

***Annual Groundwater  
Monitoring Status Report  
for Waste Area Group 5  
for Fiscal Year 2004***

**Idaho  
Completion  
Project**

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Bechtel BWXT Idaho, LLC

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# **Annual Groundwater Monitoring Status Report for Waste Area Group 5 for Fiscal Year 2004**

**November 2004**

**Idaho Completion Project  
Idaho Falls, Idaho 83415**

**Prepared for the  
U.S. Department of Energy  
Assistant Secretary for Environmental Management  
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## ABSTRACT

This report presents the analytical and water level data for fiscal year 2004, the fourth year of post-record of decision monitoring. The groundwater monitoring was completed to partially fulfill the requirements delineated in the record of decision in support of groundwater monitoring requirements at Waste Area Group 5. Sample collection and analysis requirements are defined in the *Groundwater Monitoring Plan for the Waste Area Group 5 Remedial Action*, and in the *Final Record of Decision for Power Burst Facility and Auxiliary Reactor Area*. The record of decision (signed February 2000) requires that surveillance monitoring of the groundwater underlying the Auxiliary Reactor Area and Power Burst Facility be conducted annually at least until the first five-year review due in fiscal year 2005. At that time, the analytical data will be reviewed and a joint decision made with the Agencies as to changes or revisions required for the monitoring effort.

Groundwater samples were collected from eight wells during the annual sampling effort in October 2003 for fiscal year 2004. Samples were analyzed for volatile organic compounds, inorganics (metals and anions), and radionuclides. No analyte exceeded a maximum contaminant level, a secondary maximum contaminant level, or an Environmental Protection Agency action level. Lead concentrations in past sampling events exceeded the Environmental Protection Agency action level, but lead concentrations found during the current sampling event have decreased to background levels after replacement of the galvanized riser pipes. In addition to the analytical data, groundwater levels were measured at 19 wells, and a water level contour map was generated. The water level map is consistent with previous maps.



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## ACRONYMS

ARA	Auxiliary Reactor Area
DOE-ID	U.S. Department of Energy Idaho Operations Office
EPA	U.S. Environmental Protection Agency
FY	fiscal year
INEEL	Idaho National Engineering and Environmental Laboratory
MCL	maximum contaminant level
OU	operable unit
PBF	Power Burst Facility
RI/FS	remedial investigation/feasibility study
ROD	record of decision
RPD	relative percent difference
SAM	Sample and Analysis Management
SMCL	secondary maximum contaminant level
SPERT	Special Power Excursion Reactor Test
VOC	volatile organic compound
WAG	waste area group





# Annual Groundwater Monitoring Status Report for Waste Area Group 5 for Fiscal Year 2004

## 1. INTRODUCTION

Groundwater samples were collected in fiscal year (FY) 2004 from the Snake River Plain Aquifer beneath Waste Area Group (WAG) 5 at the Idaho National Engineering and Environmental Laboratory (INEEL). These samples were then analyzed in accordance with requirements stated in the *Groundwater Monitoring Plan for the Waste Area Group 5 Remedial Action* (DOE-ID 2000a). Groundwater monitoring is being conducted in partial satisfaction of requirements set forth in the *Final Record of Decision for the Power Burst Facility and Auxiliary Reactor Area* (DOE-ID 2000b), which was signed in February 2000. This FY 2004 report is the fourth annual report since the record of decision (ROD) was issued.

As required by the ROD, groundwater monitoring is being conducted to reduce the uncertainties associated with previous sampling efforts. Specifically, samples have been collected to monitor the Snake River Plain Aquifer beneath the WAG 5 site to confirm that surface contaminants have not adversely affected the groundwater. Samples were collected for additional analyses to provide data in support of the five-year review for WAG 5 and the WAG 10 Operable Unit (OU) 10-08 evaluation of the Snake River Plain Aquifer.

WAG 5 includes the Power Burst Facility (PBF) and the Auxiliary Reactor Area (ARA) in the southern end of the INEEL site (Figure 1).

### 1.1 Purpose

The purpose of this document is to present and summarize data regarding contaminant concentrations in the groundwater collected during FY 2004. The data presented here supplement the groundwater monitoring data presented in the *Waste Area Group 5 Operable Unit 5-12 Comprehensive Remedial Investigation/Feasibility Study* (RI/FS) (DOE-ID 1999) and are a compilation of the data for the potential contaminants in the WAG 5 groundwater.

### 1.2 Groundwater Monitoring Requirements

As outlined in the groundwater monitoring plan (DOE-ID 2000a), samples are to be collected from nine aquifer wells in the WAG 5 area (Figure 2). Samples were analyzed for radionuclides, organic constituents, and inorganic constituents identified in Section 2 of this report. Each of the wells will be sampled on an annual basis until the first OU 5-12 five-year review, which is due to be completed in FY 2005.

In addition, water level measurements were collected from 19 wells within and near WAG 5. Table 1 summarizes the construction details from each of the WAG 5 wells used to monitor groundwater and measure water levels.

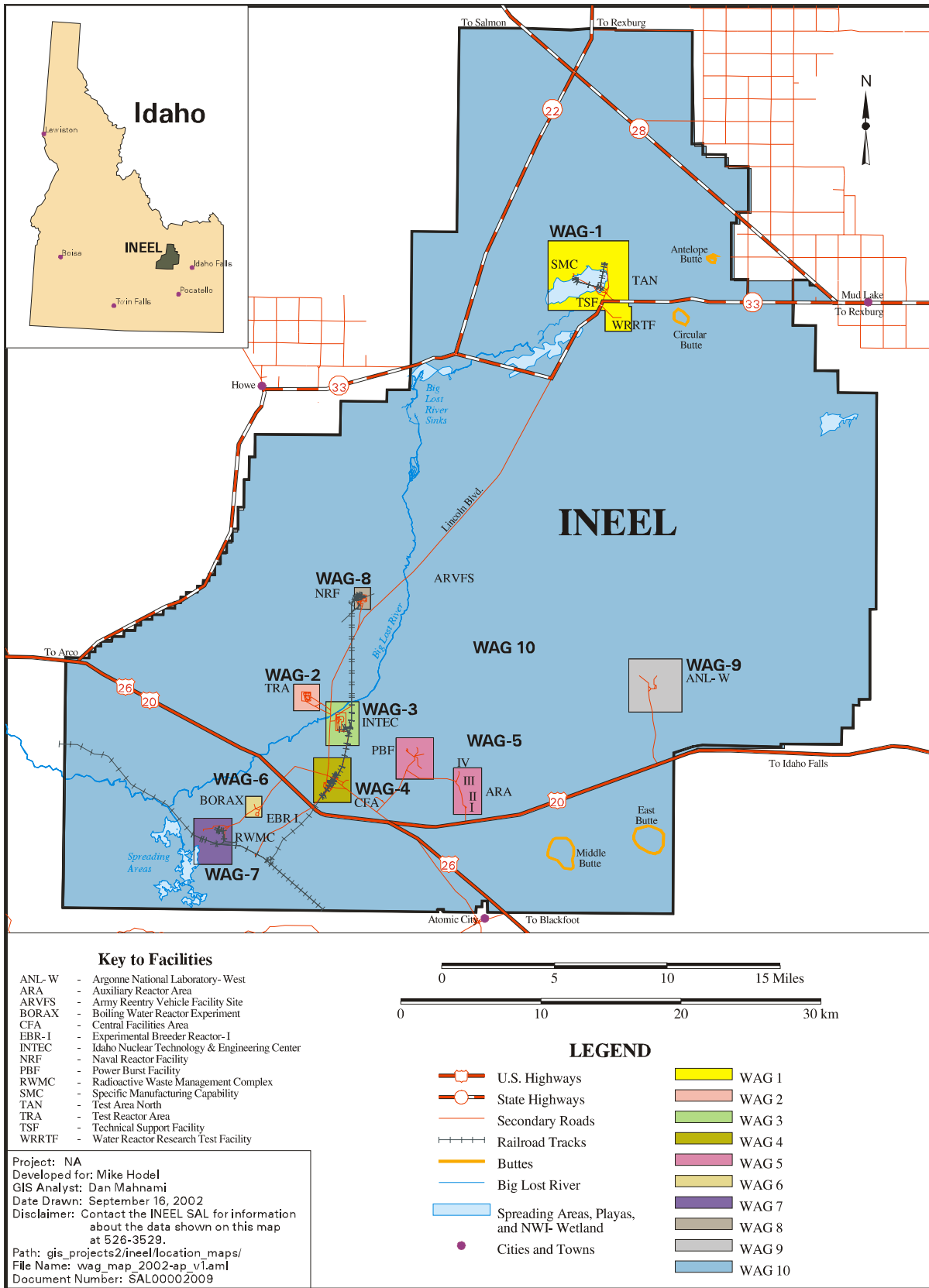


Figure 1. INEEL site map showing WAG locations.

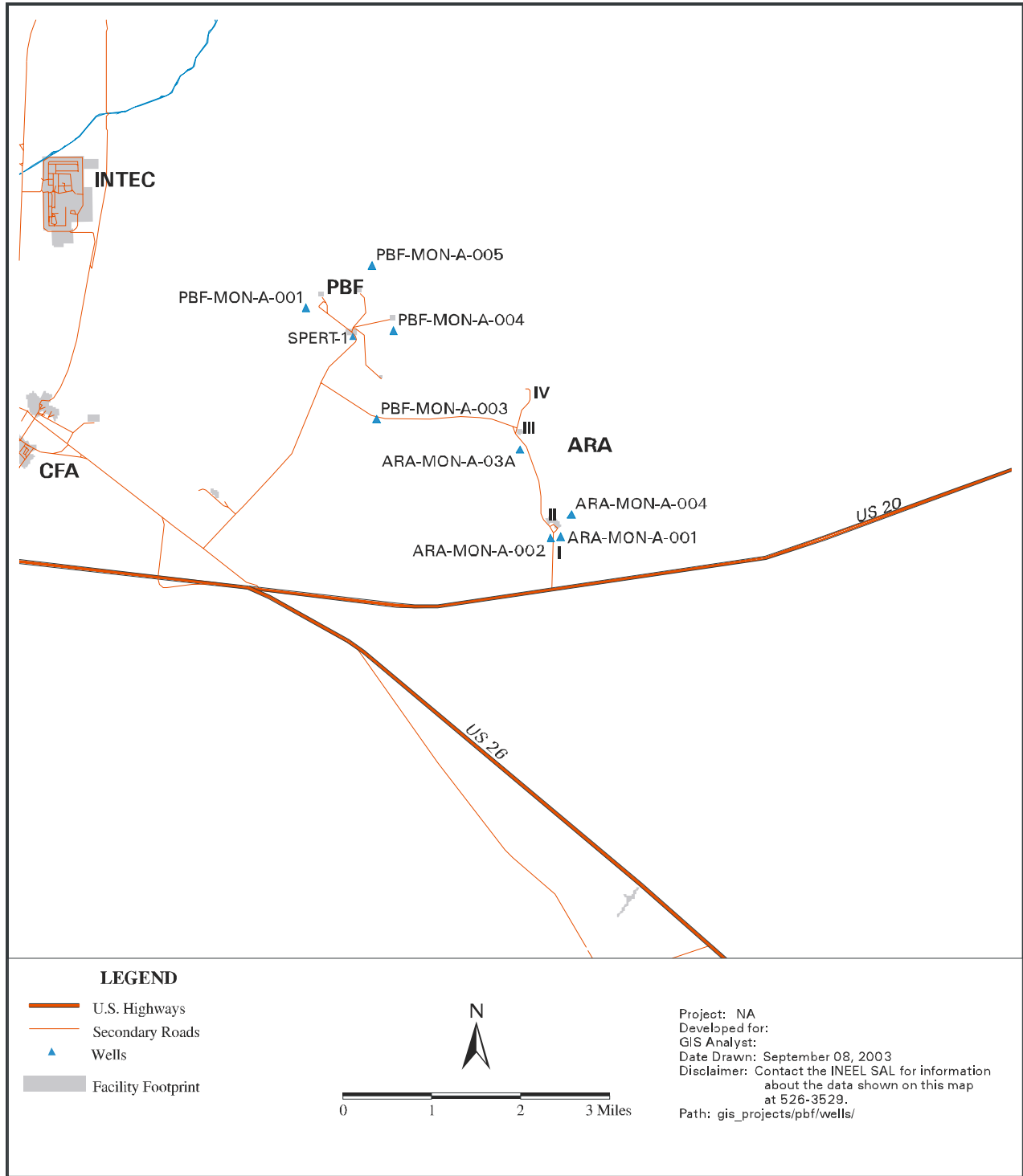


Figure 2. Wells sampled for WAG 5.

Table 1. Summary of well information for WAG 5 groundwater monitoring wells.

