0.300	NE			085247-009	SW846 6020
	Selenium	0.00977	0.001	0.005	0.050			085247-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085247-009	SW846 6020
	Sodium	44.5	0.080	0.250	NE			085247-009	SW846 6020
	Thallium	0.000725	0.0003	0.001	0.002	J	0.0017U	085247-009	SW846 6020
	Uranium	0.014	0.00005	0.0002	0.030			085247-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		085247-009	SW846 6020
	Zinc	0.00828	0.0026	0.010	NE	J		085247-009	SW846 6020

Refer to footnotes on page F-25.

Table BSG F-7
Summary of Total Metal Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW6	Aluminum	0.0057	0.005	0.015	NE	J		085249-009	SW846 6020
12-Sep-07	Antimony	ND	0.0005	0.002	0.006	B, U		085249-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	J		085249-009	SW846 6020
	Barium	0.0691	0.0005	0.002	2.00			085249-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085249-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085249-009	SW846 6020
	Calcium	155	0.400	2.00	NE	B		085249-009	SW846 6020
	Chromium	0.00195	0.001	0.003	0.100	B, J	0.0083U	085249-009	SW846 6020
	Cobalt	0.000364	0.0001	0.001	NE	J		085249-009	SW846 6020
	Copper	0.00282	0.0002	0.001	NE			085249-009	SW846 6020
	Iron	0.520	0.010	0.025	NE			085249-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085249-009	SW846 6020
	Magnesium	45.3	0.100	0.300	NE			085249-009	SW846 6020
	Manganese	0.00251	0.001	0.005	NE	J		085249-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085249-009	SW846 7470
	Nickel	0.00265	0.0005	0.002	NE			085249-009	SW846 6020
	Potassium	2.12	0.080	0.300	NE			085249-009	SW846 6020
	Selenium	0.012	0.001	0.005	0.050			085249-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085249-009	SW846 6020
	Sodium	44.5	1.60	5.00	NE			085249-009	SW846 6020
	Thallium	0.000492	0.0003	0.001	0.002	J		085249-009	SW846 6020
	Uranium	0.00911	0.00005	0.0002	0.030			085249-009	SW846 6020
	Vanadium	ND	0.003	0.010	NE	U		085249-009	SW846 6020
	Zinc	0.00391	0.0026	0.010	NE	B, J	0.017U	085249-009	SW846 6020

Refer to footnotes on page F-25.

Table BSG F-7
Summary of Total Metal Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW7 17-Sep-07	Aluminum	0.115	0.005	0.015	NE			085251-009	SW846 6020
	Antimony	ND	0.0005	0.002	0.006	U	UJ	085251-009	SW846 6020
	Arsenic	ND	0.0015	0.005	0.010	U		085251-009	SW846 6020
	Barium	0.119	0.0005	0.002	2.00			085251-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085251-009	SW846 6020
	Cadmium	ND	0.00011	0.001	0.005	U		085251-009	SW846 6020
	Calcium	107	0.100	0.500	NE	B		085251-009	SW846 6020
	Chromium	ND	0.001	0.003	0.100	U		085251-009	SW846 6020
	Cobalt	0.000371	0.0001	0.001	NE	J		085251-009	SW846 6020
	Copper	0.00104	0.0002	0.001	NE			085251-009	SW846 6020
	Iron	0.546	0.010	0.025	NE			085251-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085251-009	SW846 6020
	Magnesium	20.6	0.005	0.015	NE			085251-009	SW846 6020
	Manganese	0.0611	0.001	0.005	NE			085251-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085251-009	SW846 7470
	Nickel	0.00368	0.0005	0.002	NE			085251-009	SW846 6020
	Potassium	2.47	0.080	0.300	NE			085251-009	SW846 6020
	Selenium	0.00302	0.001	0.005	0.050	J		085251-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085251-009	SW846 6020
	Sodium	35.9	0.080	0.250	NE	B		085251-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085251-009	SW846 6020
	Uranium	0.00814	0.00005	0.0002	0.030			085251-009	SW846 6020
	Vanadium	0.00609	0.003	0.010	NE	B, J	0.024U	085251-009	SW846 6020
	Zinc	0.00513	0.0026	0.010	NE	J		085251-009	SW846 6020

Refer to footnotes on page F-25.

Table BSG F-7 (Concluded)
Summary of Total Metal Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Result[a] (mg/L)	MDL[b] (mg/L)	PQL[c] (mg/L)	MCL[d] (mg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW8	Aluminum	0.0126	0.005	0.015	NE	J		085253-009	SW846 6020
18-Sep-07	Antimony	ND	0.0005	0.002	0.006	U	UJ	085253-009	SW846 6020
	Arsenic	0.00189	0.0015	0.005	0.010	J		085253-009	SW846 6020
	Barium	0.0636	0.0005	0.002	2.00			085253-009	SW846 6020
	Beryllium	ND	0.0001	0.0005	0.004	U		085253-009	SW846 6020
	Cadmium	0.000218	0.00011	0.001	0.005	J		085253-009	SW846 6020
	Calcium	120	0.100	0.500	NE	B		085253-009	SW846 6020
	Chromium	0.00133	0.001	0.003	0.100	J		085253-009	SW846 6020
	Cobalt	0.000567	0.0001	0.001	NE	J		085253-009	SW846 6020
	Copper	0.0015	0.0002	0.001	NE			085253-009	SW846 6020
	Iron	0.560	0.010	0.025	NE			085253-009	SW846 6020
	Lead	ND	0.0005	0.002	NE	U		085253-009	SW846 6020
	Magnesium	25.3	0.005	0.015	NE			085253-009	SW846 6020
	Manganese	0.0398	0.001	0.005	NE			085253-009	SW846 6020
	Mercury	ND	0.00003	0.0002	0.002	U		085253-009	SW846 7470
	Nickel	0.00281	0.0005	0.002	NE			085253-009	SW846 6020
	Potassium	2.38	0.080	0.300	NE			085253-009	SW846 6020
	Selenium	0.00542	0.001	0.005	0.050			085253-009	SW846 6020
	Silver	ND	0.0002	0.001	NE	U		085253-009	SW846 6020
	Sodium	45.5	0.080	0.250	NE	B		085253-009	SW846 6020
	Thallium	ND	0.0003	0.001	0.002	U		085253-009	SW846 6020
	Uranium	0.00941	0.00005	0.0002	0.030			085253-009	SW846 6020
	Vanadium	0.00515	0.003	0.010	NE	B, J	0.024U	085253-009	SW846 6020
	Zinc	0.00833	0.0026	0.010	NE	J		085253-009	SW846 6020

Refer to footnotes on page F-25.

Table BSG F-8
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW1D	Tritium	18.7 ± 139	244	115	NE	U	BD	085260-036	EPA 906.0 M
19-Sep-07	Gross Alpha	0.829 ± 0.757	1.21	0.534	15	U	BD	085260-034	EPA 900.0
	Gross Beta	2.71 ± 1.30	1.96	0.954	4mrem/yr		J	085260-034	EPA 900.0
	Americium-241	-2.05 ± 3.01	5.08	2.54	NE	U	BD	085260-033	EPA 901.1
	Cesium-137	-0.478 ± 2.31	3.79	1.90	NE	U	BD	085260-033	EPA 901.1
	Cobalt-60	1.78 ± 2.57	4.19	2.10	NE	U	BD	085260-033	EPA 901.1
	Potassium-40	3.96 ± 57.8	42.4	21.2	NE	U	BD	085260-033	EPA 901.1
CYN-MW3	Tritium	18.4 ± 95.2	165	79.2	NE	U	BD	085256-036	EPA 906.0 M
14-Sep-07	Gross Alpha	12.1 ± 4.05	3.99	1.82	15		J-	085256-034	EPA 900.0
	Gross Beta	5.46 ± 3.90	6.29	3.07	4mrem/yr	U	BD	085256-034	EPA 900.0
	Americium-241	-6.41 ± 10.3	17.3	8.63	NE	U	BD	085256-033	EPA 901.1
	Cesium-137	-0.329 ± 1.98	3.33	1.67	NE	U	BD	085256-033	EPA 901.1
	Cobalt-60	2.00 ± 2.20	3.93	1.97	NE	U	BD	085256-033	EPA 901.1
	Potassium-40	-17.2 ± 43.9	47.7	23.8	NE	U	BD	085256-033	EPA 901.1
CYN-MW4	Tritium	80.9 ± 116	195	94.1	NE	U	BD	085247-036	EPA 906.0 M
11-Sep-07	**Gross Alpha**	**29.0 ± 9.58**	6.02	2.25	15			085247-034	EPA 900.0
	Gross Beta	8.43 ± 2.79	3.58	1.72	4mrem/yr		J	085247-034	EPA 900.0
	Americium-241	0.975 ± 3.29	5.16	2.58	NE	U	BD	085247-033	EPA 901.1
	Cesium-137	-1.01 ± 2.52	4.10	2.05	NE	U	BD	085247-033	EPA 901.1
	Cobalt-60	-0.365 ± 2.39	4.01	2.01	NE	U	BD	085247-033	EPA 901.1
	Potassium-40	-8.73 ± 39.5	52.9	26.5	NE	U	BD	085247-033	EPA 901.1
CYN-MW6	Tritium	148 ± 122	196	94.5	NE	U	BD	085249-036	EPA 906.0 M
12-Sep-07	Gross Alpha	14.7 ± 6.89	4.87	1.45	15			085249-034	EPA 900.0
	Gross Beta	4.35 ± 2.08	3.11	1.50	4mrem/yr		J	085249-034	EPA 900.0
	Americium-241	-2.2 ± 5.19	5.97	2.98	NE	U	BD	085249-033	EPA 901.1
	Cesium-137	3.57 ± 3.58	4.90	2.45	NE	U	BD	085249-033	EPA 901.1
	Cobalt-60	1.85 ± 2.93	5.07	2.54	NE	U	BD	085249-033	EPA 901.1
	Potassium-40	-19.4 ± 63.6	61.0	30.5	NE	U	BD	085249-033	EPA 901.1
CYN-MW7	Tritium	8.29 ± 136	240	113	NE	U	BD	085251-036	EPA 906.0 M
17-Sep-07	**Gross Alpha**	**29.6 ± 10.0**	4.27	1.18	15			085251-034	EPA 900.0
	Gross Beta	4.90 ± 2.11	2.87	1.36	4mrem/yr		J	085251-034	EPA 900.0
	Americium-241	1.32 ± 11.1	16.2	8.11	NE	U	BD	085251-033	EPA 901.1
	Cesium-137	-0.174 ± 1.98	3.23	1.62	NE	U	BD	085251-033	EPA 901.1
	Cobalt-60	1.83 ± 2.08	3.73	1.87	NE	U	BD	085251-033	EPA 901.1
	Potassium-40	7.54 ± 41.3	47.6	23.8	NE	U	BD	085251-033	EPA 901.1

Refer to footnotes on page F-25.

Table BSG F-8 (Concluded)
Summary of Tritium, Gross Alpha, Gross Beta, and Gamma Spectroscopy Results
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Analyte	Activity[a] (pCi/L)	MDA[h] (pCi/L)	Critical Level[b] (pCi/L)	MCL[d] (pCi/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Sample No.	Analytical Method[g]
CYN-MW8	Tritium	41.5 ± 140	244	115	NE	U	BD	085253-036	EPA 906.0 M
18-Sep-07	**Gross Alpha**	**20.7 ± 8.23**	5.98	2.07	15			085253-034	EPA 900.0
	Gross Beta	5.70 ± 3.36	5.10	2.40	4mrem/yr		J	085253-034	EPA 900.0
	Americium-241	1.90 ± 3.81	6.71	3.36	NE	U	BD	085253-033	EPA 901.1
	Cesium-137	-1.02 ± 4.22	5.11	2.56	NE	U	BD	085253-033	EPA 901.1
	Cobalt-60	-0.167 ± 3.59	5.28	2.64	NE	U	BD	085253-033	EPA 901.1
	Potassium-40	-15.9 ± 52.8	56.2	28.1	NE	U	BD	085253-033	EPA 901.1

Refer to footnotes on page25.

Table BSG F-9
Summary of Field Water Quality Measurements[i]
Burn Site Groundwater Monitoring

Fiscal Year 2007

Well ID	Sample Date	Temperature (^0C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (mg/L)
CYN-MW1D	22-Mar-07	15.22	420	-201.9	8.30	29.5	0.18
	19-Sep-07	21.77	415	-153.7	7.81	22.2	0.22
CYN-MW3	15-Mar-07	16.81	994	276.3	7.27	0.24	6.19
	14-Sep-07	19.80	920	302.4	6.95	0.17	6.28
CYN-MW4	19-Mar-07	18.17	692	209.7	7.31	0.31	2.28
	11-Sep-07	19.68	621	385.2	7.25	0.32	2.23
CYN-MW6	15-Dec-06	13.62	1,014	311.6	7.00	0.65	2.55
	14-Mar-07	16.00	1,053	240.6	7.03	0.48	2.49
	27-Jun-07	19.11	955	226.0	7.22	0.67	2.76
	12-Sep-07	19.36	894	282.1	6.70	0.40	2.50
CYN-MW7	11-Dec-06	14.29	665	185.7	7.08	0.58	2.18
	21-Mar-07	18.51	705	95.4	7.08	0.68	1.98
	26-Jun-07	21.47	705	125.1	7.24	1.42	2.48
	17-Sep-07	20.88	636	158.3	6.80	3.73	2.77
CYN-MW8	12-Dec-06	14.91	826	251.3	7.11	0.36	2.74
	20-Mar-07	17.19	860	91.3	7.15	0.40	3.28
	25-Jun-07	22.93	838	184.5	7.27	0.89	3.54
	18-Sep-07	18.62	751	216.4	6.82	0.95	3.45

Refer to footnotes on page F-25.

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[a]Result and/or Activity
- Values in bold exceed the established MCL.
- ND = not detected (at method detection limit).
- Activities of zero or less are considered to be not detected.
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- pCi/L = pico curies per liter

[b]MDL or Critical level
Method detection limit. The minimum concentration or activity that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.

[c]PQL
Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.

[d]MCL
Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations (40 CFR 141.11(b)), National Primary Drinking Water Standards, EPA, July 2002.
NE = not established.
The following are the MCLs for gross alpha particles and beta particles in community water systems:
15 pCi/L = Gross alpha particle activity (including radium-226 but excluding radon and total uranium).
4 mrem/yr = any combination of beta and/or gamma emitting radionuclides (as dose rate).

[e]Lab Qualifier

B = Analyte is detected in associated laboratory method blank.

H = Analytical holding time was exceeded.

h = Prep holding time was exceeded.

J = Amount detected is below the practical quantitation limit (PQL).
U = Analyte is absent or below the method detection limit.

[f]Validation Qualifier
If cell is blank, then all quality control samples met acceptance criteria with respect to submitted samples.
B = Analyte present in associated laboratory method blank.
B1 = Analyte present in associated trip blank sample.
B2 = Analyte present in associated equipment blank sample.
B3 = Analyte present in associated laboratory calibration blank sample.
BD = Below detection limit as used in radiochemistry to identify results that are not statistically different from zero.
HT = The holding time was exceeded for the associated sample analysis.
J = The associate value is an estimated quantity.
J- = Tha associated numerical value is an estimated quantity with a suspected negative bias.
U = The analyte was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
UJ = The analyte was analyzed for but was not detected. The associated value and/or sample quantitation limit is an estimate and may be inaccurate or imprecise.
X1 = Non-specified data quality concern, see validation report.

[g]Analytical Method

U.S. Environmental Protection Agency, 1990, "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods," SW-846, 3rd ed.

U.S. Environmental Protection Agency, 1983, "The Determination of Inorganic Anions in Water by Ion Chromatography-Method 300.0,"
EPA-600/4-84-017.

U.S. Environmental Protection Agency, 1999, "Perchlorate in Drinking Water Using Ion Chromatography," EPA 815/R-00-014.

U.S. Environmental Protection Agency, 1980, "Prescribed Procedures for Measurement of Radioactivity in Drinking Water,"
EPA-600/4-80-032.

[h]MDA

The minimal detectable activity or minimum measured activity in a sample required to ensure a 95% probability that the measured activity is accurately quantified above the critical level.

