LMS/RFN/RFO/S00409

Data Validation Package

April 2009
Groundwater and Surface Water Sampling at the Old and New Rifle, Colorado, Processing Sites

June 2009

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Sampling Event Summary

Site: Rifle, Colorado, Processing Sites

Sampling Period: April 13-17, 2009

This semiannual event includes sampling groundwater and surface water at the New Rifle and Old Rifle, Colorado, Processing Sites. Sampling and analysis were conducted as specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. Duplicate samples were collected from New Rifle locations 0659 and CW33 and from Old Rifle location 0309. Two equipment blanks were collected during this sampling event.

Samples were collected at the Old Rifle site from eight monitor wells and four surface locations as specified in the *Ground Water Compliance Action Plan for the Old Rifle, Colorado, UMTRA Project Site*. Water levels were measured at each sampled well.

The contaminants of concern (COCs) at the Old Rifle site are selenium, uranium, and vanadium. Wells with sample concentrations that exceeded U.S. Environmental Protection Agency (EPA) groundwater standards are listed in Table 1.

Table 1. Old Rifle Locations that Exceed Standards

Analyte	Standard[a]	ACL[b]	Location	Concentration
Selenium	0.01	0.05	0305	0.025
			0658	0.015
Uranium	0.044	NA	0305	0.11
			0310	0.22
			0655	0.12
			0656	0.11

[a] Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; units are in milligrams per liter (mg/L).
[b] Alternate concentration limit (ACL) proposed in *Ground Water Compliance Action Plan for the Old Rifle, Colorado, UMTRA Project Site*; units are in mg/L.

Time concentration graphs from the wells sampled are included with the analytical data. Data analysis indicates that the concentrations of the COCs are generally stable with fluctuations that may be partially attributable to a seasonal effect, particularly for wells at the low end of the concentration range. There is no indication of unexpected plume movement from this sampling event.

Analytical results for surface locations 0396 and 0741 that are adjacent to and downgradient of the site along the Colorado River are below the ACL at generally stable concentrations.

Samples were collected at the New Rifle site from 18 monitor wells, five culvert wells, and seven surface locations in compliance with the *Ground Water Compliance Action Plan for the New Rifle, Colorado, Processing Site*. Three monitor wells (0210, 0658, and 0670) were not sampled due to construction activities or insufficient water. Water levels were measured at each sampled well.

The COCs at the New Rifle site are arsenic, molybdenum, nitrate + nitrite as nitrogen, selenium, uranium, and vanadium. All COCs have a remedial action goal of the EPA groundwater standard or background concentration except vanadium; an ACL of 50 mg/L has been proposed for vanadium. The groundwater monitor wells were sampled to monitor plume movement and natural flushing. Wells with sample concentrations that exceeded either the EPA groundwater standards or the maximum background value, which ever is greater, are listed in Table 2.

Table 2. New Rifle Locations that Exceed Standards

Analyte	Standard[a]	MBC[b]	Location	Concentration
Arsenic	0.05	0.03	0855	2.2
			0857	0.088
			CW31	0.12
			CW32	0.14
			CW33	0.28
Molybdenum	0.10	0.03	0201	1.9
			0216	0.15
			0217	1.6
			0590	1.5
			0635	0.38
			0659	2.2
			0664	0.4
			0669	1.5
			0687	0.1
			0855	18
			0856	0.17
			0857	0.51
			0863	1.6
			CW31	0.51
			CW32	0.48
			CW33	0.59
			CW34	0.36
			CW35	0.24
Nitrate as Nitrogen	10	5.22	0170	22
			0201	61
			0217	13
			0590	73
			0620	35
			0635	31
			0659	23
			0664	19
			0669	13
			0687	40
			0855	17
			0856	15
			CW31	16
			CW35	12

Table 2 (continued). New Rifle Locations that Exceed Standards

Analyte	Standard[a]	MBC[b]	Location	Concentration
Selenium	0.01	0.036	0201	0.065
			0216	0.045
			0217	0.039
			0590	0.056
			0659	0.12
			0664	0.041
			0687	0.3
			0855	1.8
			0856	0.53
			0857	0.32
			CW31	0.42
			CW32	0.52
			CW33	0.23
			CW34	0.29
			CW35	0.16
Uranium	0.044	0.067	0201	0.077
			0217	0.12
			0635	0.1
			0659	0.11
			0664	0.082
			0669	0.069
			0856	0.089
			0857	0.09
			0863	0.094
Vanadium	Proposed ACL = 50 mg/L		0855	1000

[a]Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; units are in mg/L.
[b]Maximum background concentration listed in *Ground Water Compliance Action Plan for the New Rifle, Colorado, Processing Site*; units are in mg/L.

Time concentration graphs are included with the analytical data. These graphs include the historical results for locations 0210, 0658, and 0670, which could not be sampled during this event. Data analysis indicates that the concentrations of the COCs are stable or decreasing at most locations. A notable exception is location 0855 where several concentrations exceeded historical levels. De-watering activities southeast of this location are drawing water levels down in the area. The field notes described the water from this well as deep yellow in color. The well was classified as Category III, which indicates that the water level was within the screened interval during sampling.

The surface water locations were sampled to monitor the impact of groundwater discharge. No large variations in the data were noted.

Richard Dayvault
Site Lead, S. M. Stoller

Date 7/12/09

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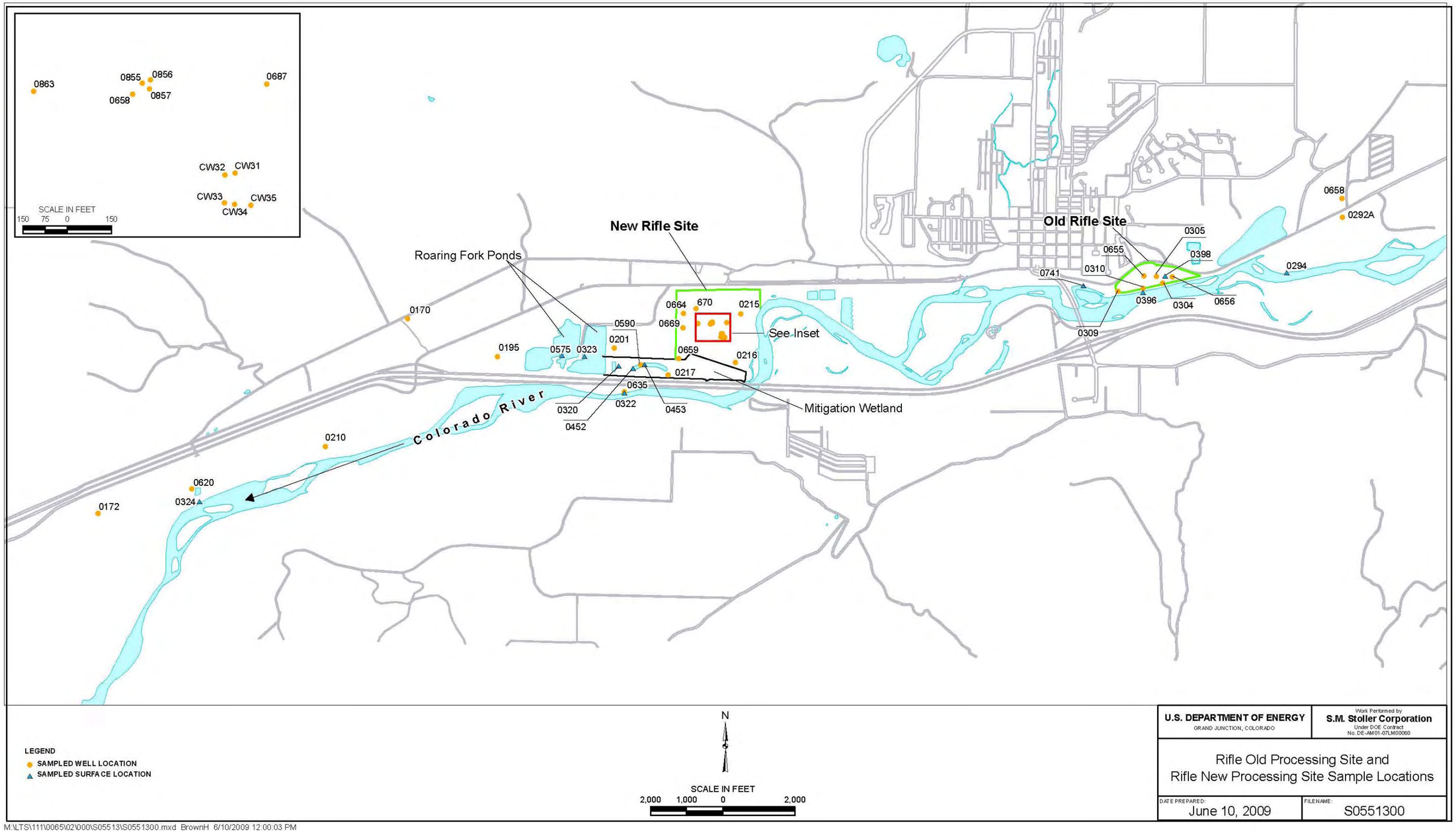

Old and New Rifle, Colorado, Processing Sites Sample Location Map

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Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Rifle, Colorado	**Date(s) of Water Sampling**	April 13-17, 2009
Date(s) of Verification	May 28, 2009	**Name of Verifier**	Gretchen Baer

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOPs, instructions.		Work Order Letter dated March 19, 2009.
2. Were the sampling locations specified in the planning documents sampled?	No	Monitor well 0210 was not found due to the area being covered by drilling equipment. Well locations 0658 and 0670 were not sampled due to insufficient water.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibration was performed on April 13, 2009.
4. Was an operational check of the field equipment conducted daily?	Yes	
Did the operational checks meet criteria?	Yes	With the exception that a sp cond reading was not recorded on 4/17/09. All other sp cond checks were acceptable.
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	No	Phenolphthalein alk was not recorded at RFN 0324. Sp Cond reading at RFO 0655 was very low. This suggests that tubing to the flow cell was attached incorrectly, causing the cell to only partially fill, which affects the sp cond measurement. The sp cond result is qualified as “R” (rejected).
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	Turbidity was >10 NTU at 0292A. Sample was filtered and data are qualified as “Q.”
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	Three duplicate samples were collected.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	Two equipment blank samples were collected.
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDCS) report?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	Samples with turbidity >10 were filtered.
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members (hardcopies) or are dates present for the “Date Signed” fields (FDCS)?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Report Number (RIN):	09032201
Sample Event:	April 13-17, 2009
Site(s):	Rifle Processing Sites, Colorado
Laboratory:	ALS Laboratory Group, Fort Collins, Colorado
Work Order No.:	0904159
Analysis:	Metals and Wet Chemistry
Validator:	Gretchen Baer
Review Date:	May 28, 2009

This validation was performed according to the *Environmental Procedures Catalog*, "Standard Practice for Validation of Laboratory Data," GT-9(P). The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 3.

Table 3. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Ammonia as N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Chloride	MIS-A-039	SW-846 9056	SW-846 9056
Calcium, Iron, Magnesium, Manganese, Potassium, Sodium	LMM-01	SW-846 3005A	SW-846 6010B
Arsenic, Molybdenum, Selenium, Uranium, Vanadium	LMM-02	SW-846 3005A	SW-846 6020A
Nitrate + Nitrite as N	WCH-A-022	MCAWW 353.2	MCAWW 353.2
Sulfate	MIS-A-044	SW-846 9056	SW-846 9056

Data Qualifier Summary

Analytical results were qualified as listed in Table 4. Refer to the sections below for an explanation of the data qualifiers applied.

Table 4. Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
0904159-1	0170	Ammonia as N	J	Matrix spike failure
0904159-1	0170	Molybdenum	J	Interference check failure
0904159-1	0170	Vanadium	J	Reporting limit verification failure
0904159-2	0172	Molybdenum	J	Interference check failure
0904159-2	0172	Vanadium	J	Reporting limit verification failure
0904159-3	0195	Molybdenum	J	Interference check failure
0904159-3	0195	Selenium	U	Less than 5 times the calibration blank

Table 4 (continued). Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
0904159-3	0195	Vanadium	J	Reporting limit verification failure
0904159-4	0201	Molybdenum	J	Interference check failure
0904159-5	0215	Molybdenum	J	Interference check failure
0904159-5	0215	Vanadium	J	Reporting limit verification failure
0904159-6	0216	Molybdenum	J	Interference check failure
0904159-7	0217	Molybdenum	J	Interference check failure
0904159-8	0320	Molybdenum	J	Interference check failure
0904159-9	0322	Molybdenum	J	Interference check failure
0904159-9	0322	Vanadium	J	Reporting limit verification failure
0904159-10	0323	Molybdenum	J	Interference check failure
0904159-11	0324	Molybdenum	J	Interference check failure
0904159-11	0324	Vanadium	J	Less than 5 times the equipment blank
0904159-12	0452	Molybdenum	J	Interference check failure
0904159-13	0453	Molybdenum	J	Interference check failure
0904159-14	0575	Molybdenum	J	Interference check failure
0904159-15	0590	Molybdenum	J	Interference check failure
0904159-16	0620	Molybdenum	J	Interference check failure
0904159-16	0620	Vanadium	J	Reporting limit verification failure
0904159-17	0635	Arsenic	U	Less than 5 times the calibration blank
0904159-17	0635	Molybdenum	J	Interference check failure
0904159-17	0635	Vanadium	J	Reporting limit verification failure
0904159-18	0659	Molybdenum	J	Interference check failure
0904159-19	0664	Iron	J	Negative calibration blank
0904159-19	0664	Molybdenum	J	Interference check failure
0904159-20	0669	Molybdenum	J	Interference check failure
0904159-26	0659 Duplicate	Iron	J	Negative calibration blank
0904159-28	Equip Blank, 2746	Molybdenum	U	Less than 5 times the calibration blank
0904159-28	Equip Blank, 2746	Uranium	U	Less than 5 times the calibration blank
0904159-34	0294	Vanadium	J	Reporting limit verification failure
0904159-37	0309	Selenium	U	Less than 5 times the calibration blank
0904159-37	0309	Vanadium	J	Reporting limit verification failure
0904159-38	0310	Selenium	U	Less than 5 times the calibration blank
0904159-44	0741	Vanadium	J	Reporting limit verification failure
0904159-45	0309 Duplicate	Selenium	U	Less than 5 times the calibration blank
0904159-45	0309 Duplicate	Vanadium	J	Reporting limit verification failure
0904159-46	Equip Blank, 2754	Selenium	U	Less than 5 times the calibration blank
0904159-46	Equip Blank, 2754	Uranium	U	Less than 5 times the calibration blank
0904159-46	Equip Blank, 2754	Vanadium	J	Reporting limit verification failure
0904159-47	0292A	Vanadium	J	Reporting limit verification failure
All	All	Potassium	J	MS & serial dilution failures

Sample Shipping/Receiving

ALS Laboratory Group in Fort Collins, Colorado, received 47 water samples on April 21, 2009, accompanied a Chain of Custody form. The Chain of Custody form was checked to confirm that

all of the samples were listed with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. Copies of the shipping labels were included in the receiving documentation. The Chain of Custody form was complete with no errors or omissions with the following exceptions. An incorrect sample date and time was written for location 2744; the laboratory used the correct date and time from the bottle labels. The filtration status for 2744 was written incorrectly; the laboratory repeated this error. The sample date and time and the filtration status was not entered for location 2745. The sample time was not entered for Old Rifle location 0292A.

Preservation and Holding Times

The sample shipments were received intact with the temperature inside the iced cooler at 0.6 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses with one exception. The laboratory noticed that two bottles for New Rifle location 0664 had pH values that contradicted the bottles' labels, which indicated that the labels had been switched. The laboratory corrected the error and proceeded with sample analysis. All analyses were performed within the applicable holding times.

Laboratory Instrument Calibration

Compliance requirements for instrument calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for all analytes. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear curve. Compliance requirements for continuing calibration checks are established to ensure that the instrument continues to be capable of producing acceptable qualitative and quantitative data. All laboratory instrument calibrations were performed in accordance with the cited methods.

Method MCAWW 350.1

Calibrations for ammonia as N were performed using six calibration standards on April 27, 2009. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the method detection limit (MDL). Initial and continuing calibration verification checks were made at the required frequency resulting in nine verification checks. All calibration check results were within the acceptance criteria.

Method MCAWW 353.2

Calibrations for nitrate + nitrite as N were performed using seven calibration standards on April 28, 2009. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in nine verification checks. All calibration check results were within the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, iron, magnesium, manganese, potassium, and sodium were performed on April 27, 2009, using three calibration standards. The correlation coefficient values were greater than 0.995. The absolute values of the intercepts were less than 3 times the MDL, with the exception of the intercepts for calcium, potassium, and sodium. These intercepts were less than 3 times the reporting limits and all calcium, potassium, and sodium results were above the reporting limits. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 13 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit (PQL) and all results were within the acceptance range, with the following exception. The vanadium check result was below the acceptance range. The affected results that were less than 5 times the PQL are qualified with a "J" flag (estimated).

Method SW-846 6020A

Calibrations were performed for arsenic, molybdenum, selenium, uranium, and vanadium April 27-29, 2009, using seven calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in 33 verification checks. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

Method SW-846 9056

Calibrations for chloride and sulfate were performed using five calibration standards on April 27, 2009. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in four verification checks. All calibration checks met the acceptance criteria.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All method blank and calibration blank results associated with the samples were below the PQLs for all analytes with the exception of some sulfate blanks. All sulfate results were greater than 5 times the blank concentrations. In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a "U" flag (not

detected) when the sample result is greater than the MDL but less than 5 times the blank concentration. For calcium, iron, and magnesium, the blank results were negative and the absolute values were greater than the MDL but less than the PQL. All calcium and magnesium results were greater than 5 times the MDL, so no results are qualified. The associated iron results less than 5 times the MDL are flagged with a "J" as estimated values.

Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

ICP interference check samples ICSA and ICSAB were analyzed at the required frequency to verify the instrumental interelement and background correction factors. All check sample results were acceptable with the exception of the molybdenum ICSAB on April 27, 2009, which was above the acceptance range. The molybdenum results for samples that have calcium and magnesium concentrations in the diluted sample that are comparable to the ICSAB standard are qualified with a "J" flag (estimated).

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated with the following exceptions. The recovery for a potassium spike was above the acceptance range, which may indicate systematic matrix interference. All potassium results are qualified with a "J" flag (estimated). The MS/MSD ammonia as N recoveries were below the acceptance range. The affected result is qualified with a "J" flag.

Laboratory Replicate Analysis

Laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference values for the sample replicates and matrix spike replicates were less than 20 percent for results that are greater than 5 times the PQL, indicating acceptable precision.

Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency to provide information on the accuracy of the analytical method and the overall laboratory performance, including sample preparation. All control sample results were acceptable.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 100 times the PQL for ICP-MS or greater than 50 times the PQL for ICP. The relative percent difference for all potassium dilutions was above the acceptance range, which may indicate systematic matrix interference; the associated results are qualified with a "J" flag (estimated). All other serial dilution results were within the acceptance range.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. The samples were diluted prior to analysis of molybdenum, uranium, and vanadium to reduce interferences. The required detection limits were met for all analytes.

Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. There were no manual integrations performed and all peak integrations were satisfactory.

Electronic Data Deliverable (EDD) File

A revised EDD file arrived on May 1, 2009, that included corrections to a ticket number. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure that the requested data have been delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package. An error was detected in the EDD. The filtration status for all analytes reported for location 2744 should have been "Yes" (filtered). This EDD error was corrected in the SEEPro database. An error was detected in the original EDD file: the sample ticket number HFW 061 was erroneously entered as HEV 061. This error was repeated throughout the data package, but was corrected in the revised EDD.

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 09032201 **Lab Code:** PAR **Validator:** Gretchen Baer **Validation Date:** 5/28/2009

Project: Rifle Disposal/Processing Site (old/new) **Analysis Type:** ☑ Metals ☑ General Chem ☐ Rad ☐ Organics

# of Samples: 47 **Matrix:** WATER **Requested Analysis Completed:** Yes

Chain of Custody

Present: OK **Signed:** OK **Dated:** OK

Sample

Integrity: OK **Preservation:** OK **Temperature:** OK

Select Quality Parameters

☑ Holding Times	All analyses were completed within the applicable holding times.
☑ Detection Limits	The reported detection limits are equal to or below contract requirements.
☑ Field/Trip Blanks	There were 2 trip/equipment blanks evaluated.
☑ Field Duplicates	There were 3 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 09032201 **Lab Code:** PAR **Date Due:** 5/19/2009

Matrix: Water **Site Code:** RFL **Date Completed:** 5/1/2009

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
1Calcium	04/27/2009											2.0			
1Calcium	04/27/2009											1.0	101.0		103.0
1CALCIUM	04/27/2009							OK	99.0			4.0	101.0	2.0	103.0
1CALCIUM	04/27/2009	52.0000	0.9999	OK	OK	OK	OK	OK	102.0	111.0	117.0	1.0	97.0	2.0	104.0
1IRON	04/27/2009	12.0000	1.0000	OK	OK	OK	OK	OK	98.0	93.0	94.0	1.0	100.0		97.0
1IRON	04/27/2009												97.0		97.0
1IRON	04/27/2009			OK	OK	OK	OK	OK	98.0	93.0	94.0	1.0	100.0		96.0
1Magnesium	04/27/2009											2.0			
1Magnesium	04/27/2009											1.0	102.0		103.0
1MAGNESIUM	04/27/2009	32.0000	0.9999	OK	OK	OK	OK	OK	103.0	110.0	113.0	1.0	101.0	3.0	103.0
1MAGNESIUM	04/27/2009							OK	101.0	92.0	99.0	3.0	99.0	1.0	104.0
1Manganese	04/27/2009											1.0			
1Manganese	04/27/2009											1.0	97.0		109.0
1MANGANESE	04/27/2009	1.1000	1.0000	OK	OK	OK	OK	OK	102.0	97.0	98.0	1.0	95.0		107.0
1MANGANESE	04/27/2009							OK	99.0			3.0	93.0	4.0	108.0
1Potassium	04/27/2009											1.0			
1Potassium	04/27/2009											1.0			83.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 09032201 **Lab Code:** PAR **Date Due:** 5/19/2009

Matrix: Water **Site Code:** RFL **Date Completed:** 5/1/2009

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
1POTASSIUM	04/27/2009	99.9900	1.0000	OK	OK	OK	OK	OK	98.0	142.0	142.0	0.0		13.0	82.0
1POTASSIUM	04/27/2009							OK	94.0	108.0	108.0	0.0		18.0	83.0
1Sodium	04/27/2009											0.0			
1Sodium	04/27/2009											1.0			86.0
1SODIUM	04/27/2009	99.9900	1.0000	OK	OK	OK	OK	OK	99.0	117.0	110.0	1.0		7.0	85.0
1SODIUM	04/27/2009							OK	96.0	94.0	99.0	1.0		9.0	86.0
2Arsenic	04/28/2009											2.0			
2ARSENIC	04/28/2009	0.0140	1.0000					OK	96.0	108.0	118.0	4.0	97.0	0.0	96.0
2ARSENIC	04/28/2009							OK	99.0	91.0	81.0	1.0		6.0	
2Selenium	04/28/2009											10.0			
2Selenium	04/28/2009											5.0			
2SELENIUM	04/28/2009	-0.0160	1.0000					OK	95.0	107.0	107.0	0.0	94.0	5.0	100.0
2SELENIUM	04/28/2009							OK	92.0			3.0		0.0	
2SELENIUM	04/28/2009							OK	93.0	89.0	90.0	0.0			
2Vanadium	04/28/2009											3.0			
2Vanadium	04/28/2009											0.0			
2VANADIUM	04/29/2009	0.0380	0.9999					OK	102.0	104.0	107.0	3.0	99.0	1.0	64.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 09032201 **Lab Code:** PAR **Date Due:** 5/19/2009

Matrix: Water **Site Code:** RFL **Date Completed:** 5/1/2009

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
2VANADIUM	04/29/2009							OK	102.0			7.0		6.0	
2VANADIUM	04/29/2009							OK	101.0			0.0			
Molybdenum	04/29/2009											5.0			
MOLYBDENUM	04/27/2009	-0.0010	1.0000					OK	100.0	109.0	109.0	0.0	270.0	9.0	75.0
MOLYBDENUM	04/29/2009	-0.0020	1.0000					OK	97.0			4.0	108.0		112.0
Uranium	04/27/2009											1.0			
Uranium	04/28/2009											0.0			
Uranium	04/29/2009											4.0			
URANIUM	04/27/2009	0.0010	1.0000					OK	98.0	104.0	109.0	1.0	105.0	1.0	81.0
URANIUM	04/29/2009	0.0020	1.0000					OK	98.0	123.0	112.0	3.0	106.0	6.0	85.0
URANIUM	04/29/2009							OK	100.0	93.0	89.0	0.0			

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 09032201 **Lab Code:** PAR **Date Due:** 5/19/2009

Matrix: Water **Site Code:** RFL **Date Completed:** 5/1/2009

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
AMMONIA AS N	04/27/2009	-0.029	1.0000	OK	OK	OK	OK	OK	97.00	70.0	69.0	0	
AMMONIA AS N	04/27/2009							OK	96.00				
CHLORIDE	04/27/2009	0.036	0.9998	OK	OK	OK	OK	OK	95.00	99.0	100.0	1.00	
CHLORIDE	04/27/2009							OK	95.00				
CHLORIDE	04/28/2009									98.0	99.0	0	
CHLORIDE	04/28/2009									87.0			
NITRATE/NITRITE AS N	04/28/2009	-0.005	0.9998	OK	OK	OK	OK	OK	101.00	103.0	100.0	1.00	
NITRATE/NITRITE AS N	04/28/2009							OK	100.00	84.0	79.0	1.00	
SULFATE	04/27/2009	0.507	0.9999	OK	OK	OK	OK	OK	96.00	101.0	100.0	0	
SULFATE	04/27/2009							OK	97.00				
SULFATE	04/28/2009									99.0	100.0	0	
SULFATE	04/28/2009									101.0			

Sampling Quality Control Assessment

The following information summarizes and assesses quality control for this sampling event.

Sampling Protocol

Sample results for all monitor wells were qualified with an "F" flag in the database, indicating the wells were purged and sampled using the low-flow sampling method. All wells met the Category I criteria with the following exceptions:

- New Rifle well CW32 was classified as Category II.
- New Rifle wells 0664, 0669, and 0855 were classified as Category III.
- Turbidity requirements were not met for Old Rifle well 0292A.

The sample results for these five wells were qualified with a "Q" flag, indicating the data are qualitative because of the sampling technique.

Equipment Blank Assessment

Equipment blanks were collected after completion of decontamination and prior to collection of environmental samples. These blanks are useful in documenting adequate decontamination of sampling equipment. Vanadium was detected in an equipment blank. The associated result that was less than 5 times the equipment blank concentration is qualified with a "J" flag (estimated). Molybdenum, selenium, and uranium were detected in one or both equipment blanks by the laboratory, but these analytes were qualified during data validation with a "U" flag as not detected. The equipment blank results indicate adequate decontamination of the sampling equipment.

Field Duplicate Assessment

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. Duplicate samples were collected as described in Table 5.