Well Name	Screened Interval(s) Below Land Surface (ft)	Well Use
ARA-MON-A-001	620–640	Sample
ARA-MON-A-002	600–620	Sample
ARA-MON-A-03A	624–644	Sample
ARA-MON-A-004	625–645	Sample
PBF-MON-A-001	454–484	Sample
PBF-MON-A-003	545–575	Sample
PBF-MON-A-004	522–542	Sample
PBF-MON-A-005	516–536	Sample
SPERT-I	482–492 522–542 552–582 597–617 632–652	Sample
STF-MON-A-01A	538–558	Water level
STF-MON-A-01A	510–530	Water level
STF-MON-A-003	493–533	Water level
STF-MON-A-004	500–540	Water level
USGS-001	600–630	Water level
USGS-005	475–497	Water level
USGS-020	467–477 515–552	Water level
USGS-082	470–570 593–693	Water level
USGS-107	270–690	Water level
USGS-110	580–780	Water level
USGS-116	401–438 438–572	Water level
NPR TEST	504–532	Water level
NTP AREA 2	667–722 742–814 844–876	Water level

## 2. MONITORING RESULTS

In October 2003, eight wells were sampled for volatile organics, inorganics (metals and anions), and radionuclides (well ARA-MON-03A could not be sampled because of pump problems). The samples were analyzed in accordance with established INEEL and U.S. Environmental Protection Agency (EPA) methods, with the exception of radionuclide analyses, which were done in accordance with the *Idaho National Engineering and Environmental Laboratory Sample and Analysis Management Statement of Work for Analytical Services* (INEEL 2002a). That statement of work establishes the minimum required detection limits and quality assurance requirements for the analytical methods to be used. All analytical results were validated to resident procedures established by the INEEL Sample and Analysis Management (SAM) Office.

### 2.1 Groundwater Monitoring Results

A complete listing of the data collected is presented in Appendix A. The data quality objectives defined in the groundwater monitoring plan (DOE-ID 2000a) are discussed in Appendix B. The results from the FY 2003 sampling round are compared to maximum contaminant levels (MCLs), secondary maximum contaminant levels (SMCLs), or action levels in Table 2. No analyte was detected at a concentration above its MCL, SMCL, or EPA action level. In addition, Table 2 shows a comparison of results to background concentrations for the INEEL.

Table 2. WAG 5 groundwater quality summary for FY 2004.

Analyte	Background <sup>a</sup>	Maximum	Minimum	Number of Wells with Detections above Background	Number of Wells with Detections above MCL	MCL or SMCL
<b>Radionuclides</b>						
Gross beta (pCi/L)	0 to 7	4.13	ND	0	0	4 mrem/yr
Gross alpha (pCi/L)	0 to 3	2.96	ND	0	0	15
Iodine-129 (pCi/L)	—	0.678	ND	1	0	1
Cesium-137 (pCi/L)	—	3.88	ND	1	0	200
<b>Inorganics</b>						
Arsenic (µg/L)	2 to 3	2.68	ND	0	0	50
Barium (µg/L)	50 to 70	54.1	31.4	0	0	2,000
Chromium (µg/L)	2 to 3	9.95	3.59	8	0	100
Lead (µg/L)	1 to 5	2.96	ND (<2.5)	0	0	15 <sup>b</sup>
Fluoride (mg/L)	0.4 to 0.5	0.546	0.19	3	0	4 <sup>c</sup>
Chloride (mg/L)	16 to 27	28.4	14.4	1	0	250 <sup>d</sup>
Nitrate (mg/L)	1 to 2	1.1	ND	0	0	10
Selenium	<1	14.7	ND (<4.6)	6	0	50
Sulfate (mg/L)	24 to 31	25.9	16.2	0	0	250 <sup>d</sup>
<b>Organics</b>						
Toluene (µg/L)	— <sup>e</sup>	0.93	ND	2	0	1,000
Trichloroethene (µg/L)	— <sup>e</sup>	0.44	ND	1	0	5

a. Background concentrations are from Knobel, Orr, and Cecil (1992).

b. Concentration represents the EPA-defined action level for this contaminant.

c. For fluoride, a 2-mg/L secondary standard exists in addition to the MCL.

d. Concentration represents the EPA-defined secondary standard for this contaminant.

e. Volatile organic compounds are considered to be absent from background.

ND = not detected.

### 2.1.1 Volatile Organic Compound Results

The volatile organic compound (VOC) analyses were performed in accordance with SW-846 Method 8260B (EPA 1986). Sample results for VOCs were below the MCLs for all analytes. Toluene was detected in two wells at concentrations less than 1 µg/L and considerably less than the MCL of 1,000 µg/L. Trichloroethene was detected in one well at 0.44 µg/L or well below the MCL of 5 µg/L. These toluene and trichloroethene detections are suspect, however, because the wells do not have a history of detections of these analytes and the values are less than the reporting limit of 1 µg/L. In the FY 2003 sampling event, tetrachloroethene was above its MCL of 5 µg/L in groundwater samples from wells ARA-MON-A-004 and PBF-MON-A-004. Tetrachloroethene was below the reporting limit of 1 µg/L in both of the above wells in the FY 2004 sampling event. Sporadic VOC detections have occurred in WAG 5 groundwater samples, but consistent VOC detections have not occurred.

### 2.1.2 Inorganic Results

Inorganic analyses included metals and anions. Metals were analyzed in accordance with procedures delineated in SW-846 (EPA 1986). Specifically, mercury by was analyzed in accordance with SW-846 Method 7470A, silver in accordance with SW-846 Method 7760A, and the balance in accordance with SW-846 Method 3010A and SW-846 Method 6010B. Specific metals requested included arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Anion analysis included fluoride, chloride, bromide, nitrate, nitrite, orthophosphate, and sulfate. Anion samples were analyzed in accordance with SW-846 Method 9056. All analytical results for metals and anions were below MCLs, SMCLs, or action levels. Lead had been detected in previous sampling events at concentrations slightly above the EPA action level of 15 µg/L, but lead was below the action level in all samples collected for FY 2004.

The cause of the previous elevated lead concentrations is believed to be the galvanized water-access and discharge pipes. Excluding the production well SPERT-I, each of the WAG 5 groundwater monitoring wells was installed with galvanized water-access and discharge pipes. As part of the INEEL routine well maintenance program, pumps were removed and maintained, and galvanized pipes were removed and replaced with stainless-steel pipes in wells ARA-MON-A-001 and PBF-MON-A-004 during June 2003. Galvanized pipe from all other WAG 5 monitoring wells has been replaced with stainless-steel pipe during well maintenance activities over the past four years. Galvanized pipe removed from these wells showed evidence of corrosion and rusting.

Corrosion of galvanized pipes has been attributed to the presence of lead and zinc in groundwater samples from other wells at the INEEL—specifically, wells in and around the Central Facilities Area and Test Area North. After galvanized pipe was replaced with stainless-steel pipe in other INEEL wells, the concentrations of lead and zinc decreased. Similarly, upon replacement of galvanized pipe in the ARA/PBF wells, the lead concentrations decreased to background levels. Consequently, the elevated lead concentrations in the ARA/PBF wells were probably the result of corroded galvanized pipe in the wells.

Chromium, selenium, fluoride, and chloride were detected above background concentrations (Table 3). The natural chromium and selenium concentrations are probably higher in the vicinity of PBF and ARA, because the upgradient well, PBF-MON-A-005, has similar concentrations to the other wells. The chloride concentration in the SPERT-I production well was marginally above the site background range of 16 to 27 mg/L. SPERT-I is screened at multiple depths, and the higher chloride concentration could reflect increased chloride concentration with depth in the aquifer. The cause of the higher fluoride concentrations in the ARA-MON-A-002 and -004 wells might be due to a locally higher background/upgradient concentration. The fluoride, chromium, and chloride concentrations are consistent with historical results (INEEL 2003).

### 2.1.3 Radionuclide Results

Radionuclide analyses included gross alpha and beta, gamma spectrometry, tritium, and iodine-129. The analyses were done in accordance with the requirements delineated in the INEEL radionuclide analytical statement of work (INEEL 2002a). For the FY 2004 sampling effort, the laboratory was requested to do alpha and beta isotopic analyses only if the corresponding gross alpha or gross beta sample result exceeded 5 pCi/L. Because this did not occur for any of the well samples analyzed, isotopic tests were unnecessary. Iodine-129 was detected in PBF-MON-A-001 at a concentration of  $0.678 \pm 0.299$ . This result is questionable, because it is near the minimum detectable activity of 0.56 pCi/L, and I-129 had not previously been detected at this well. Tritium was not detected in any of the samples. None of the radionuclide analytes exceeded the EPA-defined MCLs for drinking water (Table 2).

Cesium-134 was detected during the FY 2004 sampling event in well PBF-MON-A-001 at a concentration of  $3.88 \pm 0.984$  pCi/L. This result is below the minimum detectable activity of 5.26 pCi/L for this analysis and was flagged with a “J” by the validator, indicating that the result might be inaccurate or imprecise. Although Cs-134 was found to be present statistically, the result is questionable. Cesium-134 is a decay product of Cs-137; consequently, Cs-137 is generally expected to be present when Cs-134 is detected, especially given the fact that Cs-134 has a 2.06-year half-life, as compared to a 30.17-year half-life for Cs-137. However, Cs-137 was not detected in any of the samples. In addition, reactor operations that could have contributed to the presence of either isotope ceased at PBF in February 1985.

### 2.1.4 Field-measured Parameters

Specific conductance, dissolved oxygen, pH, and temperature were measured in the field at the time of sampling. These parameters are summarized in Table 3. The dissolved oxygen readings indicate that oxidizing conditions exist in the aquifer. Specific conductance measurements ranged from 0.317 to 0.406  $\mu\text{mhos/cm}$ , with the highest value in well SPERT-I. The pH values were relatively consistent at 7.6 to 7.9, except for PBF-MON-A-001, which had a pH value of 8.35.

Table 3. Summary of WAG 5 groundwater field-measured parameters for FY 2004.

Well Name	Date Sampled	Water Level (ft bgs) <sup>a</sup>	Open/Screen Interval (ft bgs)	Pump Depth (ft bgs)	Temperature (°C)	pH	Specific Conductivity ( $\mu\text{mhos/cm}$ )	Dissolved Oxygen (mg/L)
PBF-MON-A-003	10/6/03	521.5	545-575	572	14.09	7.75	0.349	7.49
ARA-MON-A-3A	10/6/03	608.32	624-644	622	NS	NS	NS	NS
ARA-MON-A-004	10/7/04	622.81	625-645	632	15.66	7.70	0.381	6.89
ARA-MON-A-002	10/7/04	597.58	600-620	604.3	16.54	7.71	0.378	6.72
ARA-MON-A-001	10/8/04	594.54	620-640	620	15.06	7.74	0.382	6.74
PBF-MON-A-005	10/8/04	514.88	516-536	525	11.46	7.66	0.360	8.32
PBF-MON-A-001	10/9/04	447.93	454-484	483	10.98	8.35	0.317	3.45
PBF-MON-A-004	10/9/04	497.58	522-542	525	12.35	7.87	0.36	9.64
SPERT-I	10/14/03	NM	482-492		11.36	7.65	0.409	8.96
			522-542					
			552-582					
			597-617					
			632-652					

a. Water level at the time of sampling. “ft bgs” is feet below ground surface.

NM = not measured.

NS = not sampled.

## 2.2 Groundwater Level Measurements

In April 2004, water level measurements were obtained from the 19 monitoring wells at WAG 5 (Table 4). The current ground elevation and borehole deviation correction factors are also shown in Table 4. A water level contour map prepared from these measurements is shown on Figure 3. Similar to past groundwater contour maps of WAG 5, the contour map of the April 2004 data shows steep contours in the PBF area, with the direction of hydraulic gradient somewhat counter to the regional south-southwest gradient.

Table 4. Summary of water level data from April 2004.