[i]Field Water Quality Measurements

Field measurements collected prior to sampling.

^{O}C	= degrees Celsius
µmho/cm	= micromhos per centimeter
mg/L	= milligrams per liter
mV	= millivolts
NTU	= nephelometric turbidity units
pH	= potential of hydrogen (negative logarithm of the hydrogen ion concentration)

APPENDIX G
Hydrographs
Groundwater Surveillance Task

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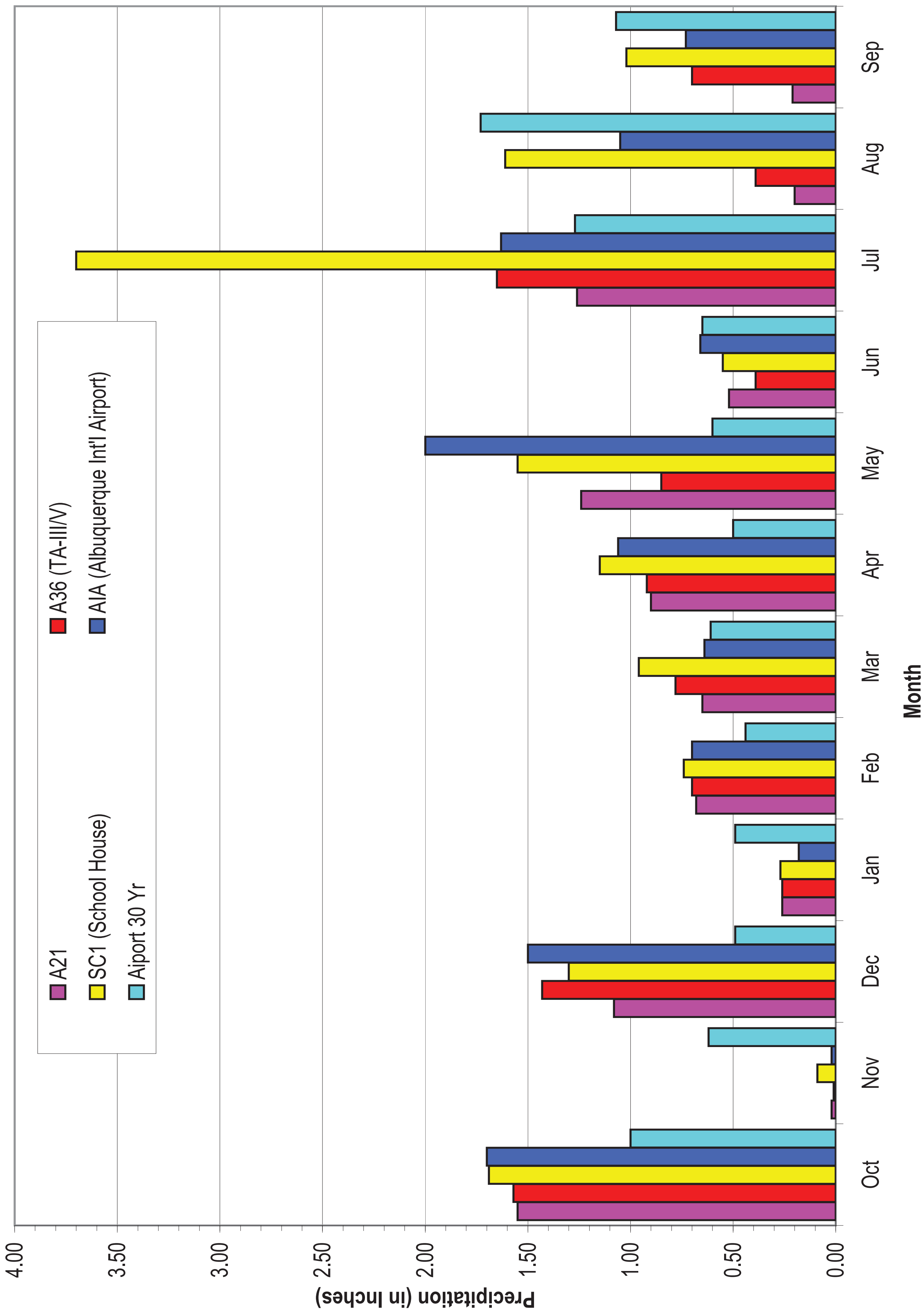

