SEMI-ANNUAL GROUND WATER QUALITY ASSURANCE REPORT

SECOND HALF OF 2017
(JULY THRU DECEMBER)

SEMI – ANNUAL QUALITY ASSURANCE

CHURCH ROCK SITE

JULY TO DECEMBER OF 2017 SAMPLING EVENTS

FEBRUARY - 2018

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1.0 REQUIREMENTS

The quality assurance and control procedures are contained in Sec. 3.0 of the Remedial Action Plan of Church Rock Site dated April 1989. The procedure addresses sampling, chain of custody, laboratory quality control, and data validation. These requirements became effective July3, 1989, when United Nuclear received the Administrative Order on the Church Rock Site from the U.S. Environmental Protection Agency (USEPA).

2.0 FIELD SAMPLING PROCEDURES AND QA/QC REPORT

Copies of the 2017 quarterly (3rd and 4th) field low flow purging and sampling data sheets are included in Appendix A. These sheets indicate the field parameter of pH, temperature, conductivity and the water level drop in the well if any, during the sampling. The quarterly QA/QC Field Blank, Rinsate and Duplicate analysis report are included in Appendix B.

3.0 CHAIN OF CUSTODY

Copies of the quarterly Chain of Custody report are included in Appendix C. Energy Laboratories, Inc., our contract laboratory is located in Casper, Wyoming. Energy Labs inspect the sample shipment upon arrival to verify the information of the Chain of Custody form and to determine if sample arrive at the appropriate temperature and preservation.

4.0 LABORATORY CONTROL

Copies of the quarterly internal Quality Control reports prepared by Energy Laboratories and associated EPA performance evaluations are included in Appendix D (1 of 2 and 2 of 2).

5.0 DATA EVALUATION

Analytical reports are reviewed by the Remedial Project Managers and site Radiation Safety Officer after receipt from Energy Labs. Significant increase or decrease and out of range values are identified and the laboratory is requested to recheck the suspect values. The laboratory responds by checking transcription for these items, and where necessary, repeats the analysis. A revised report is then issued for that sample if an error is discovered.

APPENDIX – A

QUARTERLY

FIELD DATA SHEET

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.04	7-10-17/0757	FJB
7-Buffer	7.04	7-10-17/0755	FJB

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GROUND WATER MONITORING FIELD DATA SHEET
Third QUARTER 2017
SAMPLING

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1406	7-10-17/0758	FJB

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-10-17	509-D	84.05'	84.12'	1st Cond. 6,180	2nd Cond. 6,350	Stable Cond. 6,380	Ending Cond. 6,530
				1st pH 7.35	2nd pH 7.23	Stable pH 7.16	Ending pH 6.41
				1st Temp. 15.7	2nd Temp. 15.6	Stable Temp. 15.5	Ending Temp. 15.3
	Time	Bubbler Start	Bubbler End	Comments: Conductivity is in uS/cm, Temperature is in °C, pH is in std. units. Purge rate averaged 249 ml. per minute.			
	0837	0.205'	0.227'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-10-17	EPA-23	60.62'	61.00'	1st Cond. 3,790	2nd Cond. 4,100	Stable Cond. 4,230	Ending Cond. 4,440
				1st pH 6.71	2nd pH 6.70	Stable pH 6.77	Ending pH 6.72
				1st Temp. 17.6	2nd Temp. 17.7	Stable Temp. 16.5	Ending Temp. 16.5
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 279 ml. per minute.			
	0930	1.343'	0.970'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-10-17	803	67.15'	67.23'	1st Cond. 5,610	2nd Cond. 5,780	Stable Cond. 5,810	Ending Cond. 6,230
				1st pH 6.55	2nd pH 6.57	Stable pH 6.55	Ending pH 6.52
				1st Temp. 18.7	2nd Temp. 18.6	Stable Temp. 18.3	Ending Temp. 18.3
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 144 ml. per minute.			
	1010	9.669'	9.561'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-10-17	808	54.39'	54.68'	1st Cond. 5,840	2nd Cond. 6,090	Stable Cond. 6,200	Ending Cond. 6,500
				1st pH 6.65	2nd pH 6.60	Stable pH 6.60	Ending pH 6.44
				1st Temp. 18.1	2nd Temp. 18.0	Stable Temp. 17.7	Ending Temp. 17.7
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 191 ml. per minute.			
	1120	9.284'	9.138'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-10-17	802	52.59'	52.65'	1st Cond. 6,240	2nd Cond. 6,300	Stable Cond. 6,380	Ending Cond. 6,570
				1st pH 6.54	2nd pH 6.52	Stable pH 6.52	Ending pH 6.48
				1st Temp. 19.0	2nd Temp. 17.9	Stable Temp. 17.9	Ending Temp. 17.1
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 250 ml. per minute.			
	1215	15.163'	15.126'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-10-17	632	49.13'	54.00'	1st Cond. 6,180	2nd Cond. 6,260	Stable Cond. 6,350	Ending Cond. 6,650
				1st pH 6.80	2nd pH 6.67	Stable pH 6.64	Ending pH 6.46
				1st Temp. 18.4	2nd Temp. 17.6	Stable Temp. 17.4	Ending Temp. 17.7
	Time	Bubbler Start	Bubbler End	Comments: Water level dropped 4.87' during sample with purge rate averaging 247 ml. per minute.			
	1300	7.933'	2.996'				

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer			
7-Buffer			

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GROUND WATER MONITORING FIELD DATA SHEET

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Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	801			1st Cond. 6,030	2nd Cond. 6,120	Stable Cond. 6,190	Ending Cond. 6,520
				1st pH 6.73	2nd pH 6.72	Stable pH 6.69	Ending pH 6.58
		56.47'	58.23'	1st Temp. 19.0	2nd Temp. 18.7	Stable Temp. 18.3	Ending Temp. 18.4
7-10-17	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 204 ml. per minute.			
	1340	5.317'	3.504'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	GW-1			1st Cond. 5,130	2nd Cond. 5,240	Stable Cond. 5,340	Ending Cond. 6,200
				1st pH 7.33	2nd pH 7.18	Stable pH 7.08	Ending pH 6.61
		66.12'	66.23'	1st Temp. 20.3	2nd Temp. 20.4	Stable Temp. 19.8	Ending Temp. 18.1
7-10-17	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 184 ml. per minute.			
	1430	4.650'	4.552'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	EPA-28			1st Cond. 4,330	2nd Cond. 4,420	Stable Cond. 4,510	Ending Cond. 4,650
				1st pH 7.66	2nd pH 7.66	Stable pH 7.55	Ending pH 6.83
		66.91'	67.40'	1st Temp. 20.1	2nd Temp. 19.9	Stable Temp. 19.8	Ending Temp. 17.7
7-10-17	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 200 ml. per minute.			
	1525	3.499'	2.997'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	EPA-28			1st Cond. 4,670	2nd Cond. 4,670	Stable Cond. 4,670	Ending Cond. 4,700
	DUPLICATE			1st pH 6.83	2nd pH 6.84	Stable pH 6.84	Ending pH 6.83
		67.40'	67.47'	1st Temp. 17.3	2nd Temp. 17.0	Stable Temp. 16.7	Ending Temp. 17.6
7-10-17	Time	Bubbler Start	Bubbler End	Comments:			
	1610	2.997'	2.861'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	624			1st Cond. 4,980	2nd Cond. 5,110	Stable Cond. 5,260	Ending Cond. 5,480
				1st pH 6.64	2nd pH 6.62	Stable pH 6.60	Ending pH 6.55
		54.92'	54.96'	1st Temp. 17.2	2nd Temp. 16.6	Stable Temp. 16.6	Ending Temp. 16.6
7-10-17	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 224 ml. per minute.			
	1700	7.610'	7.579'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.03	7-11-17/0802	JJS
7-Buffer	7.05	7-11-17/0812	JJS

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SAMPLING

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1455	7-11-17/0802	JJS

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-11-17	SBL-1	51.31'	52.46'	1st Cond. 6,880	2nd Cond. 7,110	Stable Cond. 7,190	Ending Cond. 6,890
				1st pH 6.85	2nd pH 6.85	Stable pH 6.82	Ending pH 6.50
				1st Temp. 16.4	2nd Temp. 16.2	Stable Temp. 15.8	Ending Temp. 16.5
	Time 0847	Bubbler Start 3.433'	Bubbler End 2.277'	Comments: Purge rate averaged 214 ml. per minute.			
7-11-17	EPA-25	57.78'	57.90'	1st Cond. 3,230	2nd Cond. 3,590	Stable Cond. 3,800	Ending Cond. 4,420
				1st pH 6.96	2nd pH 6.94	Stable pH 6.89	Ending pH 6.73
				1st Temp. 18.1	2nd Temp. 17.8	Stable Temp. 17.2	Ending Temp. 17.1
	Time 1000	Bubbler Start 3.151'	Bubbler End 3.071'	Comments: Purge rate averaged 193 ml. per minute.			
7-11-17	627	61.78'	61.85'	1st Cond. 3,600	2nd Cond. 4,000	Stable Cond. 4,140	Ending Cond. 4,130
				1st pH 7.04	2nd pH 7.05	Stable pH 7.03	Ending pH 6.88
				1st Temp. 17.5	2nd Temp. 19.0	Stable Temp. 18.6	Ending Temp. 20.3
	Time 1110	Bubbler Start 0.832'	Bubbler End 0.786'	Comments: Purge rate averaged 143 ml. per minute.			
7-11-17	614	106.12'	106.98'	1st Cond. 6,430	2nd Cond. 6,780	Stable Cond. 6,800	Ending Cond. 7,480
				1st pH 6.98	2nd pH 6.97	Stable pH 6.93	Ending pH 6.40
				1st Temp. 21.2	2nd Temp. 20.7	Stable Temp. 20.8	Ending Temp. 20.1
	Time 1240	Bubbler Start 0.394'	Bubbler End 0.187'	Comments: Increased PSI from 52 to 57 and purge rate averaged 109 ml. per minute.			
7-11-17	515-A	107.30'	113.59'	1st Cond. 8,300	2nd Cond. 8,590	Stable Cond. 8,500	Ending Cond. 8,830
				1st pH 7.60	2nd pH 7.60	Stable pH 7.59	Ending pH 6.02
				1st Temp. 19.3	2nd Temp. 19.2	Stable Temp. 18.7	Ending Temp. 23.5
	Time 1400	Bubbler Start 5.732'	Bubbler End 0.262'	Comments: Water level dropped 6.29' during sample with purge rate averaging 127 ml. per minute.			
7-11-17	604	106.33'	107.21'	1st Cond. 5,500	2nd Cond. 5,720	Stable Cond. 5,920	Ending Cond. 6,120
				1st pH 6.24	2nd pH 6.16	Stable pH 6.05	Ending pH 5.51
				1st Temp. 18.6	2nd Temp. 18.2	Stable Temp. 17.8	Ending Temp. 16.0
	Time 1510	Bubbler Start 3.151'	Bubbler End 2.269'	Comments: Purge rate averaged 191 ml. per minute.			

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.01	7-12-17/0756	[illegible]
7-Buffer	7.07	7-12-17/0751	[illegible]

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Third QUARTER 20 17
SAMPLING

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1444	7-12-17/0757	[illegible]

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-11-17	EPA-7	117.68'	119.82'	1st Cond. 6,550	2nd Cond. 6,560	Stable Cond. 6,730	Ending Cond. 6,900
				1st pH 8.10	2nd pH 8.08	Stable pH 7.57	Ending pH 6.16
				1st Temp. 15.7	2nd Temp. 15.7	Stable Temp. 15.0	Ending Temp. 15.0
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 245 ml. per minute.			
	1605	9.470'	7.336'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-11-17	EPA-5	127.93'	128.67'	1st Cond. 3,580	2nd Cond. 3,860	Stable Cond. 3,970	Ending Cond. 4,120
				1st pH 7.20	2nd pH 7.18	Stable pH 7.18	Ending pH 6.31
				1st Temp. 17.2	2nd Temp. 17.1	Stable Temp. 16.8	Ending Temp. 16.0
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 184 ml. per minute.			
	1650	2.199'	2.170'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-12-17	EPA-4	209.27'	209.81'	1st Cond. 4,020	2nd Cond. 4,060	Stable Cond. 4,110	Ending Cond. 4,120
				1st pH 7.66	2nd pH 7.68	Stable pH 7.71	Ending pH 6.75
				1st Temp. 14.6	2nd Temp. 14.6	Stable Temp. 14.2	Ending Temp. 14.8
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 232 ml. per minute.			
	0840	13.650'	9.129'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-12-17	EPA-2	175.49'	176.31'	1st Cond. 3,050	2nd Cond. 3,150	Stable Cond. 3,190	Ending Cond. 3,040
				1st pH 7.66	2nd pH 7.67	Stable pH 7.65	Ending pH 6.80
				1st Temp. 14.9	2nd Temp. 14.5	Stable Temp. 14.2	Ending Temp. 15.1
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 248 ml. per minute.			
	0940	5.872'	5.332'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-12-17	EPA-2 DUPLICATE	176.31'	176.40'	1st Cond. 3,140	2nd Cond. 3,140	Stable Cond. 3,180	Ending Cond. 3,170
				1st pH 6.80	2nd pH 6.80	Stable pH 6.80	Ending pH 6.79
				1st Temp. 15.2	2nd Temp. 14.8	Stable Temp. 14.8	Ending Temp. 15.9
	Time	Bubbler Start	Bubbler End	Comments:			
	1030	5.332'	5.242'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-12-17	TWQ-142	202.75'	203.50'	1st Cond. 1,703	2nd Cond. 1,729	Stable Cond. 1,773	Ending Cond. 1,839
				1st pH 7.87	2nd pH 7.79	Stable pH 7.79	Ending pH 7.73
				1st Temp. 18.7	2nd Temp. 17.8	Stable Temp. 17.8	Ending Temp. 16.6
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 208 ml. per minute.			
	1110	9.099'	8.349'				

PH Standard Verification Check			
STD.	PH Reading	Date/Time	Initial
4-Buffer	4.03	7-17-17/0806	[illegible]
7-Buffer	7.04	7-17-17/0804	[illegible]

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Cond. Standard Verification Check			
STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1401	7-17-17/0805	[illegible]

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	RINSATE			1st Cond. 3	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH 6.54	2nd pH	Stable pH	Ending pH
				1st Temp. 26.8	2nd Temp.	Stable Temp.	Ending Temp.
7-12-17	Time	Bubbler Start	Bubbler End	Comments:			
	1156						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	FIELD BLANK			1st Cond. 3	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH 6.44	2nd pH	Stable pH	Ending pH
				1st Temp. 32.5	2nd Temp.	Stable Temp.	Ending Temp.
7-12-17	Time	Bubbler Start	Bubbler End	Comments:			
	1210						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	613			1st Cond. 8,240	2nd Cond. 8,400	Stable Cond. 8,420	Ending Cond. 8,440
				1st pH 3.14	2nd pH 3.09	Stable pH 3.08	Ending pH 3.21
		79.98'	81.10'	1st Temp. 14.9	2nd Temp. 14.8	Stable Temp. 14.8	Ending Temp. 15.5
7-17-17	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 233 ml. per minute.			
	0832	4.832'	3.755'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	517			1st Cond. 4,870	2nd Cond. 5,210	Stable Cond. 5,330	Ending Cond. 5,330
				1st pH 3.08	2nd pH 3.03	Stable pH 2.99	Ending pH 2.99
		106.85'	111.07'	1st Temp. 17.1	2nd Temp. 16.6	Stable Temp. 16.3	Ending Temp. 16.3
7-17-17	Time	Bubbler Start	Bubbler End	Comments: Water level dropped 4.22' during sample with purge rate averaging 98 ml. per minute and required a 6.4 Hr. recharge to resume/ collect full volume.			
	0923	0.249'	0.204'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	708			1st Cond. 4,200	2nd Cond. 4,840	Stable Cond. 5,320	Ending Cond. 5,250
				1st pH 2.97	2nd pH 2.92	Stable pH 2.87	Ending pH 3.83
		158.81'	159.65'	1st Temp. 19.9	2nd Temp. 19.6	Stable Temp. 19.3	Ending Temp. 17.9
7-17-17	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 153 ml. per minute. Collected sample after pump repair (replaced lower cap, O-rings, lower check ball & bladder).			
	1111	0.294'	0.321'				

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.03	7-18-17/0756	rc
7-Buffer	7.03	7-18-17/0754	rc

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Third QUARTER 2017 SAMPLING

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1430	7-18-17/0755	rc

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-17-17	711	184.65'	185.96'	1st Cond. 4,240	2nd Cond. 4,410	Stable Cond. 4,560	Ending Cond. 4,450
				1st pH 3.38	2nd pH 3.24	Stable pH 3.18	Ending pH 4.15
				1st Temp. 20.7	2nd Temp. 20.2	Stable Temp. 20.1	Ending Temp. 17.2
	Time	Bubbler Start	Bubbler End	Comments: Purged rate averaged 169 ml. per minute.			
	1245	7.510'	6.214'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-17-17	EPA-13	169.41'	170.56'	1st Cond. 5,460	2nd Cond. 5,560	Stable Cond. 5,750	Ending Cond. 6,180
				1st pH 7.20	2nd pH 7.20	Stable pH 7.19	Ending pH 5.92
				1st Temp. 20.7	2nd Temp. 21.2	Stable Temp. 20.6	Ending Temp. 18.3
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 134 ml. per minute.			
	1418	2.325'	1.194'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-17-17	420	156.95'	157.88'	1st Cond. 3,360	2nd Cond. 3,390	Stable Cond. 3,420	Ending Cond. 3,410
				1st pH 7.61	2nd pH 7.61	Stable pH 7.62	Ending pH 6.46
				1st Temp. 19.1	2nd Temp. 18.9	Stable Temp. 18.9	Ending Temp. 18.5
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 88 ml. per minute.			
	1545	0.277'	0.231'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-18-17	EPA-14	125.86'	126.64'	1st Cond. 4,030	2nd Cond. 4,050	Stable Cond. 4,010	Ending Cond. 3,780
				1st pH 5.04	2nd pH 5.04	Stable pH 5.05	Ending pH 5.40
				1st Temp. 15.6	2nd Temp. 15.4	Stable Temp. 15.1	Ending Temp. 15.7
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 272 ml. per minute.			
	0838	0.257'	0.287'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
7-18-17	719	170.74'	171.16'	1st Cond. 4,770	2nd Cond. 4,900	Stable Cond. 4,970	Ending Cond. 5,180
				1st pH 5.38	2nd pH 5.36	Stable pH 5.40	Ending pH 5.71
				1st Temp. 20.1	2nd Temp. 19.8	Stable Temp. 19.8	Ending Temp. 24.0
	Time	Bubbler Start	Bubbler End	Comments: Purged rate averaged 69 ml. per minute.			
	1010	0.323'	0.215'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

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SAMPLING

PH Standard Verification Check			
STD.	PH Reading	Date/Time	Initial
4-Buffer			
7-Buffer			

Cond. Standard Verification Check			
STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	717			1st Cond. 5,630	2nd Cond. 5,650	Stable Cond. 5,820	Ending Cond. 6,060
				1st pH 3.17	2nd pH 3.18	Stable pH 3.18	Ending pH 3.19
		136.00'	137.24'	1st Temp. 17.4	2nd Temp. 17.4	Stable Temp. 17.6	Ending Temp. 16.7
7-18-17	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 186 ml. per minute. Sample collected after pump repaired (bladder cartridge reattached/tighten).			
	1422	0.234'	0.260'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	717			1st Cond. 6,080	2nd Cond. 6,120	Stable Cond. 6,080	Ending Cond. 6,110
	DUPLICATE			1st pH 3.18	2nd pH 3.19	Stable pH 3.18	Ending pH 3.21
		137.24'	138.12'	1st Temp. 16.8	2nd Temp. 16.6	Stable Temp. 16.5	Ending Temp. 16.6
7-18-17	Time	Bubbler Start	Bubbler End	Comments:			
	1602	0.260'	0.184'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	RINSATE			1st Cond. 2	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH 6.01	2nd pH	Stable pH	Ending pH
				1st Temp. 30.5	2nd Temp.	Stable Temp.	Ending Temp.
7-18-17	Time	Bubbler Start	Bubbler End	Comments:			
	1730						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	FIELD			1st Cond. 2	2nd Cond.	Stable Cond.	Ending Cond.
	BLANK			1st pH 6.16	2nd pH	Stable pH	Ending pH
				1st Temp. 22.4	2nd Temp.	Stable Temp.	Ending Temp.
7-18-17	Time	Bubbler Start	Bubbler End	Comments:			
	1735						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.01	7-18-17/1352	[illegible]
7-Buffer	7.00	7-18-17/1350	[illegible]

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Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1404	7-18-17/1351	[illegible]

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	MW-7			1st Cond. 3,360	2nd Cond. 3,770	Stable Cond. 3,770	Ending Cond. 3,770
				1st pH 7.76	2nd pH 7.74	Stable pH 7.74	Ending pH 6.37
7-18-17		198.24'	198.28'	1st Temp. 24.1	2nd Temp. 24.1	Stable Temp. 24.2	Ending Temp. 20.8
	Time	Bubbler Start	Bubbler End	Comments: Purge rate averaged 48 ml. per minute. Sample collected for well # MW-7 & NBL-2 using low flow purge & sample method.			
	1236						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	NW-3			1st Cond. 3,750	2nd Cond. 3,960	Stable Cond. 4,000	Ending Cond. 4,040
				1st pH 6.15	2nd pH 6.52	Stable pH 6.74	Ending pH 6.96
7-18-17		192.60'	192.81'	1st Temp. 15.6	2nd Temp. 15.2	Stable Temp. 14.9	Ending Temp. 14.6
	Time	Bubbler Start	Bubbler End	Comments: Inactive northernmost pumping well and sample collected from existing port using its dedicated pump.			
	1415						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	NBL-2			1st Cond. 3,190	2nd Cond. 3,310	Stable Cond. 3,370	Ending Cond. 3,410
				1st pH 7.49	2nd pH 7.34	Stable pH 7.05	Ending pH 6.55
7-18-17		172.38'	172.58'	1st Temp. 20.7	2nd Temp. 20.4	Stable Temp. 20.2	Ending Temp. 17.0
	Time	Bubbler Start	Bubbler End	Comments: Sampled collected after pump repaired (bladder cartridge repositioned/tighten in place). Used low flow purge & sample method.			
	1654	7.770'	7.688'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	NW-1			1st Cond. 3,600	2nd Cond. 3,640	Stable Cond. 3,650	Ending Cond. 3,660
				1st pH 6.57	2nd pH 6.79	Stable pH 6.93	Ending pH 7.10
7-19-17		199.49'	200.21'	1st Temp. 18.5	2nd Temp. 18.5	Stable Temp. 18.4	Ending Temp. 18.3
	Time	Bubbler Start	Bubbler End	Comments: Inactive northernmost pumping well and sample collected from existing port using its dedicated pump.			
	1015						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	NW-4			1st Cond. 3,870	2nd Cond. 3,950	Stable Cond. 3,980	Ending Cond. 4,000
				1st pH 7.30	2nd pH 7.16	Stable pH 7.04	Ending pH 6.80
7-19-17		196.68'	197.67'	1st Temp. 15.2	2nd Temp. 15.3	Stable Temp. 15.3	Ending Temp. 15.4
	Time	Bubbler Start	Bubbler End	Comments: As well NW-1 & NW-3 above.			
	1036						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

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PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	3.99	7-19-17/0807	rc
7-Buffer	7.01	7-19-17/0806	rc

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1411	7-19-17/0805	rc

Date 7-19-17	Well Number NW-2	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond. 4,420	2nd Cond. 4,440	Stable Cond. 4,450	Ending Cond. 4,460
				1st pH 6.11	2nd pH 6.06	Stable pH 6.04	Ending pH 6.03
		199.13'	199.26'	1st Temp. 25.7	2nd Temp. 25.7	Stable Temp. 25.8	Ending Temp. 25.8
	Time 1055	Bubbler Start	Bubbler End	Comments: Continuous extraction well and sample collected from existing port using dedicated pump.			

Date 7-19-17	Well Number RW-A	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond. 4,800	2nd Cond. 4,870	Stable Cond. 4,910	Ending Cond. 4,930
				1st pH 5.68	2nd pH 5.53	Stable pH 5.47	Ending pH 5.42
		175.75'	176.06'	1st Temp. 23.2	2nd Temp. 23.2	Stable Temp. 23.2	Ending Temp. 23.3
	Time 1118	Bubbler Start	Bubbler End	Comments: continuous extraction well and sample collected from existing port using dedicated pump.			

