NOTICE

All drawings located at the end of the document.

1F100

ER/WM&I DDT

000106102

Source/Driver: (Name & Number from ISP, IAG milestone, Mgmt. Action, Corres. Control, etc.)	Closure #: (Outgoing Correspondence Control #, if applicable)	Due Date
M. R. Wood **Originator Name**	J. Moore **QA Approval**	M. C. Broussard **Contractor Manager(s)**

Lane Butler **Kaiser-Hill Program Manager(s)**	Alan Rodgers **Kaiser-Hill Director**

Document Subject:

"Draft Final Technical Memorandum, Monitoring of the PU&D Yard Plume" – MCB – 055 – 99

KH-00003NS1A September 27, 1999

Discussion and/or Comments:

As requested, please find enclosed eight (8) copies of the "Draft Final Technical Memorandum, Monitoring of the PU&D Yard Plume". Four (4) copies are for Kaiser-Hill and four (4) are for distribution to DOE.

If you have any questions concerning this transmittal, please contact Mark Wood at extension 6689.

aw

cc:
A. C. Crawford, w/o
RMRS Records

1/47

CEX-010-98

ADMIN RECORD

RF/RMRS-99-441.UN

TECHNICAL MEMORANDUM

GROUNDWATER MONITORING OF THE PU&D YARD VOC PLUME

Draft Final

September 1999

TECHNICAL MEMORANDUM
GROUNDWATER MONITORING OF THE PU&D YARD VOC PLUME

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 PROJECT DESCRIPTION 1

2.1 BACKGROUND 2

2.2 PREVIOUS INVESTIGATIONS 2

2.3 HYDROGEOLOGIC SETTING 7

2.4 CONTAMINANT DISTRIBUTION 9

2.5 EVIDENCE OF NATURAL ATTENUATION 12
- 2.5.1 Plume Equilibrium 12
- 2.5.2 Degradation Products 15
- 2.5.3 Hydrogeologic Factors 15
- 2.5.4 Surface Water Quality Impacts 16
- 2.5.5 Conclusions Concerning Natural Attenuation in the PU&D Yard Plume 16

3.0 PROPOSED ACTION 17

3.1 PROPOSED APPROACH 17

3.2 WORKER HEALTH AND SAFETY 18

3.3 WASTE MANAGEMENT 19

4.0 IMPLEMENTATION SCHEDULE 19

5.0 REFERENCES 20

APPENDICES

Appendix A – Historical Analytical Data for Selected PU&D Yard Plume Wells
Appendix B – Volatile Organic Compound Data for Surface Water Locations SW099 and SW100

3

FIGURES

2-1 PU&D Yard Groundwater VOC Plume 3
2-2 Present Sanitary Landfill Groundwater Intercept and Diversion System 8
2-3 Potentiometric Surface Map of the PU&D Yard Plume Area 10
2-4 Trend Plots for Selected Analytes and Wells 13

TABLES

1-1 RFCA Surface Water Action Levels for PU&D Yard Plume Contaminants of Concern ... 1
2-1 Detected VOCs in Groundwater (μg/L) for PU&D Yard Wells Installed in 1997 6

2

ACRONYMS

1,1,1-TCA	1,1,1- Trichloroethane
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
1,2-DCE	1,2-Dichloroethene
µg/L	micrograms per liter
AHA	Activity Hazard Analysis
CFR	Code of Federal Regulations
DOE	Department of Energy
EPA	Environmental Protection Agency
ER	Environmental Restoration
FO	Field Operations
gpm	Gallons per minute
HASP	Health and Safety Plan
HRR	Historical Release Report
IDM	Investigation Derived Material
IMP	Integrated Monitoring Plan
IHSS	Individual Hazardous Substance Site
mg/Kg	milligram per kilogram
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PPE	personal protective equipment
PU&D Yard	Property Utilization, Storage, and Disposal Yard
RAAMP	Radioactive Ambient Air Monitoring Program
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RMRS	Rocky Mountain Remediation Services, L.L.C.
SAP	Sampling and Analysis Plan
TCE	Trichloroethene
UHSU	upper hydrostratigraphic unit
VOC	volatile organic compound

5

1.0 INTRODUCTION

The Property Utilization, Storage, and Disposal Yard (PU&D Yard) Volatile Organic Compound (VOC) Plume originated from releases that occurred at or in the vicinity of the PU&D Yard (Individual Hazardous Substance Sites [IHSS] 170, 174A, and 174B), previously designated as a part of the former Operable Unit (OU) 10. PU&D Yard source areas, IHSSs 170, 174A, and 174B, are currently proposed for no further action (RMRS, 1999a) based on the results of a pre-remedial investigation undertaken in 1997 (RMRS, 1997). The primary contaminants in the PU&D Yard VOC groundwater plume are trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethene (1,2-DCE), and carbon tetrachloride, which are consistently above Tier II action level criteria. Concentrations of 1,1,1-trichloroethane (1,1,1-TCA) and 1,1-dichloroethane (1,1-DCA) are also frequently detected in the plume, however, are currently below the Tier II action levels.

This technical memorandum serves to provide the basis and technical approach for recommending monitoring as an appropriate course of action for protecting surface water quality from groundwater contamination associated with the PU&D Yard VOC plume. This recommendation is based on an evaluation of known conditions, relevent groundwater and surface water data, and other potential factors, such as natural attenuation, that could affect contaminant transport and plume migration. Surface water action levels for the PU&D Yard plume contaminants of concern are listed in Table 1-1.

Table 1-1 RFCA Surface Water Action Levels for the PU&D Yard Plume Contaminants of Concern

Compound	Surface Water Action Levels (µg/L) Tier I	Tier II
Carbon Tetrachloride	500	5
1,2-Dichloroethene	7,000	70
1,1-Dichloroethene	700	7
Tetrachloroethene	500	5
Trichloroethene	500	5

2.0 PROJECT DESCRIPTION

This section provides a brief project background and data summary along with a description of the hydrogeologic setting and existing site conditions. More detailed information can be found in the following documents:

- *1997 Annual RFCA Groundwater Monitoring Report,* (RMRS, 1998);

- *Geologic and Hydrogeologic Characterization Reports for the Rocky Flats Environmental Technology Site* (EG&G, 1995b and 1995c);
- *Data Summary Report for IHSSs 170, 174A, and 174B, Property Utilization and Storage Yard,* (RMRS, 1997), and;
- *Historical Release Report* (HRR) (DOE, 1992) and *Annual Update for the HRR* (RMRS, 1999a).

2.1 BACKGROUND

VOC groundwater contamination has historically been detected at the upgradient periphery of the Present Sanitary Landfill. The presence of VOC contamination in upgradient landfill wells, combined with historical documentation, land usage, and hydrogeologic considerations, point to the PU&D Yard, also known as IHSS 170, including IHSSs 174A and 174B, as being the most likely source of groundwater contamination in this area.

Figure 2-1 illustrates the location of the PU&D Yard and associated VOC plume with relationship to the Present Sanitary Landfill and Industrial Area. The plume extends from the PU&D Yard on the west to the landfill pond dam on the east resulting an overall length of about 3,000 feet and maximum width of about 570 feet. Plume occurrence is restricted mainly to a narrow upland ridge that separates the North Walnut Creek and No Name Gulch drainages. The north boundary of the plume is bounded by the Present Sanitary Landfill and landfill pond, which occupies the headcut of the former No Name Gulch drainage. Plume extent is currently defined by numerous existing and abandoned monitoring wells, some of which have been monitored quarterly since 1987.

The PU&D Yard IHSSs are located in the northwest buffer zone and were former storage areas for empty drums, cargo boxes, and dumpsters from 1974 to 1994 that contained unknown residual quantities and types of solvents and waste materials. Two areas within IHSS 170, IHSSs 174A and 174B, were designated for the storage of hazardous materials, specifically empty drums at IHSS 174A and a dumpster for the storage of stainless steel sheet metal chips and lathe turnings coated with freon-based or oil-based lathe coolant at IHSS 174B. Potential VOC contamination is probably due to leaking drums containing oil-solvents or metal turnings coated with oil-solvents at the surface, or as surface spills.

2.2 PREVIOUS INVESTIGATIONS

Previous information on IHSSs 170, 174A, and 174B (formerly part of Operable Unit 10 [OU 10]) is documented in an internal letter (Rockwell, 1987), the Closure Plan for the Container Storage Area (Rockwell, 1988), the OU

10 Phase I Resource Conservation and Recovery Act (RCRA) Field Investigation/Remedial Investigation (RFI/RI) Work Plan (DOE 1992a), Draft Technical Memorandum No. 1 - Data Summary for OU 10 (EG&G, 1995a), the Final Historical Release Report (HRR) (DOE, 1992a), Annual HRR Update Report (RMRS, 1999a), the Hydrogeologic and Geologic Characterization Reports for RFETS (EG&G, 1995b and 1995c), 1997 Annual RFCA Groundwater Monitoring Report (RMRS, 1998), and the Data Summary Report for IHSSs 170, 174A, and 174B, Property Utilization and Storage Yard (RMRS, 1997).

A soil gas survey performed per the Phase I RFI/RI consisted of 235 soil gas sample locations, some of which indicated the presence of volatile organic contaminants in subsurface soil. The primary VOCs detected were: acetone, benzene, TCE, PCE, and 1,1,1-TCA. Soil gas survey anomalies indicative of subsurface contamination were identified in three areas, 1) the east-southeast side of IHSS 170, 2) the northeast corner of IHSS 170 and the north side of IHSS 174A, and 3) the oil stain area in IHSS 174B.

A total of 71 surface soil locations were sampled for the RFI/RI Work Plan (DOE, 1992b). Thirty seven soil samples from IHSS 170, 26 soil samples from IHSS 174A, and eight soil samples from IHSS 174B were analyzed for total metals, semivolatile organic compounds, pesticides, and polychlorinated biphenyl's (PCBs). Aroclor-1254 was observed in four samples from IHSS 174A at concentrations greater than the Rocky Flats Cleanup Agreement (RFCA) (DOE, 1996a) Tier II but less than the Tier I surface soil action levels (EG&G, 1995a). Beryllium was observed in two samples from IHSS 174A at concentrations greater than the RFCA Tier II but less than the Tier I surface soil action levels (EG&G, 1995a). Vanadium was observed in one sample from IHSS 174A at a concentration of 43,400 mg/Kg which is greater than the RFCA Tier I surface soil action level for industrial use but less than the RFCA Tier I surface soil action level for open space use.

High Purity Geranium and Sodium Iodide surveys of IHSSs 170, 174A, and 174B were also performed as part of the RFI/RI (EG&G, 1995a) with no anomalous results observed. However, according to an internal letter (Rockwell, 1987), a small spill of approximately 100 grams of green powder was reported from a drum in December 1987. The powder contained approximately 60 percent aluminum oxide, 32.5 percent chromium oxide, 3,000 pCi/g plutonium, 1,000 pCi/g americium, and 100 pCi/g uranium-235. Approximately 95 percent of the spilled powder was contained in the sample. The source of the powder was a result of using two drums of trichlorotrifluoroethane to clean some lines associated with the replacement of sintered metal filters on the fluidized bed incinerator. The liquid was subsequently discharged into storage tanks at Building 774 and the drum(s) were dispositioned at the PU&D Yard. This incident is most probably associated with IHSS 174A.

9

In 1997, a pre-remedial investigation of IHSSs 170, 174A, and 174B was conducted to evaluate if a source for VOCs in subsurface soils was present at the PU&D Yard that could be impacting groundwater and thus require remedial action (RMRS, 1997). A total of twenty soil borings were advanced at the three IHSSs resulting in the collection of thirty-eight subsurface soil samples and six groundwater samples. VOCs were not detected above Tier I action level concentrations in any of the soil samples, although a small area of below the current Tier I action level for PCE contamination (BH17497) was identified as contributing to groundwater contamination greater than the Tier I action level. The report concluded that the PU&D Yard IHSSs did not require remediation for VOC soil contamination.

A more extensive investigation of the PU&D Yard VOC plume was conducted as part of the 1997 Well Abandonent and Replacement Program (WARP) (RMRS, 1998). Twelve new monitoring wells were installed within and around the perimeter of the PU&D Yard and downgradient areas, as shown in Figure 2-1. In addition, a line of fourteen well were installed along the Northwest Access road to locate potential southern plume pathways to North Walnut Creek. Details of these well installations are provided in RMRS (1998). In addition, a follow-up investigation into the function of the groundwater intercept and diversion system and it's possible role in collecting and discharging PU&D Yard plume contaminants downgradient of the landfill was undertaken in 1998. This investigation consisted of a records search, field observations of drain valving, flow, and analytical results of samples collected at the drain outfalls in 1998 and 1999.

Table 2-1 presents the results of VOC groundwater sampling conducted at the PU&D Yard and surrounding area in monitoring wells 01097 through 02197 and 21197 through 22497 during the third and fourth quarters of 1997. For wells 01097 through 02197, detections of VOC compounds were found in all wells containing groundwater, including Tier II groundwater action level exceedances for TCE in wells 01497 and 02097; PCE in wells 01297 and 01397; and 1,1-DCE in wells 01497 and 01897. TCE, PCE, 1,1-DCE and 1,1,1-TCA were the most commonly detected compounds. The remaining compounds (carbon tetrachloride, chloroform, napthalene, 1,2-DCE, toluene, and 1,2,4-trimethylbenzene) were reported mainly at below detection levels as estimated quantitations (J qualifier). Wells 01797 and 02197 were dry at the time of sampling. Except for a few trace detections (<1 μg/L) of toluene, no VOC detections were reported for wells 21197 through 22497, thus indicating the absence of any significant PU&D Yard VOC plume movement towards North Walnut Creek. The B qualifier associated with the toluene results suggests that laboratory contamination is the probable cause for the positive detections in these samples. Additional VOC data for analytes detected in selected PU&D Yard wells during routine groundwater monitoring operations is presented in Appendix A.

10

Table 2 - 1 Detected Volatile Organic Compounds in Groundwater (ug/L)
PU&D Yard Monitoring Wells

WELL	Sample Date	Sample Number	TCE		PCE		Carbon Tetrachloride		Chloroform		Napthalene		cis-1,2 DCE		1,1 DCE		1,1 DCA		1,1,1 TCA		Toluene		1,2,4 Trimethyl-benzene	
01097	9/25/97	GW05613TE	1	U	2		1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.4	J	0.3	J
01197	9/29/97	GW05619TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
01297	9/25/97	GW05616TE	1	U	**7**		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
01397	9/30/97	GW05620TE	0.2	J	**5**		0.2	J	1	U	0.4	JB	1	U	1		1	U	5		1	U	1	U
01497	9/25/97	GW05614TE	**30**		4	J	**5**	J	6	U	6	U	6	U	**80**		3	J	170		6	U	6	U
01597	9/26/97	GW05617TE	1	U	2		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
01697	9/30/97	GW05623TE	4		0.5	J	1	U	1	U	1	U	1	U	2		1	U	4		1	U	1	U
01797									Dry - sample not collected															
01897	9/29/97	GW05622TE	4		0.6	J	0.8	J	0.3	J	1	U	1	U	**7**		1	U	20		1	U	1	U
01997	9/30/97	GW05621TE	2		4		1	U	1	U	1	U	1	U	2		1	U	6		1	U	1	U
02097	9/30/97	GW05618TE	**10**		2		1	U	0.4	J	1	U	0.8	J	2		3		7		1	U	1	U
02197									Dry - sample not collected															
21197	8/14/97	GW05599TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
21297	8/14/97	GW05598TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
21397	11/12/97	GW05656TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
21497	11/12/97	GW05657TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.2	JB	1	U
21597	11/12/97	GW05658TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.2	JB	1	U
21697	11/12/97	GW05659TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.3	JB	1	U
21797	11/12/97	GW05660TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
21897									Dry - sample not collected															
21997	11/12/97	GW05661TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
22097	11/11/97	GW05655TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
22197	11/11/97	GW05654TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
22297	11/10/97	GW05644TE	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
22397									Insufficient water for sample															
22497									Insufficient water for sample															
Groundwater Action Levels (K-H, 1997)			**5**		**5**		**5**		**100**		**1460**		**70**		**7**		**1010**		**200**		**1000**		**70**	

Note: U = Analyzed chemical was not detected
J = Estimated result - chemical detected below SQL
B = Chemical also found in method blank

Figure 2-2 illustrates the layout of the groundwater intercept and diversion system. Information presented in the *Phase I RFI/RI Work Plan for Operable Unit No. 7 - Present Sanitary Landfill* (DOE, 1991) and other Operable Unit 7 documentation contain engineering design specifications and a hydrologic analysis of system effectiveness, but contain little information on system operation, such as present day valving configurations and discharge data.

Discharge at drain outfalls SW099 and SW100 located below the landfill pond dam is usually minimal or absent. Observation of drain outfalls SW099 and SW100, located on Figure 2-2, was conducted at roughly monthly intervals during the Fall and Winter of 1998, and Spring of 1999. In December 1998, a sufficient amount of flow was observed at SW099 (0.007 gallons per minute [gpm] on 12/18/98) to justify sampling for VOCs. The SW100 outfall was dry during all site visits prior to April 1999, except for incident precipitation which had built up inside the weir box. On April 29, 1999, flows from both outfalls were observed and a complete sample set was collected for VOCs, metals, radionuclides (Pu-239/240, Am-241, uranium 233/234, uranium 235, uranium-238, and tritium), and water quality parameters (total dissolved solids, sulfate, fluoride, and nitrate/nitrite). Discharges of 0.5 gpm at SW099 and 1.3 gpm at SW100 were measured prior to sampling.

Appendix B presents the analytical results of the 1998 and 1999 sampling events at SW099 and SW100. VOCs characteristic of PU&D Yard groundwater contamination were not detected in samples collected at either outfall.

2.3 HYDROGEOLOGIC SETTING

The PU&D Yard is situated near the margin of a gently eastward sloping topographic and bedrock pediment surface mantled by unconsolidated Pleistocene Rocky Flats Alluvium, which is and underlain by claystones, siltstones, and sandstones of the Cretaceous Laramie Formation (EG&G, 1995b). East of this margin, colluvium-covered hillslopes dominate the landscape, except along valley bottoms where valley-fill alluvial deposits occupy the major stream courses.

The Rocky Flats Alluvium is comprised chiefly of poorly sorted, clayey gravels and sands with abundant cobble and boulder-sized material and discontinuous lenses of clay, silt, and sand. At the PU&D Yard, the thickness of this deposit ranges from approximately 10 to 40 feet. Hillside colluvial deposits are markedly finer-grained in texture, being comprised of clay, clayey gravels, and lesser amounts of sand and silt. These deposits were derived from geologic material exposed on the steep slopes and topographic highs, and were formed by slope wash, downslope creep, and landslide action. Valley-fill deposits were fluvially derived from upstream materials, and

consist of clay, silt, and sand with lenses of gravel. These deposits occur along the drainage bottoms in and adjacent to stream beds, and are most common in the eastern portions of RFETS.

The Laramie Formation unconformably underlies the Rocky Flats alluvium and other surficial deposits. It consists primarily of massive claystone and siltstone with discontinuous clayey sandstone units (EG&G, 1995b). The sandstone units typically exhibit lithologic and hydrologic characteristics (i.e., high matrix clay content and low permeability) that are not indicative of contaminant pathways.