Figure G-1. Precipitation Data for SNL/NM, FY07

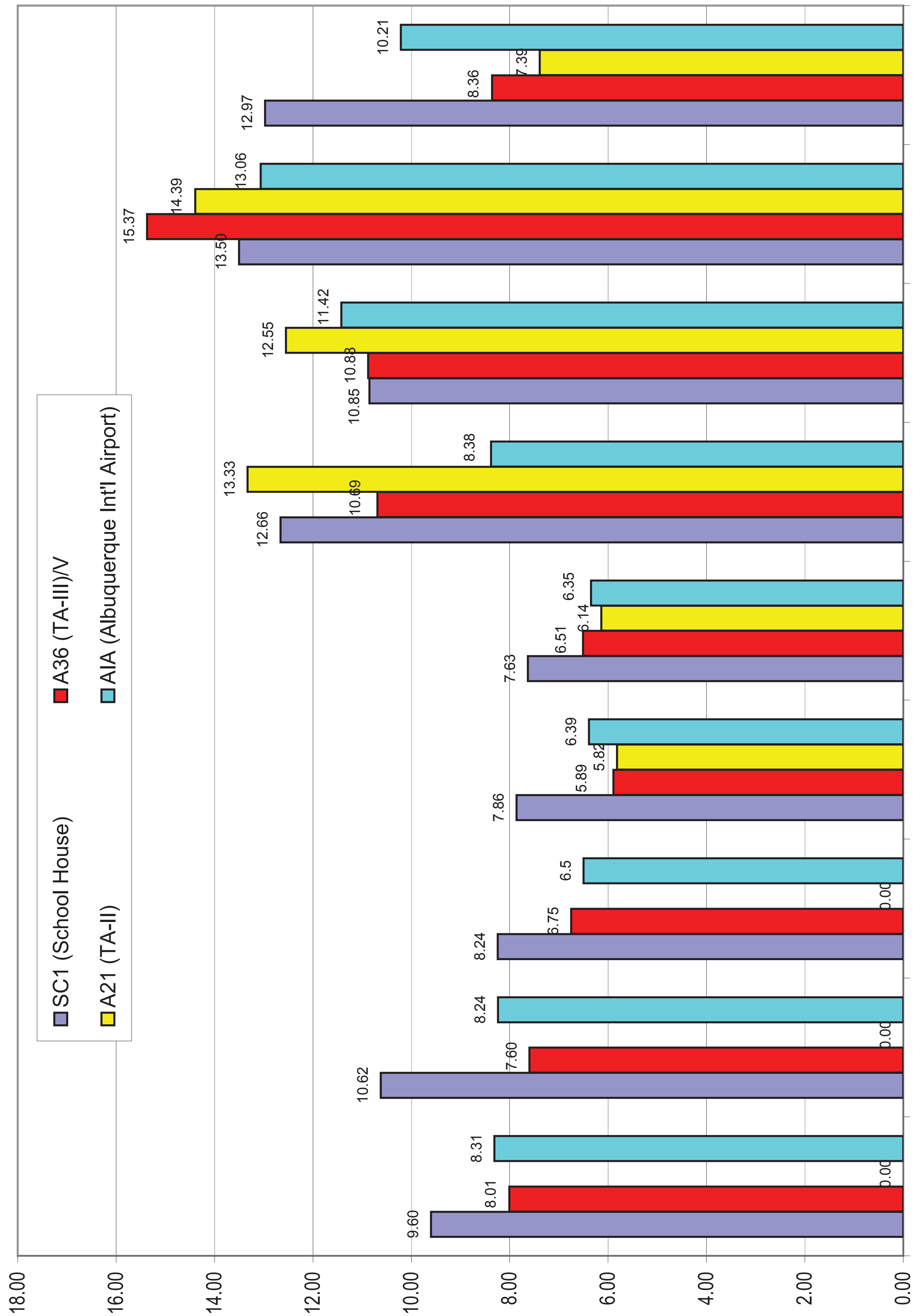

Figure G-2. Annual Precipitation Data for SNL/NM, Jan 1999 to Sept 2007

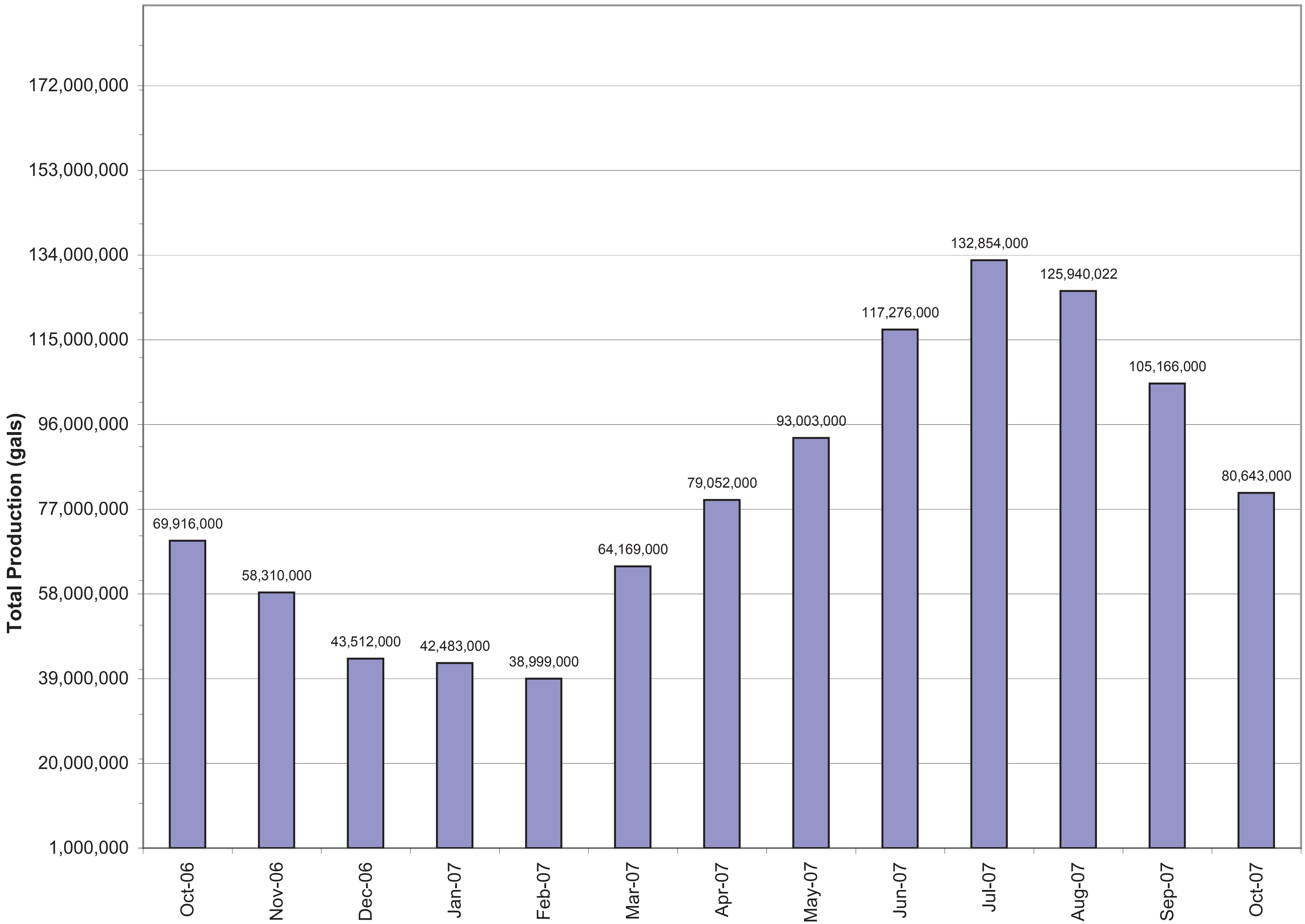

Figure G-3. Monthly Groundwater Pumped by KAFB Water supply Wells, FY07

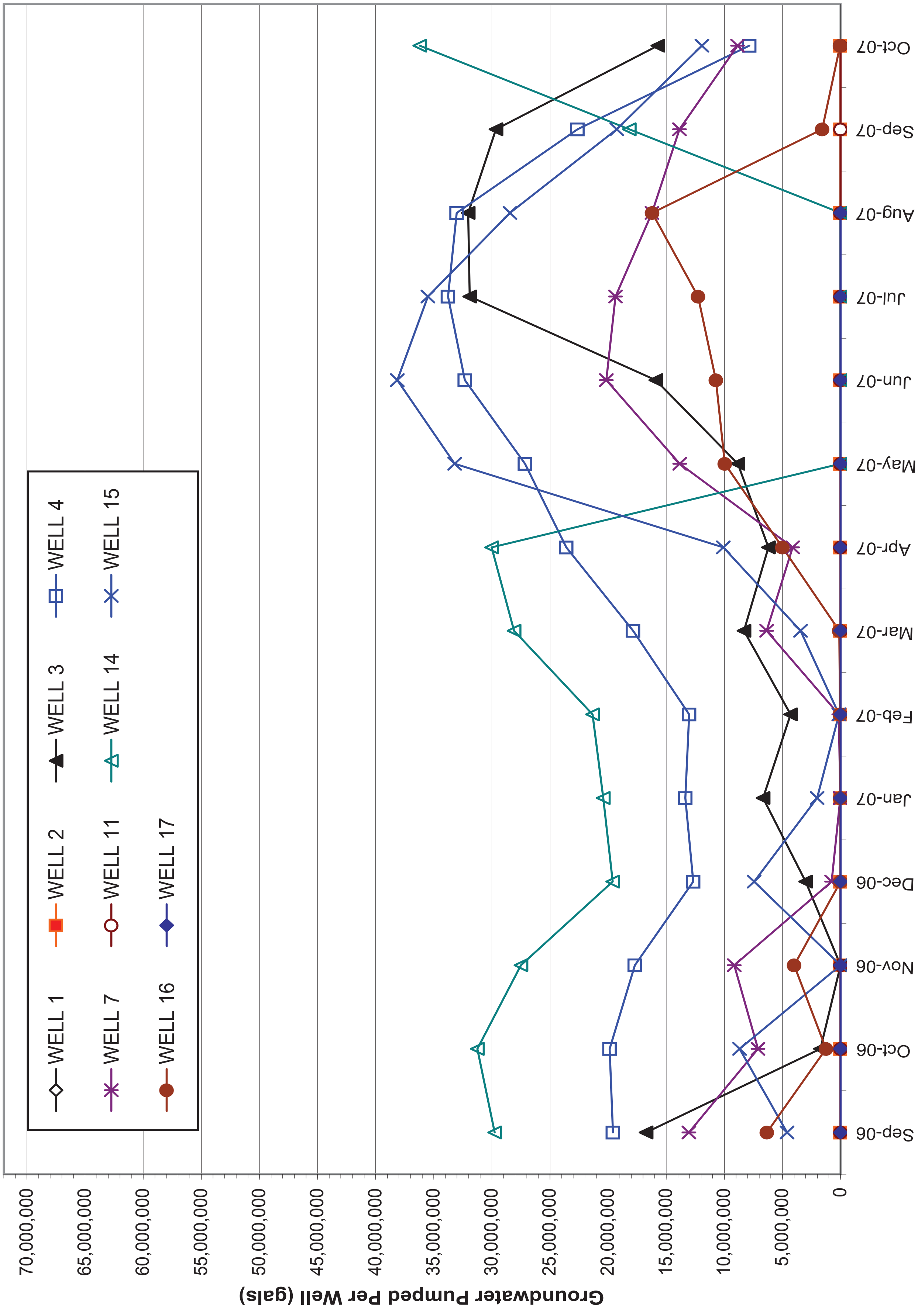

Figure G-4. Groundwater Pumped by KAFB Water Supply Wells, FY07

Figure G-5. Annual Groundwater Pumped by KAFB Water Supply Wells, 1996 to 2007

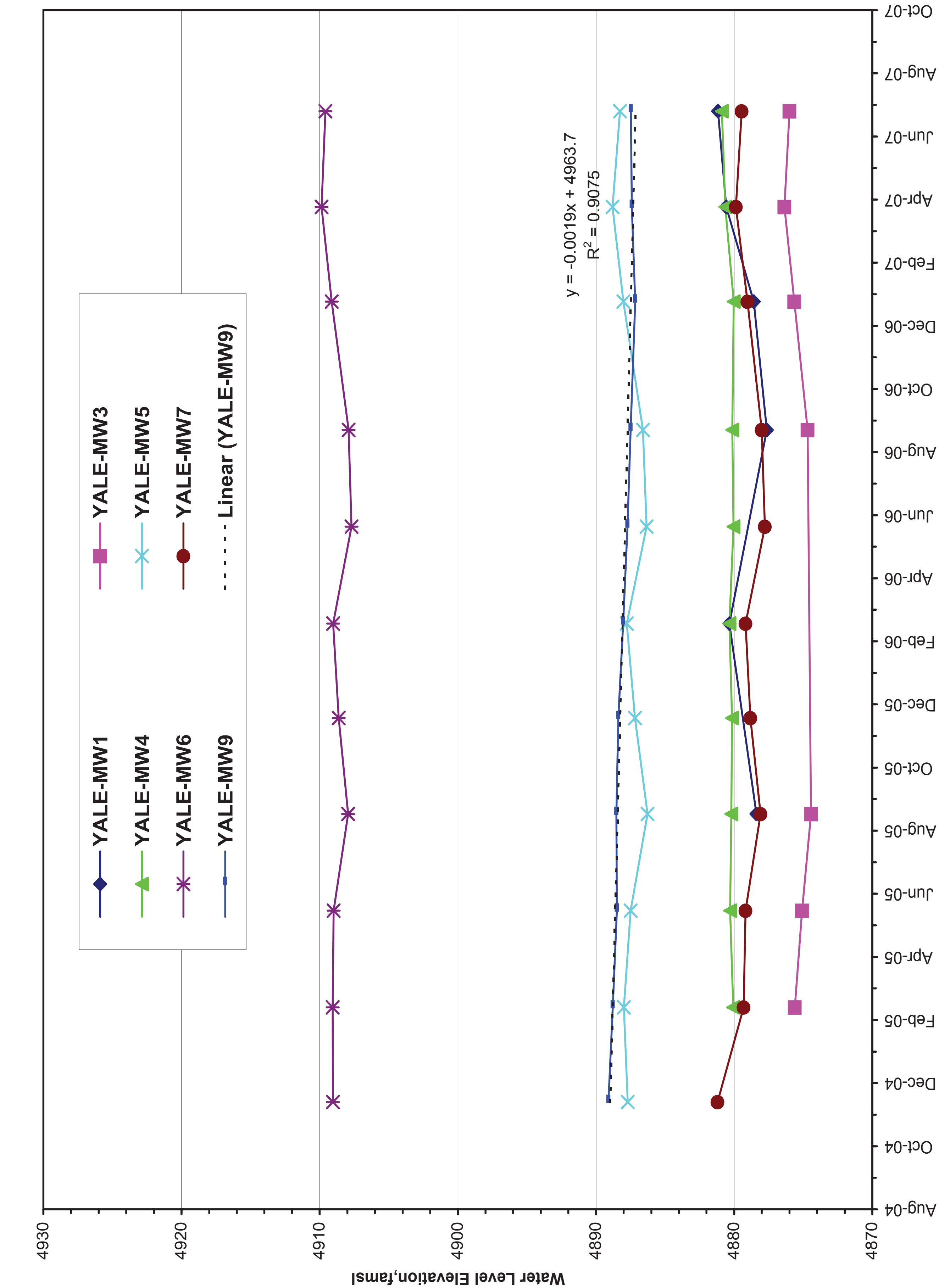

Figure G-6. City of Albuquerque Wells