Table 5. Field Duplicates

Field Sample	Filtration Status	Field Duplicate	Filtration Status
0309	Not Filtered	2747	Filtered
0659	Not Filtered	2744	Filtered
CW33	Not Filtered	2745	Not Filtered

With one exception, the duplicate results were acceptable, meeting the EPA recommended laboratory duplicate criteria of less than 20 percent relative difference for results that are greater than 5 times the PQL. The difference in iron results at New Rifle location 0659 between the unfiltered field sample and the filtered field duplicate (2744) is outside acceptance limits. There were no analytical errors identified during the review of the data; the high variability in results was caused by the difference in filtration status.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 09032201 **Lab Code:** PAR **Project:** Rifle Disposal/Processing Site (old/new) **Validation Date:** 5/28/2009

Duplicate: 2744 **Sample:** 0659

Analyte	Sample Result	Flag	Error	Duplicate Result	Flag	Error	RPD	RER	Units
AMMONIA AS N	53			51			3.85		MG/L
ARSENIC	9.5			9.3			2.13		UG/L
CALCIUM	600000			600000			0		UG/L
CHLORIDE	140			140			0		MG/L
IRON	120			1.3	U				UG/L
MAGNESIUM	19000			19000			0		UG/L
MANGANESE	2400			2400			0		UG/L
MOLYBDENUM	2300			2200			4.44		UG/L
NITRATE/NITRITE AS N	22			23			4.44		MG/L
POTASSIUM	13000			13000			0		UG/L
SELENIUM	120			120			0		UG/L
SODIUM	150000			150000			0		UG/L
SULFATE	1600			1500			6.45		MG/L
URANIUM	110			110			0		UG/L
VANADIUM	760			710			6.80		UG/L

Duplicate: 2745 **Sample:** CW33

Analyte	Sample Result	Flag	Error	Duplicate Result	Flag	Error	RPD	RER	Units
AMMONIA AS N	12			12			0		MG/L
ARSENIC	280			280			0		UG/L
CALCIUM	290000			300000			3.39		UG/L
CHLORIDE	120			130			8.00		MG/L
IRON	11	B		12	B		8.70		UG/L
MAGNESIUM	25000			26000			3.92		UG/L
MANGANESE	1200			1200			0		UG/L
MOLYBDENUM	590			570			3.45		UG/L
NITRATE/NITRITE AS N	5			5			0		MG/L
POTASSIUM	8800			8900			1.13		UG/L
SELENIUM	230			220			4.44		UG/L
SODIUM	110000			110000			0		UG/L
SULFATE	710			700			1.42		MG/L
URANIUM	47			45			4.35		UG/L
VANADIUM	9100			8900			2.22		UG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 09032201 **Lab Code:** PAR **Project:** Rifle Disposal/Processing Site (old/new) **Validation Date:** 5/28/2009

Duplicate: 2747 **Sample:** 0309

Analyte	Sample Result	Flag	Error	Duplicate Result	Flag	Error	RPD	RER	Units
SELENIUM	0.19			0.14			30.30		UG/L
URANIUM	16			16			0		UG/L
VANADIUM	0.14	U		0.14	U				UG/L

SAMPLE MANAGEMENT SYSTEM

Validation Report: Equipment/Trip Blanks

RIN: 09032201 **Lab Code:** PAR **Project:** Rifle Disposal/Processing Site (old/new) **Validation Date:** 5/28/2009

Blank Data

Blank Type	Lab Sample ID	Lab Method	Analyte Name	Result	Qualifier	MDL	Units
Equipment Blank	0904159-28	SW6020	VANADIUM	3.6		0.14	UG/L

Sample ID	Sample Ticket	Location	Result	Dilution Factor	Lab Qualifier	Validation Qualifier
0904159-11	HEV 044	0324	2.6	3		J

Certification

All laboratory analytical quality control criteria were met except as qualified in this report. The data qualifiers listed on the SEEPro database reports are defined on the last page of each report. All data in this package are considered validated and available for use.

Laboratory Coordinator: Steve Donivan — Date: 7-1-2009

Data Validation Lead: Gretchen Baer — Date: 7/1/09

Attachment 1
Assessment of Anomalous Data

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Potential Outliers Report

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Potential Outliers Report

Potential outliers are measurements that are extremely large or small relative to the rest of the data and, therefore, are suspected of misrepresenting the population from which they were collected. Potential outliers may result from transcription errors, data-coding errors, or measurement system problems. However, outliers may also represent true extreme values of a distribution and indicate more variability in the population than was expected.

Statistical outlier tests give probabilistic evidence that an extreme value does not "fit" with the distribution of the remainder of the data and is therefore a statistical outlier. These tests should only be used to identify data points that require further investigation. The tests alone cannot determine whether a statistical outlier should be discarded or corrected within a data set.

There are three steps involved in identifying extreme values or outliers:

1. Identify extreme values that may be potential outliers by generating the Outliers Report using the Sample Management System from data in the SEEPro database. The application compares the new data set with historical data and lists the new data that fall outside the historical data range. A determination is also made if the data are normally distributed using the Shapiro-Wilk Test.
2. Apply the appropriate statistical test. Dixon's Extreme Value test is used to test for statistical outliers when the sample size is less than or equal to 25. This test considers both extreme values that are much smaller than the rest of the data (case 1) and extreme values that are much larger than the rest of the data (case 2). This test is valid only if the data without the suspected outlier are normally distributed. Rosner's Test is a parametric test that is used to detect outliers for sample sizes of 25 or more. This test also assumes that the data without the suspected outliers are normally distributed.
3. Scientifically review statistical outliers and decide on their disposition.

Eleven results were identified as potentially anomalous. All other sample results meet these criteria and are acceptable for use as qualified. Two outliers were the result of definitive downward or upward trending in the data. Nine results are listed on the Anomalous Data Review Checksheet for further review. At this time, all data from this sampling event may be treated as validated results.

Three of the anomalies appeared in analytes that have not been tested since 1999 (calcium or sodium at New Rifle locations 0590, 0635, and 0659). Because the gap between the April 2009 data and the previous data is ten years for these locations, high or low points do not necessarily indicate errors in the data. Future measurements will be closely examined. The high result for nitrate + nitrite as N at New Rifle location 0664 was confirmed by the ion chromatography raw data.

Several results at New Rifle location 0855 exceeded historical levels. De-watering activities southeast of this location are drawing water levels down in the area. The field notes described the water from this well as deep yellow in color. The well was classified as Category III, which indicates that the water level was within the screened interval during sampling and all results for

this location have been qualified with a “Q” flag, indicating the data are qualitative because of the sampling technique.

Table 6 summarizes the anomalies identified in a previous report (April 2008). The right-hand column describes the result for this sampling event (April 2009).

Table 6. Comparison of April 2008 Anomalies with April 2009 Results

Loc. No.	Analyte	Type of Anomaly in April 2008	April 2009 Measurement
RFN 0215	Uranium	High	Measurement is higher; apparent upward trend
RFN 0216	Uranium	High	Measurement is lower but still elevated; possible upward trend
RFN 0216	Vanadium	High	Measurement is lower but still elevated
RFO 0305	Selenium	Low	Measurement is higher but still low; apparent downward trend
RFO 0305	Uranium	High	Measurement is higher; apparent upward trend
RFO 0656	Uranium	High	Measurement is lower but still elevated; apparent upward trend

Data Validation Outliers Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 09032201
Comparison: All Historical Data
Report Date: 6/18/2009

				Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
					Qualifiers			Qualifiers			Qualifiers					
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
RFN01	0170	04/17/2009	Manganese	0.028	E	F	1.24			0.039		F	12	1	Yes (log)	No
RFN01	0170	04/17/2009	Selenium	0.0058		F	0.0054			0.0029	B		12	0	Yes	No
RFN01	0195	04/16/2009	Ammonia Total as N	1.6		F	46		F	6.2		FQ	6	0	Yes	No
RFN01	0195	04/16/2009	Arsenic	0.0014		F	0.001	U		0.00013		UFQ	14	7	Yes	Yes
RFN01	0195	04/16/2009	Manganese	0.56		F	2.5			0.74		F	14	0	No	No
RFN01	0195	04/16/2009	Molybdenum	0.054		JF	0.6		FJ	0.097		FQ	15	0	Yes (log)	Yes
RFN01	0195	04/16/2009	Selenium	0.00017		UF	0.0012		F	0.0004	B		14	1	Yes	No
RFN01	0195	04/16/2009	Uranium	0.029		F	0.177			0.086		FQ	15	0	Yes	No
RFN01	0201	04/16/2009	Ammonia Total as N	93		F	130		F	97		F	7	0	Yes	No
RFN01	0215	04/16/2009	Ammonia Total as N	3.2		F	13		F	4.7		F	11	0	Yes	No
RFN01	0215	04/16/2009	Calcium	98		F	72		F	43.5			6	0	Yes	No
RFN01	0215	04/16/2009	Magnesium	42		F	36			29.1			6	0	Yes	No
RFN01	0215	04/16/2009	Nitrate + Nitrite as Nitrogen	0.047		F	0.045		F	0.01	U	F	10	4	No	Yes
RFN01	0215	04/16/2009	Selenium	0.0018		F	0.0017	B		0.00002	U	F	22	8	Yes (log)	No
RFN01	0215	04/16/2009	Sulfate	210		F	204			122	N	J	6	0	No	No
RFN01	0216	04/16/2009	Ammonia Total as N	8.7		F	8.6		F	4.9		F	8	0	Yes	No
RFN01	0216	04/16/2009	Arsenic	0.041		F	0.0354			0.019		F	19	0	Yes	No
RFN01	0216	04/16/2009	Selenium	0.045		F	0.031		F	0.000051	B	UF	19	4	Yes (log)	No

Data Validation Outliers Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 09032201
Comparison: All Historical Data
Report Date: 6/18/2009

				Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
					Qualifiers			Qualifiers			Qualifiers					
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
RFN01	0217	04/15/2009	Ammonia Total as N	61		F	110		F	69		F	8	0	Yes	No
RFN01	0320	04/16/2009	Ammonia Total as N	15			110			45			5	0	Yes	No
RFN01	0320	04/16/2009	Molybdenum	2.7		J	2.6			1.09			9	0	Yes	No
RFN01	0323	04/16/2009	Ammonia Total as N	26			44			36			8	0	Yes	Yes
RFN01	0323	04/16/2009	Molybdenum	2.2		J	2.1			1.1		J	9	0	Yes	No
RFN01	0324	04/17/2009	Vanadium	0.0026		J	0.0012			0.00006	B		8	0	Yes	Yes
RFN01	0453	04/15/2009	Ammonia Total as N	51			120			65			5	0	Yes	No
RFN01	0575	04/16/2009	Nitrate + Nitrite as Nitrogen	0.01	U		42			0.016			9	0	No	No
RFN01	0575	04/16/2009	Uranium	0.017			0.435			0.023			38	0	No	No
RFN01	0590	04/15/2009	Calcium	520		F	439			342			14	0	Yes	Yes
RFN01	0590	04/15/2009	Magnesium	54		F	192			57.9			14	0	No	No
RFN01	0590	04/15/2009	Potassium	28		JF	141			47.2			8	0	Yes (log)	No
RFN01	0590	04/15/2009	Sodium	420		F	11300			1040			14	0	No	No
RFN01	0620	04/17/2009	Chloride	550		F	838	I		565			15	0	Yes	No
RFN01	0620	04/17/2009	Iron	0.012	B	F	3.95			0.35			15	0	Yes	No
RFN01	0620	04/17/2009	Sodium	770		F	1270			976			15	0	No	Yes
RFN01	0635	04/16/2009	Calcium	550		F	369			274			10	0	Yes	Yes
RFN01	0635	04/16/2009	Iron	0.041	B	F	0.03	U		0.003	U		10	10	No	No

Data Validation Outliers Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 09032201
Comparison: All Historical Data
Report Date: 6/18/2009

				Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
					Qualifiers			Qualifiers			Qualifiers					
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
RFN01	0635	04/16/2009	Magnesium	33		F	132			47.4			10	0	Yes	No
RFN01	0635	04/16/2009	Potassium	56		JF	167			107			5	0	Yes	No
RFN01	0635	04/16/2009	Selenium	0.0018		F	0.057	+	J	0.002		F	24	2	No	No
RFN01	0635	04/16/2009	Sodium	270		F	3790			875			10	0	Yes	No
RFN01	0635	04/16/2009	Sulfate	1800		F	11000			2930			9	0	Yes	No
RFN01	0659	04/15/2009	Arsenic	0.0093		F	0.195		L	0.0191			25	0	No	Yes
RFN01	0659	04/15/2009	Arsenic	0.0095		F	0.195		L	0.0191			25	0	No	Yes
RFN01	0659	04/15/2009	Iron	0.12		F	0.03	U	L	0.0024	U	F	9	9	Yes (log)	No
RFN01	0659	04/15/2009	Magnesium	19		F	94.5		RX	50.1			8	0	Yes	No
RFN01	0659	04/15/2009	Sodium	150		F	477			336			8	0	Yes	Yes
RFN01	0659	04/15/2009	Sulfate	1600		F	2500			1900		F	9	0	Yes	No
RFN01	0659	04/15/2009	Sulfate	1500		F	2500			1900		F	9	0	Yes	No
RFN01	0659	04/15/2009	Vanadium	0.71		F	13.8			1.3		F	29	0	Yes (log)	No
RFN01	0659	04/15/2009	Vanadium	0.76		F	13.8			1.3		F	29	0	Yes (log)	No
RFN01	0664	04/15/2009	Ammonia Total as N	34		FQ	57		F	40		F	9	0	Yes	No
RFN01	0664	04/15/2009	Nitrate + Nitrite as Nitrogen	19		FQ	3.7		F	1.6		F	9	0	Yes	Yes
RFN01	0687	04/16/2009	Uranium	0.06		F	0.05			0.0173			5	0	Yes	No
RFN01	0855	04/15/2009	Arsenic	2.2		FQ	0.46		FJ	0.164			14	0	No	Yes

Data Validation Outliers Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 09032201
Comparison: All Historical Data
Report Date: 6/18/2009

				Current			Historical Maximum			Historical Minimum			Number of Data Points		Normally Distributed	Statistical Outlier
					Qualifiers			Qualifiers			Qualifiers					
Site Code	Location Code	Sample Date	Analyte	Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
RFN01	0855	04/15/2009	Manganese	1.7		FQ	1.44			0.83		F	13	0	Yes	No
RFN01	0855	04/15/2009	Molybdenum	18		FQ	4.32		F	1.2		F	14	0	No	Yes
RFN01	0855	04/15/2009	Selenium	1.8		FQ	1.3		F	0.3		F	13	0	Yes	Yes
RFN01	0857	04/15/2009	Uranium	0.09		F	0.069			0.0022			81	0	No	No
RFN01	0857	04/15/2009	Vanadium	33		F	28			0.78			82	0	No	No
RFN01	0863	04/15/2009	Uranium	0.094		F	0.32			0.13			6	0	Yes	No
RFN01	CW31	04/17/2009	Vanadium	4.1		F	3			1.52			5	0	Yes	No
RFN01	CW32	04/16/2009	Uranium	0.035		FQ	0.032			0.024			5	0	Yes	No
RFN01	CW32	04/16/2009	Vanadium	7.5		FQ	6.7			2.5			5	0	Yes	No
RFO01	0304	04/14/2009	Vanadium	0.11		F	0.097		FJ	0.0285			21	0	Yes	Yes
RFO01	0305	04/13/2009	Uranium	0.11		F	0.093		F	0.0315		F	21	0	Yes	Yes
RFO01	0655	04/13/2009	Selenium	0.0088		F	0.061			0.013		F	23	0	Yes	No

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
* Replicate analysis not within control limits.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C Pesticide result confirmed by GC-MS.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H Holding time expired, value suspect.

I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

STATISTICAL TESTS:

The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test
Outliers are identified using Dixon's Test when there are 25 or fewer data points.
Outliers are identified using Rosner's Test when there are 26 or more data points.
See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.

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Anomalous Data Review Checksheet

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Anomalous Data Review Checksheet

Site: New and Old Rifle Processing Site **Sampling Data:** Groundwater and Surface Water

Reviewer: Gretchen Baer (Name (print)) Signature Date 7/1/09

Site Hydrologist: Richard Dayvault (Name (print)) Signature Date 7/2/09

Date of Review: June 17, 2009

Loc. No.	Analyte	Type of Anomaly	Disposition
RFN 0195	Arsenic	High	Compare to future results.
RFN 0195	Molybdenum	Low	Apparent downward trend. Does not require further review.
RFN 0323	Ammonia Total as N	Low	May be trending downward. Compare to future results.
RFN 0324	Vanadium	High	Compare to future results.
RFN 0590	Calcium	High	10-year gap in data; compare to future results.
RFN 0635	Calcium	High	10-year gap in data; compare to future results.
RFN 0659	Sodium	Low	10-year gap in data; compare to future results.
RFN 0664	Nitrate + Nitrite as Nitrogen	High	Compare to future results.
RFN 0855	Arsenic Molybdenum Selenium Vanadium	High	Compare to future results.
RFO 0304	Vanadium	High	Compare to future results.
RFO 0305	Uranium	High	Apparent upward trend. Does not require further review.

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Attachment 2
Data Presentation

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Old Rifle Groundwater Quality Data

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Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0292A WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/14/2009	0001	-	518		FQ	#		
Oxidation Reduction Potential	mV	04/14/2009	N001	-	88.3		FQ	#		
pH	s.u.	04/14/2009	N001	-	6.99		FQ	#		
Selenium	mg/L	04/14/2009	0001	-	0.0022		FQ	#	0.000018	
Specific Conductance	umhos /cm	04/14/2009	N001	-	2856		FQ	#		
Temperature	C	04/14/2009	N001	-	11.2		FQ	#		
Turbidity	NTU	04/14/2009	N001	-	114		FQ	#		
Uranium	mg/L	04/14/2009	0001	-	0.036		FQ	#	0.0000045	
Vanadium	mg/L	04/14/2009	0001	-	0.00014	U	JFQ	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0304 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/14/2009	N001	13.2	-	18.2	290		F	#		
Oxidation Reduction Potential	mV	04/14/2009	N001	13.2	-	18.2	181		F	#		
pH	s.u.	04/14/2009	N001	13.2	-	18.2	7.22		F	#		
Selenium	mg/L	04/14/2009	N001	13.2	-	18.2	0.0094		F	#	0.000018	
Specific Conductance	umhos /cm	04/14/2009	N001	13.2	-	18.2	1450		F	#		
Temperature	C	04/14/2009	N001	13.2	-	18.2	9.9		F	#		
Turbidity	NTU	04/14/2009	N001	13.2	-	18.2	5.47		F	#		
Uranium	mg/L	04/14/2009	N001	13.2	-	18.2	0.036		F	#	0.0000045	
Vanadium	mg/L	04/14/2009	N001	13.2	-	18.2	0.11		F	#	0.0023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0305 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/13/2009	N001	13.76	-	18.76	380		F	#		
Oxidation Reduction Potential	mV	04/13/2009	N001	13.76	-	18.76	90.3		F	#		
pH	s.u.	04/13/2009	N001	13.76	-	18.76	7.27		F	#		
Selenium	mg/L	04/13/2009	N001	13.76	-	18.76	0.025		F	#	0.000036	
Specific Conductance	umhos /cm	04/13/2009	N001	13.76	-	18.76	1933		F	#		
Temperature	C	04/13/2009	N001	13.76	-	18.76	11.17		F	#		
Turbidity	NTU	04/13/2009	N001	13.76	-	18.76	1.68		F	#		
Uranium	mg/L	04/13/2009	N001	13.76	-	18.76	0.11		F	#	0.000022	
Vanadium	mg/L	04/13/2009	N001	13.76	-	18.76	0.52		F	#	0.0045	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0309 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/13/2009	N001	16.93 - 21.93	360		F	#		
Oxidation Reduction Potential	mV	04/13/2009	N001	16.93 - 21.93	39.3		F	#		
pH	s.u.	04/13/2009	N001	16.93 - 21.93	7.07		F	#		
Selenium	mg/L	04/13/2009	0002	16.93 - 21.93	0.00014		UF	#	0.000018	
Selenium	mg/L	04/13/2009	N001	16.93 - 21.93	0.00019		UF	#	0.000018	
Specific Conductance	umhos /cm	04/13/2009	N001	16.93 - 21.93	2335		F	#		
Temperature	C	04/13/2009	N001	16.93 - 21.93	12.79		F	#		
Turbidity	NTU	04/13/2009	N001	16.93 - 21.93	8.45		F	#		
Uranium	mg/L	04/13/2009	0002	16.93 - 21.93	0.016		F	#	0.0000045	
Uranium	mg/L	04/13/2009	N001	16.93 - 21.93	0.016		F	#	0.0000045	
Vanadium	mg/L	04/13/2009	0002	16.93 - 21.93	0.00014	U	JF	#	0.00014	
Vanadium	mg/L	04/13/2009	N001	16.93 - 21.93	0.00014	U	JF	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0310 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/13/2009	N001	17.93 - 22.93	440		F	#		
Oxidation Reduction Potential	mV	04/13/2009	N001	17.93 - 22.93	23.1		F	#		
pH	s.u.	04/13/2009	N001	17.93 - 22.93	7.08		F	#		
Selenium	mg/L	04/13/2009	N001	17.93 - 22.93	0.00016		UF	#	0.000018	
Specific Conductance	umhos /cm	04/13/2009	N001	17.93 - 22.93	2785		F	#		
Temperature	C	04/13/2009	N001	17.93 - 22.93	12.29		F	#		
Turbidity	NTU	04/13/2009	N001	17.93 - 22.93	7.25		F	#		
Uranium	mg/L	04/13/2009	N001	17.93 - 22.93	0.22		F	#	0.000022	
Vanadium	mg/L	04/13/2009	N001	17.93 - 22.93	0.011		F	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0655 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/13/2009	N001	13.6	-	23.6	474		F	#		
Oxidation Reduction Potential	mV	04/13/2009	N001	13.6	-	23.6	85.1		F	#		
pH	s.u.	04/13/2009	N001	13.6	-	23.6	7.83		F	#		
Selenium	mg/L	04/13/2009	N001	13.6	-	23.6	0.0088		F	#	0.000018	
Specific Conductance	umhos /cm	04/13/2009	N001	13.6	-	23.6	17		RF	#		
Temperature	C	04/13/2009	N001	13.6	-	23.6	16.84		F	#		
Turbidity	NTU	04/13/2009	N001	13.6	-	23.6	0.62		F	#		
Uranium	mg/L	04/13/2009	N001	13.6	-	23.6	0.12		F	#	0.000022	
Vanadium	mg/L	04/13/2009	N001	13.6	-	23.6	0.33		F	#	0.0023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0656 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/14/2009	N001	6.35	-	21.35	358		F	#		
Oxidation Reduction Potential	mV	04/14/2009	N001	6.35	-	21.35	150		F	#		
pH	s.u.	04/14/2009	N001	6.35	-	21.35	7.09		F	#		
Selenium	mg/L	04/14/2009	N001	6.35	-	21.35	0.0017		F	#	0.000018	
Specific Conductance	umhos /cm	04/14/2009	N001	6.35	-	21.35	1635		F	#		
Temperature	C	04/14/2009	N001	6.35	-	21.35	12.2		F	#		
Turbidity	NTU	04/14/2009	N001	6.35	-	21.35	2.71		F	#		
Uranium	mg/L	04/14/2009	N001	6.35	-	21.35	0.11		F	#	0.000022	
Vanadium	mg/L	04/14/2009	N001	6.35	-	21.35	0.027		F	#	0.00023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0658 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/14/2009	N001	2.3	-	17.3	530		F	#		
Oxidation Reduction Potential	mV	04/14/2009	N001	2.3	-	17.3	165		F	#		
pH	s.u.	04/14/2009	N001	2.3	-	17.3	7.02		F	#		
Selenium	mg/L	04/14/2009	N001	2.3	-	17.3	0.015		F	#	0.000018	
Specific Conductance	umhos /cm	04/14/2009	N001	2.3	-	17.3	2090		F	#		
Temperature	C	04/14/2009	N001	2.3	-	17.3	7.4		F	#		
Turbidity	NTU	04/14/2009	N001	2.3	-	17.3	3.96		F	#		
Uranium	mg/L	04/14/2009	N001	2.3	-	17.3	0.031		F	#	0.0000045	
Vanadium	mg/L	04/14/2009	N001	2.3	-	17.3	0.0018		F	#	0.00014	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
- * Replicate analysis not within control limits.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
- U Analytical result below detection limit.

W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F Low flow sampling method used.
G Possible grout contamination, pH > 9.
J Estimated value.
L Less than 3 bore volumes purged prior to sampling.
Q Qualitative result due to sampling technique.
R Unusable result.
U Parameter analyzed for but was not detected.
X Location is undefined.

QA QUALIFIER:

Validated according to quality assurance guidelines.

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Old Rifle Surface Water Quality Data

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Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0294 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/14/2009	N001	124			#		
Oxidation Reduction Potential	mV	04/14/2009	N001	119.31			#		
pH	s.u.	04/14/2009	N001	8.21			#		
Selenium	mg/L	04/14/2009	0001	0.00038			#	0.000018	
Specific Conductance	umhos/cm	04/14/2009	N001	902			#		
Temperature	C	04/14/2009	N001	10.21			#		
Turbidity	NTU	04/14/2009	N001	86.9			#		
Uranium	mg/L	04/14/2009	0001	0.002			#	0.0000045	
Vanadium	mg/L	04/14/2009	0001	0.00043		J	#	0.00014	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0396 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/13/2009	0001	156			#		
Oxidation Reduction Potential	mV	04/13/2009	N001	70.1			#		
pH	s.u.	04/13/2009	N001	8.27			#		
Selenium	mg/L	04/13/2009	0001	0.00045			#	0.000018	
Specific Conductance	umhos/cm	04/13/2009	N001	946			#		
Temperature	C	04/13/2009	N001	15.72			#		
Turbidity	NTU	04/13/2009	N001	36.9			#		
Uranium	mg/L	04/13/2009	0001	0.0021			#	0.0000045	
Vanadium	mg/L	04/13/2009	0001	0.0015			#	0.00014	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0398 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/14/2009	N001	327			#		
Oxidation Reduction Potential	mV	04/14/2009	N001	172			#		
pH	s.u.	04/14/2009	N001	8.03			#		
Selenium	mg/L	04/14/2009	N001	0.0056			#	0.000018	
Specific Conductance	umhos/cm	04/14/2009	N001	1885			#		
Temperature	C	04/14/2009	N001	10.1			#		
Turbidity	NTU	04/14/2009	N001	2.7			#		
Uranium	mg/L	04/14/2009	N001	0.03			#	0.0000045	
Vanadium	mg/L	04/14/2009	N001	0.0067			#	0.00014	

Surface Water Quality Data by Location (USEE102) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009
Location: 0741 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/13/2009	0001	133			#		
Oxidation Reduction Potential	mV	04/13/2009	N001	56.1			#		
pH	s.u.	04/13/2009	N001	8.23			#		
Selenium	mg/L	04/13/2009	0001	0.00038			#	0.000018	
Specific Conductance	umhos/cm	04/13/2009	N001	949			#		
Temperature	C	04/13/2009	N001	12.85			#		
Turbidity	NTU	04/13/2009	N001	36.8			#		
Uranium	mg/L	04/13/2009	0001	0.002			#	0.0000045	
Vanadium	mg/L	04/13/2009	0001	0.00039		J	#	0.00014	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F Low flow sampling method used.
L Less than 3 bore volumes purged prior to sampling.
U Parameter analyzed for but was not detected.
G Possible grout contamination, pH > 9.
Q Qualitative result due to sampling technique.
X Location is undefined.
J Estimated value.
R Unusable result.

QA QUALIFIER:
Validated according to quality assurance guidelines.