Date 7-19-17	Well Number NW-5	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond. 4,820	2nd Cond. 4,860	Stable Cond. 4,880	Ending Cond. 4,900
				1st pH 5.55	2nd pH 5.45	Stable pH 5.42	Ending pH 5.40
		192.59'	192.74'	1st Temp. 22.7	2nd Temp. 22.7	Stable Temp. 22.7	Ending Temp. 22.7
	Time 1138	Bubbler Start	Bubbler End	Comments: Continuous extraction well and sample collected from existing port using dedicated pump.			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	3.97	10-2-17/0754	[illegible]
7-Buffer	7.00	10-2-17/0752	[illegible]

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Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1406	10-2-17/0754	[illegible]

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	509-D			1st Cond. 5,110	2nd Cond. 5,880	Stable Cond. 6,080	Ending Cond. 6,500
				1st pH 7.23	2nd pH 7.16	Stable pH 7.11	Ending pH 6.41
		84.08'	84.28'	1st Temp. 14.4	2nd Temp. 14.3	Stable Temp. 14.1	Ending Temp. 14.2
10-2-17	Time	Bubbler Start	Bubbler End	Comments: Conductivity is in uS/cm, Temperature is in °C, pH is in std. units			
	0847	0.211'	0.221'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	EPA-23			1st Cond. 4,360	2nd Cond. 4,390	Stable Cond. 4,410	Ending Cond. 4,470
				1st pH 6.79	2nd pH 6.79	Stable pH 6.76	Ending pH 6.68
		60.62'	61.02'	1st Temp. 13.7	2nd Temp. 13.7	Stable Temp. 13.5	Ending Temp. 14.5
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	0938	1.365'	0.959'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	803			1st Cond. 5,500	2nd Cond. 5,550	Stable Cond. 5,710	Ending Cond. 5,550
				1st pH 6.58	2nd pH 6.58	Stable pH 6.58	Ending pH 6.55
		67.34'	67.36'	1st Temp. 16.3	2nd Temp. 16.2	Stable Temp. 16.1	Ending Temp. 16.6
10-2-17	Time	Bubbler Start	Bubbler End	Comments: Pumping unit needs maintenance work due to very low discharge rate.			
	1034	9.117'	9.411'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	808			1st Cond. 5,840	2nd Cond. 6,050	Stable Cond. 6,190	Ending Cond. 5,940
				1st pH 6.74	2nd pH 6.70	Stable pH 6.67	Ending pH 6.52
		54.48'	54.74'	1st Temp. 16.0	2nd Temp. 15.7	Stable Temp. 15.5	Ending Temp. 15.4
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	1158	9.197'	8.933'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	802			1st Cond. 5,770	2nd Cond. 5,920	Stable Cond. 6,200	Ending Cond. 6,470
				1st pH 6.59	2nd pH 6.58	Stable pH 6.56	Ending pH 6.52
		52.85'	52.89'	1st Temp. 16.3	2nd Temp. 16.0	Stable Temp. 15.8	Ending Temp. 15.4
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	1247	14.874'	14.822'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	632			1st Cond. 5,850	2nd Cond. 5,980	Stable Cond. 6,180	Ending Cond. 6,440
				1st pH 7.12	2nd pH 7.05	Stable pH 6.96	Ending pH 6.49
		49.38'	54.33'	1st Temp. 16.2	2nd Temp. 16.0	Stable Temp. 15.8	Ending Temp. 15.1
10-2-17	Time	Bubbler Start	Bubbler End	Comments: water level dropped 4.95' during sample.			
	1331	7.660'	2.699'				

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer			
7-Buffer			

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STD. µS/cm	Reading	Date/Time	Initial
1413 µS/cm			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 5,120	2nd Cond. 6,100	Stable Cond. 6,170	Ending Cond. 6,280
	801			1st pH 6.80	2nd pH 6.79	Stable pH 6.75	Ending pH 6.61
		56.79'	58.56'	1st Temp. 16.6	2nd Temp. 16.1	Stable Temp. 16.1	Ending Temp. 15.4
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	1415	4.982'	3.155'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 5,190	2nd Cond. 5,330	Stable Cond. 5,430	Ending Cond. 6,190
	GW-1			1st pH 7.29	2nd pH 7.14	Stable pH 7.03	Ending pH 6.67
		66.43'	66.52'	1st Temp. 16.5	2nd Temp. 16.3	Stable Temp. 16.3	Ending Temp. 15.3
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	1503	4.355'	4.268'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 4,150	2nd Cond. 4,380	Stable Cond. 4,520	Ending Cond. 4,620
	EPA-28			1st pH 7.64	2nd pH 7.65	Stable pH 7.64	Ending pH 6.88
		67.22'	67.68'	1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	1600	3.248'	2.757'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 4,630	2nd Cond. 4,640	Stable Cond. 4,660	Ending Cond. 4,620
	EPA-28			1st pH 6.86	2nd pH 6.86	Stable pH 6.88	Ending pH 6.86
	DUPLICATE	67.68'	67.74'	1st Temp. 15.6	2nd Temp. 15.5	Stable Temp. 15.2	Ending Temp. 15.1
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	1642	2.757'	2.649'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 4,300	2nd Cond. 4,600	Stable Cond. 4,820	Ending Cond. 5,520
	624			1st pH 6.81	2nd pH 6.75	Stable pH 6.74	Ending pH 6.57
		55.17'	55.23'	1st Temp. 14.9	2nd Temp. 14.8	Stable Temp. 15.0	Ending Temp. 13.6
10-2-17	Time	Bubbler Start	Bubbler End	Comments:			
	1730	7.218'	7.158'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	3.98	10-3-17/0728	JJS
7-Buffer	7.02	10-3-17/0758	JH

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Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1461	10-3-17/0729	JH

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 7,210	2nd Cond. 7,350	Stable Cond. 7,380	Ending Cond. 7,460
	SBL-1			1st pH 6.99	2nd pH 6.94	Stable pH 6.86	Ending pH 6.61
		51.27'	52.32'	1st Temp. 13.6	2nd Temp. 13.5	Stable Temp. 13.4	Ending Temp. 14.9
10-3-17	Time	Bubbler Start	Bubbler End	Comments:			
	0853	3.510'	2.427'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 3,710	2nd Cond. 3,830	Stable Cond. 3,920	Ending Cond. 4,570
	EPA-25			1st pH 6.89	2nd pH 6.84	Stable pH 6.83	Ending pH 6.72
		58.10'	58.21'	1st Temp. 15.7	2nd Temp. 15.5	Stable Temp. 15.4	Ending Temp. 16.3
10-3-17	Time	Bubbler Start	Bubbler End	Comments:			
	1002	2.854'	2.733'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 3,750	2nd Cond. 4,040	Stable Cond. 4,110	Ending Cond. 4,280
	627			1st pH 7.04	2nd pH 6.98	Stable pH 6.97	Ending pH 6.86
		61.93'	61.97'	1st Temp. 17.5	2nd Temp. 17.3	Stable Temp. 17.1	Ending Temp. 18.4
10-3-17	Time	Bubbler Start	Bubbler End	Comments:			
	1107	0.687'	0.670'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 6,350	2nd Cond. 6,790	Stable Cond. 6,880	Ending Cond. 7,480
	614			1st pH 6.95	2nd pH 6.95	Stable pH 6.95	Ending pH 6.38
		106.87'	106.88'	1st Temp. 18.3	2nd Temp. 18.1	Stable Temp. 18.0	Ending Temp. 19.0
10-3-17	Time	Bubbler Start	Bubbler End	Comments:			
	1234	0.458'	0.187'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 7,580	2nd Cond. 8,510	Stable Cond. 8,880	Ending Cond. 9,150
	515-A			1st pH 7.04	2nd pH 7.03	Stable pH 7.04	Ending pH 5.98
		107.33'	113.76'	1st Temp. 19.4	2nd Temp. 18.8	Stable Temp. 18.7	Ending Temp. 20.6
10-3-17	Time	Bubbler Start	Bubbler End	Comments: water level dropped 6.43' during sample.			
	1351	5.649'	0.207'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 5,540	2nd Cond. 5,760	Stable Cond. 6,020	Ending Cond. 6,150
	604			1st pH 5.48	2nd pH 5.46	Stable pH 5.45	Ending pH 5.38
		106.40'	107.30'	1st Temp. 18.8	2nd Temp. 18.2	Stable Temp. 17.9	Ending Temp. 17.4
10-3-17	Time	Bubbler Start	Bubbler End	Comments:			
	1507	3.026'	2.141'				

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.01	10-4-17/0746	AA
7-Buffer	7.06	10-4-17/0740	AA

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STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1465	10-4-17/0746	AA

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 5,980	2nd Cond. 6,640	Stable Cond. 6,900	Ending Cond. 6,860
	EPA-7			1st pH 7.43	2nd pH 7.43	Stable pH 7.43	Ending pH 6.09
		117.66'	119.63'	1st Temp. 17.9	2nd Temp. 17.4	Stable Temp. 17.2	Ending Temp. 16.7
10-3-17	Time	Bubbler Start	Bubbler End	Comments:			
	1601	9.450'	7.460'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 3,800	2nd Cond. 4,010	Stable Cond. 4,060	Ending Cond. 4,240
	EPA-5			1st pH 5.03	2nd pH 4.92	Stable pH 4.87	Ending pH 6.29
		127.98'	128.69'	1st Temp. 18.6	2nd Temp. 18.4	Stable Temp. 18.0	Ending Temp. 16.7
10-3-17	Time	Bubbler Start	Bubbler End	Comments:			
	1642	2.850'	2.147'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 4,090	2nd Cond. 4,130	Stable Cond. 4,180	Ending Cond. 4,300
	EPA-4			1st pH 7.50	2nd pH 7.50	Stable pH 7.50	Ending pH 6.78
		209.32'	209.89'	1st Temp. 15.0	2nd Temp. 14.7	Stable Temp. 14.5	Ending Temp. 15.1
10-4-17	Time	Bubbler Start	Bubbler End	Comments:			
	0831	13.703'	13.007'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 3,050	2nd Cond. 3,150	Stable Cond. 3,200	Ending Cond. 3,220
	EPA-2			1st pH 7.40	2nd pH 7.39	Stable pH 7.39	Ending pH 6.95
		175.57'	176.27'	1st Temp. 15.9	2nd Temp. 15.3	Stable Temp. 15.3	Ending Temp. 15.3
10-4-17	Time	Bubbler Start	Bubbler End	Comments:			
	0948						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 3,260	2nd Cond. 3,280	Stable Cond. 3,290	Ending Cond. 3,370
	EPA-2			1st pH 6.95	2nd pH 6.95	Stable pH 6.95	Ending pH 6.93
	DUPLICATE	176.27'	176.51'	1st Temp. 15.1	2nd Temp. 15.2	Stable Temp. 15.2	Ending Temp. 15.2
10-4-17	Time	Bubbler Start	Bubbler End	Comments:			
	1045	5.288'	4.920'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond. 1,803	2nd Cond. 1,826	Stable Cond. 1,863	Ending Cond. 1,922
	TWQ-142			1st pH 7.85	2nd pH 7.82	Stable pH 7.76	Ending pH 7.89
		202.86'	203.65'	1st Temp. 16.9	2nd Temp. 16.5	Stable Temp. 16.0	Ending Temp. 16.0
10-4-17	Time	Bubbler Start	Bubbler End	Comments:			
	1130	16.000'	17.739'				

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	3.97	10-9-17/0724	JH
7-Buffer	7.01	10-9-17/0716	JH

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Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1434	10-9-17/0724	JH

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	RINSATE			1st Cond. 5	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH 6.78	2nd pH	Stable pH	Ending pH
				1st Temp. 22.8	2nd Temp.	Stable Temp.	Ending Temp.
10-4-17	Time	Bubbler Start	Bubbler End	Comments:			
	1214						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	FIELD BLANK			1st Cond. 6	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH 6.29	2nd pH	Stable pH	Ending pH
				1st Temp. 23.7	2nd Temp.	Stable Temp.	Ending Temp.
10-4-17	Time	Bubbler Start	Bubbler End	Comments:			
	1220						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
				1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
				1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
	Time	Bubbler Start	Bubbler End	Comments:			

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	613			1st Cond. 8,030	2nd Cond. 8,330	Stable Cond. 8,450	Ending Cond. 8,560
				1st pH 2.90	2nd pH 2.89	Stable pH 2.88	Ending pH 2.90
		79.97'	81.12'	1st Temp. 12.8	2nd Temp. 12.7	Stable Temp. 12.4	Ending Temp. 12.8
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	0835	4.858'	3.750'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	517			1st Cond. 5,520	2nd Cond. 5,600	Stable Cond. 5,660	Ending Cond. 5,310
				1st pH 2.76	2nd pH 2.75	Stable pH 2.74	Ending pH 3.37
		106.69'	108.61'	1st Temp. 12.9	2nd Temp. 12.9	Stable Temp. 12.8	Ending Temp. 12.8
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	0925	0.261'	0.311'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	708			1st Cond. 5,390	2nd Cond. 5,510	Stable Cond. 5,630	Ending Cond. 5,450
				1st pH 2.74	2nd pH 2.72	Stable pH 2.72	Ending pH 3.78
		158.77'	159.81'	1st Temp. 13.5	2nd Temp. 13.5	Stable Temp. 13.6	Ending Temp. 13.6
10-9-17	Time	Bubbler Start	Bubbler End	Comments: Internal pump bladder unloosen at end of sample collection.			
	1030	0.324'	0.301'				

PH Standard Verification Check				(Quar. Performance Monitoring – Pg. 6 of 7)	Cond. Standard Verification Check		
STD.	PH Reading	Date/Time	Initial	GROUND WATER MONITORING FIELD DATA SHEET	STD. µS/cm	Reading	Date/Time	Initial
4-Buffer				Fourth QUARTER 20 17	1413 µS/cm			
7-Buffer				SAMPLING				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	711			1st Cond. 4,680	2nd Cond. 4,850	Stable Cond. 4,950	Ending Cond. 4,580
				1st pH 2.94	2nd pH 2.92	Stable pH 2.90	Ending pH 3.89
		184.48'	185.86'	1st Temp. 13.4	2nd Temp. 13.2	Stable Temp. 13.0	Ending Temp. 13.7
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	1147	7.578'	6.142'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	EPA-13			1st Cond. 5,890	2nd Cond. 6,020	Stable Cond. 6,070	Ending Cond. 6,240
				1st pH 6.20	2nd pH 6.25	Stable pH 6.28	Ending pH 5.81
		169.50'	170.58'	1st Temp. 13.8	2nd Temp. 13.6	Stable Temp. 13.7	Ending Temp. 14.8
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	1248	2.298'	1.207'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	420			1st Cond. 3,510	2nd Cond. 3,550	Stable Cond. 3,610	Ending Cond. 3,500
				1st pH 7.01	2nd pH 7.04	Stable pH 7.01	Ending pH 6.40
		157.13'	158.26'	1st Temp. 14.4	2nd Temp. 14.2	Stable Temp. 14.2	Ending Temp. 15.9
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	1355	0.262'	0.299'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	717			1st Cond. 5,810	2nd Cond. 6,010	Stable Cond. 6,040	Ending Cond. 6,230
				1st pH 3.13	2nd pH 3.13	Stable pH 3.12	Ending pH 3.09
		136.08'	137.30'	1st Temp. 15.0	2nd Temp. 14.8	Stable Temp. 14.8	Ending Temp. 13.5
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	1500	0.261'	0.254'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	717			1st Cond. 6,230	2nd Cond. 6,230	Stable Cond. 6,250	Ending Cond. 6,050
	DUPLICATE			1st pH 3.09	2nd pH 3.09	Stable pH 3.09	Ending pH 3.07
		137.30'	138.64'	1st Temp. 13.6	2nd Temp. 13.4	Stable Temp. 13.3	Ending Temp. 14.0
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	1546	0.254'	0.192'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
	EPA-14			1st Cond. 3,840	2nd Cond. 3,910	Stable Cond. 3,930	Ending Cond. 3,910
				1st pH 5.44	2nd pH 5.51	Stable pH 5.55	Ending pH 5.34
		125.83'	126.59'	1st Temp. 13.9	2nd Temp. 13.8	Stable Temp. 13.7	Ending Temp. 13.3
10-9-17	Time	Bubbler Start	Bubbler End	Comments:			
	1630	0.173'	0.132'				

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.01	10-10-17/0730	
7-Buffer	7.03	10-10-17/0726	

(Quar. Performance Monitoring – Pg. 7 of 7)

GROUND WATER MONITORING FIELD DATA SHEET

Fourth QUARTER 2017
SAMPLING

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1453	10-10-17/0731	

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample		Reading		Reading		Reading		Reading
10-10-17	719	170.93'	171.16'	1st Cond.	4,720	2nd Cond.	4,910	Stable Cond.	5,220	Ending Cond.	5,220
				1st pH	5.23	2nd pH	5.24	Stable pH	5.27	Ending pH	5.27
				1st Temp.	11.6	2nd Temp.	11.6	Stable Temp.	11.7	Ending Temp.	11.7
	Time	Bubbler Start	Bubbler End	Comments:	Re-tighten fittings due to pressure leakage in line.						
	0827	0.345'	0.232'								

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample		Reading		Reading		Reading		Reading
10-10-17	RINSATE			1st Cond.	5	2nd Cond.		Stable Cond.		Ending Cond.	
				1st pH	7.96	2nd pH		Stable pH		Ending pH	
				1st Temp.	23.4	2nd Temp.		Stable Temp.		Ending Temp.	
	Time	Bubbler Start	Bubbler End	Comments:							
	1600										

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample		Reading		Reading		Reading		Reading
10-10-17	FIELD BLANK			1st Cond.	8	2nd Cond.		Stable Cond.		Ending Cond.	
				1st pH	6.38	2nd pH		Stable pH		Ending pH	
				1st Temp.	22.2	2nd Temp.		Stable Temp.		Ending Temp.	
	Time	Bubbler Start	Bubbler End	Comments:							
	1615										

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample		Reading		Reading		Reading		Reading
				1st Cond.		2nd Cond.		Stable Cond.		Ending Cond.	
				1st pH		2nd pH		Stable pH		Ending pH	
				1st Temp.		2nd Temp.		Stable Temp.		Ending Temp.	
	Time	Bubbler Start	Bubbler End	Comments:							

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample		Reading		Reading		Reading		Reading
				1st Cond.		2nd Cond.		Stable Cond.		Ending Cond.	
				1st pH		2nd pH		Stable pH		Ending pH	
				1st Temp.		2nd Temp.		Stable Temp.		Ending Temp.	
	Time	Bubbler Start	Bubbler End	Comments:							

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample		Reading		Reading		Reading		Reading
				1st Cond.		2nd Cond.		Stable Cond.		Ending Cond.	
				1st pH		2nd pH		Stable pH		Ending pH	
				1st Temp.		2nd Temp.		Stable Temp.		Ending Temp.	
	Time	Bubbler Start	Bubbler End	Comments:							

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.01	10-10-17/0730	[illegible]
7-Buffer	7.03	10-10-17/0726	[illegible]

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GROUND WATER MONITORING FIELD DATA SHEET
Fourth QUARTER 20 17
SAMPLING

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1453	10-10-17/0731	[illegible]

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
10-10-17	NBL-2	172.96'	173.13'	1st Cond. 3,250	2nd Cond. 3,320	Stable Cond. 3,400	Ending Cond. 3,370
				1st pH 6.91	2nd pH 6.91	Stable pH 6.91	Ending pH 6.44
				1st Temp. 15.7	2nd Temp. 15.6	Stable Temp. 15.4	Ending Temp. 17.1
	Time	Bubbler Start	Bubbler End	Comments:			
	1230	7.306'	7.006'				

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
10-10-17	MW-7	198.59'	198.58'	1st Cond. 3,590	2nd Cond. 3,650	Stable Cond. 3,760	Ending Cond. 3,880
				1st pH 7.44	2nd pH 7.44	Stable pH 7.44	Ending pH 6.80
				1st Temp. 17.7	2nd Temp. 17.5	Stable Temp. 17.6	Ending Temp. 17.6
	Time	Bubbler Start	Bubbler End	Comments:			
	1405						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
10-10-17	NW-3	192.92'	193.50'	1st Cond. 3,980	2nd Cond. 4,030	Stable Cond. 4,070	Ending Cond. 4,080
				1st pH 7.23	2nd pH 7.21	Stable pH 7.22	Ending pH 7.23
				1st Temp. 17.4	2nd Temp. 17.2	Stable Temp. 17.1	Ending Temp. 17.0
	Time	Bubbler Start	Bubbler End	Comments:			
	1532						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
10-10-17	RW-A	176.42'		1st Cond. 5,050	2nd Cond. 5,120	Stable Cond. 5,120	Ending Cond. 5,120
				1st pH 5.49	2nd pH 5.57	Stable pH 5.63	Ending pH 5.68
				1st Temp. 15.4	2nd Temp. 15.4	Stable Temp. 15.5	Ending Temp. 15.5
	Time	Bubbler Start	Bubbler End	Comments: Water level cable is tangling up in well.			
	1632						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
10-10-17	RW-11	170.75'	171.12'	1st Cond. 4,620	2nd Cond. 4,620	Stable Cond. 4,620	Ending Cond. 4,620
				1st pH 6.46	2nd pH 6.47	Stable pH 6.50	Ending pH 6.49
				1st Temp. 15.1	2nd Temp. 15.1	Stable Temp. 15.1	Ending Temp. 15.1
	Time	Bubbler Start	Bubbler End	Comments:			
	1700						

Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	Reading	Reading	Reading	Reading
10-11-17	NW-1	199.88'	200.58'	1st Cond. 3,650	2nd Cond. 3,690	Stable Cond. 3,700	Ending Cond. 3,700
				1st pH 6.09	2nd pH 6.46	Stable pH 6.77	Ending pH 7.05
				1st Temp. 15.1	2nd Temp. 15.0	Stable Temp. 14.9	Ending Temp. 14.8
	Time	Bubbler Start	Bubbler End	Comments:			
	1006						

PH Standard Verification Check

STD.	PH Reading	Date/Time	Initial
4-Buffer	4.01	10-11-17/0757	rc
7-Buffer	6.99	10-11-17/0756	rc

(Monthly/Quar. Supplemental - Pg. 2 of 2)

GROUND WATER MONITORING FIELD DATA SHEET
Fourth QUARTER 2017
SAMPLING

Cond. Standard Verification Check

STD.	µS/cm Reading	Date/Time	Initial
1413 µS/cm	1453	10-11-17/0755	rc

				Reading	Reading	Reading	Reading
Date	Well Number NW-4	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond. 3,980	2nd Cond. 4,030	Stable Cond. 4,040	Ending Cond. 4,040
10-11-17		196.88'	197.76'	1st pH 7.00	2nd pH 6.90	Stable pH 6.81	Ending pH 6.71
	Time 1028			1st Temp. 13.3	2nd Temp. 13.3	Stable Temp. 13.3	Ending Temp. 13.3
		Bubbler Start	Bubbler End	Comments:			

				Reading	Reading	Reading	Reading
Date	Well Number NW-2	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond. 4,080	2nd Cond. 4,510	Stable Cond. 4,490	Ending Cond. 4,470
10-11-17		199.53'	199.75'	1st pH 6.33	2nd pH 6.23	Stable pH 6.19	Ending pH 6.14
	Time 1040			1st Temp. 18.1	2nd Temp. 18.1	Stable Temp. 18.1	Ending Temp. 18.4
		Bubbler Start	Bubbler End	Comments:			

				Reading	Reading	Reading	Reading
Date	Well Number NW-5	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond. 4,470	2nd Cond. 4,850	Stable Cond. 4,850	Ending Cond. 4,860
10-11-17		192.89'	193.05'	1st pH 5.79	2nd pH 5.62	Stable pH 5.55	Ending pH 5.48
	Time 1052			1st Temp. 19.3	2nd Temp. 19.3	Stable Temp. 19.4	Ending Temp. 19.6
		Bubbler Start	Bubbler End	Comments:			

				Reading	Reading	Reading	Reading
Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
	Time			1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
		Bubbler Start	Bubbler End	Comments:			

				Reading	Reading	Reading	Reading
Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
	Time			1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
		Bubbler Start	Bubbler End	Comments:			

				Reading	Reading	Reading	Reading
Date	Well Number	WL w/Probe Pre-Sample	WL w/Probe Post Sample	1st Cond.	2nd Cond.	Stable Cond.	Ending Cond.
				1st pH	2nd pH	Stable pH	Ending pH
	Time			1st Temp.	2nd Temp.	Stable Temp.	Ending Temp.
		Bubbler Start	Bubbler End	Comments:			