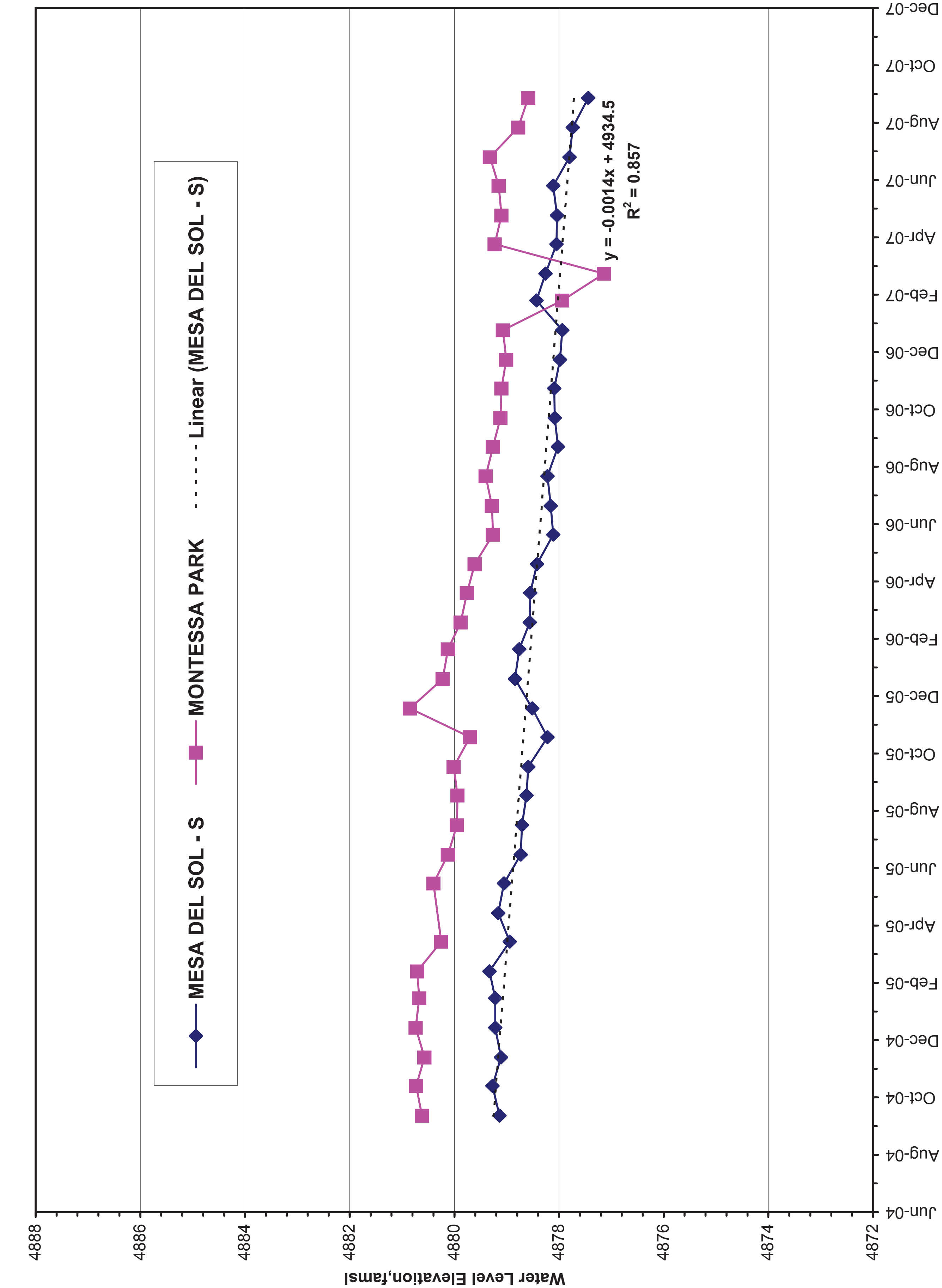

Figure G-7. USGS Wells West of KAFB

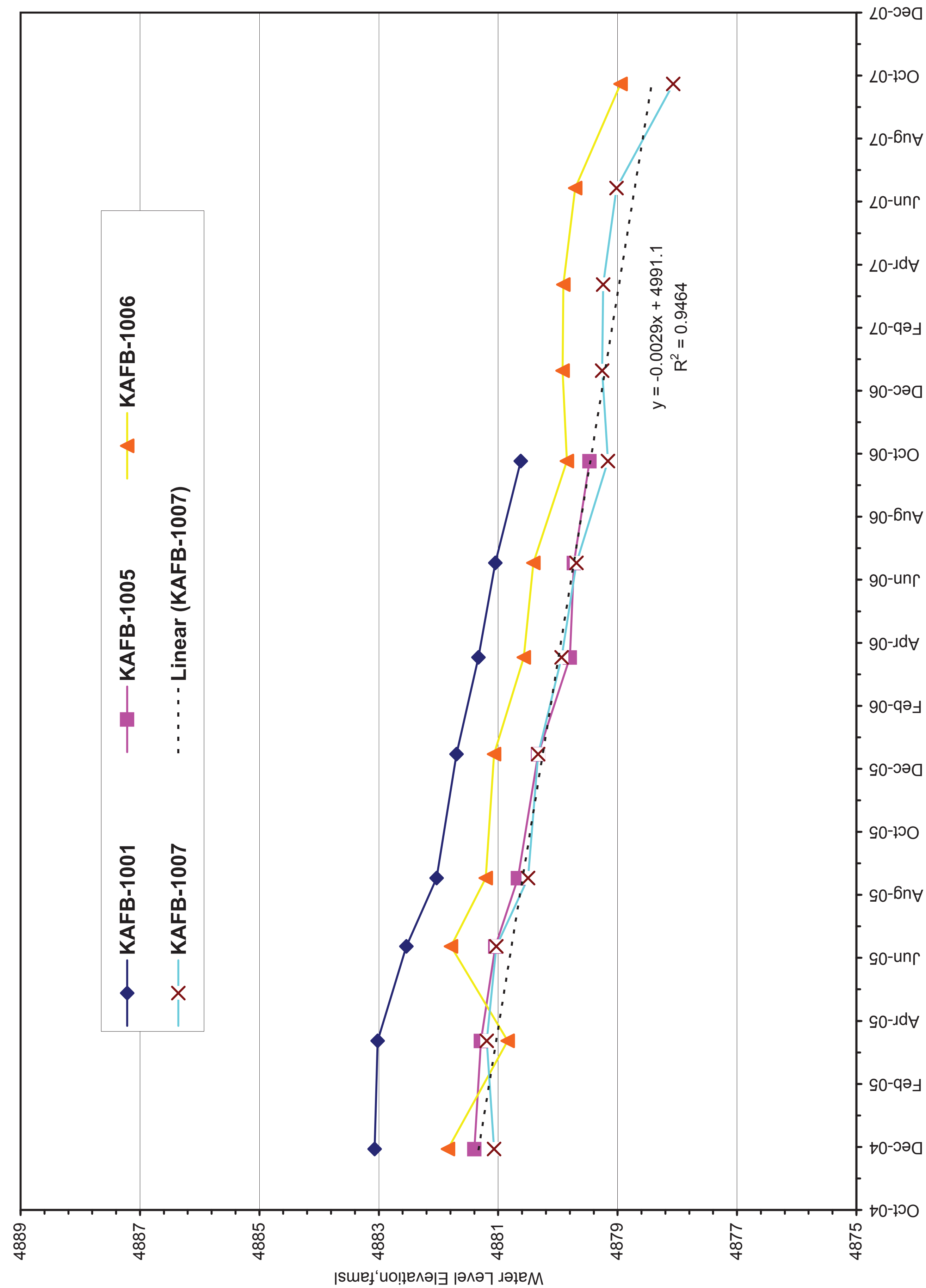

Figure G-8. McCormick Wells

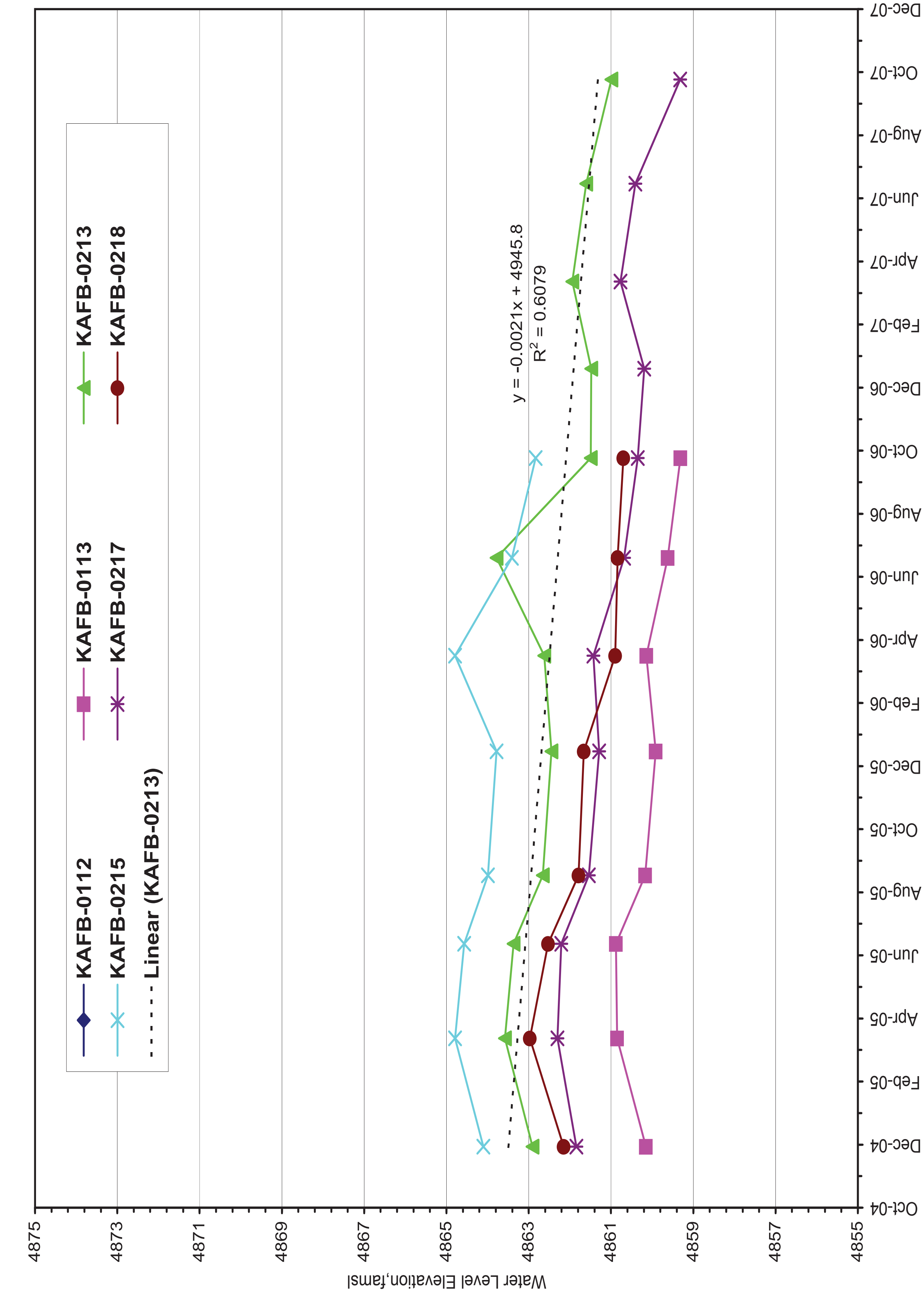

Figure G-9. KABF North Wells

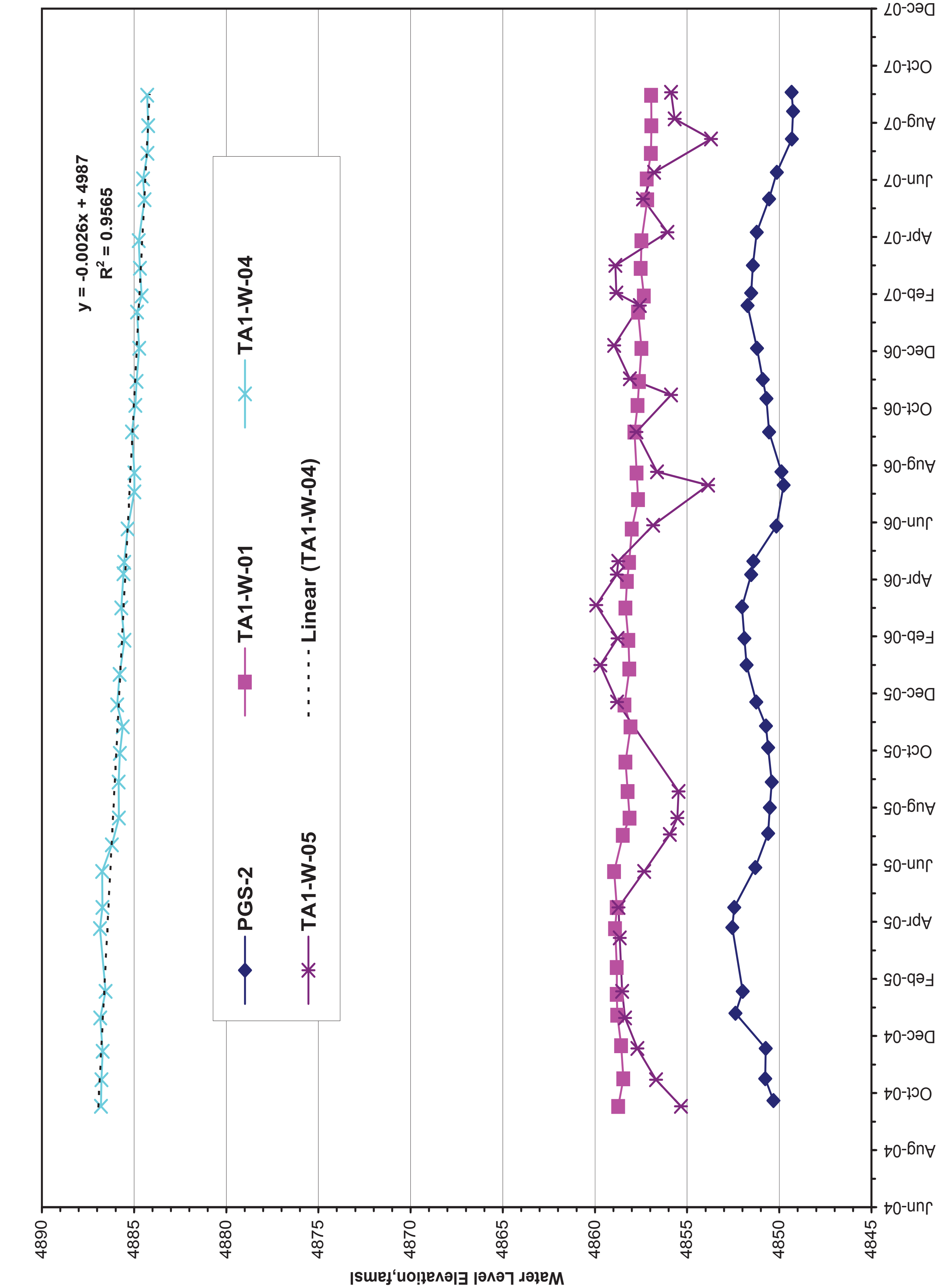

Figure G-10 KABF Northeast Wells (1 of 2)

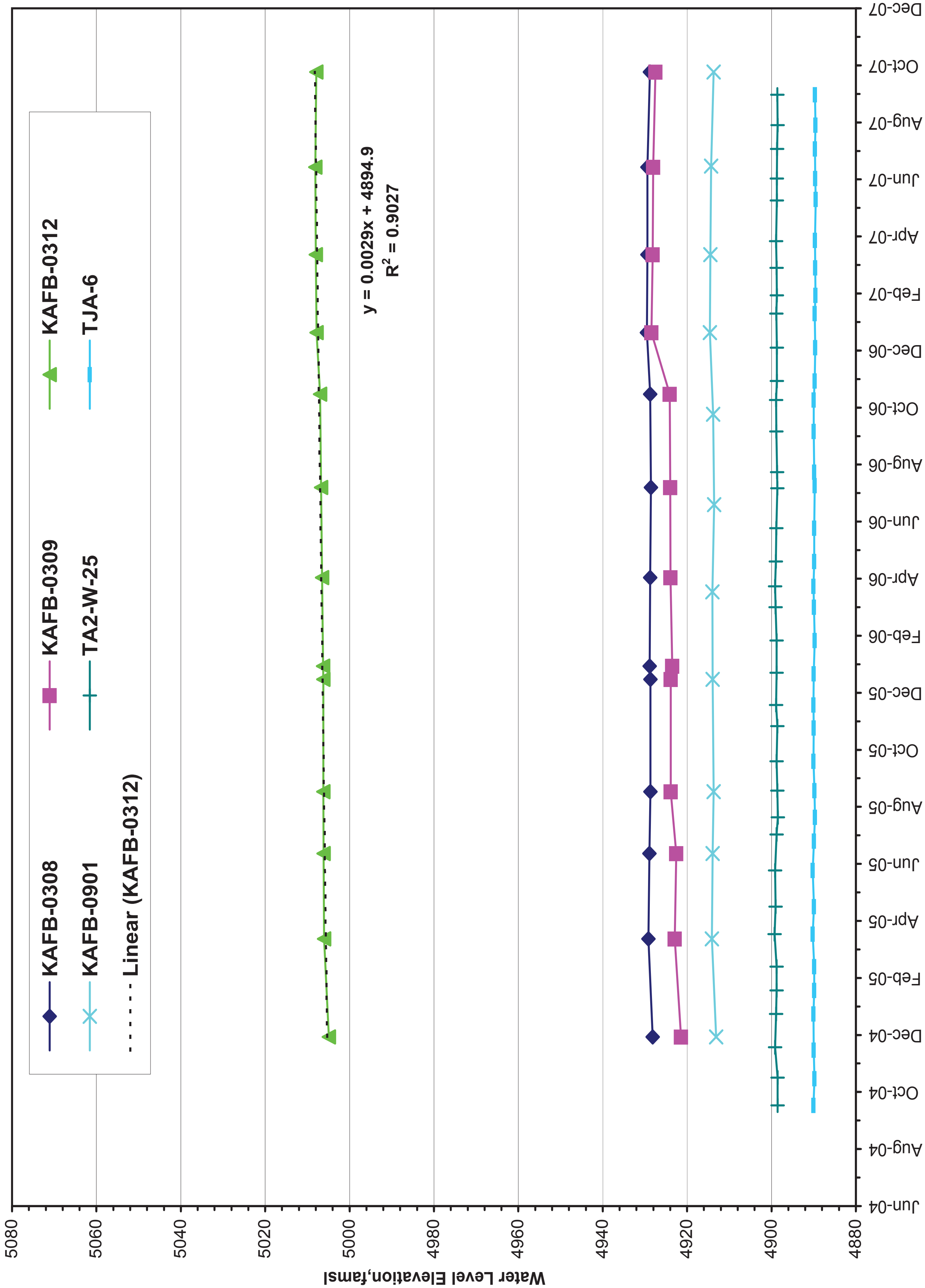

Figure G-11. KAFB Northeast Wells (2 of 2)

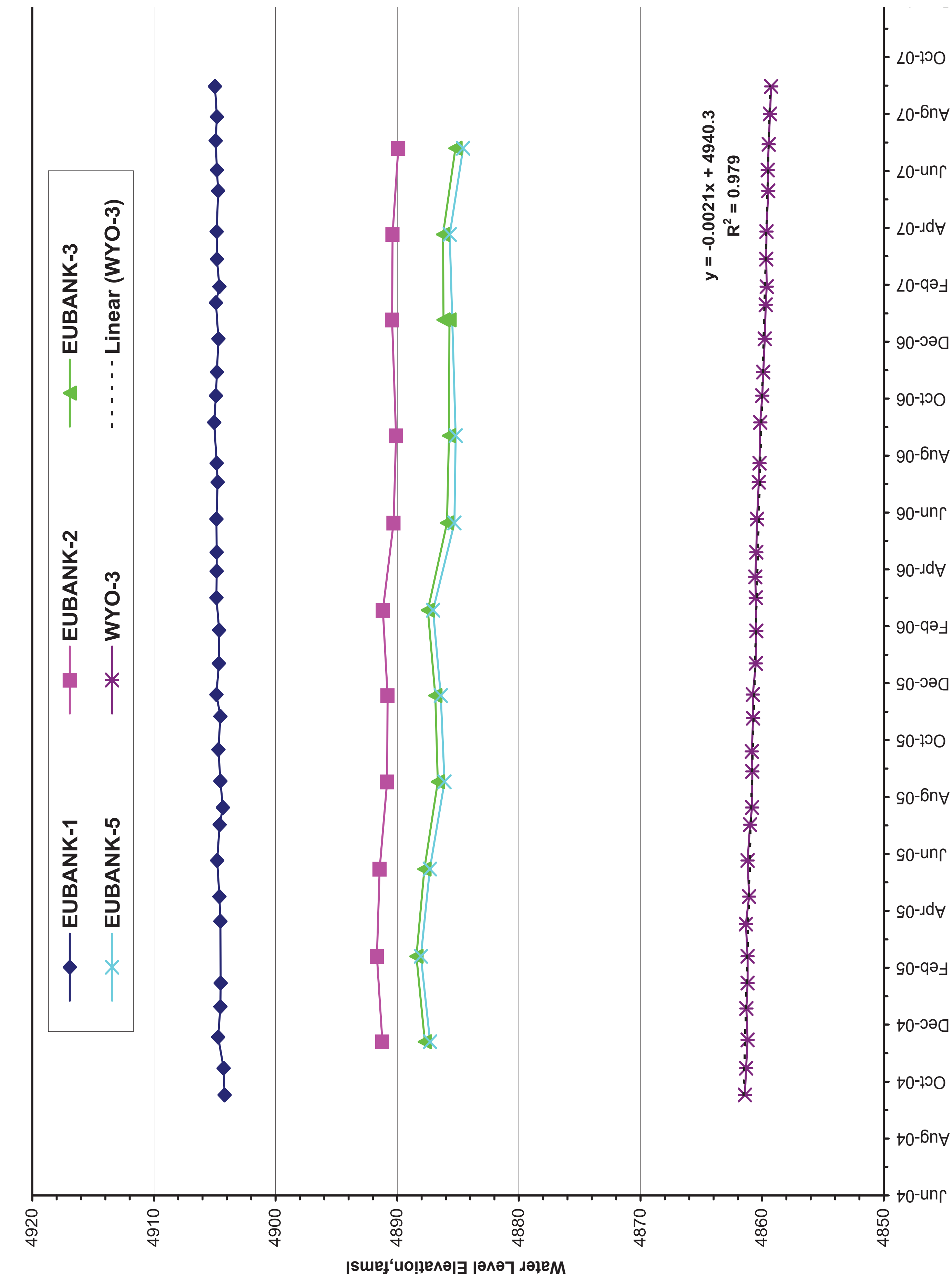

Figure G-12. City of Albuquerque, Eubank Landfill Wells

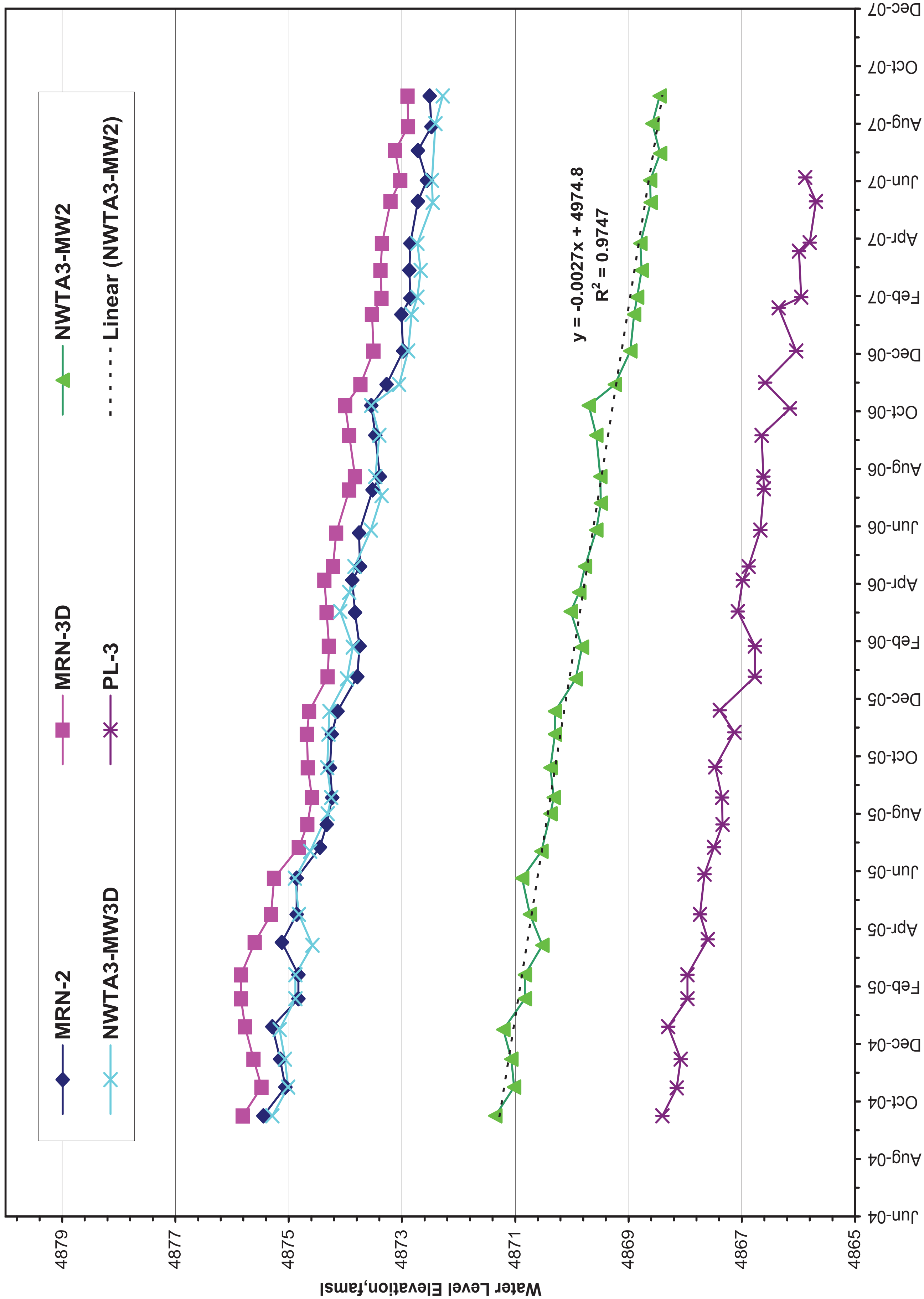

Figure G-13. Wells West of TA-III (1 of 2)