Well	Land Surface Datum (ft above MSL)	Depth to Water (ft)	Stick-up (ft)	Water Level (ft bgs)	Barometric Pressure	Time	Date	Borehole Deviation Correction Factor (ft)	Water level Elevation (ft above MSL)
ARA-MON-A-001	5,034.3	598.21	3.06	595.15	25.07	1320	4/30/04	0.47	4,439.62
ARA-MON-A-002	5,037.4	601.39	3.03	598.36	25.07	1250	4/30/04	0.1	4,439.14
ARA-MON-A-004	5,064.6	626.59	3.07	623.53	25.07	1415	4/30/04	0.08	4,441.15
ARA-MON-A-03A	5,050.1	612.27	3.20	609.07	25.04	1130	4/30/04	0.12	4,441.145
NTP AREA 2	5,128.42	678.59	1.71	676.88	25.04	1245	4/23/04	No info	4,451.54
NPR TEST	4,933.15	472.53	2.15	470.38	25.28	1020	4/23/04	No info	4,462.77
PBF-MON-A-001	4,906.15	450.61	2.35	448.26	25.07	1545	4/30/04	0.02	4,457.91
PBF-MON-A-004	4,939.66	502.23	3.36	498.87	25.07	1500	4/30/04	0.06	4,440.85
PBF-MON-A-003	4,959.29	524.31	2.16	522.15	25.13	1045	4/30/04	0.06	4,437.2
STF-MON-A-003	4,937.01	507.76	2.73	505.03	25.16	845	4/30/04	0.14	4,432.12
STF-MON-A-004	4,945.37	514.41	2.84	511.57	25.16	1010	4/30/04	0.1	4,433.9
STF-MON-A-01A	4,941.4	508.9	2.47	506.43	25.16	915	4/30/04	0.03	4,435
USGS-001	5,022.71	595.21	1.38	593.83	25.07	1530	4/23/04	0.19	4,429.07
USGS-005	4,937.79	476.8	1.45	475.35	25.25	830	4/23/04	No info	4,462.44
USGS-107	4,917.5	487.28	1.79	485.49	25.25	1400	4/23/04	No info	4,432.01
USGS-110	4,999.97	572.77	2.56	570.21	25.22	1430	4/23/04	0.06	4,429.82
USGS-116	4,916.03	469.52	2.56	466.96	25.25	955	4/23/04	0.2	4,449.27
USGS-020	4,916.36	470.26	0.52	469.74	25.25	940	4/23/04	0.07	4,446.69
USGS-082	4,906.83	459.08	1.59	457.49	25.25	1100	4/23/04	0.03	4,449.37

MSL = mean sea level.



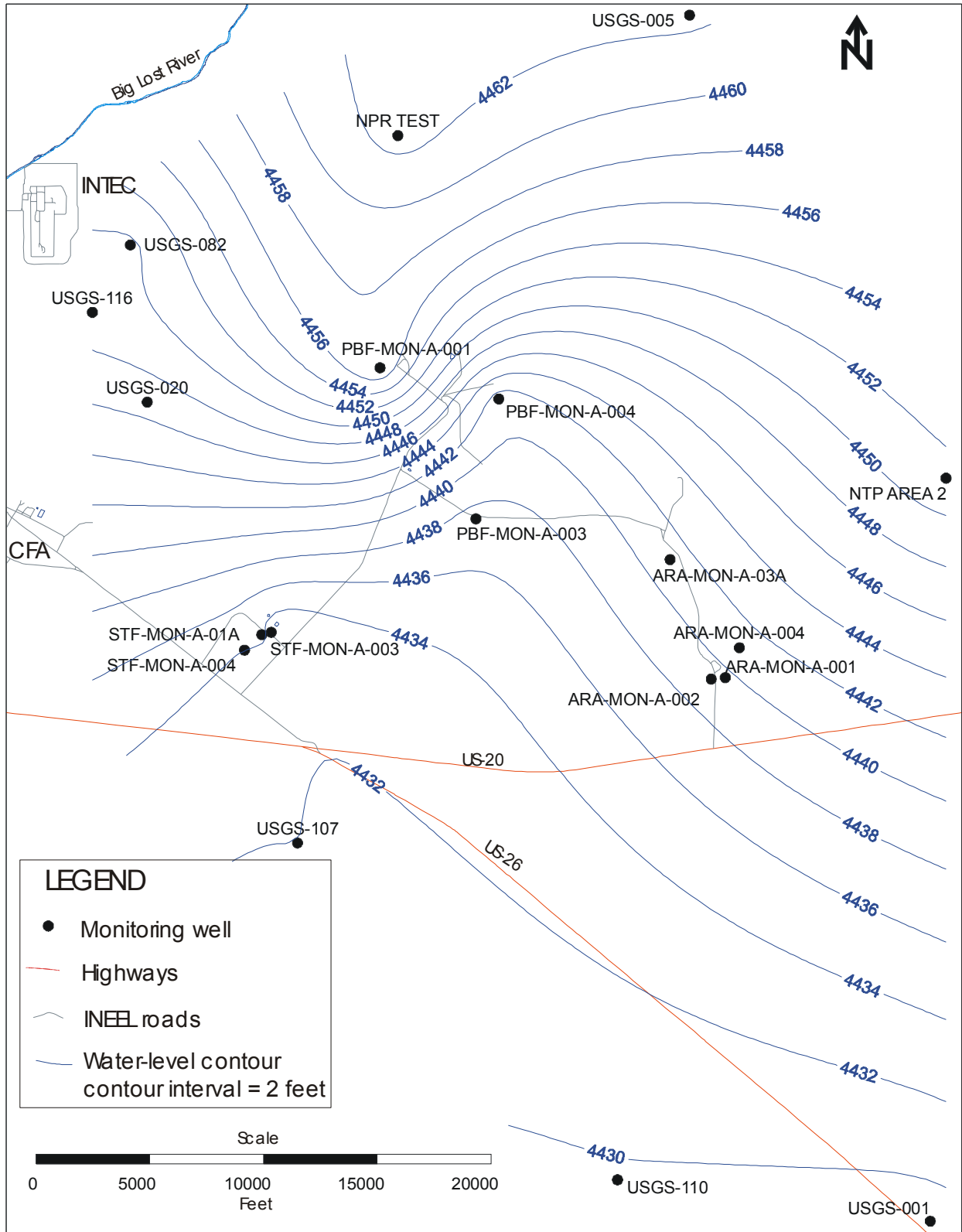


Figure 3. WAG 5 groundwater contour map of April 2004 data.

### **3. CONCLUSIONS AND RECOMMENDATIONS**

This section summarizes the conclusions and recommendations based on the groundwater monitoring events that have occurred to date.

#### **3.1 Conclusions**

Groundwater monitoring for FY 2004 was completed in October 2003 in accordance with the WAG 5 ROD (DOE-ID 2000b) and the groundwater monitoring plan (DOE-ID 2000a). As discussed in Appendix B, all data quality objectives defined in the groundwater monitoring plan were met. Overall, most analyte concentrations appear to be consistent with historical results and do not indicate the influence of contaminants from the surface of the ARA or PBF areas.

All constituents analyzed from the groundwater samples collected during the October 2003 sampling event were below MCLs. Lead concentrations, which have been above its action level in several wells in the past, were all below MCLs in October 2003. The October 2003 sampling event represents the second consecutive year that the lead concentrations have not exceeded the action level. Replacement of galvanized pipe with stainless-steel pipe appears to have removed the source of the lead. Consequently, lead concentrations have declined to background concentrations.

Although Cs-134 and I-129 were considered to be present statistically in the sample from well PBF-MON-A-001 at concentrations of  $3.88 \pm 0.984$  and  $0.69 \pm 0.29$  pCi/L, respectively, the results are considered suspect for the reasons stated in Subsection 2.1.3.

The groundwater contour map prepared from the water elevations measured during April 2004 continues to show a steep hydraulic gradient in the PBF area and is consistent with previous contour maps of the area. Future well maintenance will include collection of gyroscopic borehole deviation logs from wells that do not currently have gyroscopic borehole deviation logs; these logs might provide further insight to the steep hydraulic gradient in the PBF area.

#### **3.2 Recommendations**

Groundwater monitoring should continue at the nine wells utilized by WAG 5 at the frequency prescribed in the groundwater monitoring plan (DOE-ID 2000a). In addition, nitrite and phosphate should be dropped from the analyte list. Nitrite is rapidly converted to nitrate in the oxidizing conditions of the vadoze zone and the groundwater (see Table 3). Phosphate contamination is rapidly attenuated by precipitation in the presence of iron and calcium. Consequently, neither of these analytes is a good tracer for contamination. In addition, removing these analytes will eliminate the 48-hour hold time on samples.

For overall comparability of the groundwater analytical data, collection of groundwater samples for WAG 5 should continue at approximately the same time of year for each annual event. WAG 5 is currently scheduled for annual sampling during November of each year.

### **4. REFERENCES**

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- Knobel, L. L., B. R. Orr, and L. D. Cecil, 1992, "Summary of Background Concentrations of Selected Radiochemical and Chemical Constituents in Groundwater from the Snake River Plain Aquifer Idaho: Estimated from an Analysis of Previously Published Data," *Journal of Idaho Academy of Science*, Vol. 28, No. 1, 1992.



**Appendix A**  
**Analytical Results**



# Appendix A

## Analytical Results

This appendix presents the analytical data collected from groundwater sampling at Waste Area Group 5. The complete data set is provided on the compact disc attached to the inside back cover of this report. Data qualifier flags used in this appendix are defined as follows:

### Organics

- B – the analyte was detected in the associated laboratory blank.
- U – the analyte was not detected.
- UJ – the analyte was analyzed for, but it was not detected. The associated value is an estimate and might be inaccurate or imprecise.
- J – the analyte was detected, but the associated value is an estimate and might be inaccurate or imprecise.
- R – the accuracy of the data is so questionable that it is recommended that the data not be used. The “R” flag overrides all other applicable flags.

### Inorganics

- B – the result is less than the contract-required reporting limit but greater than or equal to the instrument detection limit.
- E – the post-digestion spike was outside the control limits.
- N – the matrix spike recovery was outside control limits.
- U – the analyte was not detected.
- UJ – the analyte was analyzed for, but it was not detected. The associated value is an estimate and might be inaccurate or imprecise.
- R – the accuracy of the data is so questionable that it is recommended that the data not be used. The “R” flag overrides all other applicable flags.

### Radiological Qualifier Flags

- J—the associated value is estimated. The result might not be an accurate representation of the amount of activity actually present in the sample.
- R—the accuracy of the data is so questionable that it is recommended that the data not be used. The “R” flag overrides all other applicable flags.
- U—the radionuclide is not considered present in the sample (i.e., nondetect).

- UJ—the radionuclide might or might not be present, and the result is considered highly questionable. The associated value is an estimate and might be inaccurate or imprecise. The result is considered a nondetect for project data interpretation purposes.



Field Sample Number	Location	Compound	Sample Result	Sample Error	Result Qualifier	Validation Flag	Sample Units	Date Sample Collected	Method Code	MDA
5GM30101AZ	ARA-MON-A-001	1,1,1,2-Tetrachloroethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,1,1-Trichloroethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,1,2,2-Tetrachloroethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,1,2-Trichloroethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,1-Dichloroethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,1-Dichloroethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,2,3-Trichloropropane	1		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,2-Dibromo-3-chloropropane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,2-Dibromoethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,2-Dichlorobenzene	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,2-Dichloroethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,2-Dichloroethene (total)	2		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,2-Dichloropropane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,3-Dichlorobenzene	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,4-Dichlorobenzene	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	1,4-Dioxane	80		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	2-Butanone	10		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	2-Hexanone	5		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Acetone	10		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Acetonitrile	20		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Acrolein	10		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Acrylonitrile	10		U	R	UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Allyl chloride	2		U		UG/L	10/08/2003	SW8260B	
5GM30101RH	ARA-MON-A-001	Americium-241	2.32E+01	1.31E+01		U	PCI/L	10/08/2003	GMS	3.97E+01
5GM30101RH	ARA-MON-A-001	Antimony-125	5.05E+00	3.40E+00		U	PCI/L	10/08/2003	GMS	1.34E+01
5GM30101LL	ARA-MON-A-001	Arsenic	2.65		U		UG/L	10/08/2003	SW6010B	
5GM30101LL	ARA-MON-A-001	Barium	38.1		B		UG/L	10/08/2003	SW6010B	
5GM30101AZ	ARA-MON-A-001	Benzene	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AN	ARA-MON-A-001	Bromide	1.15		U		MG/L	10/08/2003	E300	
5GM30101AZ	ARA-MON-A-001	Bromodichloromethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Bromoform	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Bromomethane	2		U	R	UG/L	10/08/2003	SW8260B	
5GM30101LL	ARA-MON-A-001	Cadmium	0.36		U		UG/L	10/08/2003	SW6010B	
5GM30101AZ	ARA-MON-A-001	Carbon disulfide	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Carbon tetrachloride	1		U		UG/L	10/08/2003	SW8260B	
5GM30101RH	ARA-MON-A-001	Cerium-144	4.25E-01	9.01E+00		U	PCI/L	10/08/2003	GMS	3.27E+01
5GM30101RH	ARA-MON-A-001	Cesium-134	4.65E+00	2.54E+00		U	PCI/L	10/08/2003	GMS	5.66E+00
5GM30101RH	ARA-MON-A-001	Cesium-137	-1.61E+00	1.12E+00		U	PCI/L	10/08/2003	GMS	3.78E+00
5GM30101AN	ARA-MON-A-001	Chloride	19.7				MG/L	10/08/2003	E300	
5GM30101AZ	ARA-MON-A-001	Chlorobenzene	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Chloroethane	2		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Chloroform	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Chloromethane	2		U		UG/L	10/08/2003	SW8260B	
5GM30101LL	ARA-MON-A-001	Chromium	4		B		UG/L	10/08/2003	SW6010B	
5GM30101AZ	ARA-MON-A-001	cis-1,2-Dichloroethene	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	cis-1,3-Dichloropropene	1		U		UG/L	10/08/2003	SW8260B	
5GM30101RH	ARA-MON-A-001	Cobalt-58	6.35E-01	1.37E+00		U	PCI/L	10/08/2003	GMS	5.45E+00
5GM30101RH	ARA-MON-A-001	Cobalt-60	2.43E-01	9.88E-01		U	PCI/L	10/08/2003	GMS	4.39E+00
5GM30101AZ	ARA-MON-A-001	Dibromochloromethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30101AZ	ARA-MON-A-001	Dibromomethane	1		U		UG/L	10/08/2003	SW8260B	