The PU&D Yard VOC plume is primarily confined to the upper hydrostratigraphic unit (UHSU) which consists of Rocky Flats Alluvium, colluvium, and the weathered bedrock. Groundwater occurrence in the UHSU deposits is controlled by the local hydrogeologic setting. In the PU&D Yard area, the main sources of UHSU groundwater include infiltration of incident precipitation and seasonal leakage from diversion ditches located just to the north, especially during the Spring months. Depth to groundwater is approximately 5 to 20 feet with a hydraulic gradient of 0.01 ft/ft towards the east (EG&G, 1995c).

As shown on Figure 2-3, alluvial groundwater flows generally eastward across the pediment surface until it is intercepted by the Present Sanitary Landfill groundwater intercept and diversion system/No Name Gulch watershed to the northeast or North Walnut Creek watershed to the south and southeast. Groundwater is discharged from the Rocky Flats Alluvium to the colluvium at seeps found near the pediment rim which, in turn, discharges to the valley fill alluvium associated with North Walnut Creek and No Name Gulch. Alluvial groundwater also enters into the groundwater intercept system at the landfill perimeter and is discharged as surface water below the landfill pond dam into No Name Gulch (SW099 and SW100). In addition, it is possible that a small fraction of groundwater flow circumvents the groundwater intercept and diversion system, enters landfill refuse material, and is ultimately discharged from the toe of the landfill at SW097. Judging from the distribution of contaminant concentrations within the PU&D Yard VOC plume, the principal groundwater flow pathway from the PU&D Yard is towards No Name Gulch.

2.4 CONTAMINANT DISTRIBUTION

Technically, the VOC plume depicted in Figure 2-3 is a composite representation of TCE, PCE, 1,2-DCE, and vinyl chloride groundwater concentrations that exceed the Tier I and II action level criteria. The distribution of individual PU&D Yard contaminants of concern is more complex than depicted by the composite plume map. The composite plume boundaries were drawn based on a comparison of VOC compounds found within and

outside of the landfill. The data suggest that the chlorinated organic compounds observed in the PU&D Yard plume are prevalent in wells located south of the groundwater intercept system, while organic compounds found within the boundaries of the intercept system show more variable organic affinities (DOE, 1995, 1996b). Of special note is the presence of 1,1,1-TCA, which is a good indicator compound for PU&D Yard contamination. This compound is detected in wells south of the intercept system but not in wells within the intercept boundaries. The potential incursion of PU&D Yard plume contaminants into the landfill and the apparent extent of the PU&D Yard plume beyond the east face of the landfill indicates a potential future impact to the No Name Gulch drainage. As described previously in Section 2.2, sample results from drain discharges indicate that surface water quality in No Name Gulch is currently not being impacted by PU&D Yard plume contaminants.

The relatively high concentrations of TCE (20 to 30 μg/L), 1,1-DCE (10 to 80 μg/L), and 1,1,1-TCA (30 to 170 μg/L) in wells 70393 and 01497, and PCE in wells 01397 (5 μg/L) and 01297 (7 μg/L), borehole 17497 (1,700 μg/L), indicates the VOC contamination that is associated with the PU&D Yard, most probably IHSS 174A. From the PU&D Yard, these contaminants are observed to migrate longitudinally eastward along the south boundary of the landfill and laterally to the south, where alluvial groundwater containing plume contaminants discharge to the North Walnut Creek drainage as hillside seeps (i.e., well 61495) and shallow subsurface flow. Considering the fact that groundwater once discharged to the No Name Gulch valley headcut (indicated by seepage areas present in a 1937 aerial photograph) now filled with landfill refuse, the shape and orientation of the plume strongly suggests that plume migration is, at least partially, influenced by interaction with groundwater control structures (groundwater-intercept and slurry wall system) and diverted around the south perimeter of the landfill.

Near the distal end of the composite plume, a second potential source area is apparent from VOC signatures and concentrations at wells 7287 and B206489. The highest concentrations of TCE, PCE, and carbon tetrachloride in the PU&D Yard plume occur in well 7287. Well B206489, located next to 7287, also contains relatively high concentrations of TCE and 1,2-DCE. These wells are located near well B206389, which contains the highest concentrations of these analytes anywhere in the north buffer zone. This well is located north of the groundwater intercept and diversion system and technically monitors groundwater within the landfill rather than the PU&D Yard. The source of these contaminants are unknown, but is probably located somewhere in the eastern one third of the plume boundary near the contaminated wells and east of wells 6587, 6687, and 00597.

16

2.5 EVIDENCE OF NATURAL ATTENUATION

Natural attenuation processes include "a variety of physical, chemical, and biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume or concentration of contaminants in soil or groundwater" (EPA, 1997). This might include any or all of the following processes:

- Chemical Transformation,
- Biodegradation,
- Dilution,
- Dispersion,
- Sorption, and
- Volatilization

There are a number of potential mechanisms that could diminish the concentration or mobility of VOCs in the PU&D Yard Plume. Any individual process or combination of these processes could result in significantly lower downgradient contaminant concentrations. To a significant degree, contaminant type, local hydrogeologic conditions, and geochemical conditions will determine whether natural attenuation processes, both physical and degradation, will be effective in controlling the downgradient concentrations of contaminants. Because several of these processes likely apply to the PU&D Yard plume, the determination of a specific mechanism of attenuation is not critical. However, general conclusions regarding the evidence of natural attenuation can be made. This evidence is discussed in the following sections.

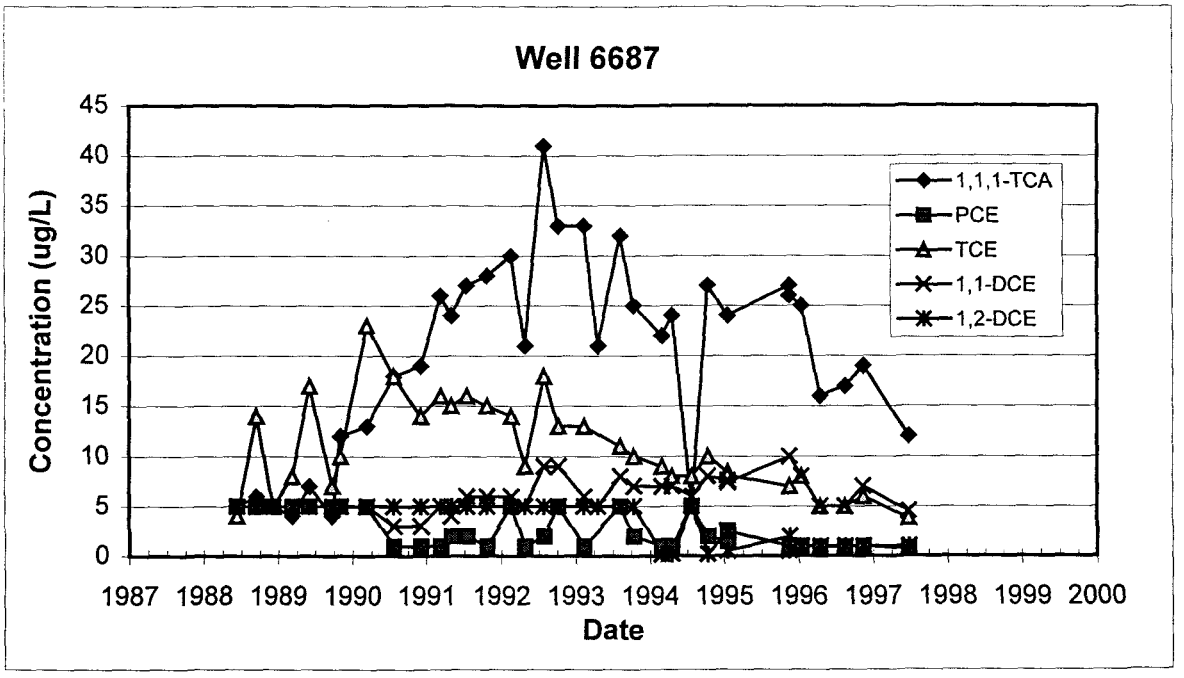
2.5.1 Plume Equilibrium

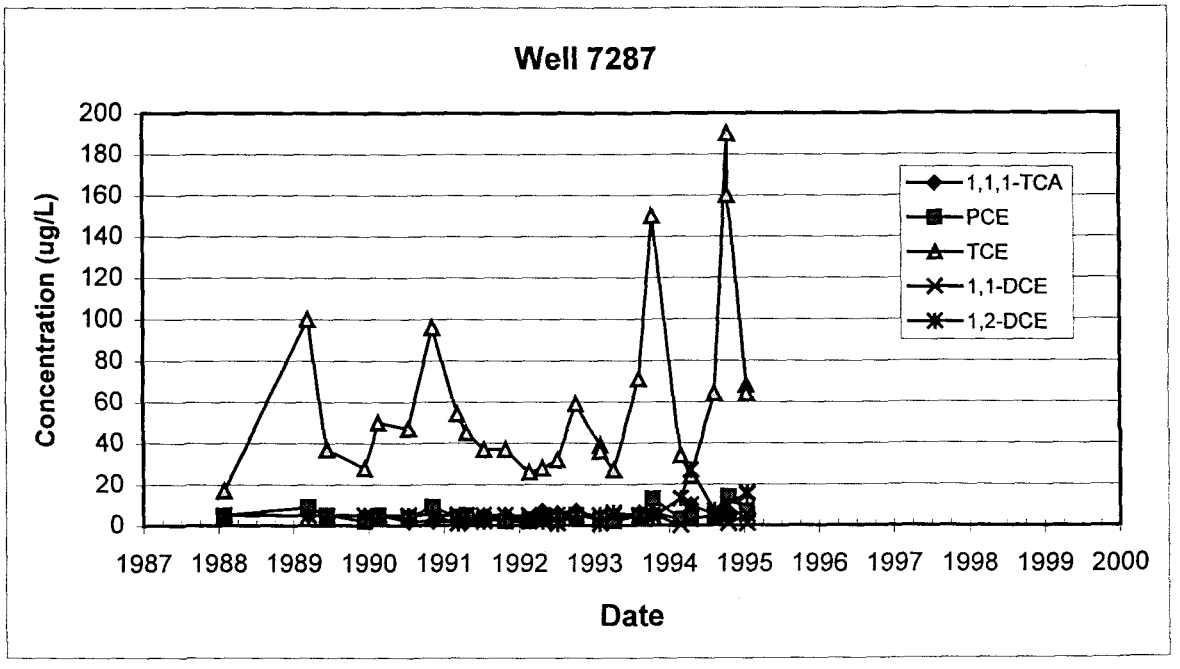
The low downgradient concentrations encountered during past investigations could be evidence that natural attenuation processes are diminishing contaminant concentrations and/or are slowing the migration of contaminants. Plume dynamics can be evaluated using contaminant trend plots of selected wells. Trend plots of 1,1,1-TCA, PCE, TCE, 1,1-DCE, and 1,2-DCE for wells position along the length of the plume (6587, 6687, 7287, and 70393) are presented in Figure 2-4.

For the most part, concentration trends of the selected analytes are observed to gradually decrease or remain flat in wells 6687 and 70393, located in the mid- to upper portions of the plume, respectively. The plume in these areas appears to have reached a steady state or declining condition which suggests that PU&D Yard contamination is slowly being depleted at the source. The flat to gradually increasing TCE trend in well 7287

17

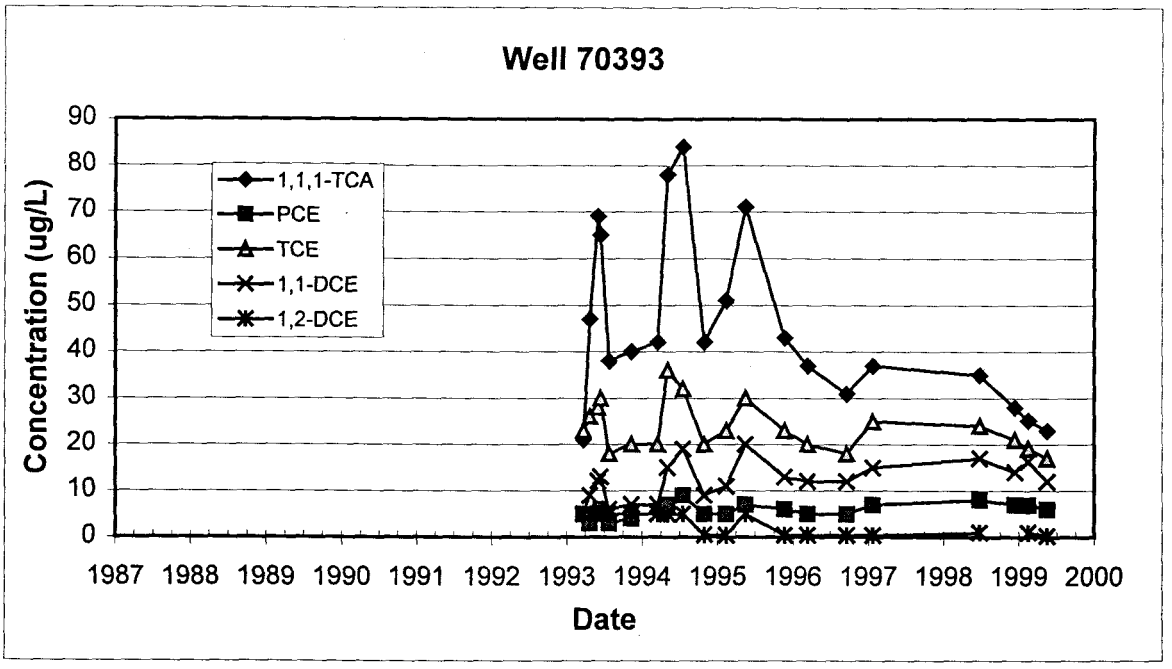
Figure 2-4
Trend Plots for Selected Analytes
PU&D Yard Plume





18

Table 2-4 (Continued)
Trend Plots for Selected Analytes
PU&D Yard Plume



19

indicates the plume originating from the unidentifed VOC source near this well may be advancing. TCE concentrations in downgradient wells 76992 and 77392 are below detection, and thus do not show evidence of plume migration toward No Name Gulch. Similarly, there is no evidence from monitoring wells 21197 through 22497 to indicate significant plume migration in the North Walnut Creek drainage.

2.5.2 Degradation Products

The presence of degradation products is an important indicator of contaminant-destroying chemical and biological processes. One difficulty in ascertaining the presence of degradation products is that a variety of organic solvents may have been stored and released at the PU&D Yard (i.e. expected degradation products could be solvents from the original release). Another difficulty is the diffuse nature of the plume which, except for a small area of above Tier I PCE groundwater contamination at IHSS 174A, lacks a well defined source area. While various degradation products of TCE (DCE), PCE (TCE and DCE), and 1,1,1-TCA (1,1-DCA) are detected in groundwater at the PU&D Yard, there appears to be no patterns of occurrence that would suggest that degradation will reduce VOC contaminant concentrations to below Tier II action levels prior to reaching surface water.

2.5.3 Hydrogeologic Factors

Because the PU&D Yard is situated at the head of a narrow pediment ridge, groundwater flow will eventually diverge away from the ridgeline toward the adjacent stream drainages as flow progresses to the east. It is apparent from Figure 2-3 and the data presented in Table 2-1 and Appendix A that hydrogeologic controls are probably the dominant factor in explaining PU&D Yard plume geometry and extent. As groundwater flows eastward from the PU&D Yard, loss of groundwater to the adjacent drainages (including the landfill groundwater intercept and diversion system) combined with dilution from recharge will cause plume spreading and a gradual decline in contaminant concentrations and saturated thickness. In thinly saturated areas, groundwater and plume movement will be controlled primarily by bedrock topography, as described in detail by EG&G (1995c). Sorption probably plays a minor role in retarding plume migration, considering the fact that plume contaminants are found in wells as far east as the landfill pond dam. Volatilization of plume contaminants may further attenuate contaminant concentrations, especially in seasonally desaturated and seep areas.

2.5.4 Surface Water Quality Impacts

The impact of the PU&D Yard plume on surface water quality has been assessed for North Walnut Creek and No Name Gulch using a combination of groundwater and surface water sampling programs. Based on the results of sampling performed to date, there is no evidence of surface water quality impacts to either stream. In the North Walnut Creek drainage, a line of fourteen wells spaced at roughly 100 foot intervals and oriented parallel to the stream were installed and sampled for evaluating PU&D Yard plume impacts to the creek in 1997 (see Figure 2-3). As shown in Table 2-1, no VOC contamination was detected in any of the wells indicating that any flux of PU&D Yard contaminants toward North Walnut Creek, if present, was small or non-existent. In No Name Gulch, recent samples collected from the landfill groundwater intercept drain outfalls (SW099 and SW100) did not contain PU&D Yard plume contaminants, nor are these contaminants found in untreated landfill leachate water at SW097 (RMRS, 1999b) or in landfill downgradient monitoring wells 4087, B206989, and 52894.

2.5.5 Conclusions Concerning Natural Attenuation in the PU&D Yard Plume

The following conclusions can be made based on existing data:

- Monitoring of contaminant concentrations in selected wells and drain outfalls located at and beyond the leading edge of the plume needs to be performed to verify that natural attenuation processes are capable of controlling contaminant concentrations and fluxes to levels that are protective of surface water.

- The presence of reductive dechlorination products of the three contaminants of concern suggests that small quantities from the original release might have been degraded. As such, degradation appears to be a minor factor in controlling contaminant concentrations at the PU&D Yard.

- Hydrogeologic factors, such as advection, dispersion, sorption, and volatilization, appear to have a greater impact on contaminant migration than degradation processes. Nevertheless, these factors have an inadequate capacity for completely attenuating plume migration, as demonstrated by the 3,000 foot length of the plume.

- Depletion of residual contaminant source material may be occurring as evidenced by declining concentration trends observed in some monitoring wells.

- There is no evidence that the PU&D Yard Plume is currently impacting surface water quality at this time.

3.0 PROPOSED ACTION

Based on a review of existing data, a monitoring approach is proposed to assess potential groundwater impacts to surface water quality. This action is recommended because plume contamination, although widespread in upland areas downgradient of the PU&D Yard, does not appear to be currently impacting surface water quality. With the exception of a small area at IHSS 174A, contaminant concentrations in the PU&D Yard plume occur well below Tier I action levels; in many downgradient wells, the contaminant concentrations only slightly exceed Tier II action levels. If groundwater impacts to surface water are detected by the monitoring program, this decision will need to be reexamined to determine whether a remedial action will be required to mitigate the problem.

3.1 PROPOSED APPROACH

The overall strategy for the PU&D Yard Plume monitoring program involves the use of selected existing monitoring wells and new and existing surface water sampling locations to evaluate plume movement and surface water quality. Representative downgradient monitoring well locations will be selected at the leading edge to the plume in North Walnut Creek and No Name Gulch. An initial round of semi-annual surface water samples will be collected from locations in North Walnut Creek to confirm the results of the 1997 groundwater evaluation. These locations will be chosen based on an analysis of likely plume pathways determined from previous groundwater sampling results and consideration of hillside seep locations and prominence.

All monitoring wells will be monitored for VOCs during sampling. All activities will be integrated with existing RFETS monitoring activities under the IMP (Kaiser-Hill, 1997). Monitoring is planned to continue until enough data are collected to establish baseline trends in downgradient concentrations. Further details on data quality objectives, sampling procedures, and analytical methods will be presented in the Sampling and Analysis Plan (SAP) appendix to the workplan to be developed under the IMP. Monitoring will be initially performed quarterly in conjunction with the IMP activities during the first year to optimize the seasonal aspects of water level and VOC concentration variations, while minimizing costs and other resources. Subsequent sampling timing and frequency will be specified in the IMP based on the sampling results of the first year. The same sampling and analyses methodologies used for monitoring RFCA groundwater wells will be utilized for the PU&D Yard Plume wells. If at any time during monitoring the monitoring data indicates that the plume could cause surface water concentrations to exceed the surface water action levels in Table 1-1 at points of evaluation in North Walnut Creek and No Name Gulch, then the approach to the PU&D Yard Plume will be reevaluated.