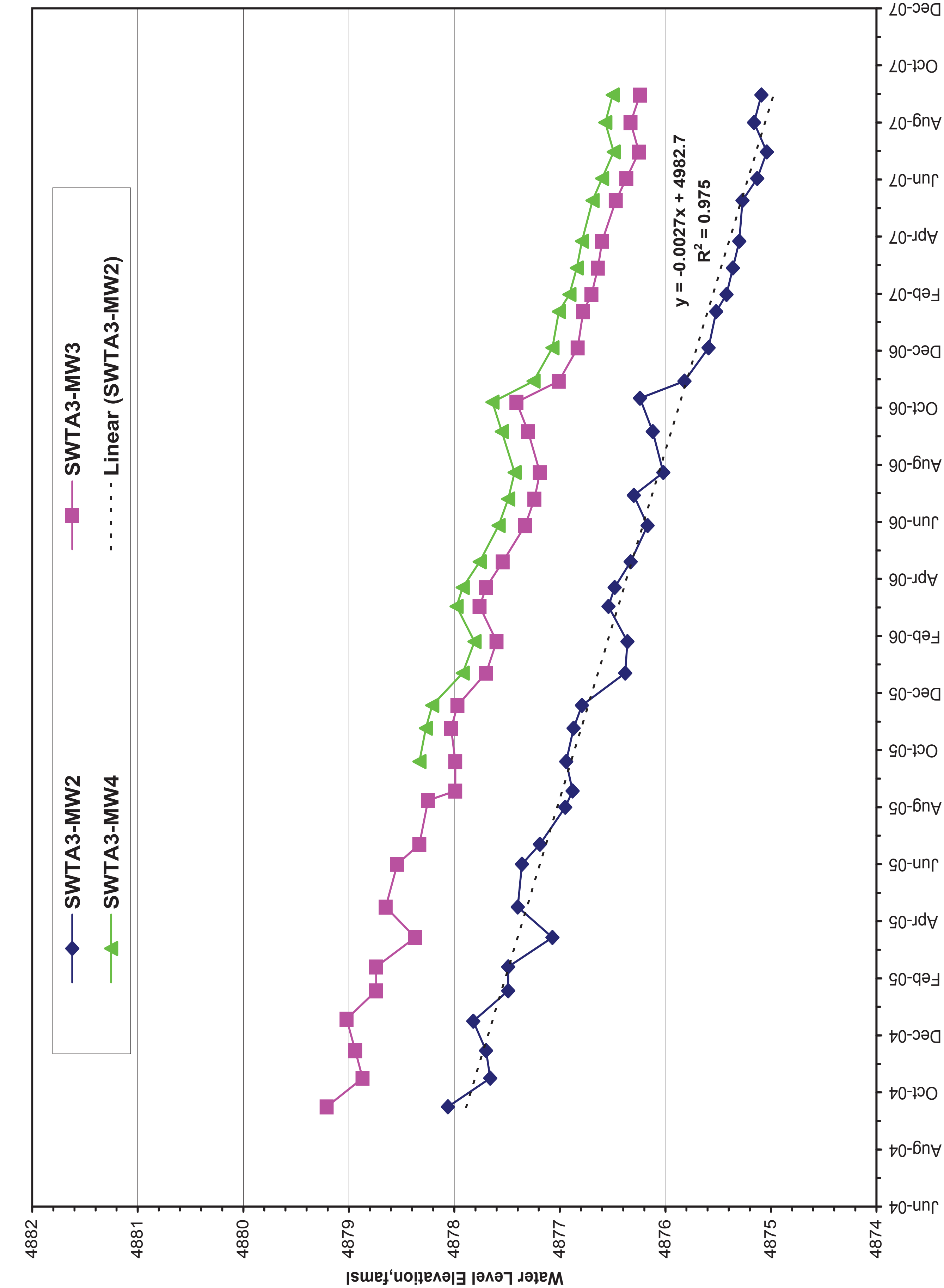

Figure G-14. Wells West of TA-III (2 of 2)

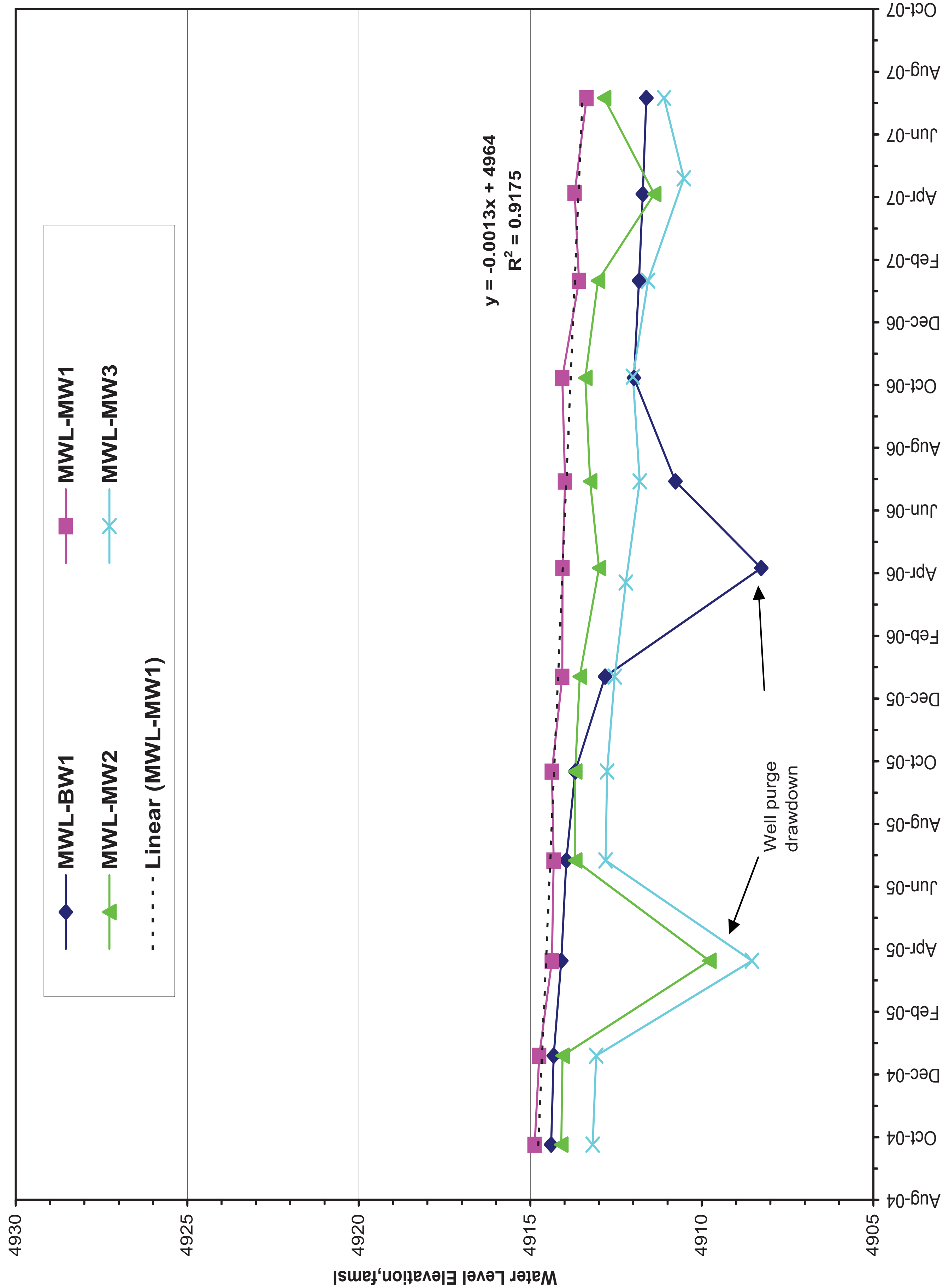

Figure G-15. MWL Area Wells (1 of 2)

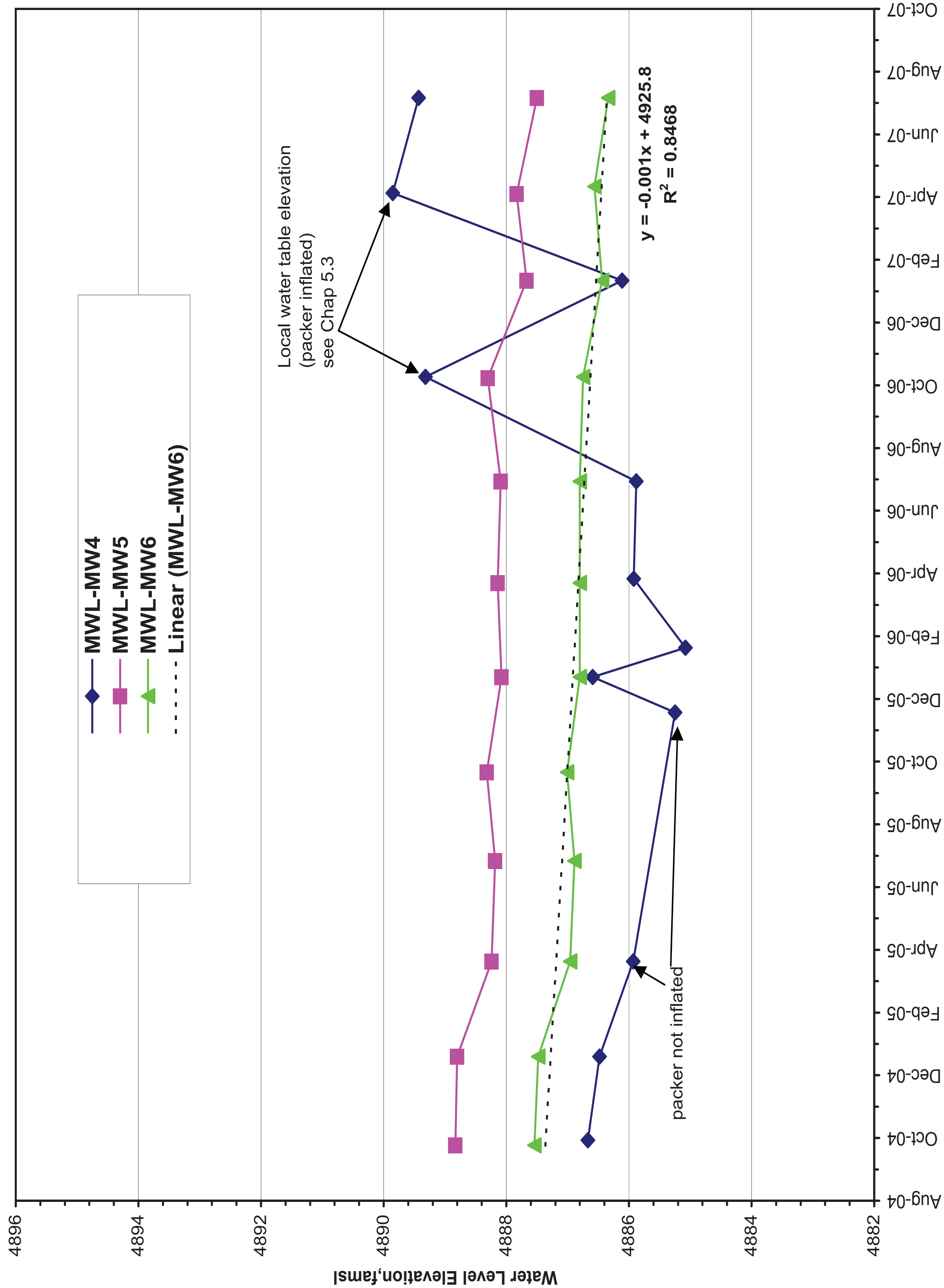

Figure G-16. MWL Area Wells (2 of2)

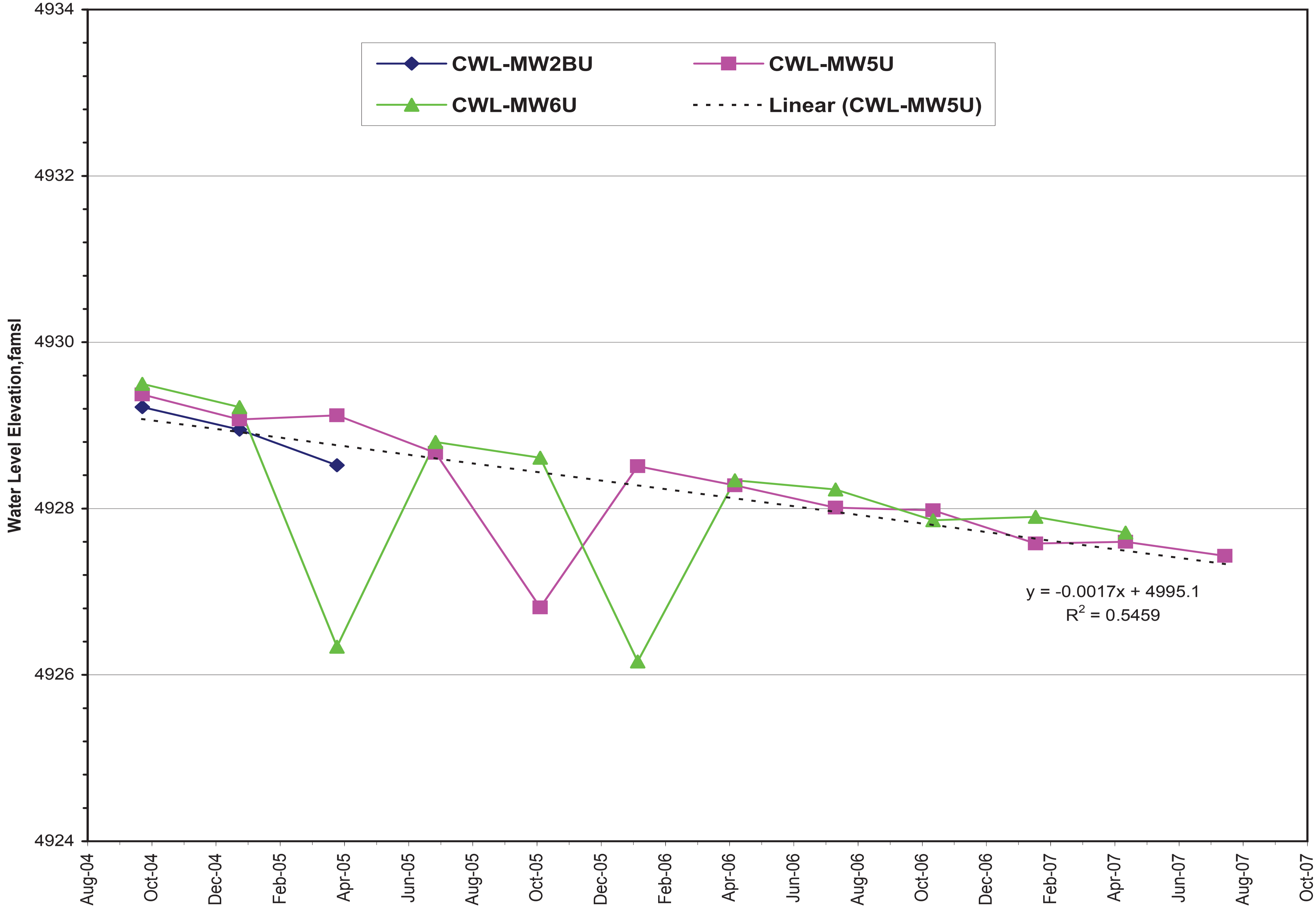

Figure G-17. CWL Area Wells (1 of 2)

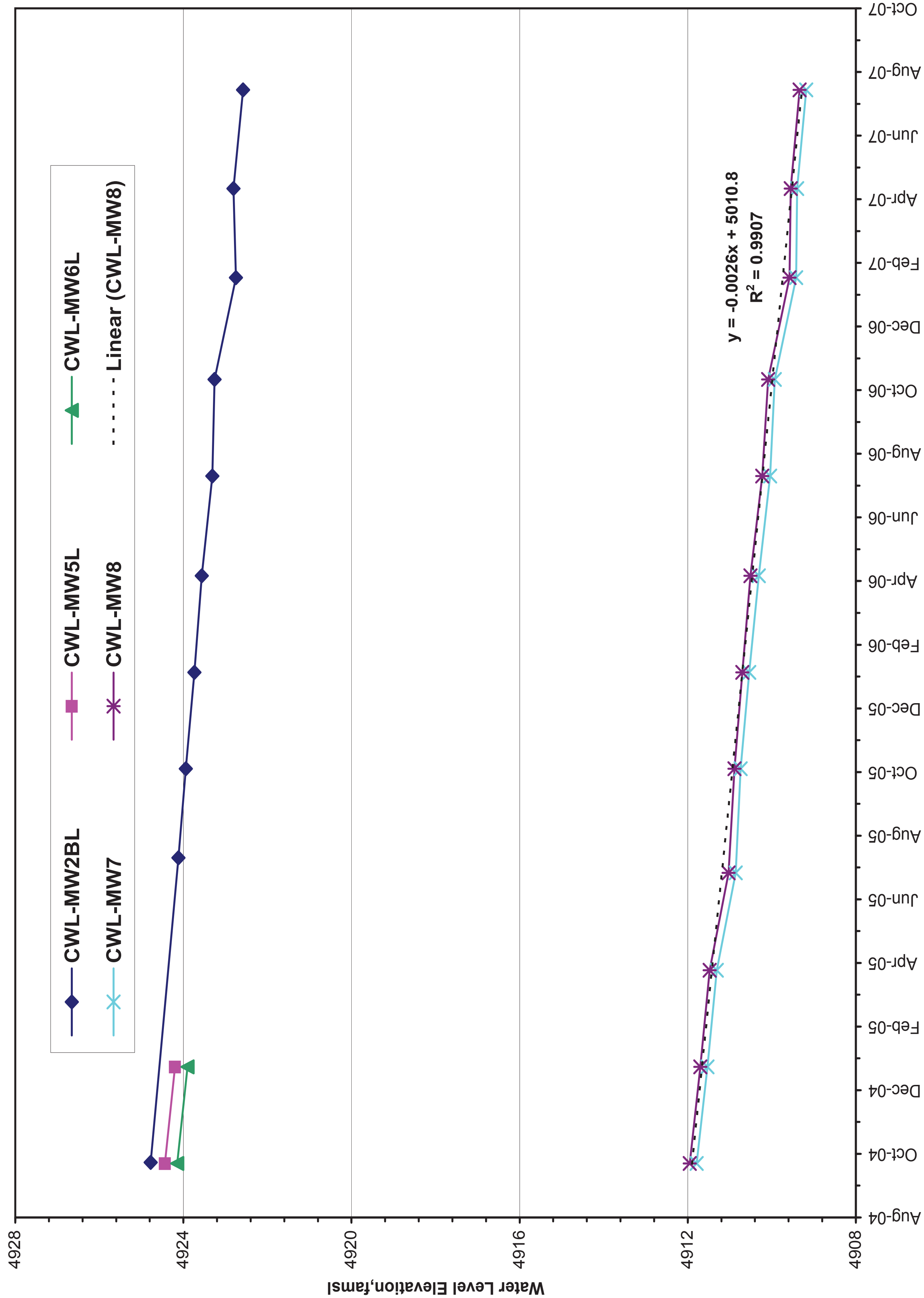

Figure G-18. CWL Area Wells (2 of 2)