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New Rifle Groundwater Quality Data

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Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0170 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	N001	92.23 - 112.23	492		F	#		
Ammonia Total as N	mg/L	04/17/2009	N001	92.23 - 112.23	0.11	N	JF	#	0.1	
Arsenic	mg/L	04/17/2009	N001	92.23 - 112.23	0.0002		F	#	0.00001	
Calcium	mg/L	04/17/2009	N001	92.23 - 112.23	160		F	#	0.0031	
Chloride	mg/L	04/17/2009	N001	92.23 - 112.23	150		F	#	10	
Dissolved Oxygen	mg/L	04/17/2009	N001	92.23 - 112.23	1.67		F	#		
Field Ferrous Iron	mg/L	04/17/2009	N001	92.23 - 112.23	0.03		F	#		
Iron	mg/L	04/17/2009	N001	92.23 - 112.23	0.047	B	F	#	0.0013	
Magnesium	mg/L	04/17/2009	N001	92.23 - 112.23	99		F	#	0.0075	
Manganese	mg/L	04/17/2009	N001	92.23 - 112.23	0.028	E	F	#	0.00012	
Molybdenum	mg/L	04/17/2009	N001	92.23 - 112.23	0.0036	E	JF	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N001	92.23 - 112.23	22		F	#	0.5	
Oxidation Reduction Potential	mV	04/17/2009	N001	92.23 - 112.23	53.2		F	#		
pH	s.u.	04/17/2009	N001	92.23 - 112.23	7.18		F	#		
Potassium	mg/L	04/17/2009	N001	92.23 - 112.23	8.6	EN	JF	#	0.11	
Selenium	mg/L	04/17/2009	N001	92.23 - 112.23	0.0058		F	#	0.000018	
Sodium	mg/L	04/17/2009	N001	92.23 - 112.23	460		F	#	0.047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0170 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/17/2009	N001	92.23	-	112.23	3482		F	#		
Sulfate	mg/L	04/17/2009	N001	92.23	-	112.23	1200		F	#	25	
Temperature	C	04/17/2009	N001	92.23	-	112.23	13.7		F	#		
Turbidity	NTU	04/17/2009	N001	92.23	-	112.23	5.31		F	#		
Uranium	mg/L	04/17/2009	N001	92.23	-	112.23	0.06		F	#	0.0000045	
Vanadium	mg/L	04/17/2009	N001	92.23	-	112.23	0.00075		JF	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0172 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	N001	6.98 - 31.98	952		F	#		
Ammonia Total as N	mg/L	04/17/2009	N001	6.98 - 31.98	0.1	U	F	#	0.1	
Arsenic	mg/L	04/17/2009	N001	6.98 - 31.98	0.0053		F	#	0.00001	
Calcium	mg/L	04/17/2009	N001	6.98 - 31.98	460		F	#	0.0031	
Chloride	mg/L	04/17/2009	N001	6.98 - 31.98	2900		F	#	40	
Dissolved Oxygen	mg/L	04/17/2009	N001	6.98 - 31.98	0.03		F	#		
Field Ferrous Iron	mg/L	04/17/2009	N001	6.98 - 31.98	1.81		F	#		
Iron	mg/L	04/17/2009	N001	6.98 - 31.98	7.2		F	#	0.0013	
Magnesium	mg/L	04/17/2009	N001	6.98 - 31.98	710		F	#	0.38	
Manganese	mg/L	04/17/2009	N001	6.98 - 31.98	1.1		F	#	0.00012	
Molybdenum	mg/L	04/17/2009	N001	6.98 - 31.98	0.011		JF	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N001	6.98 - 31.98	0.018		F	#	0.01	
Oxidation Reduction Potential	mV	04/17/2009	N001	6.98 - 31.98	-99		F	#		
pH	s.u.	04/17/2009	N001	6.98 - 31.98	7.11		F	#		
Potassium	mg/L	04/17/2009	N001	6.98 - 31.98	31		JF	#	0.11	
Selenium	mg/L	04/17/2009	N001	6.98 - 31.98	0.00031		F	#	0.000018	
Sodium	mg/L	04/17/2009	N001	6.98 - 31.98	3500		F	#	0.23	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0172 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/17/2009	N001	6.98	-	31.98	18323		F	#		
Sulfate	mg/L	04/17/2009	N001	6.98	-	31.98	6700		F	#	100	
Temperature	C	04/17/2009	N001	6.98	-	31.98	12.75		F	#		
Turbidity	NTU	04/17/2009	N001	6.98	-	31.98	4.55		F	#		
Uranium	mg/L	04/17/2009	N001	6.98	-	31.98	0.057		F	#	0.0000045	
Vanadium	mg/L	04/17/2009	N001	6.98	-	31.98	0.00014	U	JF	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0195 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	5.29 - 25.29	430		F	#		
Ammonia Total as N	mg/L	04/16/2009	N001	5.29 - 25.29	1.6		F	#	0.1	
Arsenic	mg/L	04/16/2009	N001	5.29 - 25.29	0.0014		F	#	0.00001	
Calcium	mg/L	04/16/2009	N001	5.29 - 25.29	100		F	#	0.0031	
Chloride	mg/L	04/16/2009	N001	5.29 - 25.29	39		F	#	4	
Dissolved Oxygen	mg/L	04/16/2009	N001	5.29 - 25.29	0.1		F	#		
Field Ferrous Iron	mg/L	04/16/2009	N001	5.29 - 25.29	0.35		F	#		
Iron	mg/L	04/16/2009	N001	5.29 - 25.29	1.4		F	#	0.0013	
Magnesium	mg/L	04/16/2009	N001	5.29 - 25.29	48		F	#	0.0075	
Manganese	mg/L	04/16/2009	N001	5.29 - 25.29	0.56		F	#	0.00012	
Molybdenum	mg/L	04/16/2009	N001	5.29 - 25.29	0.054		JF	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	5.29 - 25.29	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	04/16/2009	N001	5.29 - 25.29	14.4		F	#		
pH	s.u.	04/16/2009	N001	5.29 - 25.29	7.29		F	#		
Potassium	mg/L	04/16/2009	N001	5.29 - 25.29	11		JF	#	0.11	
Selenium	mg/L	04/16/2009	N001	5.29 - 25.29	0.00017		UF	#	0.000018	
Sodium	mg/L	04/16/2009	N001	5.29 - 25.29	130		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0195 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/16/2009	N001	5.29	-	25.29	1403		F	#		
Sulfate	mg/L	04/16/2009	N001	5.29	-	25.29	240		F	#	10	
Temperature	C	04/16/2009	N001	5.29	-	25.29	8.52		F	#		
Turbidity	NTU	04/16/2009	N001	5.29	-	25.29	9.7		F	#		
Uranium	mg/L	04/16/2009	N001	5.29	-	25.29	0.029		F	#	0.0000045	
Vanadium	mg/L	04/16/2009	N001	5.29	-	25.29	0.0003		JF	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0201 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	7.35	-	22.35	262		F	#		
Ammonia Total as N	mg/L	04/16/2009	N001	7.35	-	22.35	93		F	#	5	
Arsenic	mg/L	04/16/2009	N001	7.35	-	22.35	0.00038		F	#	0.00001	
Calcium	mg/L	04/16/2009	N001	7.35	-	22.35	550		F	#	0.031	
Chloride	mg/L	04/16/2009	N001	7.35	-	22.35	150		F	#	10	
Dissolved Oxygen	mg/L	04/16/2009	N001	7.35	-	22.35	1.88		F	#		
Field Ferrous Iron	mg/L	04/16/2009	N001	7.35	-	22.35	0.01		F	#		
Iron	mg/L	04/16/2009	N001	7.35	-	22.35	0.014	B	F	#	0.0013	
Magnesium	mg/L	04/16/2009	N001	7.35	-	22.35	62		F	#	0.0075	
Manganese	mg/L	04/16/2009	N001	7.35	-	22.35	3.2		F	#	0.00012	
Molybdenum	mg/L	04/16/2009	N001	7.35	-	22.35	1.9		JF	#	0.0014	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	7.35	-	22.35	61		F	#	0.5	
Oxidation Reduction Potential	mV	04/16/2009	N001	7.35	-	22.35	191.3		F	#		
pH	s.u.	04/16/2009	N001	7.35	-	22.35	7		F	#		
Potassium	mg/L	04/16/2009	N001	7.35	-	22.35	19		JF	#	0.11	
Selenium	mg/L	04/16/2009	N001	7.35	-	22.35	0.065		F	#	0.00018	
Sodium	mg/L	04/16/2009	N001	7.35	-	22.35	360		F	#	0.047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0201 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/16/2009	N001	7.35	-	22.35	4792		F	#		
Sulfate	mg/L	04/16/2009	N001	7.35	-	22.35	2100		F	#	25	
Temperature	C	04/16/2009	N001	7.35	-	22.35	10.24		F	#		
Turbidity	NTU	04/16/2009	N001	7.35	-	22.35	1.88		F	#		
Uranium	mg/L	04/16/2009	N001	7.35	-	22.35	0.077		F	#	0.00009	
Vanadium	mg/L	04/16/2009	N001	7.35	-	22.35	0.0028		F	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0215 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	6.84 - 21.84	189		F	#		
Ammonia Total as N	mg/L	04/16/2009	N001	6.84 - 21.84	3.2		F	#	0.1	
Arsenic	mg/L	04/16/2009	N001	6.84 - 21.84	0.00027		F	#	0.00001	
Calcium	mg/L	04/16/2009	N001	6.84 - 21.84	98		F	#	0.0031	
Chloride	mg/L	04/16/2009	N001	6.84 - 21.84	150		F	#	2	
Dissolved Oxygen	mg/L	04/16/2009	N001	6.84 - 21.84	1.07		F	#		
Field Ferrous Iron	mg/L	04/16/2009	N001	6.84 - 21.84	0.01		F	#		
Iron	mg/L	04/16/2009	N001	6.84 - 21.84	0.025	B	F	#	0.0013	
Magnesium	mg/L	04/16/2009	N001	6.84 - 21.84	42		F	#	0.0075	
Manganese	mg/L	04/16/2009	N001	6.84 - 21.84	0.65		F	#	0.00012	
Molybdenum	mg/L	04/16/2009	N001	6.84 - 21.84	0.019		JF	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	6.84 - 21.84	0.047		F	#	0.01	
Oxidation Reduction Potential	mV	04/16/2009	N001	6.84 - 21.84	22.2		F	#		
pH	s.u.	04/16/2009	N001	6.84 - 21.84	7.65		F	#		
Potassium	mg/L	04/16/2009	N001	6.84 - 21.84	5.7		JF	#	0.11	
Selenium	mg/L	04/16/2009	N001	6.84 - 21.84	0.0018		F	#	0.000018	
Sodium	mg/L	04/16/2009	N001	6.84 - 21.84	89		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0215 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/16/2009	N001	6.84	-	21.84	1310		F	#		
Sulfate	mg/L	04/16/2009	N001	6.84	-	21.84	210		F	#	5	
Temperature	C	04/16/2009	N001	6.84	-	21.84	10.8		F	#		
Turbidity	NTU	04/16/2009	N001	6.84	-	21.84	1.95		F	#		
Uranium	mg/L	04/16/2009	N001	6.84	-	21.84	0.023		F	#	0.0000045	
Vanadium	mg/L	04/16/2009	N001	6.84	-	21.84	0.00069		JF	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0216 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	5.5	-	20.5	203		F	#		
Ammonia Total as N	mg/L	04/16/2009	N001	5.5	-	20.5	8.7		F	#	0.5	
Arsenic	mg/L	04/16/2009	N001	5.5	-	20.5	0.041		F	#	0.0001	
Calcium	mg/L	04/16/2009	N001	5.5	-	20.5	70		F	#	0.0031	
Chloride	mg/L	04/16/2009	N001	5.5	-	20.5	160		F	#	2	
Dissolved Oxygen	mg/L	04/16/2009	N001	5.5	-	20.5	0.85		F	#		
Field Ferrous Iron	mg/L	04/16/2009	N001	5.5	-	20.5	0.01		F	#		
Iron	mg/L	04/16/2009	N001	5.5	-	20.5	0.26		F	#	0.0013	
Magnesium	mg/L	04/16/2009	N001	5.5	-	20.5	20		F	#	0.0075	
Manganese	mg/L	04/16/2009	N001	5.5	-	20.5	0.7		F	#	0.00012	
Molybdenum	mg/L	04/16/2009	N001	5.5	-	20.5	0.15		JF	#	0.00014	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	5.5	-	20.5	0.77		F	#	0.01	
Oxidation Reduction Potential	mV	04/16/2009	N001	5.5	-	20.5	96.1		F	#		
pH	s.u.	04/16/2009	N001	5.5	-	20.5	7.69		F	#		
Potassium	mg/L	04/16/2009	N001	5.5	-	20.5	8.9		JF	#	0.11	
Selenium	mg/L	04/16/2009	N001	5.5	-	20.5	0.045		F	#	0.00018	
Sodium	mg/L	04/16/2009	N001	5.5	-	20.5	130		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0216 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/16/2009	N001	5.5	-	20.5	2527		F	#		
Sulfate	mg/L	04/16/2009	N001	5.5	-	20.5	210		F	#	5	
Temperature	C	04/16/2009	N001	5.5	-	20.5	9.01		F	#		
Turbidity	NTU	04/16/2009	N001	5.5	-	20.5	2.64		F	#		
Uranium	mg/L	04/16/2009	N001	5.5	-	20.5	0.052		F	#	0.000009	
Vanadium	mg/L	04/16/2009	N001	5.5	-	20.5	0.64		F	#	0.0045	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0217 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	7.4	-	22.4	199		F	#		
Ammonia Total as N	mg/L	04/15/2009	N001	7.4	-	22.4	61		F	#	5	
Arsenic	mg/L	04/15/2009	N001	7.4	-	22.4	0.00081		F	#	0.00001	
Calcium	mg/L	04/15/2009	N001	7.4	-	22.4	590		F	#	0.031	
Chloride	mg/L	04/15/2009	N001	7.4	-	22.4	240		F	#	10	
Dissolved Oxygen	mg/L	04/15/2009	N001	7.4	-	22.4	0.25		F	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	7.4	-	22.4	0.01		F	#		
Iron	mg/L	04/15/2009	N001	7.4	-	22.4	0.044	B	F	#	0.0013	
Magnesium	mg/L	04/15/2009	N001	7.4	-	22.4	20		F	#	0.0075	
Manganese	mg/L	04/15/2009	N001	7.4	-	22.4	5.3		F	#	0.00012	
Molybdenum	mg/L	04/15/2009	N001	7.4	-	22.4	1.6		JF	#	0.0014	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	7.4	-	22.4	13		F	#	0.1	
Oxidation Reduction Potential	mV	04/15/2009	N001	7.4	-	22.4	146		F	#		
pH	s.u.	04/15/2009	N001	7.4	-	22.4	6.97		F	#		
Potassium	mg/L	04/15/2009	N001	7.4	-	22.4	22		JF	#	0.11	
Selenium	mg/L	04/15/2009	N001	7.4	-	22.4	0.039		F	#	0.000091	
Sodium	mg/L	04/15/2009	N001	7.4	-	22.4	180		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0217 WELL Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole Summary