22

3.2 WORKER HEALTH AND SAFETY

This project falls under the scope of the Occupational Safety and Health Administration (OSHA) construction standard for Hazardous Waste Operations and Emergency Response, 29 Code of Federal Regulations (CFR) 1910.120. Under this standard, the Health and Safety Plan (HASP) currently utilized for groundwater monitoring will be revised, if necessary, to address the safety and health hazards of each phase of monitoring activities and specify the requirements and procedures for employee protection. In addition, the DOE Order for Construction Project Safety and Health Management, 5480.9A, applies to this project. This order requires the preparation of Activity Hazard Analyses (AHAs) to identify each task, the hazards associated with each task, and the precautions necessary to mitigate the hazards. The AHAs will be included in the HASP. This project could expose workers to physical and chemical hazards. Physical hazards include those associated with use of heat stress, and cold stress. Chemical hazards include exposure to the contaminated groundwater. Physical hazards will be mitigated by engineering controls, administrative controls, and appropriate use of personal protective equipment (PPE). Chemical hazards will be mitigated by the use of PPE and administrative controls. Appropriate skin and respiratory PPE will be worn throughout the project. Routine VOC monitoring will be conducted with an organic vapor monitor.

If unanticipated hazards or conditions are encountered during this project in accordance with RMRS policy (Directive-001), the project activities will pause to assess the potential hazard or condition to determine whether work can proceed with existing safety controls. If field conditions or hazards vary from the planned approach and it is determined that work can be done safely, an AHA will be prepared or modified to address the unexpected circumstances, and work will proceed according to the appropriate control measures. Data and safety controls will be continually evaluated. Field radiological screening will be conducted as appropriate using radiological instruments appropriate to detect surface contamination and airborne radioactivity. As required by 10 CFR 835, Radiation Protection of Occupational Workers, all applicable implementing procedures will be followed to ensure protection of the workers, collocated workers, the public, and the environment. The HASP will describe the air monitoring to be used to monitor for radiation, VOCs, and particulate, as appropriate. If necessary, air monitoring will be performed in accordance with applicable procedures, which includes perimeter Radioactive Ambient Air Monitoring Program (RAAMP) monitoring throughout the project duration. Air monitoring activities may vary and are dependent on field activities.

23

3.3 WASTE MANAGEMENT

Waste anticipated from sampling include purge water and PPE. All wastes will be managed in accordance with the RFETS standard operating procedure, Field Operations (FO).29, for investigation-derived material (IDM) under the existing IDM program. Wastes generated, as part of this proposed action, will be characterized based on process knowledge, analytical results, and radiological screening. Based on FO.29, wastes, such as PPE, identified as non-radiological and non-hazardous will be disposed in a sanitary landfill. Purge water will be treated at the 891 Consolidated Water Treatment Facility.

4.0 IMPLEMENTATION SCHEDULE

Monitoring of the PU&D Yard Plume is scheduled to commence in Fiscal Year 2000 on a quarterly basis for the first year. Subsequent sampling timing and frequency will be specified in the IMP based on the sampling results collected during the first year.

5.0 REFERENCES

DOE, 1992a, Historical Release Report for the Rocky Flats Plant, June.

DOE, 1992b, *Final Phase I RFI/RI Work Plan, Rocky Flats Plant, Other Outside Closures (Operable Unit 10),* Rocky Flats Plant, Golden, Colorado.

DOE, 1991. *Phase I RFI/RI Work Plan for Operable Unit No. 7 - Present Sanitary Landfill (IHSS No. 114) and the Inactive Hazardous Waste Storage Area (IHSS No. 203) (Operable Unit No. 7).* U.S. Department of Energy, Rocky Flats Plant, Golden, Colorado. August 1991.

DOE, 1995, *1994 Annual RCRA Groundwater Monitoring Report for Regulated Units at Rocky Flats Plant, Golden, Colorado*, February 1995

DOE, 1996a, *Final Rocky Flats Cleanup Agreement*, Rocky Flats Environmental Technology Site, Golden, Colorado, July.

DOE, 1996b, *1995 Annual RCRA Groundwater Monitoring Report for Regulated Units at Rocky Flats Plant, Golden, Colorado*, February 1996

EG&G, 1995a, *Draft Technical Memorandum 1, Operable Unit 10, Other Outside Closures,* Rocky Flats Environmental Technology Site, Golden, Colorado, January.

EG&G, 1995b, *Geologic Characterization Report for the Rocky Flats Environmental Technology Site, Volume 1 of the Sitewide Geoscience Characterization Study, Final Report,* April

EG&G, 1995c, *Hydrogeologic Characterization Report for the Rocky Flats Environmental Technology Site, Volume II of the Sitewide Geoscience Characterization Study,* April.

EPA, 1997, *Use of Monitored Natural Attenuation At Superfund, RCRA Corrective Action, and Underground Storage Sites*, OSWER Directive 9200.4-17, U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response, Washington, D.C., November.

Kaiser-Hill, 1997, *Rocky Flats Environmental Technology Site Integrated Monitoring Plan FY-97*, Kaiser-Hill Company, December.

RMRS, 1997, *Data Summary Report for IHSSs 170, 174A, and 174B, Property Utilization and Storage Yard, RF/RMRS-97-080.UN*, September, 25, 1997

RMRS, 1998, 1997 *Annual Rocky Flats Cleanup Agreement (RFCA) Groundwater Monitoring Report for Rocky Flats Environmental Technology Site*, RF/RMRS-98-273.UN, November.

RMRS, 1999a, *Annual Update for the Historical Release Report, RF/RMRS-99-428*.UN, Draft, September.

RMRS, 1999b, 1998 *Annual Rocky Flats Cleanup Agreement (RFCA) Groundwater Monitoring Report for Rocky Flats Environmental Technology Site*, RF/RMRS-99-433.UN, Draft, November.

Rockwell, 1987, *Letter to File from F. Blaha, dated December 17, 1987, Rocky Flats Plant, Golden, Colorado*

25

Rockwell, 1988, *Closure Plan for the Container Storage Area,* Rocky Flats Plant, Golden, Colorado.

26

Appendix A

Historical Analytical Data

For Selected PU&D Yard Plume Wells

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
00397	GW06321TE	5/5/99	METHYLENE CHLORIDE	0.2	UG/L	BJ	1	JB1	TR1
00597	GW05769TE	12/15/97	1,1,1-TRICHLOROETHANE	17	UG/L		0.5		RX1
00597	GW05769TE	12/15/97	1,1,1-TRICHLOROETHANE	18	UG/L		0.5	J1	TR1
00597	GW05775TE	3/3/98	1,1,1-TRICHLOROETHANE	20	UG/L		0.5	V1	TR1
00597	GW05904TE	7/28/98	1,1,1-TRICHLOROETHANE	22	UG/L		1	V1	TR1
00597	GW06201TE	2/9/99	1,1,1-TRICHLOROETHANE	14.6	UG/L		0.2	V	TR2
00597	GW06421TE	7/27/99	1,1,1-TRICHLOROETHANE	13	UG/L		1		TR1
00597	GW05769TE	12/15/97	1,1-DICHLOROETHENE	6	UG/L		0.5		RX1
00597	GW05769TE	12/15/97	1,1-DICHLOROETHENE	7	UG/L		0.5	J1	TR1
00597	GW05775TE	3/3/98	1,1-DICHLOROETHENE	9	UG/L		0.5	V1	TR1
00597	GW05904TE	7/28/98	1,1-DICHLOROETHENE	13	UG/L		1	V1	TR1
00597	GW06201TE	2/9/99	1,1-DICHLOROETHENE	8.8	UG/L		0.7	J	TR2
00597	GW06421TE	7/27/99	1,1-DICHLOROETHENE	6	UG/L		1		TR1
00597	GW06201TE	2/9/99	BROMOFLUOROBENZENE	43.2	UG/L				TR2
00597	GW05769TE	12/15/97	CARBON TETRACHLORIDE	0.8	UG/L		0.5		RX1
00597	GW05769TE	12/15/97	CARBON TETRACHLORIDE	1	UG/L		0.5	J1	TR1
00597	GW05775TE	3/3/98	CARBON TETRACHLORIDE	1	UG/L		0.5	V1	TR1
00597	GW05904TE	7/28/98	CARBON TETRACHLORIDE	1	UG/L	J	1	V1	TR1
00597	GW06421TE	7/27/99	CARBON TETRACHLORIDE	0.9	UG/L	J	1		TR1
00597	GW06421TE	7/27/99	CHLOROFORM	0.3	UG/L	J	1		TR1
00597	GW06201TE	2/9/99	Dibromofluoromethane	39.9	UG/L				TR2
00597	GW06421TE	7/27/99	DICHLORODIFLUOROMETHANE	0.4	UG/L	J	1		TR1
00597	GW05904TE	7/28/98	METHYLENE CHLORIDE	0.6	UG/L	JB	1	J1	TR1
00597	GW05769TE	12/15/97	TETRACHLOROETHENE	1	UG/L		0.5		RX1
00597	GW05769TE	12/15/97	TETRACHLOROETHENE	1	UG/L		0.5	J1	TR1
00597	GW05775TE	3/3/98	TETRACHLOROETHENE	1	UG/L		0.5	V1	TR1
00597	GW05904TE	7/28/98	TETRACHLOROETHENE	1	UG/L		1	V1	TR1
00597	GW06421TE	7/27/99	TETRACHLOROETHENE	0.8	UG/L	J	1		TR1
00597	GW06201TE	2/9/99	TOLUENE - D8	41	UG/L				TR2
00597	GW05769TE	12/15/97	TRICHLOROETHENE	5	UG/L		0.5		RX1
00597	GW05769TE	12/15/97	TRICHLOROETHENE	5	UG/L		0.5	J1	TR1
00597	GW05775TE	3/3/98	TRICHLOROETHENE	6	UG/L		0.5	V1	TR1
00597	GW05904TE	7/28/98	TRICHLOROETHENE	6	UG/L		1	V1	TR1
00597	GW06201TE	2/9/99	TRICHLOROETHENE	4.5	UG/L		0.6	V	TR2
00597	GW06421TE	7/27/99	TRICHLOROETHENE	4	UG/L		1		TR1
61495	GW03075GA	12/18/95	1,1,1-TRICHLOROETHANE	54	ug/L		1	Y	TR1
61495	GW03075GA	12/18/95	1,1-DICHLOROETHENE	15	ug/L		1	Y	TR1
61495	GW03075GA	12/18/95	1,2,3-TRICHLOROBENZENE	0.4	ug/L	J	1	Y	TR1
61495	GW03075GA	12/18/95	CARBON TETRACHLORIDE	2	ug/L		1	Y	TR1
61495	GW03075GA	12/18/95	CHLOROFORM	0.5	ug/L	J	1	Y	TR1
61495	GW03075GA	12/18/95	NAPHTHALENE	0.3	ug/L	J	1	Y	TR1
61495	GW03075GA	12/18/95	TETRACHLOROETHENE	2	ug/L		1	Y	TR1
61495	GW03075GA	12/18/95	TRICHLOROETHENE	7	ug/L		1	Y	TR1
6587	65-87-06-12-89	6/12/89	1,1,1-TRICHLOROETHANE	9	ug/L		5	V	TRG
6587	G65871189004	11/7/89	1,1,1-TRICHLOROETHANE	17	ug/L		5	A	TRG
6587	GW00019IT	7/18/90	1,1,1-TRICHLOROETHANE	14	ug/L		5	V	TRG
6587	GW00546IT	10/17/90	1,1,1-TRICHLOROETHANE	18	ug/L			V	TRG
6587	GW00546IT	10/17/90	1,1,1-TRICHLOROETHANE	18	ug/L		5	V	TRG
6587	GW01510IT	7/12/91	1,1,1-TRICHLOROETHANE	20	ug/L		5	V	TRG
6587	GW01943IT	10/24/91	1,1,1-TRICHLOROETHANE	22	ug/L		5	V	TRG
6587	GW02409IT	2/18/92	1,1,1-TRICHLOROETHANE	22	ug/L		5	V	TRG
6587	GW02755IT	4/21/92	1,1,1-TRICHLOROETHANE	36	ug/L		5	V	TRG
6587	GW03249IT	7/27/92	1,1,1-TRICHLOROETHANE	23	ug/L		5	V	TRG
6587	GW00111WC	1/29/93	1,1,1-TRICHLOROETHANE	25	ug/L		5	V	TRG
6587	GW00517WC	4/9/93	1,1,1-TRICHLOROETHANE	23	ug/L		5	V	TRG
6587	GW01111WC	8/13/93	1,1,1-TRICHLOROETHANE	24	ug/L		5	V	TRG
6587	GW01389WC	10/18/93	1,1,1-TRICHLOROETHANE	22	ug/L		5		TRG

28

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
6587	GW00348GA	2/28/94	1,1,1-TRICHLOROETHANE	29	ug/L		0.2	V	TRG
6587	GW00568GA	4/19/94	1,1,1-TRICHLOROETHANE	30	ug/L		0.2	V	TRG
6587	GW01576GA	10/14/94	1,1,1-TRICHLOROETHANE	24	ug/L		0.2	V	TR1
6587	GW01938GA	1/17/95	1,1,1-TRICHLOROETHANE	27	ug/L	D	2.5	V	DL1
6587	GW01938GA	1/17/95	1,1,1-TRICHLOROETHANE	24	ug/L	E	0.5	Z	TR1
6587	GW00019IT	7/18/90	1,1,2-TRICHLOROTRIFLUOROETHANE	21	ug/L	J			TIC
6587	GW00019IT	7/18/90	1,1,2-TRICHLOROTRIFLUOROETHANE	21	ug/L	J		Z	TRG
6587	GW00019IT	7/18/90	1,1-DICHLOROETHANE	2	ug/L	J	5	A	TRG
6587	GW00546IT	10/17/90	1,1-DICHLOROETHANE	1	ug/L	J	5	J	TRG
6587	GW00546IT	10/17/90	1,1-DICHLOROETHANE	1	ug/L			J	TRG
6587	GW02409IT	2/18/92	1,1-DICHLOROETHANE	2	ug/L	J	5	A	TRG
6587	GW02755IT	4/21/92	1,1-DICHLOROETHANE	2	ug/L	J	5	A	TRG
6587	GW03249IT	7/27/92	1,1-DICHLOROETHANE	3	ug/L	J	5	A	TRG
6587	GW00348GA	2/28/94	1,1-DICHLOROETHANE	2	ug/L		0.2	V	TRG
6587	GW00568GA	4/19/94	1,1-DICHLOROETHANE	1	ug/L		0.2	V	TRG
6587	GW01576GA	10/14/94	1,1-DICHLOROETHANE	2	ug/L		0.2	V	TR1
6587	GW01938GA	1/17/95	1,1-DICHLOROETHANE	1.1	ug/L		0.5	V	TR1
6587	G65871189004	11/7/89	1,1-DICHLOROETHENE	1	ug/L	J	5	A	TRG
6587	G65870390001	3/22/90	1,1-DICHLOROETHENE	6	ug/L				TRG
6587	GW00019IT	7/18/90	1,1-DICHLOROETHENE	3	ug/L	J	5	A	TRG
6587	GW00546IT	10/17/90	1,1-DICHLOROETHENE	3	ug/L	J	5	J	TRG
6587	GW00546IT	10/17/90	1,1-DICHLOROETHENE	3	ug/L			J	TRG
6587	GW01163IT	4/19/91	1,1-DICHLOROETHENE	3	ug/L	J	5	A	TRG
6587	GW01510IT	7/12/91	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
6587	GW01943IT	10/24/91	1,1-DICHLOROETHENE	5	ug/L		5	V	TRG
6587	GW02409IT	2/18/92	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
6587	GW03249IT	7/27/92	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
6587	GW00111WC	1/29/93	1,1-DICHLOROETHENE	8	ug/L		5	V	TRG
6587	GW00517WC	4/9/93	1,1-DICHLOROETHENE	7	ug/L		5	V	TRG
6587	GW01111WC	8/13/93	1,1-DICHLOROETHENE	8	ug/L		5	V	TRG
6587	GW01389WC	10/18/93	1,1-DICHLOROETHENE	9	ug/L		5		TRG
6587	GW00348GA	2/28/94	1,1-DICHLOROETHENE	7	ug/L		0.2	V	TRG
6587	GW00568GA	4/19/94	1,1-DICHLOROETHENE	9	ug/L		0.2	V	TRG
6587	GW01108GA	8/15/94	1,1-DICHLOROETHENE	7	ug/L		5	V	TR1
6587	GW01576GA	10/14/94	1,1-DICHLOROETHENE	8	ug/L		0.2	V	TR1
6587	GW01938GA	1/17/95	1,1-DICHLOROETHENE	8.7	ug/L	D	2.5	Z	DL1
6587	GW01938GA	1/17/95	1,1-DICHLOROETHENE	8.3	ug/L		0.5	V	TR1
6587	GW00019IT	7/18/90	1,2-DICHLOROETHENE	8	ug/L		5	V	TRG
6587	GW00546IT	10/17/90	1,2-DICHLOROETHENE	4	ug/L	J	5	J	TRG
6587	GW00546IT	10/17/90	1,2-DICHLOROETHENE	4	ug/L			J	TRG
6587	GW01510IT	7/12/91	1,2-DICHLOROETHENE	5	ug/L		5	J	TRG
6587	GW01943IT	10/24/91	1,2-DICHLOROETHENE	4	ug/L	J	5	A	TRG
6587	GW02409IT	2/18/92	1,2-DICHLOROETHENE	3	ug/L	J	5	A	TRG
6587	GW02755IT	4/21/92	1,2-DICHLOROETHENE	2	ug/L	JX	5	A	TRG
6587	GW03249IT	7/27/92	1,2-DICHLOROETHENE	7	ug/L		5	J	TRG
6587	GW00111WC	1/29/93	1,2-DICHLOROETHENE	3	ug/L	J	5	A	TRG
6587	GW00517WC	4/9/93	1,2-DICHLOROETHENE	1	ug/L	J	5	A	TRG
6587	GW01111WC	8/13/93	1,2-DICHLOROETHENE	3	ug/L	J	5	A	TRG
6587	GW01389WC	10/18/93	1,2-DICHLOROETHENE	4	ug/L	J	5		TRG
6587	GW00019IT	7/18/90	ACETONE	5	ug/L	J	10	A	TRG
6587	GW00348GA	2/28/94	CARBON TETRACHLORIDE	0.5	ug/L		0.3	V	TRG
6587	GW00568GA	4/19/94	CARBON TETRACHLORIDE	1	ug/L		0.3	V	TRG
6587	GW01576GA	10/14/94	CARBON TETRACHLORIDE	0.7	ug/L		0.3	J	TR1
6587	GW01938GA	1/17/95	CARBON TETRACHLORIDE	0.76	ug/L		0.5	V	TR1
6587	GW02755IT	4/21/92	CHLOROFORM	1	ug/L	J	5	A	TRG
6587	GW00348GA	2/28/94	CHLOROFORM	0.6	ug/L		0.2	V	TRG
6587	GW00568GA	4/19/94	CHLOROFORM	0.5	ug/L		0.2	V	TRG
6587	GW01576GA	10/14/94	CHLOROFORM	0.7	ug/L		0.2	V	TR1