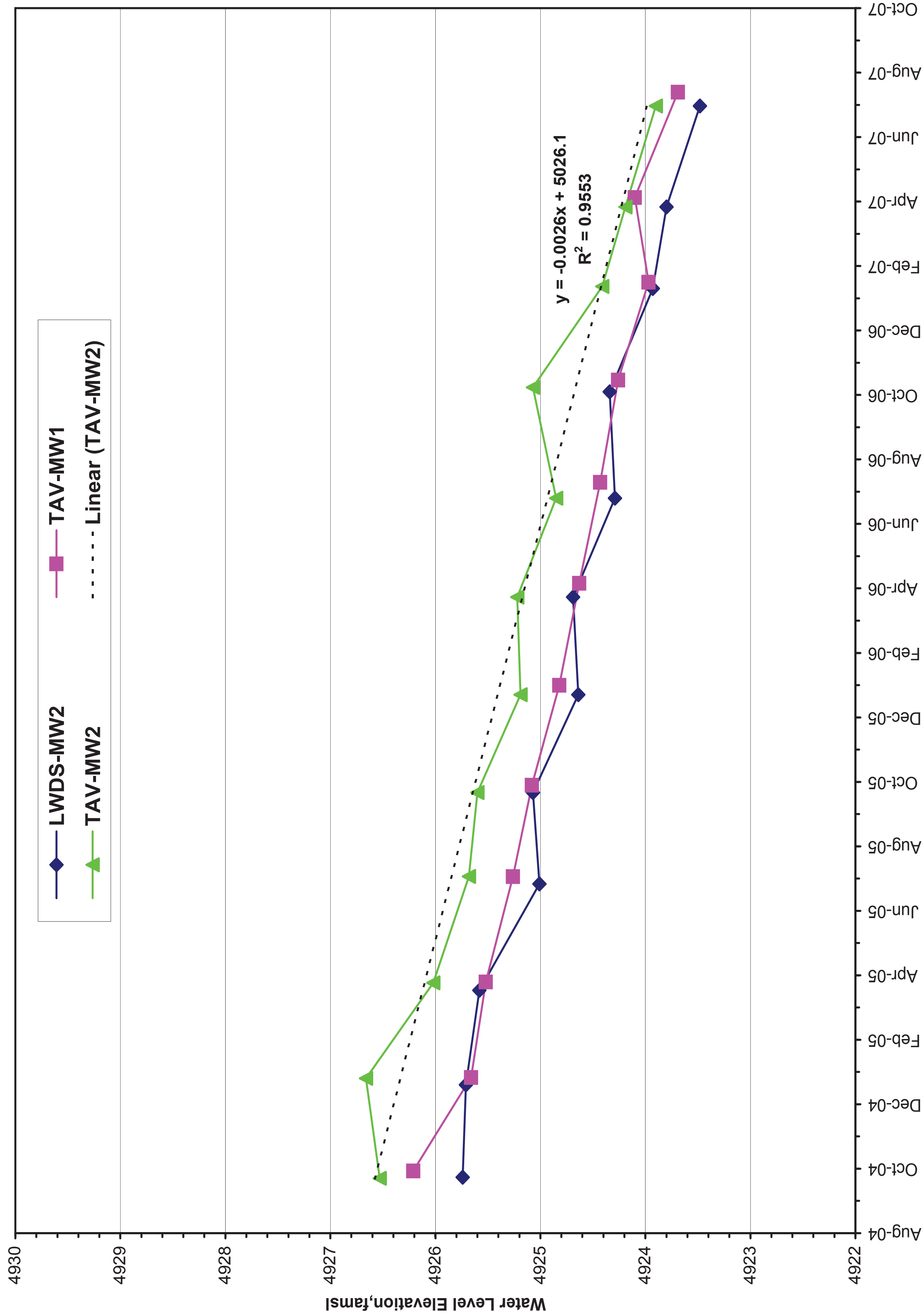

Figure G-19. TA-V Area Wells (1 of 4)

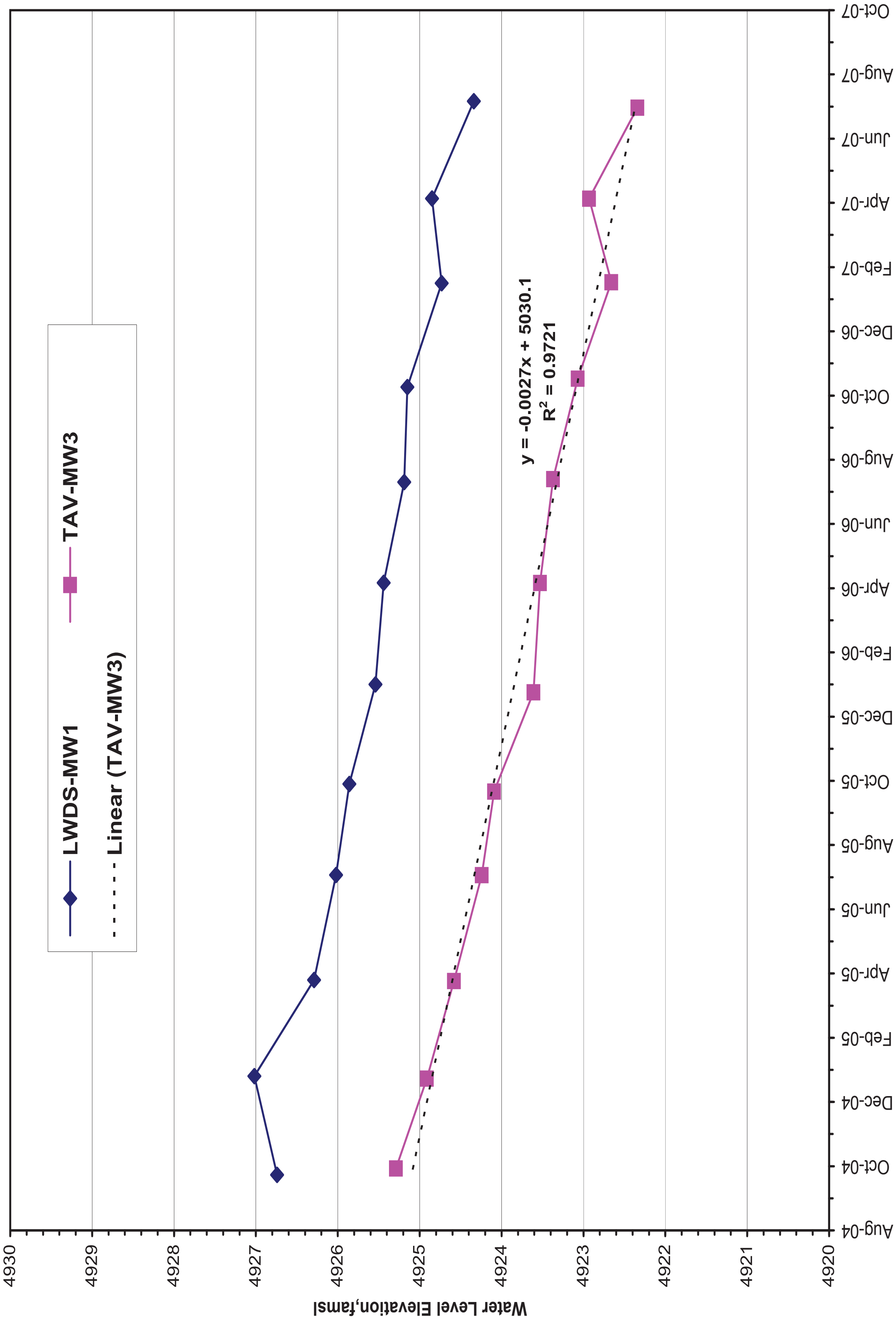

Figure G-20. TA-V Area Wells (2 of 4)

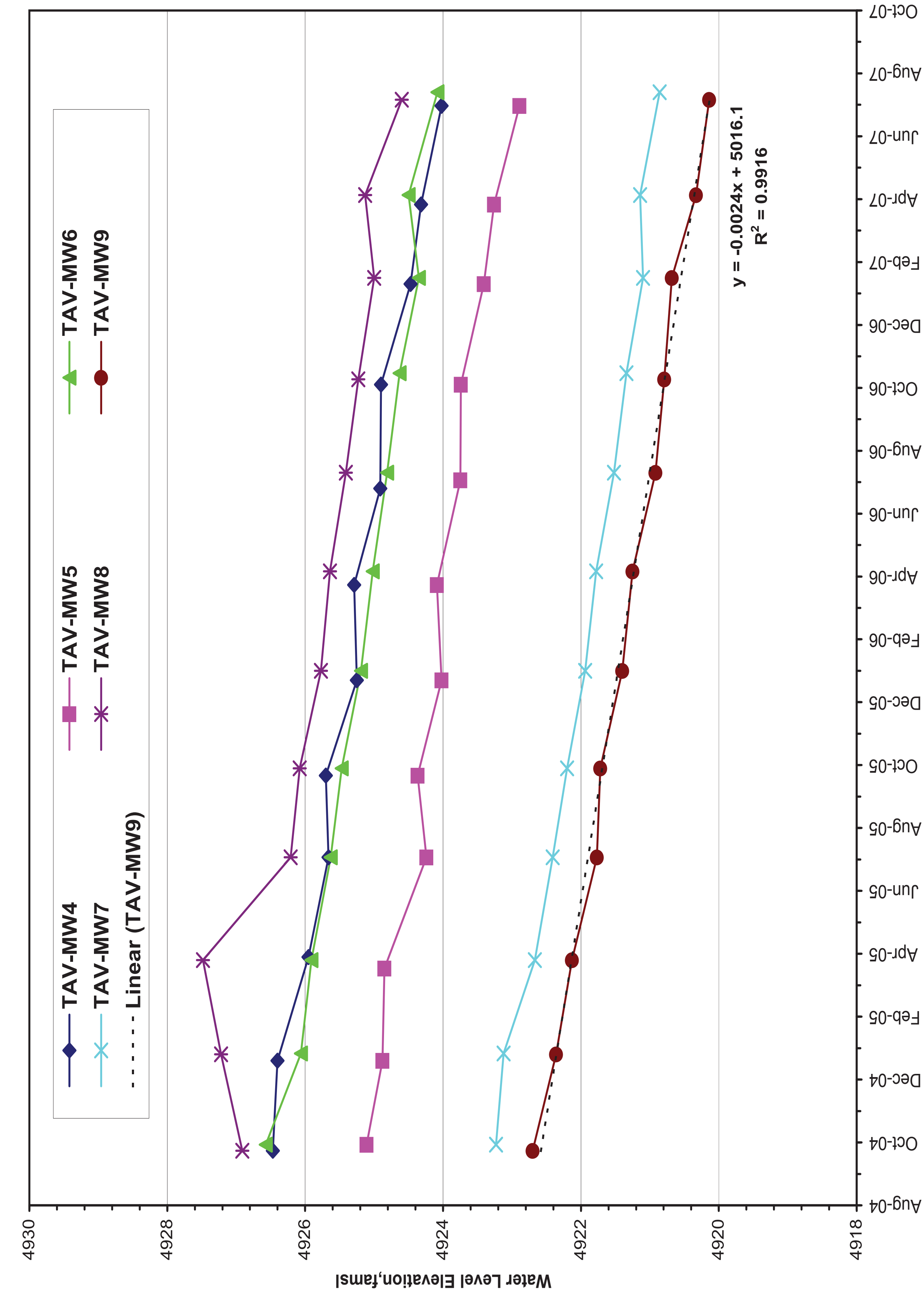

Figure G-21. TA-V Area Wells (3 of 4)

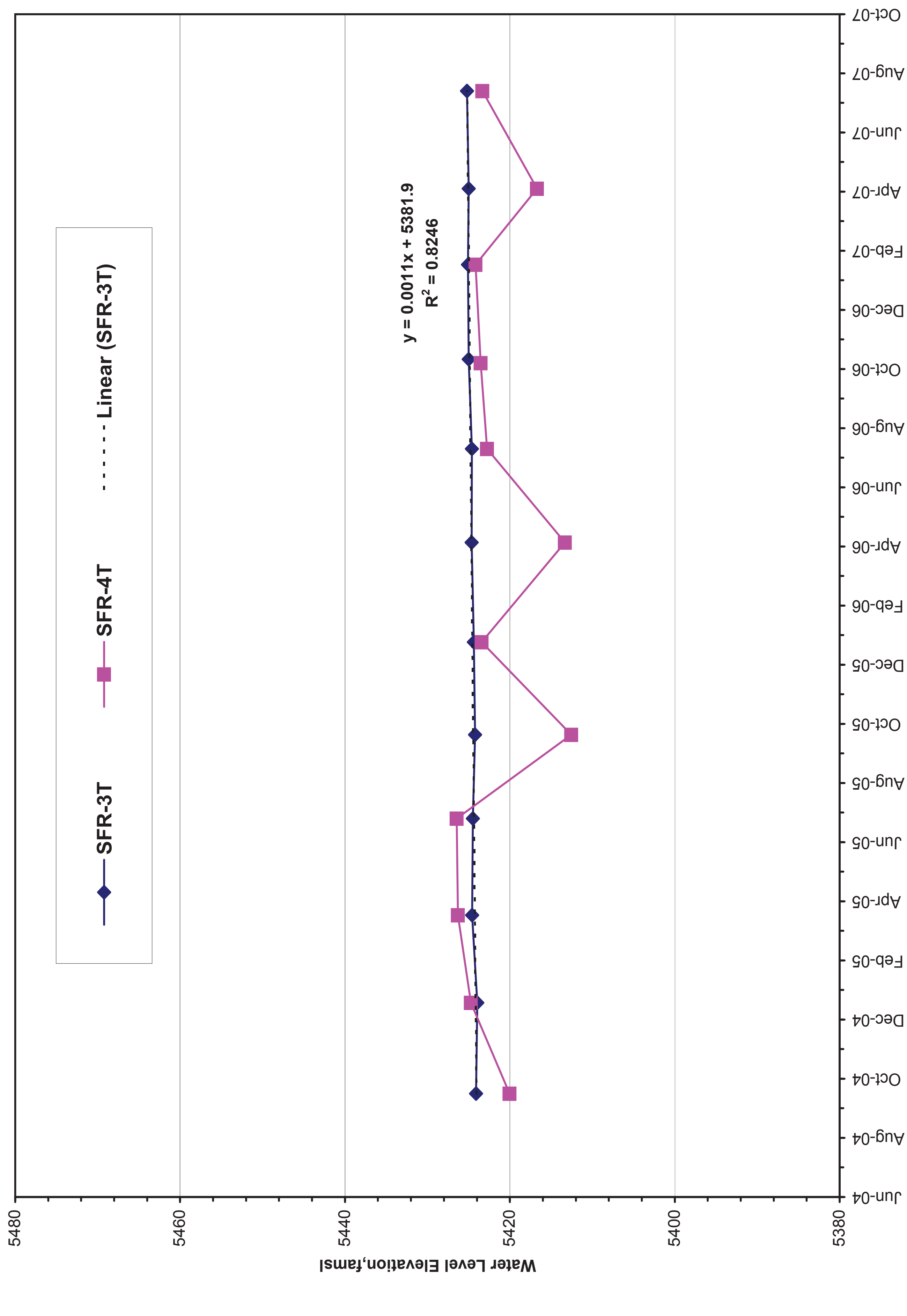

Figure G-22 TA-V Area Wells (4 of 4)