APPENDIX B

QUARTERLY SAMPLING

SEMI-ANNUAL GROUND WATER MONITORING REPORT

JULY TO DECEMBER OF 2017

QA/QC CONTROLS

FIELD BLANKS
RINSATES

EPA-28 AND EPA-28 DUPLICATE FOR SW ALLUVIUM

EPA–2 AND EPA–2 DUPLICATE FOR ZONE – 1

717 AND 717 DUPLICATE FOR ZONE - 3

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LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17070470-011
Client Sample ID: Field Blank

Report Date: 08/16/17
Collection Date: 07/12/17 12:10
DateReceived: 07/14/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	07/17/17 22:08 / mvr
Chloride	ND	mg/L		1		E300.0	07/24/17 15:35 / jcg
Sulfate	ND	mg/L		1		E300.0	07/24/17 15:35 / jcg
Calcium	ND	mg/L		1		E200.7	07/20/17 01:12 / eli-b
Magnesium	ND	mg/L		1		E200.7	07/20/17 01:12 / eli-b
Potassium	ND	mg/L		1		E200.7	07/20/17 21:11 / eli-b
Sodium	ND	mg/L		1		E200.7	07/20/17 01:12 / eli-b
PHYSICAL PROPERTIES							
pH	6.00	s.u.	H	0.01		A4500-H B	07/17/17 15:28 / mvr
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	07/17/17 17:10 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	07/21/17 17:05 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	07/23/17 11:39 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	07/25/17 02:51 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	07/26/17 00:40 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	07/25/17 02:51 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	07/25/17 02:51 / eli-b
Lead	ND	mg/L		0.001		E200.8	07/25/17 02:51 / eli-b
Manganese	ND	mg/L		0.01		E200.8	07/25/17 02:51 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	07/25/17 02:51 / eli-b
Nickel	ND	mg/L		0.05		E200.8	07/25/17 02:51 / eli-b
Uranium	ND	mg/L		0.0003		E200.8	07/25/17 02:51 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	07/25/17 02:51 / eli-b
METALS - SPECIATED - TOTAL							
Arsenic-III	ND	mg/L		0.001		E1632AM	07/28/17 23:40 / eli-h
Selenium-IV	ND	mg/L		0.001		A3114 B	07/21/17 13:37 / eli-h
DATA QUALITY							
A/C Balance	-10.9	%				A1030 E	08/11/17 14:06 / tjp
Anions	0.04	meq/L				A1030 E	08/11/17 14:06 / tjp
Cations	0.03	meq/L				A1030 E	08/11/17 14:06 / tjp
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	-0.05	pCi/L	U			E900.1	08/10/17 14:32 / cng
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	08/10/17 14:32 / cng
Gross Alpha minus Rn & U MDC	0.6	pCi/L				E900.1	08/10/17 14:32 / cng
Lead 210	0.4	pCi/L	U			E909.0	08/13/17 02:40 / dmf
Lead 210 precision (±)	0.7	pCi/L				E909.0	08/13/17 02:40 / dmf
Lead 210 MDC	1.2	pCi/L				E909.0	08/13/17 02:40 / dmf
Radium 226	-0.04	pCi/L	U			E903.0	08/14/17 16:17 / trs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17070470-011
Client Sample ID: Field Blank

Report Date: 08/16/17
Collection Date: 07/12/17 12:10
DateReceived: 07/14/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226 precision (±)	0.1	pCi/L				E903.0	08/14/17 16:17 / trs
Radium 226 MDC	0.2	pCi/L				E903.0	08/14/17 16:17 / trs
Radium 228	1.3	pCi/L	U			RA-05	08/09/17 13:06 / trs
Radium 228 precision (±)	1.1	pCi/L				RA-05	08/09/17 13:06 / trs
Radium 228 MDC	1.9	pCi/L				RA-05	08/09/17 13:06 / trs
Thorium 230	0.1	pCi/L	U			E908.0	08/10/17 09:35 / cng
Thorium 230 precision (±)	0.1	pCi/L				E908.0	08/10/17 09:35 / cng
Thorium 230 MDC	0.2	pCi/L				E908.0	08/10/17 09:35 / cng
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	1.7	ug/L		0.50		E624	07/21/17 20:19 / eli-b
Bromoform	1.6	ug/L		0.50		E624	07/21/17 20:19 / eli-b
Chlorodibromomethane	1.7	ug/L		0.50		E624	07/21/17 20:19 / eli-b
Chloroform	1.9	ug/L		0.50		E624	07/21/17 20:19 / eli-b
Trihalomethanes, Total	6.8	ug/L		0.50		E624	08/15/17 12:02 / sec
Surr: 1,2-Dichloroethane-d4	94.0	%REC		71-139		E624	07/21/17 20:19 / eli-b
Surr: p-Bromofluorobenzene	127	%REC		80-127		E624	07/21/17 20:19 / eli-b
Surr: Toluene-d8	102	%REC		80-123		E624	07/21/17 20:19 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17070708-008
Client Sample ID: Field Blank

Report Date: 09/20/17
Collection Date: 07/18/17 17:35
DateReceived: 07/21/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	07/27/17 17:06 / jcg
Chloride	ND	mg/L		1		E300.0	07/28/17 15:21 / jcg
Sulfate	ND	mg/L		1		E300.0	07/28/17 15:21 / jcg
Calcium	ND	mg/L		1		E200.7	07/28/17 16:46 / eli-b
Magnesium	ND	mg/L		1		E200.7	07/28/17 16:46 / eli-b
Potassium	ND	mg/L		1		E200.7	07/28/17 16:46 / eli-b
Sodium	ND	mg/L		1		E200.7	07/28/17 16:46 / eli-b
PHYSICAL PROPERTIES							
pH	5.89	s.u.	H	0.01		A4500-H B	07/24/17 12:58 / mvr
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	07/24/17 12:03 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	07/28/17 17:32 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	07/31/17 13:37 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	07/27/17 23:40 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	08/01/17 04:09 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	07/27/17 23:40 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	07/27/17 23:40 / eli-b
Lead	ND	mg/L		0.001		E200.8	07/27/17 23:40 / eli-b
Manganese	ND	mg/L		0.01		E200.8	07/27/17 23:40 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	07/27/17 23:40 / eli-b
Nickel	ND	mg/L		0.05		E200.8	07/27/17 23:40 / eli-b
Uranium	ND	mg/L		0.0003		E200.8	07/27/17 23:40 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	07/27/17 23:40 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	07/29/17 02:05 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	07/27/17 13:27 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	ND	mg/L				A1030 E	08/03/17 15:52 / tla
A/C Balance	54.4	%				A1030 E	08/03/17 15:52 / tla
Anions	0	meq/L				A1030 E	08/03/17 15:52 / tla
Cations	0.03	meq/L				A1030 E	08/03/17 15:52 / tla
Cation\Anion Balance <±0.2 meq/L Difference							
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.3	pCi/L	U			E900.1	08/14/17 16:55 / dmf
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	08/14/17 16:55 / dmf
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	08/14/17 16:55 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17070708-008
Client Sample ID: Field Blank

Report Date: 09/20/17
Collection Date: 07/18/17 17:35
DateReceived: 07/21/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210	1	pCi/L	U			E909.0	08/26/17 04:59 / meh
Lead 210 precision (±)	0.8	pCi/L				E909.0	08/26/17 04:59 / meh
Lead 210 MDC	1.4	pCi/L				E909.0	08/26/17 04:59 / meh
Radium 226	0.1	pCi/L	U			E903.0	08/21/17 15:38 / meh
Radium 226 precision (±)	0.2	pCi/L				E903.0	08/21/17 15:38 / meh
Radium 226 MDC	0.3	pCi/L				E903.0	08/21/17 15:38 / meh
Radium 228	-0.8	pCi/L	U			RA-05	08/16/17 17:14 / plj
Radium 228 precision (±)	1.4	pCi/L				RA-05	08/16/17 17:14 / plj
Radium 228 MDC	2.5	pCi/L				RA-05	08/16/17 17:14 / plj
Thorium 230	0.1	pCi/L	U			E908.0	08/17/17 09:33 / cng
Thorium 230 precision (±)	0.1	pCi/L				E908.0	08/17/17 09:33 / cng
Thorium 230 MDC	0.2	pCi/L				E908.0	08/17/17 09:33 / cng
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	1.7	ug/L		0.50		E624	07/26/17 18:08 / eli-b
Bromoform	1.6	ug/L		0.50		E624	07/26/17 18:08 / eli-b
Chlorodibromomethane	1.9	ug/L		0.50		E624	07/26/17 18:08 / eli-b
Chloroform	2.0	ug/L		0.50		E624	07/26/17 18:08 / eli-b
Trihalomethanes, Total	7.3	ug/L		0.50		E624	08/15/17 12:02 / sec
Surr: 1,2-Dichloroethane-d4	99.0	%REC		71-139		E624	07/26/17 18:08 / eli-b
Surr: p-Bromofluorobenzene	126	%REC		80-127		E624	07/26/17 18:08 / eli-b
Surr: Toluene-d8	102	%REC		80-123		E624	07/26/17 18:08 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17100295-011
Client Sample ID: Field Blank

Report Date: 11/10/17
Collection Date: 10/04/17 12:20
DateReceived: 10/06/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	10/11/17 01:53 / mvr
Chloride	ND	mg/L		1		E300.0	10/11/17 18:18 / jcg
Sulfate	ND	mg/L		1		E300.0	10/11/17 18:18 / jcg
Calcium	ND	mg/L		1		E200.7	10/12/17 05:39 / eli-b
Magnesium	ND	mg/L		1		E200.7	10/12/17 05:39 / eli-b
Potassium	ND	mg/L		1		E200.7	10/12/17 05:39 / eli-b
Sodium	ND	mg/L		1		E200.7	10/12/17 05:39 / eli-b
PHYSICAL PROPERTIES							
pH	5.96	s.u.	H	0.01		A4500-H B	10/09/17 14:54 / mvr
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/09/17 14:27 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/09/17 15:31 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	10/08/17 13:39 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.7	11/01/17 05:04 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	10/27/17 09:08 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	10/16/17 21:24 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	10/16/17 21:24 / eli-b
Lead	ND	mg/L		0.001		E200.8	10/16/17 21:24 / eli-b
Manganese	ND	mg/L		0.01		E200.8	10/16/17 21:24 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	10/16/17 21:24 / eli-b
Nickel	ND	mg/L		0.05		E200.8	10/16/17 21:24 / eli-b
Uranium	ND	mg/L		0.0003		E200.8	10/16/17 21:24 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	10/16/17 21:24 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	10/16/17 22:52 / eli-h
METALS - SPECIATED							
Selenium-IV	0.003	mg/L		0.001		A3114 B	10/12/17 18:20 / eli-h
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.1	pCi/L	U			E900.1	11/01/17 17:50 / dmf
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	11/01/17 17:50 / dmf
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	11/01/17 17:50 / dmf
Lead 210	0.6	pCi/L	U			E909.0	11/01/17 08:38 / meh
Lead 210 precision (±)	0.8	pCi/L				E909.0	11/01/17 08:38 / meh
Lead 210 MDC	1.3	pCi/L				E909.0	11/01/17 08:38 / meh
Radium 226	0.07	pCi/L	U			E903.0	10/24/17 14:33 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	10/24/17 14:33 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	10/24/17 14:33 / arh
Radium 228	1.4	pCi/L	U			RA-05	10/19/17 21:05 / tlf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17100295-011
Client Sample ID: Field Blank

Report Date: 11/10/17
Collection Date: 10/04/17 12:20
DateReceived: 10/06/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 228 precision (±)	0.9	pCi/L				RA-05	10/19/17 21:05 / tlf
Radium 228 MDC	2.3	pCi/L				RA-05	10/19/17 21:05 / tlf
Thorium 230	0.03	pCi/L	U			E908.0	11/06/17 10:29 / cnh
Thorium 230 precision (±)	0.08	pCi/L				E908.0	11/06/17 10:29 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	11/06/17 10:29 / cnh
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	10/14/17 21:15 / eli-b
Bromoform	1.1	ug/L		0.50		E624	10/14/17 21:15 / eli-b
Chlorodibromomethane	1.0	ug/L		0.50		E624	10/14/17 21:15 / eli-b
Chloroform	1.5	ug/L		0.50		E624	10/14/17 21:15 / eli-b
Trihalomethanes, Total	3.6	ug/L		0.50		E624	11/06/17 17:15 / sec
Surr: 1,2-Dichloroethane-d4	100	%REC		71-139		E624	10/14/17 21:15 / eli-b
Surr: p-Bromofluorobenzene	102	%REC		80-127		E624	10/14/17 21:15 / eli-b
Surr: Toluene-d8	101	%REC		80-123		E624	10/14/17 21:15 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17100506-006
Client Sample ID: Field Blank

Report Date: 11/14/17
Collection Date: 10/10/17 16:15
DateReceived: 10/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	10/15/17 23:34 / mvr
Chloride	ND	mg/L		1		E300.0	10/18/17 06:02 / jcg
Sulfate	ND	mg/L		1		E300.0	10/18/17 06:02 / jcg
Calcium	ND	mg/L		1		E200.7	10/19/17 22:15 / eli-b
Magnesium	ND	mg/L		1		E200.7	10/19/17 22:15 / eli-b
Potassium	ND	mg/L		1		E200.7	10/19/17 22:15 / eli-b
Sodium	ND	mg/L		1		E200.7	10/19/17 22:15 / eli-b
PHYSICAL PROPERTIES							
pH	6.29	s.u.	H	0.01		A4500-H B	10/15/17 21:00 / mvr
Solids, Total Dissolved TDS @ 180 C	11	mg/L		10		A2540 C	10/15/17 21:24 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/19/17 12:38 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	10/14/17 12:41 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	10/29/17 12:41 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	11/02/17 08:29 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	10/28/17 04:58 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	10/28/17 04:58 / eli-b
Lead	ND	mg/L		0.001		E200.8	10/28/17 04:58 / eli-b
Manganese	ND	mg/L		0.01		E200.8	10/28/17 04:58 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	10/28/17 04:58 / eli-b
Nickel	ND	mg/L		0.05		E200.8	10/28/17 04:58 / eli-b
Uranium	ND	mg/L		0.0003		E200.8	11/09/17 15:32 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	10/28/17 04:58 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	11/01/17 19:49 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	10/24/17 13:10 / eli-h
DATA QUALITY							
A/C Balance	33.9	%				A1030 E	11/10/17 15:55 / tla
Anions	0.01	meq/L				A1030 E	11/10/17 15:55 / tla
Cations	0.02	meq/L				A1030 E	11/10/17 15:55 / tla
Cation\Anion Balance <±0.2 meq/L Difference							
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.4	pCi/L	U			E900.1	11/07/17 17:07 / dmf
Gross Alpha minus Rn & U Precision (±)	0.4	pCi/L				E900.1	11/07/17 17:07 / dmf
Gross Alpha minus Rn & U MDC	0.6	pCi/L				E900.1	11/07/17 17:07 / dmf
Lead 210	1.1	pCi/L	U			E909.0	10/25/17 14:48 / meh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17100506-006
Client Sample ID: Field Blank

Report Date: 11/14/17
Collection Date: 10/10/17 16:15
DateReceived: 10/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210 precision (±)	1	pCi/L				E909.0	10/25/17 14:48 / meh
Lead 210 MDC	1.5	pCi/L				E909.0	10/25/17 14:48 / meh
Radium 226	0.1	pCi/L	U			E903.0	11/07/17 11:32 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	11/07/17 11:32 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	11/07/17 11:32 / arh
Radium 228	-0.1	pCi/L	U			RA-05	11/08/17 18:16 / trs
Radium 228 precision (±)	1.2	pCi/L				RA-05	11/08/17 18:16 / trs
Radium 228 MDC	2.1	pCi/L				RA-05	11/08/17 18:16 / trs
Thorium 230	0.07	pCi/L	U			E908.0	11/07/17 10:50 / cnh
Thorium 230 precision (±)	0.1	pCi/L				E908.0	11/07/17 10:50 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	11/07/17 10:50 / cnh
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	1.0	ug/L		0.50		E624	10/20/17 17:39 / eli-b
Bromoform	1.5	ug/L		0.50		E624	10/20/17 17:39 / eli-b
Chlorodibromomethane	1.4	ug/L		0.50		E624	10/20/17 17:39 / eli-b
Chloroform	2.5	ug/L		0.50		E624	10/20/17 17:39 / eli-b
Trihalomethanes, Total	6.4	ug/L		0.50		E624	11/12/17 11:19 / sec
Surr: 1,2-Dichloroethane-d4	100	%REC		71-139		E624	10/20/17 17:39 / eli-b
Surr: p-Bromofluorobenzene	105	%REC		80-127		E624	10/20/17 17:39 / eli-b
Surr: Toluene-d8	98.0	%REC		80-123		E624	10/20/17 17:39 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17070470-010
Client Sample ID: Rinsate

Report Date: 08/16/17
Collection Date: 07/12/17 11:56
DateReceived: 07/14/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	07/17/17 22:03 / mvr
Chloride	ND	mg/L		1		E300.0	07/24/17 14:03 / jcg
Sulfate	4	mg/L		1		E300.0	07/24/17 14:03 / jcg
Calcium	ND	mg/L		1		E200.7	07/20/17 00:37 / eli-b
Magnesium	ND	mg/L		1		E200.7	07/20/17 00:37 / eli-b
Potassium	ND	mg/L		1		E200.7	07/20/17 00:37 / eli-b
Sodium	2	mg/L		1		E200.7	07/20/17 00:37 / eli-b
PHYSICAL PROPERTIES							
pH	6.59	s.u.	H	0.01		A4500-H B	07/17/17 15:22 / mvr
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	07/17/17 17:10 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	07/21/17 17:02 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	07/23/17 11:38 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	07/26/17 22:45 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	07/27/17 19:38 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	07/21/17 06:24 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	07/21/17 06:24 / eli-b
Lead	ND	mg/L		0.001		E200.8	07/21/17 06:24 / eli-b
Manganese	ND	mg/L		0.01		E200.8	07/21/17 06:24 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	07/26/17 22:45 / eli-b
Nickel	ND	mg/L		0.05		E200.8	07/21/17 06:24 / eli-b
Uranium	ND	mg/L		0.0003		E200.8	07/21/17 06:24 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	07/21/17 06:24 / eli-b
METALS - SPECIATED - TOTAL							
Arsenic-III	ND	mg/L		0.001		E1632AM	07/28/17 23:28 / eli-h
Selenium-IV	ND	mg/L		0.001		A3114 B	07/21/17 13:36 / eli-h
DATA QUALITY							
A/C Balance	-2.97	%				A1030 E	08/11/17 14:06 / tjp
Anions	0.14	meq/L				A1030 E	08/11/17 14:06 / tjp
Cations	0.13	meq/L				A1030 E	08/11/17 14:06 / tjp
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.05	pCi/L	U			E900.1	08/10/17 14:32 / cng
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	08/10/17 14:32 / cng
Gross Alpha minus Rn & U MDC	0.6	pCi/L				E900.1	08/10/17 14:32 / cng
Lead 210	0.4	pCi/L	U			E909.0	08/12/17 23:47 / dmf
Lead 210 precision (±)	0.7	pCi/L				E909.0	08/12/17 23:47 / dmf
Lead 210 MDC	1.2	pCi/L				E909.0	08/12/17 23:47 / dmf
Radium 226	0.1	pCi/L	U			E903.0	08/14/17 16:17 / trs

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17070470-010
Client Sample ID: Rinsate

Report Date: 08/16/17
Collection Date: 07/12/17 11:56
DateReceived: 07/14/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 226 precision (±)	0.1	pCi/L				E903.0	08/14/17 16:17 / trs
Radium 226 MDC	0.2	pCi/L				E903.0	08/14/17 16:17 / trs
Radium 228	1.7	pCi/L	U			RA-05	08/09/17 14:43 / trs
Radium 228 precision (±)	1.3	pCi/L				RA-05	08/09/17 14:43 / trs
Radium 228 MDC	2.0	pCi/L				RA-05	08/09/17 14:43 / trs
Thorium 230	0.1	pCi/L	U			E908.0	08/10/17 09:35 / cng
Thorium 230 precision (±)	0.1	pCi/L				E908.0	08/10/17 09:35 / cng
Thorium 230 MDC	0.2	pCi/L				E908.0	08/10/17 09:35 / cng
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	1.9	ug/L		0.50		E624	07/21/17 19:48 / eli-b
Bromoform	1.6	ug/L		0.50		E624	07/21/17 19:48 / eli-b
Chlorodibromomethane	1.8	ug/L		0.50		E624	07/21/17 19:48 / eli-b
Chloroform	2.1	ug/L		0.50		E624	07/21/17 19:48 / eli-b
Trihalomethanes, Total	7.5	ug/L		0.50		E624	08/15/17 12:02 / sec
Surr: 1,2-Dichloroethane-d4	86.0	%REC		71-139		E624	07/21/17 19:48 / eli-b
Surr: p-Bromofluorobenzene	127	%REC		80-127		E624	07/21/17 19:48 / eli-b
Surr: Toluene-d8	102	%REC		80-123		E624	07/21/17 19:48 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17070708-007
Client Sample ID: Rinsate

Report Date: 09/20/17
Collection Date: 07/18/17 17:30
DateReceived: 07/21/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	07/27/17 17:01 / jcg
Chloride	ND	mg/L		1		E300.0	07/28/17 15:03 / jcg
Sulfate	10	mg/L		1		E300.0	07/28/17 15:03 / jcg
Calcium	1	mg/L		1		E200.7	07/28/17 16:43 / eli-b
Magnesium	ND	mg/L		1		E200.7	07/28/17 16:43 / eli-b
Potassium	ND	mg/L		1		E200.7	07/28/17 16:43 / eli-b
Sodium	ND	mg/L		1		E200.7	07/28/17 16:43 / eli-b
PHYSICAL PROPERTIES							
pH	5.83	s.u.	H	0.01		A4500-H B	07/24/17 12:55 / mvr
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	07/24/17 12:03 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	07/28/17 17:31 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	07/31/17 13:36 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	07/27/17 23:36 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	08/01/17 04:06 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	07/27/17 23:36 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	07/27/17 23:36 / eli-b
Lead	ND	mg/L		0.001		E200.8	07/27/17 23:36 / eli-b
Manganese	ND	mg/L		0.01		E200.8	07/27/17 23:36 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	07/27/17 23:36 / eli-b
Nickel	ND	mg/L		0.05		E200.8	07/27/17 23:36 / eli-b
Uranium	0.0005	mg/L		0.0003		E200.8	07/27/17 23:36 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	07/27/17 23:36 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	07/29/17 01:53 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	07/27/17 13:25 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	14	mg/L				A1030 E	08/03/17 15:52 / tla
A/C Balance	-20.7	%				A1030 E	08/03/17 15:52 / tla
Anions	0.21	meq/L				A1030 E	08/03/17 15:52 / tla
Cations	0.14	meq/L				A1030 E	08/03/17 15:52 / tla
Cation\Anion Balance <±0.2 meq/L Difference							
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.2	pCi/L	U			E900.1	08/14/17 16:55 / dmf
Gross Alpha minus Rn & U Precision (±)	0.4	pCi/L				E900.1	08/14/17 16:55 / dmf
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	08/14/17 16:55 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17070708-007
Client Sample ID: Rinsate

Report Date: 09/20/17
Collection Date: 07/18/17 17:30
DateReceived: 07/21/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210	0.7	pCi/L	U			E909.0	08/26/17 02:03 / meh
Lead 210 precision (±)	0.8	pCi/L				E909.0	08/26/17 02:03 / meh
Lead 210 MDC	1.4	pCi/L				E909.0	08/26/17 02:03 / meh
Radium 226	0.1	pCi/L	U			E903.0	08/21/17 15:38 / meh
Radium 226 precision (±)	0.2	pCi/L				E903.0	08/21/17 15:38 / meh
Radium 226 MDC	0.3	pCi/L				E903.0	08/21/17 15:38 / meh
Radium 228	0.03	pCi/L	U			RA-05	08/16/17 17:14 / plj
Radium 228 precision (±)	1.3	pCi/L				RA-05	08/16/17 17:14 / plj
Radium 228 MDC	2.2	pCi/L				RA-05	08/16/17 17:14 / plj
Thorium 230	0.2	pCi/L	U			E908.0	08/17/17 09:33 / cng
Thorium 230 precision (±)	0.2	pCi/L				E908.0	08/17/17 09:33 / cng
Thorium 230 MDC	0.2	pCi/L				E908.0	08/17/17 09:33 / cng
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	1.8	ug/L		0.50		E624	07/26/17 17:37 / eli-b
Bromoform	1.6	ug/L		0.50		E624	07/26/17 17:37 / eli-b
Chlorodibromomethane	1.8	ug/L		0.50		E624	07/26/17 17:37 / eli-b
Chloroform	2.3	ug/L		0.50		E624	07/26/17 17:37 / eli-b
Trihalomethanes, Total	7.6	ug/L		0.50		E624	08/15/17 12:02 / sec
Surr: 1,2-Dichloroethane-d4	102	%REC		71-139		E624	07/26/17 17:37 / eli-b
Surr: p-Bromofluorobenzene	124	%REC		80-127		E624	07/26/17 17:37 / eli-b
Surr: Toluene-d8	100	%REC		80-123		E624	07/26/17 17:37 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17100295-010
Client Sample ID: Rinsate