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
6587	GW01938GA	1/17/95	CHLOROFORM	0.64	ug/L		0.5	V	TR1
6587	GW00348GA	2/28/94	cis-1,2-DICHLOROETHENE	2	ug/L		0.2	V	TRG
6587	GW00568GA	4/19/94	cis-1,2-DICHLOROETHENE	0.8	ug/L		0.2	V	TRG
6587	GW01108GA	8/15/94	cis-1,2-DICHLOROETHENE	3	ug/L	J	5	A	TR1
6587	GW01576GA	10/14/94	cis-1,2-DICHLOROETHENE	3	ug/L		0.2	V	TR1
6587	GW01938GA	1/17/95	cis-1,2-DICHLOROETHENE	1.4	ug/L		0.5	V	TR1
6587	GW01938GA	1/17/95	DICHLORODIFLUOROMETHANE	0.79	ug/L		0.5	V	TR1
6587	GW00546IT	10/17/90	METHYLENE CHLORIDE	1	ug/L	J		A	TRG
6587	GW01576GA	10/14/94	METHYLENE CHLORIDE	0.7	ug/L		0.2	V	TR1
6587	65-87-12-09-88	12/9/88	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6587	65-87-03-08-89	3/8/89	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6587	G65870390001	3/22/90	TETRACHLOROETHENE	1	ug/L	J			TRG
6587	GW00019IT	7/18/90	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6587	GW00546IT	10/17/90	TETRACHLOROETHENE	1	ug/L	J	5		TRG
6587	GW01510IT	7/12/91	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6587	GW01943IT	10/24/91	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6587	GW02409IT	2/18/92	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6587	GW02755IT	4/21/92	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6587	GW03249IT	7/27/92	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6587	GW00111WC	1/29/93	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6587	GW00517WC	4/9/93	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6587	GW01111WC	8/13/93	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6587	GW00348GA	2/28/94	TETRACHLOROETHENE	2	ug/L		0.2	V	TRG
6587	GW00568GA	4/19/94	TETRACHLOROETHENE	2	ug/L		0.2	V	TRG
6587	GW01576GA	10/14/94	TETRACHLOROETHENE	1	ug/L		0.2	V	TR1
6587	GW01938GA	1/17/95	TETRACHLOROETHENE	1.6	ug/L		0.5	V	TR1
6587	65-87-09-23-88	9/23/88	TRICHLOROETHENE	18	ug/L		5		TRG
6587	65-87-12-09-88	12/9/88	TRICHLOROETHENE	20	ug/L		5	V	TRG
6587	65-87-03-08-89	3/8/89	TRICHLOROETHENE	19	ug/L		5	V	TRG
6587	65-87-06-12-89	6/12/89	TRICHLOROETHENE	25	ug/L		5	V	TRG
6587	G65871189004	11/7/89	TRICHLOROETHENE	19	ug/L		5	A	TRG
6587	G65870390001	3/22/90	TRICHLOROETHENE	29	ug/L				TRG
6587	GW00019IT	7/18/90	TRICHLOROETHENE	23	ug/L		5	V	TRG
6587	GW00546IT	10/17/90	TRICHLOROETHENE	21	ug/L			V	TRG
6587	GW00546IT	10/17/90	TRICHLOROETHENE	21	ug/L		5	V	TRG
6587	GW01163IT	4/19/91	TRICHLOROETHENE	21	ug/L		5	V	TRG
6587	GW01510IT	7/12/91	TRICHLOROETHENE	21	ug/L		5	V	TRG
6587	GW01943IT	10/24/91	TRICHLOROETHENE	18	ug/L		5	V	TRG
6587	GW02409IT	2/18/92	TRICHLOROETHENE	18	ug/L		5	V	TRG
6587	GW02755IT	4/21/92	TRICHLOROETHENE	22	ug/L		5	V	TRG
6587	GW03249IT	7/27/92	TRICHLOROETHENE	18	ug/L		5	V	TRG
6587	GW00111WC	1/29/93	TRICHLOROETHENE	17	ug/L		5	V	TRG
6587	GW00517WC	4/9/93	TRICHLOROETHENE	16	ug/L		5	V	TRG
6587	GW01111WC	8/13/93	TRICHLOROETHENE	15	ug/L		5	V	TRG
6587	GW01389WC	10/18/93	TRICHLOROETHENE	21	ug/L		5		TRG
6587	GW00348GA	2/28/94	TRICHLOROETHENE	22	ug/L		0.2	V	TRG
6587	GW00568GA	4/19/94	TRICHLOROETHENE	16	ug/L		0.2	V	TRG
6587	GW01108GA	8/15/94	TRICHLOROETHENE	13	ug/L		5	V	TR1
6587	GW01576GA	10/14/94	TRICHLOROETHENE	15	ug/L		0.2	V	TR1
6587	GW01938GA	1/17/95	TRICHLOROETHENE	15	ug/L	D	2.5	Z	DL1
6587	GW01938GA	1/17/95	TRICHLOROETHENE	16	ug/L		0.5	V	TR1
6687	66-87-09-16-88	9/16/88	1,1,1-TRICHLOROETHANE	6	ug/L		5		TRG
6687	66-87-03-13-89	3/13/89	1,1,1-TRICHLOROETHANE	4	ug/L	J	5	A	TRG
6687	66-87-06-05-89	6/5/89	1,1,1-TRICHLOROETHANE	7	ug/L		5	V	TRG
6687	66-87-09-25-89	9/25/89	1,1,1-TRICHLOROETHANE	4	ug/L	J	5	A	TRG
6687	G66871189004	11/3/89	1,1,1-TRICHLOROETHANE	12	ug/L		5	A	TRG
6687	G66870390001	3/12/90	1,1,1-TRICHLOROETHANE	13	ug/L		5	V	TRG
6687	GW00026IT	7/24/90	1,1,1-TRICHLOROETHANE	18	ug/L		5	V	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
6687	GW00672IT	12/6/90	1,1,1-TRICHLOROETHANE	19	ug/L	B	5	V	TRG
6687	GW00946IT	3/12/91	1,1,1-TRICHLOROETHANE	26	ug/L			V	TRG
6687	GW01161IT	5/3/91	1,1,1-TRICHLOROETHANE	24	ug/L		5	V	TRG
6687	GW01483IT	7/17/91	1,1,1-TRICHLOROETHANE	27	ug/L		5	V	TRG
6687	GW01950IT	10/24/91	1,1,1-TRICHLOROETHANE	28	ug/L		5	V	TRG
6687	GW02470IT	2/21/92	1,1,1-TRICHLOROETHANE	30	ug/L		5	V	TRG
6687	GW02779IT	4/28/92	1,1,1-TRICHLOROETHANE	21	ug/L		5	V	TRG
6687	GW03250IT	7/28/92	1,1,1-TRICHLOROETHANE	41	ug/L		5	V	TRG
6687	GW03603IT	10/8/92	1,1,1-TRICHLOROETHANE	33	ug/L		5	V	TRG
6687	GW00112WC	2/11/93	1,1,1-TRICHLOROETHANE	33	ug/L		5	V	TRG
6687	GW00518WC	4/21/93	1,1,1-TRICHLOROETHANE	21	ug/L		5	V	TRG
6687	GW01112WC	8/10/93	1,1,1-TRICHLOROETHANE	32	ug/L		5	V	TRG
6687	GW01390WC	10/15/93	1,1,1-TRICHLOROETHANE	25	ug/L		5	V	TRG
6687	GW00349GA	3/1/94	1,1,1-TRICHLOROETHANE	22	ug/L		0.2	V	TRG
6687	GW00569GA	4/19/94	1,1,1-TRICHLOROETHANE	24	ug/L		0.2	V	TRG
6687	GW01577GA	10/14/94	1,1,1-TRICHLOROETHANE	27	ug/L		0.2	V	TR1
6687	GW01939GA	1/20/95	1,1,1-TRICHLOROETHANE	24	ug/L	D	2.5	V	DL1
6687	GW01939GA	1/20/95	1,1,1-TRICHLOROETHANE	24	ug/L	E	0.5	Z	TR1
6687	GW03049GA	11/16/95	1,1,1-TRICHLOROETHANE	26	ug/L	D	0.5	Y	TR2
6687	GW03049GA	11/16/95	1,1,1-TRICHLOROETHANE	27	ug/L	E	0.5	Y	TR1
6687	GW03109GA	1/15/96	1,1,1-TRICHLOROETHANE	25	ug/L		1	V	TR1
6687	GW05022TE	4/16/96	1,1,1-TRICHLOROETHANE	16	ug/L		1	Y	TR1
6687	GW05212TE	8/15/96	1,1,1-TRICHLOROETHANE	17	ug/L		1	Y	TR1
6687	GW05355TE	11/14/96	1,1,1-TRICHLOROETHANE	19	ug/L		1	Y	TR1
6687	GW05550TE	6/26/97	1,1,1-TRICHLOROETHANE	12	UG/L		1	V1	TR1
6687	66-87-09-25-89	9/25/89	1,1-DICHLOROETHANE	5	ug/L	J	5	A	TRG
6687	66-87-09-25-89	9/25/89	1,1-DICHLOROETHENE	5	ug/L	J	5	A	TRG
6687	GW00026IT	7/24/90	1,1-DICHLOROETHENE	3	ug/L	J	5	A	TRG
6687	GW00672IT	12/6/90	1,1-DICHLOROETHENE	3	ug/L	J	5	A	TRG
6687	GW00946IT	3/12/91	1,1-DICHLOROETHENE	5	ug/L			V	TRG
6687	GW01161IT	5/3/91	1,1-DICHLOROETHENE	4	ug/L	J	5	A	TRG
6687	GW01483IT	7/17/91	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
6687	GW01950IT	10/24/91	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
6687	GW02470IT	2/21/92	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
6687	GW03250IT	7/28/92	1,1-DICHLOROETHENE	9	ug/L		5	V	TRG
6687	GW03603IT	10/8/92	1,1-DICHLOROETHENE	9	ug/L		5	V	TRG
6687	GW00112WC	2/11/93	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
6687	GW00518WC	4/21/93	1,1-DICHLOROETHENE	5	ug/L		5	V	TRG
6687	GW01112WC	8/10/93	1,1-DICHLOROETHENE	8	ug/L		5	V	TRG
6687	GW01390WC	10/15/93	1,1-DICHLOROETHENE	7	ug/L		5	V	TRG
6687	GW00349GA	3/1/94	1,1-DICHLOROETHENE	7	ug/L		0.2	V	TRG
6687	GW00569GA	4/19/94	1,1-DICHLOROETHENE	7	ug/L		0.2	V	TRG
6687	GW00977GA	7/27/94	1,1-DICHLOROETHENE	6	ug/L		5	V	TR1
6687	GW01577GA	10/14/94	1,1-DICHLOROETHENE	8	ug/L		0.2	V	TR1
6687	GW01939GA	1/20/95	1,1-DICHLOROETHENE	7.4	ug/L	D	2.5	Z	DL1
6687	GW01939GA	1/20/95	1,1-DICHLOROETHENE	7.6	ug/L		0.5	V	TR1
6687	GW03049GA	11/16/95	1,1-DICHLOROETHENE	10	ug/L	D	0.5	Y	TR2
6687	GW03049GA	11/16/95	1,1-DICHLOROETHENE	10	ug/L		0.5	Y	TR1
6687	GW03109GA	1/15/96	1,1-DICHLOROETHENE	8	ug/L		1	V	TR1
6687	GW05022TE	4/16/96	1,1-DICHLOROETHENE	5	ug/L		1	Y	TR1
6687	GW05212TE	8/15/96	1,1-DICHLOROETHENE	5	ug/L		1	Y	TR1
6687	GW05355TE	11/14/96	1,1-DICHLOROETHENE	7	ug/L		1	Y	TR1
6687	GW05550TE	6/26/97	1,1-DICHLOROETHENE	4.5	UG/L		1	V1	TR1
6687	66-87-09-25-89	9/25/89	1,2-DICHLOROETHANE	5	ug/L	J	5	A	TRG
6687	66-87-09-25-89	9/25/89	1,2-DICHLOROETHENE	5	ug/L	J	5	A	TRG
6687	66-87-03-13-89	3/13/89	2-BUTANONE	1	ug/L	J	10	A	TRG
6687	66-87-09-25-89	9/25/89	ACETONE	10	ug/L	J	10	A	TRG
6687	66-87-09-25-89	9/25/89	CARBON DISULFIDE	5	ug/L	J	5	A	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
6687	GW03250IT	7/28/92	CARBON TETRACHLORIDE	2	ug/L	J	5	A	TRG
6687	GW03603IT	10/8/92	CARBON TETRACHLORIDE	1	ug/L	J	5	A	TRG
6687	GW01390WC	10/15/93	CARBON TETRACHLORIDE	1	ug/L	J	5	A	TRG
6687	GW00349GA	3/1/94	CARBON TETRACHLORIDE	1	ug/L		0.3	V	TRG
6687	GW00569GA	4/19/94	CARBON TETRACHLORIDE	1	ug/L		0.3	V	TRG
6687	GW01577GA	10/14/94	CARBON TETRACHLORIDE	1	ug/L		0.3	J	TR1
6687	GW01939GA	1/20/95	CARBON TETRACHLORIDE	1.2	ug/L		0.5	V	TR1
6687	GW03049GA	11/16/95	CARBON TETRACHLORIDE	3	ug/L	D	0.5	Y	TR2
6687	GW03049GA	11/16/95	CARBON TETRACHLORIDE	1	ug/L		0.5	Y	TR1
6687	GW03109GA	1/15/96	CARBON TETRACHLORIDE	1	ug/L		1	V	TR1
6687	GW05022TE	4/16/96	CARBON TETRACHLORIDE	0.7	ug/L	J	1	Y	TR1
6687	GW05212TE	8/15/96	CARBON TETRACHLORIDE	0.7	ug/L	J	1	Y	TR1
6687	GW05355TE	11/14/96	CARBON TETRACHLORIDE	0.9	ug/L	J	1	Y	TR1
6687	GW05550TE	6/26/97	CARBON TETRACHLORIDE	0.51	UG/L	J	1	V1	TR1
6687	66-87-09-25-89	9/25/89	CHLOROFORM	5	ug/L	J	5	A	TRG
6687	GW02779IT	4/28/92	CHLOROFORM	1	ug/L	J	5	A	TRG
6687	GW00349GA	3/1/94	CHLOROFORM	0.3	ug/L		0.2	V	TRG
6687	GW00569GA	4/19/94	CHLOROFORM	0.3	ug/L		0.2	V	TRG
6687	GW01577GA	10/14/94	CHLOROFORM	0.5	ug/L		0.2	V	TR1
6687	GW03049GA	11/16/95	CHLOROFORM	0.4	ug/L	J	0.5	Y	TR1
6687	GW03109GA	1/15/96	CHLOROFORM	0.4	ug/L	J	1	V	TR1
6687	GW05022TE	4/16/96	CHLOROFORM	0.2	ug/L	J	1	Y	TR1
6687	GW05212TE	8/15/96	CHLOROFORM	0.3	ug/L	J	1	Y	TR1
6687	GW05355TE	11/14/96	CHLOROFORM	0.3	ug/L	J	1	Y	TR1
6687	GW05550TE	6/26/97	CHLOROFORM	0.26	UG/L	J,B	1	JB1	TR1
6687	66-87-09-16-88	9/16/88	METHYLENE CHLORIDE	32	ug/L		5		TRG
6687	66-87-09-25-89	9/25/89	METHYLENE CHLORIDE	5	ug/L	J	5	A	TRG
6687	GW00946IT	3/12/91	METHYLENE CHLORIDE	1	ug/L	JB		J	TRG
6687	GW00977GA	7/27/94	METHYLENE CHLORIDE	4	ug/L	J	5	A	TR1
6687	GW01577GA	10/14/94	METHYLENE CHLORIDE	0.2	ug/L	J	0.2	A	TR1
6687	GW03049GA	11/16/95	METHYLENE CHLORIDE	2	ug/L	BDJ	1	Y	TR2
6687	GW03049GA	11/16/95	METHYLENE CHLORIDE	0.4	ug/L	BJ	1	Y	TR1
6687	GW05550TE	6/26/97	METHYLENE CHLORIDE	0.63	UG/L	J,B	1	JB1	TR1
6687	GW00026IT	7/24/90	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6687	GW00672IT	12/6/90	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6687	GW00946IT	3/12/91	TETRACHLOROETHENE	1	ug/L	J		A	TRG
6687	GW01161IT	5/3/91	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6687	GW01483IT	7/17/91	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6687	GW01950IT	10/24/91	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6687	GW02779IT	4/28/92	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6687	GW03250IT	7/28/92	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6687	GW00112WC	2/11/93	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
6687	GW01390WC	10/15/93	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
6687	GW00349GA	3/1/94	TETRACHLOROETHENE	1	ug/L		0.2	V	TRG
6687	GW00569GA	4/19/94	TETRACHLOROETHENE	1	ug/L		0.2	V	TRG
6687	GW01577GA	10/14/94	TETRACHLOROETHENE	2	ug/L		0.2	V	TR1
6687	GW01939GA	1/20/95	TETRACHLOROETHENE	1.4	ug/L		0.5	V	TR1
6687	GW03049GA	11/16/95	TETRACHLOROETHENE	1	ug/L	DJ	0.5	Y	TR2
6687	GW03049GA	11/16/95	TETRACHLOROETHENE	1	ug/L		0.5	Y	TR1
6687	GW03109GA	1/15/96	TETRACHLOROETHENE	1	ug/L		1	V	TR1
6687	GW05022TE	4/16/96	TETRACHLOROETHENE	0.9	ug/L	J	1	Y	TR1
6687	GW05212TE	8/15/96	TETRACHLOROETHENE	0.9	ug/L	J	1	Y	TR1
6687	GW05355TE	11/14/96	TETRACHLOROETHENE	1	ug/L		1	Y	TR1
6687	GW05550TE	6/26/97	TETRACHLOROETHENE	0.73	UG/L	J	1	V1	TR1
6687	66-87-06-14-88	6/14/88	TRICHLOROETHENE	4	ug/L	J	5		TRG
6687	66-87-09-16-88	9/16/88	TRICHLOROETHENE	14	ug/L		5		TRG
6687	66-87-12-07-88	12/7/88	TRICHLOROETHENE	5	ug/L		5	V	TRG
6687	66-87-03-13-89	3/13/89	TRICHLOROETHENE	8	ug/L		5	V	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
6687	66-87-06-05-89	6/5/89	TRICHLOROETHENE	17	ug/L		5	V	TRG
6687	66-87-09-25-89	9/25/89	TRICHLOROETHENE	7	ug/L	B	5	V	TRG
6687	G66871189004	11/3/89	TRICHLOROETHENE	10	ug/L	J	5	A	TRG
6687	G66870390001	3/12/90	TRICHLOROETHENE	23	ug/L	J	5	A	TRG
6687	GW00026IT	7/24/90	TRICHLOROETHENE	18	ug/L		5	V	TRG
6687	GW00672IT	12/6/90	TRICHLOROETHENE	14	ug/L		5	V	TRG
6687	GW00946IT	3/12/91	TRICHLOROETHENE	16	ug/L			V	TRG
6687	GW01161IT	5/3/91	TRICHLOROETHENE	15	ug/L		5	V	TRG
6687	GW01483IT	7/17/91	TRICHLOROETHENE	16	ug/L		5	V	TRG
6687	GW01950IT	10/24/91	TRICHLOROETHENE	15	ug/L		5	V	TRG
6687	GW02470IT	2/21/92	TRICHLOROETHENE	14	ug/L		5	V	TRG
6687	GW02779IT	4/28/92	TRICHLOROETHENE	9	ug/L		5	V	TRG
6687	GW03250IT	7/28/92	TRICHLOROETHENE	18	ug/L		5	V	TRG
6687	GW03603IT	10/8/92	TRICHLOROETHENE	13	ug/L		5	V	TRG
6687	GW00112WC	2/11/93	TRICHLOROETHENE	13	ug/L		5	V	TRG
6687	GW01112WC	8/10/93	TRICHLOROETHENE	11	ug/L		5	V	TRG
6687	GW01390WC	10/15/93	TRICHLOROETHENE	10	ug/L		5	V	TRG
6687	GW00349GA	3/1/94	TRICHLOROETHENE	9	ug/L		0.2	V	TRG
6687	GW00569GA	4/19/94	TRICHLOROETHENE	8	ug/L		0.2	V	TRG
6687	GW00977GA	7/27/94	TRICHLOROETHENE	8	ug/L		5	V	TR1
6687	GW01577GA	10/14/94	TRICHLOROETHENE	10	ug/L		0.2	V	TR1
6687	GW01939GA	1/20/95	TRICHLOROETHENE	8.1	ug/L	D	2.5	Z	DL1
6687	GW01939GA	1/20/95	TRICHLOROETHENE	8.4	ug/L		0.5	V	TR1
6687	GW03049GA	11/16/95	TRICHLOROETHENE	7	ug/L	D	0.5	Y	TR2
6687	GW03049GA	11/16/95	TRICHLOROETHENE	7	ug/L		0.5	Y	TR1
6687	GW03109GA	1/15/96	TRICHLOROETHENE	8	ug/L		1	V	TR1
6687	GW05022TE	4/16/96	TRICHLOROETHENE	5	ug/L		1	Y	TR1
6687	GW05212TE	8/15/96	TRICHLOROETHENE	5	ug/L		1	Y	TR1
6687	GW05355TE	11/14/96	TRICHLOROETHENE	6	ug/L		1	Y	TR1
6687	GW05550TE	6/26/97	TRICHLOROETHENE	3.8	UG/L		1	V1	TR1
6687	66-87-09-25-89	9/25/89	VINYL CHLORIDE	10	ug/L	J	10	A	TRG
70393	GW70010ST	3/24/93	1,1,1-TRICHLOROETHANE	21	ug/L		5	V	TRG
70393	GW00641WC	4/23/93	1,1,1-TRICHLOROETHANE	47	ug/L		5	V	TRG
70393	GW00833WC	6/2/93	1,1,1-TRICHLOROETHANE	69	ug/L		5	V	TRG
70393	GW00991WC	6/15/93	1,1,1-TRICHLOROETHANE	65	ug/L		5	V	TRG
70393	GW01139WC	7/27/93	1,1,1-TRICHLOROETHANE	38	ug/L		5	V	TRG
70393	GW01507WC	11/12/93	1,1,1-TRICHLOROETHANE	40	ug/L		5	V	TRG
70393	GW00429GA	3/18/94	1,1,1-TRICHLOROETHANE	42	ug/L		5	V	TRG
70393	GW00636GA	5/4/94	1,1,1-TRICHLOROETHANE	78	ug/L		5	V	TRG
70393	GW00960GA	7/19/94	1,1,1-TRICHLOROETHANE	84	ug/L		5	V	TR1
70393	GW01626GA	10/31/94	1,1,1-TRICHLOROETHANE	42	ug/L		0.2	V	TR1
70393	GW02106GA	2/15/95	1,1,1-TRICHLOROETHANE	51	ug/L		0.2	V	TR1
70393	GW02503GA	5/18/95	1,1,1-TRICHLOROETHANE	71	ug/L		5	Y	TRG
70393	GW02941GA	11/22/95	1,1,1-TRICHLOROETHANE	43	ug/L		1	V	TR1
70393	GW03128GA	3/14/96	1,1,1-TRICHLOROETHANE	37	ug/L		1	Y	TR1
70393	GW05215TE	9/19/96	1,1,1-TRICHLOROETHANE	31	ug/L		1	Y	TR1
70393	GW05452TE	1/23/97	1,1,1-TRICHLOROETHANE	37	ug/L		1	Y	TR1
70393	GW06035TE	6/24/98	1,1,1-TRICHLOROETHANE	35	UG/L		1	J1	TR1
70393	GW06190TE	12/14/98	1,1,1-TRICHLOROETHANE	28	UG/L		1	J	TR1
70393	GW06260TE	2/17/99	1,1,1-TRICHLOROETHANE	25.2	UG/L		0.2	V1	TR1
70393	GW06400TE	5/18/99	1,1,1-TRICHLOROETHANE	23	UG/L		1		TR1
70393	GW01507WC	11/12/93	1,1-DICHLOROETHANE	2	ug/L	J	5	A	TRG
70393	GW00636GA	5/4/94	1,1-DICHLOROETHANE	1	ug/L	J	5	A	TRG
70393	GW01626GA	10/31/94	1,1-DICHLOROETHANE	1	ug/L		0.2	V	TR1
70393	GW02106GA	2/15/95	1,1-DICHLOROETHANE	1	ug/L		0.2	V	TR1
70393	GW02941GA	11/22/95	1,1-DICHLOROETHANE	1	ug/L		1	V	TR1
70393	GW03128GA	3/14/96	1,1-DICHLOROETHANE	1	ug/L		1	Y	TR1
70393	GW05215TE	9/19/96	1,1-DICHLOROETHANE	0.9	ug/L	J	1	Y	TR1