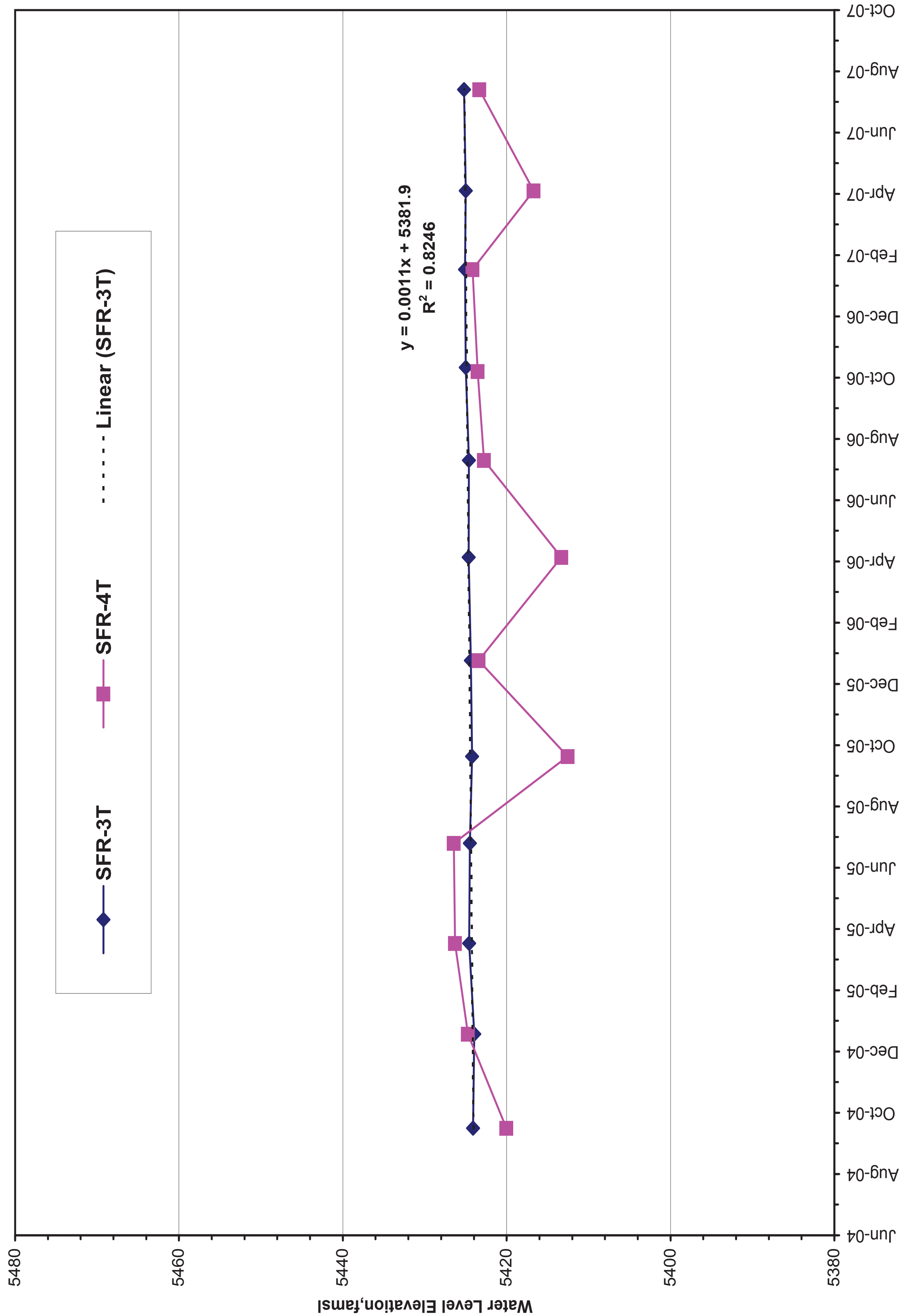

Figure G-23. KAFB South Area Wells (1 of 2)

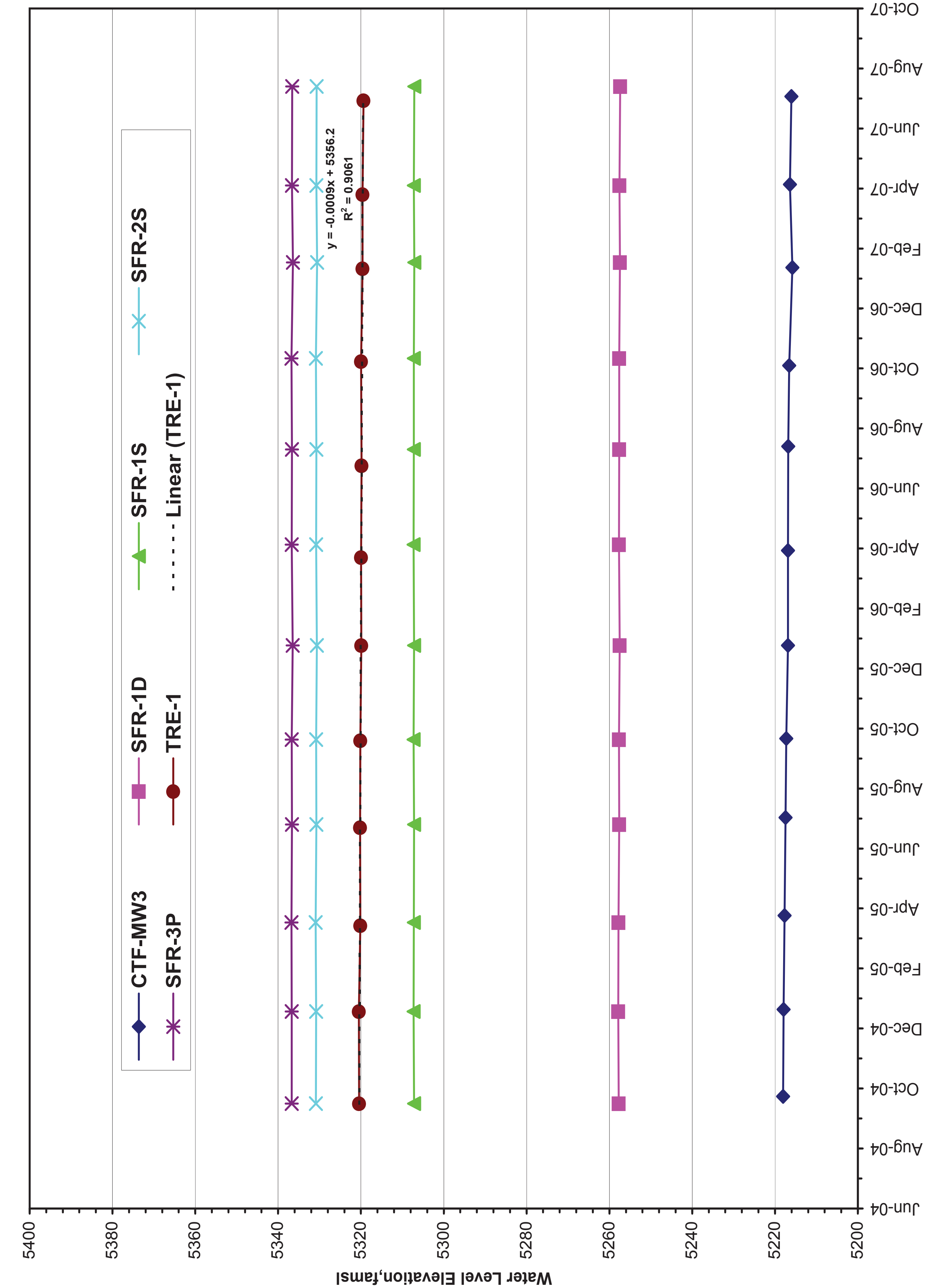

Figure G-24. KAFB Sou th Area Wells (2 of 2)