Report Date: 11/10/17
Collection Date: 10/04/17 12:14
DateReceived: 10/06/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	10/11/17 01:48 / mvr
Chloride	ND	mg/L		1		E300.0	10/11/17 18:02 / jcg
Sulfate	2	mg/L		1		E300.0	10/11/17 18:02 / jcg
Calcium	ND	mg/L		1		E200.7	10/12/17 05:36 / eli-b
Magnesium	ND	mg/L		1		E200.7	10/12/17 05:36 / eli-b
Potassium	ND	mg/L		1		E200.7	10/12/17 05:36 / eli-b
Sodium	1	mg/L		1		E200.7	10/12/17 05:36 / eli-b
PHYSICAL PROPERTIES							
pH	6.53	s.u.	H	0.01		A4500-H B	10/09/17 14:51 / mvr
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	10/09/17 14:27 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/09/17 15:30 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	10/08/17 13:35 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.7	11/01/17 05:00 / eli-b
Beryllium	ND	mg/L		0.001		E200.7	11/01/17 05:00 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	10/16/17 21:21 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	10/16/17 21:21 / eli-b
Lead	ND	mg/L		0.001		E200.8	11/02/17 13:48 / eli-b
Manganese	ND	mg/L		0.01		E200.8	10/16/17 21:21 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	10/16/17 21:21 / eli-b
Nickel	ND	mg/L		0.05		E200.8	10/16/17 21:21 / eli-b
Uranium	ND	mg/L		0.0003		E200.8	11/02/17 13:48 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	10/16/17 21:21 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	10/16/17 22:40 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	10/12/17 18:19 / eli-h
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.2	pCi/L	U			E900.1	11/01/17 17:50 / dmf
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	11/01/17 17:50 / dmf
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	11/01/17 17:50 / dmf
Lead 210	0.7	pCi/L	U			E909.0	11/01/17 05:52 / meh
Lead 210 precision (±)	0.8	pCi/L				E909.0	11/01/17 05:52 / meh
Lead 210 MDC	1.3	pCi/L				E909.0	11/01/17 05:52 / meh
Radium 226	0.04	pCi/L	U			E903.0	10/24/17 13:01 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	10/24/17 13:01 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	10/24/17 13:01 / arh
Radium 228	0.4	pCi/L	U			RA-05	10/19/17 21:05 / tlf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17100295-010
Client Sample ID: Rinsate

Report Date: 11/10/17
Collection Date: 10/04/17 12:14
DateReceived: 10/06/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Radium 228 precision (±)	1.5	pCi/L				RA-05	10/19/17 21:05 / tlf
Radium 228 MDC	2.5	pCi/L				RA-05	10/19/17 21:05 / tlf
Thorium 230	0.02	pCi/L	U			E908.0	11/06/17 10:29 / cnh
Thorium 230 precision (±)	0.06	pCi/L				E908.0	11/06/17 10:29 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	11/06/17 10:29 / cnh
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	10/15/17 01:39 / eli-b
Bromoform	1.1	ug/L		0.50		E624	10/15/17 01:39 / eli-b
Chlorodibromomethane	0.98	ug/L		0.50		E624	10/15/17 01:39 / eli-b
Chloroform	1.5	ug/L		0.50		E624	10/15/17 01:39 / eli-b
Trihalomethanes, Total	3.6	ug/L		0.50		E624	11/06/17 17:15 / sec
Surr: 1,2-Dichloroethane-d4	96.0	%REC		71-139		E624	10/15/17 01:39 / eli-b
Surr: p-Bromofluorobenzene	102	%REC		80-127		E624	10/15/17 01:39 / eli-b
Surr: Toluene-d8	100	%REC		80-123		E624	10/15/17 01:39 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17100506-005
Client Sample ID: Rinsate

Report Date: 11/14/17
Collection Date: 10/10/17 16:00
DateReceived: 10/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	10/15/17 23:30 / mvr
Chloride	ND	mg/L		1		E300.0	10/18/17 05:10 / jcg
Sulfate	4	mg/L		1		E300.0	10/18/17 05:10 / jcg
Calcium	ND	mg/L		1		E200.7	10/19/17 22:03 / eli-b
Magnesium	ND	mg/L		1		E200.7	10/19/17 22:03 / eli-b
Potassium	ND	mg/L		1		E200.7	10/19/17 22:03 / eli-b
Sodium	ND	mg/L		1		E200.7	10/19/17 22:03 / eli-b
PHYSICAL PROPERTIES							
pH	6.55	s.u.	H	0.01		A4500-H B	10/15/17 20:57 / mvr
Solids, Total Dissolved TDS @ 180 C	19	mg/L		10		A2540 C	10/15/17 21:24 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	10/19/17 12:37 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	10/14/17 12:37 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	10/29/17 12:38 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	11/02/17 08:25 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	10/28/17 04:45 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	10/28/17 04:45 / eli-b
Lead	0.003	mg/L		0.001		E200.8	10/28/17 04:45 / eli-b
Manganese	ND	mg/L		0.01		E200.8	10/28/17 04:45 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	10/28/17 04:45 / eli-b
Nickel	ND	mg/L		0.05		E200.8	10/28/17 04:45 / eli-b
Uranium	0.0004	mg/L		0.0003		E200.8	11/09/17 15:30 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	10/28/17 04:45 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	11/01/17 19:37 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	10/24/17 13:09 / eli-h
DATA QUALITY							
A/C Balance	-18.5	%				A1030 E	11/10/17 15:54 / tla
Anions	0.14	meq/L				A1030 E	11/10/17 15:54 / tla
Cations	0.10	meq/L				A1030 E	11/10/17 15:54 / tla
Cation\Anion Balance <±0.2 meq/L Difference							
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.3	pCi/L	U			E900.1	11/07/17 17:07 / dmf
Gross Alpha minus Rn & U Precision (±)	0.4	pCi/L				E900.1	11/07/17 17:07 / dmf
Gross Alpha minus Rn & U MDC	0.6	pCi/L				E900.1	11/07/17 17:07 / dmf
Lead 210	1.2	pCi/L	U			E909.0	10/25/17 12:14 / meh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17100506-005
Client Sample ID: Rinsate

Report Date: 11/14/17
Collection Date: 10/10/17 16:00
DateReceived: 10/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210 precision (±)	1.0	pCi/L				E909.0	10/25/17 12:14 / meh
Lead 210 MDC	1.5	pCi/L				E909.0	10/25/17 12:14 / meh
Radium 226	0.1	pCi/L	U			E903.0	11/07/17 11:32 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	11/07/17 11:32 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	11/07/17 11:32 / arh
Radium 228	1.6	pCi/L				RA-05	11/08/17 16:10 / trs
Radium 228 precision (±)	1.1	pCi/L				RA-05	11/08/17 16:10 / trs
Radium 228 MDC	1.6	pCi/L				RA-05	11/08/17 16:10 / trs
Thorium 230	0.02	pCi/L	U			E908.0	11/07/17 10:50 / cnh
Thorium 230 precision (±)	0.08	pCi/L				E908.0	11/07/17 10:50 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	11/07/17 10:50 / cnh
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	1.1	ug/L		0.50		E624	10/20/17 18:08 / eli-b
Bromoform	1.5	ug/L		0.50		E624	10/20/17 18:08 / eli-b
Chlorodibromomethane	1.5	ug/L		0.50		E624	10/20/17 18:08 / eli-b
Chloroform	2.5	ug/L		0.50		E624	10/20/17 18:08 / eli-b
Trihalomethanes, Total	6.5	ug/L		0.50		E624	11/12/17 11:19 / sec
Surr: 1,2-Dichloroethane-d4	98.0	%REC		71-139		E624	10/20/17 18:08 / eli-b
Surr: p-Bromofluorobenzene	103	%REC		80-127		E624	10/20/17 18:08 / eli-b
Surr: Toluene-d8	97.0	%REC		80-123		E624	10/20/17 18:08 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

United Nuclear Corporation					
SW Alluvium					
Well ID:		EPA-28	EPA-28	EPA-28	EPA-28
Collection Date:		10/2/2017	7/10/2017	4/3/2017	1/9/2017
Receive Date:		10/3/2017	7/13/2017	4/6/2017	1/12/2017
Report Date:		11/9/2017	9/5/2017	5/5/2017	2/23/2017
Analyte	**Units**	**C17100193-009**	**C17070424-009**	**C17040178-009**	**C17010292-009**
Bicarbonate as HCO3	mg/L	432	412	419	410
Chloride	mg/L	98	98	100	102
Sulfate	mg/L	2900	2930	3170	3180
Calcium	mg/L	491	491	479	469
Magnesium	mg/L	469	463	429	473
Potassium	mg/L	10	10	11	11
Sodium	mg/L	252	252	240	256
pH	s.u.	6.93	6.89	6.94	6.95
Solids, Total Dissolved TDS @ 180 C	mg/L	4830	4920	4860	4900
Nitrogen, Ammonia as N	mg/L	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
Nitrogen, Nitrate+Nitrite as N	mg/L	7.05	7.10	7.8	8.1
Aluminum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Beryllium	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Cadmium	mg/L	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Cobalt	mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Lead	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Manganese	mg/L	0.46	0.51	0.52	0.51
Molybdenum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Nickel	mg/L	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
Uranium	mg/L	0.0211	0.0183	0.0179	0.0179
Vanadium	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Arsenic-III	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Selenium-IV	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
A/C Balance	%	2.51	1.95	-4.28	-1.71
Anions	meq/L	70.7	71.0	76.2	76.3
Cations	meq/L	74.4	73.9	69.9	73.8
Solids, Total Dissolved - Calculated	mg/L	4500	4500	4700	4700
TDS Ratio	unitless	1.08	1.10	1.04	1.03
Gross Alpha minus Rn & U	pCi/L	1	0.6	1.2	1.8
Gross Alpha minus Rn & U Precision (±)	pCi/L	0.5	0.4	0.9	1.0
Gross Alpha minus Rn & U MDC	pCi/L	0.7	0.5	1.6	1.3
Lead 210	pCi/L	0.4	-0.02	-0.6	0.4
Lead 210 precision (±)	pCi/L	0.8	0.8	0.8	0.8
Lead 210 MDC	pCi/L	1.4	1.3	1.3	1.3
Radium 226	pCi/L	0.3	0.2	0.30	0.43
Radium 226 precision (±)	pCi/L	0.1	0.1	0.13	0.17
Radium 226 MDC	pCi/L	0.2	0.2	0.12	0.20
Radium 228	pCi/L	0.3	1.4	1.3	0.31
Radium 228 precision (±)	pCi/L	0.9	1.2	0.87	1.3
Radium 228 MDC	pCi/L	1.5	1.8	1.3	2.1
Thorium 230	pCi/L	0.02	0.1	0.06	0.3
Thorium 230 precision (±)	pCi/L	0.06	0.1	0.1	0.2
Thorium 230 MDC	pCi/L	0.1	0.1	0.2	0.2
Trihalomethanes, Total	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)

United Nuclear Corporation					
SW Alluvium					
Well ID:		EPA-28 Duplicate	EPA-28 Duplicate	EPA-28 Duplicate	EPA-28 Duplicate
Collection Date:		10/2/2017	7/10/2017	4/3/2017	1/9/2017
Receive Date:		10/3/2017	7/13/2017	4/6/2017	1/12/2017
Report Date:		11/9/2017	9/5/2017	5/5/2017	2/23/2017
Analyte	**Units**	**C17100193-010**	**C17070424-010**	**C17040178-010**	**C17010292-010**
Bicarbonate as HCO3	mg/L	440	417	431	416
Chloride	mg/L	98	97	101	102
Sulfate	mg/L	2890	2930	3070	3190
Calcium	mg/L	482	515	474	464
Magnesium	mg/L	463	473	422	467
Potassium	mg/L	10	11	10	12
Sodium	mg/L	249	260	232	256
pH	s.u.	6.88	6.88	6.88	6.93
Solids, Total Dissolved TDS @ 180 C	mg/L	4950	4910	4890	4890
Nitrogen, Ammonia as N	mg/L	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
Nitrogen, Nitrate+Nitrite as N	mg/L	7.20	7.35	7.6	7.9
Aluminum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Beryllium	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Cadmium	mg/L	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Cobalt	mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Lead	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Manganese	mg/L	0.49	0.51	0.46	0.55
Molybdenum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Nickel	mg/L	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
Uranium	mg/L	0.0218	0.0204	0.0189	0.0189
Vanadium	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Arsenic-III	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Selenium-IV	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
A/C Balance	%	1.87	3.55	-4.02	-2.42
Anions	meq/L	70.6	71.0	74.5	76.7
Cations	meq/L	73.3	76.2	68.7	73.0
Solids, Total Dissolved - Calculated	mg/L	4400	4500	4600	4700
TDS Ratio	unitless	1.11	1.08	1.07	1.03
Gross Alpha minus Rn & U	pCi/L	0.7	0.3	1.0	1.1
Gross Alpha minus Rn & U Precision (±)	pCi/L	0.5	0.3	0.9	0.8
Gross Alpha minus Rn & U MDC	pCi/L	0.7	0.5	1.6	1.3
Lead 210	pCi/L	-0.5	0.8	-0.4	0.3
Lead 210 precision (±)	pCi/L	0.8	0.8	0.8	0.8
Lead 210 MDC	pCi/L	1.4	1.4	1.3	1.3
Radium 226	pCi/L	0.5	0.4	0.40	0.57
Radium 226 precision (±)	pCi/L	0.2	0.2	0.14	0.18
Radium 226 MDC	pCi/L	0.2	0.2	0.13	0.19
Radium 228	pCi/L	1.5	-0.002	3.6	0.86
Radium 228 precision (±)	pCi/L	0.8	1.1	1.3	1.3
Radium 228 MDC	pCi/L	1.3	1.8	1.3	2.1
Thorium 230	pCi/L	0.04	-0.01	0.003	0.1
Thorium 230 precision (±)	pCi/L	0.07	0.07	0.1	0.1
Thorium 230 MDC	pCi/L	0.1	0.2	0.3	0.2
Trihalomethanes, Total	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)

NOTE: The data presented on this form is intended for summary only. Laboratory approved data is contained within the database reports.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium
Lab ID: C17070424-010
Client Sample ID: EPA-28 Duplicate

Report Date: 09/05/17
Collection Date: 07/10/17 16:10
DateReceived: 07/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	417	mg/L		5		A2320 B	07/14/17 13:36 / mvr
Chloride	97	mg/L	D	2		E300.0	07/20/17 21:43 / jcg
Sulfate	2930	mg/L	D	8		E300.0	07/20/17 21:43 / jcg
Calcium	515	mg/L		1		E200.7	07/24/17 18:12 / eli-b
Magnesium	473	mg/L		1		E200.7	07/24/17 18:12 / eli-b
Potassium	11	mg/L		1		E200.7	07/24/17 18:12 / eli-b
Sodium	260	mg/L	D	3		E200.7	07/24/17 18:12 / eli-b
PHYSICAL PROPERTIES							
pH	6.88	s.u.	H	0.01		A4500-H B	07/14/17 10:04 / mvr
Solids, Total Dissolved TDS @ 180 C	4910	mg/L	D	40		A2540 C	07/14/17 15:21 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	7.35	mg/L	D	0.05		E353.2	07/19/17 17:19 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	07/23/17 11:11 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	07/25/17 03:52 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	07/26/17 01:28 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	07/25/17 03:52 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	07/25/17 03:52 / eli-b
Lead	ND	mg/L		0.001		E200.8	07/25/17 03:52 / eli-b
Manganese	0.51	mg/L		0.01		E200.8	07/25/17 03:52 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	07/25/17 03:52 / eli-b
Nickel	ND	mg/L		0.05		E200.8	07/25/17 03:52 / eli-b
Uranium	0.0204	mg/L		0.0003		E200.8	07/25/17 03:52 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	07/25/17 03:52 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	07/28/17 20:28 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	07/21/17 13:02 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	4500	mg/L				A1030 E	07/26/17 16:06 / tjp
A/C Balance	3.55	%				A1030 E	07/26/17 16:06 / tjp
Anions	71.0	meq/L				A1030 E	07/26/17 16:06 / tjp
Cations	76.2	meq/L				A1030 E	07/26/17 16:06 / tjp
TDS Ratio	1.08	unitless				A1030 E	07/26/17 16:06 / tjp
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.3	pCi/L	U			E900.1	08/09/17 14:58 / cng
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	08/09/17 14:58 / cng
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	08/09/17 14:58 / cng

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium
Lab ID: C17070424-010
Client Sample ID: EPA-28 Duplicate

Report Date: 09/05/17
Collection Date: 07/10/17 16:10
DateReceived: 07/13/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210	0.8	pCi/L	U			E909.0	08/20/17 00:59 / plj
Lead 210 precision (±)	0.8	pCi/L				E909.0	08/20/17 00:59 / plj
Lead 210 MDC	1.4	pCi/L				E909.0	08/20/17 00:59 / plj
Radium 226	0.4	pCi/L				E903.0	08/21/17 11:37 / dmf
Radium 226 precision (±)	0.2	pCi/L				E903.0	08/21/17 11:37 / dmf
Radium 226 MDC	0.2	pCi/L				E903.0	08/21/17 11:37 / dmf
Radium 228	-0.002	pCi/L	U			RA-05	08/15/17 12:50 / plj
Radium 228 precision (±)	1.1	pCi/L				RA-05	08/15/17 12:50 / plj
Radium 228 MDC	1.8	pCi/L				RA-05	08/15/17 12:50 / plj
Thorium 230	-0.01	pCi/L	U			E908.0	08/07/17 11:37 / cng
Thorium 230 precision (±)	0.07	pCi/L				E908.0	08/07/17 11:37 / cng
Thorium 230 MDC	0.2	pCi/L				E908.0	08/07/17 11:37 / cng
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	07/20/17 18:13 / eli-b
Bromoform	ND	ug/L		0.50		E624	07/20/17 18:13 / eli-b
Chlorodibromomethane	ND	ug/L		0.50		E624	07/20/17 18:13 / eli-b
Chloroform	ND	ug/L		0.50		E624	07/20/17 18:13 / eli-b
Trihalomethanes, Total	ND	ug/L		0.50		E624	08/03/17 11:31 / sec
Surr: 1,2-Dichloroethane-d4	99.0	%REC		71-139		E624	07/20/17 18:13 / eli-b
Surr: p-Bromofluorobenzene	129	%REC	S	80-127		E624	07/20/17 18:13 / eli-b
Surr: Toluene-d8	101	%REC		80-123		E624	07/20/17 18:13 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium
Lab ID: C17100193-010
Client Sample ID: EPA-28 Duplicate

Report Date: 11/09/17
Collection Date: 10/02/17 16:42
DateReceived: 10/05/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	440	mg/L		5		A2320 B	10/06/17 23:56 / mvr
Chloride	98	mg/L	D	2		E300.0	10/10/17 02:03 / jcg
Sulfate	2890	mg/L	D	8		E300.0	10/10/17 02:03 / jcg
Calcium	482	mg/L		1		E200.7	10/11/17 23:52 / eli-b
Magnesium	463	mg/L		1		E200.7	10/11/17 23:52 / eli-b
Potassium	10	mg/L		1		E200.7	10/11/17 23:52 / eli-b
Sodium	249	mg/L		1		E200.7	10/11/17 23:52 / eli-b
PHYSICAL PROPERTIES							
pH	6.88	s.u.	H	0.01		A4500-H B	10/06/17 12:04 / mvr
Solids, Total Dissolved TDS @ 180 C	4950	mg/L	D	40		A2540 C	10/09/17 13:19 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	7.20	mg/L	D	0.05		E353.2	10/09/17 14:02 / ljl
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH3 G	10/08/17 12:38 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	10/16/17 17:58 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	10/16/17 17:58 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	10/16/17 17:58 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	10/16/17 17:58 / eli-b
Lead	ND	mg/L		0.001		E200.8	10/16/17 17:58 / eli-b
Manganese	0.49	mg/L		0.01		E200.8	10/16/17 17:58 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	10/16/17 17:58 / eli-b
Nickel	ND	mg/L		0.05		E200.8	10/16/17 17:58 / eli-b
Uranium	0.0218	mg/L		0.0003		E200.8	10/16/17 17:58 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	10/16/17 17:58 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	10/16/17 19:04 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	10/10/17 13:33 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	4400	mg/L				A1030 E	10/19/17 10:30 / tla
A/C Balance	1.87	%				A1030 E	10/19/17 10:30 / tla
Anions	70.6	meq/L				A1030 E	10/19/17 10:30 / tla
Cations	73.3	meq/L				A1030 E	10/19/17 10:30 / tla
TDS Ratio	1.11	unitless				A1030 E	10/19/17 10:30 / tla
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	0.7	pCi/L				E900.1	11/01/17 17:46 / dmf
Gross Alpha minus Rn & U Precision (±)	0.5	pCi/L				E900.1	11/01/17 17:46 / dmf
Gross Alpha minus Rn & U MDC	0.7	pCi/L				E900.1	11/01/17 17:46 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium
Lab ID: C17100193-010
Client Sample ID: EPA-28 Duplicate

Report Date: 11/09/17
Collection Date: 10/02/17 16:42
DateReceived: 10/05/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210	-0.5	pCi/L	U			E909.0	10/08/17 05:09 / meh
Lead 210 precision (±)	0.8	pCi/L				E909.0	10/08/17 05:09 / meh
Lead 210 MDC	1.4	pCi/L				E909.0	10/08/17 05:09 / meh
Radium 226	0.5	pCi/L				E903.0	10/24/17 11:56 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	10/24/17 11:56 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	10/24/17 11:56 / arh
Radium 228	1.5	pCi/L				RA-05	10/18/17 20:54 / tlf
Radium 228 precision (±)	0.8	pCi/L				RA-05	10/18/17 20:54 / tlf
Radium 228 MDC	1.3	pCi/L				RA-05	10/18/17 20:54 / tlf
Thorium 230	0.04	pCi/L	U			E908.0	10/27/17 10:48 / cnh
Thorium 230 precision (±)	0.07	pCi/L				E908.0	10/27/17 10:48 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	10/27/17 10:48 / cnh
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	10/14/17 13:23 / eli-b
Bromoform	ND	ug/L		0.50		E624	10/14/17 13:23 / eli-b
Chlorodibromomethane	ND	ug/L		0.50		E624	10/14/17 13:23 / eli-b
Chloroform	ND	ug/L		0.50		E624	10/14/17 13:23 / eli-b
Trihalomethanes, Total	ND	ug/L		0.50		E624	11/02/17 19:39 / sec
Surr: 1,2-Dichloroethane-d4	101	%REC		71-139		E624	10/14/17 13:23 / eli-b
Surr: p-Bromofluorobenzene	102	%REC		80-127		E624	10/14/17 13:23 / eli-b
Surr: Toluene-d8	98.0	%REC		80-123		E624	10/14/17 13:23 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

United Nuclear Corporation					
Zone1					
Well ID:		EPA-2	EPA-2	EPA-2	EPA-2
Collection Date:		10/3/2017	7/11/2017	4/4/2017	1/10/2017
Receive Date:		10/6/2017	7/14/2017	4/7/2017	1/13/2017
Report Date:		11/10/2017	8/16/2017	5/10/2017	2/17/2017
Analyte	**Units**	**C17100295-007**	**C17070470-007**	**C17040232-007**	**C17010332-007**
Bicarbonate as HCO3	mg/L	290	287	310	293
Chloride	mg/L	24	24	26	25
Sulfate	mg/L	1890	1850	2000	2000
Calcium	mg/L	406	380	396	432
Magnesium	mg/L	194	177	187	190
Potassium	mg/L	7	7	7	7
Sodium	mg/L	207	191	206	206
pH	s.u.	6.93	7.00	6.91	6.96
Solids, Total Dissolved TDS @ 180 C	mg/L	3200	3060	2990	3110
Nitrogen, Ammonia as N	mg/L	0.27	0.08	0.25	0.23
Nitrogen, Nitrate+Nitrite as N	mg/L	0.10	0.07	0.1	0.1
Aluminum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Beryllium	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Cadmium	mg/L	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Cobalt	mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Lead	mg/L	ND(0.001)	0.004	0.002	ND(0.001)
Manganese	mg/L	1.83	1.76	1.54	1.74
Molybdenum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Nickel	mg/L	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
Uranium	mg/L	0.0013	0.0018	0.0016	0.0017
Vanadium	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Arsenic-III	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Selenium-IV	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
A/C Balance	%	0.56	-2.19	-3.43	-0.94
Anions	meq/L	44.9	43.9	47.5	47.2
Cations	meq/L	45.4	42.0	44.3	46.3
Solids, Total Dissolved - Calculated	mg/L	2900	2800	3000	3000
TDS Ratio	unitless	1.10	1.10	1.00	1.03
Gross Alpha minus Rn & U	pCi/L	1.8	1.4	3.2	2.5
Gross Alpha minus Rn & U Precision (±)	pCi/L	0.7	0.6	1.4	1.3
Gross Alpha minus Rn & U MDC	pCi/L	0.5	0.5	1.3	1.5
Lead 210	pCi/L	1.1	1.6	1.6	0.4
Lead 210 precision (±)	pCi/L	0.9	0.9	1	0.6
Lead 210 MDC	pCi/L	1.3	1.3	1.4	1.0
Radium 226	pCi/L	1.5	1.1	1.4	1.0
Radium 226 precision (±)	pCi/L	0.4	0.3	0.36	0.23
Radium 226 MDC	pCi/L	0.2	0.2	0.19	0.22
Radium 228	pCi/L	5.6	3.1	5.6	3.1
Radium 228 precision (±)	pCi/L	1.5	1.3	1.8	1.1
Radium 228 MDC	pCi/L	1.4	1.8	1.8	1.6
Thorium 230	pCi/L	0.1	-0.008	0.04	0.3
Thorium 230 precision (±)	pCi/L	0.1	0.08	0.09	0.1
Thorium 230 MDC	pCi/L	0.2	0.2	0.2	0.2
Trihalomethanes, Total	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)

NOTE: The data presented on this form is intended for summary only. Laboratory approved data is contained within the database reports.