5GM30201AV	ARA-MON-A-002	1,1,2,2-Tetrachloroethane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,1,2,2-Tetrachloroethane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,1,2-Trichloroethane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,1,2-Trichloroethane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,1-Dichloroethane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,1-Dichloroethane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,1-Dichloroethene	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,1-Dichloroethene	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,2,3-Trichloropropane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,2,3-Trichloropropane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,2-Dibromo-3-chloropropane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,2-Dibromo-3-chloropropane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,2-Dibromoethane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,2-Dibromoethane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,2-Dichloroethane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,2-Dichloroethane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,2-Dichloropropane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,2-Dichloropropane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	1,4-Dioxane	80				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	1,4-Dioxane	80				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	2-Butanone	10				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	2-Butanone	10				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	2-Hexanone	5				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	2-Hexanone	5				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	Acetone	10				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Acetone	10				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	Acetonitrile	20				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Acetonitrile	20				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	Acrolein	10				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Acrolein	10				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	Acrylonitrile	10				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Acrylonitrile	10				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	Allyl chloride	2				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Allyl chloride	2				UG/L	10/07/2003	SW8260B
5GM30202RH	ARA-MON-A-002	Americium-241	5.92E-03		8.10E+00		PC/L	10/07/2003	GMS
5GM30201RH	ARA-MON-A-002	Americium-241	7.05E+00		6.81E+00		PC/L	10/07/2003	GMS
5GM30202RH	ARA-MON-A-002	Antimony-125	-3.52E+00		5.35E+00		PC/L	10/07/2003	GMS
5GM30201RH	ARA-MON-A-002	Antimony-125	-1.13E+00		3.67E+00		PC/L	10/07/2003	GMS
5GM30202LL	ARA-MON-A-002	Arsenic	2.65				UG/L	10/07/2003	SW6010B
5GM30201LL	ARA-MON-A-002	Arsenic	2.65				UG/L	10/07/2003	SW6010B
5GM30202LL	ARA-MON-A-002	Barium	38.3				UG/L	10/07/2003	SW6010B
5GM30201LL	ARA-MON-A-002	Barium	37.8				UG/L	10/07/2003	SW6010B
5GM30201AV	ARA-MON-A-002	Benzene	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Benzene	1				UG/L	10/07/2003	SW8260B
5GM30201AN	ARA-MON-A-002	Bromide	0				MG/L	10/07/2003	E300
5GM30202AN	ARA-MON-A-002	Bromide	0				MG/L	10/07/2003	E300
5GM30201AV	ARA-MON-A-002	Bromodichloromethane	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Bromodichloromethane	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	Bromoform	1				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Bromoform	1				UG/L	10/07/2003	SW8260B
5GM30201AV	ARA-MON-A-002	Bromomethane	2				UG/L	10/07/2003	SW8260B
5GM30202AV	ARA-MON-A-002	Bromomethane	2				UG/L	10/07/2003	SW8260B



5GM30201RI	ARA-MON-A-002	Iodine-129	1.07E-03	9.66E-03		U	PCI/L	10/07/2003	GMS	3.41E-02
5GM30202RI	ARA-MON-A-002	Iodine-129	7.97E-02	1.05E-01		U	PCI/L	10/07/2003	GMS	3.58E-01
5GM30201AV	ARA-MON-A-002	Isobutyl alcohol	80		U	R	UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Isobutyl alcohol	80		U	R	UG/L	10/07/2003	SW8260B	
5GM30202LL	ARA-MON-A-002	Lead	2.79		B		UG/L	10/07/2003	SW6010B	
5GM30201LL	ARA-MON-A-002	Lead	2.59		B		UG/L	10/07/2003	SW6010B	
5GM30202RH	ARA-MON-A-002	Manganese-54	2.50E+00	2.79E+00		U	PCI/L	10/07/2003	GMS	7.69E+00
5GM30201RH	ARA-MON-A-002	Manganese-54	-9.63E-01	1.35E+00		U	PCI/L	10/07/2003	GMS	4.80E+00
5GM30202LL	ARA-MON-A-002	Mercury	0.033		U		UG/L	10/07/2003	SW7470A	
5GM30201LL	ARA-MON-A-002	Mercury	0.033		U		UG/L	10/07/2003	SW7470A	
5GM30201AV	ARA-MON-A-002	Methacrylonitrile	5		U		UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Methacrylonitrile	5		U		UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Methyl iodide	2		U		UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Methyl iodide	2		U		UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Methyl isobutyl ketone	5		U		UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Methyl isobutyl ketone	5		U		UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Methylene Chloride	1		U	JJ	UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Methylene Chloride	1		U	JJ	UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Methylmethacrylate	1		U	R	UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Methylmethacrylate	1		U	R	UG/L	10/07/2003	SW8260B	
5GM30202RH	ARA-MON-A-002	Niobium-95	-4.63E+00	2.76E+00		U	PCI/L	10/07/2003	GMS	7.42E+00
5GM30201RH	ARA-MON-A-002	Niobium-95	-3.04E-01	1.80E+00		U	PCI/L	10/07/2003	GMS	6.74E+00
5GM30201AN	ARA-MON-A-002	Nitrate-N	1.18				MG/L	10/07/2003	E300	
5GM30202AN	ARA-MON-A-002	Nitrate-N	1.18				MG/L	10/07/2003	E300	
5GM30201AN	ARA-MON-A-002	Nitrite-N	0		U		MG/L	10/07/2003	E300	
5GM30202AN	ARA-MON-A-002	Nitrite-N	0		U		MG/L	10/07/2003	E300	
5GM30201AN	ARA-MON-A-002	Nitrite-N	0		U		MG/L	10/07/2003	E300	
5GM30202AN	ARA-MON-A-002	Nitrite-N	0		U		MG/L	10/07/2003	E300	
5GM30201AN	ARA-MON-A-002	Ortho-Phosphate as P	0		U		MG/L	10/07/2003	E300	
5GM30202AN	ARA-MON-A-002	Ortho-Phosphate as P	0		U		MG/L	10/07/2003	E300	
5GM30201AV	ARA-MON-A-002	Propionitrile	5		U	R	UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Propionitrile	5		U	R	UG/L	10/07/2003	SW8260B	
5GM30202RH	ARA-MON-A-002	Radium-226	9.19E+00	4.17E+00		JJ	PCI/L	10/07/2003	GMS	1.65E+01
5GM30201RH	ARA-MON-A-002	Radium-226	4.45E-01	4.41E+00		U	PCI/L	10/07/2003	GMS	1.22E+01
5GM30202RH	ARA-MON-A-002	Ruthenium-103	4.07E+00	2.46E+00		U	PCI/L	10/07/2003	GMS	8.61E+00
5GM30201RH	ARA-MON-A-002	Ruthenium-103	4.51E+00	2.52E+00		U	PCI/L	10/07/2003	GMS	5.22E+00
5GM30202RH	ARA-MON-A-002	Ruthenium-106	-1.00E+01	1.57E+01		U	PCI/L	10/07/2003	GMS	5.44E+01
5GM30201RH	ARA-MON-A-002	Ruthenium-106	1.03E+01	1.30E+01		U	PCI/L	10/07/2003	GMS	5.12E+01
5GM30202LL	ARA-MON-A-002	Selenium	13.4		B		UG/L	10/07/2003	SW6010B	
5GM30201LL	ARA-MON-A-002	Selenium	14.7		B		UG/L	10/07/2003	SW6010B	
5GM30202LL	ARA-MON-A-002	Silver	0.48		U		UG/L	10/07/2003	SW6010B	
5GM30201LL	ARA-MON-A-002	Silver	0.48		U		UG/L	10/07/2003	SW6010B	
5GM30202RH	ARA-MON-A-002	Silver-108m	3.16E-01	1.84E+00		U	PCI/L	10/07/2003	GMS	6.66E+00
5GM30201RH	ARA-MON-A-002	Silver-108m	-9.68E-01	1.15E+00		U	PCI/L	10/07/2003	GMS	3.84E+00
5GM30202RH	ARA-MON-A-002	Silver-110m	1.16E+00	2.52E+00		U	PCI/L	10/07/2003	GMS	8.09E+00
5GM30201RH	ARA-MON-A-002	Silver-110m	-7.17E-01	1.29E+00		U	PCI/L	10/07/2003	GMS	4.71E+00
5GM30201AV	ARA-MON-A-002	Styrene	1		U		UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Styrene	1		U		UG/L	10/07/2003	SW8260B	
5GM30201AN	ARA-MON-A-002	Sulfate	20.3			J	MG/L	10/07/2003	E300	
5GM30202AN	ARA-MON-A-002	Sulfate	20.2			J	MG/L	10/07/2003	E300	
5GM30201AV	ARA-MON-A-002	Tetrachloroethene	1		U		UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Tetrachloroethene	1		U		UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Toluene	1		U		UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Toluene	1		U		UG/L	10/07/2003	SW8260B	

5GM30201AV	ARA-MON-A-002	trans-1,2-Dichloroethene	1			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	trans-1,2-Dichloroethene	1			UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	trans-1,3-Dichloropropene	1			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	trans-1,3-Dichloropropene	1			UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	trans-1,4-Dichloro-2-butene	2			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	trans-1,4-Dichloro-2-butene	2			UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Trichloroethene	1			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Trichloroethene	1			UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Trichlorofluoromethane	1			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Trichlorofluoromethane	1			UG/L	10/07/2003	SW8260B	
5GM30201R8	ARA-MON-A-002	Tritium	-2.83E+01	8.33E+01		PCI/L	10/07/2003	LSC	2.84E+02
5GM30202R8	ARA-MON-A-002	Tritium	-3.10E+01	8.04E+01		PCI/L	10/07/2003	LSC	2.75E+02
5GM30202RH	ARA-MON-A-002	Uranium-235	1.38E+01	1.86E+01		PCI/L	10/07/2003	GMS	4.66E+01
5GM30201RH	ARA-MON-A-002	Uranium-235	3.77E+00	9.26E+00		PCI/L	10/07/2003	GMS	3.33E+01
5GM30201AV	ARA-MON-A-002	Vinyl Acetate	2			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Vinyl Acetate	2			UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Vinyl Chloride	2			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Vinyl Chloride	2			UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Vinyl Chloride	3			UG/L	10/07/2003	SW8260B	
5GM30201AV	ARA-MON-A-002	Xylene (Total)	3			UG/L	10/07/2003	SW8260B	
5GM30202AV	ARA-MON-A-002	Xylene (Total)	3			UG/L	10/07/2003	SW8260B	
5GM30202RH	ARA-MON-A-002	Zinc-65	-2.03E+00	4.14E+00		PCI/L	10/07/2003	GMS	1.51E+01
5GM30201RH	ARA-MON-A-002	Zinc-65	-2.33E+00	2.25E+00		PCI/L	10/07/2003	GMS	7.71E+00
5GM30202RH	ARA-MON-A-002	Zirconium-95	-3.57E-01	2.82E+00		PCI/L	10/07/2003	GMS	1.11E+01
5GM30201RH	ARA-MON-A-002	Zirconium-95	1.44E+00	2.27E+00		PCI/L	10/07/2003	GMS	9.34E+00
5GM30401AV	ARA-MON-A-004	1,1,1,2-Tetrachloroethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,1,1-Trichloroethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,1,2,2-Tetrachloroethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,1,2-Trichloroethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,1-Dichloroethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,1-Dichloroethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,2,3-Trichloropropane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,2-Dibromo-3-chloropropane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,2-Dibromoethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,2-Dichloroethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,2-Dichloropropane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	1,4-Dioxane	80			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	2-Butanone	10			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	2-Hexanone	5			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Acetone	10			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Acetonitrile	20			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Acrolein	10			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Acrylonitrile	10			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Allyl chloride	2			UG/L	10/07/2003	SW8260B	
5GM30401RH	ARA-MON-A-004	Americium-241	-9.22E+00	1.06E+01		PCI/L	10/07/2003	GMS	3.14E+01
5GM30401RH	ARA-MON-A-004	Antimony-125	2.51E+00	3.21E+00		PCI/L	10/07/2003	GMS	1.22E+01
5GM30401LL	ARA-MON-A-004	Arsenic	2.65			UG/L	10/07/2003	SW6010B	
5GM30401LL	ARA-MON-A-004	Barium	38.7			UG/L	10/07/2003	SW6010B	
5GM30401AV	ARA-MON-A-004	Benzene	1			UG/L	10/07/2003	SW8260B	
5GM30401AN	ARA-MON-A-004	Bromide	0			MG/L	10/07/2003	E300	
5GM30401AV	ARA-MON-A-004	Bromodichloromethane	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Bromoform	1			UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Bromomethane	2			UG/L	10/07/2003	SW8260B	