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	7.4	-	22.4	3650		F	#		
Sulfate	mg/L	04/15/2009	N001	7.4	-	22.4	1500		F	#	25	
Temperature	C	04/15/2009	N001	7.4	-	22.4	9.1		F	#		
Turbidity	NTU	04/15/2009	N001	7.4	-	22.4	3		F	#		
Uranium	mg/L	04/15/2009	N001	7.4	-	22.4	0.12		F	#	0.00009	
Vanadium	mg/L	04/15/2009	N001	7.4	-	22.4	1.9		F	#	0.023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0590 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	5.21 - 19.21	332		F	#		
Ammonia Total as N	mg/L	04/15/2009	N001	5.21 - 19.21	170		F	#	10	
Arsenic	mg/L	04/15/2009	N001	5.21 - 19.21	0.00062		F	#	0.00001	
Calcium	mg/L	04/15/2009	N001	5.21 - 19.21	520		F	#	0.031	
Chloride	mg/L	04/15/2009	N001	5.21 - 19.21	300		F	#	10	
Dissolved Oxygen	mg/L	04/15/2009	N001	5.21 - 19.21	0.27		F	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	5.21 - 19.21	0.01		F	#		
Iron	mg/L	04/15/2009	N001	5.21 - 19.21	0.02	B	F	#	0.0013	
Magnesium	mg/L	04/15/2009	N001	5.21 - 19.21	54		F	#	0.0075	
Manganese	mg/L	04/15/2009	N001	5.21 - 19.21	11		F	#	0.0012	
Molybdenum	mg/L	04/15/2009	N001	5.21 - 19.21	1.5		JF	#	0.0014	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	5.21 - 19.21	73		F	#	0.5	
Oxidation Reduction Potential	mV	04/15/2009	N001	5.21 - 19.21	161		F	#		
pH	s.u.	04/15/2009	N001	5.21 - 19.21	6.84		F	#		
Potassium	mg/L	04/15/2009	N001	5.21 - 19.21	28		JF	#	0.11	
Selenium	mg/L	04/15/2009	N001	5.21 - 19.21	0.056		F	#	0.00018	
Sodium	mg/L	04/15/2009	N001	5.21 - 19.21	420		F	#	0.047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0590 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	5.21	-	19.21	5680		F	#		
Sulfate	mg/L	04/15/2009	N001	5.21	-	19.21	2200		F	#	25	
Temperature	C	04/15/2009	N001	5.21	-	19.21	9.4		F	#		
Turbidity	NTU	04/15/2009	N001	5.21	-	19.21	1.31		F	#		
Uranium	mg/L	04/15/2009	N001	5.21	-	19.21	0.057		F	#	0.00009	
Vanadium	mg/L	04/15/2009	N001	5.21	-	19.21	0.35		F	#	0.0023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0620 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	N001	6.7	-	10.7	548		F	#		
Ammonia Total as N	mg/L	04/17/2009	N001	6.7	-	10.7	0.1	U	F	#	0.1	
Arsenic	mg/L	04/17/2009	N001	6.7	-	10.7	0.00044		F	#	0.00001	
Calcium	mg/L	04/17/2009	N001	6.7	-	10.7	340		F	#	0.0031	
Chloride	mg/L	04/17/2009	N001	6.7	-	10.7	550		F	#	10	
Dissolved Oxygen	mg/L	04/17/2009	N001	6.7	-	10.7	2.17		F	#		
Field Ferrous Iron	mg/L	04/17/2009	N001	6.7	-	10.7	0.08		F	#		
Iron	mg/L	04/17/2009	N001	6.7	-	10.7	0.012	B	F	#	0.0013	
Magnesium	mg/L	04/17/2009	N001	6.7	-	10.7	210		F	#	0.0075	
Manganese	mg/L	04/17/2009	N001	6.7	-	10.7	1		F	#	0.00012	
Molybdenum	mg/L	04/17/2009	N001	6.7	-	10.7	0.0099		JF	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N001	6.7	-	10.7	35		F	#	0.2	
Oxidation Reduction Potential	mV	04/17/2009	N001	6.7	-	10.7	76.3		F	#		
pH	s.u.	04/17/2009	N001	6.7	-	10.7	7.45		F	#		
Potassium	mg/L	04/17/2009	N001	6.7	-	10.7	13		JF	#	0.11	
Selenium	mg/L	04/17/2009	N001	6.7	-	10.7	0.011		F	#	0.000018	
Sodium	mg/L	04/17/2009	N001	6.7	-	10.7	770		F	#	0.23	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0620 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/17/2009	N001	6.7	-	10.7	6269		F	#		
Sulfate	mg/L	04/17/2009	N001	6.7	-	10.7	2200		F	#	25	
Temperature	C	04/17/2009	N001	6.7	-	10.7	10.4		F	#		
Turbidity	NTU	04/17/2009	N001	6.7	-	10.7	1.72		F	#		
Uranium	mg/L	04/17/2009	N001	6.7	-	10.7	0.06		F	#	0.0000045	
Vanadium	mg/L	04/17/2009	N001	6.7	-	10.7	0.0011		JF	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0635 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	12	-	17	337		F	#		
Ammonia Total as N	mg/L	04/16/2009	N001	12	-	17	120		F	#	5	
Arsenic	mg/L	04/16/2009	N001	12	-	17	0.00014		UF	#	0.00001	
Calcium	mg/L	04/16/2009	N001	12	-	17	550		F	#	0.031	
Chloride	mg/L	04/16/2009	N001	12	-	17	240		F	#	10	
Dissolved Oxygen	mg/L	04/16/2009	N001	12	-	17	0.22		F	#		
Field Ferrous Iron	mg/L	04/16/2009	N001	12	-	17	0.08		F	#		
Iron	mg/L	04/16/2009	N001	12	-	17	0.041	B	F	#	0.0013	
Magnesium	mg/L	04/16/2009	N001	12	-	17	33		F	#	0.0075	
Manganese	mg/L	04/16/2009	N001	12	-	17	6.2		F	#	0.00012	
Molybdenum	mg/L	04/16/2009	N001	12	-	17	0.38		JF	#	0.00035	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	12	-	17	31		F	#	0.2	
Oxidation Reduction Potential	mV	04/16/2009	N001	12	-	17	117.7		F	#		
pH	s.u.	04/16/2009	N001	12	-	17	6.94		F	#		
Potassium	mg/L	04/16/2009	N001	12	-	17	56		JF	#	0.11	
Selenium	mg/L	04/16/2009	N001	12	-	17	0.0018		F	#	0.000018	
Sodium	mg/L	04/16/2009	N001	12	-	17	270		F	#	0.047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0635 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/16/2009	N001	12	-	17	4592		F	#		
Sulfate	mg/L	04/16/2009	N001	12	-	17	1800		F	#	25	
Temperature	C	04/16/2009	N001	12	-	17	10.85		F	#		
Turbidity	NTU	04/16/2009	N001	12	-	17	3.12		F	#		
Uranium	mg/L	04/16/2009	N001	12	-	17	0.1		F	#	0.000022	
Vanadium	mg/L	04/16/2009	N001	12	-	17	0.00039		JF	#	0.00014	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0659 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	.5	-	10.5	190		F	#		
Ammonia Total as N	mg/L	04/15/2009	0002	.5	-	10.5	51		F	#	5	
Ammonia Total as N	mg/L	04/15/2009	N001	.5	-	10.5	53		F	#	5	
Arsenic	mg/L	04/15/2009	0002	.5	-	10.5	0.0093		F	#	0.0001	
Arsenic	mg/L	04/15/2009	N001	.5	-	10.5	0.0095		F	#	0.0001	
Calcium	mg/L	04/15/2009	0002	.5	-	10.5	600		F	#	0.031	
Calcium	mg/L	04/15/2009	N001	.5	-	10.5	600		F	#	0.031	
Chloride	mg/L	04/15/2009	0002	.5	-	10.5	140		F	#	10	
Chloride	mg/L	04/15/2009	N001	.5	-	10.5	140		F	#	10	
Dissolved Oxygen	mg/L	04/15/2009	N001	.5	-	10.5	1.33		F	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	.5	-	10.5	0.01		F	#		
Iron	mg/L	04/15/2009	0002	.5	-	10.5	0.0013	U	JF	#	0.0013	
Iron	mg/L	04/15/2009	N001	.5	-	10.5	0.12		F	#	0.0013	
Magnesium	mg/L	04/15/2009	0002	.5	-	10.5	19		F	#	0.0075	
Magnesium	mg/L	04/15/2009	N001	.5	-	10.5	19		F	#	0.0075	
Manganese	mg/L	04/15/2009	0002	.5	-	10.5	2.4		F	#	0.00012	
Manganese	mg/L	04/15/2009	N001	.5	-	10.5	2.4		F	#	0.00012	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0659 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Molybdenum	mg/L	04/15/2009	0002	.5	-	10.5	2.2		F	#	0.0035	
Molybdenum	mg/L	04/15/2009	N001	.5	-	10.5	2.3		JF	#	0.0035	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	0002	.5	-	10.5	23		F	#	0.2	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	.5	-	10.5	22		F	#	0.2	
Oxidation Reduction Potential	mV	04/15/2009	N001	.5	-	10.5	150		F	#		
pH	s.u.	04/15/2009	N001	.5	-	10.5	7.14		F	#		
Potassium	mg/L	04/15/2009	0002	.5	-	10.5	13		JF	#	0.11	
Potassium	mg/L	04/15/2009	N001	.5	-	10.5	13		JF	#	0.11	
Selenium	mg/L	04/15/2009	0002	.5	-	10.5	0.12		F	#	0.00018	
Selenium	mg/L	04/15/2009	N001	.5	-	10.5	0.12		F	#	0.00018	
Sodium	mg/L	04/15/2009	0002	.5	-	10.5	150		F	#	0.0047	
Sodium	mg/L	04/15/2009	N001	.5	-	10.5	150		F	#	0.0047	
Specific Conductance	umhos /cm	04/15/2009	N001	.5	-	10.5	3400		F	#		
Sulfate	mg/L	04/15/2009	0002	.5	-	10.5	1500		F	#	25	
Sulfate	mg/L	04/15/2009	N001	.5	-	10.5	1600		F	#	25	
Temperature	C	04/15/2009	N001	.5	-	10.5	10.4		F	#		
Turbidity	NTU	04/15/2009	N001	.5	-	10.5	6.07		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0659 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Uranium	mg/L	04/15/2009	0002	.5	-	10.5	0.11		F	#	0.00022	
Uranium	mg/L	04/15/2009	N001	.5	-	10.5	0.11		F	#	0.00022	
Vanadium	mg/L	04/15/2009	0002	.5	-	10.5	0.71		F	#	0.0045	
Vanadium	mg/L	04/15/2009	N001	.5	-	10.5	0.76		F	#	0.0091	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0664 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	0001	7.7	-	14.7	529		FQ	#		
Ammonia Total as N	mg/L	04/15/2009	N001	7.7	-	14.7	34		FQ	#	5	
Arsenic	mg/L	04/15/2009	N001	7.7	-	14.7	0.0026		FQ	#	0.000052	
Calcium	mg/L	04/15/2009	N001	7.7	-	14.7	280		FQ	#	0.0031	
Chloride	mg/L	04/15/2009	N001	7.7	-	14.7	70		FQ	#	10	
Dissolved Oxygen	mg/L	04/15/2009	N001	7.7	-	14.7	2.53		FQ	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	7.7	-	14.7	0.01		FQ	#		
Iron	mg/L	04/15/2009	N001	7.7	-	14.7	0.0022	B	JFQ	#	0.0013	
Magnesium	mg/L	04/15/2009	N001	7.7	-	14.7	68		FQ	#	0.0075	
Manganese	mg/L	04/15/2009	N001	7.7	-	14.7	1.7		FQ	#	0.00012	
Molybdenum	mg/L	04/15/2009	N001	7.7	-	14.7	0.4		JFQ	#	0.00035	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	7.7	-	14.7	19		FQ	#	0.1	
Oxidation Reduction Potential	mV	04/15/2009	N001	7.7	-	14.7	143		FQ	#		
pH	s.u.	04/15/2009	N001	7.7	-	14.7	7.04		FQ	#		
Potassium	mg/L	04/15/2009	N001	7.7	-	14.7	14		JFQ	#	0.11	
Selenium	mg/L	04/15/2009	N001	7.7	-	14.7	0.041		FQ	#	0.000091	
Sodium	mg/L	04/15/2009	N001	7.7	-	14.7	210		FQ	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0664 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	7.7	-	14.7	2855		FQ	#		
Sulfate	mg/L	04/15/2009	N001	7.7	-	14.7	870		FQ	#	25	
Temperature	C	04/15/2009	N001	7.7	-	14.7	16.8		FQ	#		
Turbidity	NTU	04/15/2009	N001	7.7	-	14.7	44.9		FQ	#		
Uranium	mg/L	04/15/2009	N001	7.7	-	14.7	0.082		FQ	#	0.000022	
Vanadium	mg/L	04/15/2009	N001	7.7	-	14.7	1.8		FQ	#	0.023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0669 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	0001	4	-	10.6	274		FQ	#		
Ammonia Total as N	mg/L	04/15/2009	N001	4	-	10.6	85		FQ	#	5	
Arsenic	mg/L	04/15/2009	N001	4	-	10.6	0.0056		FQ	#	0.000052	
Calcium	mg/L	04/15/2009	N001	4	-	10.6	530		FQ	#	0.031	
Chloride	mg/L	04/15/2009	N001	4	-	10.6	120		FQ	#	10	
Dissolved Oxygen	mg/L	04/15/2009	N001	4	-	10.6	4.48		FQ	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	4	-	10.6	0.15		FQ	#		
Iron	mg/L	04/15/2009	N001	4	-	10.6	0.021	B	FQ	#	0.0013	
Magnesium	mg/L	04/15/2009	N001	4	-	10.6	41		FQ	#	0.0075	
Manganese	mg/L	04/15/2009	N001	4	-	10.6	2.6		FQ	#	0.00012	
Molybdenum	mg/L	04/15/2009	N001	4	-	10.6	1.5		JFQ	#	0.0014	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	4	-	10.6	13		FQ	#	0.1	
Oxidation Reduction Potential	mV	04/15/2009	N001	4	-	10.6	81		FQ	#		
pH	s.u.	04/15/2009	N001	4	-	10.6	6.92		FQ	#		
Potassium	mg/L	04/15/2009	N001	4	-	10.6	13		JFQ	#	0.11	
Selenium	mg/L	04/15/2009	N001	4	-	10.6	0.016		FQ	#	0.000091	
Sodium	mg/L	04/15/2009	N001	4	-	10.6	220		FQ	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0669 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	4	-	10.6	3975		FQ	#		
Sulfate	mg/L	04/15/2009	N001	4	-	10.6	1700		FQ	#	25	
Temperature	C	04/15/2009	N001	4	-	10.6	15.5		FQ	#		
Turbidity	NTU	04/15/2009	N001	4	-	10.6	653		FQ	#		
Uranium	mg/L	04/15/2009	N001	4	-	10.6	0.069		FQ	#	0.00009	
Vanadium	mg/L	04/15/2009	N001	4	-	10.6	3.1		FQ	#	0.023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0687 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	9.7 - 14.7	331		F	#		
Ammonia Total as N	mg/L	04/16/2009	N001	9.7 - 14.7	17		F	#	2	
Arsenic	mg/L	04/16/2009	N001	9.7 - 14.7	0.0027		F	#	0.00001	
Calcium	mg/L	04/16/2009	N001	9.7 - 14.7	210		F	#	0.0031	
Chloride	mg/L	04/16/2009	N001	9.7 - 14.7	95		F	#	4	
Dissolved Oxygen	mg/L	04/16/2009	N001	9.7 - 14.7	2.67		F	#		
Field Ferrous Iron	mg/L	04/16/2009	N001	9.7 - 14.7	0.01		F	#		
Iron	mg/L	04/16/2009	N001	9.7 - 14.7	0.058	B	F	#	0.0013	
Magnesium	mg/L	04/16/2009	N001	9.7 - 14.7	56		F	#	0.0075	
Manganese	mg/L	04/16/2009	N001	9.7 - 14.7	2.1		F	#	0.00012	
Molybdenum	mg/L	04/16/2009	N001	9.7 - 14.7	0.1		F	#	0.00014	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	9.7 - 14.7	40		F	#	0.2	
Oxidation Reduction Potential	mV	04/16/2009	N001	9.7 - 14.7	101.1		F	#		
pH	s.u.	04/16/2009	N001	9.7 - 14.7	7.11		F	#		
Potassium	mg/L	04/16/2009	N001	9.7 - 14.7	20	E	JF	#	0.11	
Selenium	mg/L	04/16/2009	N001	9.7 - 14.7	0.3		F	#	0.00091	
Sodium	mg/L	04/16/2009	N001	9.7 - 14.7	140		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0687 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/16/2009	N001	9.7	-	14.7	2074		F	#		
Sulfate	mg/L	04/16/2009	N001	9.7	-	14.7	450		F	#	10	
Temperature	C	04/16/2009	N001	9.7	-	14.7	10.41		F	#		
Turbidity	NTU	04/16/2009	N001	9.7	-	14.7	1.45		F	#		
Uranium	mg/L	04/16/2009	N001	9.7	-	14.7	0.06		F	#	0.000009	
Vanadium	mg/L	04/16/2009	N001	9.7	-	14.7	2.2		F	#	0.023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0855 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	0001	6	-	11	330		FQ	#		
Ammonia Total as N	mg/L	04/15/2009	0001	6	-	11	78		FQ	#	5	
Arsenic	mg/L	04/15/2009	0001	6	-	11	2.2		FQ	#	0.0021	
Calcium	mg/L	04/15/2009	0001	6	-	11	780		FQ	#	0.016	
Chloride	mg/L	04/15/2009	0001	6	-	11	170		FQ	#	10	
Dissolved Oxygen	mg/L	04/15/2009	N001	6	-	11	0.72		FQ	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	6	-	11	0.01		FQ	#		
Iron	mg/L	04/15/2009	0001	6	-	11	0.71		FQ	#	0.0067	
Magnesium	mg/L	04/15/2009	0001	6	-	11	25		FQ	#	0.038	
Manganese	mg/L	04/15/2009	0001	6	-	11	1.7		FQ	#	0.00058	
Molybdenum	mg/L	04/15/2009	0001	6	-	11	18		FQ	#	0.035	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	0001	6	-	11	17		FQ	#	0.2	
Oxidation Reduction Potential	mV	04/15/2009	N001	6	-	11	190		FQ	#		
pH	s.u.	04/15/2009	N001	6	-	11	6.41		FQ	#		
Potassium	mg/L	04/15/2009	0001	6	-	11	8.6		JFQ	#	0.54	
Selenium	mg/L	04/15/2009	0001	6	-	11	1.8		FQ	#	0.0036	
Sodium	mg/L	04/15/2009	0001	6	-	11	160		FQ	#	0.023	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0855 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	6	-	11	4100		FQ	#		
Sulfate	mg/L	04/15/2009	0001	6	-	11	1500		FQ	#	25	
Temperature	C	04/15/2009	N001	6	-	11	11.9		FQ	#		
Turbidity	NTU	04/15/2009	N001	6	-	11	76.5		FQ	#		
Uranium	mg/L	04/15/2009	0001	6	-	11	0.0084		FQ	#	0.000045	
Vanadium	mg/L	04/15/2009	0001	6	-	11	1000		FQ	#	9.1	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0856 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	12	-	16	973		F	#		
Ammonia Total as N	mg/L	04/15/2009	N001	12	-	16	50		F	#	5	
Arsenic	mg/L	04/15/2009	N001	12	-	16	0.023		F	#	0.00052	
Calcium	mg/L	04/15/2009	N001	12	-	16	230		F	#	0.0031	
Chloride	mg/L	04/15/2009	N001	12	-	16	74		F	#	4	
Dissolved Oxygen	mg/L	04/15/2009	N001	12	-	16	0.36		F	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	12	-	16	0.01		F	#		
Iron	mg/L	04/15/2009	N001	12	-	16	0.51		F	#	0.0013	
Magnesium	mg/L	04/15/2009	N001	12	-	16	54		F	#	0.0075	
Manganese	mg/L	04/15/2009	N001	12	-	16	2.6		F	#	0.00012	
Molybdenum	mg/L	04/15/2009	N001	12	-	16	0.17		F	#	0.00014	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	12	-	16	15		F	#	0.1	
Oxidation Reduction Potential	mV	04/15/2009	N001	12	-	16	210		F	#		
pH	s.u.	04/15/2009	N001	12	-	16	7.12		F	#		
Potassium	mg/L	04/15/2009	N001	12	-	16	19		JF	#	0.11	
Selenium	mg/L	04/15/2009	N001	12	-	16	0.53		F	#	0.00091	
Sodium	mg/L	04/15/2009	N001	12	-	16	190		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0856 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	12	-	16	2560		F	#		
Sulfate	mg/L	04/15/2009	N001	12	-	16	740		F	#	10	
Temperature	C	04/15/2009	N001	12	-	16	11.7		F	#		
Turbidity	NTU	04/15/2009	N001	12	-	16	9.05		F	#		
Uranium	mg/L	04/15/2009	N001	12	-	16	0.089		F	#	0.000009	
Vanadium	mg/L	04/15/2009	N001	12	-	16	8.6		F	#	0.091	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0857 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	19	-	23	490		F	#		
Ammonia Total as N	mg/L	04/15/2009	N001	19	-	23	61		F	#	5	
Arsenic	mg/L	04/15/2009	N001	19	-	23	0.088		F	#	0.00052	
Calcium	mg/L	04/15/2009	N001	19	-	23	340		F	#	0.0031	
Chloride	mg/L	04/15/2009	N001	19	-	23	76		F	#	4	
Dissolved Oxygen	mg/L	04/15/2009	N001	19	-	23	0.49		F	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	19	-	23	0.09		F	#		
Iron	mg/L	04/15/2009	N001	19	-	23	0.16		F	#	0.0013	
Magnesium	mg/L	04/15/2009	N001	19	-	23	26		F	#	0.0075	
Manganese	mg/L	04/15/2009	N001	19	-	23	2.1		F	#	0.00012	
Molybdenum	mg/L	04/15/2009	N001	19	-	23	0.51		F	#	0.0007	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	19	-	23	2		F	#	0.02	
Oxidation Reduction Potential	mV	04/15/2009	N001	19	-	23	35		F	#		
pH	s.u.	04/15/2009	N001	19	-	23	7.25		F	#		
Potassium	mg/L	04/15/2009	N001	19	-	23	17		JF	#	0.11	
Selenium	mg/L	04/15/2009	N001	19	-	23	0.32		F	#	0.00091	
Sodium	mg/L	04/15/2009	N001	19	-	23	170		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0857 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	19	-	23	2700		F	#		
Sulfate	mg/L	04/15/2009	N001	19	-	23	890		F	#	10	
Temperature	C	04/15/2009	N001	19	-	23	13		F	#		
Turbidity	NTU	04/15/2009	N001	19	-	23	8.23		F	#		
Uranium	mg/L	04/15/2009	N001	19	-	23	0.09		F	#	0.000045	
Vanadium	mg/L	04/15/2009	N001	19	-	23	33		F	#	0.45	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0863 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	10.5	-	25.5	445		F	#		
Ammonia Total as N	mg/L	04/15/2009	N001	10.5	-	25.5	290		F	#	10	
Arsenic	mg/L	04/15/2009	N001	10.5	-	25.5	0.0027		F	#	0.00001	
Calcium	mg/L	04/15/2009	N001	10.5	-	25.5	490		F	#	0.16	
Chloride	mg/L	04/15/2009	N001	10.5	-	25.5	180		F	#	10	
Dissolved Oxygen	mg/L	04/15/2009	N001	10.5	-	25.5	0.18		F	#		
Field Ferrous Iron	mg/L	04/15/2009	N001	10.5	-	25.5	0.82		F	#		
Iron	mg/L	04/15/2009	N001	10.5	-	25.5	0.32		F	#	0.0013	
Magnesium	mg/L	04/15/2009	N001	10.5	-	25.5	35		F	#	0.0075	
Manganese	mg/L	04/15/2009	N001	10.5	-	25.5	3.6		F	#	0.00012	
Molybdenum	mg/L	04/15/2009	N001	10.5	-	25.5	1.6		F	#	0.0035	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	10.5	-	25.5	0.056		F	#	0.01	
Oxidation Reduction Potential	mV	04/15/2009	N001	10.5	-	25.5	28		F	#		
pH	s.u.	04/15/2009	N001	10.5	-	25.5	7.01		F	#		
Potassium	mg/L	04/15/2009	N001	10.5	-	25.5	21		JF	#	0.11	
Selenium	mg/L	04/15/2009	N001	10.5	-	25.5	0.0019		F	#	0.000018	
Sodium	mg/L	04/15/2009	N001	10.5	-	25.5	390		F	#	0.23	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0863 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/15/2009	N001	10.5	-	25.5	6480		F	#		
Sulfate	mg/L	04/15/2009	N001	10.5	-	25.5	2700		F	#	25	
Temperature	C	04/15/2009	N001	10.5	-	25.5	12.3		F	#		
Turbidity	NTU	04/15/2009	N001	10.5	-	25.5	2.08		F	#		
Uranium	mg/L	04/15/2009	N001	10.5	-	25.5	0.094		F	#	0.00022	
Vanadium	mg/L	04/15/2009	N001	10.5	-	25.5	0.48		F	#	0.0045	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW31 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	N001	-	160		F	#		
Ammonia Total as N	mg/L	04/17/2009	N001	-	7.9		F	#	0.5	
Arsenic	mg/L	04/17/2009	N001	-	0.12		F	#	0.00052	
Calcium	mg/L	04/17/2009	N001	-	170		F	#	0.0031	
Chloride	mg/L	04/17/2009	N001	-	99		F	#	4	
Dissolved Oxygen	mg/L	04/17/2009	N001	-	1.83		F	#		
Field Ferrous Iron	mg/L	04/17/2009	N001	-	0.01		F	#		
Iron	mg/L	04/17/2009	N001	-	0.0067	B	F	#	0.0013	
Magnesium	mg/L	04/17/2009	N001	-	37		F	#	0.0075	
Manganese	mg/L	04/17/2009	N001	-	1.2		F	#	0.00012	
Molybdenum	mg/L	04/17/2009	N001	-	0.51		F	#	0.0007	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N001	-	16		F	#	0.1	
Oxidation Reduction Potential	mV	04/17/2009	N001	-	289.7		F	#		
pH	s.u.	04/17/2009	N001	-	7.25		F	#		
Potassium	mg/L	04/17/2009	N001	-	7.6		JF	#	0.11	
Selenium	mg/L	04/17/2009	N001	-	0.42		F	#	0.00091	
Sodium	mg/L	04/17/2009	N001	-	120		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW31 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/17/2009	N001	-	1702		F	#		
Sulfate	mg/L	04/17/2009	N001	-	480		F	#	10	
Temperature	C	04/17/2009	N001	-	8.66		F	#		
Turbidity	NTU	04/17/2009	N001	-	1.94		F	#		
Uranium	mg/L	04/17/2009	N001	-	0.039		F	#	0.000045	
Vanadium	mg/L	04/17/2009	N001	-	4.1		F	#	0.045	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW32 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	0001	-	388		FQ	#		
Ammonia Total as N	mg/L	04/16/2009	0001	-	4.9		FQ	#	0.1	
Arsenic	mg/L	04/16/2009	0001	-	0.14		FQ	#	0.00052	
Calcium	mg/L	04/16/2009	0001	-	200		FQ	#	0.0031	
Chloride	mg/L	04/16/2009	0001	-	110		FQ	#	4	
Dissolved Oxygen	mg/L	04/16/2009	N001	-	0.76		FQ	#		
Field Ferrous Iron	mg/L	04/16/2009	N001	-	0.1		FQ	#		
Iron	mg/L	04/16/2009	0001	-	0.076	B	FQ	#	0.0013	
Magnesium	mg/L	04/16/2009	0001	-	28		FQ	#	0.0075	
Manganese	mg/L	04/16/2009	0001	-	1.2		FQ	#	0.00012	
Molybdenum	mg/L	04/16/2009	0001	-	0.48		FQ	#	0.0007	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	0001	-	9.3		FQ	#	0.05	
Oxidation Reduction Potential	mV	04/16/2009	N001	-	69		FQ	#		
pH	s.u.	04/16/2009	N001	-	7.29		FQ	#		
Potassium	mg/L	04/16/2009	0001	-	6.8		JFQ	#	0.11	
Selenium	mg/L	04/16/2009	0001	-	0.52		FQ	#	0.00091	
Sodium	mg/L	04/16/2009	0001	-	110		FQ	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW32 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/16/2009	N001	-	1646		FQ	#		
Sulfate	mg/L	04/16/2009	0001	-	440		FQ	#	10	
Temperature	C	04/16/2009	N001	-	9.51		FQ	#		
Turbidity	NTU	04/16/2009	N001	-	249		FQ	#		
Uranium	mg/L	04/16/2009	0001	-	0.035		FQ	#	0.000045	
Vanadium	mg/L	04/16/2009	0001	-	7.5		FQ	#	0.045	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW33 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	N001	-	187		F	#		
Ammonia Total as N	mg/L	04/17/2009	N001	-	12		F	#	0.5	
Ammonia Total as N	mg/L	04/17/2009	N002	-	12		F	#	0.5	
Arsenic	mg/L	04/17/2009	N001	-	0.28		F	#	0.00052	
Arsenic	mg/L	04/17/2009	N002	-	0.28		F	#	0.00052	
Calcium	mg/L	04/17/2009	N001	-	290		F	#	0.0031	
Calcium	mg/L	04/17/2009	N002	-	300		F	#	0.0031	
Chloride	mg/L	04/17/2009	N001	-	120		F	#	4	
Chloride	mg/L	04/17/2009	N002	-	130		F	#	4	
Dissolved Oxygen	mg/L	04/17/2009	N001	-	0.4		F	#		
Field Ferrous Iron	mg/L	04/17/2009	N001	-	0.15		F	#		
Iron	mg/L	04/17/2009	N001	-	0.011	B	F	#	0.0013	
Iron	mg/L	04/17/2009	N002	-	0.012	B	F	#	0.0013	
Magnesium	mg/L	04/17/2009	N001	-	25		F	#	0.0075	
Magnesium	mg/L	04/17/2009	N002	-	26		F	#	0.0075	
Manganese	mg/L	04/17/2009	N001	-	1.2		F	#	0.00012	
Manganese	mg/L	04/17/2009	N002	-	1.2		F	#	0.00012	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW33 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Molybdenum	mg/L	04/17/2009	N001	-	0.59		F	#	0.0007	
Molybdenum	mg/L	04/17/2009	N002	-	0.57		F	#	0.0007	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N001	-	5		F	#	0.05	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N002	-	5		F	#	0.05	
Oxidation Reduction Potential	mV	04/17/2009	N001	-	282.4		F	#		
pH	s.u.	04/17/2009	N001	-	7.27		F	#		
Potassium	mg/L	04/17/2009	N001	-	8.8		JF	#	0.11	
Potassium	mg/L	04/17/2009	N002	-	8.9		JF	#	0.11	
Selenium	mg/L	04/17/2009	N001	-	0.23		F	#	0.00091	
Selenium	mg/L	04/17/2009	N002	-	0.22		F	#	0.00091	
Sodium	mg/L	04/17/2009	N001	-	110		F	#	0.0047	
Sodium	mg/L	04/17/2009	N002	-	110		F	#	0.0047	
Specific Conductance	umhos /cm	04/17/2009	N001	-	2030		F	#		
Sulfate	mg/L	04/17/2009	N001	-	710		F	#	10	
Sulfate	mg/L	04/17/2009	N002	-	700		F	#	10	
Temperature	C	04/17/2009	N001	-	8.07		F	#		
Turbidity	NTU	04/17/2009	N001	-	3.04		F	#		

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW33 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Uranium	mg/L	04/17/2009	N001	-	0.047		F	#	0.000045	
Uranium	mg/L	04/17/2009	N002	-	0.045		F	#	0.000045	
Vanadium	mg/L	04/17/2009	N001	-	9.1		F	#	0.091	
Vanadium	mg/L	04/17/2009	N002	-	8.9		F	#	0.091	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW34 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	N001	-	178		F	#		
Ammonia Total as N	mg/L	04/17/2009	N001	-	9.6		F	#	0.5	
Arsenic	mg/L	04/17/2009	N001	-	0.047		F	#	0.00052	
Calcium	mg/L	04/17/2009	N001	-	150		F	#	0.0031	
Chloride	mg/L	04/17/2009	N001	-	120		F	#	4	
Dissolved Oxygen	mg/L	04/17/2009	N001	-	0.49		F	#		
Field Ferrous Iron	mg/L	04/17/2009	N001	-	1.07		F	#		
Iron	mg/L	04/17/2009	N001	-	1.3		F	#	0.0013	
Magnesium	mg/L	04/17/2009	N001	-	25		F	#	0.0075	
Manganese	mg/L	04/17/2009	N001	-	1.3		F	#	0.00012	
Molybdenum	mg/L	04/17/2009	N001	-	0.36		F	#	0.00035	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N001	-	3		F	#	0.05	
Oxidation Reduction Potential	mV	04/17/2009	N001	-	-69.3		F	#		
pH	s.u.	04/17/2009	N001	-	7.41		F	#		
Potassium	mg/L	04/17/2009	N001	-	8.9		JF	#	0.11	
Selenium	mg/L	04/17/2009	N001	-	0.29		F	#	0.00091	
Sodium	mg/L	04/17/2009	N001	-	100		F	#	0.0047	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW34 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Specific Conductance	umhos /cm	04/17/2009	N001	-	1458		F	#		
Sulfate	mg/L	04/17/2009	N001	-	370		F	#	10	
Temperature	C	04/17/2009	N001	-	9.22		F	#		
Turbidity	NTU	04/17/2009	N001	-	9.84		F	#		
Uranium	mg/L	04/17/2009	N001	-	0.022		F	#	0.000022	
Vanadium	mg/L	04/17/2009	N001	-	5.1		F	#	0.045	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW35 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	N001	-	156		F	#		
Ammonia Total as N	mg/L	04/17/2009	N001	-	5.1		F	#	0.5	
Arsenic	mg/L	04/17/2009	N001	-	0.027		F	#	0.00021	
Calcium	mg/L	04/17/2009	N001	-	140		F	#	0.0031	
Chloride	mg/L	04/17/2009	N001	-	120		F	#	4	
Dissolved Oxygen	mg/L	04/17/2009	N001	-	1.65		F	#		
Field Ferrous Iron	mg/L	04/17/2009	N001	-	0.03		F	#		
Iron	mg/L	04/17/2009	N001	-	0.019	B	F	#	0.0013	
Magnesium	mg/L	04/17/2009	N001	-	30		F	#	0.0075	
Manganese	mg/L	04/17/2009	N001	-	1.1		F	#	0.00012	
Molybdenum	mg/L	04/17/2009	N001	-	0.24		F	#	0.00035	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	N001	-	12		F	#	0.1	
Oxidation Reduction Potential	mV	04/17/2009	N001	-	3.7		F	#		
pH	s.u.	04/17/2009	N001	-	7.52		F	#		
Potassium	mg/L	04/17/2009	N001	-	7.2		JF	#	0.11	
Selenium	mg/L	04/17/2009	N001	-	0.16		F	#	0.00036	
Sodium	mg/L	04/17/2009	N001	-	100		F	#	0.0047	
Specific Conductance	umhos /cm	04/17/2009	N001	-	1426		F	#		
Sulfate	mg/L	04/17/2009	N001	-	320		F	#	10	

Groundwater Quality Data by Location (USEE100) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: CW35 WELL City of Rifle WWTP Dewatering Wells

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Temperature	C	04/17/2009	N001	-	8.44		F	#		
Turbidity	NTU	04/17/2009	N001	-	1.42		F	#		
Uranium	mg/L	04/17/2009	N001	-	0.016		F	#	0.000022	
Vanadium	mg/L	04/17/2009	N001	-	3.7		F	#	0.045	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

New Rifle Surface Water Quality Data

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Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0320 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	189			#		
Ammonia Total as N	mg/L	04/16/2009	N001	15			#	0.5	
Dissolved Oxygen	mg/L	04/16/2009	N001	6.76			#		
Field Ferrous Iron	mg/L	04/16/2009	N001	0.01			#		
Molybdenum	mg/L	04/16/2009	N001	2.7		J	#	0.0035	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	87			#	0.5	
Oxidation Reduction Potential	mV	04/16/2009	N001	187.3			#		
pH	s.u.	04/16/2009	N001	8.21			#		
Specific Conductance	umhos/cm	04/16/2009	N001	8888			#		
Temperature	C	04/16/2009	N001	12.51			#		
Turbidity	NTU	04/16/2009	N001	9.52			#		
Uranium	mg/L	04/16/2009	N001	0.24			#	0.00022	
Vanadium	mg/L	04/16/2009	N001	0.12			#	0.00091	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0322 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	0001	207			#		
Ammonia Total as N	mg/L	04/16/2009	0001	0.1	U		#	0.1	
Dissolved Oxygen	mg/L	04/16/2009	N001	6.36			#		
Field Ferrous Iron	mg/L	04/16/2009	N001	0.01			#		
Molybdenum	mg/L	04/16/2009	0001	0.0033		J	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	0001	0.18			#	0.01	
Oxidation Reduction Potential	mV	04/16/2009	N001	75.9			#		
pH	s.u.	04/16/2009	N001	8.33			#		
Specific Conductance	umhos/cm	04/16/2009	N001	899			#		
Temperature	C	04/16/2009	N001	12.4			#		
Turbidity	NTU	04/16/2009	N001	205			#		
Uranium	mg/L	04/16/2009	0001	0.002			#	0.0000045	
Vanadium	mg/L	04/16/2009	0001	0.0014		J	#	0.00014	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0323 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	171			#		
Ammonia Total as N	mg/L	04/16/2009	N001	26			#	2	
Dissolved Oxygen	mg/L	04/16/2009	N001	6.62			#		
Field Ferrous Iron	mg/L	04/16/2009	N001	0.01			#		
Molybdenum	mg/L	04/16/2009	N001	2.2		J	#	0.0035	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	99			#	0.5	
Oxidation Reduction Potential	mV	04/16/2009	N001	205.1			#		
pH	s.u.	04/16/2009	N001	8.32			#		
Specific Conductance	umhos/cm	04/16/2009	N001	8048			#		
Temperature	C	04/16/2009	N001	12.08			#		
Turbidity	NTU	04/16/2009	N001	4.84			#		
Uranium	mg/L	04/16/2009	N001	0.26			#	0.00022	
Vanadium	mg/L	04/16/2009	N001	0.0035			#	0.00014	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0324 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/17/2009	0001	114			#		
Ammonia Total as N	mg/L	04/17/2009	0001	0.1	U		#	0.1	
Dissolved Oxygen	mg/L	04/17/2009	N001	11.54			#		
Field Ferrous Iron	mg/L	04/17/2009	N001	0.05			#		
Molybdenum	mg/L	04/17/2009	0001	0.003		J	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/17/2009	0001	0.26			#	0.01	
Oxidation Reduction Potential	mV	04/17/2009	N001	51.2			#		
pH	s.u.	04/17/2009	N001	8.41			#		
Specific Conductance	umhos/cm	04/17/2009	N001	896			#		
Temperature	C	04/17/2009	N001	9.17			#		
Turbidity	NTU	04/17/2009	N001	78.5			#		
Uranium	mg/L	04/17/2009	0001	0.002			#	0.0000045	
Vanadium	mg/L	04/17/2009	0001	0.0026		J	#	0.00014	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0452 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	183			#		
Ammonia Total as N	mg/L	04/15/2009	N001	36			#	5	
Dissolved Oxygen	mg/L	04/15/2009	N001	5.52			#		
Field Ferrous Iron	mg/L	04/15/2009	N001	0.01			#		
Molybdenum	mg/L	04/15/2009	N001	3		J	#	0.0035	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	92			#	0.5	
Oxidation Reduction Potential	mV	04/15/2009	N001	146			#		
pH	s.u.	04/15/2009	N001	7.76			#		
Specific Conductance	umhos/cm	04/15/2009	N001	6440			#		
Temperature	C	04/15/2009	N001	20.6			#		
Turbidity	NTU	04/15/2009	N001	9.37			#		
Uranium	mg/L	04/15/2009	N001	0.09			#	0.00022	
Vanadium	mg/L	04/15/2009	N001	1			#	0.0091	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0453 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/15/2009	N001	145			#		
Ammonia Total as N	mg/L	04/15/2009	N001	51			#	5	
Dissolved Oxygen	mg/L	04/15/2009	N001	6.48			#		
Field Ferrous Iron	mg/L	04/15/2009	N001	0.01			#		
Molybdenum	mg/L	04/15/2009	N001	3.3		J	#	0.0035	
Nitrate + Nitrite as Nitrogen	mg/L	04/15/2009	N001	82			#	0.5	
Oxidation Reduction Potential	mV	04/15/2009	N001	147			#		
pH	s.u.	04/15/2009	N001	7.71			#		
Specific Conductance	umhos/cm	04/15/2009	N001	5445			#		
Temperature	C	04/15/2009	N001	21.7			#		
Turbidity	NTU	04/15/2009	N001	5.3			#		
Uranium	mg/L	04/15/2009	N001	0.084			#	0.00022	
Vanadium	mg/L	04/15/2009	N001	2.1			#	0.023	

Surface Water Quality Data by Location (USEE102) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009
Location: 0575 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	04/16/2009	N001	216			#		
Ammonia Total as N	mg/L	04/16/2009	N001	0.1	U		#	0.1	
Dissolved Oxygen	mg/L	04/16/2009	N001	8.27			#		
Field Ferrous Iron	mg/L	04/16/2009	N001	0.01			#		
Molybdenum	mg/L	04/16/2009	N001	0.042		J	#	0.00007	
Nitrate + Nitrite as Nitrogen	mg/L	04/16/2009	N001	0.01	U		#	0.01	
Oxidation Reduction Potential	mV	04/16/2009	N001	198.4			#		
pH	s.u.	04/16/2009	N001	8.35			#		
Specific Conductance	umhos/cm	04/16/2009	N001	1578			#		
Temperature	C	04/16/2009	N001	10.67			#		
Turbidity	NTU	04/16/2009	N001	9.49			#		
Uranium	mg/L	04/16/2009	N001	0.017			#	0.0000045	
Vanadium	mg/L	04/16/2009	N001	0.0025			#	0.00014	

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
* Replicate analysis not within control limits.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.

C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z	Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	Q	Qualitative result due to sampling technique.	R	Unusable result.
U	Parameter analyzed for but was not detected.	X	Location is undefined.		