United Nuclear Corporation					
Zone1					
Well ID:		EPA-2 Duplicate	EPA-2 Duplicate	EPA-2 Duplicate	EPA-2 Duplicate
Collection Date:		10/3/2017	7/11/2017	4/4/2017	1/10/2017
Receive Date:		10/6/2017	7/14/2017	4/7/2017	1/13/2017
Report Date:		11/10/2017	8/16/2017	5/10/2017	2/17/2017
Analyte	**Units**	**C17100295-008**	**C17070470-008**	**C17040232-008**	**C17010332-008**
Bicarbonate as HCO3	mg/L	303	296	309	302
Chloride	mg/L	24	23	24	25
Sulfate	mg/L	1880	1860	1910	2020
Calcium	mg/L	411	374	390	435
Magnesium	mg/L	195	177	185	193
Potassium	mg/L	7	6	7	8
Sodium	mg/L	208	185	214	207
pH	s.u.	6.72	6.76	6.78	6.78
Solids, Total Dissolved TDS @ 180 C	mg/L	3170	3110	3030	3160
Nitrogen, Ammonia as N	mg/L	0.43	0.41	0.38	0.42
Nitrogen, Nitrate+Nitrite as N	mg/L	0.02	ND(0.01)	0.2	0.1
Aluminum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Beryllium	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Cadmium	mg/L	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Cobalt	mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Lead	mg/L	ND(0.001)	0.003	0.005	ND(0.001)
Manganese	mg/L	1.85	1.89	1.54	1.89
Molybdenum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Nickel	mg/L	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
Uranium	mg/L	0.0012	0.0011	0.0017	0.0015
Vanadium	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Arsenic-III	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Selenium-IV	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
A/C Balance	%	1.25	-3.28	-1.55	-1.00
Anions	meq/L	44.7	44.2	45.6	47.7
Cations	meq/L	45.8	41.4	44.2	46.8
Solids, Total Dissolved - Calculated	mg/L	2900	2800	2900	3100
TDS Ratio	unitless	1.09	1.12	1.04	1.03
Gross Alpha minus Rn & U	pCi/L	2.2	1.2	4.2	2.3
Gross Alpha minus Rn & U Precision (±)	pCi/L	0.7	0.6	1.5	1.5
Gross Alpha minus Rn & U MDC	pCi/L	0.5	0.5	1.3	1.5
Lead 210	pCi/L	1.3	0.7	0.7	0.5
Lead 210 precision (±)	pCi/L	0.9	0.7	0.8	0.7
Lead 210 MDC	pCi/L	1.3	1.2	1.3	1.1
Radium 226	pCi/L	1.6	1.5	1.6	1.1
Radium 226 precision (±)	pCi/L	0.4	0.4	0.41	0.33
Radium 226 MDC	pCi/L	0.2	0.2	0.18	0.23
Radium 228	pCi/L	5.1	2.7	4.7	3.0
Radium 228 precision (±)	pCi/L	1.3	1.1	1.6	1.2
Radium 228 MDC	pCi/L	1.5	2.0	1.7	1.7
Thorium 230	pCi/L	0.008	0.009	0.003	0.1
Thorium 230 precision (±)	pCi/L	0.05	0.05	0.1	0.1
Thorium 230 MDC	pCi/L	0.1	0.1	0.3	0.2
Trihalomethanes, Total	ug/L	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)

NOTE: The data presented on this form is intended for summary only. Laboratory approved data is contained within the database reports.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17070470-008
Client Sample ID: EPA-2 Duplicate

Report Date: 08/16/17
Collection Date: 07/12/17 10:30
DateReceived: 07/14/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	296	mg/L		5		A2320 B	07/17/17 21:51 / mvr
Chloride	23	mg/L		1		E300.0	07/21/17 06:26 / jcg
Sulfate	1860	mg/L	D	4		E300.0	07/21/17 06:26 / jcg
Calcium	374	mg/L		1		E200.7	07/20/17 00:30 / eli-b
Magnesium	177	mg/L		1		E200.7	07/20/17 00:30 / eli-b
Potassium	6	mg/L		1		E200.7	07/20/17 00:30 / eli-b
Sodium	185	mg/L		1		E200.7	07/20/17 00:30 / eli-b
PHYSICAL PROPERTIES							
pH	6.76	s.u.	H	0.01		A4500-H B	07/17/17 15:16 / mvr
Solids, Total Dissolved TDS @ 180 C	3110	mg/L	D	40		A2540 C	07/18/17 13:37 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	07/21/17 16:59 / ljl
Nitrogen, Ammonia as N	0.41	mg/L		0.05		A4500-NH3 G	07/23/17 11:35 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	07/26/17 22:39 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	07/27/17 19:33 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	07/21/17 06:19 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	07/21/17 06:19 / eli-b
Lead	0.003	mg/L		0.001		E200.8	07/21/17 06:19 / eli-b
Manganese	1.89	mg/L		0.01		E200.8	07/21/17 06:19 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	07/26/17 22:39 / eli-b
Nickel	ND	mg/L		0.05		E200.8	07/21/17 06:19 / eli-b
Uranium	0.0011	mg/L		0.0003		E200.8	07/21/17 06:19 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	07/21/17 06:19 / eli-b
METALS - SPECIATED - TOTAL							
Arsenic-III	ND	mg/L		0.001		E1632AM	07/28/17 23:04 / eli-h
Selenium-IV	ND	mg/L		0.001		A3114 B	07/21/17 13:32 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	2800	mg/L				A1030 E	08/11/17 14:05 / tjp
A/C Balance	-3.28	%				A1030 E	08/11/17 14:05 / tjp
Anions	44.2	meq/L				A1030 E	08/11/17 14:05 / tjp
Cations	41.4	meq/L				A1030 E	08/11/17 14:05 / tjp
TDS Ratio	1.12	unitless				A1030 E	08/11/17 14:05 / tjp
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	1.2	pCi/L				E900.1	08/09/17 16:32 / cng
Gross Alpha minus Rn & U Precision (±)	0.6	pCi/L				E900.1	08/09/17 16:32 / cng
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	08/09/17 16:32 / cng
Lead 210	0.7	pCi/L	U			E909.0	08/12/17 18:11 / dmf
Lead 210 precision (±)	0.7	pCi/L				E909.0	08/12/17 18:11 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17070470-008
Client Sample ID: EPA-2 Duplicate

Report Date: 08/16/17
Collection Date: 07/12/17 10:30
DateReceived: 07/14/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210 MDC	1.2	pCi/L				E909.0	08/12/17 18:11 / dmf
Radium 226	1.5	pCi/L				E903.0	08/14/17 14:12 / trs
Radium 226 precision (±)	0.4	pCi/L				E903.0	08/14/17 14:12 / trs
Radium 226 MDC	0.2	pCi/L				E903.0	08/14/17 14:12 / trs
Radium 228	2.7	pCi/L				RA-05	08/09/17 14:43 / trs
Radium 228 precision (±)	1.1	pCi/L				RA-05	08/09/17 14:43 / trs
Radium 228 MDC	2.0	pCi/L				RA-05	08/09/17 14:43 / trs
Thorium 230	0.009	pCi/L	U			E908.0	08/10/17 09:35 / cng
Thorium 230 precision (±)	0.05	pCi/L				E908.0	08/10/17 09:35 / cng
Thorium 230 MDC	0.1	pCi/L				E908.0	08/10/17 09:35 / cng
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	07/21/17 18:47 / eli-b
Bromoform	ND	ug/L		0.50		E624	07/21/17 18:47 / eli-b
Chlorodibromomethane	ND	ug/L		0.50		E624	07/21/17 18:47 / eli-b
Chloroform	ND	ug/L		0.50		E624	07/21/17 18:47 / eli-b
Trihalomethanes, Total	ND	ug/L		0.50		E624	08/15/17 12:02 / sec
Surr: 1,2-Dichloroethane-d4	88.0	%REC		71-139		E624	07/21/17 18:47 / eli-b
Surr: p-Bromofluorobenzene	133	%REC	S	80-127		E624	07/21/17 18:47 / eli-b
Surr: Toluene-d8	102	%REC		80-123		E624	07/21/17 18:47 / eli-b

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17100295-008
Client Sample ID: EPA-2 Duplicate

Report Date: 11/10/17
Collection Date: 10/04/17 10:45
DateReceived: 10/06/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bicarbonate as HCO3	303	mg/L		5		A2320 B	10/11/17 01:34 / mvr
Chloride	24	mg/L		1		E300.0	10/11/17 15:47 / jcg
Sulfate	1880	mg/L	D	4		E300.0	10/11/17 15:47 / jcg
Calcium	411	mg/L		1		E200.7	10/12/17 05:28 / eli-b
Magnesium	195	mg/L		1		E200.7	10/12/17 05:28 / eli-b
Potassium	7	mg/L		1		E200.7	10/12/17 05:28 / eli-b
Sodium	208	mg/L		1		E200.7	10/12/17 05:28 / eli-b
PHYSICAL PROPERTIES							
pH	6.72	s.u.	H	0.01		A4500-H B	10/09/17 14:45 / mvr
Solids, Total Dissolved TDS @ 180 C	3170	mg/L	D	20		A2540 C	10/09/17 14:26 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.02	mg/L		0.01		E353.2	10/09/17 15:28 / ljl
Nitrogen, Ammonia as N	0.43	mg/L		0.05		A4500-NH3 G	10/08/17 13:33 / ljl
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.7	11/01/17 04:46 / eli-b
Beryllium	ND	mg/L		0.001		E200.8	10/27/17 08:35 / eli-b
Cadmium	ND	mg/L		0.005		E200.8	10/16/17 21:16 / eli-b
Cobalt	ND	mg/L		0.01		E200.8	10/16/17 21:16 / eli-b
Lead	ND	mg/L		0.001		E200.8	10/27/17 08:35 / eli-b
Manganese	1.85	mg/L		0.01		E200.8	10/16/17 21:16 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	10/16/17 21:16 / eli-b
Nickel	ND	mg/L		0.05		E200.8	10/16/17 21:16 / eli-b
Uranium	0.0012	mg/L		0.0003		E200.8	10/27/17 08:35 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	10/16/17 21:16 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	10/16/17 22:16 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	10/12/17 18:12 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	2900	mg/L				A1030 E	11/03/17 17:08 / tjp
A/C Balance	1.25	%				A1030 E	11/03/17 17:08 / tjp
Anions	44.7	meq/L				A1030 E	11/03/17 17:08 / tjp
Cations	45.8	meq/L				A1030 E	11/03/17 17:08 / tjp
TDS Ratio	1.09	unitless				A1030 E	11/03/17 17:08 / tjp
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	2.2	pCi/L				E900.1	11/01/17 17:50 / dmf
Gross Alpha minus Rn & U Precision (±)	0.7	pCi/L				E900.1	11/01/17 17:50 / dmf
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	11/01/17 17:50 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1
Lab ID: C17100295-008
Client Sample ID: EPA-2 Duplicate

Report Date: 11/10/17
Collection Date: 10/04/17 10:45
DateReceived: 10/06/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Lead 210	1.3	pCi/L				E909.0	11/01/17 00:28 / meh
Lead 210 precision (±)	0.9	pCi/L				E909.0	11/01/17 00:28 / meh
Lead 210 MDC	1.3	pCi/L				E909.0	11/01/17 00:28 / meh
Radium 226	1.6	pCi/L				E903.0	10/24/17 13:01 / arh
Radium 226 precision (±)	0.4	pCi/L				E903.0	10/24/17 13:01 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	10/24/17 13:01 / arh
Radium 228	5.1	pCi/L				RA-05	10/19/17 19:30 / tlf
Radium 228 precision (±)	1.3	pCi/L				RA-05	10/19/17 19:30 / tlf
Radium 228 MDC	1.5	pCi/L				RA-05	10/19/17 19:30 / tlf
Thorium 230	0.008	pCi/L	U			E908.0	11/06/17 10:28 / cnh
Thorium 230 precision (±)	0.05	pCi/L				E908.0	11/06/17 10:28 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	11/06/17 10:28 / cnh
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	10/14/17 20:16 / eli-b
Bromoform	ND	ug/L		0.50		E624	10/14/17 20:16 / eli-b
Chlorodibromomethane	ND	ug/L		0.50		E624	10/14/17 20:16 / eli-b
Chloroform	ND	ug/L		0.50		E624	10/14/17 20:16 / eli-b
Trihalomethanes, Total	ND	ug/L		0.50		E624	11/06/17 17:15 / sec
Surr: 1,2-Dichloroethane-d4	99.0	%REC		71-139		E624	10/14/17 20:16 / eli-b
Surr: p-Bromofluorobenzene	102	%REC		80-127		E624	10/14/17 20:16 / eli-b
Surr: Toluene-d8	100	%REC		80-123		E624	10/14/17 20:16 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

United Nuclear Corporation					
Zone 3					
Well ID:		717	717	717	717
Collection Date:		10/9/2017	7/18/2017	4/11/2017	1/16/2017
Receive Date:		10/12/2017	7/21/2017	4/17/2017	1/20/2017
Report Date:		11/16/2017	9/20/2017	5/24/2017	2/28/2017
Analyte	**Units**	**C17100456-007**	**C17070708-005**	**C17040482-003**	**C17010541-009**
Acidity, Total as CaCO3	mg/L	1750	2010	1650	1790
Calcium	mg/L	445	463	452	459
Magnesium	mg/L	496	506	489	485
Sulfate	mg/L	5230	5160	5320	5500
Bicarbonate as HCO3	mg/L	ND(5)	ND(5)	ND(5)	ND(5)
Chloride	mg/L	57	64	62	64
Potassium	mg/L	2	1	ND(1)	2
Sodium	mg/L	163	181	174	161
pH	s.u.	3.20	3.11	3.03	2.95
Solids, Total Dissolved TDS @ 180 C	mg/L	7300	7650	6620	7110
Nitrogen, Ammonia as N	mg/L	39	40	38	38
Nitrogen, Nitrate+Nitrite as N	mg/L	17.6	19.2	18	20
Aluminum	mg/L	285	274	254	216
Beryllium	mg/L	0.156	0.130	0.149	0.128
Cadmium	mg/L	0.019	0.019	0.017	0.017
Cobalt	mg/L	1.16	1.09	0.93	0.88
Lead	mg/L	0.036	0.039	0.056	0.050
Manganese	mg/L	20.2	20.2	18.2	16.1
Molybdenum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Nickel	mg/L	1.26	1.22	0.99	0.89
Uranium	mg/L	0.619	0.516	0.374	0.363
Vanadium	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Arsenic-III	mg/L	ND(0.001)	ND(0.001)	0.001	ND(0.001)
Selenium-IV	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
A/C Balance	%	-2.11	1.94	-3.76	-4.38
Anions	meq/L	113	111	114	118
Cations	meq/L	108	116	106	108
Solids, Total Dissolved - Calculated	mg/L	6500	6600	6700	6900
TDS Ratio	unitless	1.12	1.15	0.98	1.03
Gross Alpha minus Rn & U	pCi/L	24.4	30.8	135	148
Gross Alpha minus Rn & U Precision (±)	pCi/L	4.9	6.1	26.2	28.5
Gross Alpha minus Rn & U MDC	pCi/L	0.6	0.5	1.9	1.4
Lead 210	pCi/L	-3	3.4	3.3	4.0
Lead 210 precision (±)	pCi/L	1	1.4	1.3	1.4
Lead 210 MDC	pCi/L	1.7	1.5	1.3	1.3
Radium 226	pCi/L	12.0	12.6	8.6	18
Radium 226 precision (±)	pCi/L	2.3	2.5	1.7	3.4
Radium 226 MDC	pCi/L	0.2	0.3	0.23	0.19
Radium 228	pCi/L	7.0	0.6	0.33	1.8
Radium 228 precision (±)	pCi/L	1.6	0.9	1.4	0.94
Radium 228 MDC	pCi/L	1.2	1.4	2.3	1.6
Thorium 230	pCi/L	19.4	19.8	25.0	21.0
Thorium 230 precision (±)	pCi/L	3.8	3.8	4.8	4.0
Thorium 230 MDC	pCi/L	24.3	0.8	3.7	2.8
Trihalomethanes, Total	ug/L	ND(0.50)	ND(0.50)	0.53	1.5

United Nuclear Corporation					
Zone 3					
Well ID:		717 Duplicate	717 Duplicate	717 Duplicate	717 Duplicate
Collection Date:		7/18/2017	4/11/2017	1/16/2017	
Receive Date:		7/21/2017	4/17/2017	1/20/2017	
Report Date:		9/20/2017	5/24/2017	2/28/2017	
Analyte	**Units**	**C17100456-008**	**C17070708-006**	**C17040482-004**	**C17010541-010**
Acidity, Total as CaCO3	mg/L	1790	2020	1610	1780
Calcium	mg/L	447	455	454	459
Magnesium	mg/L	496	498	495	485
Sulfate	mg/L	5240	5550	5440	5560
Bicarbonate as HCO3	mg/L	ND(5)	ND(5)	ND(5)	ND(5)
Chloride	mg/L	56	64	63	64
Potassium	mg/L	2	1	1	2
Sodium	mg/L	161	176	170	161
pH	s.u.	3.20	3.11	3.03	2.95
Solids, Total Dissolved TDS @ 180 C	mg/L	7270	7470	7000	7060
Nitrogen, Ammonia as N	mg/L	40	38	39	39
Nitrogen, Nitrate+Nitrite as N	mg/L	18.6	19.4	19	20
Aluminum	mg/L	282	273	258	226
Beryllium	mg/L	0.163	0.132	0.148	0.131
Cadmium	mg/L	0.019	0.018	0.016	0.014
Cobalt	mg/L	1.14	1.07	0.92	0.89
Lead	mg/L	0.028	0.029	0.031	0.025
Manganese	mg/L	20.1	19.9	18.0	16.6
Molybdenum	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Nickel	mg/L	1.27	1.16	0.95	0.91
Uranium	mg/L	0.615	0.512	0.383	0.315
Vanadium	mg/L	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Arsenic-III	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Selenium-IV	mg/L	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ion Balance	%	4.28	-2.14	-5.08	-4.98
Anions	meq/L	122	119	117	120
Cations	meq/L	133	114	106	108
Solids, Total Dissolved - Calculated	mg/L	6900	7000	6900	7000
TDS Ratio	unitless	1.05	1.07	1.02	1.01
Gross Alpha minus Rn & U	pCi/L	23.8	33.0	145	140
Gross Alpha minus Rn & U Precision (±)	pCi/L	4.8	6.5	28.1	27.1
Gross Alpha minus Rn & U MDC	pCi/L	0.6	0.5	1.9	1.4
Lead 210	pCi/L	-1	4.7	3.8	3.2
Lead 210 precision (±)	pCi/L	1.1	1.7	1.4	1.2
Lead 210 MDC	pCi/L	1.9	1.6	1.3	1.2
Radium 226	pCi/L	17.1	13.3	8.9	15
Radium 226 precision (±)	pCi/L	3.3	2.6	1.7	3.0
Radium 226 MDC	pCi/L	0.2	0.3	0.22	0.19
Radium 228	pCi/L	5.9	0.7	-0.2	1.1
Radium 228 precision (±)	pCi/L	1.4	0.9	1.3	0.96
Radium 228 MDC	pCi/L	1.2	1.4	2.2	1.6
Thorium 230	pCi/L	17.0	17.1	25.0	24.7
Thorium 230 precision (±)	pCi/L	3.3	3.3	4.8	4.7
Thorium 230 MDC	pCi/L	24.3	0.9	2.7	2.3
Trihalomethanes, Total	ug/L	0.52	ND(0.50)	0.59	1.6

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17070708-006
Client Sample ID: 717 Duplicate

Report Date: 09/20/17
Collection Date: 07/18/17 16:02
DateReceived: 07/21/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Acidity, Total as CaCO3	2020	mg/L		5		A2310 B	07/29/17 10:45 / mvr
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	07/27/17 16:57 / jcg
Chloride	64	mg/L	D	2		E300.0	07/28/17 14:44 / jcg
Sulfate	5550	mg/L	D	8		E300.0	07/28/17 14:44 / jcg
Calcium	455	mg/L		1		E200.7	07/28/17 16:33 / eli-b
Magnesium	498	mg/L		1		E200.7	07/28/17 16:33 / eli-b
Potassium	1	mg/L		1		E200.7	07/27/17 22:17 / eli-b
Sodium	176	mg/L		1		E200.7	07/27/17 22:17 / eli-b
PHYSICAL PROPERTIES							
pH	3.11	s.u.	H	0.01		A4500-H B	07/24/17 12:52 / mvr
Solids, Total Dissolved TDS @ 180 C	7470	mg/L	D	100		A2540 C	07/24/17 12:02 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	19.4	mg/L	D	0.2		E353.2	07/28/17 17:30 / ljl
Nitrogen, Ammonia as N	38	mg/L	D	1		A4500-NH3 G	07/31/17 13:35 / ljl
METALS, TOTAL							
Aluminum	273	mg/L		0.1		E200.7	08/02/17 14:50 / eli-b
Beryllium	0.132	mg/L		0.001		E200.8	08/01/17 04:03 / eli-b
Cadmium	0.018	mg/L		0.005		E200.8	07/27/17 23:33 / eli-b
Cobalt	1.07	mg/L		0.01		E200.8	07/27/17 23:33 / eli-b
Lead	0.029	mg/L		0.001		E200.8	07/27/17 23:33 / eli-b
Manganese	19.9	mg/L		0.01		E200.8	07/27/17 23:33 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	07/27/17 23:33 / eli-b
Nickel	1.16	mg/L		0.05		E200.8	07/27/17 23:33 / eli-b
Uranium	0.512	mg/L		0.0003		E200.8	07/27/17 23:33 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	07/27/17 23:33 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	07/29/17 01:41 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	07/27/17 13:21 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	7000	mg/L				A1030 E	08/03/17 15:52 / tla
A/C Balance	-2.14	%				A1030 E	08/03/17 15:52 / tla
Anions	119	meq/L				A1030 E	08/03/17 15:52 / tla
Cations	114	meq/L				A1030 E	08/03/17 15:52 / tla
TDS Ratio	1.07	unitless				A1030 E	08/03/17 15:52 / tla
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	33.0	pCi/L				E900.1	08/14/17 16:55 / dmf
Gross Alpha minus Rn & U Precision (±)	6.5	pCi/L				E900.1	08/14/17 16:55 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17070708-006
Client Sample ID: 717 Duplicate