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
70393	GW05452TE	1/23/97	1,1-DICHLOROETHANE	0.8	ug/L	J	1	Y	TR1
70393	GW00641WC	4/23/93	1,1-DICHLOROETHENE	9	ug/L		5	V	TRG
70393	GW00833WC	6/2/93	1,1-DICHLOROETHENE	12	ug/L		5	V	TRG
70393	GW00991WC	6/15/93	1,1-DICHLOROETHENE	13	ug/L		5	V	TRG
70393	GW01139WC	7/27/93	1,1-DICHLOROETHENE	6	ug/L		5	V	TRG
70393	GW01507WC	11/12/93	1,1-DICHLOROETHENE	7	ug/L		5	V	TRG
70393	GW00429GA	3/18/94	1,1-DICHLOROETHENE	7	ug/L		5	V	TRG
70393	GW00636GA	5/4/94	1,1-DICHLOROETHENE	15	ug/L		5	V	TRG
70393	GW00960GA	7/19/94	1,1-DICHLOROETHENE	19	ug/L		5	V	TR1
70393	GW01626GA	10/31/94	1,1-DICHLOROETHENE	9	ug/L		0.2	V	TR1
70393	GW02106GA	2/15/95	1,1-DICHLOROETHENE	11	ug/L		0.2	V	TR1
70393	GW02503GA	5/18/95	1,1-DICHLOROETHENE	20	ug/L		5	Y	TRG
70393	GW02941GA	11/22/95	1,1-DICHLOROETHENE	13	ug/L		1	V	TR1
70393	GW03128GA	3/14/96	1,1-DICHLOROETHENE	12	ug/L		1	Y	TR1
70393	GW05215TE	9/19/96	1,1-DICHLOROETHENE	12	ug/L		1	Y	TR1
70393	GW05452TE	1/23/97	1,1-DICHLOROETHENE	15	ug/L		1	Y	TR1
70393	GW06035TE	6/24/98	1,1-DICHLOROETHENE	17	UG/L		1	V1	TR1
70393	GW06190TE	12/14/98	1,1-DICHLOROETHENE	14	UG/L		1	J	TR1
70393	GW06260TE	2/17/99	1,1-DICHLOROETHENE	16.3	UG/L		0.7	V1	TR1
70393	GW06400TE	5/18/99	1,1-DICHLOROETHENE	12	UG/L		1		TR1
70393	GW06260TE	2/17/99	BROMOFLUOROBENZENE	40.8	UG/L			1	TR1
70393	GW00960GA	7/19/94	CARBON TETRACHLORIDE	1	ug/L	J	5	A	TR1
70393	GW01626GA	10/31/94	CARBON TETRACHLORIDE	0.7	ug/L		0.3	V	TR1
70393	GW02106GA	2/15/95	CARBON TETRACHLORIDE	0.8	ug/L		0.3	V	TR1
70393	GW03128GA	3/14/96	CARBON TETRACHLORIDE	0.7	ug/L	J	1	Y	TR1
70393	GW05215TE	9/19/96	CARBON TETRACHLORIDE	0.7	ug/L	J	1	Y	TR1
70393	GW05452TE	1/23/97	CARBON TETRACHLORIDE	0.9	ug/L	J	1	Y	TR1
70393	GW06035TE	6/24/98	CARBON TETRACHLORIDE	4	UG/L		1	J1	TR1
70393	GW06190TE	12/14/98	CARBON TETRACHLORIDE	0.7	UG/L	J	1	J	TR1
70393	GW06400TE	5/18/99	CARBON TETRACHLORIDE	0.5	UG/L	J	1		TR1
70393	GW01626GA	10/31/94	CHLOROFORM	0.3	ug/L	J	0.2	A	TR1
70393	GW02106GA	2/15/95	CHLOROFORM	0.3	ug/L	J	0.2	A	TR1
70393	GW02941GA	11/22/95	CHLOROFORM	0.3	ug/L	J	1	V	TR1
70393	GW03128GA	3/14/96	CHLOROFORM	0.3	ug/L	J	1	Y	TR1
70393	GW05215TE	9/19/96	CHLOROFORM	0.2	ug/L	J	1	Y	TR1
70393	GW05452TE	1/23/97	CHLOROFORM	0.3	ug/L	J	1	Y	TR1
70393	GW06400TE	5/18/99	CHLOROFORM	0.3	UG/L	J	1		TR1
70393	GW01626GA	10/31/94	cis-1,2-DICHLOROETHENE	0.5	ug/L		0.2	V	TR1
70393	GW02106GA	2/15/95	cis-1,2-DICHLOROETHENE	0.4	ug/L		0.2	V	TR1
70393	GW02941GA	11/22/95	cis-1,2-DICHLOROETHENE	0.4	ug/L	J	1	V	TR1
70393	GW03128GA	3/14/96.	cis-1,2-DICHLOROETHENE	0.4	ug/L	J	1	Y	TR1
70393	GW05215TE	9/19/96	cis-1,2-DICHLOROETHENE	0.4	ug/L	J	1	Y	TR1
70393	GW05452TE	1/23/97	cis-1,2-DICHLOROETHENE	0.4	ug/L	J	1	Y	TR1
70393	GW06400TE	5/18/99	cis-1,2-DICHLOROETHENE	0.3	UG/L	J	1		TR1
70393	GW06260TE	2/17/99	Dibromofluoromethane	38	UG/L			1	TR1
70393	GW05452TE	1/23/97	HEXACHLOROBUTADIENE	0.3	ug/L	J	1	Y	TR1
70393	GW00641WC	4/23/93	METHYLENE CHLORIDE	4	ug/L	J	5	A	TRG
70393	GW06035TE	6/24/98	METHYLENE CHLORIDE	3	UG/L		1	J1	TR1
70393	GW06190TE	12/14/98	METHYLENE CHLORIDE	0.5	UG/L	BJ	1	U	TR1
70393	GW06400TE	5/18/99	METHYLENE CHLORIDE	3	UG/L	B	1		TR1
70393	GW00641WC	4/23/93	TETRACHLOROETHENE	3	ug/L	J	5	A	TRG
70393	GW00833WC	6/2/93	TETRACHLOROETHENE	5	ug/L		5	V	TRG
70393	GW00991WC	6/15/93	TETRACHLOROETHENE	6	ug/L		5	V	TRG
70393	GW01139WC	7/27/93	TETRACHLOROETHENE	3	ug/L	J	5	A	TRG
70393	GW01507WC	11/12/93	TETRACHLOROETHENE	4	ug/L	J	5	A	TRG
70393	GW00636GA	5/4/94	TETRACHLOROETHENE	7	ug/L		5	V	TRG
70393	GW00960GA	7/19/94	TETRACHLOROETHENE	9	ug/L		5	V	TR1
70393	GW01626GA	10/31/94	TETRACHLOROETHENE	5	ug/L		0.2	V	TR1