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

Equipment Blank Data

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BLANKS REPORT
LAB: PARAGON (Fort Collins, CO)
RIN: 09032201
Report Date: 6/17/2009

Parameter	Site Code	Location ID	Sample Date	ID	Units	Result	Qualifiers Lab	Qualifiers Data	Detection Limit	Uncertainty	Sample Type
Ammonia Total as N	RFN01	0999	04/17/2009	N001	mg/L	0.1	U		0.1		E
Molybdenum	RFN01	0999	04/17/2009	N001	mg/L	0.00035	B	U	0.00007		E
Nitrate + Nitrite as Nitrogen	RFN01	0999	04/17/2009	N001	mg/L	0.01	U		0.01		E
Uranium	RFN01	0999	04/17/2009	N001	mg/L	0.000025	B	U	0.0000045		E
Vanadium	RFN01	0999	04/17/2009	N001	mg/L	0.0036			0.00014		E
Selenium	RFO01	0999	04/14/2009	N001	mg/L	0.000052	B	U	0.000018		E
Uranium	RFO01	0999	04/14/2009	N001	mg/L	0.000025	B	U	0.0000045		E
Vanadium	RFO01	0999	04/14/2009	N001	mg/L	0.00014	U	J	0.00014		E

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:
- * Replicate analysis not within control limits.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:
- F Low flow sampling method used.
- G Possible grout contamination, pH > 9.
- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- Q Qualitative result due to sampling technique.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- X Location is undefined.

SAMPLE TYPES:
- E Equipment Blank.

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Static Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE RFO01, Rifle Old Processing Site
REPORT DATE: 6/17/2009

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0292A			04/14/2009	13:40:13	11.9	-11.9	
0304	O	5310.63	04/14/2009	11:15:48	11.37	5299.26	
0305	O	5312.08	04/13/2009	15:45:57	12.62	5299.46	
0309	O	5313.37	04/13/2009	13:50:13	15.69	5297.68	
0310	O	5311.64	04/13/2009	14:55:44	13.62	5298.02	
0655	O	5312.87	04/13/2009	16:15:28	13.75	5299.12	
0656	O	5313.28	04/14/2009	13:15:34	13.65	5299.63	
0658	U	5323.07	04/14/2009	12:45:40	7.94	5315.13	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT F OFF SITE
N UNKNOWN O ON SITE U UPGRADIENT

WATER LEVEL FLAGS: D Dry F FLOWING

STATIC WATER LEVELS (USEE700) FOR SITE RFN01, Rifle New Processing Site
REPORT DATE: 6/17/2009

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0170	D	5332.97	04/17/2009	13:17:07	94.33	5238.64	
0172	D	5229.45	04/17/2009	15:20:12	14.71	5214.74	
0195	D	5253.1	04/16/2009	16:00:01	9.69	5243.41	
0201	D	5261.07	04/16/2009	11:50:33	12.75	5248.32	
0215	O	5271.42	04/16/2009	13:15:09	14.88	5256.54	
0216	O	5265.41	04/16/2009	12:50:18	8.71	5256.7	
0217	D	5256.98	04/15/2009	15:10:41	5.21	5251.77	
0590	D	5256.37	04/15/2009	15:35:29	6.79	5249.58	
0620	D	5231.22	04/17/2009	14:20:39	9.86	5221.36	
0635	D	5253.12	04/16/2009	14:40:47	5.19	5247.93	
0659	O	5261.33	04/15/2009	14:40:24	8.11	5253.22	
0664	O	5270.17	04/15/2009	14:15:21	16.5	5253.67	
0669	O	5266.56	04/15/2009	13:55:31	12.65	5253.91	
0687			04/16/2009	13:35:54	12.82	-12.82	
0855	O	5267.24	04/15/2009	11:55:06	12.15	5255.09	
0856	O	5267.7	04/15/2009	11:05:32	12.49	5255.21	
0857	O	5267.24	04/15/2009	11:40:24	12.11	5255.13	
0863	O	5267.77	04/15/2009	13:30:11	13.19	5254.58	
CW31			04/17/2009	10:30:42	13	-13	
CW32			04/16/2009	17:00:38	10.74	-10.74	
CW33			04/17/2009	11:00:20	11.21	-11.21	
CW34			04/17/2009	11:30:47	13.2	-13.2	
CW35			04/17/2009	11:55:15	11.95	-11.95	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT F OFF SITE
N UNKNOWN O ON SITE U UPGRADIENT

WATER LEVEL FLAGS: D Dry F FLOWING

Old Rifle Hydrograph

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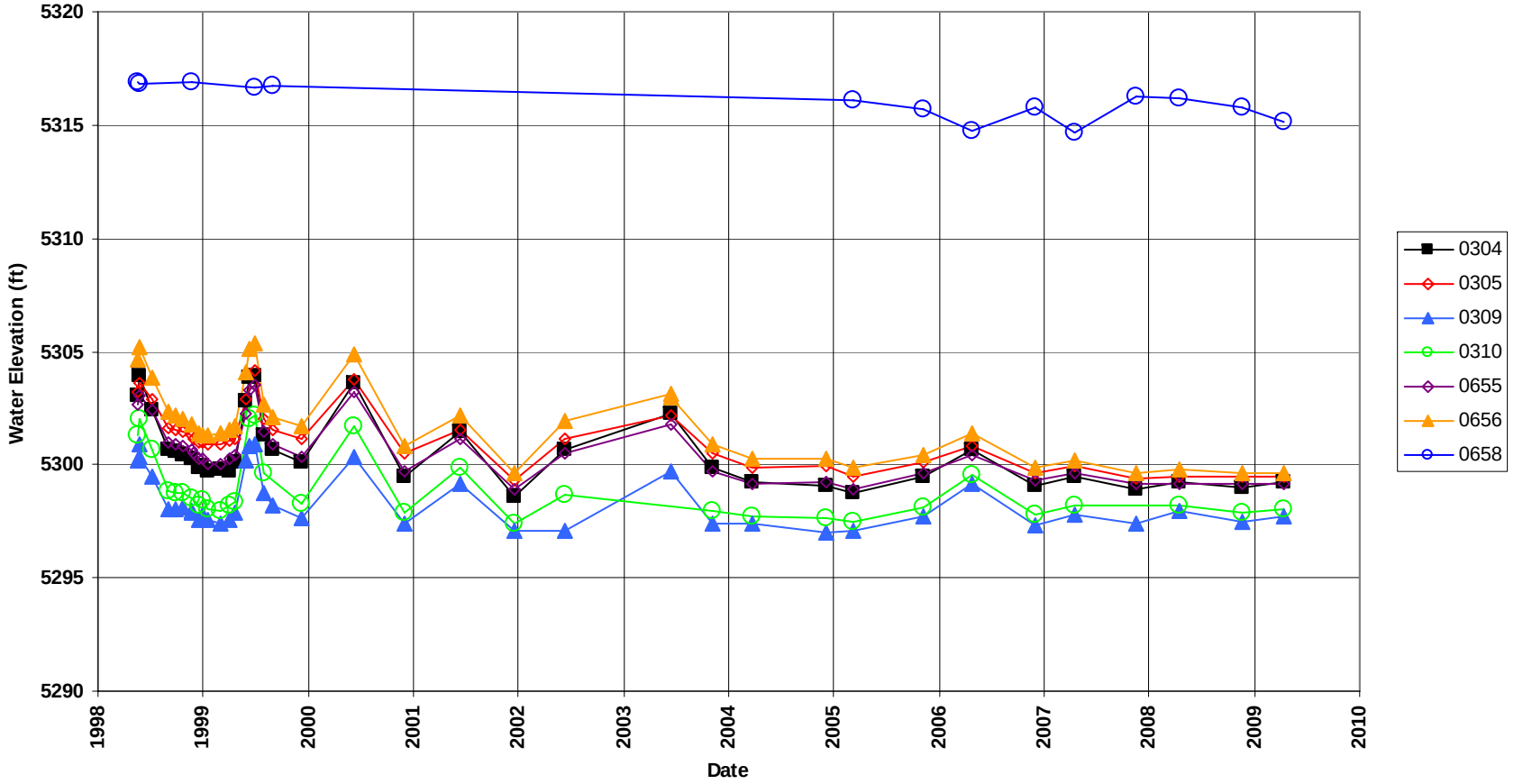
Rifle Old Processing Site
Hydrograph



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New Rifle Hydrograph

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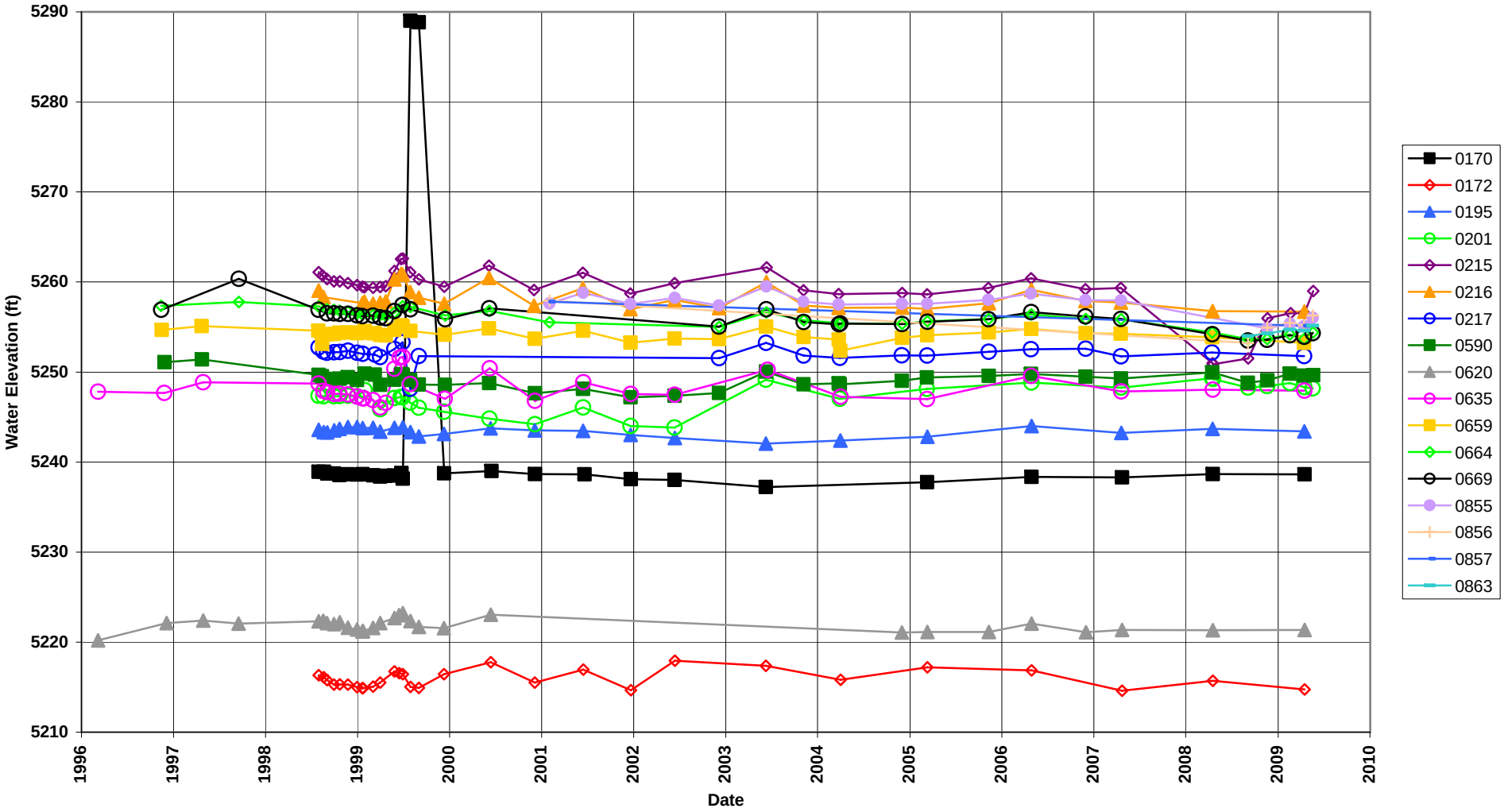
Rifle New Processing Site
Hydrograph



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Old Rifle
Time-Concentration Graphs

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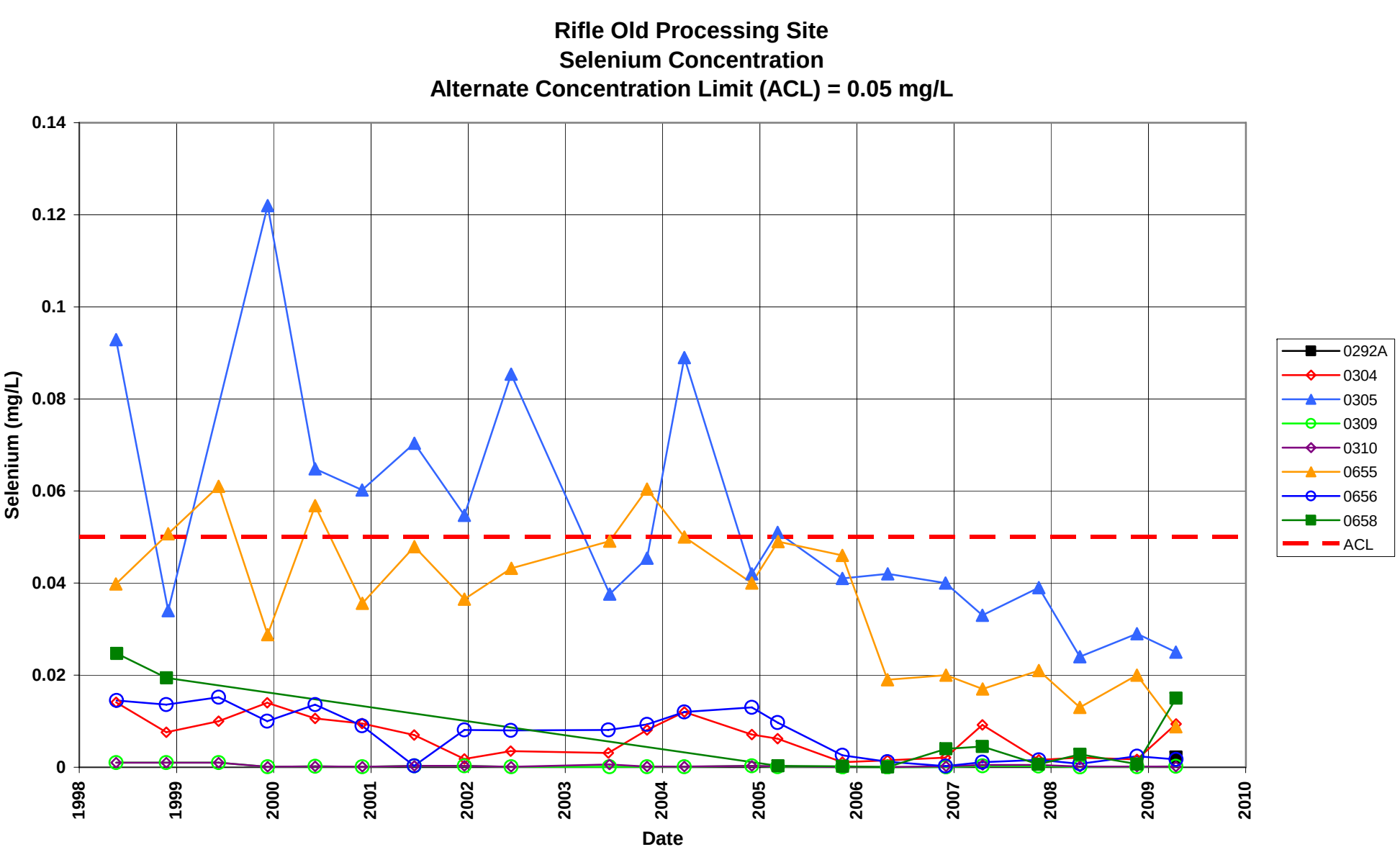
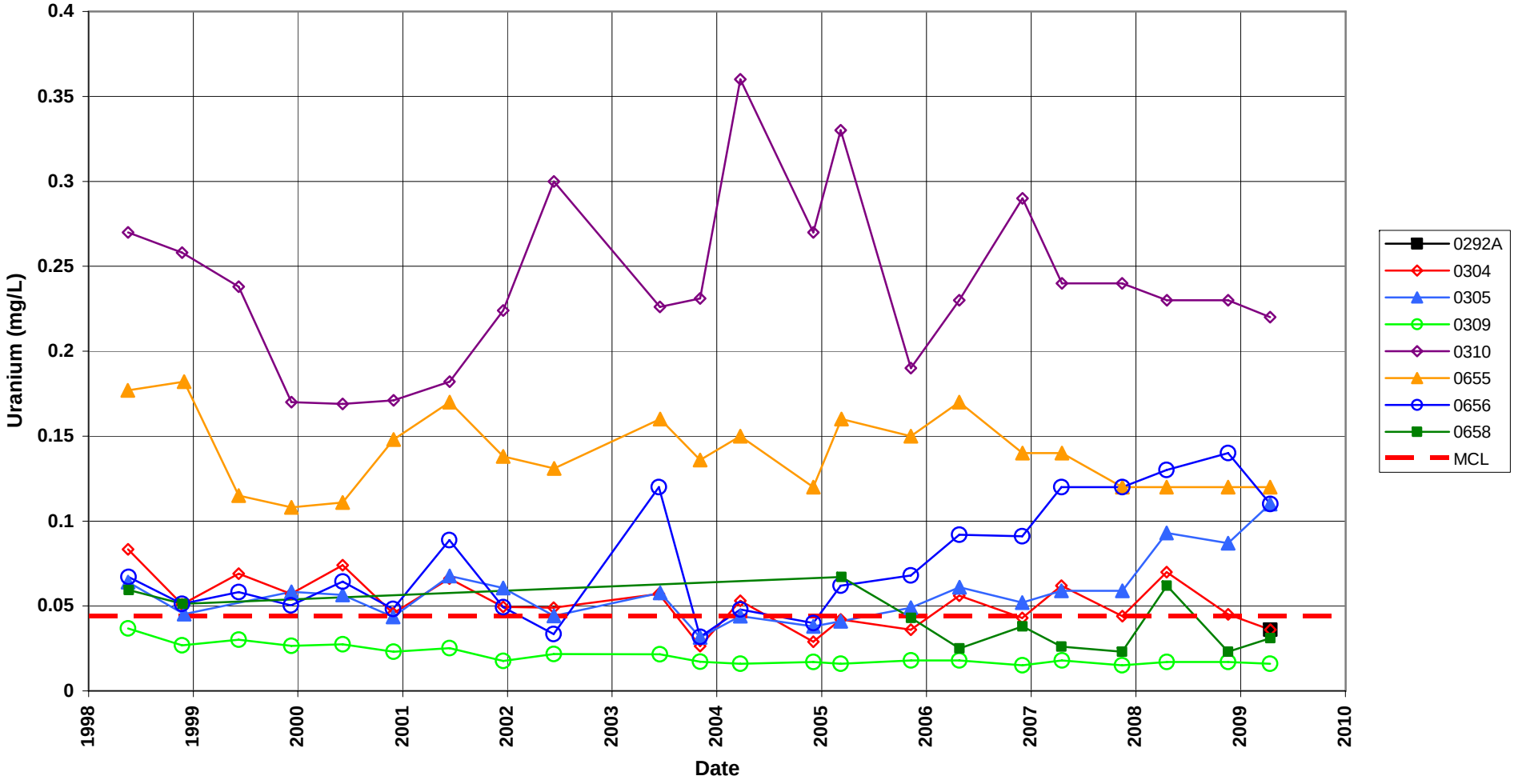
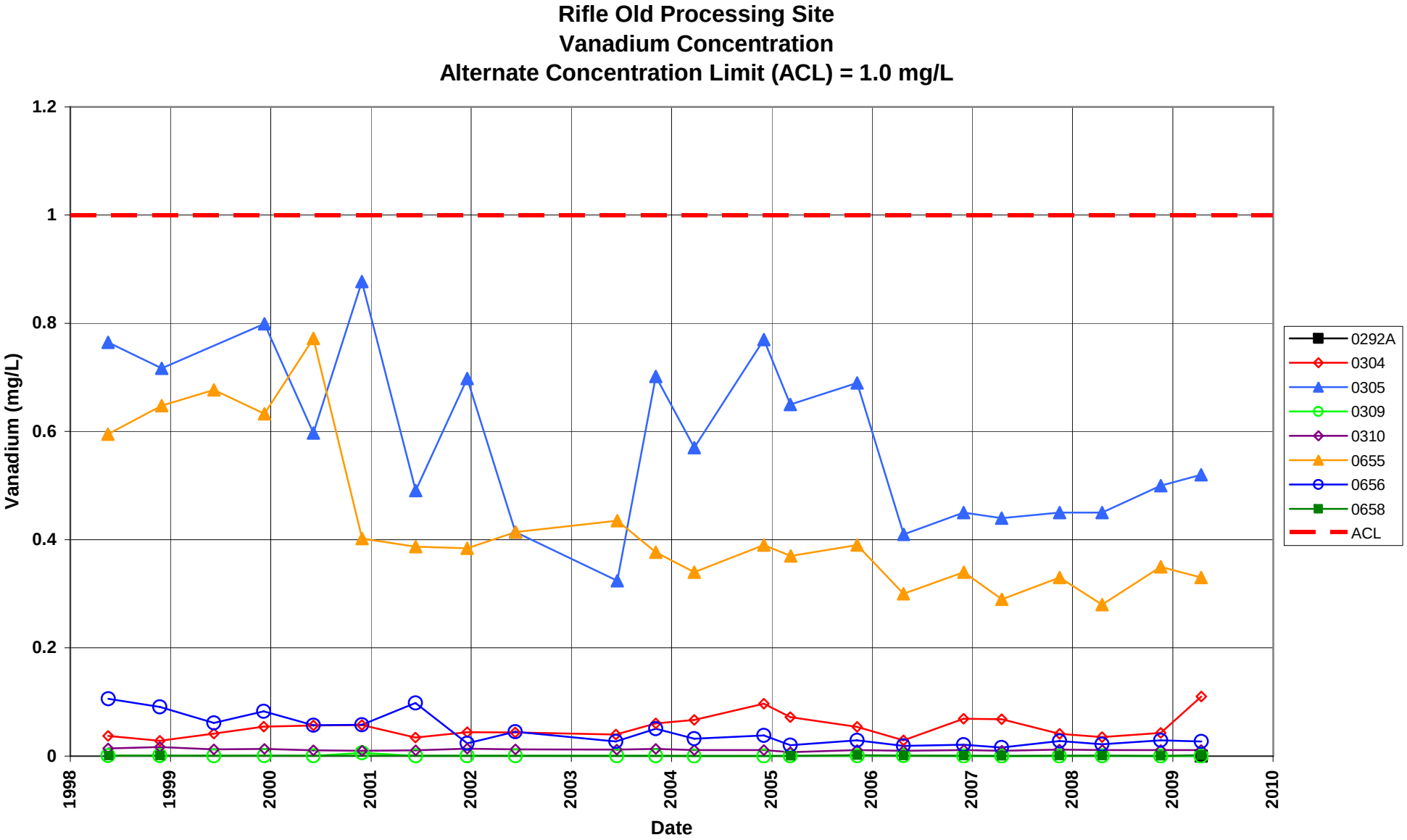
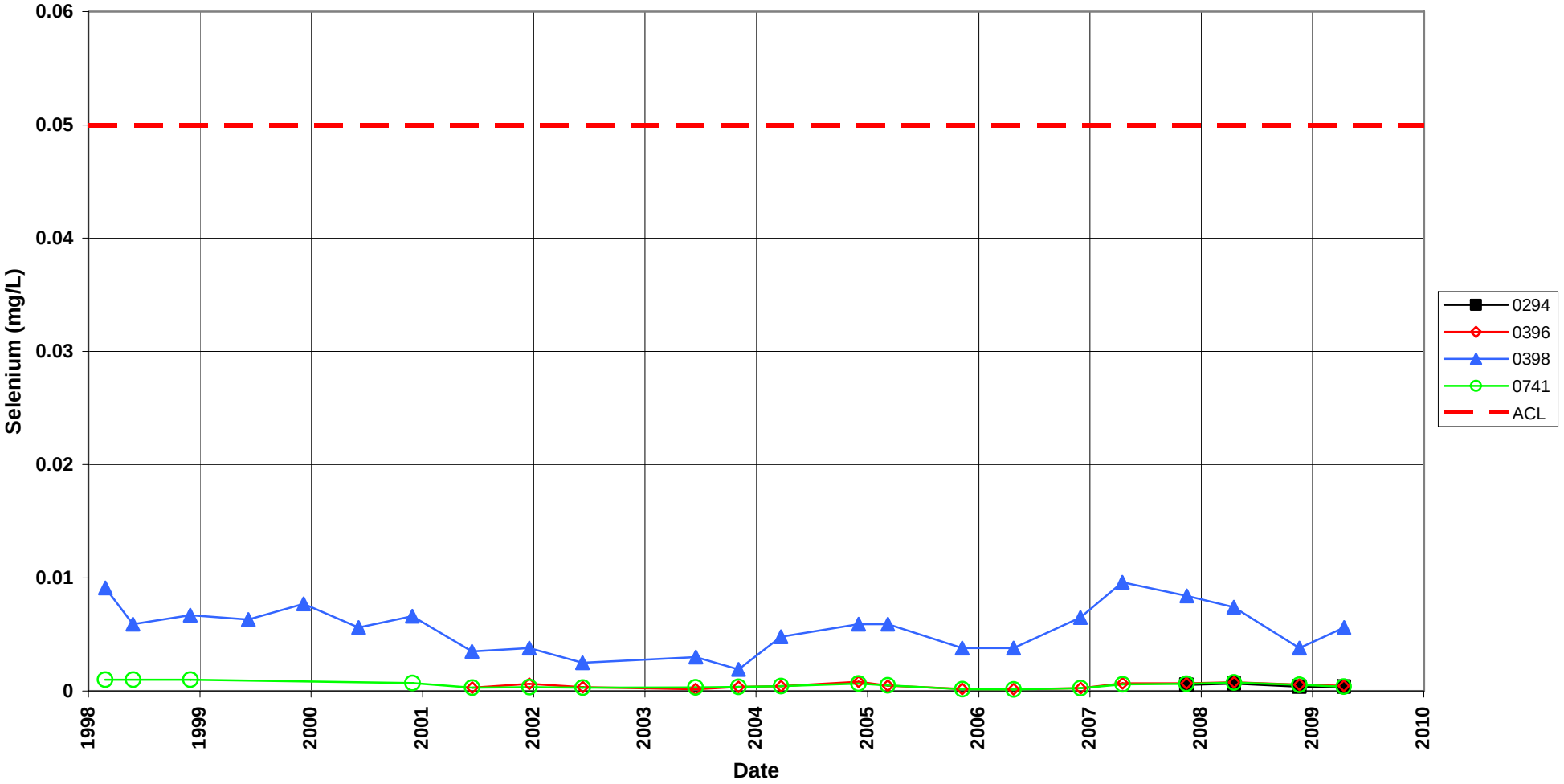

Rifle Old Processing Site
Selenium Concentration
Alternate Concentration Limit (ACL) = 0.05 mg/L
Selenium (mg/L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0292A
0304
0305
0309
0310
0655
0656
0658
ACL