5GM30401LL	ARA-MON-A-004	Cadmium	0.36						UG/L	10/07/2003	SW6010B	
5GM30401AV	ARA-MON-A-004	Carbon disulfide	1						UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Carbon tetrachloride	1						UG/L	10/07/2003	SW8260B	
5GM30401RH	ARA-MON-A-004	Cerium-144	1.38E+01		9.43E+00			U	PCI/L	10/07/2003	GMS	3.58E+01
5GM30401RH	ARA-MON-A-004	Cesium-134	6.52E-05		1.13E+00			U	PCI/L	10/07/2003	GMS	4.45E+00
5GM30401RH	ARA-MON-A-004	Cesium-137	2.49E+00		1.44E+00			U	PCI/L	10/07/2003	GMS	4.51E+00
5GM30401AN	ARA-MON-A-004	Chloride	19.2						MG/L	10/07/2003	E300	
5GM30401AV	ARA-MON-A-004	Chlorobenzene	1					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Chloroethane	2					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Chloroform	1					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Chloromethane	2					U	UG/L	10/07/2003	SW8260B	
5GM30401LL	ARA-MON-A-004	Chromium	3.99					B	UG/L	10/07/2003	SW6010B	
5GM30401AV	ARA-MON-A-004	cis-1,2-Dichloroethene	1					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	cis-1,3-Dichloropropene	1					U	UG/L	10/07/2003	SW8260B	
5GM30401RH	ARA-MON-A-004	Cobalt-58	-3.89E-01		1.14E+00			U	PCI/L	10/07/2003	GMS	4.35E+00
5GM30401RH	ARA-MON-A-004	Cobalt-60	9.68E-01		1.21E+00			U	PCI/L	10/07/2003	GMS	5.40E+00
5GM30401AV	ARA-MON-A-004	Dibromochloromethane	1					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Dibromomethane	1					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Dichlorodifluoromethane	2					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Ethylbenzene	1					U	UG/L	10/07/2003	SW8260B	
5GM30401RH	ARA-MON-A-004	Europium-152	4.12E+00		3.37E+00			U	PCI/L	10/07/2003	GMS	1.31E+01
5GM30401RH	ARA-MON-A-004	Europium-154	1.24E+00		3.29E+00			U	PCI/L	10/07/2003	GMS	1.41E+01
5GM30401RH	ARA-MON-A-004	Europium-155	4.14E+00		4.73E+00			U	PCI/L	10/07/2003	GMS	1.79E+01
5GM30401AN	ARA-MON-A-004	Fluoride	0.505						MG/L	10/07/2003	E300	
5GM30401RH	ARA-MON-A-004	Gross Alpha	2.05E+00		5.56E-01			J	PCI/L	10/07/2003	GAB	1.33E+00
5GM30401RH	ARA-MON-A-004	Gross Beta	1.88E+00		7.66E-01			UJ	PCI/L	10/07/2003	GAB	3.04E+00
5GM30401RI	ARA-MON-A-004	Iodine-129	1.60E-01		1.08E-01			U	PCI/L	10/07/2003	GMS	4.48E-01
5GM30401AV	ARA-MON-A-004	Isobutyl alcohol	80					U	UG/L	10/07/2003	SW8260B	
5GM30401LL	ARA-MON-A-004	Lead	2.83					B	UG/L	10/07/2003	SW6010B	
5GM30401RH	ARA-MON-A-004	Manganese-54	-2.93E+00		1.22E+00			U	PCI/L	10/07/2003	GMS	3.51E+00
5GM30401LL	ARA-MON-A-004	Mercury	0.033					U	UG/L	10/07/2003	SW7470A	
5GM30401AV	ARA-MON-A-004	Methacrylonitrile	5					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Methyl iodide	2					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Methyl isobutyl ketone	5					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Methylene Chloride	1					UJ	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Methylmethacrylate	1					R	UG/L	10/07/2003	SW8260B	
5GM30401RH	ARA-MON-A-004	Niobium-95	-1.90E+00		1.59E+00			U	PCI/L	10/07/2003	GMS	5.43E+00
5GM30401AN	ARA-MON-A-004	Nitrate-N	1.18						MG/L	10/07/2003	E300	
5GM30401AN	ARA-MON-A-004	Nitrite-N	0						MG/L	10/07/2003	E300	
5GM30401AN	ARA-MON-A-004	Ortho-Phosphate as P	0						MG/L	10/07/2003	E300	
5GM30401AV	ARA-MON-A-004	Propionitrile	5					U	UG/L	10/07/2003	SW8260B	
5GM30401RH	ARA-MON-A-004	Radium-226	4.99E+00		2.87E+00			R	PCI/L	10/07/2003	GMS	1.17E+01
5GM30401RH	ARA-MON-A-004	Ruthenium-103	-2.10E+00		1.61E+00			U	PCI/L	10/07/2003	GMS	5.64E+00
5GM30401RH	ARA-MON-A-004	Ruthenium-106	1.68E+01		8.98E+00			U	PCI/L	10/07/2003	GMS	4.05E+01
5GM30401LL	ARA-MON-A-004	Selenium	11.6					B	UG/L	10/07/2003	SW6010B	
5GM30401LL	ARA-MON-A-004	Silver	0.48					U	UG/L	10/07/2003	SW6010B	
5GM30401RH	ARA-MON-A-004	Silver-108m	2.21E+00		1.09E+00			UJ	PCI/L	10/07/2003	GMS	4.53E+00
5GM30401RH	ARA-MON-A-004	Silver-110m	-4.96E-01		1.29E+00			U	PCI/L	10/07/2003	GMS	4.17E+00
5GM30401AV	ARA-MON-A-004	Styrene	1						UG/L	10/07/2003	SW8260B	
5GM30401AN	ARA-MON-A-004	Sulfate	20.3					J	MG/L	10/07/2003	E300	
5GM30401AV	ARA-MON-A-004	Tetrachloroethene	1					U	UG/L	10/07/2003	SW8260B	
5GM30401AV	ARA-MON-A-004	Toluene	1					U	UG/L	10/07/2003	SW8260B	





5GM31101AV	EQUIPMT RINSTE	cis-1,2-Dichloroethene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	cis-1,3-Dichloropropene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101RH	EQUIPMT RINSTE	Cobalt-58	-3.34E-01	2.12E+00		U	PC/I/L	10/14/2003	GMS	7.76E+00
5GM31101RH	EQUIPMT RINSTE	Cobalt-60	2.38E+00	2.18E+00		U	PC/I/L	10/14/2003	GMS	8.06E+00
5GM31101AV	EQUIPMT RINSTE	Dibromochloromethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Dibromomethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Dichlorodifluoromethane	2		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Ethylbenzene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101RH	EQUIPMT RINSTE	Europium-152	-3.42E+00	4.37E+00		U	PC/I/L	10/14/2003	GMS	1.50E+01
5GM31101RH	EQUIPMT RINSTE	Europium-154	5.50E+00	4.86E+00		U	PC/I/L	10/14/2003	GMS	2.11E+01
5GM31101RH	EQUIPMT RINSTE	Europium-155	-1.25E+00	4.06E+00		U	PC/I/L	10/14/2003	GMS	1.36E+01
5GM31101AN	EQUIPMT RINSTE	Fluoride	0		U		MG/L	10/14/2003	E300	
5GM31101RH	EQUIPMT RINSTE	Gross Alpha	6.52E-01	4.49E-01		UJ	PC/I/L	10/14/2003	GAB	1.81E+00
5GM31101RH	EQUIPMT RINSTE	Gross Beta	-2.65E-02	6.90E-01		UJ	PC/I/L	10/14/2003	GAB	3.04E+00
5GM31101RI	EQUIPMT RINSTE	Iodine-129	3.17E-02	5.83E-02		U	PC/I/L	10/14/2003	GMS	2.08E-01
5GM31101AV	EQUIPMT RINSTE	Isobutyl alcohol	80		U		UG/L	10/14/2003	SW8260B	
5GM31101LL	EQUIPMT RINSTE	Lead	2.14		U		UG/L	10/14/2003	SW6010B	
5GM31101RH	EQUIPMT RINSTE	Manganese-54	2.15E+00	1.59E+00		U	PC/I/L	10/14/2003	GMS	6.60E+00
5GM31101LL	EQUIPMT RINSTE	Mercury	0.048		B		UG/L	10/14/2003	SW7470A	
5GM31101AV	EQUIPMT RINSTE	Methacrylonitrile	5		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Methyl iodide	2		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Methyl isobutyl ketone	5		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Methylene Chloride	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Methylmethacrylate	1		U		UG/L	10/14/2003	SW8260B	
5GM31101RH	EQUIPMT RINSTE	Niobium-95	2.73E+00	2.31E+00		U	PC/I/L	10/14/2003	GMS	9.16E+00
5GM31101AN	EQUIPMT RINSTE	Nitrate-N	0.076		J		MG/L	10/14/2003	E300	
5GM31101AN	EQUIPMT RINSTE	Nitrite-N	0		U		MG/L	10/14/2003	E300	
5GM31101AN	EQUIPMT RINSTE	Ortho-Phosphate as P	0		U		MG/L	10/14/2003	E300	
5GM31101AV	EQUIPMT RINSTE	Propionitrile	5		U		UG/L	10/14/2003	SW8260B	
5GM31101RH	EQUIPMT RINSTE	Radium-226	1.34E+01	4.90E+00		UJ	PC/I/L	10/14/2003	GMS	1.09E+01
5GM31101RH	EQUIPMT RINSTE	Ruthenium-103	1.16E+00	1.70E+00		U	PC/I/L	10/14/2003	GMS	6.38E+00
5GM31101RH	EQUIPMT RINSTE	Ruthenium-106	6.45E+00	2.07E+01		U	PC/I/L	10/14/2003	GMS	5.29E+01
5GM31101LL	EQUIPMT RINSTE	Selenium	4.56		U		UG/L	10/14/2003	SW6010B	
5GM31101LL	EQUIPMT RINSTE	Silver	1.98		U		UG/L	10/14/2003	SW6010B	
5GM31101RH	EQUIPMT RINSTE	Silver-108m	-6.55E-01	1.63E+00		U	PC/I/L	10/14/2003	GMS	5.63E+00
5GM31101RH	EQUIPMT RINSTE	Silver-110m	1.61E+00	1.74E+00		U	PC/I/L	10/14/2003	GMS	6.84E+00
5GM31101AV	EQUIPMT RINSTE	Styrene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AN	EQUIPMT RINSTE	Sulfate	0		U		MG/L	10/14/2003	E300	
5GM31101AV	EQUIPMT RINSTE	Tetrachloroethene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Toluene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	trans-1,2-Dichloroethene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	trans-1,3-Dichloropropene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	trans-1,4-Dichloro-2-butene	2		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Trichloroethene	1		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Trichlorofluoromethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31101RH8	EQUIPMT RINSTE	Tritium	1.27E+01	9.93E+01		U	PC/I/L	10/14/2003	LSC	3.34E+02
5GM31101RH	EQUIPMT RINSTE	Uranium-235	1.55E+01	9.00E+00		U	PC/I/L	10/14/2003	GMS	3.19E+01
5GM31101AV	EQUIPMT RINSTE	Vinyl Acetate	2		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Vinyl Chloride	2		U		UG/L	10/14/2003	SW8260B	
5GM31101AV	EQUIPMT RINSTE	Xylene (Total)	3		U		UG/L	10/14/2003	SW8260B	
5GM31101RH	EQUIPMT RINSTE	Zinc-65	1.35E+00	3.92E+00		U	PC/I/L	10/14/2003	GMS	1.50E+01
5GM31101RH	EQUIPMT RINSTE	Zirconium-95	2.69E-01	3.26E+00		U	PC/I/L	10/14/2003	GMS	1.23E+01