Report Date: 09/20/17
Collection Date: 07/18/17 16:02
DateReceived: 07/21/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	08/14/17 16:55 / dmf
Lead 210	4.7	pCi/L				E909.0	08/25/17 23:50 / meh
Lead 210 precision (±)	1.7	pCi/L				E909.0	08/25/17 23:50 / meh
Lead 210 MDC	1.6	pCi/L				E909.0	08/25/17 23:50 / meh
Radium 226	13.3	pCi/L				E903.0	08/21/17 15:38 / meh
Radium 226 precision (±)	2.6	pCi/L				E903.0	08/21/17 15:38 / meh
Radium 226 MDC	0.3	pCi/L				E903.0	08/21/17 15:38 / meh
Radium 228	0.7	pCi/L	U			RA-05	09/13/17 09:02 / trs
Radium 228 precision (±)	0.9	pCi/L				RA-05	09/13/17 09:02 / trs
Radium 228 MDC	1.4	pCi/L				RA-05	09/13/17 09:02 / trs
Thorium 230	17.1	pCi/L				E908.0	09/01/17 09:17 / cng
Thorium 230 precision (±)	3.3	pCi/L				E908.0	09/01/17 09:17 / cng
Thorium 230 MDC	0.9	pCi/L				E908.0	09/01/17 09:17 / cng
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	07/26/17 17:06 / eli-b
Bromoform	ND	ug/L		0.50		E624	07/26/17 17:06 / eli-b
Chlorodibromomethane	ND	ug/L		0.50		E624	07/26/17 17:06 / eli-b
Chloroform	ND	ug/L		0.50		E624	07/26/17 17:06 / eli-b
Trihalomethanes, Total	ND	ug/L		0.50		E624	08/15/17 12:02 / sec
Surr: 1,2-Dichloroethane-d4	99.0	%REC		71-139		E624	07/26/17 17:06 / eli-b
Surr: p-Bromofluorobenzene	126	%REC		80-127		E624	07/26/17 17:06 / eli-b
Surr: Toluene-d8	102	%REC		80-123		E624	07/26/17 17:06 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17100456-008
Client Sample ID: 717 Duplicate

Report Date: 11/16/17
Collection Date: 10/09/17 15:46
DateReceived: 10/12/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Acidity, Total as CaCO3	1790	mg/L		5		A2310 B	10/15/17 20:29 / mvr
Bicarbonate as HCO3	ND	mg/L		5		A2320 B	10/13/17 13:18 / mvr
Chloride	56	mg/L	DH	2		E300.0	11/08/17 20:57 / jcg
Sulfate	5240	mg/L	DH	8		E300.0	11/08/17 20:57 / jcg
Calcium	447	mg/L		1		E200.7	10/19/17 16:17 / eli-b
Magnesium	496	mg/L		1		E200.7	10/19/17 16:17 / eli-b
Potassium	2	mg/L		1		E200.7	10/19/17 16:17 / eli-b
Sodium	161	mg/L	D	3		E200.7	10/19/17 16:17 / eli-b
PHYSICAL PROPERTIES							
pH	3.20	s.u.	H	0.01		A4500-H B	10/13/17 11:20 / mvr
Solids, Total Dissolved TDS @ 180 C	7270	mg/L	D	100		A2540 C	10/15/17 21:15 / mvr
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	18.6	mg/L	D	0.1		E353.2	10/19/17 11:51 / ljl
Nitrogen, Ammonia as N	40	mg/L	D	2		A4500-NH3 G	10/14/17 12:24 / ljl
METALS, TOTAL							
Aluminum	282	mg/L		0.1		E200.7	10/27/17 18:33 / eli-b
Beryllium	0.163	mg/L		0.001		E200.8	10/27/17 04:12 / eli-b
Cadmium	0.019	mg/L		0.005		E200.8	10/25/17 08:02 / eli-b
Cobalt	1.14	mg/L		0.01		E200.8	10/25/17 08:02 / eli-b
Lead	0.028	mg/L		0.001		E200.8	10/25/17 08:02 / eli-b
Manganese	20.1	mg/L		0.01		E200.7	10/27/17 18:33 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	10/25/17 08:02 / eli-b
Nickel	1.27	mg/L		0.05		E200.8	10/25/17 08:02 / eli-b
Uranium	0.615	mg/L		0.0003		E200.8	10/27/17 04:12 / eli-b
Vanadium	ND	mg/L		0.1		E200.8	10/25/17 08:02 / eli-b
METALS - SPECIATED							
Arsenic-III	ND	mg/L		0.001		E1632AM	11/02/17 11:13 / eli-h
METALS - SPECIATED							
Selenium-IV	ND	mg/L		0.001		A3114 B	10/24/17 12:47 / eli-h
DATA QUALITY							
Solids, Total Dissolved - Calculated	6900	mg/L				A1030 E	11/14/17 18:52 / tjp
A/C Balance	4.28	%				A1030 E	11/14/17 18:52 / tjp
Anions	122	meq/L				A1030 E	11/14/17 18:52 / tjp
Cations	133	meq/L				A1030 E	11/14/17 18:52 / tjp
TDS Ratio	1.05	unitless				A1030 E	11/14/17 18:52 / tjp
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U	23.8	pCi/L				E900.1	11/07/17 15:27 / dmf
Gross Alpha minus Rn & U Precision (±)	4.8	pCi/L				E900.1	11/07/17 15:27 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3
Lab ID: C17100456-008
Client Sample ID: 717 Duplicate

Report Date: 11/16/17
Collection Date: 10/09/17 15:46
DateReceived: 10/12/17
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES, TOTAL							
Gross Alpha minus Rn & U MDC	0.6	pCi/L				E900.1	11/07/17 15:27 / dmf
Lead 210	-1	pCi/L	U			E909.0	10/20/17 11:02 / meh
Lead 210 precision (±)	1.1	pCi/L				E909.0	10/20/17 11:02 / meh
Lead 210 MDC	1.9	pCi/L				E909.0	10/20/17 11:02 / meh
Radium 226	17.1	pCi/L				E903.0	10/30/17 11:30 / arh
Radium 226 precision (±)	3.3	pCi/L				E903.0	10/30/17 11:30 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	10/30/17 11:30 / arh
Radium 228	5.9	pCi/L				RA-05	10/25/17 17:40 / trs
Radium 228 precision (±)	1.4	pCi/L				RA-05	10/25/17 17:40 / trs
Radium 228 MDC	1.2	pCi/L				RA-05	10/25/17 17:40 / trs
Thorium 230	17.0	pCi/L	U			E908.0	11/06/17 16:28 / cnh
Thorium 230 precision (±)	3.3	pCi/L				E908.0	11/06/17 16:28 / cnh
Thorium 230 MDC	24.3	pCi/L				E908.0	11/06/17 16:28 / cnh
VOLATILE ORGANIC COMPOUNDS							
Bromodichloromethane	ND	ug/L		0.50		E624	10/19/17 04:11 / eli-b
Bromoform	ND	ug/L		0.50		E624	10/19/17 04:11 / eli-b
Chlorodibromomethane	ND	ug/L		0.50		E624	10/19/17 04:11 / eli-b
Chloroform	0.52	ug/L		0.50		E624	10/19/17 04:11 / eli-b
Trihalomethanes, Total	0.52	ug/L		0.50		E624	11/06/17 17:15 / sec
Surr: 1,2-Dichloroethane-d4	81.0	%REC		71-139		E624	10/19/17 04:11 / eli-b
Surr: p-Bromofluorobenzene	104	%REC		80-127		E624	10/19/17 04:11 / eli-b
Surr: Toluene-d8	106	%REC		80-123		E624	10/19/17 04:11 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

APPENDIX – C

QUARTERLY

CHAIN OF CUSTODY REPORT

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305- 1088
505-905-6851

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

SW Alluvium

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE- 8-7-2017

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
509-D	7-10-17	0837	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
EPA-23	7-10-17	0930	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			K, Mg, Mn, Na, NH_4, Ni,
803	7-10-17	1010	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			NO_3, Pb, Pb-210, pH, Se,
808	7-10-17	1120	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			SO_4, TDS, Th-230, U, V,
802	7-10-17	1215	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Chloroform, Gross
632	7-10-17	1300	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Alpha (-) U & Rn,
801	7-10-17	1340	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Combined Ra-226 & Ra-228, Al,
GW-1	7-10-17	1430	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Co, Mo & Total Trihalomethanes (TTHMs)
EPA-28	7-10-17	1525	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			
EPA-28 DUPLICATE	7-10-17	1610	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			
624	7-10-17	1700	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			

Sampled by: [signature]

Received by [signature] 7-10-17 1800
Date Time

Dispatched by: [signature] 07/11/17 11:32
Date Time

Carrier: UPS- Ground

6 iced cooler
Method of Shipment

K Kowalski 7-13-17
Lab Receipt Signature

7-13-17 12:30
Date Time

The above analysis to be performed is authorized by:

[signature]
Signature

7-11-2017
Date

C170704 24

ENERGY LABORATORIES

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College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Lab Receipt Chain of Custody

Client: UNC Date: 7-13-17

☐ **Was a Temperature Blank Received?** Y / N N/A

Record Temp of each cooler received. If cooler(s) is received outside 2-6°C record which samples were received in each cooler(s).

Temp °C 1 4.8 2 4.9 3 6.8 4 8.8 5 8.6 6 4.6 7 ____ 8 ____ 9 ____ 10 ____

Circle: From Field On Ice Melted Ice Blue Ice No Ice *If samples are received frozen notate them in the comments section.*

Thermometer Probe Number ____ IR Thermometer Number 2 Geiger Reading/Instrument Number ____ ur/hr

☐ **What is the shipment method?** (*circle*)

UPS / Fed Ex:	GRD	2ND Day	NDA	Sat Del
US Mail:	STD	Priority	Express	
Other:	HAND	NPT	DROP BOX	

✓ # containers/coolers were received? ____ Shipping charged to client? Y/N If Y, Qty 6

Is the Shipping container/cooler in good condition? Y / N N/P

Are there Custody seals intact on all shipping container/cooler? Y / N N/P

Are there Custody seals intact on sample bottles? Y / N N/P

Is the Chain of Custody present? Y / N

Is the Chain of Custody signed when relinquished and received? Y / N

Does the COC agree with the sample labels? Y / N

Are Samples in proper container/bottle? Y / N

Are the Sample containers intact? Y / N

Is there sufficient sample volume for indicated test? Y / N

Are all samples received within holding time? Y / N

Water-VOA vials have 0 headspace? Y / N NA

List samples with headspace (bubble >1/4 in) in the comments section

Water-pH acceptable upon receipt? Y / N

This section is only to be filled out if applicable

Subsampled / Preserved

For: ____

Circle one or both of the above as applicable

Is lab filtering required for the sample(s)? Y/N

For:

Comments:

*** Take Pictures of shipping container(s) & sample bottles**

Set up completed by: KK

Bottle/ELI Labels Checked By: JP

C17070424

Energy Laboratories, Inc
Login Prep-Lab Receipt Chain of Custody (updated 6/12/17 kvidick)

Work Order Receipt Checklist

United Nuclear Corporation

C17070424

Login completed by: Corinne Wagner
Reviewed by: Kasey Vidick
Reviewed Date: 7/13/2017

Date Received: 7/13/2017
Received by: kmk
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	4.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305- 1088
505-905-6651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

SW Alluvium

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE- 9- 7-2017 (Pg. 1 of 2)

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
SBL-1	7-11-17	0847	1-(802.) ✓	2- ✓	4- ✓	1- ✓	3- ✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
EPA-25	7-11-17	1000	1-(802.) ✓	2- ✓	4- ✓	1- ✓	3- ✓		M. Chischilly	K, Mg, Mn, Na, NH_4, Ni,
627	7-11-17	1110	1-(802.) ✓	2- ✓	4- ✓	1- ✓	3- ✓		M. Chischilly	NO_3, Pb, Pb-210, pH, Se,
										SO_4, TDS, Th-230, U, V,
										Chloroform, Gross
										Alpha (-) U & Rn,
										Combined Ra-226 & Ra-228, Al,
										Co, Mo & Total Trihalomethanes (TTHMs)

Sampled by: M. Chischilly Jr.
Dispatched by: [signature]
Carrier: UPS-Ground
6 iced cooler
Method of Shipment

Received by: [signature]
7-12-17 1:12
Date Time

7-11-17 1800
Date Time

Lab Receipt Signature

Date Time

The above analysis to be performed is authorized by:
M. Chischilly Jr.
Signature
7-12-17
Date

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Lab Receipt Chain of Custody

Client: UNC Date: _____

☐ **Was a Temperature Blank Received?** Y / N N/A

Record Temp of each cooler received. If cooler(s) is received outside 2-6°C record which samples were received in each cooler(s).

Temp °C 1 5.6 2 7.2 3 8.4 4 4.6 5 7.2 6 ____ 7 ____ 8 ____ 9 ____ 10 ____

Circle: From Field On Ice Melted Ice Blue Ice No Ice *If samples are received frozen notate them in the comments section.*

Thermometer Probe Number _____ **IR Thermometer Number** IR-2 **Geiger Reading/Instrument Number** 15488 ur/hr

☐ **What is the shipment method?** (*circle*)

UPS / Fed Ex:	(GRD)	2ND Day	NDA	Sat Del
US Mail:	STD	Priority	Express	
Other:	HAND	NPT	DROP BOX	

✓ **# containers/coolers were received?** _____ **Shipping charged to client?** Y/N **If Y, Qty** _____

Is the Shipping container/cooler in good condition? (Y) / N N/P

Are there Custody seals intact on all shipping container/cooler? Y / N N/P

Are there Custody seals intact on sample bottles? Y / N N/P

Is the Chain of Custody present? Y / N

Is the Chain of Custody signed when relinquished and received? Y / N

Does the COC agree with the sample labels? Y / N

Are Samples in proper container/bottle? Y / N

Are the Sample containers intact? Y / N

Is there sufficient sample volume for indicated test? Y / N

Are all samples received within holding time? Y / N

Water-VOA vials have 0 headspace? Y / N NA

List samples with headspace (bubble >1/4 in) in the comments section

Water-pH acceptable upon receipt? Y / N

This section is only to be filled out if applicable

Subsampled / Preserved

For: _____

Circle one or both of the above as applicable

Is lab filtering required for the sample(s)? Y/N

For:

Comments:

Missing one cooler with 614, 515A, EPA-7, EPA5.

*** Take Pictures of shipping container(s) & sample bottles**

Set up completed by: KK

Bottle/ELI Labels Checked By: TP

Work Order Receipt Checklist

United Nuclear Corporation C17070469

Login completed by: Tessa Parke
Reviewed by: Kasey Vidick
Reviewed Date: 7/19/2017

Date Received: 7/14/2017
Received by: tjp
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	4.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-6651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

ZONE - 1

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE-9-7-2017 (pg. 2 of 2)

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
614	7-11-17	1240	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
515-A	7-11-17	1400	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			K, Mg, Mn, Na, NH_4, Ni,
604	7-11-17	1510	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			NO_3, Pb, Pb-210, pH, Se,
EPA-7	7-11-17	1605	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			SO_4, TDS, Th-230, U, V,
EPA-5	7-11-17	1650	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			Chloroform, Gross
EPA-4	7-12-17	0840	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			Alpha (-) U & Rn,
EPA-2	7-12-17	0940	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			Combined Ra-226 & Ra-228, Al,
EPA-2 DUPLICATE	7-12-17	1030	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			Co, Mo & Total Trihalomethanes (TTHMs)
TWQ-142	7-12-17	1110	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			
RINSATE	7-12-17	1156	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			
FIELD BLANK	7-12-17	1210	1-(8oz.)✓ne	2-✓ne	4-✓ne	1-✓ne	3-✓ne			

Sampled by: Mel Chischilly Jr.
Dispatched by: [signature]
Carrier: UPS-Ground
6 iced cooler
Method of Shipment

Received by [signature]
7-12-17 1:12
Date Time

7-11-17 @ 1800
7-12-17 @ 1230
Date Time

Lab Receipt Signature

Date Time

The above analysis to be performed is authorized by:
Mel Chischilly Jr.
Signature
7-12-17
Date

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Lab Receipt Chain of Custody

Client: UNC Date: _____

☐ **Was a Temperature Blank Received?** Y / N N/A
Record Temp of each cooler received. If cooler(s) is received outside 2-6°C record which samples were received in each cooler(s).

Temp °C 1 5.6 2 7.2 3 8.4 4 4.6 5 7.2 6 ____ 7 ____ 8 ____ 9 ____ 10 ____

Circle: From Field On Ice Melted Ice Blue Ice No Ice *If samples are received frozen notate them in the comments section.*

Thermometer Probe Number _____ IR Thermometer Number IR-2 Geiger Reading/Instrument Number 15488 ur/hr

☐ **What is the shipment method?** (*circle*)

UPS / Fed Ex:	(GRD)	2ND Day	NDA	Sat Del
US Mail:	STD	Priority	Express	
Other:	HAND	NPT	DROP BOX	

✓ **# containers/coolers were received?** _____ **Shipping charged to client? Y/N If Y, Qty** _____

Is the Shipping container/cooler in good condition? (Y) / N N/P

Are there Custody seals intact on all shipping container/cooler? Y / N N/P

Are there Custody seals intact on sample bottles? Y / N N/P

Is the Chain of Custody present? Y / N

Is the Chain of Custody signed when relinquished and received? Y / N

Does the COC agree with the sample labels? Y / N

Are Samples in proper container/bottle? Y / N

Are the Sample containers intact? Y / N

Is there sufficient sample volume for indicated test? Y / N

Are all samples received within holding time? Y / N

Water-VOA vials have 0 headspace? Y / N NA
List samples with headspace (bubble >1/4 in) in the comments section

Water-pH acceptable upon receipt? Y / N

This section is only to be filled out if applicable
Subsampled / Preserved
For: _____
Circle one or both of the above as applicable

Is lab filtering required for the sample(s)? Y/N
For:

Comments:
Missing one cooler with
614, 515A, EPA-7, EPA5

*** Take Pictures of shipping container(s) & sample bottles**

Set up completed by: KK

Bottle/ELI Labels Checked By: TY

Energy Laboratories, Inc
Login Prep-Lab Receipt Chain of Custody (updated 6/12/17 kvidick)

Work Order Receipt Checklist

United Nuclear Corporation

C17070470

Login completed by: Tessa Parke
Reviewed by: Kasey Vidick
Reviewed Date: 7/19/2017

Date Received: 7/14/2017
Received by: tjp
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	4.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-6651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

ZONE - 3

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE-10-7-2017

C17070656
~~C17070657~~

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
613	7-17-17	0832	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
517	7-17-17	0923	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			K, Mg, Mn, Na, NH_4, Ni,
708	7-17-17	1111	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			NO_3, Pb, Pb-210, pH, Se,
711	7-17-17	1245	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			SO_4, TDS, Th-230, U, V,
EPA-13	7-17-17	1418	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			Chloroform, Gross
420	7-17-17	1545	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓		✓	Alpha (-) U & Rn,
										Combined Ra-226 & Ra-228, Al,
										Co, Mo & Total Trihalomethanes (TTHMs)

Sampled by: Mel Chischilly Jr.

Dispatched by: [signature]

Carrier: UPS-Ground

4 iced cooler
Method of Shipment

Received by [signature]
7-18-17 10:54
Date Time

7-17-17 1730
Date Time

[signature]
Lab Receipt Signature

7-20-17 1040
Date Time

The above analysis to be performed is authorized by:

Mel Chischilly Jr.
Signature

7-18-2017
Date

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Lab Receipt Chain of Custody

Client: CNC Date: 7-20 C17070656 ~~C17070657~~

☐ **Was a Temperature Blank Received?** Y / N N/A

Record Temp of each cooler received. If cooler(s) is received outside 2-6°C record which samples were received in each cooler(s).

Temp °C 1 0.8 2 4.2 3 2.8 4 1.4 5 ____ 6 ____ 7 ____ 8 ____ 9 ____ 10 ____

Circle: From Field On Ice Melted Ice Blue Ice No Ice *If samples are received frozen notate them in the comments section.*

Thermometer Probe Number ____ IR Thermometer Number 1 Geiger Reading/Instrument Number <50 ur/hr 15488

☐ **What is the shipment method?** (circle)

UPS / Fed Ex:	GRD	2ND Day	NDA	Sat Del
US Mail:	STD	Priority	Express	
Other:	HAND	NPT	DROP BOX	

✓ **# containers/coolers were received?** 4 **Shipping charged to client?** Y/N **If Y, Qty** 4

Is the Shipping container/cooler in good condition? Y N N/P

Are there Custody seals intact on all shipping container/cooler? Y / N N/P

Are there Custody seals intact on sample bottles? Y / N N/P

Is the Chain of Custody present? Y / N

Is the Chain of Custody signed when relinquished and received? Y / N

Does the COC agree with the sample labels? Y / N

Are Samples in proper container/bottle? Y / N

Are the Sample containers intact? Y / N

Is there sufficient sample volume for indicated test? Y / N

Are all samples received within holding time? Y / N

Water-VOA vials have 0 headspace? Y N NA

List samples with headspace (bubble >1/4 in) in the comments section

Water-pH acceptable upon receipt? Y / N

This section is only to be filled out if applicable

Subsampled / Preserved

For: ____

Circle one or both of the above as applicable

Is lab filtering required for the sample(s)? Y/N

For:

Comments:

*** Take Pictures of shipping container(s) & sample bottles**

Set up completed by: CW

Bottle/ELI Labels Checked By: KB

Energy Laboratories, Inc
Login Prep-Lab Receipt Chain of Custody (updated 6/12/17 kvidick)

Work Order Receipt Checklist

United Nuclear Corporation C17070656

Login completed by: Corinne Wagner
Reviewed by: Kasey Vidick
Reviewed Date: 7/20/2017

Date Received: 7/20/2017
Received by: ckw
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	0.8°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-6651

CHAIN OF CUSTODY

ZONE - 3

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

UNC Submittal No. TE- 11-7-2017

Sample Description	Date	Time	Filter 0.45u #NO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
EPA-14	7-18-17	0838	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
719	7-18-17	1010	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			K, Mg, Mn, Na, NH_4, Ni,
MW-7	7-18-17	1236	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			NO_3, Pb, Pb-210, pH, Se,
NW-3	7-18-17	1415	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			SO_4, TDS, Th-230, U, V,
717	7-18-17	1422	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			Chloroform, Gross
717 DUPLICATE	7-18-17	1602	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			Alpha (-) U & Rn,
RINSATE	7-18-17	1730	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓			Combined Ra-226 & Ra-228, Al,
FIELD BLANK	7-18-17	1735	1-(8oz.)✓	2-✓	4-✓	1-✓	3-✓		↓	Co, Mo & Total Trihalomethanes (TTHMs)

Sampled by: Mel Chischilly Jr.
Dispatched by: [signature]
Carrier: UPS-Ground
5 iced cooler
Method of Shipment

Received by [signature]
7-19-17 12:12
Date Time

7-18-17 1800
Date Time
[signature]
Lab Receipt Signature
7/21/17 17:09
Date Time

The above analysis to be performed is authorized by:
Mel Chischilly Jr.
Signature
7-19-2017
Date

C17070708

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Lab Receipt Chain of Custody

Client: UM Date: 7/21/17

☐ **Was a Temperature Blank Received?** Y / N N/A
Record Temp of each cooler received. If cooler(s) is received outside 2-6°C record which samples were received in each cooler(s).

Temp °C 1 8.2 2 9.3 3 10.0 4 9.9 5 10.3 6 _____ 7 _____ 8 _____ 9 _____ 10 _____

Circle: From Field (On Ice) Melted Ice Blue Ice No Ice *If samples are received frozen notate them in the comments section.*

Thermometer Probe Number _____ IR Thermometer Number IR-2 Geiger Reading/Instrument Number LSD 15488 ur/hr

☐ **What is the shipment method?** (*circle*)

UPS / Fed Ex:	(GRD)	2ND Day	NDA	Sat Del
US Mail:	STD	Priority	Express	
Other:	HAND	NPT	DROP BOX	

✓ **# containers/coolers were received?** 5 **Shipping charged to client?** (Y)/N **If Y, Qty** 5

Is the Shipping container/cooler in good condition? (Y)/ N N/P

Are there Custody seals intact on all shipping container/cooler? (Y)/ N N/P

Are there Custody seals intact on sample bottles? Y / N (N/P)

Is the Chain of Custody present? (Y)/ N

Is the Chain of Custody signed when relinquished and received? (Y)/ N

Does the COC agree with the sample labels? (Y)/ N

Are Samples in proper container/bottle? (Y)/ N

Are the Sample containers intact? (Y)/ N

Is there sufficient sample volume for indicated test? (Y)/ N

Are all samples received within holding time? (Y)/ N

Water-VOA vials have 0 headspace? (Y)/ N NA
List samples with headspace (bubble >1/4 in) in the comments section

Water-pH acceptable upon receipt? Y / N

This section is only to be filled out if applicable
Subsampled / Preserved
For: _____
Circle one or both of the above as applicable

Is lab filtering required for the sample(s)? Y/N
For:

Comments:

*** Take Pictures of shipping container(s) & sample bottles**

Set up completed by: KK

Bottle/ELI Labels Checked By: DQ

Energy Laboratories, Inc
Login Prep-Lab Receipt Chain of Custody (updated 6/12/17 kvidick)

Work Order Receipt Checklist

United Nuclear Corporation

C17070708

Login completed by: Tessa Parke
Reviewed by: Kasey Vidick
Reviewed Date: 7/25/2017

Date Received: 7/21/2017
Received by: tjp
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	8.2°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

UNC MINING & MILLING
(St. Rd. 566 - 21 Miles NE of Gallup)
P. O. Box 1088
Gallup, NM 87305-1088
(505) 905-6651

CHAIN OF CUSTODY

ZONE - 3

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. EW- 3-7-2017

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

(307) 235-0515
Phone No.