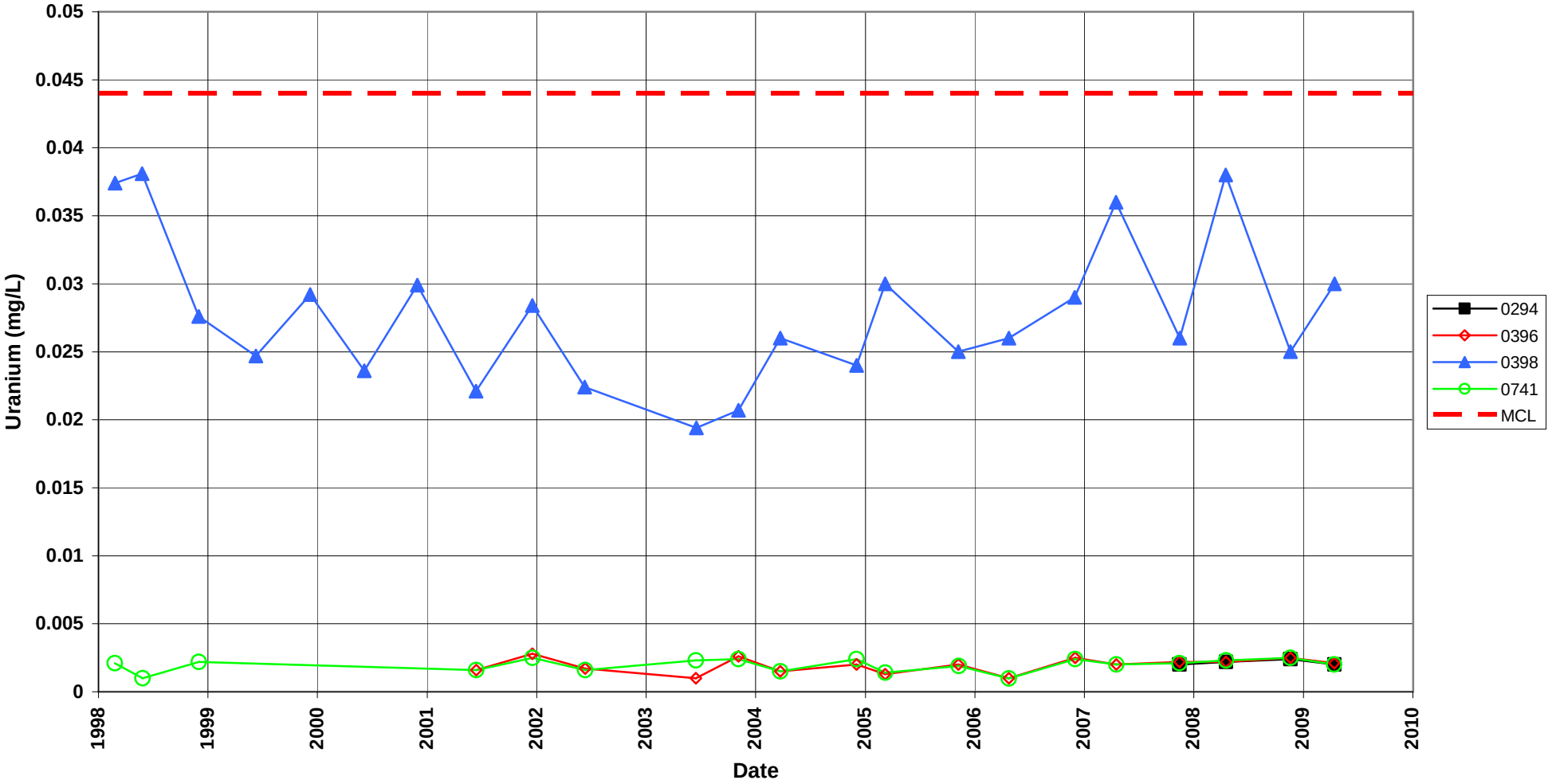
Rifle Old Processing Site
Uranium Concentration
Maximum Concentration Level (MCL) = 0.044 mg/L



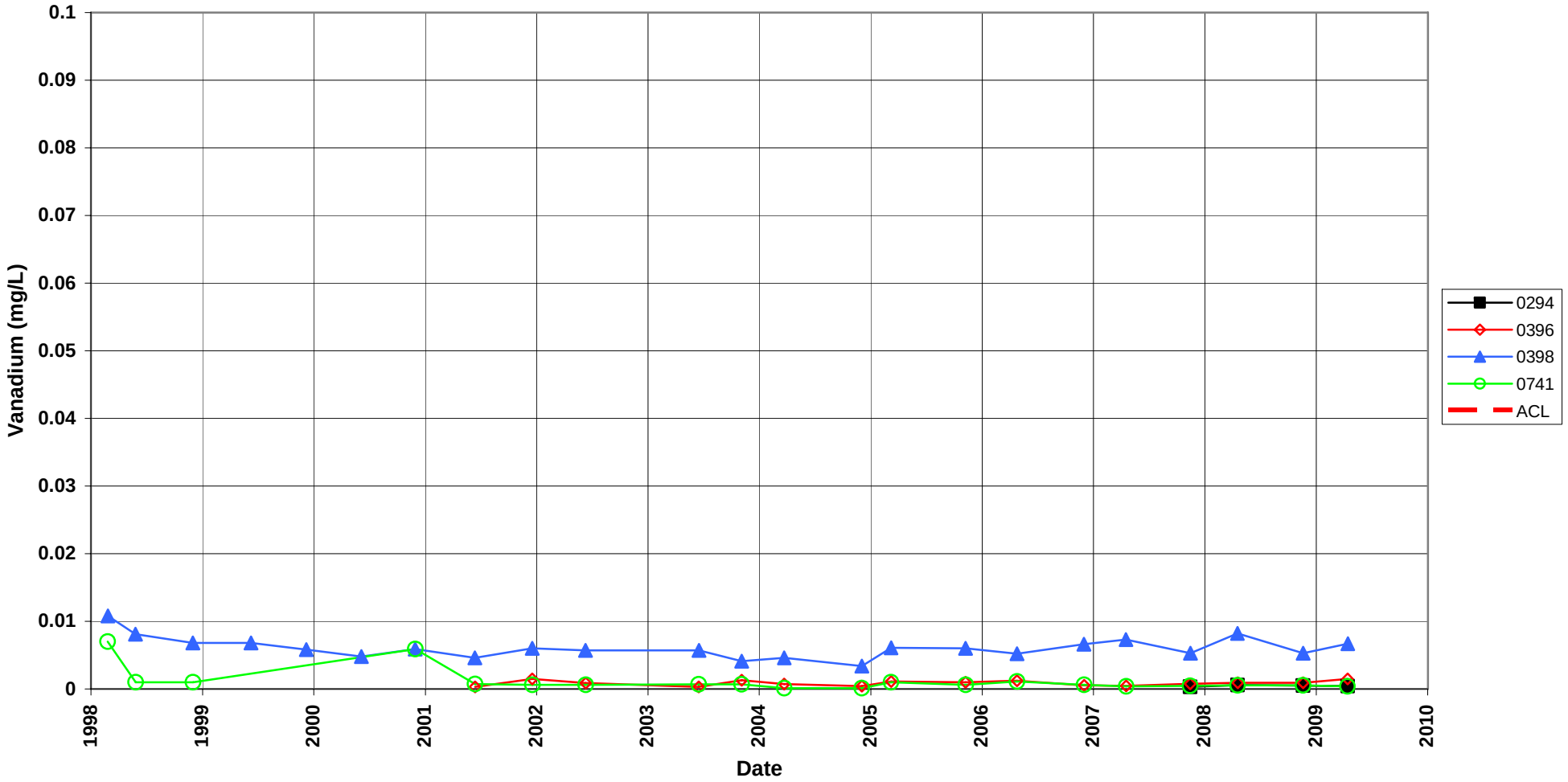

Rifle Old Processing Site
Vanadium Concentration
Alternate Concentration Limit (ACL) = 1.0 mg/L
Vanadium (mg/L)
1.2
1
0.8
0.6
0.4
0.2
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0292A
0304
0305
0309
0310
0655
0656
0658
ACL

Rifle Old Processing Site
Selenium Concentration
Surface Locations
Alternate Concentration Limit (ACL) = 0.05 mg/L




Rifle Old Processing Site
Uranium Concentration
Surface Locations
Maximum Concentration Level (MCL) = 0.044 mg/L
Uranium (mg/L)
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0294
0396
0398
0741
MCL

Rifle Old Processing Site
Vanadium Concentration
Surface Locations
Alternate Concentration Limit (ACL) = 1.0 mg/L



New Rifle
Time-Concentration Graphs

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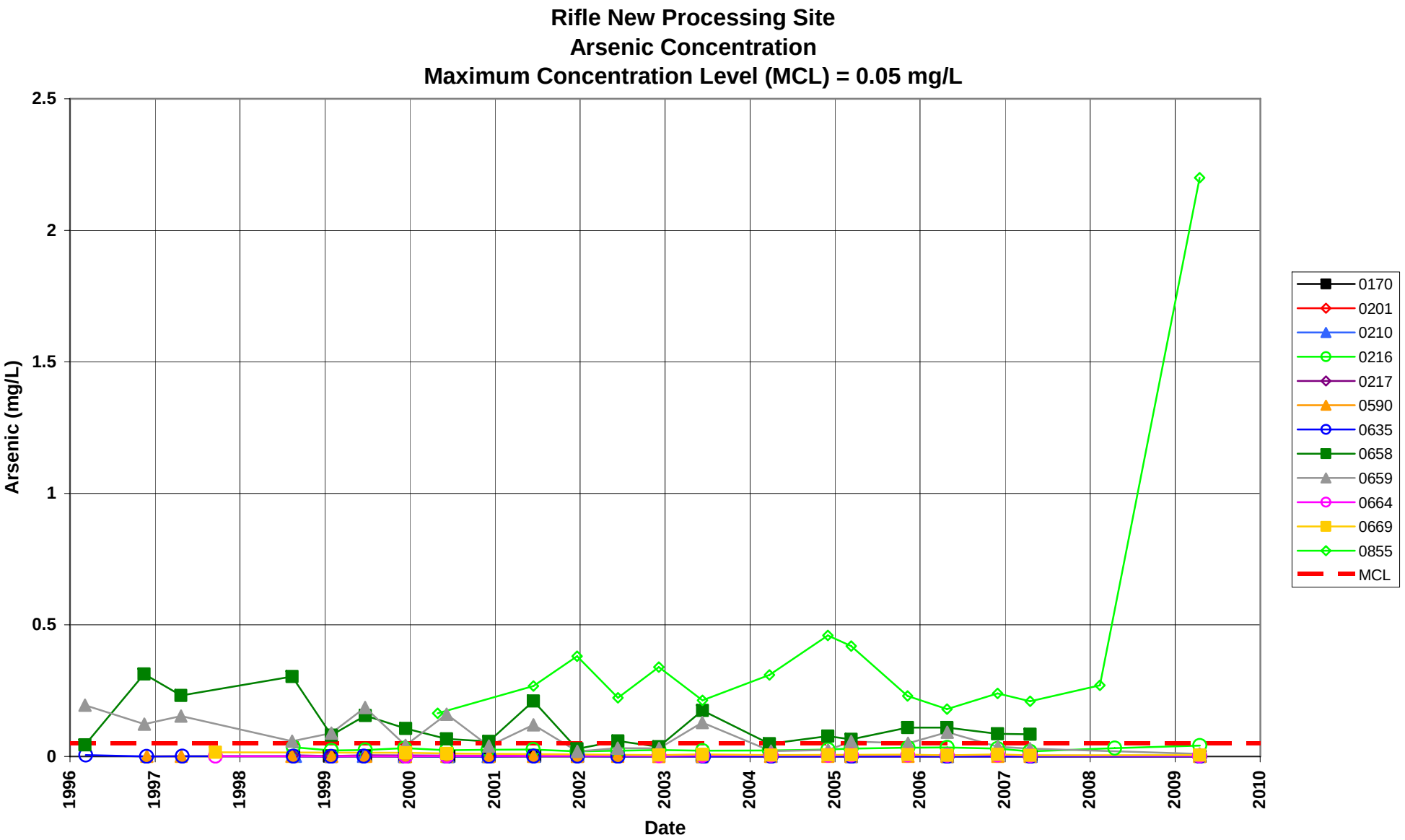
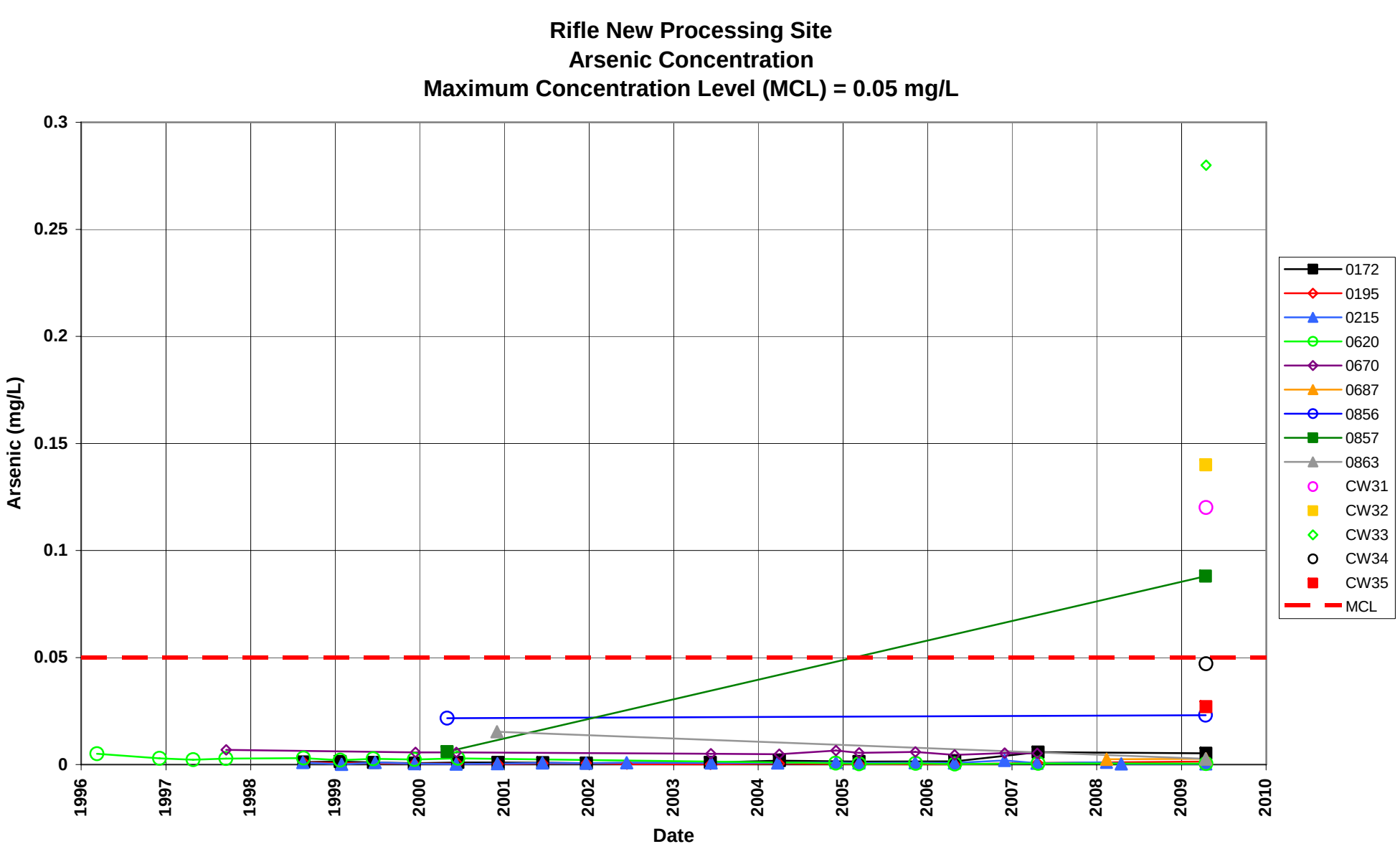
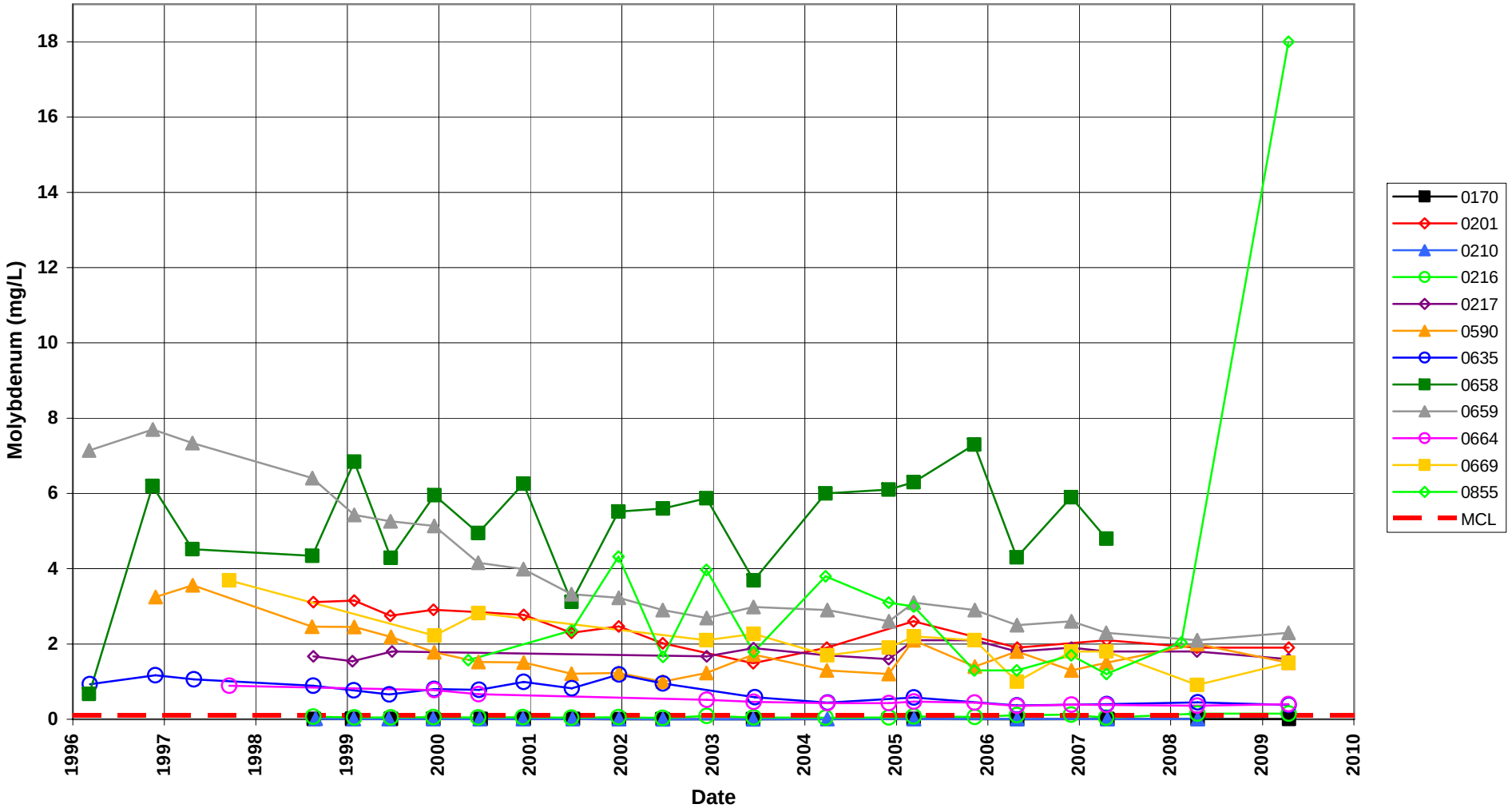
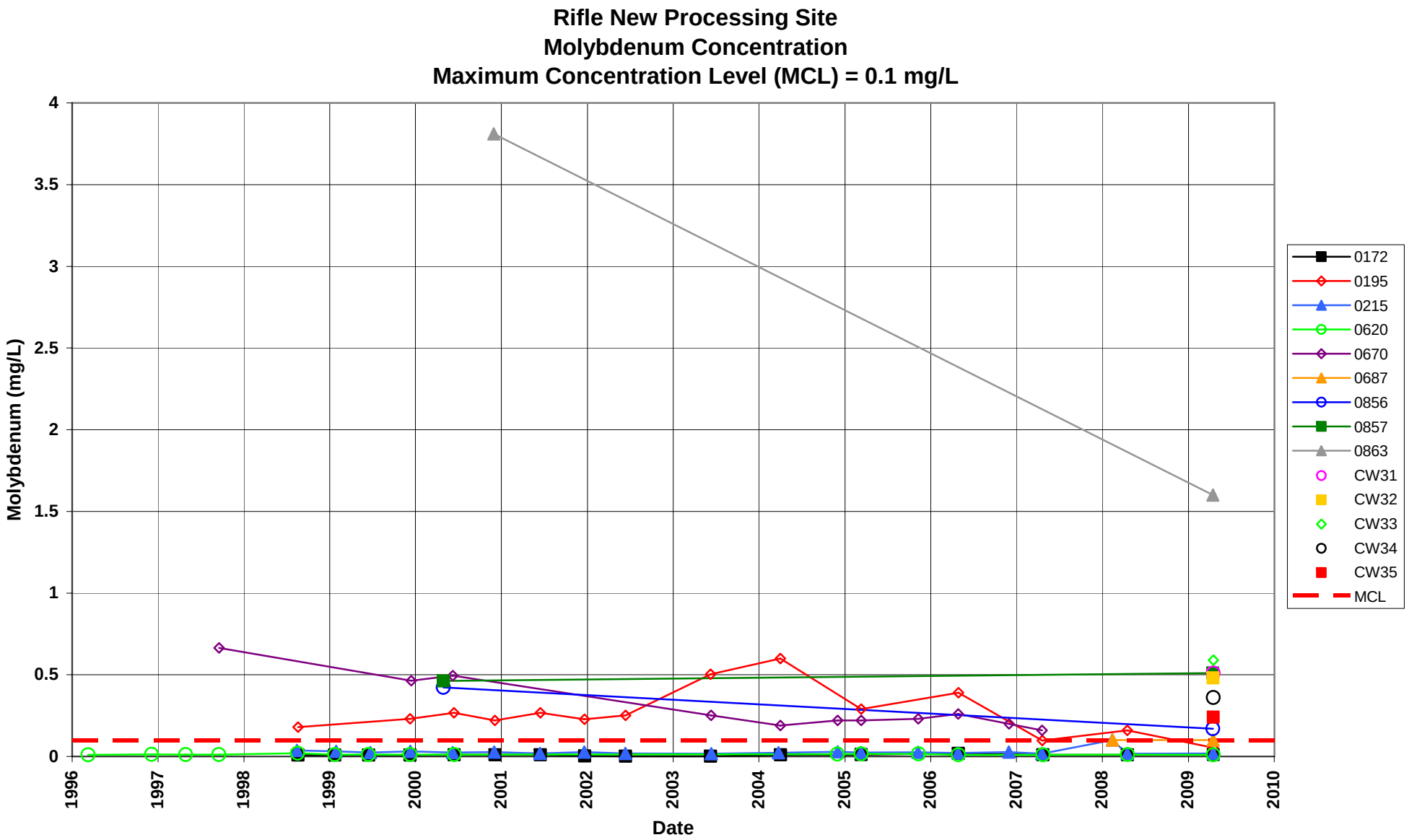
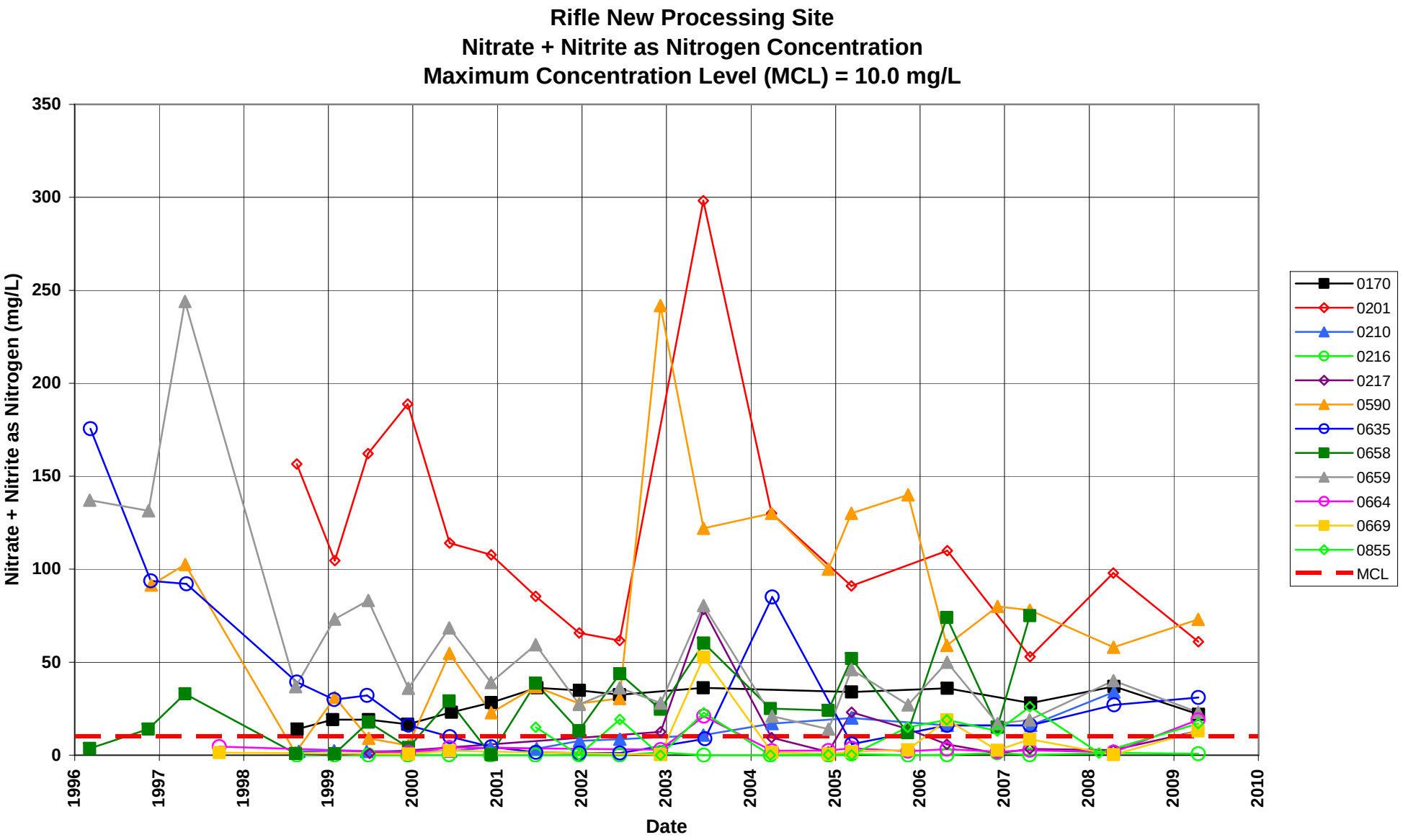

Rifle New Processing Site
Arsenic Concentration
Maximum Concentration Level (MCL) = 0.05 mg/L
Arsenic (mg/L)
2.5
2
1.5
1
0.5
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0170
0201
0210
0216
0217
0590
0635
0658
0659
0664
0669
0855
MCL