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
70393	GW02106GA	2/15/95	TETRACHLOROETHENE	5	ug/L		0.2	V	TR1
70393	GW02503GA	5/18/95	TETRACHLOROETHENE	7	ug/L		5	Y	TRG
70393	GW02941GA	11/22/95	TETRACHLOROETHENE	6	ug/L		1	V	TR1
70393	GW03128GA	3/14/96	TETRACHLOROETHENE	5	ug/L		1	Y	TR1
70393	GW05215TE	9/19/96	TETRACHLOROETHENE	5	ug/L		1	Y	TR1
70393	GW05452TE	1/23/97	TETRACHLOROETHENE	7	ug/L		1	Y	TR1
70393	GW06035TE	6/24/98	TETRACHLOROETHENE	8	UG/L		1	V1	TR1
70393	GW06190TE	12/14/98	TETRACHLOROETHENE	7	UG/L		1	J	TR1
70393	GW06260TE	2/17/99	TETRACHLOROETHENE	6.9	UG/L		0.7	V1	TR1
70393	GW06400TE	5/18/99	TETRACHLOROETHENE	6	UG/L		1		TR1
70393	GW06260TE	2/17/99	TOLUENE - D8	43.2	UG/L			1	TR1
70393	GW70010ST	3/24/93	TRICHLOROETHENE	23	ug/L		5	V	TRG
70393	GW00641WC	4/23/93	TRICHLOROETHENE	26	ug/L		5	V	TRG
70393	GW00833WC	6/2/93	TRICHLOROETHENE	28	ug/L		5	V	TRG
70393	GW00991WC	6/15/93	TRICHLOROETHENE	30	ug/L		5	V	TRG
70393	GW01139WC	7/27/93	TRICHLOROETHENE	18	ug/L		5	V	TRG
70393	GW01507WC	11/12/93	TRICHLOROETHENE	20	ug/L		5	V	TRG
70393	GW00429GA	3/18/94	TRICHLOROETHENE	20	ug/L		5	V	TRG
70393	GW00636GA	5/4/94	TRICHLOROETHENE	36	ug/L		5	V	TRG
70393	GW00960GA	7/19/94	TRICHLOROETHENE	32	ug/L		5	V	TR1
70393	GW01626GA	10/31/94	TRICHLOROETHENE	20	ug/L		0.2	V	TR1
70393	GW02106GA	2/15/95	TRICHLOROETHENE	23	ug/L		0.2	V	TR1
70393	GW02503GA	5/18/95	TRICHLOROETHENE	30	ug/L		5	Y	TRG
70393	GW02941GA	11/22/95	TRICHLOROETHENE	23	ug/L		1	V	TR1
70393	GW03128GA	3/14/96	TRICHLOROETHENE	20	ug/L		1	Y	TR1
70393	GW05215TE	9/19/96	TRICHLOROETHENE	18	ug/L		1	Y	TR1
70393	GW05452TE	1/23/97	TRICHLOROETHENE	25	ug/L		1	Y	TR1
70393	GW06035TE	6/24/98	TRICHLOROETHENE	24	UG/L		1	V1	TR1
70393	GW06190TE	12/14/98	TRICHLOROETHENE	21	UG/L		1	J	TR1
70393	GW06260TE	2/17/99	TRICHLOROETHENE	19.1	UG/L		0.6	V1	TR1
70393	GW06400TE	5/18/99	TRICHLOROETHENE	17	UG/L		1		TR1
70393	GW06400TE	5/18/99	TRICHLOROFLUOROMETHANE	0.2	UG/L	J	1		TR1
7287	GW00011IT	7/18/90	1,1,1-TRICHLOROETHANE	2	ug/L	J	5	A	TRG
7287	GW00659IT	11/9/90	1,1,1-TRICHLOROETHANE	2	ug/L	J		A	TRG
7287	GW00944IT	3/11/91	1,1,1-TRICHLOROETHANE	2	ug/L	J		A	TRG
7287	GW01212IT	4/23/91	1,1,1-TRICHLOROETHANE	2	ug/L	J	5	A	TRG
7287	GW01524IT	7/15/91	1,1,1-TRICHLOROETHANE	5	ug/L		5	V	TRG
7287	GW02309IT	2/20/92	1,1,1-TRICHLOROETHANE	2	ug/L	J	5	A	TRG
7287	GW02783IT	4/23/92	1,1,1-TRICHLOROETHANE	7	ug/L		5	V	TRG
7287	GW03089IT	7/7/92	1,1,1-TRICHLOROETHANE	6	ug/L		5	V	TRG
7287	GW03604IT	10/7/92	1,1,1-TRICHLOROETHANE	7	ug/L		5	V	TRG
7287	GW00113WC	2/1/93	1,1,1-TRICHLOROETHANE	3	ug/L	J	5		REX
7287	GW00113WC	2/1/93	1,1,1-TRICHLOROETHANE	4	ug/L	J	5	A	TRG
7287	GW00519WC	4/8/93	1,1,1-TRICHLOROETHANE	4	ug/L	J	5	A	TRG
7287	GW01113WC	8/10/93	1,1,1-TRICHLOROETHANE	6	ug/L		5	V	TRG
7287	GW01391WC	10/14/93	1,1,1-TRICHLOROETHANE	6	ug/L		5	V	TRG
7287	GW00350GA	3/1/94	1,1,1-TRICHLOROETHANE	3	ug/L		0.2	V	TRG
7287	GW01578GA	10/18/94	1,1,1-TRICHLOROETHANE	6	ug/L	D	0.2	Z	TR2
7287	GW01578GA	10/18/94	1,1,1-TRICHLOROETHANE	5	ug/L		0.2	V	TR1
7287	GW01964GA	1/16/95	1,1,1-TRICHLOROETHANE	5.4	ug/L		0.5	V	TR1
7287	G72871289004	12/14/89	1,1-DICHLOROETHANE	3	ug/L	J	5	A	TRG
7287	GW00011IT	7/18/90	1,1-DICHLOROETHANE	4	ug/L	J	5	A	TRG
7287	GW00944IT	3/11/91	1,1-DICHLOROETHANE	3	ug/L	J		A	TRG
7287	GW01212IT	4/23/91	1,1-DICHLOROETHANE	3	ug/L	J	5	A	TRG
7287	GW02309IT	2/20/92	1,1-DICHLOROETHANE	4	ug/L	J	5	A	TRG
7287	GW02783IT	4/23/92	1,1-DICHLOROETHANE	4	ug/L	J	5	A	TRG
7287	GW03089IT	7/7/92	1,1-DICHLOROETHANE	3	ug/L	J	5	A	TRG
7287	GW03604IT	10/7/92	1,1-DICHLOROETHANE	4	ug/L	J	5	A	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
7287	GW00113WC	2/1/93	1,1-DICHLOROETHANE	3	ug/L	J	5		REX
7287	GW00113WC	2/1/93	1,1-DICHLOROETHANE	3	ug/L	J	5	A	TRG
7287	GW00519WC	4/8/93	1,1-DICHLOROETHANE	5	ug/L		5	V	TRG
7287	GW01113WC	8/10/93	1,1-DICHLOROETHANE	4	ug/L	J	5	A	TRG
7287	GW01391WC	10/14/93	1,1-DICHLOROETHANE	5	ug/L		5	V	TRG
7287	GW00350GA	3/1/94	1,1-DICHLOROETHANE	7	ug/L		0.2	V	TRG
7287	GW00570GA	4/18/94	1,1-DICHLOROETHANE	13	ug/L		10	V	TR1
7287	GW01578GA	10/18/94	1,1-DICHLOROETHANE	7	ug/L	D	0.2	Z	TR2
7287	GW01578GA	10/18/94	1,1-DICHLOROETHANE	6	ug/L		0.2	V	TR1
7287	GW01964GA	1/16/95	1,1-DICHLOROETHANE	8.6	ug/L	D	5	Z	DL1
7287	GW01964GA	1/16/95	1,1-DICHLOROETHANE	9.5	ug/L		0.5	V	TR1
7287	GW01578GA	10/18/94	1,1-DICHLOROETHENE	1	ug/L	DJ	0.2	Z	TR2
7287	GW01578GA	10/18/94	1,1-DICHLOROETHENE	1	ug/L		0.2	V	TR1
7287	GW01964GA	1/16/95	1,1-DICHLOROETHENE	0.93	ug/L		0.5	V	TR1
7287	GW00944IT	3/11/91	1,2-DICHLOROETHENE	1	ug/L	J		A	TRG
7287	GW01524IT	7/15/91	1,2-DICHLOROETHENE	2	ug/L	J	5	A	TRG
7287	GW02309IT	2/20/92	1,2-DICHLOROETHENE	3	ug/L	J	5	A	TRG
7287	GW02783IT	4/23/92	1,2-DICHLOROETHENE	2	ug/L	J	5	A	TRG
7287	GW03089IT	7/7/92	1,2-DICHLOROETHENE	1	ug/L	J	5	A	TRG
7287	GW03604IT	10/7/92	1,2-DICHLOROETHENE	5	ug/L		5	J	TRG
7287	GW00113WC	2/1/93	1,2-DICHLOROETHENE	1	ug/L	J	5		REX
7287	GW00519WC	4/8/93	1,2-DICHLOROETHENE	6	ug/L		5	V	TRG
7287	GW01391WC	10/14/93	1,2-DICHLOROETHENE	4	ug/L	J	5	A	TRG
7287	GW00570GA	4/18/94	1,2-DICHLOROETHENE	27	ug/L		10	V	TR1
7287	72-87-03-15-89	3/15/89	CARBON TETRACHLORIDE	7	ug/L		5	V	TRG
7287	72-87-06-12-89	6/12/89	CARBON TETRACHLORIDE	3	ug/L	J	5	A	TRG
7287	G72871289004	12/14/89	CARBON TETRACHLORIDE	2	ug/L	J	5	A	TRG
7287	G72870290001	2/20/90	CARBON TETRACHLORIDE	8	ug/L		5	V	TRG
7287	G72870290001	2/20/90	CARBON TETRACHLORIDE	8	ug/L		5		TRG
7287	GW00011IT	7/18/90	CARBON TETRACHLORIDE	2	ug/L	J	5	A	TRG
7287	GW00659IT	11/9/90	CARBON TETRACHLORIDE	9	ug/L			V	TRG
7287	GW00944IT	3/11/91	CARBON TETRACHLORIDE	6	ug/L			V	TRG
7287	GW01212IT	4/23/91	CARBON TETRACHLORIDE	6	ug/L		5	J	TRG
7287	GW02309IT	2/20/92	CARBON TETRACHLORIDE	2	ug/L	J	5	A	TRG
7287	GW03604IT	10/7/92	CARBON TETRACHLORIDE	3	ug/L	J	5	A	TRG
7287	GW00113WC	2/1/93	CARBON TETRACHLORIDE	2	ug/L	J	5		REX
7287	GW00113WC	2/1/93	CARBON TETRACHLORIDE	3	ug/L	J	5	A	TRG
7287	GW00519WC	4/8/93	CARBON TETRACHLORIDE	2	ug/L	J	5	A	TRG
7287	GW01391WC	10/14/93	CARBON TETRACHLORIDE	8	ug/L		5	J	TRG
7287	GW00350GA	3/1/94	CARBON TETRACHLORIDE	4	ug/L		0.3	V	TRG
7287	GW01111GA	8/15/94	CARBON TETRACHLORIDE	3	ug/L	J	5	A	TR1
7287	GW01578GA	10/18/94	CARBON TETRACHLORIDE	12	ug/L	D	0.3	Z	TR2
7287	GW01578GA	10/18/94	CARBON TETRACHLORIDE	12	ug/L		0.3	V	TR1
7287	GW01964GA	1/16/95	CARBON TETRACHLORIDE	4.6	ug/L		0.5	V	TR1
7287	GW01964GA	1/16/95	CHLOROETHANE	0.58	ug/L		0.5	V	TR1
7287	72-87-03-15-89	3/15/89	CHLOROFORM	8	ug/L		5	V	TRG
7287	72-87-06-12-89	6/12/89	CHLOROFORM	3	ug/L	J	5	A	TRG
7287	G72871289004	12/14/89	CHLOROFORM	3	ug/L	J	5	A	TRG
7287	G72870290001	2/20/90	CHLOROFORM	4	ug/L	J	5	A	TRG
7287	G72870290001	2/20/90	CHLOROFORM	4	ug/L	J	5		TRG
7287	GW00011IT	7/18/90	CHLOROFORM	2	ug/L	J	5	A	TRG
7287	GW00659IT	11/9/90	CHLOROFORM	4	ug/L	J		A	TRG
7287	GW00944IT	3/11/91	CHLOROFORM	4	ug/L	J		A	TRG
7287	GW01524IT	7/15/91	CHLOROFORM	2	ug/L	J	5	A	TRG
7287	GW02309IT	2/20/92	CHLOROFORM	3	ug/L	J	5	A	TRG
7287	GW02783IT	4/23/92	CHLOROFORM	2	ug/L	J	5	A	TRG
7287	GW03089IT	7/7/92	CHLOROFORM	2	ug/L	J	5	A	TRG
7287	GW03604IT	10/7/92	CHLOROFORM	4	ug/L	J	5	A	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
7287	GW00113WC	2/1/93	CHLOROFORM	3	ug/L	J	5		REX
7287	GW00113WC	2/1/93	CHLOROFORM	3	ug/L	J	5	A	TRG
7287	GW00519WC	4/8/93	CHLOROFORM	2	ug/L	J	5	A	TRG
7287	GW01391WC	10/14/93	CHLOROFORM	8	ug/L		5	V	TRG
7287	GW00350GA	3/1/94	CHLOROFORM	3	ug/L		0.2	V	TRG
7287	GW01111GA	8/15/94	CHLOROFORM	4	ug/L	J	5	A	TR1
7287	GW01578GA	10/18/94	CHLOROFORM	10	ug/L	D	0.2	Z	TR2
7287	GW01578GA	10/18/94	CHLOROFORM	10	ug/L		0.2	V	TR1
7287	GW01964GA	1/16/95	CHLOROFORM	4.4	ug/L		0.5	V	TR1
7287	GW00350GA	3/1/94	cis-1,2-DICHLOROETHENE	13	ug/L		0.2	V	TRG
7287	GW01111GA	8/15/94	cis-1,2-DICHLOROETHENE	7	ug/L		5	V	TR1
7287	GW01578GA	10/18/94	cis-1,2-DICHLOROETHENE	10	ug/L	D	0.2	Z	TR2
7287	GW01578GA	10/18/94	cis-1,2-DICHLOROETHENE	10	ug/L		0.2	V	TR1
7287	GW01964GA	1/16/95	cis-1,2-DICHLOROETHENE	15	ug/L	D	5	Z	DL1
7287	GW01964GA	1/16/95	cis-1,2-DICHLOROETHENE	16	ug/L		0.5	V	TR1
7287	G72870290001	2/20/90	METHYLENE CHLORIDE	3	ug/L	JB	5		TRG
7287	GW00944IT	3/11/91	METHYLENE CHLORIDE	1	ug/L	JB		J	TRG
7287	GW02309IT	2/20/92	METHYLENE CHLORIDE	2	ug/L	J	5	A	TRG
7287	GW01578GA	10/18/94	METHYLENE CHLORIDE	0.3	ug/L		0.2	V	TR1
7287	72-87-03-15-89	3/15/89	TETRACHLOROETHENE	9	ug/L		5	V	TRG
7287	72-87-06-12-89	6/12/89	TETRACHLOROETHENE	5	ug/L	J	5	A	TRG
7287	G72871289004	12/14/89	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
7287	G72870290001	2/20/90	TETRACHLOROETHENE	5	ug/L		5	V	TRG
7287	G72870290001	2/20/90	TETRACHLOROETHENE	5	ug/L		5		TRG
7287	GW00011IT	7/18/90	TETRACHLOROETHENE	4	ug/L	J	5	A	TRG
7287	GW00659IT	11/9/90	TETRACHLOROETHENE	9	ug/L			V	TRG
7287	GW00944IT	3/11/91	TETRACHLOROETHENE	4	ug/L	J		A	TRG
7287	GW01212IT	4/23/91	TETRACHLOROETHENE	5	ug/L		5	V	TRG
7287	GW01524IT	7/15/91	TETRACHLOROETHENE	3	ug/L	J	5	A	TRG
7287	GW01958IT	10/28/91	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
7287	GW02309IT	2/20/92	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
7287	GW02783IT	4/23/92	TETRACHLOROETHENE	3	ug/L	J	5	A	TRG
7287	GW03089IT	7/7/92	TETRACHLOROETHENE	3	ug/L	J	5	A	TRG
7287	GW00113WC	2/1/93	TETRACHLOROETHENE	3	ug/L	J	5		REX
7287	GW00113WC	2/1/93	TETRACHLOROETHENE	3	ug/L	J	5	A	TRG
7287	GW00519WC	4/8/93	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
7287	GW01113WC	8/10/93	TETRACHLOROETHENE	5	ug/L		5	V	TRG
7287	GW01391WC	10/14/93	TETRACHLOROETHENE	13	ug/L		5	V	TRG
7287	GW00350GA	3/1/94	TETRACHLOROETHENE	3	ug/L		0.2	V	TRG
7287	GW00570GA	4/18/94	TETRACHLOROETHENE	3	ug/L	J	10	A	TR1
7287	GW01111GA	8/15/94	TETRACHLOROETHENE	5	ug/L		5	V	TR1
7287	GW01578GA	10/18/94	TETRACHLOROETHENE	14	ug/L	D	0.2	Z	TR2
7287	GW01578GA	10/18/94	TETRACHLOROETHENE	14	ug/L		0.2	V	TR1
7287	GW01964GA	1/16/95	TETRACHLOROETHENE	7	ug/L	D	5	Z	DL1
7287	GW01964GA	1/16/95	TETRACHLOROETHENE	7	ug/L		0.5	V	TR1
7287	GW02783IT	4/23/92	TOLUENE	3	ug/L	J	5	A	TRG
7287	72-87-01-28-88	1/28/88	TRICHLOROETHENE	17	ug/L		5		TRG
7287	72-87-03-15-89	3/15/89	TRICHLOROETHENE	100	ug/L		5	V	TRG
7287	72-87-06-12-89	6/12/89	TRICHLOROETHENE	37	ug/L		5	V	TRG
7287	G72871289004	12/14/89	TRICHLOROETHENE	28	ug/L	J	5	A	TRG
7287	G72870290001	2/20/90	TRICHLOROETHENE	50	ug/L		5	V	TRG
7287	G72870290001	2/20/90	TRICHLOROETHENE	50	ug/L		5		TRG
7287	GW00011IT	7/18/90	TRICHLOROETHENE	47	ug/L		5	V	TRG
7287	GW00659IT	11/9/90	TRICHLOROETHENE	96	ug/L			V	TRG
7287	GW00944IT	3/11/91	TRICHLOROETHENE	54	ug/L			V	TRG
7287	GW01212IT	4/23/91	TRICHLOROETHENE	45	ug/L		5	V	TRG
7287	GW01524IT	7/15/91	TRICHLOROETHENE	37	ug/L		5	V	TRG
7287	GW01958IT	10/28/91	TRICHLOROETHENE	37	ug/L		5	V	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
7287	GW02309IT	2/20/92	TRICHLOROETHENE	26	ug/L		5	V	TRG
7287	GW02783IT	4/23/92	TRICHLOROETHENE	28	ug/L		5	V	TRG
7287	GW03089IT	7/7/92	TRICHLOROETHENE	32	ug/L		5	V	TRG
7287	GW03604IT	10/7/92	TRICHLOROETHENE	59	ug/L		5	V	TRG
7287	GW00113WC	2/1/93	TRICHLOROETHENE	36	ug/L		5		REX
7287	GW00113WC	2/1/93	TRICHLOROETHENE	39	ug/L		5	J	TRG
7287	GW00519WC	4/8/93	TRICHLOROETHENE	27	ug/L		5	V	TRG
7287	GW01113WC	8/10/93	TRICHLOROETHENE	71	ug/L		5	V	TRG
7287	GW01391WC	10/14/93	TRICHLOROETHENE	150	ug/L		5	V	TRG
7287	GW00350GA	3/1/94	TRICHLOROETHENE	34	ug/L		0.2	V	TRG
7287	GW00570GA	4/18/94	TRICHLOROETHENE	24	ug/L		10	V	TR1
7287	GW01111GA	8/15/94	TRICHLOROETHENE	64	ug/L		5	V	TR1
7287	GW01578GA	10/18/94	TRICHLOROETHENE	190	ug/L	D	0.2	V	TR2
7287	GW01578GA	10/18/94	TRICHLOROETHENE	160	ug/L	E	0.2	Z	TR1
7287	GW01964GA	1/16/95	TRICHLOROETHENE	68	ug/L	D	5	V	DL1
7287	GW01964GA	1/16/95	TRICHLOROETHENE	64	ug/L	E	0.5	Z	TR1
76992	GW05731TE	11/18/97	NAPHTHALENE	1	UG/L		0.5		TR1
76992	GW05731TE	11/18/97	TOLUENE	0.6	UG/L	JB	0.2		TR1
76992	GW01362GA	9/7/94	TRICHLOROETHENE	1	ug/L	J	5	A	TR1
77392	GW05996TE	6/9/98	METHYLENE CHLORIDE	4	UG/L	B	1	V1	TR1
B206389	048905230211	5/24/90	1,1,1-TRICHLOROETHANE	1	ug/L	J	5	A	TRG
B206389	GW00647IT	11/9/90	1,1,1-TRICHLOROETHANE	4	ug/L	J	5	A	TRG
B206389	GW02791IT	4/28/92	1,1,1-TRICHLOROETHANE	5	ug/L		5	V	TRG
B206389	GW03628IT	10/13/92	1,1,1-TRICHLOROETHANE	3	ug/L	J	5	A	TRG
B206389	GW00115WC	2/9/93	1,1,1-TRICHLOROETHANE	2	ug/L	J	5	A	TRG
B206389	GW00521WC	4/13/93	1,1,1-TRICHLOROETHANE	3	ug/L	DJ	10	Z	DIL
B206389	GW00521WC	4/13/93	1,1,1-TRICHLOROETHANE	4	ug/L	J	5	A	TRG
B206389	GW03628IT	10/13/92	1,1,2-TRICHLOROETHANE	0.4	ug/L	J	5	A	TRG
B206389	GW00115WC	2/9/93	1,1,2-TRICHLOROETHANE	1	ug/L	J	5	A	TRG
B206389	048905230211	5/24/90	1,1-DICHLOROETHANE	3	ug/L	J	5	A	TRG
B206389	GW00647IT	11/9/90	1,1-DICHLOROETHANE	8	ug/L		5	V	TRG
B206389	GW01471IT	7/10/91	1,1-DICHLOROETHANE	5	ug/L		5	V	TRG
B206389	GW02300IT	2/7/92	1,1-DICHLOROETHANE	8	ug/L		5	V	TRG
B206389	GW02791IT	4/28/92	1,1-DICHLOROETHANE	14	ug/L		5	V	TRG
B206389	GW03628IT	10/13/92	1,1-DICHLOROETHANE	12	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	1,1-DICHLOROETHANE	22	ug/L	DJ	25	Z	DIL
B206389	GW00115WC	2/9/93	1,1-DICHLOROETHANE	11	ug/L		5	V	TRG
B206389	GW00521WC	4/13/93	1,1-DICHLOROETHANE	13	ug/L	D	10	Z	DIL
B206389	GW00521WC	4/13/93	1,1-DICHLOROETHANE	19	ug/L		5	V	TRG
B206389	048905230211	5/24/90	1,2-DICHLOROETHENE	32	ug/L		5	V	TRG
B206389	GW00647IT	11/9/90	1,2-DICHLOROETHENE	26	ug/L		5	J	TRG
B206389	GW01471IT	7/10/91	1,2-DICHLOROETHENE	24	ug/L		5	V	TRG
B206389	GW02300IT	2/7/92	1,2-DICHLOROETHENE	30	ug/L		5	J	TRG
B206389	GW02791IT	4/28/92	1,2-DICHLOROETHENE	52	ug/L		5	J	TRG
B206389	GW03628IT	10/13/92	1,2-DICHLOROETHENE	130	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	1,2-DICHLOROETHENE	130	ug/L	D	25	Z	DIL
B206389	GW00115WC	2/9/93	1,2-DICHLOROETHENE	63	ug/L		5	V	TRG
B206389	GW00521WC	4/13/93	1,2-DICHLOROETHENE	49	ug/L	D	10	Z	DIL
B206389	GW00521WC	4/13/93	1,2-DICHLOROETHENE	68	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	4-METHYL-2-PENTANONE	4	ug/L	J	10	A	TRG
B206389	048905230211	5/24/90	ACETONE	110	ug/L	J	10	A	TRG
B206389	GW01471IT	7/10/91	ACETONE	37	ug/L		10	J	TRG
B206389	GW02791IT	4/28/92	ACETONE	24	ug/L		10	V	TRG
B206389	GW03628IT	10/13/92	BENZENE	0.7	ug/L	J	5	A	TRG
B206389	GW00115WC	2/9/93	BROMODICHLOROMETHANE	1	ug/L	J	5	A	TRG
B206389	GW00521WC	4/13/93	CARBON DISULFIDE	6	ug/L	DJ	10	Z	DIL
B206389	048905230211	5/24/90	CHLOROETHANE	12	ug/L	J	10	A	TRG
B206389	GW01471IT	7/10/91	CHLOROETHANE	12	ug/L		10	V	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
B206389	048905230211	5/24/90	CHLOROFORM	8	ug/L		5	V	TRG
B206389	GW00647IT	11/9/90	CHLOROFORM	11	ug/L		5	V	TRG
B206389	GW01471IT	7/10/91	CHLOROFORM	6	ug/L		5	V	TRG
B206389	GW02300IT	2/7/92	CHLOROFORM	11	ug/L		5	V	TRG
B206389	GW02791IT	4/28/92	CHLOROFORM	11	ug/L		5	V	TRG
B206389	GW03628IT	10/13/92	CHLOROFORM	14	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	CHLOROFORM	30	ug/L	D	25	Z	DIL
B206389	GW00115WC	2/9/93	CHLOROFORM	15	ug/L		5	V	TRG
B206389	GW00521WC	4/13/93	CHLOROFORM	11	ug/L	D	10	Z	DIL
B206389	GW00521WC	4/13/93	CHLOROFORM	16	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	CHLOROMETHANE	6	ug/L	DJ	50	Z	DIL
B206389	GW03628IT	10/13/92	ETHYLBENZENE	0.3	ug/L	J	5	A	TRG
B206389	GW00647IT	11/9/90	METHANE, DICHLOROFLUORO	200	ug/L	J		Z	TRG
B206389	GW01471IT	7/10/91	METHANE, DICHLOROFLUORO	160	ug/L	J		Z	TIC
B206389	048905230211	5/24/90	METHYLENE CHLORIDE	3	ug/L	JB	5		TRG
B206389	GW00647IT	11/9/90	METHYLENE CHLORIDE	3	ug/L	BJ	5	J	TRG
B206389	GW02300IT	2/7/92	METHYLENE CHLORIDE	2	ug/L	J	5	A	TRG
B206389	GW02791IT	4/28/92	METHYLENE CHLORIDE	8	ug/L		5	V	TRG
B206389	GW03628IT	10/13/92	METHYLENE CHLORIDE	7	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	METHYLENE CHLORIDE	19	ug/L	DJ	25	Z	DIL
B206389	GW00115WC	2/9/93	METHYLENE CHLORIDE	8	ug/L		5	V	TRG
B206389	GW02791IT	4/28/92	SEE ANALYTE NAME COLUMN	9.3	ug/L	J		Z	TR2
B206389	GW02791IT	4/28/92	SEE ANALYTE NAME COLUMN	250	ug/L	J		Z	TRG
B206389	048905230211	5/24/90	TETRACHLOROETHENE	51	ug/L		5	V	TRG
B206389	GW00647IT	11/9/90	TETRACHLOROETHENE	55	ug/L		5	V	TRG
B206389	GW01471IT	7/10/91	TETRACHLOROETHENE	52	ug/L		5	V	TRG
B206389	GW02300IT	2/7/92	TETRACHLOROETHENE	99	ug/L		5	V	TRG
B206389	GW02791IT	4/28/92	TETRACHLOROETHENE	170	ug/L		5	V	TRG
B206389	GW03628IT	10/13/92	TETRACHLOROETHENE	110	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	TETRACHLOROETHENE	380	ug/L	D	25	V	DIL
B206389	GW00115WC	2/9/93	TETRACHLOROETHENE	200	ug/L		5	Z	TRG
B206389	GW00521WC	4/13/93	TETRACHLOROETHENE	140	ug/L	D	10	V	DIL
B206389	GW00521WC	4/13/93	TETRACHLOROETHENE	240	ug/L		5	Z	TRG
B206389	GW03628IT	10/13/92	TOLUENE	3	ug/L	J	5	A	TRG
B206389	GW02300IT	2/7/92	TOTAL XYLENES	2	ug/L	J	5	A	TRG
B206389	GW02791IT	4/28/92	TOTAL XYLENES	6	ug/L		5	V	TRG
B206389	GW03628IT	10/13/92	TOTAL XYLENES	4	ug/L	J	5	A	TRG
B206389	GW00521WC	4/13/93	TOTAL XYLENES	3	ug/L	J	5	A	TRG
B206389	048905230211	5/24/90	TRICHLOROETHENE	74	ug/L	J	5	A	TRG
B206389	GW00647IT	11/9/90	TRICHLOROETHENE	84	ug/L		5	V	TRG
B206389	GW01471IT	7/10/91	TRICHLOROETHENE	97	ug/L		5	V	TRG
B206389	GW02300IT	2/7/92	TRICHLOROETHENE	160	ug/L		5	V	TRG
B206389	GW02791IT	4/28/92	TRICHLOROETHENE	170	ug/L		5	V	TRG
B206389	GW03628IT	10/13/92	TRICHLOROETHENE	150	ug/L		5	V	TRG
B206389	GW00115WC	2/9/93	TRICHLOROETHENE	400	ug/L	D	25	V	DIL
B206389	GW00115WC	2/9/93	TRICHLOROETHENE	220	ug/L		5	Z	TRG
B206389	GW00521WC	4/13/93	TRICHLOROETHENE	150	ug/L	D	10	Z	DIL
B206389	GW00521WC	4/13/93	TRICHLOROETHENE	190	ug/L		5	V	TRG
B206389	GW01471IT	7/10/91	TRICHLOROFLUOROMETHANE	34	ug/L	J		Z	TIC
B206389	GW01471IT	7/10/91	VINYL CHLORIDE	2	ug/L	J	10	A	TRG
B206389	GW03628IT	10/13/92	VINYL CHLORIDE	5	ug/L	J	10	A	TRG
B206389	GW00115WC	2/9/93	VINYL CHLORIDE	8	ug/L	DJ	50	Z	DIL
B206389	GW00115WC	2/9/93	VINYL CHLORIDE	4	ug/L	J	10	A	TRG
B206389	GW00521WC	4/13/93	VINYL CHLORIDE	5	ug/L	DJ	20	Z	DIL
B206489	GW01232IT	5/3/91	1,1,1-TRICHLOROETHANE	2	ug/L	J	5	A	TRG
B206489	GW02310IT	2/20/92	1,1,1-TRICHLOROETHANE	4	ug/L	J	5	A	TRG
B206489	GW02720IT	4/16/92	1,1,1-TRICHLOROETHANE	5	ug/L		5	V	TRG
B206489	GW03246IT	7/30/92	1,1,1-TRICHLOROETHANE	2	ug/L	J	5	A	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
B206489	GW00116WC	2/2/93	1,1,1-TRICHLOROETHANE	2	ug/L	J	5	A	TRG
B206489	GW00522WC	4/9/93	1,1,1-TRICHLOROETHANE	3	ug/L	J	5	A	TRG
B206489	GW00352GA	3/1/94	1,1,1-TRICHLOROETHANE	2	ug/L		0.2	V	TRG
B206489	GW01232IT	5/3/91	1,1-DICHLOROETHANE	2	ug/L	J	5	A	TRG
B206489	GW02310IT	2/20/92	1,1-DICHLOROETHANE	5	ug/L		5	V	TRG
B206489	GW02720IT	4/16/92	1,1-DICHLOROETHANE	3	ug/L	J	5	A	TRG
B206489	GW03607IT	10/6/92	1,1-DICHLOROETHANE	0.5	ug/L	J	5	A	TRG
B206489	GW00116WC	2/2/93	1,1-DICHLOROETHANE	2	ug/L	J	5	A	TRG
B206489	GW00522WC	4/9/93	1,1-DICHLOROETHANE	4	ug/L	J	5	A	TRG
B206489	GW00352GA	3/1/94	1,1-DICHLOROETHANE	9	ug/L		0.2	V	TRG
B206489	GW00571GA	4/19/94	1,1-DICHLOROETHANE	12	ug/L		10	V	TR1
B206489	GW00956IT	3/12/91	1,2-DICHLOROETHENE	2	ug/L	J		A	TRG
B206489	GW01525IT	7/16/91	1,2-DICHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW02310IT	2/20/92	1,2-DICHLOROETHENE	3	ug/L	J	5	A	TRG
B206489	GW02720IT	4/16/92	1,2-DICHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW03246IT	7/30/92	1,2-DICHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW03607IT	10/6/92	1,2-DICHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW00116WC	2/2/93	1,2-DICHLOROETHENE	1	ug/L	J	5	A	TRG
B206489	GW00522WC	4/9/93	1,2-DICHLOROETHENE	3	ug/L	J	5	A	TRG
B206489	GW00571GA	4/19/94	1,2-DICHLOROETHENE	24	ug/L		10	V	TR1
B206489	GW01574GA	10/13/94	1,2-DICHLOROETHENE	3	ug/L	J	10	A	TR1
B206489	LF0589029000	2/20/90	ACETONE	14	ug/L		10	V	TRG
B206489	LF0589029000	2/20/90	ACETONE	14	ug/L		10		TRG
B206489	589BR053002	5/31/90	ACETONE	29	ug/L		10		TRG
B206489	GW00153IT	8/7/90	ACETONE	4	ug/L	J	10	A	TRG
B206489	GW01967GA	1/20/95	ACETONE	4	ug/L	J	10	A	TR1
B206489	GW03607IT	10/6/92	BENZENE	2	ug/L	J	5	A	TRG
B206489	LF0589029000	2/20/90	BROMOFORM	1	ug/L	J	5	A	TRG
B206489	LF0589029000	2/20/90	BROMOFORM	1	ug/L	J	5		TRG
B206489	GW00352GA	3/1/94	CARBON TETRACHLORIDE	0.9	ug/L		0.3	V	TRG
B206489	LF0589029000	2/20/90	CHLOROFORM	3	ug/L	J	5	A	TRG
B206489	LF0589029000	2/20/90	CHLOROFORM	3	ug/L	J	5		TRG
B206489	GW00153IT	8/7/90	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW00746IT	11/20/90	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW00956IT	3/12/91	CHLOROFORM	3	ug/L	J		A	TRG
B206489	GW01232IT	5/3/91	CHLOROFORM	3	ug/L	J	5	A	TRG
B206489	GW01525IT	7/16/91	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW01959IT	11/1/91	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW02310IT	2/20/92	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW02720IT	4/16/92	CHLOROFORM	1	ug/L	J	5	A	TRG
B206489	GW03246IT	7/30/92	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW03607IT	10/6/92	CHLOROFORM	3	ug/L	J	5	A	TRG
B206489	GW00116WC	2/2/93	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW00522WC	4/9/93	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW01116WC	8/6/93	CHLOROFORM	2	ug/L	J	5	A	TRG
B206489	GW00352GA	3/1/94	CHLOROFORM	2	ug/L		0.2	V	TRG
B206489	GW01114GA	8/16/94	CHLOROFORM	1	ug/L	J	5	A	TR1
B206489	GW01574GA	10/13/94	CHLOROFORM	3	ug/L	J	10	A	TR1
B206489	GW00352GA	3/1/94	cis-1,2-DICHLOROETHENE	20	ug/L		0.2	V	TRG
B206489	GW01114GA	8/16/94	cis-1,2-DICHLOROETHENE	8	ug/L		5	V	TR1
B206489	GW03607IT	10/6/92	ETHYLBENZENE	0.7	ug/L	J	5	A	TRG
B206489	LF0589029000	2/20/90	METHYLENE CHLORIDE	3	ug/L	JB	5		TRG
B206489	GW00956IT	3/12/91	METHYLENE CHLORIDE	1	ug/L	JB		J	TRG
B206489	GW01116WC	8/6/93	METHYLENE CHLORIDE	1	ug/L	J	5	A	TRG
B206489	GW00153IT	8/7/90	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
B206489	GW00746IT	11/20/90	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
B206489	GW00956IT	3/12/91	TETRACHLOROETHENE	3	ug/L	J		A	TRG
B206489	GW01232IT	5/3/91	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
B206489	GW01525IT	7/16/91	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW01959IT	11/1/91	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
B206489	GW02310IT	2/20/92	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW02720IT	4/16/92	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
B206489	GW03246IT	7/30/92	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
B206489	GW03607IT	10/6/92	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW00116WC	2/2/93	TETRACHLOROETHENE	2	ug/L	J	5	A	TRG
B206489	GW00522WC	4/9/93	TETRACHLOROETHENE	1	ug/L	J	5	A	TRG
B206489	GW00352GA	3/1/94	TETRACHLOROETHENE	2	ug/L		0.2	V	TRG
B206489	GW01959IT	11/1/91	TOLUENE	1	ug/L	J	5	A	TRG
B206489	GW03607IT	10/6/92	TOLUENE	8	ug/L		5	V	TRG
B206489	GW03607IT	10/6/92	TOTAL XYLENES	4	ug/L	J	5	A	TRG
B206489	LF0589029000	2/20/90	TRICHLOROETHENE	46	ug/L		5	V	TRG
B206489	LF0589029000	2/20/90	TRICHLOROETHENE	46	ug/L		5		TRG
B206489	589BR053002	5/31/90	TRICHLOROETHENE	18	ug/L		5		TRG
B206489	GW00153IT	8/7/90	TRICHLOROETHENE	25	ug/L		5	V	TRG
B206489	GW00746IT	11/20/90	TRICHLOROETHENE	26	ug/L		5	V	TRG
B206489	GW00956IT	3/12/91	TRICHLOROETHENE	62	ug/L			V	TRG
B206489	GW01232IT	5/3/91	TRICHLOROETHENE	20	ug/L		5	V	TRG
B206489	GW01525IT	7/16/91	TRICHLOROETHENE	27	ug/L		5	V	TRG
B206489	GW01959IT	11/1/91	TRICHLOROETHENE	16	ug/L		5	V	TRG
B206489	GW02310IT	2/20/92	TRICHLOROETHENE	28	ug/L		5	V	TRG
B206489	GW02720IT	4/16/92	TRICHLOROETHENE	16	ug/L		5	V	TRG
B206489	GW03246IT	7/30/92	TRICHLOROETHENE	23	ug/L		5	V	TRG
B206489	GW03607IT	10/6/92	TRICHLOROETHENE	41	ug/L		5	V	TRG
B206489	GW00116WC	2/2/93	TRICHLOROETHENE	26	ug/L		5	V	TRG
B206489	GW00522WC	4/9/93	TRICHLOROETHENE	17	ug/L		5	V	TRG
B206489	GW01116WC	8/6/93	TRICHLOROETHENE	21	ug/L		5	V	TRG
B206489	GW01404WC	10/19/93	TRICHLOROETHENE	35	ug/L		5		TRG
B206489	GW00352GA	3/1/94	TRICHLOROETHENE	21	ug/L		0.2	V	TRG
B206489	GW00571GA	4/19/94	TRICHLOROETHENE	16	ug/L		10	V	TRI
B206489	GW01114GA	8/16/94	TRICHLOROETHENE	19	ug/L		5	V	TRI
B206489	GW01574GA	10/13/94	TRICHLOROETHENE	38	ug/L		10	V	TRI
B206489	GW01967GA	1/20/95	TRICHLOROETHENE	11	ug/L		10	V	TRI
P114389	GW01194GA	8/16/94	1,1,1-TRICHLOROETHANE	1	ug/L		0.5	J	TRI
P114389	GW01194GA	8/16/94	1,1-DICHLOROETHENE	1.5	ug/L		0.5	J	TRI
P114389	GW01536WC	11/18/93	1,2,4,5-TETRAMETHYLBENZENE	0.52	ug/L	J		Z	TRG
P114389	GW06245TE	1/27/99	BROMOFLUOROBENZENE	37.1	UG/L				TRI
P114389	GW01536WC	11/18/93	cis-1,2-DICHLOROETHENE	0.1	ug/L	J	0.2	A	TRG
P114389	GW00659GA	4/27/94	cis-1,2-DICHLOROETHENE	0.5	ug/L		0.2	V	TRG
P114389	GW01194GA	8/16/94	cis-1,2-DICHLOROETHENE	1.4	ug/L		0.5	J	TRI
P114389	GW01664GA	11/4/94	cis-1,2-DICHLOROETHENE	0.87	ug/L		0.5	V	TRI
P114389	GW02159GA	2/22/95	cis-1,2-DICHLOROETHENE	0.8	ug/L		0.2	V	TRG
P114389	GW02823GA	8/17/95	cis-1,2-DICHLOROETHENE	0.8	ug/L		0.1	Y	TRI
P114389	GW02908GA	2/29/96	cis-1,2-DICHLOROETHENE	1	ug/L		1	Y	TRI
P114389	GW05158TE	7/17/96	cis-1,2-DICHLOROETHENE	1	ug/L		1	Y	TRI
P114389	GW05464TE	1/23/97	cis-1,2-DICHLOROETHENE	1	ug/L		1	Y	TRI
P114389	GW06245TE	1/27/99	cis-1,2-DICHLOROETHENE	0.9	UG/L	J	0.7		TRI
P114389	GW06468TE	7/20/99	cis-1,2-DICHLOROETHENE	0.3	UG/L	J	1		TRI
P114389	GW06245TE	1/27/99	Dibromofluoromethane	42.5	UG/L				TRI
P114389	GW00659GA	4/27/94	HEXACHLOROBUTADIENE	0.1	ug/L	J	0.2	A	TRG
P114389	GW06000TE	7/21/98	METHYLENE CHLORIDE	0.7	UG/L	J		J1	TRI
P114389	GW06245TE	1/27/99	TOLUENE - D8	40	UG/L				TRI
P114389	GW01194GA	8/16/94	TRICHLOROETHENE	23	ug/L	E	0.5	A	TRI
P114389	GW01664GA	11/4/94	TRICHLOROETHENE	8.9	ug/L		0.5	V	TRI
P114389	GW02159GA	2/22/95	TRICHLOROETHENE	1	ug/L		0.2	V	TRG
P114389	GW02823GA	8/17/95	TRICHLOROETHENE	0.5	ug/L		0.3	Y	TRI
P114389	GW02908GA	2/29/96	TRICHLOROETHENE	0.2	ug/L	J	1	Y	TRI