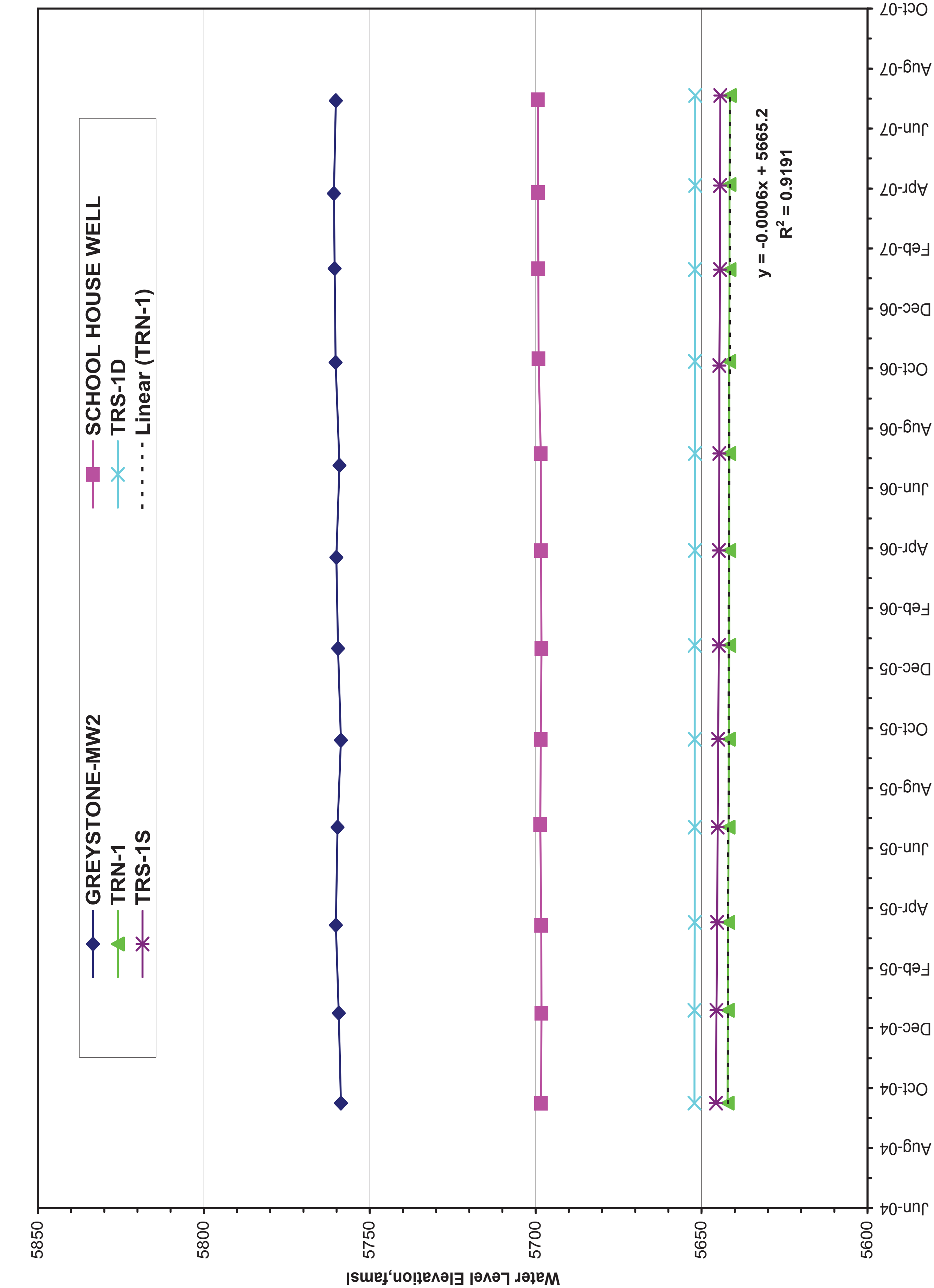

Figure G-25. KAFB East Wells

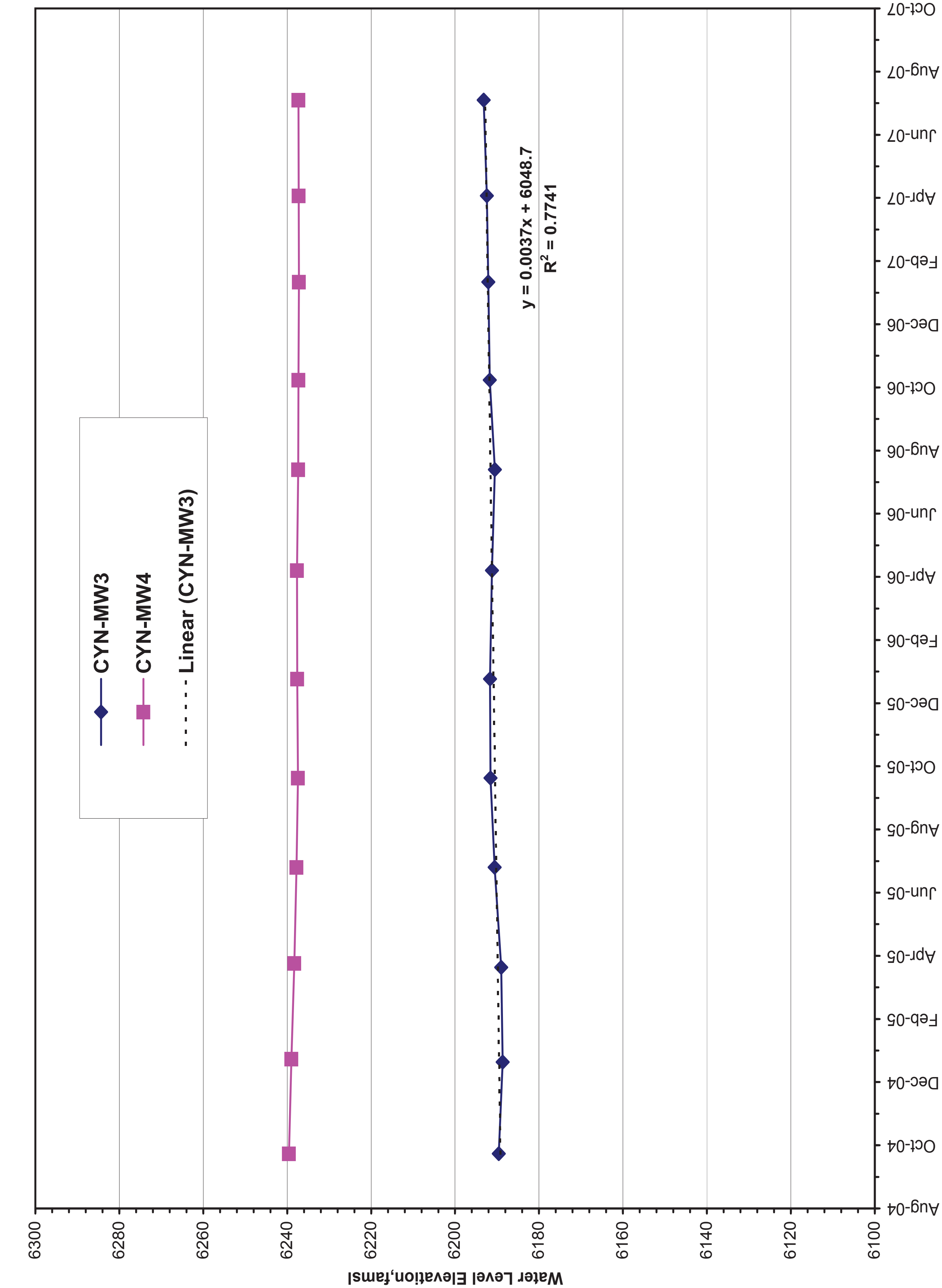

Figure G-26. Burn Site Groundwater Area Wells

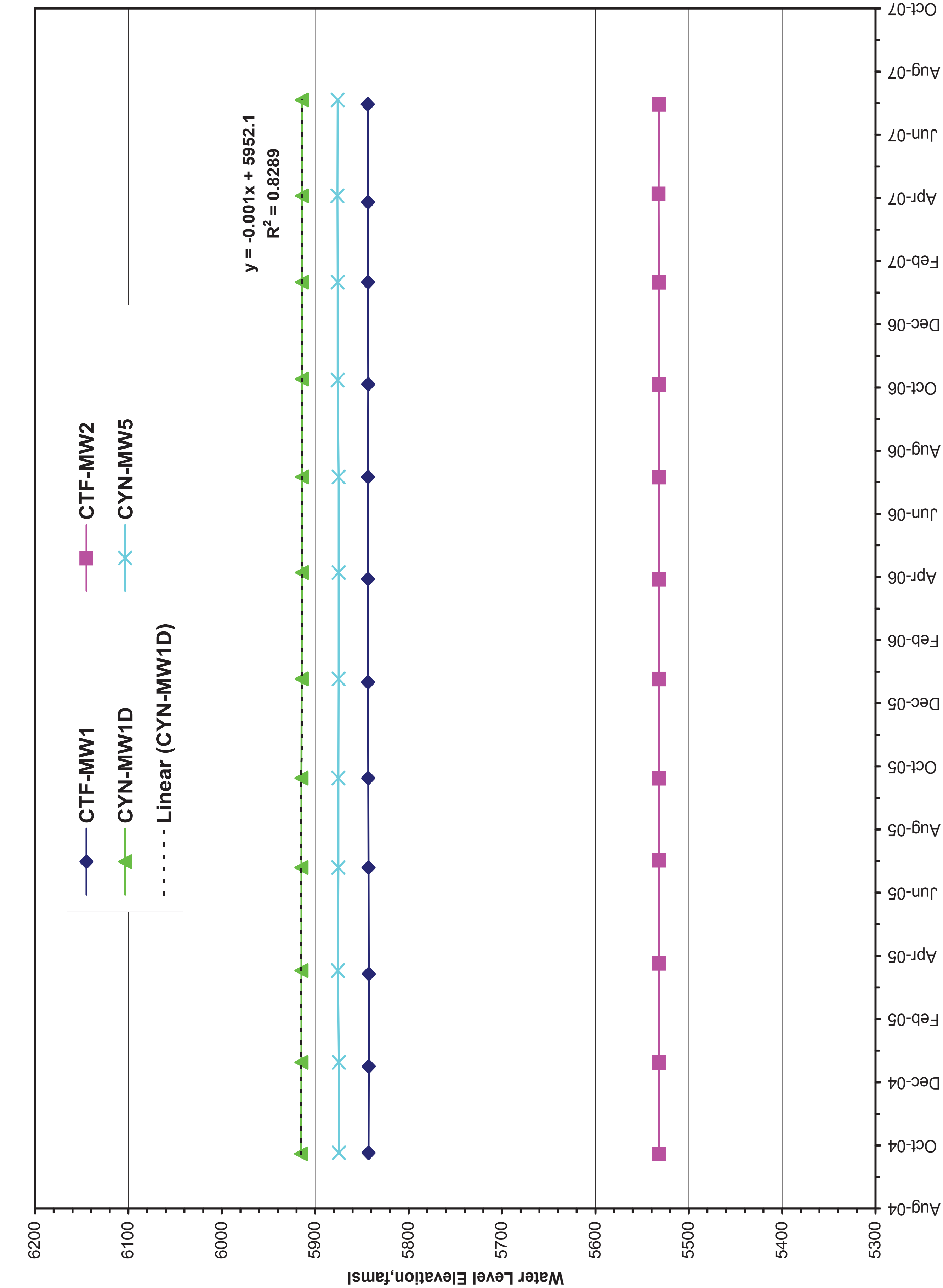

Figure G-27. Canyon Groundwater Area Wells /Coyote Test Field Wells

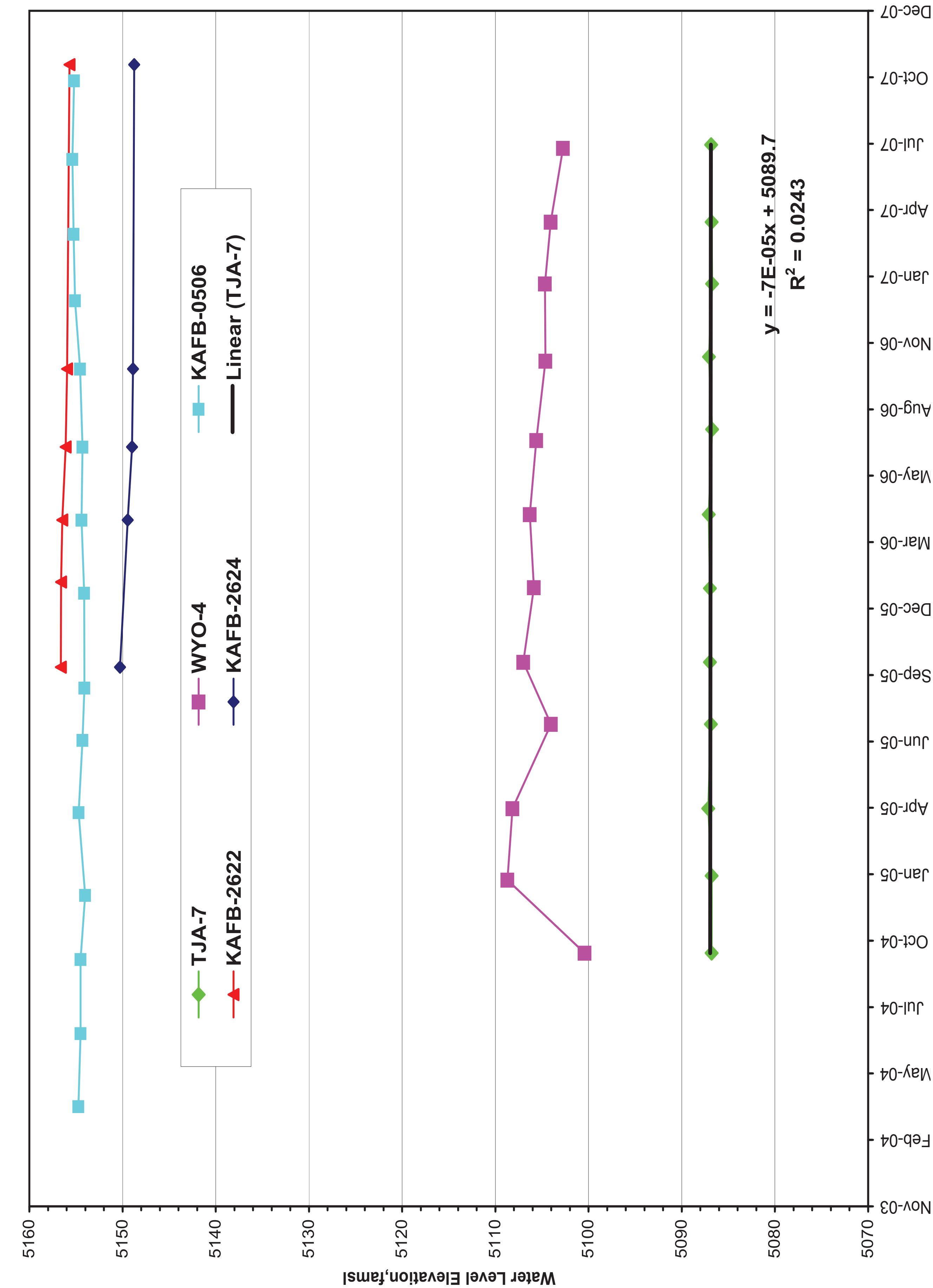

Figure G-28. Perched Groundwater System Wells (1 of 3)

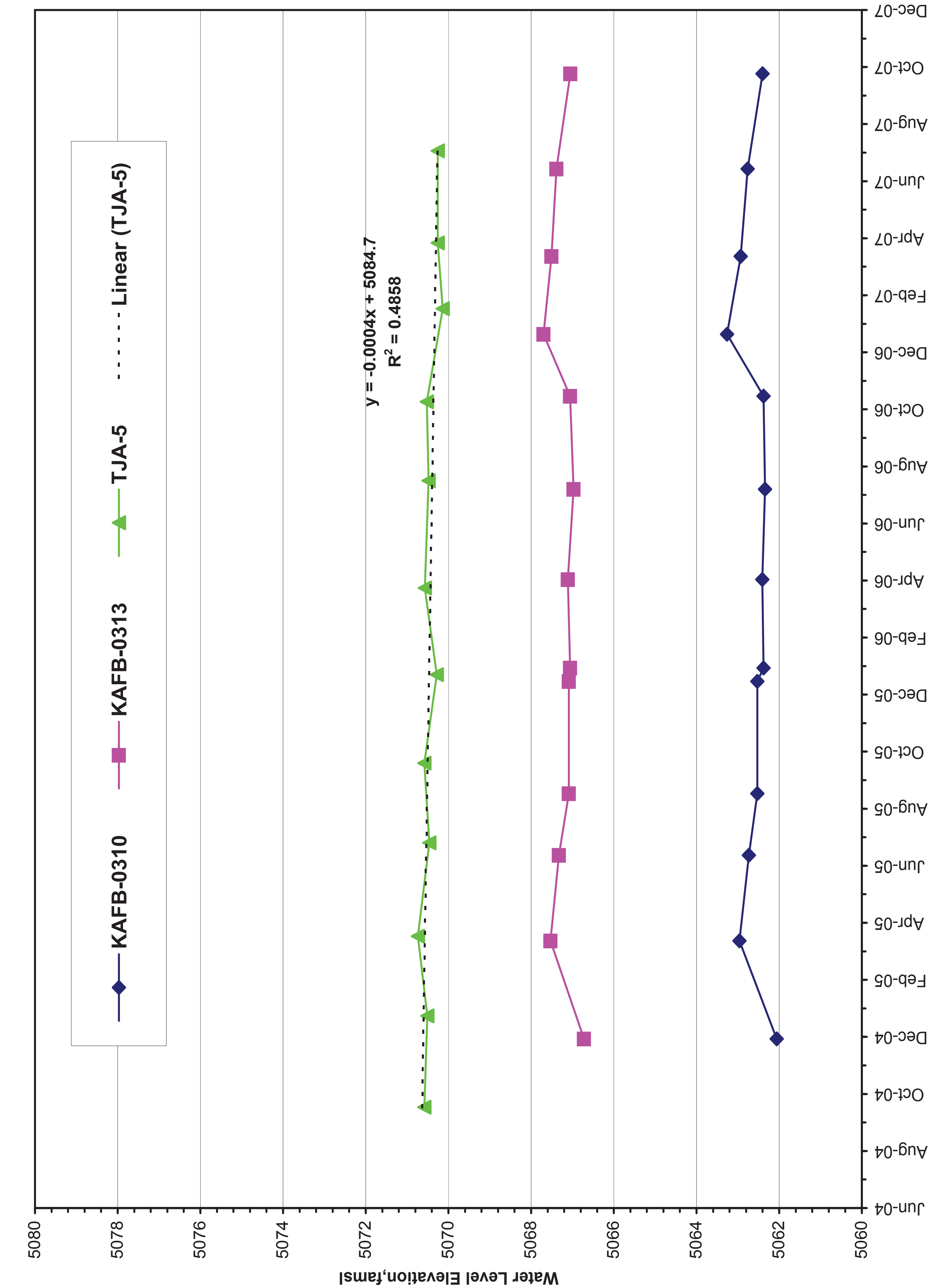

Figure G-29. Perched Groundwater System Wells (2 of 3)

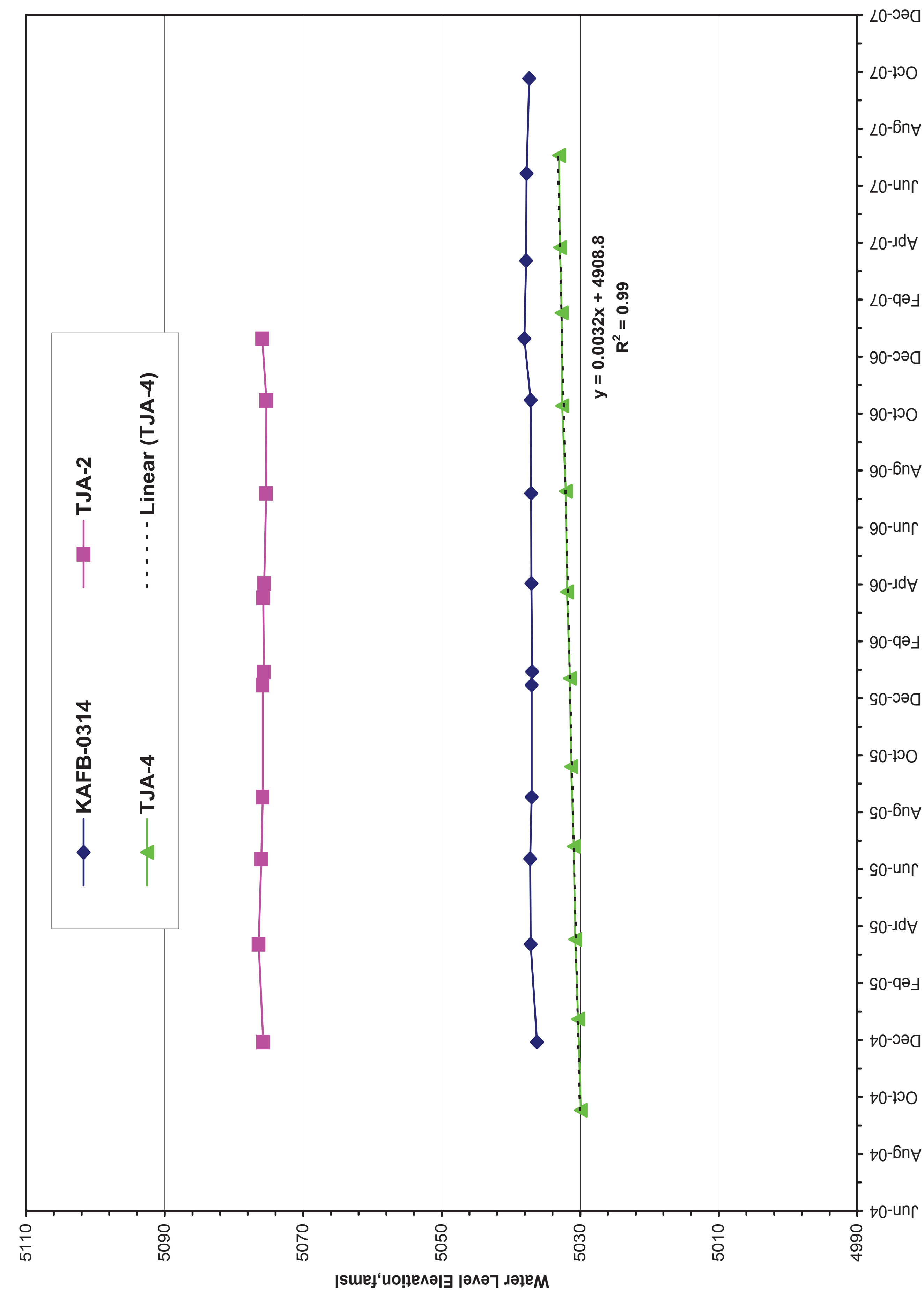

Figure G-30. Perched Groundwater System Wells (3 or 3)