5GM31001RH	FIELD BLANK	Gross Alpha	4.07E-01	3.08E-01		UJ	PC/I/L	10/09/2003	GAB	1.21E+00
5GM31001RH	FIELD BLANK	Gross Beta	6.31E-01	7.15E-01		UJ	PC/I/L	10/09/2003	GAB	3.03E+00
5GM31001RI	FIELD BLANK	Iodine-129	-1.23E-01	1.31E-01		U	PC/I/L	10/09/2003	GMS	4.60E-01
5GM31001AV	FIELD BLANK	Isobutyl alcohol	80			R	UG/L	10/09/2003	SW8260B	
5GM31001LL	FIELD BLANK	Lead	1.77			U	UG/L	10/09/2003	SW6010B	
5GM31001RH	FIELD BLANK	Manganese-54	7.16E-01	1.09E+00		U	PC/I/L	10/09/2003	GMS	4.02E+00
5GM31001LL	FIELD BLANK	Mercury	0.033				UG/L	10/09/2003	SW7470A	
5GM31001AV	FIELD BLANK	Methacrylonitrile	5			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Methyl iodide	2			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Methyl isobutyl ketone	5			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Methylene Chloride	1			UJ	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Methylmethacrylate	1			R	UG/L	10/09/2003	SW8260B	
5GM31001RH	FIELD BLANK	Niobium-95	-6.06E-01	1.58E+00		U	PC/I/L	10/09/2003	GMS	5.78E+00
5GM31001AN	FIELD BLANK	Nitrate-N	0			U	MG/L	10/09/2003	E300	
5GM31001AN	FIELD BLANK	Nitrite-N	0			U	MG/L	10/09/2003	E300	
5GM31001AN	FIELD BLANK	Ortho-Phosphate as P	0			U	MG/L	10/09/2003	E300	
5GM31001AV	FIELD BLANK	Propionitrile	5			R	UG/L	10/09/2003	SW8260B	
5GM31001RH	FIELD BLANK	Radium-226	1.68E+00	3.35E+00		U	PC/I/L	10/09/2003	GMS	1.06E+01
5GM31001RH	FIELD BLANK	Ruthenium-103	-1.45E+00	1.38E+00		U	PC/I/L	10/09/2003	GMS	4.90E+00
5GM31001RH	FIELD BLANK	Ruthenium-106	5.36E+00	1.06E+01		U	PC/I/L	10/09/2003	GMS	4.13E+01
5GM31001LL	FIELD BLANK	Selenium	4.5			U	UG/L	10/09/2003	SW6010B	
5GM31001LL	FIELD BLANK	Silver	0.48			U	UG/L	10/09/2003	SW6010B	
5GM31001RH	FIELD BLANK	Silver-108m	2.40E+00	1.04E+00		UJ	PC/I/L	10/09/2003	GMS	4.18E+00
5GM31001RH	FIELD BLANK	Silver-110m	-1.81E+00	1.35E+00		U	PC/I/L	10/09/2003	GMS	4.57E+00
5GM31001AV	FIELD BLANK	Styrene	1			U	UG/L	10/09/2003	SW8260B	
5GM31001AN	FIELD BLANK	Sulfate	0			U	MG/L	10/09/2003	E300	
5GM31001AV	FIELD BLANK	Tetrachloroethene	1			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Toluene	1			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	trans-1,2-Dichloroethene	1			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	trans-1,3-Dichloropropene	1			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	trans-1,4-Dichloro-2-butene	2			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Trichloroethene	1			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Trichlorofluoromethane	1			U	UG/L	10/09/2003	SW8260B	
5GM31001R8	FIELD BLANK	Tritium	1.18E+02	8.56E+01		U	PC/I/L	10/09/2003	LSC	2.83E+02
5GM31001RH	FIELD BLANK	Uranium-235	1.74E+01	8.84E+00		U	PC/I/L	10/09/2003	GMS	3.36E+01
5GM31001AV	FIELD BLANK	Vinyl Acetate	2			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Vinyl Chloride	2			U	UG/L	10/09/2003	SW8260B	
5GM31001AV	FIELD BLANK	Xylene (Total)	3			U	UG/L	10/09/2003	SW8260B	
5GM31001RH	FIELD BLANK	Zinc-65	-2.46E+00	2.28E+00		U	PC/I/L	10/09/2003	GMS	7.59E+00
5GM31001RH	FIELD BLANK	Zirconium-95	-4.88E-01	2.03E+00		U	PC/I/L	10/09/2003	GMS	7.65E+00
5GM30501AV	PBF-MON-A-001	1,1,1,2-Tetrachloroethane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,1,1-Trichloroethane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,1,2,2-Tetrachloroethane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,1,2-Trichloroethane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,1-Dichloroethane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,1-Dichloroethene	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,2,3-Trichloropropane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,2-Dibromo-3-chloropropane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,2-Dibromoethane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,2-Dichloroethane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,2-Dichloropropane	1			U	UG/L	10/09/2003	SW8260B	
5GM30501AV	PBF-MON-A-001	1,4-Dioxane	80			U	UG/L	10/09/2003	SW8260B	





5GM30601AV	PBF-MON-A-003	Benzene	1		UG/L	10/06/2003	SW8260B	
5GM30601AN	PBF-MON-A-003	Bromide	0		MG/L	10/06/2003	E300	
5GM30601AV	PBF-MON-A-003	Bromodichloromethane	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Bromoform	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Bromomethane	2		UG/L	10/06/2003	SW8260B	
5GM30601LL	PBF-MON-A-003	Cadmium	0.36		UG/L	10/06/2003	SW6010B	
5GM30601AV	PBF-MON-A-003	Carbon disulfide	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Carbon tetrachloride	1		UG/L	10/06/2003	SW8260B	
5GM30601RH	PBF-MON-A-003	Cerium-144	6.61E+00	1.11E+01	PC/L	10/06/2003	GMS	3.82E+01
5GM30601RH	PBF-MON-A-003	Cesium-134	-6.57E-01	1.49E+00	PC/L	10/06/2003	GMS	5.37E+00
5GM30601RH	PBF-MON-A-003	Cesium-137	-3.09E+00	1.44E+00	PC/L	10/06/2003	GMS	4.58E+00
5GM30601AN	PBF-MON-A-003	Chloride	14.4		MG/L	10/06/2003	E300	
5GM30601AV	PBF-MON-A-003	Chlorobenzene	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Chloroethane	2		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Chloroform	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Chloromethane	2		UG/L	10/06/2003	SW8260B	
5GM30601LL	PBF-MON-A-003	Chromium	7.16		UG/L	10/06/2003	SW6010B	
5GM30601AV	PBF-MON-A-003	cis-1,2-Dichloroethene	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	cis-1,3-Dichloropropene	1		UG/L	10/06/2003	SW8260B	
5GM30601RH	PBF-MON-A-003	Cobalt-58	3.36E+00	1.49E+00	PC/L	10/06/2003	GMS	6.44E+00
5GM30601RH	PBF-MON-A-003	Cobalt-60	2.55E+00	3.92E+00	PC/L	10/06/2003	GMS	6.40E+00
5GM30601AV	PBF-MON-A-003	Dibromochloromethane	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Dibromomethane	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Dichlorodifluoromethane	2		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Ethylbenzene	1		UG/L	10/06/2003	SW8260B	
5GM30601RH	PBF-MON-A-003	Europium-152	-2.63E+00	4.26E+00	PC/L	10/06/2003	GMS	1.47E+01
5GM30601RH	PBF-MON-A-003	Europium-154	6.59E+00	4.42E+00	PC/L	10/06/2003	GMS	1.88E+01
5GM30601RH	PBF-MON-A-003	Europium-155	-8.64E-01	5.34E+00	PC/L	10/06/2003	GMS	1.82E+01
5GM30601AN	PBF-MON-A-003	Fluoride	0.341		MG/L	10/06/2003	E300	
5GM30601RH	PBF-MON-A-003	Gross Alpha	1.77E+00	7.41E-01	PC/L	10/06/2003	GAB	2.48E+00
5GM30601RH	PBF-MON-A-003	Gross Beta	1.62E+00	5.65E-01	PC/L	10/06/2003	GAB	2.08E+00
5GM30601RI	PBF-MON-A-003	Iodine-129	-5.53E-02	1.22E-01	PC/L	10/06/2003	GMS	4.48E-01
5GM30601AV	PBF-MON-A-003	Isobutyl alcohol	80		UG/L	10/06/2003	SW8260B	
5GM30601LL	PBF-MON-A-003	Lead	1.8		UG/L	10/06/2003	SW6010B	
5GM30601RH	PBF-MON-A-003	Manganese-54	4.32E-01	1.19E+00	PC/L	10/06/2003	GMS	4.63E+00
5GM30601LL	PBF-MON-A-003	Mercury	0.033		UG/L	10/06/2003	SW7470A	
5GM30601AV	PBF-MON-A-003	Methacrylonitrile	5		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Methyl iodide	2		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Methyl isobutyl ketone	5		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Methylene Chloride	1		UG/L	10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Methylmethacrylate	1		UG/L	10/06/2003	SW8260B	
5GM30601RH	PBF-MON-A-003	Niobium-95	-2.56E-01	2.52E+00	PC/L	10/06/2003	GMS	7.92E+00
5GM30601AN	PBF-MON-A-003	Nitrate-N	0.62		MG/L	10/06/2003	E300	
5GM30601AN	PBF-MON-A-003	Nitrite-N	0		MG/L	10/06/2003	E300	
5GM30601AN	PBF-MON-A-003	Ortho-Phosphate as P	0		MG/L	10/06/2003	E300	
5GM30601AV	PBF-MON-A-003	Propionitrile	5		UG/L	10/06/2003	SW8260B	
5GM30601RH	PBF-MON-A-003	Radium-226	4.68E+00	5.02E+00	PC/L	10/06/2003	GMS	1.02E+01
5GM30601RH	PBF-MON-A-003	Ruthenium-103	-1.49E+00	1.85E+00	PC/L	10/06/2003	GMS	6.22E+00
5GM30601RH	PBF-MON-A-003	Ruthenium-106	3.90E+00	1.27E+01	PC/L	10/06/2003	GMS	4.82E+01
5GM30601LL	PBF-MON-A-003	Selenium	11.5		UG/L	10/06/2003	SW6010B	
5GM30601LL	PBF-MON-A-003	Silver	0.48		UG/L	10/06/2003	SW6010B	
5GM30601RH	PBF-MON-A-003	Silver-108m	-4.74E-01	1.46E+00	PC/L	10/06/2003	GMS	4.43E+00

5GM30601RH	PBF-MON-A-003	Silver-110m	1.82E+00	1.31E+00	U	U	U	10/06/2003	GMS	5.31E+00
5GM30601AV	PBF-MON-A-003	Styrene	1					10/06/2003	SW8260B	
5GM30601AN	PBF-MON-A-003	Sulfate	23.7					10/06/2003	E300	
5GM30601AV	PBF-MON-A-003	Tetrachloroethene	1					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Toluene	1					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	trans-1,2-Dichloroethene	1					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	trans-1,3-Dichloropropene	1					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	trans-1,4-Dichloro-2-butene	2					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Trichloroethene	1					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Trichlorofluoromethane	1					10/06/2003	SW8260B	
5GM30601R8	PBF-MON-A-003	Tritium	-4.25E+01	7.47E+01	U			10/06/2003	LSC	2.56E+02
5GM30601RH	PBF-MON-A-003	Uranium-235	2.37E+01	1.52E+01	U			10/06/2003	GMS	3.83E+01
5GM30601AV	PBF-MON-A-003	Vinyl Acetate	2					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Vinyl Chloride	2					10/06/2003	SW8260B	
5GM30601AV	PBF-MON-A-003	Xylene (Total)	3					10/06/2003	SW8260B	
5GM30601RH	PBF-MON-A-003	Zinc-65	-7.08E+00	2.94E+00	U			10/06/2003	GMS	8.91E+00
5GM30601RH	PBF-MON-A-003	Zirconium-95	9.76E-02	3.37E+00	U			10/06/2003	GMS	1.09E+01
5GM30701AV	PBF-MON-A-004	1,1,1,2-Tetrachloroethane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,1,1-Trichloroethane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,1,2,2-Tetrachloroethane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,1,2-Trichloroethane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,1-Dichloroethane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,1-Dichloroethene	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,2,3-Trichloropropane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,2-Dibromo-3-chloropropane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,2-Dibromoethane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,2-Dichloroethane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,2-Dichloropropane	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	1,4-Dioxane	80					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	2-Butanone	10					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	2-Hexanone	5					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Acetone	10					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Acetonitrile	20					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Acrolein	10					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Acrylonitrile	10					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Allyl chloride	2					10/09/2003	SW8260B	
5GM30701RH	PBF-MON-A-004	Americium-241	2.43E+00	7.74E+00	U			10/09/2003	GMS	2.63E+01
5GM30701RH	PBF-MON-A-004	Antimony-125	-1.43E+00	2.96E+00	U			10/09/2003	GMS	1.09E+01
5GM30701LL	PBF-MON-A-004	Arsenic	2.65					10/09/2003	SW6010B	
5GM30701LL	PBF-MON-A-004	Barium	31.4					10/09/2003	SW6010B	
5GM30701AV	PBF-MON-A-004	Benzene	1					10/09/2003	SW6010B	
5GM30701AN	PBF-MON-A-004	Bromide	0					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Bromodichloromethane	1					10/09/2003	E300	
5GM30701AV	PBF-MON-A-004	Bromoform	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Bromomethane	2					10/09/2003	SW8260B	
5GM30701LL	PBF-MON-A-004	Cadmium	0.36					10/09/2003	SW6010B	
5GM30701AV	PBF-MON-A-004	Carbon disulfide	1					10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Carbon tetrachloride	1					10/09/2003	SW8260B	
5GM30701RH	PBF-MON-A-004	Cerium-144	6.56E+00	8.58E+00	U			10/09/2003	GMS	3.16E+01
5GM30701RH	PBF-MON-A-004	Cesium-134	7.83E-01	1.43E+00	U			10/09/2003	GMS	5.55E+00
5GM30701RH	PBF-MON-A-004	Cesium-137	-3.41E-01	1.31E+00	U			10/09/2003	GMS	4.80E+00
5GM30701AN	PBF-MON-A-004	Chloride	26.7					10/09/2003	E300	