Appendix A: Groundwater Volatile Organic Compound Data

Well	Sample Number	Date	Analyte	Result	Unit	Lab Qualifier	Detection Limit	Validation Qualifier	Result Type
P114389	GW05158TE	7/17/96	TRICHLOROETHENE	0.9	ug/L	J	1	Y	TRI

Appendix B

Volatile Organic Compound Data

For Surface Water Locations SW099 and SW100

Appendix B: Surface Water Volatile Organic Compound Data

Location	Sample Date	Sample #	Analyte	Result	Units	Lab Qualifier	Detection Limit	Validation Qualifier
SW099	12/30/98	GW06198TE	1,1,1,2-TETRACHLOROETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,1,1-TRICHLOROETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,1,2,2-TETRACHLOROETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,1,2-TRICHLOROETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,1-DICHLOROETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,1-DICHLOROETHENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,1-DICHLOROPROPENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,2,3-TRICHLOROBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,2,3-TRICHLOROPROPANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,2,4-TRICHLOROBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,2-DIBROMOETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,2-DICHLOROBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,2-DICHLOROETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,2-DICHLOROPROPANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,3-DICHLOROBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,3-DICHLOROPROPANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	1,4-DICHLOROBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	2,2-DICHLOROPROPANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	4-ISOPROPYLTOLUENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BENZENE, 1,2,4-TRIMETHYL	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BENZENE, 1,3,5-TRIMETHYL-	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BROMOBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BROMOCHLOROMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BROMODICHLOROMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BROMOFORM	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	BROMOMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	CARBON TETRACHLORIDE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	CHLOROBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	CHLOROETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	CHLOROFORM	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	CHLOROMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	cis-1,2-DICHLOROETHENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	cis-1,3-DICHLOROPROPENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	DIBROMOCHLOROMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	DIBROMOMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	DICHLORODIFLUOROMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	ETHYLBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	HEXACHLOROBUTADIENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	ISOPROPYLBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	METHYLENE CHLORIDE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	NAPHTHALENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	n-BUTYLBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	n-PROPYLBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	o-CHLOROTOLUENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	p-CHLOROTOLUENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	PROPANE, 1,2-DIBROMO-3-CHLORO-	1	UG/L	U	1	R1
SW099	12/30/98	GW06198TE	sec-BUTYLBENZENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	STYRENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	tert-BUTYLBENZENE	1	UG/L	U	1	