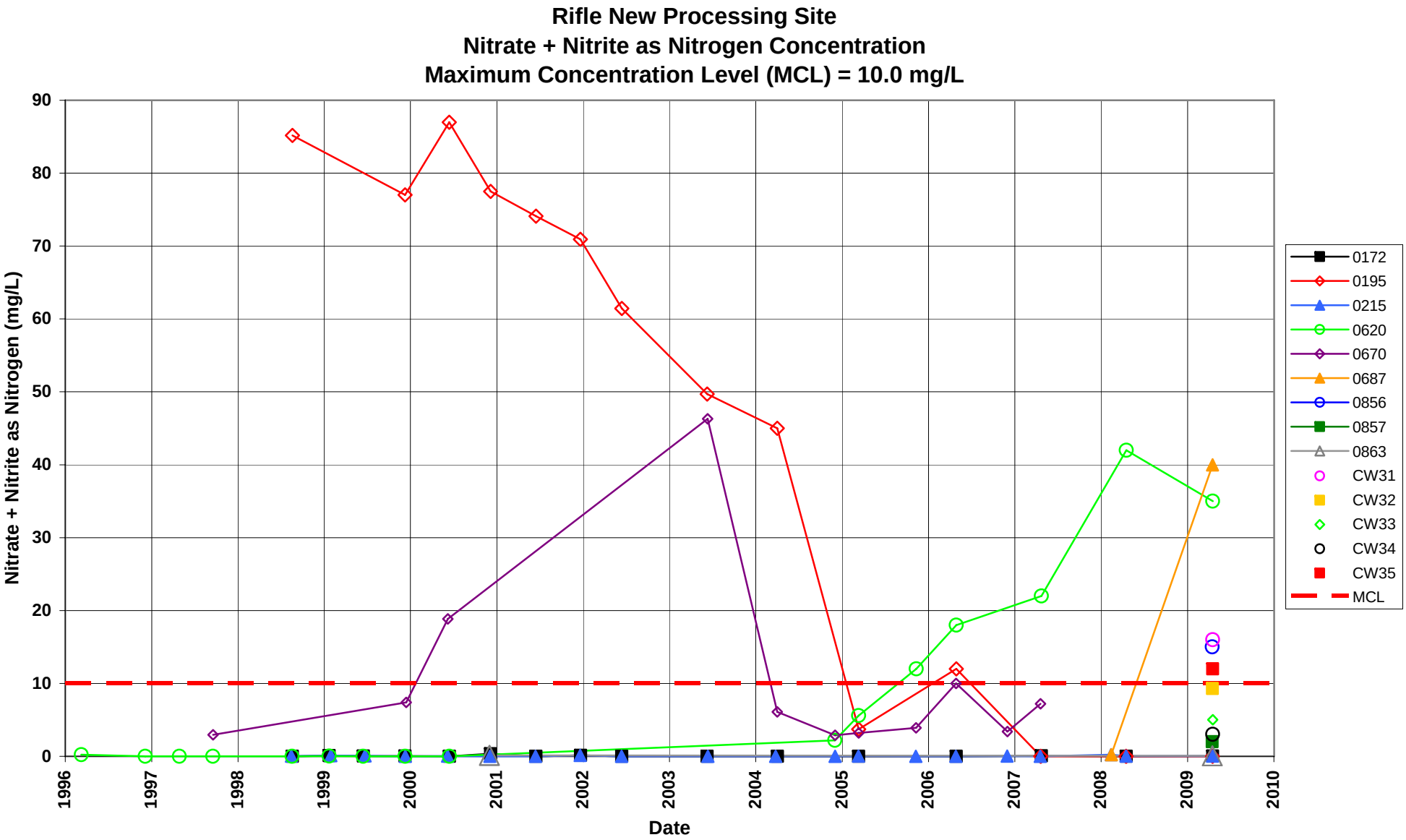

Rifle New Processing Site
Arsenic Concentration
Maximum Concentration Level (MCL) = 0.05 mg/L
Arsenic (mg/L)
0.3
0.25
0.2
0.15
0.1
0.05
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0172
0195
0215
0620
0670
0687
0856
0857
0863
CW31
CW32
CW33
CW34
CW35
MCL

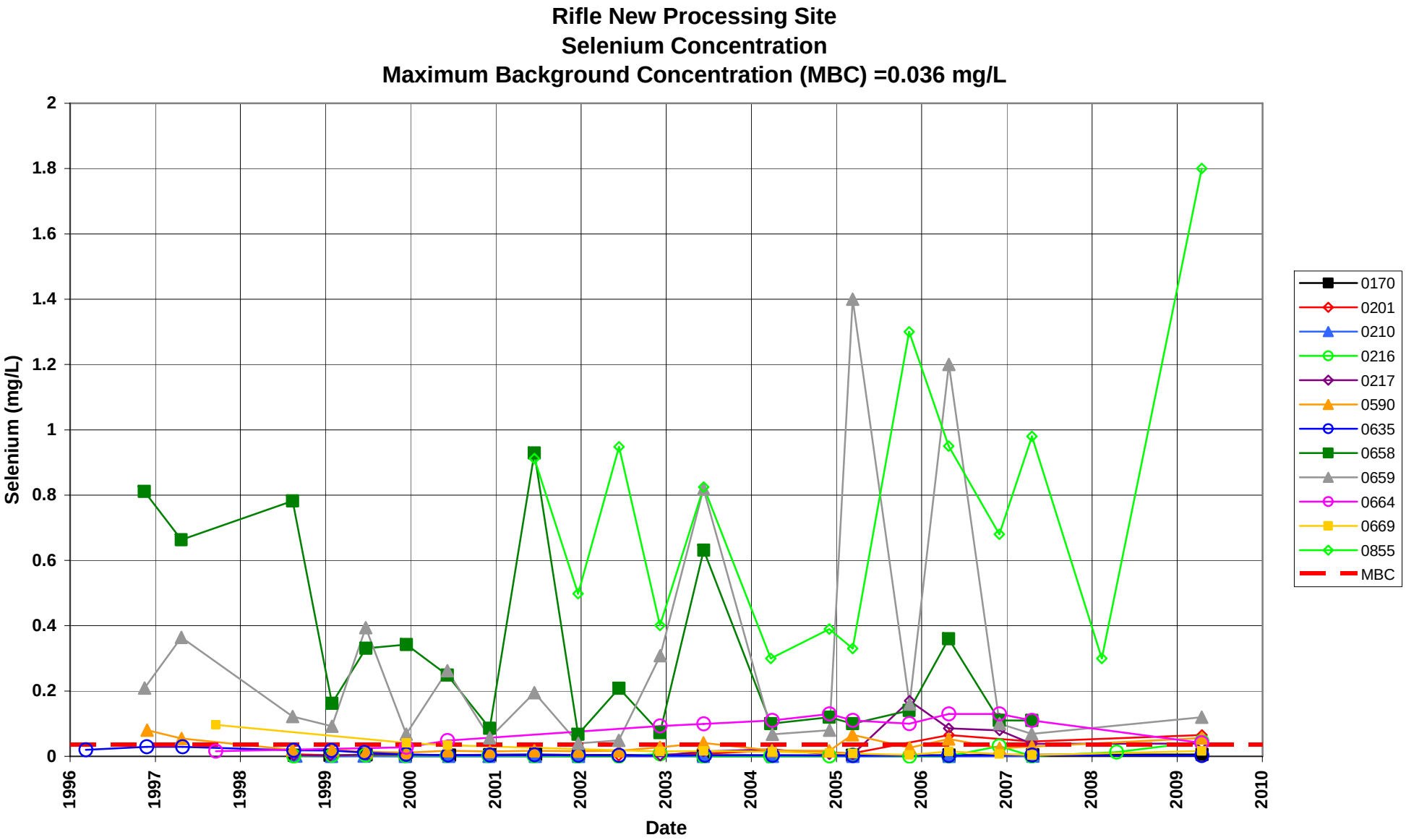
Rifle New Processing Site
Molybdenum Concentration
Maximum Concentration Level (MCL) = 0.1 mg/L

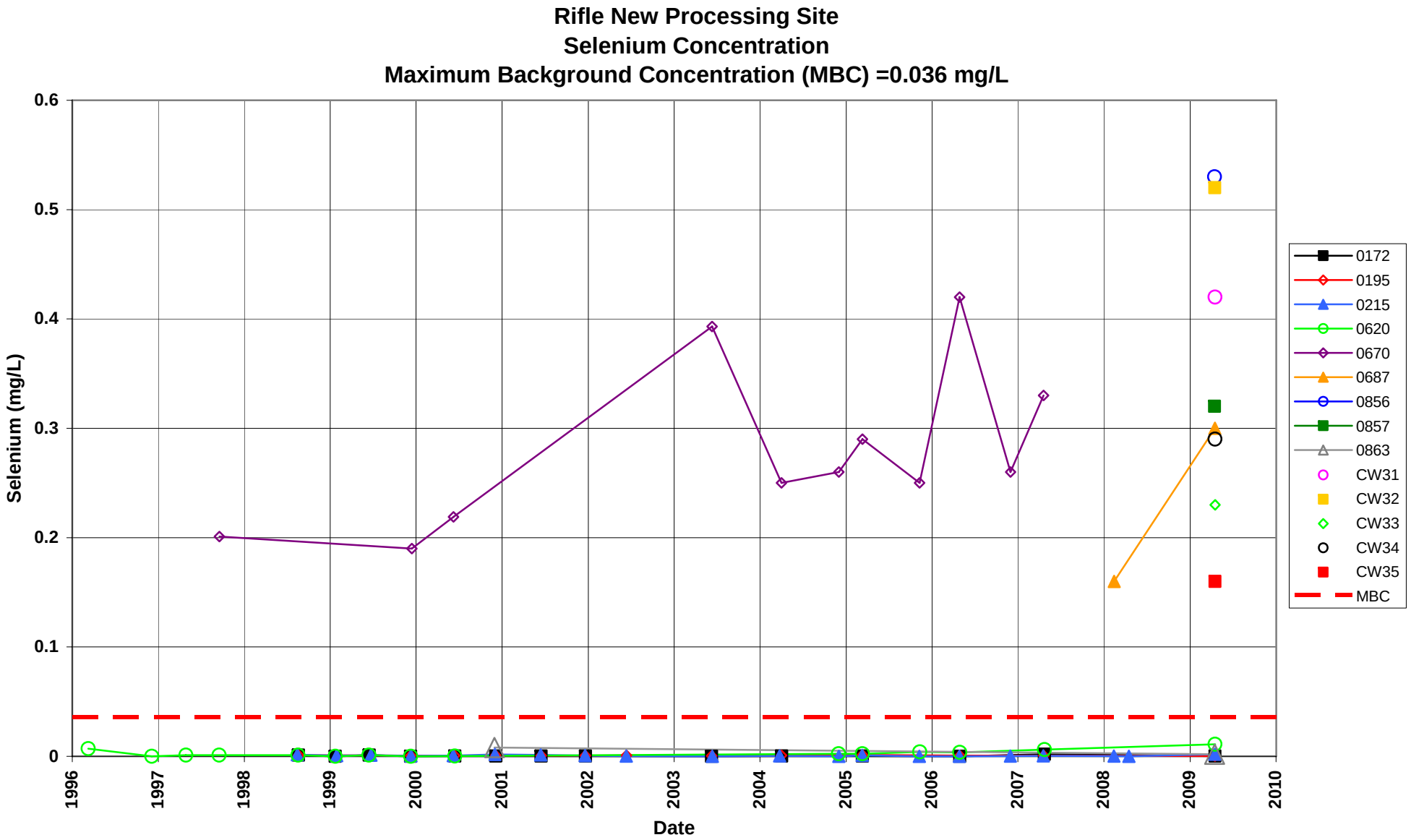


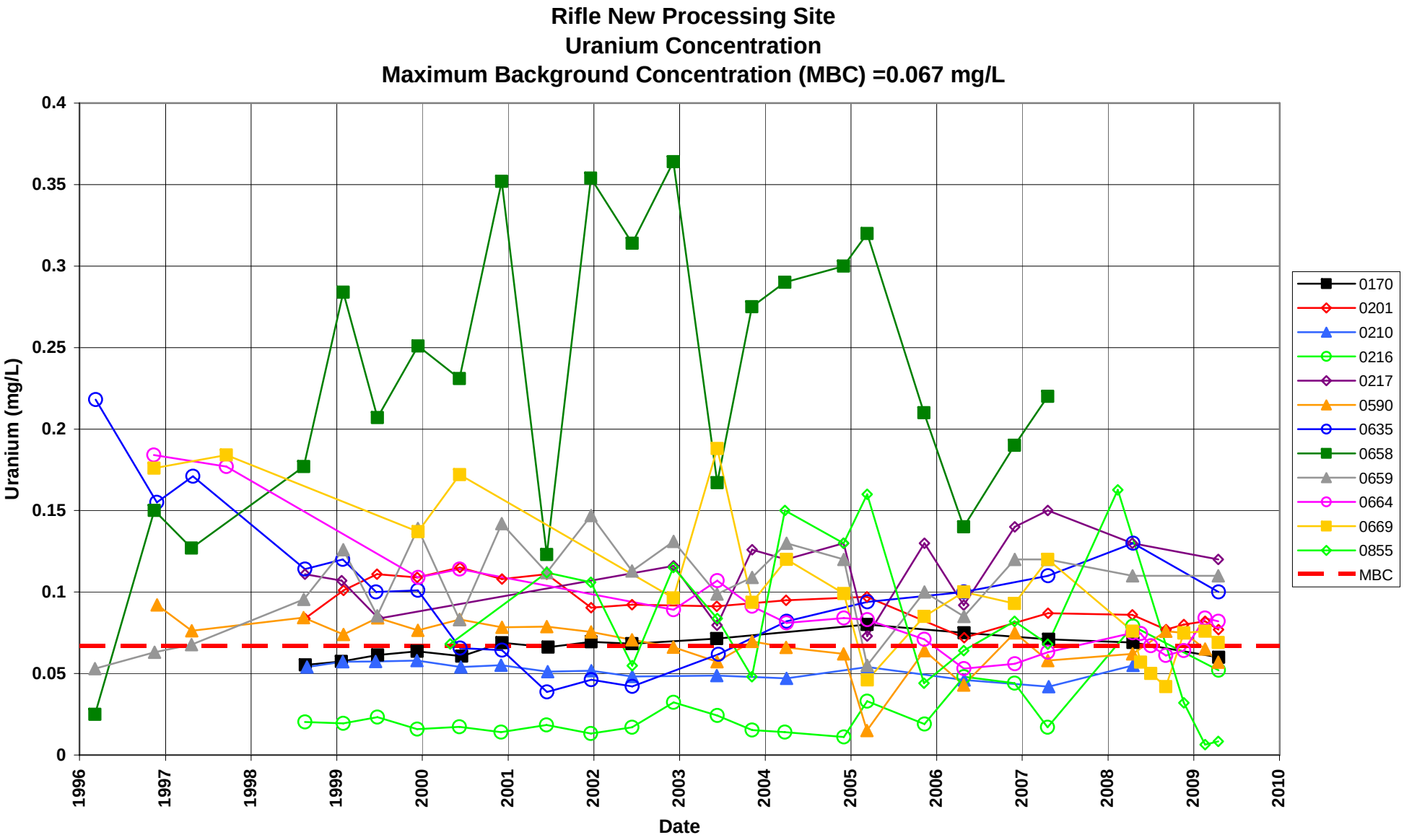

Rifle New Processing Site
Molybdenum Concentration
Maximum Concentration Level (MCL) = 0.1 mg/L
Molybdenum (mg/L)
4
3.5
3
2.5
2
1.5
1
0.5
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0172
0195
0215
0620
0670
0687
0856
0857
0863
CW31
CW32
CW33
CW34
CW35
MCL

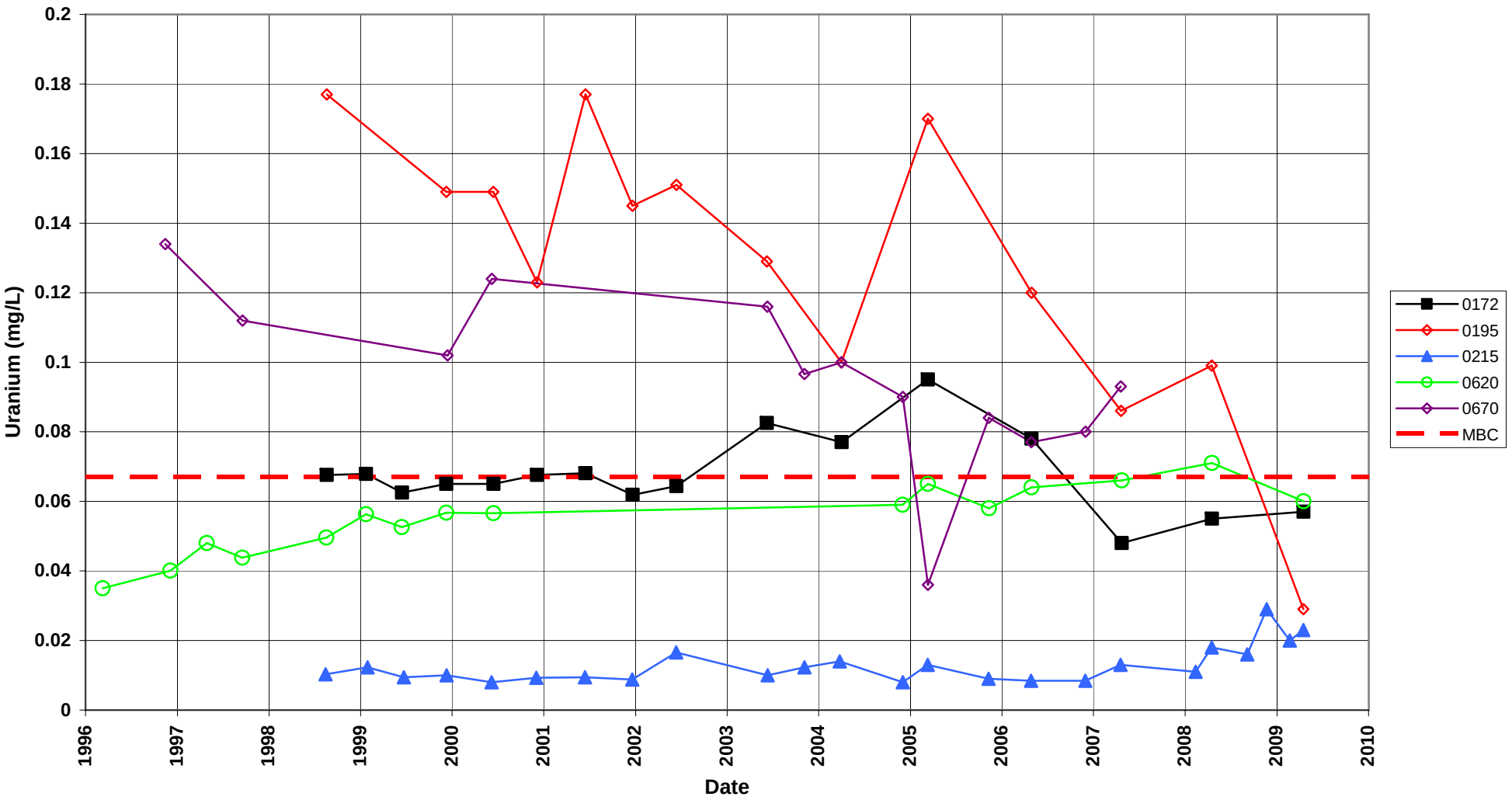

Rifle New Processing Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Level (MCL) = 10.0 mg/L
Nitrate + Nitrite as Nitrogen (mg/L)
350
300
250
200
150
100
50
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0170
0201
0210
0216
0217
0590
0635
0658
0659
0664
0669
0855
MCL

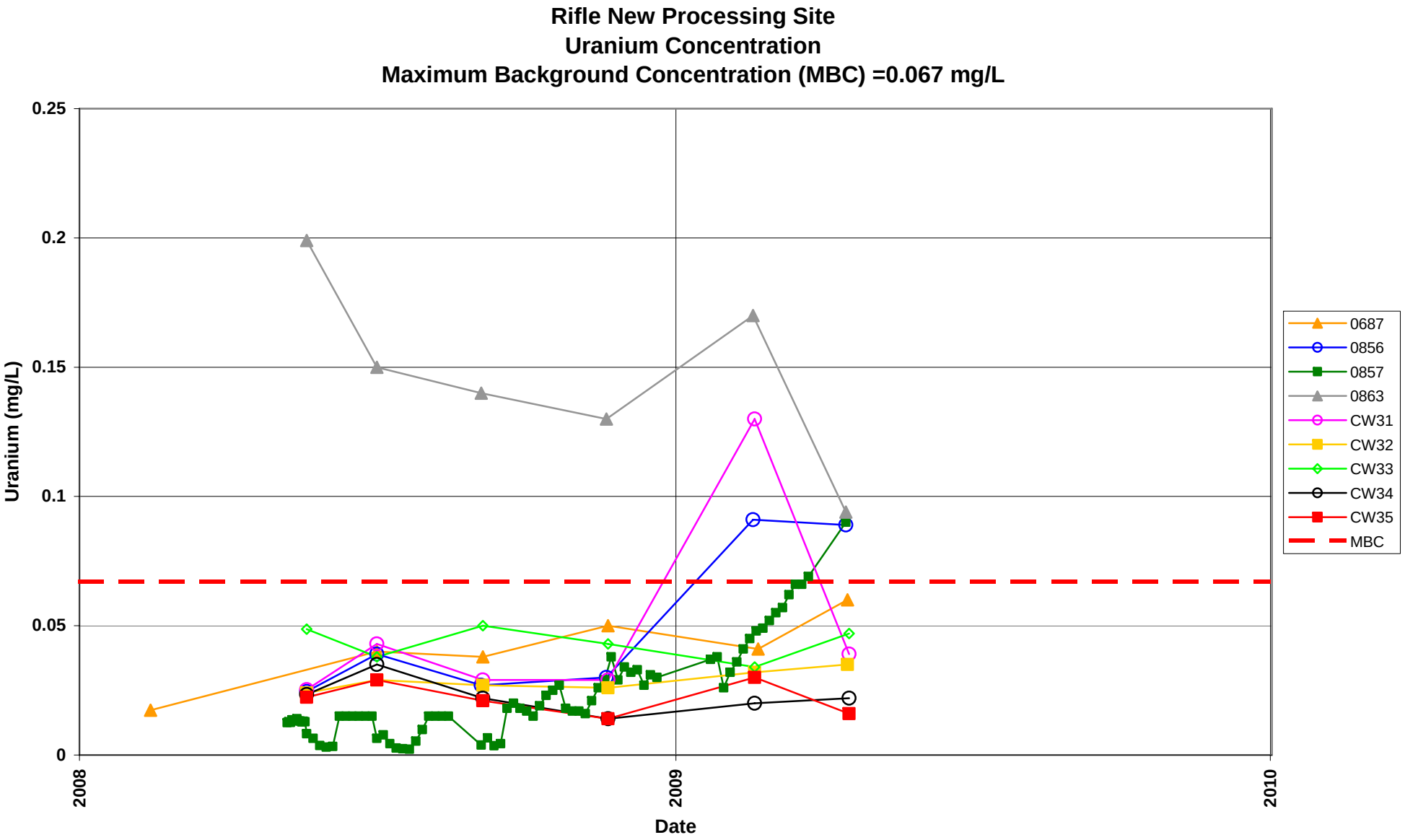

Rifle New Processing Site
Nitrate + Nitrite as Nitrogen Concentration
Maximum Concentration Level (MCL) = 10.0 mg/L
Nitrate + Nitrite as Nitrogen (mg/L)
90
80
70
60
50
40
30
20
10
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0172
0195
0215
0620
0670
0687
0856
0857
0863
CW31
CW32
CW33
CW34
CW35
MCL

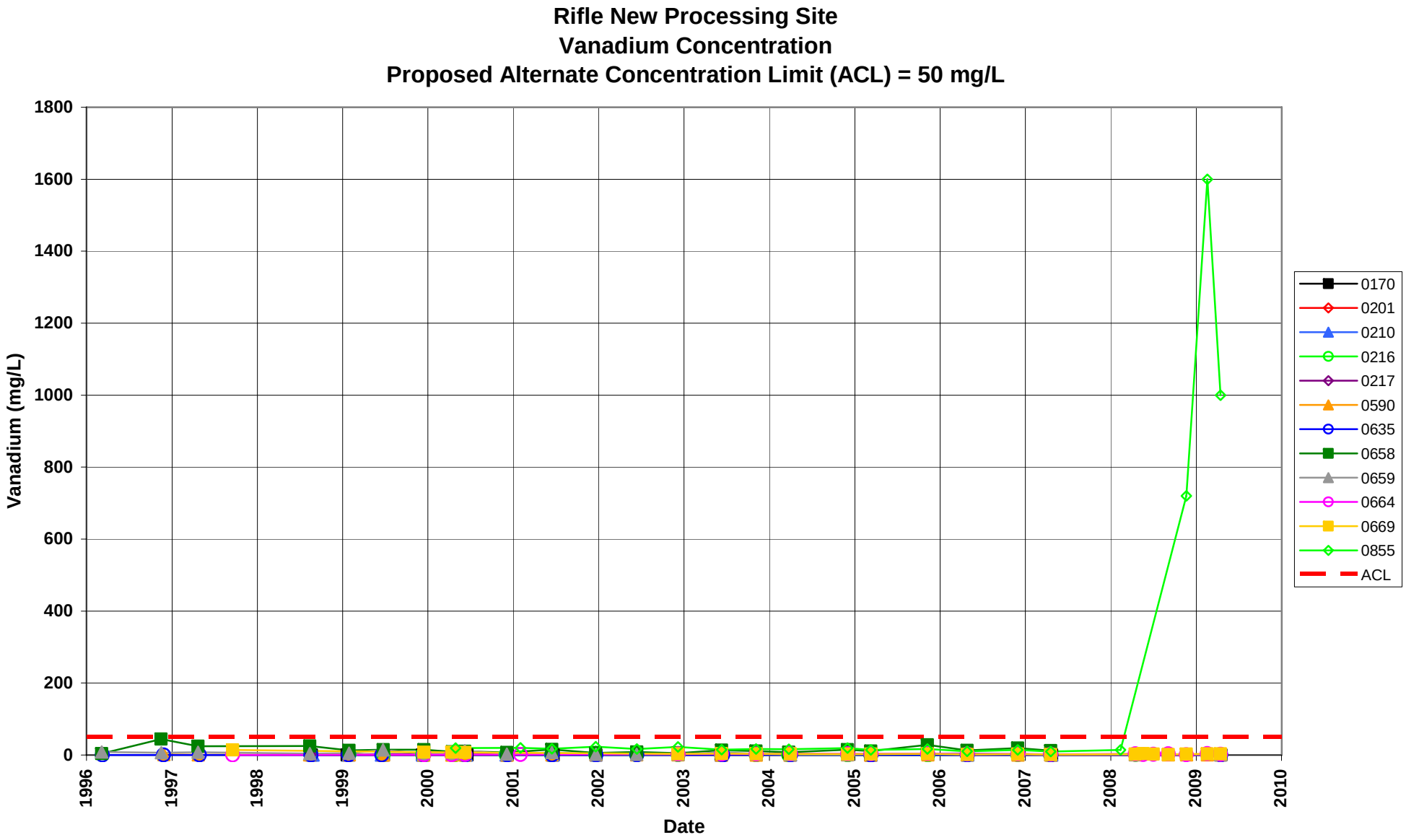

Rifle New Processing Site
Selenium Concentration
Maximum Background Concentration (MBC) =0.036 mg/L
Selenium (mg/L)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0170
0201
0210
0216
0217
0590
0635
0658
0659
0664
0669
0855
MBC


Rifle New Processing Site
Selenium Concentration
Maximum Background Concentration (MBC) =0.036 mg/L
Selenium (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0172
0195
0215
0620
0670
0687
0856
0857
0863
CW31
CW32
CW33
CW34
CW35
MBC

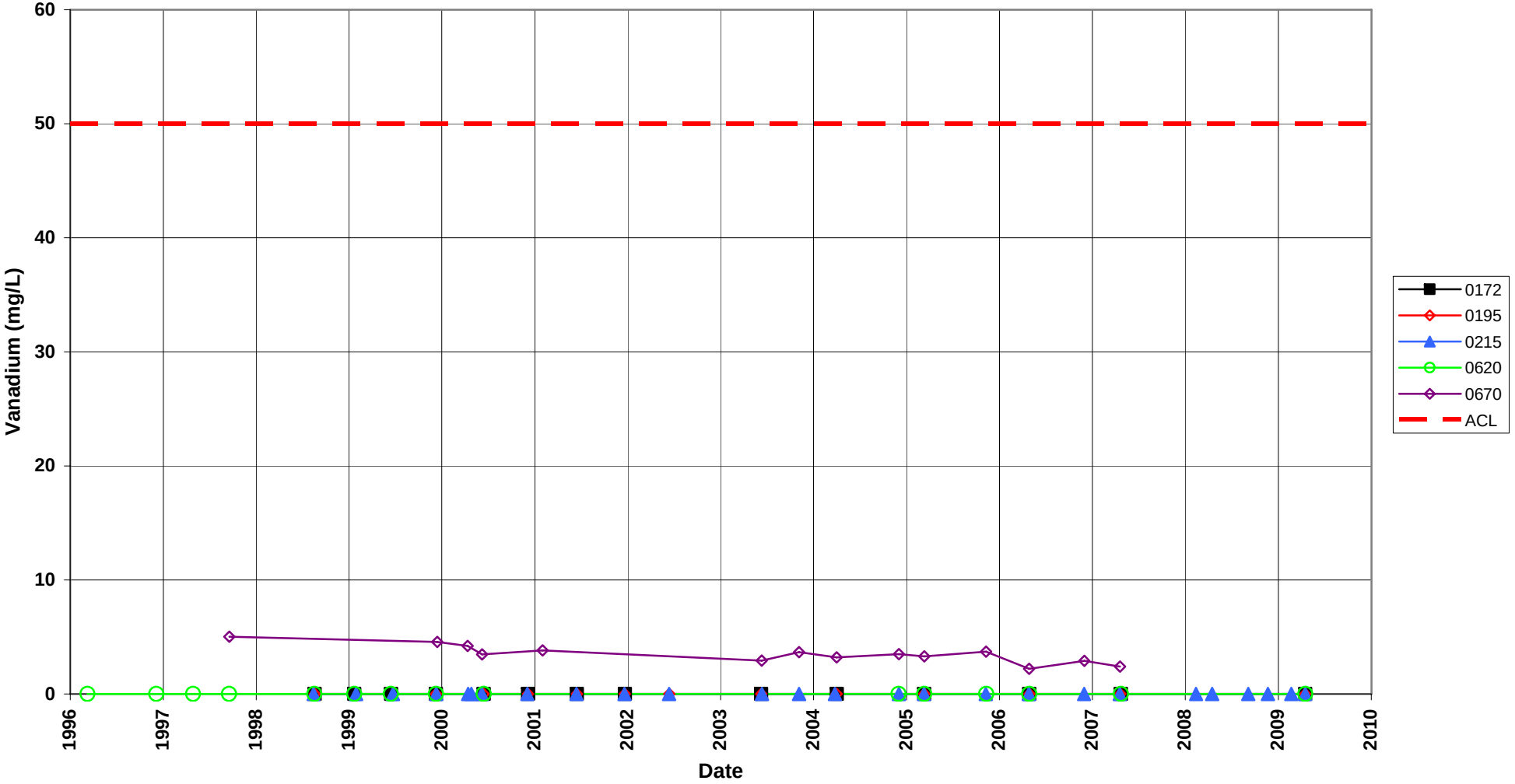

Rifle New Processing Site
Uranium Concentration
Maximum Background Concentration (MBC) =0.067 mg/L
Uranium (mg/L)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0170
0201
0210
0216
0217
0590
0635
0658
0659
0664
0669
0855
MBC