5GM30701AV	PBF-MON-A-004	Chlorobenzene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Chloroethane	2		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Chloroform	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Chloromethane	2		U	UG/L	10/09/2003	SW8260B	
5GM30701LL	PBF-MON-A-004	Chromium	9.95		B	UG/L	10/09/2003	SW6010B	
5GM30701AV	PBF-MON-A-004	cis-1,2-Dichloroethene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	cis-1,3-Dichloropropene	1	1.41E+00	U	UG/L	10/09/2003	SW8260B	4.96E+00
5GM30701RH	PBF-MON-A-004	Cobalt-58	-9.77E-01	1.07E+00		PCI/L	10/09/2003	GMS	4.35E+00
5GM30701RH	PBF-MON-A-004	Cobalt-60	5.69E-01		U	PCI/L	10/09/2003	GMS	
5GM30701AV	PBF-MON-A-004	Dibromochloromethane	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Dibromomethane	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Dichlorodifluoromethane	2		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Ethylbenzene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701RH	PBF-MON-A-004	Europium-152	-5.75E+00	3.64E+00		PCI/L	10/09/2003	GMS	1.15E+01
5GM30701RH	PBF-MON-A-004	Europium-154	3.93E+00	2.65E+00		PCI/L	10/09/2003	GMS	1.27E+01
5GM30701RH	PBF-MON-A-004	Europium-155	1.59E+00	4.50E+00		PCI/L	10/09/2003	GMS	1.65E+01
5GM30701AN	PBF-MON-A-004	Fluoride	0.316		J	MG/L	10/09/2003	E300	
5GM30701RH	PBF-MON-A-004	Gross Alpha	6.47E-01	5.98E-01		PCI/L	10/09/2003	GAB	2.51E+00
5GM30701RH	PBF-MON-A-004	Gross Beta	3.00E+00	6.97E-01		PCI/L	10/09/2003	GAB	2.37E+00
5GM30701RI	PBF-MON-A-004	Iodine-129	3.79E-01	1.30E-01		PCI/L	10/09/2003	GMS	4.68E-01
5GM30701AV	PBF-MON-A-004	Isobutyl alcohol	80		U	UG/L	10/09/2003	SW8260B	
5GM30701LL	PBF-MON-A-004	Lead	1.77		U	UG/L	10/09/2003	SW6010B	
5GM30701RH	PBF-MON-A-004	Manganese-54	-5.97E-01	1.37E+00		PCI/L	10/09/2003	GMS	4.24E+00
5GM30701LL	PBF-MON-A-004	Mercury	0.033		U	UG/L	10/09/2003	SW7470A	
5GM30701AV	PBF-MON-A-004	Methacrylonitrile	5		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Methyl iodide	2		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Methyl isobutyl ketone	5		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Methylene Chloride	1		UJ	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Methylmethacrylate	1		U	UG/L	10/09/2003	SW8260B	
5GM30701RH	PBF-MON-A-004	Niobium-95	5.50E-01	1.56E+00		PCI/L	10/09/2003	GMS	6.08E+00
5GM30701AN	PBF-MON-A-004	Nitrate-N	0.835		U	MG/L	10/09/2003	E300	
5GM30701AN	PBF-MON-A-004	Nitrite-N	0		U	MG/L	10/09/2003	E300	
5GM30701AN	PBF-MON-A-004	Ortho-Phosphate as P	0		U	MG/L	10/09/2003	E300	
5GM30701AV	PBF-MON-A-004	Propionitrile	5		U	UG/L	10/09/2003	SW8260B	
5GM30701RH	PBF-MON-A-004	Radium-226	1.02E+01	4.73E+00		PCI/L	10/09/2003	GMS	9.99E+00
5GM30701RH	PBF-MON-A-004	Ruthenium-103	2.50E+00	1.72E+00		PCI/L	10/09/2003	GMS	5.87E+00
5GM30701RH	PBF-MON-A-004	Ruthenium-106	-1.01E+01	1.25E+01		PCI/L	10/09/2003	GMS	4.38E+01
5GM30701LL	PBF-MON-A-004	Selenium	9.66		B	UG/L	10/09/2003	SW6010B	
5GM30701LL	PBF-MON-A-004	Silver	0.48		U	UG/L	10/09/2003	SW6010B	
5GM30701RH	PBF-MON-A-004	Silver-108m	1.08E+00	1.08E+00		PCI/L	10/09/2003	GMS	4.34E+00
5GM30701RH	PBF-MON-A-004	Silver-110m	8.15E-01	1.26E+00		PCI/L	10/09/2003	GMS	4.91E+00
5GM30701AV	PBF-MON-A-004	Styrene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AN	PBF-MON-A-004	Sulfate	23.1		U	MG/L	10/09/2003	E300	
5GM30701AV	PBF-MON-A-004	Tetrachloroethene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Toluene	0.84		J	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	trans-1,2-Dichloroethene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	trans-1,3-Dichloropropene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	trans-1,4-Dichloro-2-butene	2		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Trichloroethene	1		U	UG/L	10/09/2003	SW8260B	
5GM30701AV	PBF-MON-A-004	Trichlorofluoromethane	1		U	UG/L	10/09/2003	SW8260B	
5GM30701R8	PBF-MON-A-004	Tritium	-1.61E+02	8.22E+01		PCI/L	10/09/2003	LSC	2.89E+02
5GM30701RH	PBF-MON-A-004	Uranium-235	9.97E+00	9.16E+00		PCI/L	10/09/2003	GMS	3.37E+01





5GM30801AV	PBF-MON-A-005	Ethylbenzene	1	3.74E+00	U	U	UG/L	10/08/2003	SW8260B	1.30E+01
5GM30801RH	PBF-MON-A-005	Europium-152	-8.48E-01	4.11E+00	U	U	PC/I/L	10/08/2003	GMS	1.56E+01
5GM30801RH	PBF-MON-A-005	Europium-154	-1.49E+00	4.73E+00	U	U	PC/I/L	10/08/2003	GMS	1.68E+01
5GM30801RH	PBF-MON-A-005	Europium-155	-1.76E+00	8.39E-01	U	J	MG/L	10/08/2003	E300	2.31E+00
5GM30801AN	PBF-MON-A-005	Fluoride	0.4	5.90E-01	U	UJ	PC/I/L	10/08/2003	GAB	2.18E+00
5GM30801RH	PBF-MON-A-005	Gross Alpha	2.96E+00	1.45E-01	U	R	UG/L	10/08/2003	GMS	5.20E-01
5GM30801RH	PBF-MON-A-005	Gross Beta	1.69E+00	1.30E+00	B	U	UG/L	10/08/2003	SW6010B	4.91E+00
5GM30801RI	PBF-MON-A-005	Iodine-129	-9.66E-02				PC/I/L	10/08/2003	GMS	
5GM30801AV	PBF-MON-A-005	Isobutyl alcohol	80		U		UG/L	10/08/2003	SW8260B	
5GM30801LL	PBF-MON-A-005	Lead	2.58		U		UG/L	10/08/2003	SW6010B	
5GM30801RH	PBF-MON-A-005	Manganese-54	1.09E-01				PC/I/L	10/08/2003	GMS	
5GM30801LL	PBF-MON-A-005	Mercury	0.033		U		UG/L	10/08/2003	SW7470A	
5GM30801AV	PBF-MON-A-005	Methacrylonitrile	5		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Methyl iodide	2		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Methyl isobutyl ketone	5		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Methyl isobutyl ketone	5		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Methylene Chloride	1		U	UJ	UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Methylmethacrylate	1		U	R	UG/L	10/08/2003	SW8260B	
5GM30801RH	PBF-MON-A-005	Niobium-95	-4.34E-01	1.41E+00	U	U	PC/I/L	10/08/2003	GMS	5.28E+00
5GM30801AN	PBF-MON-A-005	Nitrate-N	0		HU	R	MG/L	10/08/2003	E300	
5GM30801AN	PBF-MON-A-005	Nitrite-N	0.5		HU	R	MG/L	10/08/2003	E300	
5GM30801AN	PBF-MON-A-005	Nitrite-N	0		HU	R	MG/L	10/08/2003	E300	
5GM30801AN	PBF-MON-A-005	Ortho-Phosphate as P	0		HU	R	MG/L	10/08/2003	E300	
5GM30801AV	PBF-MON-A-005	Propionitrile	5		U	R	UG/L	10/08/2003	SW8260B	
5GM30801RH	PBF-MON-A-005	Radium-226	4.65E+00	4.52E+00	U	U	PC/I/L	10/08/2003	GMS	1.26E+01
5GM30801RH	PBF-MON-A-005	Ruthenium-103	5.66E-01	1.64E+00	U	U	PC/I/L	10/08/2003	GMS	6.28E+00
5GM30801RH	PBF-MON-A-005	Ruthenium-106	7.20E+00	1.17E+01	U	U	PC/I/L	10/08/2003	GMS	4.58E+01
5GM30801LL	PBF-MON-A-005	Selenium	9.21		B		UG/L	10/08/2003	SW6010B	
5GM30801LL	PBF-MON-A-005	Silver	0.48		U		UG/L	10/08/2003	SW6010B	
5GM30801RH	PBF-MON-A-005	Silver-108m	-8.42E-01	1.00E+00	U	U	PC/I/L	10/08/2003	GMS	3.63E+00
5GM30801RH	PBF-MON-A-005	Silver-110m	-1.79E+00	1.07E+00	U	U	PC/I/L	10/08/2003	GMS	3.46E+00
5GM30801AV	PBF-MON-A-005	Styrene	1		U		UG/L	10/08/2003	SW8260B	
5GM30801AN	PBF-MON-A-005	Sulfate	16.2		J		MG/L	10/08/2003	E300	
5GM30801AV	PBF-MON-A-005	Tetrachloroethene	1		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Toluene	1		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	trans-1,2-Dichloroethene	1		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	trans-1,3-Dichloropropene	1		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	trans-1,4-Dichloro-2-butene	2		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Trichloroethene	1		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Trichlorofluoromethane	1		U		UG/L	10/08/2003	SW8260B	
5GM30801R8	PBF-MON-A-005	Tritium	-7.69E+01	7.99E+01	U	U	PC/I/L	10/08/2003	LSC	2.76E+02
5GM30801RH	PBF-MON-A-005	Uranium-235	6.43E+00	8.96E+00	U	U	PC/I/L	10/08/2003	GMS	3.27E+01
5GM30801AV	PBF-MON-A-005	Vinyl Acetate	2		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Vinyl Chloride	2		U		UG/L	10/08/2003	SW8260B	
5GM30801AV	PBF-MON-A-005	Xylene (Total)	3		U		UG/L	10/08/2003	SW8260B	
5GM30801RH	PBF-MON-A-005	Zinc-65	-4.57E-01	2.55E+00	U	U	PC/I/L	10/08/2003	GMS	1.01E+01
5GM30801RH	PBF-MON-A-005	Zirconium-95	2.51E-01	2.61E+00	U	U	PC/I/L	10/08/2003	GMS	9.86E+00
5GM30901AV	SPERT-I	1,1,1,2-Tetrachloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	1,1,1-Trichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	1,1,2,2-Tetrachloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	1,1,2-Trichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	1,1-Dichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	1,1-Dichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	1,2,3-Trichloropropane	1		U		UG/L	10/14/2003	SW8260B	