Appendix B: Surface Water Volatile Organic Compound Data

Location	Sample Date	Sample #	Analyte	Result	Units	Lab Qualifier	Detection Limit	Validation Qualifier
SW099	12/30/98	GW06198TE	TETRACHLOROETHENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	TOLUENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	TOTAL XYLENES	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	trans-1,2-DICHLOROETHENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	trans-1,3-DICHLOROPROPENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	TRICHLOROETHENE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	TRICHLOROFLUOROMETHANE	1	UG/L	U	1	
SW099	12/30/98	GW06198TE	VINYL CHLORIDE	1	UG/L	U	1	
SW099	4/29/99	GW06353TE	1,1,1,2-TETRACHLOROETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,1,1-TRICHLOROETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,1,2,2-TETRACHLOROETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,1,2-TRICHLOROETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,1-DICHLOROETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,1-DICHLOROETHENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,1-DICHLOROPROPENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,2,3-TRICHLOROBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	1,2,3-TRICHLOROPROPANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,2,4-TRICHLOROBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	1,2-DIBROMOETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,2-DICHLOROBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	1,2-DICHLOROETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,2-DICHLOROPROPANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,3-DICHLOROBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	1,3-DICHLOROPROPANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	1,4-DICHLOROBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	2,2-DICHLOROPROPANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	4-ISOPROPYLTOLUENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	BENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	BENZENE, 1,2,4-TRIMETHYL	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	BENZENE, 1,3,5-TRIMETHYL-	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	BROMOBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	BROMOCHLOROMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	BROMODICHLOROMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	BROMOFORM	0.1	UG/L	J	1	V1
SW099	4/29/99	GW06353TE	BROMOMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	CARBON TETRACHLORIDE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	CHLOROBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	CHLOROETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	CHLOROFORM	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	CHLOROMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	cis-1,2-DICHLOROETHENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	cis-1,3-DICHLOROPROPENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	DIBROMOCHLOROMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	DIBROMOMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	DICHLORODIFLUOROMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	ETHYLBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	HEXACHLOROBUTADIENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	ISOPROPYLBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	METHYLENE CHLORIDE	0.09	UG/L	BJ	1	JB1
SW099	4/29/99	GW06353TE	NAPHTHALENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	n-BUTYLBENZENE	1	UG/L	U	1	UJ1

Appendix B: Surface Water Volatile Organic Compound Data

Location	Sample Date	Sample #	Analyte	Result	Units	Lab Qualifier	Detection Limit	Validation Qualifier
SW099	4/29/99	GW06353TE	n-PROPYLBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	o-CHLOROTOLUENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	p-CHLOROTOLUENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	PROPANE, 1,2-DIBROMO-3-CHLORO-	1	UG/L	U	1	R1
SW099	4/29/99	GW06353TE	sec-BUTYLBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	STYRENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	tert-BUTYLBENZENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	TETRACHLOROETHENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	TOLUENE	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	TOTAL XYLENES	1	UG/L	U	1	UJ1
SW099	4/29/99	GW06353TE	trans-1,2-DICHLOROETHENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	trans-1,3-DICHLOROPROPENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	TRICHLOROETHENE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	TRICHLOROFLUOROMETHANE	1	UG/L	U	1	V1
SW099	4/29/99	GW06353TE	VINYL CHLORIDE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,1,1,2-TETRACHLOROETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,1,1-TRICHLOROETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,1,2,2-TETRACHLOROETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,1,2-TRICHLOROETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,1-DICHLOROETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,1-DICHLOROETHENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,1-DICHLOROPROPENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,2,3-TRICHLOROBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	1,2,3-TRICHLOROPROPANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,2,4-TRICHLOROBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	1,2-DIBROMOETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,2-DICHLOROBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	1,2-DICHLOROETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,2-DICHLOROPROPANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,3-DICHLOROBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	1,3-DICHLOROPROPANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	1,4-DICHLOROBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	2,2-DICHLOROPROPANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	4-ISOPROPYLTOLUENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	BENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	BENZENE, 1,2,4-TRIMETHYL	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	BENZENE, 1,3,5-TRIMETHYL-	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	BROMOBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	BROMOCHLOROMETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	BROMODICHLOROMETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	BROMOFORM	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	BROMOMETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	CARBON TETRACHLORIDE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	CHLOROBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	CHLOROETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	CHLOROFORM	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	CHLOROMETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	cis-1,2-DICHLOROETHENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	cis-1,3-DICHLOROPROPENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	DIBROMOCHLOROMETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	DIBROMOMETHANE	1	UG/L	U	1	V1

46

Appendix B: Surface Water Volatile Organic Compound Data

Location	Sample Date	Sample #	Analyte	Result	Units	Lab Qualifier	Detection Limit	Validation Qualifier
SW100	4/29/99	GW06354TE	DICHLORODIFLUOROMETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	ETHYLBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	HEXACHLOROBUTADIENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	ISOPROPYLBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06353TE	METHYLENE CHLORIDE	0.1	UG/L	JB	1	JB1
SW100	4/29/99	GW06354TE	NAPHTHALENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	n-BUTYLBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	n-PROPYLBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	o-CHLOROTOLUENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	p-CHLOROTOLUENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	PROPANE, 1,2-DIBROMO-3-CHLORO-	1	UG/L	U	1	R1
SW100	4/29/99	GW06354TE	sec-BUTYLBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	STYRENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	tert-BUTYLBENZENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	TETRACHLOROETHENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	TOLUENE	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	TOTAL XYLENES	1	UG/L	U	1	UJ1
SW100	4/29/99	GW06354TE	trans-1,2-DICHLOROETHENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	trans-1,3-DICHLOROPROPENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	TRICHLOROETHENE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	TRICHLOROFLUOROMETHANE	1	UG/L	U	1	V1
SW100	4/29/99	GW06354TE	VINYL CHLORIDE	1	UG/L	U	1	V1

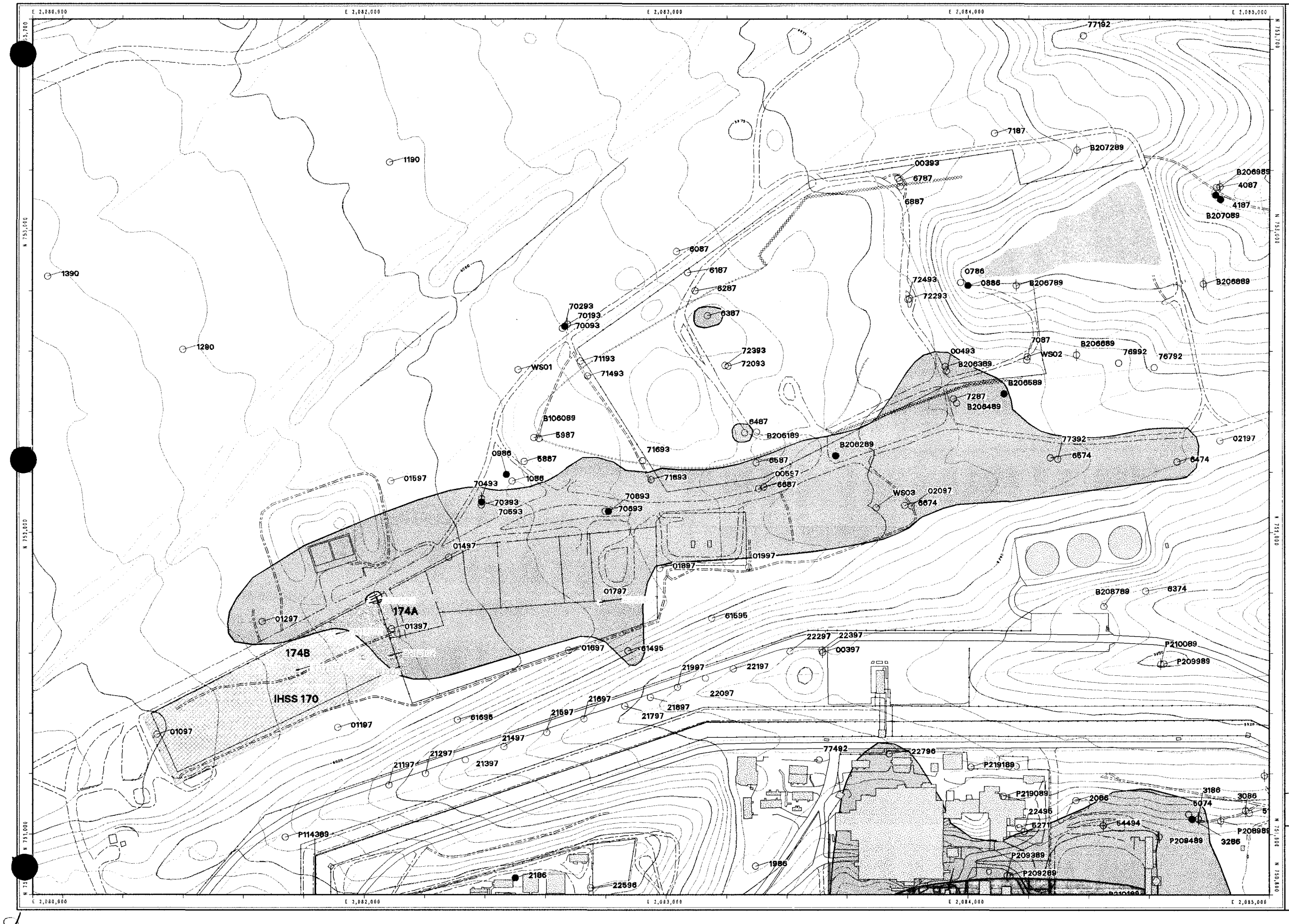


Figure 2-1
PU&D Yard
Groundwater VOC Plume

EXPLANATION

- PU&D Yard Monitoring Well
- Groundwater Monitor Well UHSU Surficial Material
- Groundwater Monitor Well UHSU Bedrock
- Groundwater Monitor Well LHSU Bedrock
- Borehole Locations
- Groundwater Intercept System
- Landfill Slurry wall
- Composite VOC Groundwater Plume (100 X MCL)
- Composite VOC Groundwater Plume (concentration equal to MCL)
- PU&D Yard IHSS

Standard Map Features

- Buildings and other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Contour (5-Foot)
- Paved roads
- Dirt roads

Scale = 1 : 3810
1 inch represents approximately 318 feet

100 0 200 400ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

Rocky Mountain Remediation Services, L.L.C.
Geographic Information Systems Group
Rocky Flats Environmental Technology Site
P.O. Box 464
Golden, CO 80402-0464

MAP ID: 99-0440

September 23, 1999

NT_ Svr w:/projects/fy99/99-0440/pud-yard.aml

8

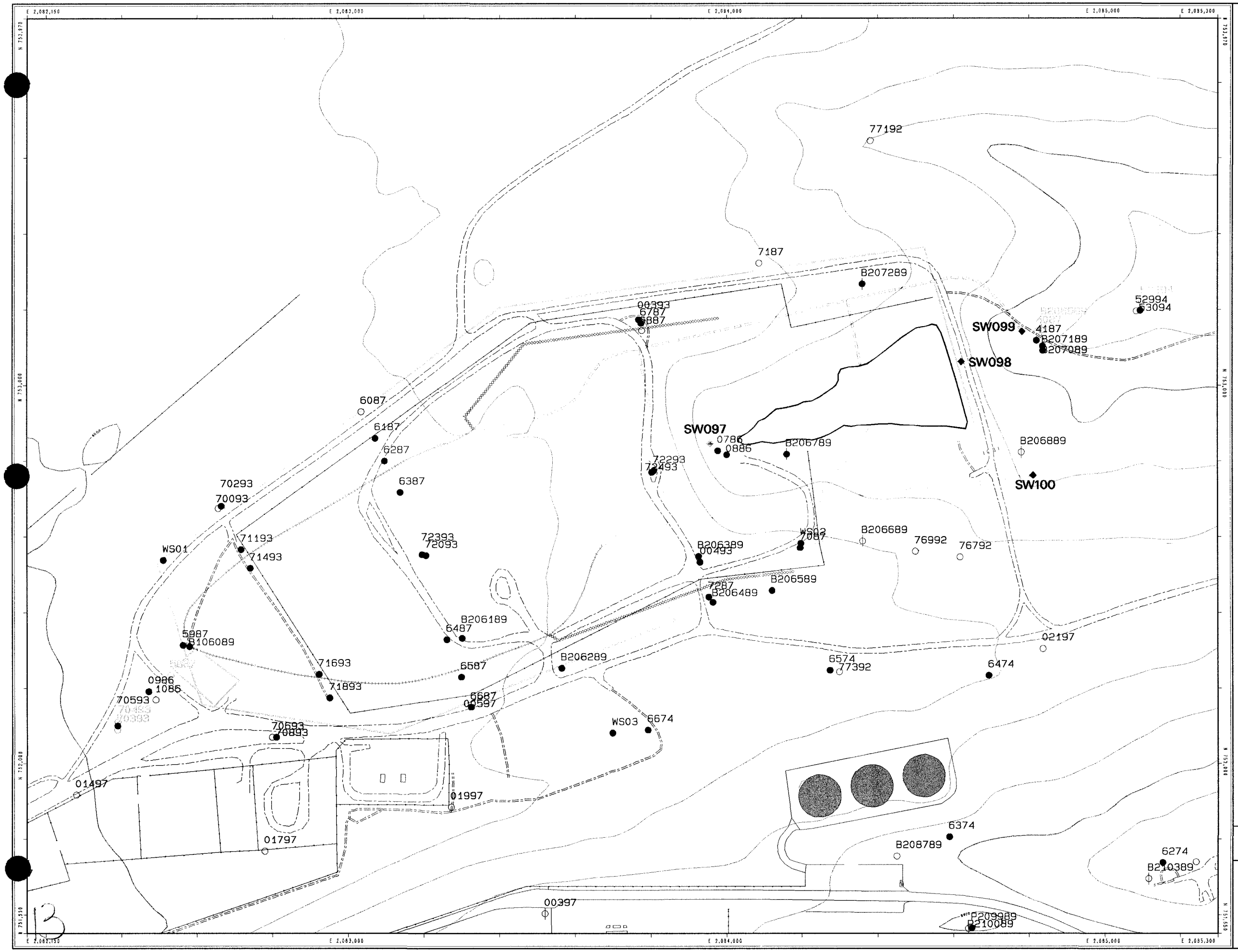


Figure 2-2

Present Sanitary Landfill Groundwater Intercept and Diversion System

EXPLANATION

- Groundwater Monitor Well UHSU Surficial Material
- Groundwater Monitor Well UHSU Bedrock
- Groundwater Monitor Well LHSU Bedrock
- Surface Water Monitoring Locations
- Landfill Groundwater Monitoring Wells
- All Other Existing Wells
- Abandoned Wells
- Slurry Wall
- GW Intercept System - Perforated
- GW Intercept System - Non-Perforated
- Individual Hazardous Substance Site
- East Landfill Pond
- Tanks
- Fences and other barriers
- Contour (20-Foot)
- Paved roads
- Dirt roads

Scale = 1 : 2930
1 inch represents approximately 244 feet

100 0 200 400ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

Rocky Mountain Remediation Services, L.L.C.
Geographic Information Systems Group
Rocky Flats Environmental Technology Site
P.O. Box 464
Golden, CO 80402-0464

MAP ID: 99-0266

September 23, 1999

NT_Svr w:/projects/fy99/99-0266/map-wqp/uheu_landfill.aml

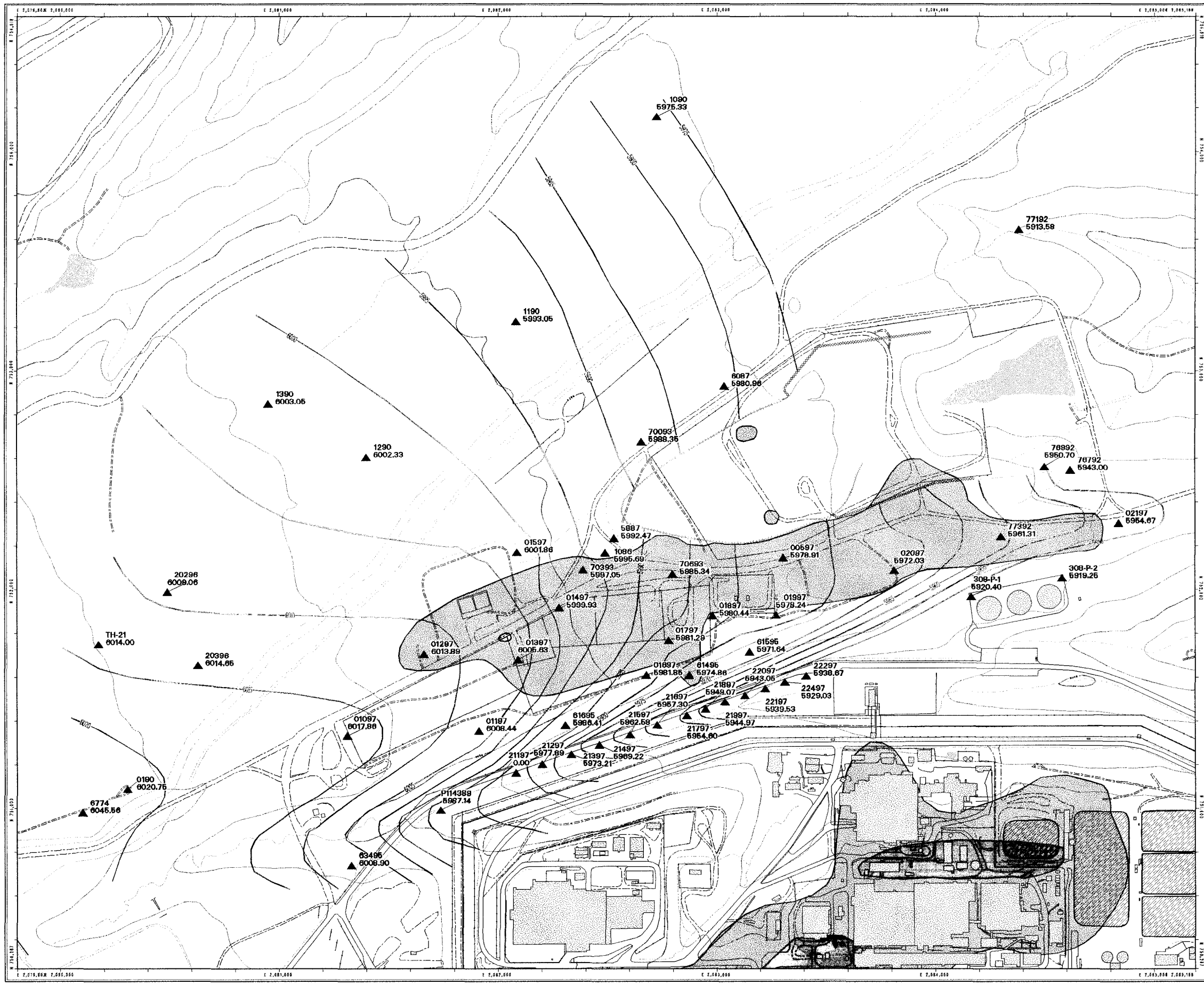


Figure 2-3
Potentiometric Surface Map of the PU&D Yard Plume Area

EXPLANATION

- Groundwater Well
- Groundwater Intercept System
- Landfill Slurry wall
- Water Level Contour
- Composite VOC Groundwater Plume (100 X MCL)
- Composite VOC Groundwater Plume (concentration equal to MCL)

Standard Map Features

- Buildings and other structures
- Solar Evaporation Ponds (SEP)
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Contour (20-Foot)
- Paved roads
- Dirt roads

DATA SOURCE:
Buildings, fences, hydrography, roads and other structures from 1994 aerial flyover data captured by EG&G RSL, Las Vegas.
Digitized from the orthophotographs. 1/95
Topology (contours) were derived from digital elevation model (DEM) data by Morrison Knudson (MK) using ESRI Arc TIN and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Flyover at ~ 10 meter resolution. DEM post-processing performed by MK, Winter 1997.

Scale = 1 : 5620
1 inch represents approximately 468 feet

100 0 200 400ft

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

Rocky Mountain Remediation Services, L.L.C.
Geographic Information Systems Group
Rocky Flats Environmental Technology Site
P.O. Box 464
Golden, CO 80402-0464

MAP ID: 99-0461

September 24, 1999

NT_Svr w:/projects/fy99/99-0461/wtrlevel99.aml

15