Sample Description	Date	Time	Filter 0.45u	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	NaOH	Preserved By	Analysis Required
NBL-2	7-18-17	1654		1- ✓ ice					M. Chischilly	Bicarbonate (HCO_3), Chloride (Cl), pH, TDS
NW-1	7-19-17	1015		1- ✓ ice					↓	
NW-4	7-19-17	1036		1- ✓ ice						
NW-2	7-19-17	1055		1- ✓ ice						
RW-A	7-19-17	1118		1- ✓ ice						
NW-5	7-19-17	1138		1- ✓ ice						

C17070709

Sampled By: Myl Chischilly Jr.

Dispatched By: [signature]

Carrier: UPS-Ground

5 iced cooler
Method of Shipment

Received By: [signature]
7-19-17 12:17
Date Time

7-18-17 @ 1800
7-19-17 @ 1200
Date Time

[signature]
Lab Receipt Signature

7/21/17 17:00
Date Time

The above analysis to be performed is authorized by:

Myl Chischilly Jr.
Signature

7-19-2017
Date

ENERGY LABORATORIES

Trust our People. Trust our Data.
www.energylab.com

Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Lab Receipt Chain of Custody

Client: UNC Date: 7/21/17

☐ **Was a Temperature Blank Received?** Y / (N) N/A
Record Temp of each cooler received. If cooler(s) is received outside 2-6°C record which samples were received in each cooler(s).

Temp °C 1 8.2 2 9.3 3 10.0 4 9.9 5 10.3 6 _____ 7 _____ 8 _____ 9 _____ 10 _____

Circle: From Field, (On Ice) Melted Ice Blue Ice No Ice *If samples are received frozen notate them in the comments section.*

Thermometer Probe Number _____ IR Thermometer Number _____ Geiger Reading/Instrument Number _____ ur/hr

☐ **What is the shipment method?** (*circle*)

UPS / Fed Ex: (GRD) 2ND Day NDA Sat Del

US Mail: STD Priority Express

Other: HAND NPT DROP BOX

✓ **# containers/coolers were received?** 5 **Shipping charged to client?** Y/(N) **If Y, Qty** _____

Is the Shipping container/cooler in good condition? (Y) N N/P

Are there Custody seals intact on all shipping container/cooler? (Y) N N/P

Are there Custody seals intact on sample bottles? Y / N (N/P)

Is the Chain of Custody present? (Y) / N

Is the Chain of Custody signed when relinquished and received? (Y) / N

Does the COC agree with the sample labels? (Y) / N

Are Samples in proper container/bottle? (Y) N

Are the Sample containers intact? (Y) / N

Is there sufficient sample volume for indicated test? (Y) / N

Are all samples received within holding time? (Y) / N

Water-VOA vials have 0 headspace? (Y) / N NA
List samples with headspace (bubble >1/4 in) in the comments section

Water-pH acceptable upon receipt? Y / N

This section is only to be filled out if applicable
Subsampled / Preserved
For: _____
Circle one or both of the above as applicable

Is lab filtering required for the sample(s)? Y/N
For:

Comments:

*** Take Pictures of shipping container(s) & sample bottles**

Set up completed by: KK

Bottle/ELI Labels Checked By: DQ

Energy Laboratories, Inc
Login Prep-Lab Receipt Chain of Custody (updated 6/12/17 kvidick)

Work Order Receipt Checklist

United Nuclear Corporation

C17070709

Login completed by: Tessa Parke
Reviewed by: Kasey Vidick
Reviewed Date: 7/25/2017

Date Received: 7/21/2017
Received by: tjp
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	8.2°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-6651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

SW Alluvium

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE- 12-10-2017

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
509-D	10-2-17	0847	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
EPA-23	10-2-17	0938	1-(8 oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			K, Mg, Mn, Na, NH_4, Ni,
803	10-2-17	1034	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			NO_3, Pb, Pb-210, pH, Se,
808	10-2-17	1158	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			SO_4, TDS, Th-230, U, V,
802	10-2-17	1247	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			Chloroform, Gross
632	10-2-17	1331	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			Alpha (-) U & Rn,
801	10-2-17	1415	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			Combined Ra-226 & Ra-228, Al,
GW-1	10-2-17	1503	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			Co, Mo & Total Trihalomethanes (TTHMs)
EPA-28	10-2-17	1600	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			
EPA-28 DUPLICATE	10-2-17	1642	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓			
624	10-2-17	1730	1-(8oz.) ✓ ✓	2- ✓ ✓	4- ✓ ✓	1- ✓ ✓	3- ✓ ✓		✓	
										L17100193

Sampled by: Mel Chischilly Jr.
Dispatched by: [signature]
Carrier: UPS-Ground
Method of Shipment: 4 Iced Cooler

Received by: [signature]
Date: 10-3-17 Time: 10:06

Date: 10-2-17 Time: 1800
Lab Receipt Signature: [signature]
Date: 10/5/17 Time: 1000

The above analysis to be performed is authorized by:
Signature: Mel Chischilly Jr.
Date: 10-3-2017

Work Order Receipt Checklist

United Nuclear Corporation C17100193

Login completed by: Tessa Parke
Reviewed by: Kasey Vidick
Reviewed Date: 10/6/2017

Date Received: 10/5/2017
Received by: klv
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	8.2°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-6651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

SW Alluvium

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE-13-10-2017 (Pg. 1 of 2)

Sample Description	Date	Time	Filter 0.45u HNO_3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
SBL-1	10-3-17	0853	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
EPA-25	10-3-17	1002	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	K, Mg, Mn, Na, NH_4, Ni,
627	10-3-17	1107	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	NO_3, Pb, Pb-210, pH, Se,
										SO_4, TDS, Th-230, U, V,
										Chloroform, Gross
										Alpha (-) U & Rn,
										Combined Ra-226 & Ra-228, Al,
										Co, Mo & Total Trihalomethanes (TTHMs)

Sampled by: Mel Chischilly Jr.
Dispatched by: [signature]
Carrier: UPS-Ground
7 iced cooler
Method of Shipment

Received by: Francesca Holbrook 10-3-17 1730
Date Time
10-4-17 1:25
Date Time
Lab Receipt Signature
10/6/17 2:45 pm
Date Time

The above analysis to be performed is authorized by:
Mel Chischilly Jr.
Signature
10-4-2017
Date

Work Order Receipt Checklist

United Nuclear Corporation

C17100294

Login completed by: Tessa Parke
Reviewed by: Kasey Vidick
Reviewed Date: 10/10/2017

Date Received: 10/6/2017
Received by: kak
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The temperature was taken when the samples were received in the laboratory but inadvertently was not recorded. It was noted that the coolers were received with sufficient ice. The laboratory sincerely apologizes for this oversight.

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-6651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

ZONE - 1

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE-13-10-2017 (Pg. 2 of 2)

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
614	10-3-17	1234	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
515-A	10-3-17	1351	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			K, Mg, Mn, Na, NH_4, Ni,
604	10-3-17	1507	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			NO_3, Pb, Pb-210, pH, Se,
EPA-7	10-3-17	1601	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			SO_4, TDS, Th-230, U, V,
EPA-5	10-3-17	1642	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			Chloroform, Gross
EPA-4	10-4-17	0831	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			Alpha (-) U & Rn,
EPA-2	10-4-17	0948	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			Combined Ra-226 & Ra-228, Al,
EPA-2 DUPLICATE	10-4-17	1045	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			Co, Mo & Total Trihalomethanes (TTHMs)
TWQ-142	10-4-17	1130	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			
RINSATE	10-4-17	1214	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			
FIELD BLANK	10-4-17	1220	1-(8oz.) ✓ ✗	2- ✓ ✗	4- ✓ ✗	1- ✓ ✗	3- ✓ ✗			

Sampled by: Mal Chischilly Jr.
Dispatched by: [illegible]
Carrier: UPS-Ground
7 iced cooler
Method of Shipment

Received by: [illegible]
10-4-17 1:26
Date Time

10-3-17 @ 1730
10-4-17 @ 1230
Date Time

Lab Receipt Signature

Date Time

The above analysis to be performed is authorized by:
Mal Chischilly Jr.
Signature
10-4-2017
Date

017100295

Work Order Receipt Checklist

United Nuclear Corporation

C17100295

Login completed by: Tessa Parke
Reviewed by: Kasey Vidick
Reviewed Date: 10/10/2017

Date Received: 10/6/2017
Received by: kak
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The temperature was taken when the samples were received in the laboratory but inadvertently was not recorded. It was noted that the coolers were received with sufficient ice. The laboratory sincerely apologizes for this oversight.

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-6651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

ZONE - 3

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE-14-10-2017

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
613	10-9-17	0835	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
517	10-9-17	0925	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			K, Mg, Mn, Na, NH_4, Ni,
708	10-9-17	1030	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			NO_3, Pb, Pb-210, pH, Se,
711	10-9-17	1147	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			SO_4, TDS, Th-230, U, V,
EPA-13	10-9-17	1248	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Chloroform, Gross
420	10-9-17	1355	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Alpha (-) U & Rn,
717	10-9-17	1500	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Combined Ra-226 & Ra-228, Al,
717 DUPLICATE	10-9-17	1546	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Co, Mo & Total Trihalomethanes (TTHMs)
EPA-14	10-9-17	1630	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			
										C17100456

Sampled by: Mel Chischilly Jr.
Dispatched by: [signature]
Carrier: UPS-Ground
4 iced cooler
Method of Shipment

Received by: Frank Deitz
10-10-17 Date 1113 Time

10-9-17 Date 1800 Time
Lab Receipt Signature: Brian Ortiz
10/12/17 Date 1035 Time

The above analysis to be performed is authorized by:
Mel Chischilly Jr.
Signature
10-10-2017
Date

Work Order Receipt Checklist

United Nuclear Corporation C17100456

Login completed by: Dorian Quis
Reviewed by: Kasey Vidick
Reviewed Date: 10/15/2017

Date Received: 10/12/2017
Received by: dcq
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	1.2°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Container/Temp Blank temperature #1 - 7.6
Container/Temp Blank temperature #2 - 1.2
Container/Temp Blank temperature #3 - 1.8
Container/Temp Blank temperature #4 - 1.2

UNITED NUCLEAR CORPORATION
(State Road 566 - 21 Miles NE of Gallup)
P.O. Box 1088
Gallup, NM 87305-1088
505-905-8651

CHAIN OF CUSTODY

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

307-235-0515
Phone No.

ZONE - 3

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. TE- 15-10-2017

Sample Description	Date	Time	Filter 0.45u HNO3	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	HCl	Preserved By	Analysis Required (For all samples listed)
719	10-10-17	0827	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓		M. Chischilly	As, Be, Ca, Cd, Cl, HCO_3,
NBL-2	10-10-17	1230	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			K, Mg, Mn, Na, NH_4, Ni,
MW-7	10-10-17	1405	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			NO_3, Pb, Pb-210, pH, Se,
NW-3	10-10-17	1532	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			SO_4, TDS, Th-230, U, V,
RINSATE	10-10-17	1600	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Chloroform, Gross
FIELD BLANK	10-10-17	1615	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Alpha (-) U & Rn,
RW-A	10-10-17	1632	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓			Combined Ra-226 & Ra-228, Al,
RW-11	10-10-17	1700	1-(8oz.) ✓	2-✓	4-✓	1-✓	3-✓		↓	Co, Mo & Total Trihalomethanes (TTHMs)
										C17100506

Sampled by: Mel Chischilly Jr.
Dispatched by: [signature]
Carrier: UPS-Ground
4 iced cooler
Method of Shipment

Received by: [signature] 10-10-17 1800
Date Time
10/11/17 11:45
Date Time

Lab Receipt Signature
10/13/17 1115
Date Time

The above analysis to be performed is authorized by:
Mel Chischilly Jr.
Signature
10-11-2017
Date

Work Order Receipt Checklist

United Nuclear Corporation

C17100506

Login completed by: Dorian Quis
Reviewed by: Kasey Vidick
Reviewed Date: 10/15/2017

Date Received: 10/13/2017
Received by: dcq
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	2.4°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Container/Temp blank temperature #1 was 4.0, #2 was 2.4, #3 was 3.2 and #4 was 2.8

UNC MINING & MILLING
(St. Rd. 566 - 21 Miles NE of Gallup)
P. O. Box 1088
Gallup, NM 87305-1088
(505) 905-6651

CHAIN OF CUSTODY

ZONE – 3

All analysis will be performed in accordance with EPA approved procedures and/or 15th Edition of Standard Methods

UNC Submittal No. EM- 4-10- 2017

Energy Laboratories, Inc.
Laboratory

2393 N. Salt Creek Highway
Address

Casper WY 82601
City State Zip

(307) 235-0515
Phone No.

Sample Description	Date	Time	Filter 0.45u	PRESERVATION & NUMBER OF CONTAINERS plain	HNO_3	H_2SO_4	$Na_2S_2O_3$	NaOH	Preserved By	Analysis Required
NW-1	10-11-17	1006		1- ✓ ice					M. Chischilly	Bicarbonate (HCO_3), Chloride (Cl), pH, TDS
NW-4	10-11-17	1028		1- ✓ ice					↓	
NW-2	10-11-17	1040		1- ✓ ice						
NW-5	10-11-17	1052		1- ✓ ice						
										C17100505

Sampled By: Mel Chischilly Jr.
Dispatched By: Avon B. Scott 10/11/17 Date 11:45 Time
Carrier: UPS- Ground
4 iced cooler
Method of Shipment

Received By: Jean Ann Hill 10-11-17 Date 1200 Time
Lab Receipt Signature: Darian Ries
10/13/17 Date 1115 Time

The above analysis to be performed is authorized by:
Mel Chischilly Jr.
Signature
10-11-2017
Date

Work Order Receipt Checklist

United Nuclear Corporation C17100505

Login completed by: Dorian Quis
Reviewed by: Kasey Vidick
Reviewed Date: 10/15/2017

Date Received: 10/13/2017
Received by: dcq
Carrier name: Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	2.4°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Container/Temp Blank temperature #1 was 4.0, #2 was 2.4, #3 was 3.2 and #4 was 2.8

APPENDIX – D (1 OF 2)

THIRD QUARTER

LABORATORY QUALITY CONTROL AND

PERFORMANCE REPORT

ANALYTICAL SUMMARY REPORT

September 05, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17070424 Quote ID: C129 - Quarterly Long List

Project Name: SW Alluvium

Energy Laboratories, Inc. Casper WY received the following 11 samples for United Nuclear Corporation on 7/13/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17070424-001	509-D	07/10/17 08:37	07/13/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070424-002	EPA-23	07/10/17 09:30	07/13/17	Aqueous	Same As Above
C17070424-003	803	07/10/17 10:10	07/13/17	Aqueous	Same As Above
C17070424-004	808	07/10/17 11:20	07/13/17	Aqueous	Same As Above
C17070424-005	802	07/10/17 12:15	07/13/17	Aqueous	Same As Above
C17070424-006	632	07/10/17 13:00	07/13/17	Aqueous	Same As Above
C17070424-007	801	07/10/17 13:40	07/13/17	Aqueous	Same As Above
C17070424-008	GW-1	07/10/17 14:30	07/13/17	Aqueous	Same As Above
C17070424-009	EPA-28	07/10/17 15:25	07/13/17	Aqueous	Same As Above
C17070424-010	EPA-28 Duplicate	07/10/17 16:10	07/13/17	Aqueous	Same As Above
C17070424-011	624	07/10/17 17:00	07/13/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

ANALYTICAL SUMMARY REPORT

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.09.05 15:52:10 -06:00

CLIENT: United Nuclear Corporation
Project: SW Alluvium
Work Order: C17070424

Report Date: 09/05/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

Sample ID 509-D:
Nitrogen, Nitrate+Nitrite as N reported by method E353.2 is lower than the data obtained by method E300.0 used for an internal data check. The data from both methods was confirmed by re-analysis. Method E353.2 is analyzed from the preserved sample and method E300.0 is analyzed from the unpreserved sample. Nitrogen, Nitrate+Nitrite as N by method E300.0 was 12 mg/L.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/29/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_170714B	
Lab ID: ICV-9186		Initial Calibration Verification Standard							07/14/17 11:20	
pH		6.88	s.u.	0.010	100	98	102			
Method: A2320 B									Batch: R225027	
Lab ID: MBLK		Method Blank				Run: MANTECH_170714B			07/14/17 11:24	
Alkalinity, Total as CaCO3		ND	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_170714B			07/14/17 11:33	
Alkalinity, Total as CaCO3		264	mg/L	5.0	106	90	110			
Lab ID: C17070424-001ADUP		Sample Duplicate				Run: MANTECH_170714B			07/14/17 12:00	
Alkalinity, Total as CaCO3		2000	mg/L	5.0				2.3	10	
Lab ID: C17070424-011ADUP		Sample Duplicate				Run: MANTECH_170714B			07/14/17 13:58	
Alkalinity, Total as CaCO3		1330	mg/L	5.0				0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/29/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS170714A	
Lab ID: MB-1_170714A		Method Blank				Run: BAL-18_170714A			07/14/17 14:53	
Solids, Total Dissolved TDS @ 180 C		10	mg/L	7						
Lab ID: LCS-2_170714A		Laboratory Control Sample				Run: BAL-18_170714A			07/14/17 14:56	
Solids, Total Dissolved TDS @ 180 C		1160	mg/L	11	103	90	110			
Lab ID: C17070393-001A DUP		Sample Duplicate				Run: BAL-18_170714A			07/14/17 14:57	
Solids, Total Dissolved TDS @ 180 C		4610	mg/L	39				0.3	5	
Lab ID: C17070424-005A DUP		Sample Duplicate				Run: BAL-18_170714A			07/14/17 15:18	
Solids, Total Dissolved TDS @ 180 C		6480	mg/L	100				0.3	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/29/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A4500-H B**									Analytical Run: PHSC_101-C_170714A	
Lab ID: **pH 6.86**		Initial Calibration Verification Standard							07/14/17 08:06	
pH		6.88	s.u.	0.010	100	98	102			
Method: **A4500-H B**									Batch: R224973	
Lab ID: **C17070424-004ADUP**		Sample Duplicate				Run: PHSC_101-C_170714A			07/14/17 09:47	
pH		6.53	s.u.	0.010				0.0	3	
Lab ID: **C17070424-006ADUP**		Sample Duplicate				Run: PHSC_101-C_170714A			07/14/17 15:48	
pH		6.65	s.u.	0.010				0.2	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/29/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_170723A	
Lab ID: ICV		Initial Calibration Verification Standard							07/23/17 10:56	
Nitrogen, Ammonia as N		0.994	mg/L	0.050	99	90	110			
Method: A4500-NH3 G									Batch: R225275	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170723A			07/23/17 10:54	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170723A			07/23/17 10:57	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17070424-001DMS		Sample Matrix Spike				Run: FIA201-C_170723A			07/23/17 10:59	
Nitrogen, Ammonia as N		2.19	mg/L	0.050	115	90	110			SE
Lab ID: C17070424-001DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170723A			07/23/17 11:01	
Nitrogen, Ammonia as N		2.18	mg/L	0.050	114	90	110	0.5	10	SE
Lab ID: C17070424-011DMS		Sample Matrix Spike				Run: FIA201-C_170723A			07/23/17 11:16	
Nitrogen, Ammonia as N		0.778	mg/L	0.050	78	90	110			S
Lab ID: C17070424-011DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170723A			07/23/17 11:17	
Nitrogen, Ammonia as N		0.808	mg/L	0.050	81	90	110	3.8	10	S

Qualifiers:

RL - Analyte reporting limit.

E - Estimated value. Result exceeds the instrument upper quantitation limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 07/29/17

Project: SW Alluvium **Work Order:** C17070424

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC2-C_170720A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							07/20/17 14:11	
Chloride			9.99	mg/L	1.0	100	90	110			
Sulfate			38.1	mg/L	1.0	95	90	110			
Method:	**E300.0**									Batch: R225279	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170720A			07/20/17 14:28	
Chloride			ND	mg/L	0.05						
Sulfate			ND	mg/L	0.05						
Lab ID:	**LFB072017-1**	2	Laboratory Fortified Blank				Run: IC2-C_170720A			07/20/17 14:45	
Chloride			9.90	mg/L	1.0	99	90	110			
Sulfate			38.9	mg/L	1.0	97	90	110			
Lab ID:	**C17070149-001AMS**	2	Sample Matrix Spike				Run: IC2-C_170720A			07/20/17 15:37	
Chloride			343	mg/L	1.0	83	80	120			
Sulfate			1300	mg/L	4.2	87	80	120			
Lab ID:	**C17070149-001AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170720A			07/20/17 15:55	
Chloride			345	mg/L	1.0	85	80	120	0.7	20	
Sulfate			1300	mg/L	4.2	87	80	120	0.0	20	
Lab ID:	**C17070424-004AMS**	2	Sample Matrix Spike				Run: IC2-C_170720A			07/20/17 19:42	
Chloride			386	mg/L	2.1	97	80	120			
Sulfate			3850	mg/L	8.3		80	120			A
Lab ID:	**C17070424-004AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170720A			07/20/17 19:59	
Chloride			370	mg/L	2.1	89	80	120	4.3	20	
Sulfate			3830	mg/L	8.3		80	120	0.4	20	A