Rifle New Processing Site
Uranium Concentration
Maximum Background Concentration (MBC) =0.067 mg/L
Uranium (mg/L)
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0172
0195
0215
0620
0670
MBC

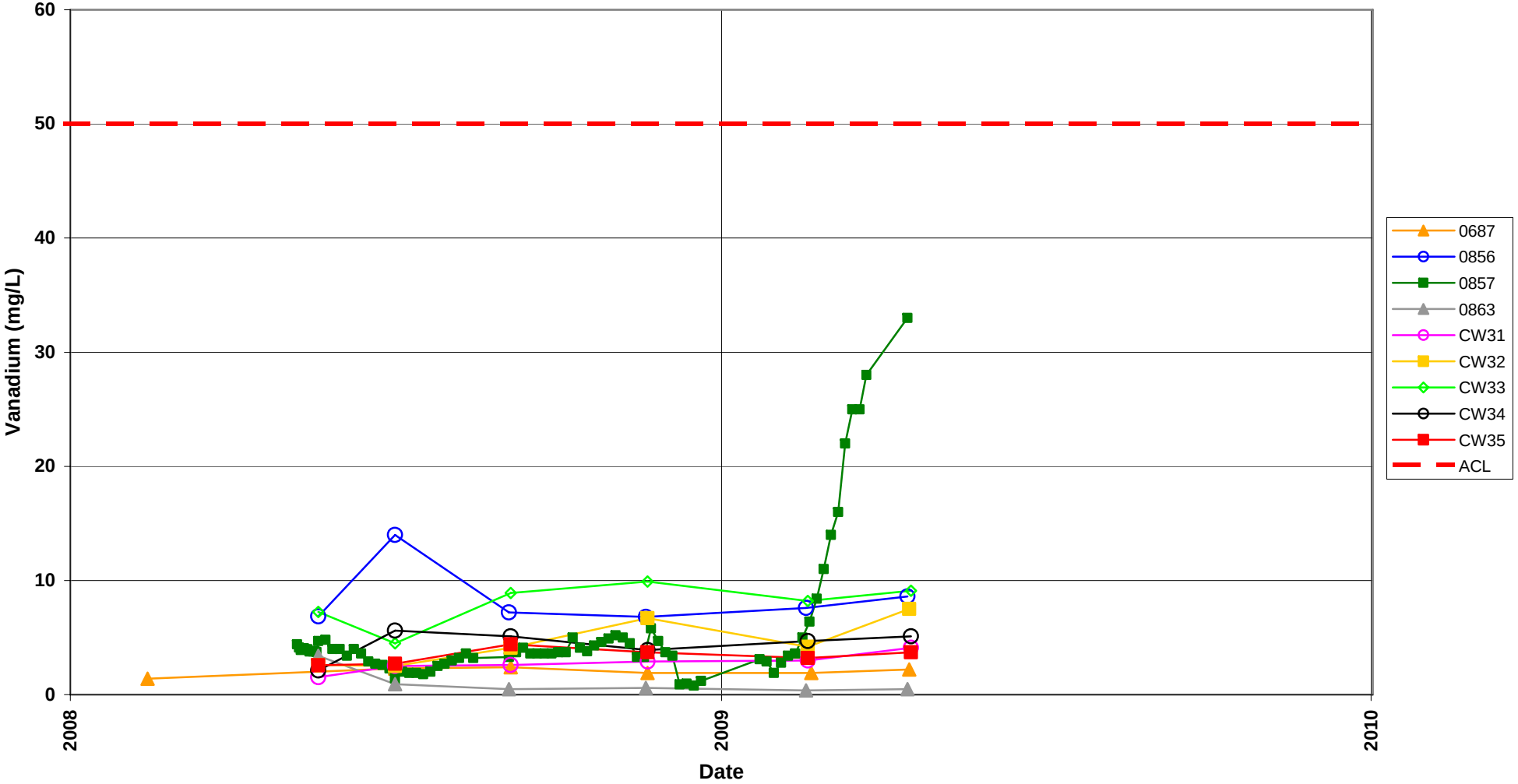

Rifle New Processing Site
Uranium Concentration
Maximum Background Concentration (MBC) =0.067 mg/L
Uranium (mg/L)
0.25
0.2
0.15
0.1
0.05
0
2008
2009
2010
Date
0687
0856
0857
0863
CW31
CW32
CW33
CW34
CW35
MBC


Rifle New Processing Site
Vanadium Concentration
Proposed Alternate Concentration Limit (ACL) = 50 mg/L
Vanadium (mg/L)
1800
1600
1400
1200
1000
800
600
400
200
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0170
0201
0210
0216
0217
0590
0635
0658
0659
0664
0669
0855
ACL

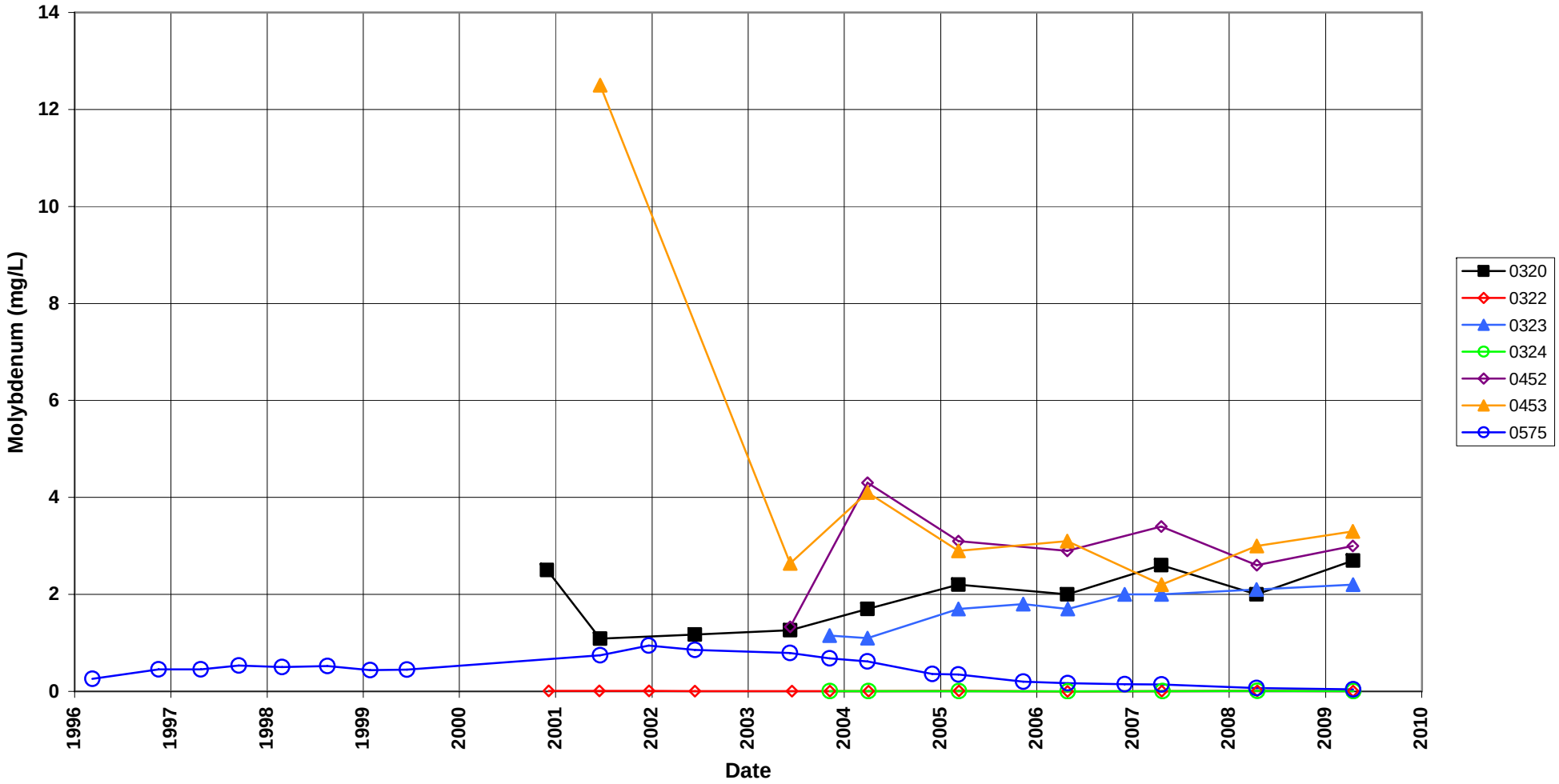
Rifle New Processing Site
Vanadium Concentration
Proposed Alternate Concentration Limit (ACL) = 50 mg/L



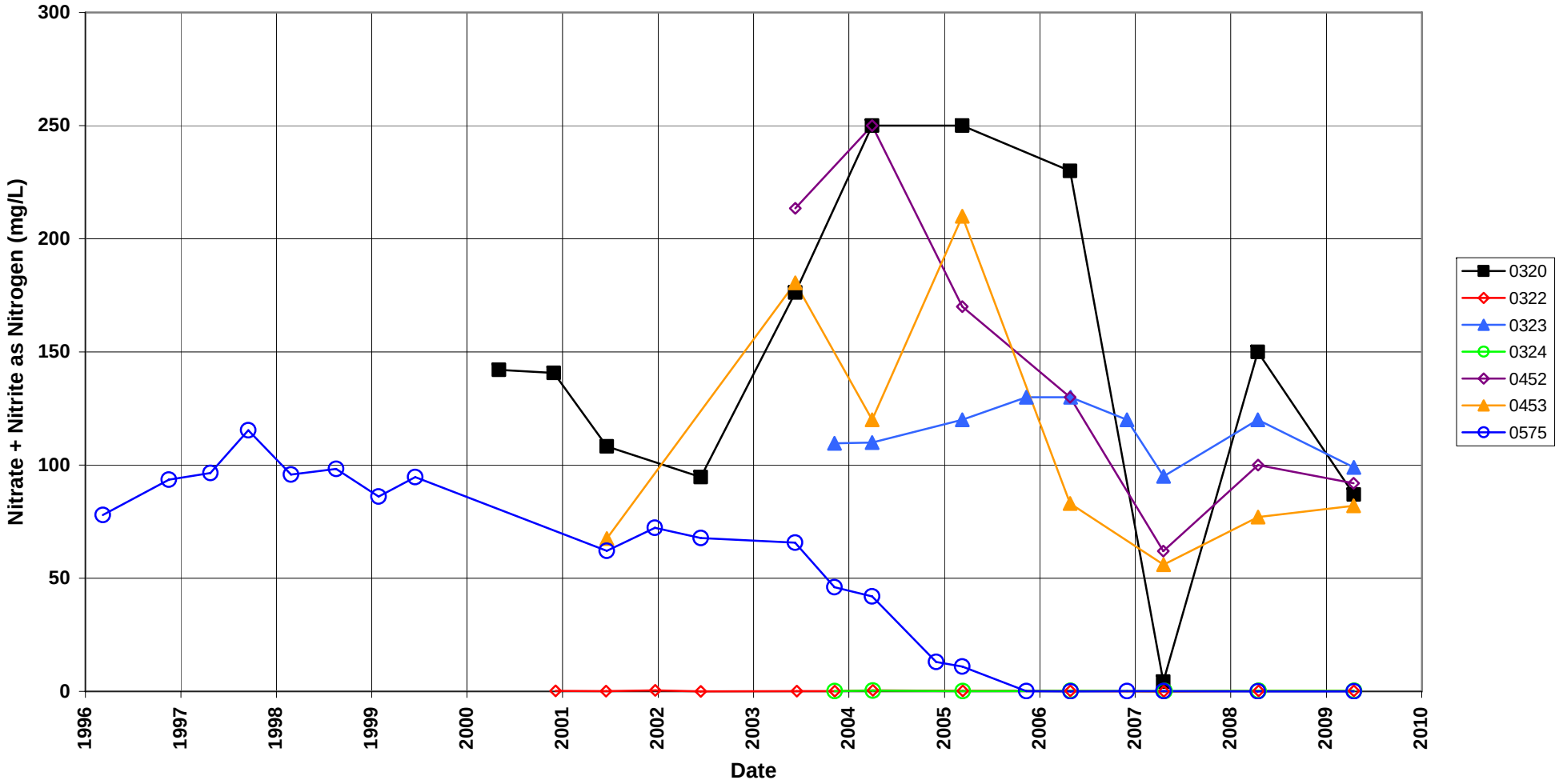
Rifle New Processing Site
Vanadium Concentration
Proposed Alternate Concentration Limit (ACL) = 50 mg/L

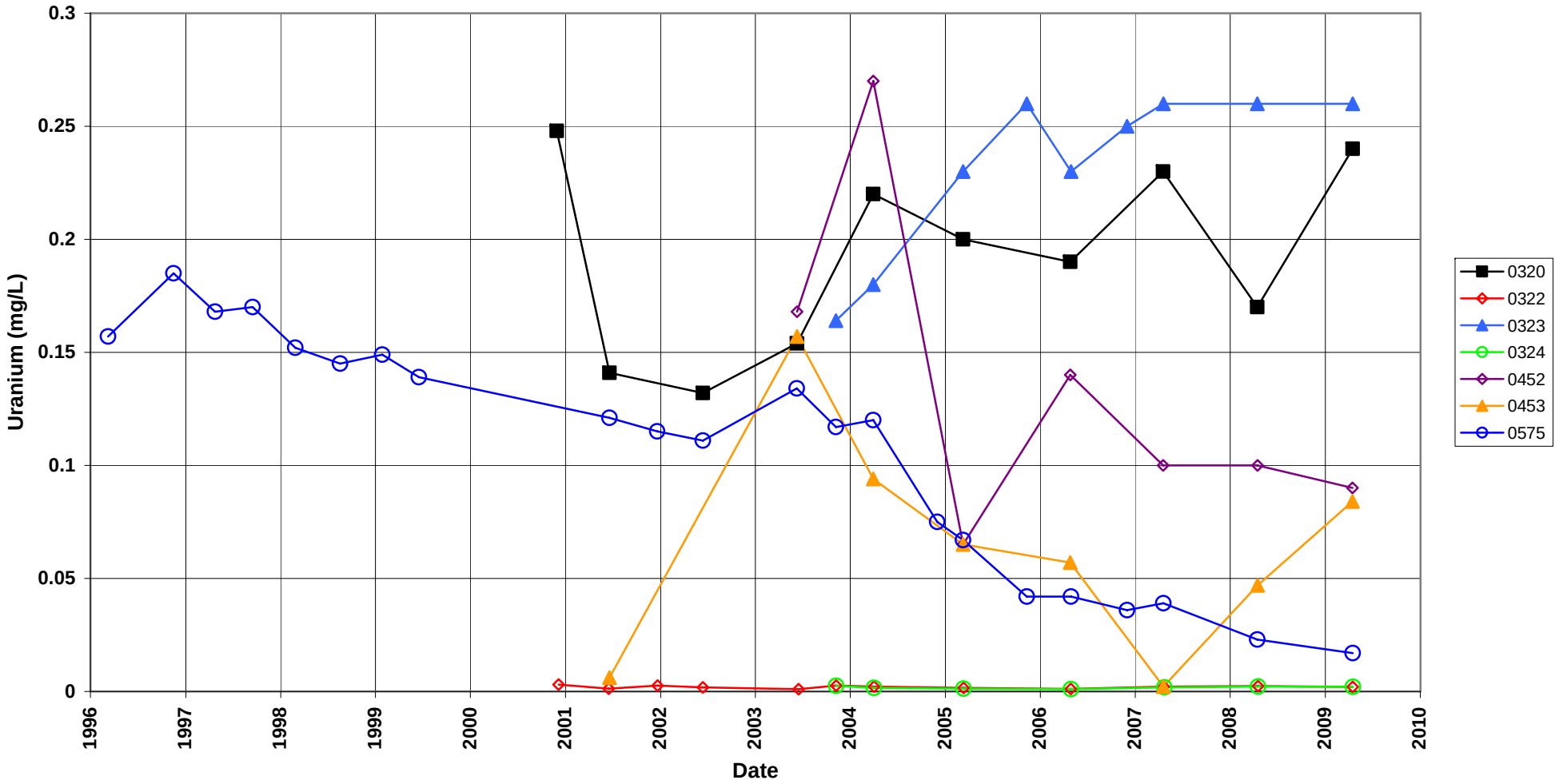


Rifle New Processing Site
Molybdenum Concentration
Surface Locations

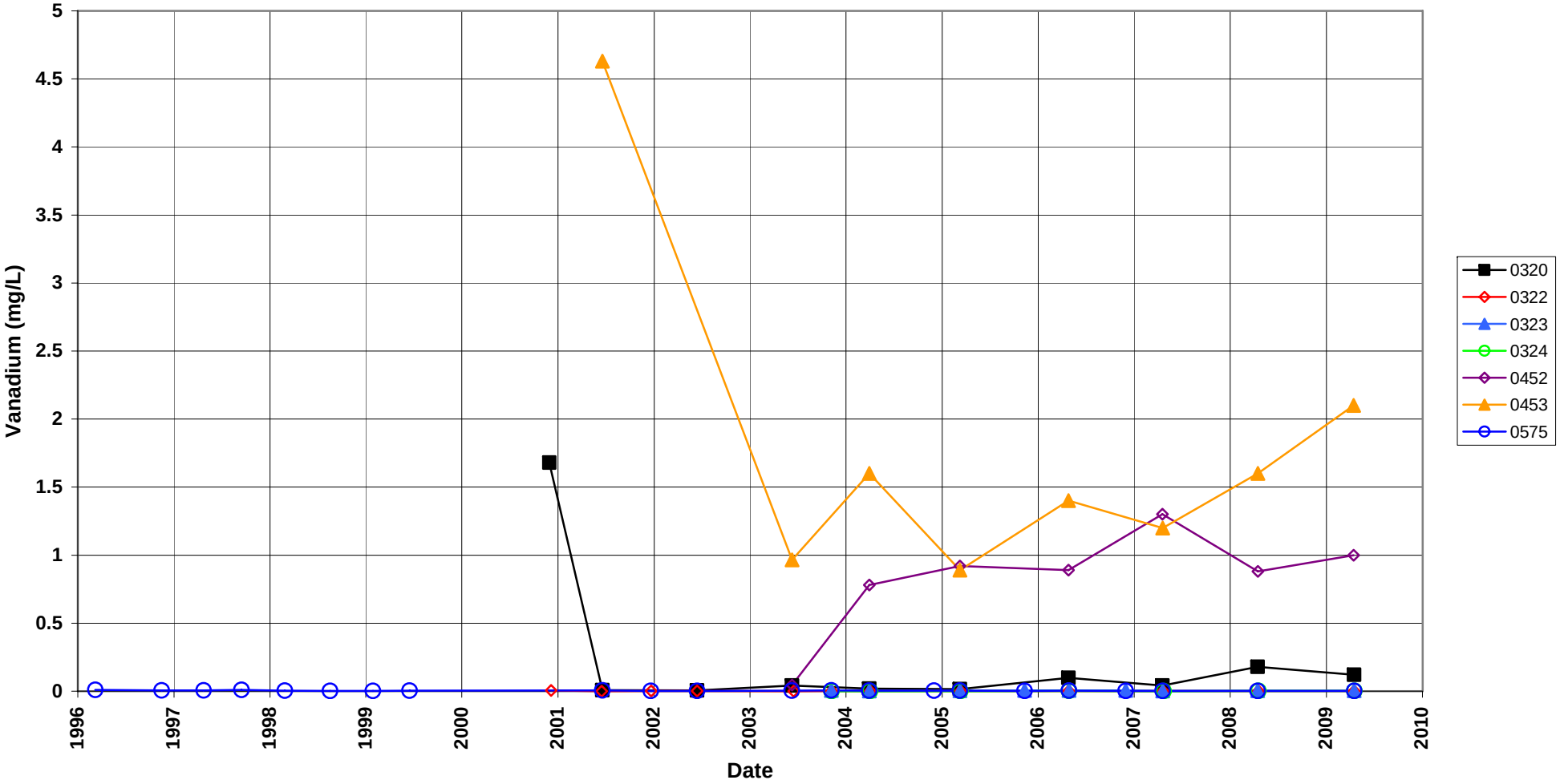


Rifle New Processing Site
Nitrate + Nitrite as Nitrogen Concentration
Surface Locations




Rifle New Processing Site
Uranium Concentration
Surface Locations
Uranium (mg/L)
0.3
0.25
0.2
0.15
0.1
0.05
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Date
0320
0322
0323
0324
0452
0453
0575

Rifle New Processing Site
Vanadium Concentration
Surface Locations



Attachment 3
Sampling and Analysis Work Order

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Stoller

established 1959

Task Order LM00-501
Control Number 09-0630

March 19, 2009

U.S. Department of Energy
Office of Legacy Management
ATTN: Richard P. Bush
Site Manager
2597 B ¾ Road
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AM01-07LM00060, Stoller
April 2009 Environmental Sampling at Rifle, Colorado - Revised

REFERENCE: Task Order LM00-501-02-116-402, Rifle, CO, Site

Dear Mr. Bush:

The purpose of this letter is to inform you of the upcoming sampling event at Rifle, Colorado. Enclosed are the map and tables specifying sample locations and analytes for monitoring at the Rifle New and Old Processing sites. Water quality data will be collected at this site as part of the routine environmental sampling currently scheduled to begin the week of April 13, 2009. In addition, five CW wells owned by the City of Rifle will be sampled and major anion and cation data will be collected at New Rifle as part of a vanadium study being conducted.

The following lists show the monitor well and surface water locations scheduled to be sampled during this event.

Monitor Wells*

New Rifle

170 Al	210 Al	590 Al	659 Al	687 Al	863 Al	CW33
172 Al	215 Al	620 Al	664 Al	855 Al	CW31	CW34
195 Al	216 Al	635 Al	669 Al	856 Al	CW32	CW35
201 Al	217 Al	658 Al	670 Al	857 Al		

Old Rifle

292A Al	305 Al	309 Al	310 Al	655 Al	656 Al	658 Al
304 Al						

*NOTE: Al = alluvium

Surface Locations

New Rifle

320	322	323	324	452	453	575

The S.M. Stoller Corporation 2597 B¾ Road Grand Junction, CO 81503 (970) 248-6000 Fax: (970) 248-6040

Old Rifle
294 396 398 741

All samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. Access agreements are being reviewed and are expected to be complete by the beginning of fieldwork.

If you have any questions, please call me at (970) 248-6375.

Sincerely,

Richard Dayvault
Site Lead

RD/lcg/lb

Enclosures (3)

cc: (electronic)
Cheri Bahrke, Stoller
Richard Dayvault, Stoller
Steve Donivan, Stoller
Bev Gallagher, Stoller
Lauren Goodknight, Stoller
EDD Delivery
rc-grand.junction

The S.M. Stoller Corporation 2597 B¾ Road Grand Junction, CO 81503 (970) 248-6000 Fax: (970) 248-6040

Attachment 4
Trip Report

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Stoller established 1959
Grand Junction Office

Memorandum

DATE: April 22, 2009

TO: Dick Dayvault

FROM: Dan Sellers

SUBJECT: Sampling Trip Report

Site: New and Old Rifle, CO

Dates of Sampling Event: April 13 through April 17, 2009

Team Members: Joe Trevino, Kent Moe, Jeff Price and Dan Sellers

Number of Locations Sampled:

New Rifle: Water samples for metals and major cations/anions (Mo, U, V, As, Se, Ca, Na, Mg, K, Fe (total), Mn, SO_4, and Cl), nitrate plus nitrite as N (NO_3+NO_2)-N, and ammonia as N (NH_3–N), were collected from 18 monitor wells, 5 culverts, and 7 surface water locations. One duplicate and one equipment blank were taken for QA/QC purposes.

Old Rifle: Water samples for metals (Se, U, and V) were collected from 8 monitor wells and 4 surface water locations. One duplicate and one equipment blank were taken for QA/QC purposes.

Locations Not Sampled/Reason:

New Rifle: Monitor well 0210 was not found due to the area being covered by drilling equipment. Well locations 0658 and 0670 were not sampled due to insufficient water.

Old Rifle: None.

Location Specific Information: None.

Quality Control Sample Cross Reference: The following are the false identifications assigned to the quality control samples:

False Id	True Id	Sample Type	Associated Matrix	Ticket Number
2747	0309	Old Rifle Filtered Duplicate	Groundwater	HEV 055
2754	----	Old Rifle Equipment Blank	DI Water	HFW 061
2745	CW33	New Rifle Duplicate	Groundwater	HEV 053
2746	-----	New Rifle Equipment Blank	DI water	HEV 054
2744	0659	New Rifle Duplicate	Groundwater	HEV 052

RIN Number Assigned: New and Old Rifle samples were assigned to RIN 09032201.

Sample Shipment: Samples were shipped overnight via FedEx to Paragon Analytics, Inc., from GJO on April 20, 2008.

Well Inspection Summary: Well inspections were conducted at all sampled wells and were in good condition. Well RFN01-0195 may have a broken screen or well casing.

Equipment: All wells were sampled using the low-flow procedure. All samples from wells were collected using a peristaltic pump and dedicated down hole tubing except well RFN01-0170, which had a dedicated bladder pump and dedicated tubing. Surface water and culvert samples were collected using a peristaltic pump, non-dedicated flex tubing, and a stainless steel inlet weight.

Water Level Measurements: Water levels were collected at all sampled wells and culverts.

Field Variance: Turbidity criteria were not met for wells RFN01-0855, 0664, 0669, CW32, and 0292A. All river surface samples were filtered due to turbidity being >10 NTUs. Field tests were conducted for ferrous iron at all New Rifle sample locations.

Institutional Controls: All gates were appropriately closed and locked during the sampling event.

Fences, Gates, Locks: All were in good condition.
Signs: No missing or vandalized signs were observed.
Trespassing/Site Disturbances: There is evidence of trespassing on the Old Rifle site (sleeping bag, tubs, food and camping equipment).

Site Issues:

Disposal Cell/Drainage Structure Integrity: N/A.
Vegetation/Noxious Weed Concerns: N/A.
Maintenance Requirements: N/A.
Other: N/A.

Corrective Action Taken: Need to investigate well RFN01-0195 with downhole camera to determine if screen is broken. Need to investigate well RFN01-0173 to determine if it has been abandoned.

(DLS/lcg)

cc: (electronic)
Richard Bush, LM–50
Steve Donivan, Stoller
EDD Delivery

\\Condor\Home\L40048\My Documents\Ground Water\RFL\0904rfl-trp.doc