5GM30901AV	SPERT-I	Methacrylonitrile	5	1.53E+00	U	U	UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Methyl iodide	2		U	U	UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Methyl isobutyl ketone	5		U	U	UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Methylene Chloride	1		U	UJ	UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Methylmethacrylate	1		U	R	UG/L	10/14/2003	SW8260B	
5GM30901RH	SPERT-I	Niobium-95	2.83E+00	1.53E+00	H	U	PC/L	10/14/2003	GMS	6.51E+00
5GM30901AN	SPERT-I	Nitrate-N	1.22		HU		MG/L	10/14/2003	E300	
5GM30901AN	SPERT-I	Nitrite-N	0		HU		MG/L	10/14/2003	E300	
5GM30901AN	SPERT-I	Ortho-Phosphate as P	0		HU		MG/L	10/14/2003	E300	
5GM30901AV	SPERT-I	Propionitrile	5		U	R	UG/L	10/14/2003	SW8260B	
5GM30901RH	SPERT-I	Radium-226	1.04E+01	2.85E+00	U	UJ	PC/L	10/14/2003	GMS	1.24E+01
5GM30901RH	SPERT-I	Ruthenium-103	-6.49E-01	1.54E+00	U	U	PC/L	10/14/2003	GMS	5.49E+00
5GM30901RH	SPERT-I	Ruthenium-106	1.47E+00	1.21E+01	U	U	PC/L	10/14/2003	GMS	4.49E+01
5GM30901LL	SPERT-I	Selenium	4.56		U		UG/L	10/14/2003	SW6010B	
5GM30901LL	SPERT-I	Silver	1.98		U		UG/L	10/14/2003	SW6010B	
5GM30901RH	SPERT-I	Silver-108m	-3.94E-01	1.27E+00	U	U	PC/L	10/14/2003	GMS	4.59E+00
5GM30901RH	SPERT-I	Silver-110m	-2.90E-01	1.42E+00	U	U	PC/L	10/14/2003	GMS	4.46E+00
5GM30901AV	SPERT-I	Styrene	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AN	SPERT-I	Sulfate	25.9		U		MG/L	10/14/2003	E300	
5GM30901AV	SPERT-I	Tetrachloroethene	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Toluene	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	trans-1,2-Dichloroethene	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	trans-1,3-Dichloropropene	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	trans-1,4-Dichloro-2-butene	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Trichloroethene	2		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Trichlorofluoromethane	1		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Tritium	1		U		UG/L	10/14/2003	SW8260B	
5GM30901R8	SPERT-I	Uranium-235	2.33E+02	9.19E+01	U	UJ	PC/L	10/14/2003	LSC	2.98E+02
5GM30901RH	SPERT-I	Vinyl Acetate	4.42E+00	8.70E+00	U	U	PC/L	10/14/2003	GMS	3.11E+01
5GM30901AV	SPERT-I	Vinyl Chloride	2		U		UG/L	10/14/2003	SW8260B	
5GM30901AV	SPERT-I	Xylene (Total)	2		U		UG/L	10/14/2003	SW8260B	
5GM30901RH	SPERT-I	Zinc-65	3		U	U	UG/L	10/14/2003	GMS	1.08E+01
5GM30901RH	SPERT-I	Zirconium-95	-1.20E+00	2.91E+00	U	U	PC/L	10/14/2003	GMS	7.93E+00
5GM30901RH	SPERT-I	Zirconium-95	-2.89E+00	2.43E+00	U	U	PC/L	10/14/2003	GMS	7.93E+00
5GM31201AV	TRIP BLANK	1,1,1,2-Tetrachloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,1,1,2-Tetrachloroethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,1,1-Trichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,1,1-Trichloroethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,1,2,2-Tetrachloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,1,2,2-Tetrachloroethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,1,2-Trichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,1,2-Trichloroethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,1-Dichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,1-Dichloroethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,1-Dichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,1-Dichloroethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,1-Dichloroethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,1-Dichloroethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,2,3-Trichloropropane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,2,3-Trichloropropane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,2-Dibromo-3-chloropropane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,2-Dibromo-3-chloropropane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,2-Dibromo-3-chloropropane	1		U	R	UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,2-Dibromo-3-chloropropane	1		U	R	UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,2-Dibromoethane	1		U		UG/L	10/14/2003	SW8260B	
5GM31202AV	TRIP BLANK	1,2-Dibromoethane	1		U		UG/L	10/06/2003	SW8260B	
5GM31201AV	TRIP BLANK	1,2-Dichloroethane	1		U		UG/L	10/14/2003	SW8260B	

5GM31202AV	TRIP BLANK	1,2-Dichloroethane	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	1,2-Dichloropropane	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	1,2-Dichloropropane	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	1,4-Dioxane	80	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	1,4-Dioxane	80	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	2-Butanone	10	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	2-Butanone	10	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	2-Hexanone	5	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	2-Hexanone	5	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Acetone	10	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Acetone	10	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Acetonitrile	5.8	J	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Acetonitrile	4.6	J	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Acrolein	10	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Acrolein	10	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Acrylonitrile	10	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Acrylonitrile	10	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Allyl chloride	2	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Allyl chloride	2	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Benzene	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Benzene	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Bromodichloromethane	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Bromodichloromethane	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Bromoform	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Bromoform	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Bromomethane	2	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Bromomethane	2	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Carbon disulfide	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Carbon disulfide	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Carbon tetrachloride	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Carbon tetrachloride	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Chlorobenzene	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Chlorobenzene	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Chloroethane	2	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Chloroethane	2	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Chloroform	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Chloroform	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Chloromethane	2	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Chloromethane	2	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	cis-1,2-Dichloroethene	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	cis-1,2-Dichloroethene	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	cis-1,3-Dichloropropene	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	cis-1,3-Dichloropropene	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Dibromochloromethane	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Dibromochloromethane	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Dibromomethane	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Dibromomethane	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Dichlorodifluoromethane	2	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Dichlorodifluoromethane	2	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Ethylbenzene	1	U	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Ethylbenzene	1	U	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Isobutyl alcohol	80	U	UG/L	10/14/2003	SW8260B

5GM31202AV	TRIP BLANK	Isobutyl alcohol	80	U	R	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Methacrylonitrile	5	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Methacrylonitrile	5	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Methyl iodide	2	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Methyl iodide	2	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Methyl isobutyl ketone	5	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Methyl isobutyl ketone	5	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Methylene Chloride	1		UJ	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Methylene Chloride	1		UJ	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Methylmethacrylate	1	U	R	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Methylmethacrylate	1	U	R	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Methylmethacrylate	5	U	R	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Propionitrile	5	U	R	UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Propionitrile	5	U	R	UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Styrene	1	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Styrene	1	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Tetrachloroethene	1	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Tetrachloroethene	1	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Toluene	1	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Toluene	1	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	trans-1,2-Dichloroethene	1	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	trans-1,2-Dichloroethene	1	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	trans-1,3-Dichloropropene	1	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	trans-1,3-Dichloropropene	1	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	trans-1,4-Dichloro-2-butene	2	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	trans-1,4-Dichloro-2-butene	2	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Trichloroethene	1	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Trichloroethene	1	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Trichlorofluoromethane	1	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Trichlorofluoromethane	1	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Vinyl Acetate	2	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Vinyl Acetate	2	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Vinyl Chloride	2	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Vinyl Chloride	2	U		UG/L	10/14/2003	SW8260B
5GM31202AV	TRIP BLANK	Xylene (Total)	3	U		UG/L	10/06/2003	SW8260B
5GM31201AV	TRIP BLANK	Xylene (Total)	3	U		UG/L	10/14/2003	SW8260B

**Appendix B**

**Quality Assurance/Quality Control  
Sample Results**





## Appendix B

### Quality Assurance/Quality Control Sample Results

#### B-1. QUALITY ASSURANCE/QUALITY CONTROL SAMPLING

The purpose of collecting and analyzing quality assurance/quality control samples is to confirm the achievement of project objectives and data quality objectives. The overall objectives associated with the Waste Area Group 5 annual groundwater monitoring are discussed in the *Groundwater Monitoring Plan for the Waste Area Group 5 Remedial Action* (DOE-ID 2000). The overall objectives and quality assurance or quality control sample results for the fiscal year (FY) 2004 sampling effort are discussed in the following subsections.

##### B-1.1 Precision and Accuracy

The spatial variations in the concentrations of contaminants at individual sites create sampling variability. Additional variability, called measurement error, occurs during sample collection, handling, processing, analysis, quality evaluation, and reporting. Concentrations of contaminants reported represent the true concentrations in the media sampled plus the measurement error, which can be minimized but not eliminated. Though measurement error might not be significant in many cases, it is important to assess the contribution of measurement error to the total error in individual investigations. The analytical results of quality control samples are used to estimate accuracy and precision, the quantitative descriptions of measurement error, and bias.

###### B-1.1.1 Overall Precision

Precision is a measure of the reproducibility of measurements under a given set of conditions. In the field, precision is affected by sample collection procedures and by the natural heterogeneity of the matrix. Overall precision (field and laboratory) can be evaluated by the use of duplicate samples collected in the field. Greater precision is typically required for analytes with very low action levels that are close to background concentrations. Allowable laboratory precision for water samples is defined as having a relative percent difference (RPD) of less than or equal to 20%. Field precision is the difference between overall precision and laboratory precision. Table B-1 summarizes the precision for the FY 2004 round of groundwater monitoring. Using the following formula, the RPD was calculated only for samples that were true positive values for both the initial sample and the field duplicate:

$$RPD = \frac{|S - D|}{\frac{S + D}{2}} \times 100 \quad (B-1)$$

where

S = sample

D = duplicate.

Table B-1. Overall precision for FY 2004 analytical data.

Analyte	Sample	Duplicate	Units	RPD (%)
Lead	2.59	2.79	µg/L	7.43
Fluoride	0.546	0.53	mg/L	2.97
Chromium	3.59	3.8	µg/L	5.68
Chloride	18.9	19	mg/L	0.53
Barium	37.8	38.3	µg/L	1.31
Gross alpha	2.39	2.58	pCi/L	7.65
Nitrate-N	1.18	1.18	mg/L	0.00
Selenium	14.7	13.4	µg/L	9.25
Sulfate	20.3	20.2	mg/L	0.49

As can be seen from the data in Table B-1, the RPD does not exceed 20% for any of the analytes; therefore, the overall precision of the FY 2004 data is considered acceptable.

### **B-1.1.2 Overall Accuracy**

Accuracy is a measure of bias in a measurement system. Accuracy is affected by the methods used for sample preservation, sample handling, field contamination, and the sample matrix. The effects of the first three are evaluated using the field blank, trip blank, and equipment rinsate results. The presence of a contaminant in the field blank, trip blank, or rinsate reveals that cross-contamination has occurred.

Laboratory accuracy is ensured through the use of standard methods and the use of calibration standards from the National Institute for Standards and Technology. All instrumentation is calibrated before use per the procedures outlined in the analytical methods required by the Idaho National Engineering and Environmental Laboratory (INEEL) Sample and Analysis Management (SAM) statements of work. Laboratory accuracy is assessed through the use of matrix spikes and laboratory control samples. The number of laboratory quality control samples is specified in the analytical methods employed and in the INEEL SAM statements of work. Evaluation criteria for the quality control samples are specified in data-validation technical procedures administered by the INEEL SAM Office. Samples analyzed in accordance with Environmental Protection Agency (EPA) Contract Laboratory Program protocol are also validated in accordance with that protocol. For the FY 2004 data set, the overall accuracy of the analyses is acceptable.

### **B-1.1.3 Representativeness**

Representativeness is a qualitative parameter that expresses the degree to which the sampling and analysis data accurately and precisely represent the characteristic of a population parameter being measured at a given sampling point or for a process or environmental condition. Representativeness is evaluated by determining whether field data and physical samples were collected in such a manner that the resulting data appropriately measure the media and phenomenon to be studied.

For the FY 2004 sampling activity, all measurements were in accordance with established EPA and INEEL SAM protocol. Trained personnel used established INEEL procedures to collect the physical samples.

#### **B-1.1.4 Completeness**

Completeness is a measure of the quantity of usable data collected during the field sampling activities. The groundwater monitoring plan (DOE-ID 2000) requires an overall completeness goal of 90% for this project. For FY 2004, nine wells were to be sampled with a total of 63 possible analyses (seven per well). However, the pump at well ARA-MON-03A failed to operate, so no samples were collected from the well during FY 2004. As a result, 56 of the 63 possible analyses were completed, resulting in a completeness of 89%. The pump at well ARA-MON-03A will be scheduled for repair before the FY 2005 sampling event.

#### **B-1.1.5 Comparability**

Comparability is a qualitative characteristic that refers to the confidence with which one data set can be compared to another. At a minimum, comparable data must be obtained using unbiased sampling designs. If sampling designs are biased, the reasons for selecting another design should be well documented. Data comparability for this sampling activity was ensured through the following efforts:

- All data sets contained the same variables of interest.
- All measurements were taken and results reported using common units.
- Similar analytical procedures and quality assurance measures have been used.
- All field and laboratory instrumentation had similar or better detection limits than those historically used.
- All samples were collected following established INEEL procedures.
- Wells selected for sampling are identical to those historically chosen.

Samples were collected in the November timeframe, which was different from historical sampling rounds that occurred in April, July/August, October, and January. However, historical data collected at other INEEL sites indicate that contaminant concentrations are unaffected by seasonal factors. In an effort to negate any effect that changes in groundwater levels due to snowmelt and runoff might have on data collected, this and future sampling rounds will be conducted at approximately the same time of year.

### **B-1.2 Data Validation**

Method data validation is the process whereby analytical data are reviewed against set criteria to ensure that the results conform to the requirements of the analytical method and any other specified requirements. For the FY 2004 sampling activity, all laboratory data were validated according to established INEEL SAM and EPA protocols. The limitations and validation reports were previously transmitted to the Agencies in January 2004. No major problems were identified during this method validation process.

## **B-2. REFERENCE**

DOE-ID, 2000, *Groundwater Monitoring Plan for the Waste Area Group 5 Remedial Action*, DOE/ID-10779, Rev. 0, U.S. Department of Energy Idaho Operations Office, October 2000.