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 07/29/17
Project: SW Alluvium **Work Order:** C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_170719A	
Lab ID: ICV		Initial Calibration Verification Standard							07/19/17 15:27	
Nitrogen, Nitrate+Nitrite as N		0.954	mg/L	0.010	95	90	110			
Method: E353.2									Batch: R225156	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170719A			07/19/17 15:28	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170719A			07/19/17 15:30	
Nitrogen, Nitrate+Nitrite as N		1.03	mg/L	0.010	104	90	110			
Lab ID: C17060749-010FMS		Sample Matrix Spike				Run: FIA201-C_170719A			07/19/17 15:33	
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.010	102	90	110			
Lab ID: C17060749-010FMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170719A			07/19/17 15:34	
Nitrogen, Nitrate+Nitrite as N		1.03	mg/L	0.010	104	90	110	1.0	10	
Lab ID: C17070424-005DMS		Sample Matrix Spike				Run: FIA201-C_170719A			07/19/17 15:50	
Nitrogen, Nitrate+Nitrite as N		123	mg/L	0.50	97	90	110			
Lab ID: C17070424-005DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170719A			07/19/17 15:51	
Nitrogen, Nitrate+Nitrite as N		123	mg/L	0.50	97	90	110	0.0	10	
Method: E353.2									Analytical Run: FIA201-C_170719B	
Lab ID: ICV		Initial Calibration Verification Standard							07/19/17 17:06	
Nitrogen, Nitrate+Nitrite as N		0.958	mg/L	0.010	96	90	110			
Method: E353.2									Batch: R225163	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170719B			07/19/17 17:07	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170719B			07/19/17 17:09	
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.010	103	90	110			
Lab ID: C17070424-005DMS		Sample Matrix Spike				Run: FIA201-C_170719B			07/19/17 17:12	
Nitrogen, Nitrate+Nitrite as N		127	mg/L	0.50	104	90	110			
Lab ID: C17070424-005DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170719B			07/19/17 17:13	
Nitrogen, Nitrate+Nitrite as N		126	mg/L	0.50	103	90	110	0.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/26/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_170719A	
Lab ID: ICV	3	Continuing Calibration Verification Standard							07/19/17 11:25	
Calcium		25.3	mg/L	1.0	101	95	105			
Magnesium		24.9	mg/L	1.0	100	95	105			
Sodium		24.8	mg/L	1.0	99	95	105			
Method: E200.7									Batch: R283406	
Lab ID: MB-6500DIS170719A	3	Method Blank				Run: ICP203-B_170719A			07/19/17 11:32	
Calcium		0.10	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Sodium		0.03	mg/L	0.03						
Lab ID: LFB-6500DIS170719A	3	Laboratory Fortified Blank				Run: ICP203-B_170719A			07/19/17 11:39	
Calcium		50.1	mg/L	1.0	100	85	115			
Magnesium		48.8	mg/L	1.0	98	85	115			
Sodium		49.7	mg/L	1.0	99	85	115			
Lab ID: B17071467-003BMS2	3	Sample Matrix Spike				Run: ICP203-B_170719A			07/20/17 01:26	
Calcium		748	mg/L	1.0	104	70	130			
Magnesium		461	mg/L	1.0	100	70	130			
Sodium		599	mg/L	1.0	101	70	130			
Lab ID: B17071467-003BMSD	3	Sample Matrix Spike Duplicate				Run: ICP203-B_170719A			07/20/17 01:29	
Calcium		690	mg/L	1.0	81	70	130	8.1	20	
Magnesium		426	mg/L	1.0	86	70	130	7.8	20	
Sodium		545	mg/L	1.0	79	70	130	9.5	20	
Lab ID: C17070424-010BMS2	3	Sample Matrix Spike				Run: ICP203-B_170719A			07/20/17 02:19	
Calcium		678	mg/L	1.0	85	70	130			
Magnesium		650	mg/L	1.0	88	70	130			
Sodium		447	mg/L	1.0	85	70	130			
Lab ID: C17070424-010BMSD	3	Sample Matrix Spike Duplicate				Run: ICP203-B_170719A			07/20/17 02:22	
Calcium		632	mg/L	1.0	67	70	130	6.9	20	S
Magnesium		607	mg/L	1.0	71	70	130	6.8	20	
Sodium		414	mg/L	1.0	71	70	130	7.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/26/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_170720A	
Lab ID: ICV		Continuing Calibration Verification Standard							07/20/17 12:59	
Potassium		25.1	mg/L	1.0	101	95	105			
Method: E200.7									Batch: R283486	
Lab ID: MB-6500DIS170718A		Method Blank				Run: ICP203-B_170720A			07/20/17 13:06	
Potassium		ND	mg/L	0.08						
Lab ID: LFB-6500DIS170718A		Laboratory Fortified Blank				Run: ICP203-B_170720A			07/20/17 13:13	
Potassium		50.3	mg/L	1.0	101	85	115			
Lab ID: B17071466-011BMS2		Sample Matrix Spike				Run: ICP203-B_170720A			07/20/17 21:14	
Potassium		51.4	mg/L	1.0	103	70	130			
Lab ID: B17071466-011BMSD		Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/20/17 21:18	
Potassium		52.3	mg/L	1.0	105	70	130	1.8	20	
Lab ID: C17070424-006BMS2		Sample Matrix Spike				Run: ICP203-B_170720A			07/20/17 22:03	
Potassium		441	mg/L	1.0	87	70	130			
Lab ID: C17070424-006BMSD		Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/20/17 22:07	
Potassium		451	mg/L	1.0	88	70	130	2.1	20	
Lab ID: B17071573-001BMS2		Sample Matrix Spike				Run: ICP203-B_170720A			07/20/17 22:49	
Potassium		246	mg/L	1.3	91	70	130			
Lab ID: B17071573-001BMSD		Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/20/17 22:53	
Potassium		251	mg/L	1.3	93	70	130	2.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 07/26/17

Project: SW Alluvium **Work Order:** C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP204-B_170724A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							07/24/17 11:50	
Calcium		25.1	mg/L	1.0	100	95	105			
Magnesium		24.9	mg/L	1.0	99	95	105			
Potassium		24.8	mg/L	1.0	99	95	105			
Sodium		24.6	mg/L	1.0	98	95	105			
Method: E200.7									Batch: R283661	
Lab ID: MB-7400DIS170724A	4	Method Blank				Run: ICP204-B_170724A			07/24/17 11:54	
Calcium		ND	mg/L	0.1						
Magnesium		ND	mg/L	0.003						
Potassium		ND	mg/L	0.03						
Sodium		ND	mg/L	0.02						
Lab ID: LFB-7400DIS170724A	4	Laboratory Fortified Blank				Run: ICP204-B_170724A			07/24/17 12:06	
Calcium		51.0	mg/L	1.0	102	85	115			
Magnesium		50.6	mg/L	1.0	101	85	115			
Potassium		50.7	mg/L	1.0	101	85	115			
Sodium		49.8	mg/L	1.0	100	85	115			
Lab ID: C17070424-005BMS2	4	Sample Matrix Spike				Run: ICP204-B_170724A			07/24/17 17:41	
Calcium		1170	mg/L	1.4	102	70	130			
Magnesium		1290	mg/L	1.0	107	70	130			
Potassium		522	mg/L	1.0	103	70	130			
Sodium		851	mg/L	3.1	104	70	130			
Lab ID: C17070424-005BMSD	4	Sample Matrix Spike Duplicate				Run: ICP204-B_170724A			07/24/17 17:53	
Calcium		1170	mg/L	1.4	101	70	130	0.2	20	
Magnesium		1280	mg/L	1.0	106	70	130	0.4	20	
Potassium		523	mg/L	1.0	104	70	130	0.2	20	
Sodium		850	mg/L	3.1	104	70	130	0.1	20	
Lab ID: B17071455-002BMS2	4	Sample Matrix Spike				Run: ICP204-B_170724A			07/24/17 18:39	
Calcium		573	mg/L	1.0	98	70	130			
Magnesium		277	mg/L	1.0	99	70	130			
Potassium		291	mg/L	1.0	101	70	130			
Sodium		870	mg/L	1.6	103	70	130			
Lab ID: B17071455-002BMSD	4	Sample Matrix Spike Duplicate				Run: ICP204-B_170724A			07/24/17 18:43	
Calcium		573	mg/L	1.0	99	70	130	0.1	20	
Magnesium		281	mg/L	1.0	101	70	130	1.3	20	
Potassium		290	mg/L	1.0	100	70	130	0.5	20	
Sodium		865	mg/L	1.6	101	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 07/26/17
Project: SW Alluvium **Work Order:** C17070424

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**								Analytical Run: ICPMS202-B_170725A		
Lab ID:	**QCS**		Initial Calibration Verification Standard							07/26/17 00:15	
Beryllium			0.0255	mg/L	0.0010	102	90	110			
Method:	**E200.8**									Batch: 111684	
Lab ID:	**MB-111684**	10	Method Blank				Run: ICPMS202-B_170725A			07/26/17 00:37	
Aluminum			0.006	mg/L	0.0009						
Beryllium			ND	mg/L	0.00002						
Cadmium			ND	mg/L	0.00002						
Cobalt			ND	mg/L	0.00003						
Lead			ND	mg/L	0.00005						
Manganese			ND	mg/L	0.00004						
Molybdenum			0.0006	mg/L	0.00007						
Nickel			0.0001	mg/L	0.00006						
Uranium			0.00002	mg/L	0.00002						
Vanadium			ND	mg/L	0.0002						
Lab ID:	**LCS-111684**	10	Laboratory Control Sample				Run: ICPMS202-B_170725A			07/26/17 00:42	
Aluminum			2.40	mg/L	0.030	96	85	115			
Beryllium			0.273	mg/L	0.0010	109	85	115			
Cadmium			0.262	mg/L	0.0010	105	85	115			
Cobalt			0.478	mg/L	0.0050	96	85	115			
Lead			0.506	mg/L	0.0010	101	85	115			
Manganese			2.43	mg/L	0.0010	97	85	115			
Molybdenum			0.528	mg/L	0.0010	106	85	115			
Nickel			0.477	mg/L	0.0050	95	85	115			
Uranium			0.502	mg/L	0.00030	100	85	115			
Vanadium			0.500	mg/L	0.010	100	85	115			
Lab ID:	**B17071466-011CMS3**	10	Sample Matrix Spike				Run: ICPMS202-B_170725A			07/26/17 00:45	
Aluminum			2.39	mg/L	0.030	95	70	130			
Beryllium			0.273	mg/L	0.0010	109	70	130			
Cadmium			0.262	mg/L	0.0010	105	70	130			
Cobalt			0.483	mg/L	0.0050	97	70	130			
Lead			0.509	mg/L	0.0010	102	70	130			
Manganese			2.42	mg/L	0.0010	97	70	130			
Molybdenum			0.551	mg/L	0.0010	110	70	130			
Nickel			0.475	mg/L	0.0050	95	70	130			
Uranium			0.508	mg/L	0.00030	102	70	130			
Vanadium			0.502	mg/L	0.010	100	70	130			
Lab ID:	**B17071466-011CMSD**	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170725A			07/26/17 00:48	
Aluminum			2.42	mg/L	0.030	97	70	130	1.4	20	
Beryllium			0.279	mg/L	0.0010	112	70	130	2.2	20	
Cadmium			0.267	mg/L	0.0010	107	70	130	1.9	20	
Cobalt			0.491	mg/L	0.0050	98	70	130	1.6	20	
Lead			0.509	mg/L	0.0010	102	70	130	0.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/26/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 111684
Lab ID: B17071466-011CMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170725A			07/26/17 00:48	
Manganese		2.44	mg/L	0.0010	98	70	130	0.6	20	
Molybdenum		0.552	mg/L	0.0010	110	70	130	0.2	20	
Nickel		0.480	mg/L	0.0050	96	70	130	1.0	20	
Uranium		0.519	mg/L	0.00030	104	70	130	2.2	20	
Vanadium		0.510	mg/L	0.010	102	70	130	1.5	20	
Lab ID: B17071474-008BMS3	10	Sample Matrix Spike				Run: ICPMS202-B_170725A			07/26/17 02:00	
Aluminum		2.98	mg/L	0.030	116	70	130			
Beryllium		0.238	mg/L	0.0010	95	70	130			
Cadmium		0.272	mg/L	0.0010	109	70	130			
Cobalt		0.570	mg/L	0.0050	114	70	130			
Lead		0.541	mg/L	0.0010	108	70	130			
Manganese		2.93	mg/L	0.0010	111	70	130			
Molybdenum		0.517	mg/L	0.0015	103	70	130			
Nickel		0.566	mg/L	0.0050	111	70	130			
Uranium		0.568	mg/L	0.00033	113	70	130			
Vanadium		0.598	mg/L	0.010	119	70	130			
Lab ID: B17071474-008BMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170725A			07/26/17 02:03	
Aluminum		2.83	mg/L	0.030	111	70	130	5.0	20	
Beryllium		0.253	mg/L	0.0010	101	70	130	6.1	20	
Cadmium		0.267	mg/L	0.0010	107	70	130	2.0	20	
Cobalt		0.535	mg/L	0.0050	107	70	130	6.3	20	
Lead		0.533	mg/L	0.0010	107	70	130	1.4	20	
Manganese		2.79	mg/L	0.0010	106	70	130	5.0	20	
Molybdenum		0.521	mg/L	0.0015	104	70	130	0.7	20	
Nickel		0.528	mg/L	0.0050	103	70	130	6.8	20	
Uranium		0.555	mg/L	0.00033	110	70	130	2.4	20	
Vanadium		0.553	mg/L	0.010	109	70	130	7.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/26/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS206-B_170724A	
Lab ID: QCS	9	Initial Calibration Verification Standard							07/25/17 02:25	
Aluminum		0.256	mg/L	0.10	102	90	110			
Cadmium		0.0245	mg/L	0.0010	98	90	110			
Cobalt		0.0513	mg/L	0.010	103	90	110			
Lead		0.0517	mg/L	0.010	103	90	110			
Manganese		0.258	mg/L	0.010	103	90	110			
Molybdenum		0.0494	mg/L	0.0050	99	90	110			
Nickel		0.0517	mg/L	0.010	103	90	110			
Uranium		0.0212	mg/L	0.0010	106	90	110			
Vanadium		0.0494	mg/L	0.10	99	90	110			
Method: E200.8									Batch: 111684	
Lab ID: MB-111684	9	Method Blank				Run: ICPMS206-B_170724A			07/25/17 01:34	
Aluminum		ND	mg/L	0.0009						
Cadmium		ND	mg/L	0.00003						
Cobalt		ND	mg/L	0.00002						
Lead		ND	mg/L	0.00003						
Manganese		0.0002	mg/L	0.00006						
Molybdenum		0.00003	mg/L	0.00003						
Nickel		ND	mg/L	0.00009						
Uranium		ND	mg/L	0.00003						
Vanadium		ND	mg/L	0.00007						
Lab ID: LCS-111684	9	Laboratory Control Sample				Run: ICPMS206-B_170724A			07/25/17 02:55	
Aluminum		2.28	mg/L	0.030	91	85	115			
Cadmium		0.253	mg/L	0.0010	101	85	115			
Cobalt		0.489	mg/L	0.0050	98	85	115			
Lead		0.524	mg/L	0.0010	105	85	115			
Manganese		2.56	mg/L	0.0010	102	85	115			
Molybdenum		0.509	mg/L	0.0010	102	85	115			
Nickel		0.517	mg/L	0.0050	103	85	115			
Uranium		0.520	mg/L	0.00030	104	85	115			
Vanadium		0.512	mg/L	0.010	102	85	115			
Lab ID: B17071466-011CMS3	9	Sample Matrix Spike				Run: ICPMS206-B_170724A			07/25/17 02:58	
Aluminum		2.34	mg/L	0.030	94	70	130			
Cadmium		0.259	mg/L	0.0010	104	70	130			
Cobalt		0.506	mg/L	0.0050	101	70	130			
Lead		0.522	mg/L	0.0010	104	70	130			
Manganese		2.68	mg/L	0.0010	107	70	130			
Molybdenum		0.517	mg/L	0.0010	103	70	130			
Nickel		0.516	mg/L	0.0050	103	70	130			
Uranium		0.529	mg/L	0.00030	106	70	130			
Vanadium		0.504	mg/L	0.010	101	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/26/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 111684
Lab ID: B17071466-011CMSD	9	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170724A			07/25/17 03:02	
Aluminum		2.45	mg/L	0.030	98	70	130	4.4	20	
Cadmium		0.262	mg/L	0.0010	105	70	130	1.2	20	
Cobalt		0.494	mg/L	0.0050	99	70	130	2.3	20	
Lead		0.524	mg/L	0.0010	105	70	130	0.4	20	
Manganese		2.56	mg/L	0.0010	102	70	130	4.6	20	
Molybdenum		0.512	mg/L	0.0010	102	70	130	1.0	20	
Nickel		0.511	mg/L	0.0050	102	70	130	0.9	20	
Uranium		0.539	mg/L	0.00030	108	70	130	1.9	20	
Vanadium		0.512	mg/L	0.010	102	70	130	1.4	20	
Lab ID: B17071474-008BMS3	9	Sample Matrix Spike				Run: ICPMS206-B_170724A			07/25/17 04:36	
Aluminum		2.54	mg/L	0.030	96	70	130			
Cadmium		0.298	mg/L	0.0010	119	70	130			
Cobalt		0.525	mg/L	0.0050	104	70	130			
Lead		0.508	mg/L	0.0010	101	70	130			
Manganese		2.73	mg/L	0.0013	103	70	130			
Molybdenum		0.516	mg/L	0.0010	102	70	130			
Nickel		0.606	mg/L	0.0050	120	70	130			
Uranium		0.510	mg/L	0.00059	101	70	130			
Vanadium		0.606	mg/L	0.010	121	70	130			
Lab ID: B17071474-008BMSD	9	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170724A			07/25/17 04:39	
Aluminum		2.60	mg/L	0.030	99	70	130	2.2	20	
Cadmium		0.248	mg/L	0.0010	99	70	130	18	20	
Cobalt		0.527	mg/L	0.0050	105	70	130	0.3	20	
Lead		0.513	mg/L	0.0010	102	70	130	1.1	20	
Manganese		2.68	mg/L	0.0013	101	70	130	1.6	20	
Molybdenum		0.526	mg/L	0.0010	104	70	130	1.8	20	
Nickel		0.521	mg/L	0.0050	103	70	130	15	20	
Uranium		0.511	mg/L	0.00059	101	70	130	0.0	20	
Vanadium		0.512	mg/L	0.010	102	70	130	17	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/01/17
Work Order: C17070424

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**						'tical Run: SELENIUM PSA MILLENIUM_170721A			
Lab ID:	**ICV-38024**	Initial Calibration Verification Standard								07/21/17 12:21
Selenium-IV		0.0197	mg/L	0.0010	98	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								07/21/17 12:22
Selenium-IV		0.0207	mg/L	0.0010	104	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								07/21/17 12:54
Selenium-IV		0.0213	mg/L	0.0010	106	90	110			
Method:	**A3114 B**									Batch: 38024
Lab ID:	**MB-38024**	Method Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:25
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-38024**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:28
Selenium-IV		0.0199	mg/L	0.0010	100	85	115			
Lab ID:	**H17070303-001EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:31
Selenium-IV		0.0207	mg/L	0.0010	99	70	130			
Lab ID:	**H17070303-001EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:32
Selenium-IV		0.0210	mg/L	0.0010	101	70	130	1.4	20	
Lab ID:	**C17070424-008EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:57
Selenium-IV		0.0214	mg/L	0.0010	107	70	130			
Lab ID:	**C17070424-008EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:59
Selenium-IV		0.0216	mg/L	0.0010	108	70	130	0.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/01/17
Work Order: C17070424

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_170728A			
Lab ID:	**AS-ICV 25ppb-7/28/2017**	Initial Calibration Verification Standard								07/28/17 14:52
Arsenic-III		25.2	ug/L	5.0	101	87.6	114			
Lab ID:	**AS-50.0-7/28/2017**	Continuing Calibration Verification Standard								07/28/17 15:04
Arsenic-III		51.6	ug/L	5.0	103	85	115			
Lab ID:	**AS-50.0-7/28/2017**	Continuing Calibration Verification Standard								07/28/17 18:16
Arsenic-III		51.1	ug/L	5.0	102	85	115			
Method:	**E1632AM**									Batch: R127182
Lab ID:	**AS-LFB 50ppb-7/28/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:28
Arsenic-III		50.8	ug/L	5.0	102	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:40
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**C17070424-003E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1707				07/28/17 18:52
Arsenic-III		51.7	ug/L	5.0	103	55	146			
Lab ID:	**C17070424-003E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1707				07/28/17 19:04
Arsenic-III		51.2	ug/L	5.0	102	55	146	0.9	20	
Lab ID:	**H17070305-002E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1707				07/28/17 21:40
Arsenic-III		50.3	ug/L	5.0	98	55	146			
Lab ID:	**H17070305-002E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1707				07/28/17 21:52
Arsenic-III		51.7	ug/L	5.0	101	55	146	2.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1030
Lab ID: MB-GA-1030	3	Method Blank				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		0.08	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.3	pCi/L							
Gross Alpha minus Rn & U MDC		0.5	pCi/L							
Lab ID: LCS-GA-1030		Laboratory Control Sample				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		32	pCi/L		96	80	120			
Lab ID: C17070424-007FMS		Sample Matrix Spike				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		59	pCi/L		88	70	130			
Lab ID: C17070424-007FMSD		Sample Matrix Spike Duplicate				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		59	pCi/L		89	70	130	0.8	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8581
Lab ID: LCS-RA226-8581		Laboratory Control Sample				Run: G5000W_170802C				08/21/17 10:04
Radium 226		8.6	pCi/L		84	80	120			
Lab ID: MB-RA226-8581	3	Method Blank				Run: G5000W_170802C				08/21/17 10:04
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17070426-004CMS		Sample Matrix Spike				Run: G5000W_170802C				08/21/17 11:37
Radium 226		18	pCi/L		81	70	130			
Lab ID: C17070426-004CMSD		Sample Matrix Spike Duplicate				Run: G5000W_170802C				08/21/17 11:37
Radium 226		21	pCi/L		99	70	130	17	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2592
Lab ID: LCS-RA-TH-ISO-2592		Laboratory Control Sample				Run: EGG-ORTEC_2_170728A			08/03/17 15:06	
Thorium 230		5.0	pCi/L		89	80	120			
Lab ID: C17070239-001CMS		Sample Matrix Spike				Run: EGG-ORTEC_2_170728A			08/03/17 15:06	
Thorium 230		16	pCi/L		97	70	130			
Lab ID: C17070239-001CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_170728A			08/03/17 15:06	
Thorium 230		16	pCi/L		95	70	130	2.4	20	
Lab ID: MB-RA-TH-ISO-2592	3	Method Blank				Run: EGG-ORTEC_2_170728A			08/03/17 15:05	
Thorium 230		0.0007	pCi/L							U
Thorium 230 precision (±)		0.06	pCi/L							
Thorium 230 MDC		0.2	pCi/L							
Method: E908.0										Batch: RA-TH-ISO-2597
Lab ID: LCS-RA-TH-ISO-2597		Laboratory Control Sample				Run: EGG-ORTEC_2_170803A			08/07/17 11:38	
Thorium 230		5.6	pCi/L		95	80	120			
Lab ID: C17070468-002CMS		Sample Matrix Spike				Run: EGG-ORTEC_2_170803A			08/07/17 11:37	
Thorium 230		11	pCi/L		95	70	130			
Lab ID: C17070468-002CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_170803A			08/07/17 11:37	
Thorium 230		9.2	pCi/L		80	70	130	16	20	
Lab ID: MB-RA-TH-ISO-2597	3	Method Blank				Run: EGG-ORTEC_2_170803A			08/07/17 11:37	
Thorium 230		0.1	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.1	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070424

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0849	
Lab ID:	**LCS-PB-210-0849**		Laboratory Control Sample				Run: TRICARB LSC_170808A			08/18/17 15:02	
Lead 210			20	pCi/L		107	80	120			
Lab ID:	**MB-PB-210-0849**	3	Method Blank				Run: TRICARB LSC_170808A			08/18/17 16:04	
Lead 210			0.2	pCi/L							U
Lead 210 precision (±)			0.7	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17070426-001CMS**		Sample Matrix Spike				Run: TRICARB LSC_170808A			08/20/17 09:22	
Lead 210			50	pCi/L		128	70	130			
Lab ID:	**C17070426-001CMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_170808A			08/20/17 10:16	
Lead 210			45	pCi/L		114	70	130	11	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5557
Lab ID: LCS-228-RA226-8581		Laboratory Control Sample				Run: TENNELEC-3_170802D				08/15/17 11:17
Radium 228		9.0	pCi/L		87	80	120			
Lab ID: MB-RA226-8581	3	Method Blank				Run: TENNELEC-3_170802D				08/15/17 11:17
Radium 228		0.3	pCi/L							U
Radium 228 precision (±)		1.0	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C17070468-001CMS		Sample Matrix Spike				Run: TENNELEC-3_170802D				08/15/17 11:17
Radium 228		25	pCi/L		86	70	130			
Lab ID: C17070468-001CMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170802D				08/15/17 11:17
Radium 228		30	pCi/L		109	70	130	18	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/25/17
Work Order: C17070424

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624								Analytical Run: R283546	
Lab ID: CCV072017	Continuing Calibration Verification Standard							07/20/17 10:04	
Bromodichloromethane	4.72	ug/L	0.50	94	70	130			
Bromoform	5.12	ug/L	0.50	102	70	130			
Chlorodibromomethane	4.84	ug/L	0.50	97	70	130			
Chloroform	4.72	ug/L	0.50	94	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	96	71	139			
Surr: p-Bromofluorobenzene			0.50	107	80	127			
Surr: Toluene-d8			0.50	100	80	123			
Method: E624								Batch: R283546	
Lab ID: LCS072017	Laboratory Control Sample				Run: SV5972.I_170720A			07/20/17 10:35	
Bromodichloromethane	5.08	ug/L	0.50	102	74	128			
Bromoform	5.32	ug/L	0.50	106	66	128			
Chlorodibromomethane	5.12	ug/L	0.50	102	74	125			
Chloroform	5.32	ug/L	0.50	106	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	108	71	139			
Surr: p-Bromofluorobenzene			0.50	103	80	127			
Surr: Toluene-d8			0.50	99	80	123			
Lab ID: BLK072017	Method Blank				Run: SV5972.I_170720A			07/20/17 12:20	
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	95	71	139			
Surr: p-Bromofluorobenzene			0.50	124	80	127			
Surr: Toluene-d8			0.50	103	80	123			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 07/25/17
Work Order: C17070424

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R283606
Lab ID: CCV072117	Continuing Calibration Verification Standard								07/21/17 10:06
Bromodichloromethane	4.76	ug/L	0.50	95	70	130			
Bromoform	4.80	ug/L	0.50	96	70	130			
Chlorodibromomethane	4.64	ug/L	0.50	93	70	130			
Chloroform	4.68	ug/L	0.50	94	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	88	71	139			
Surr: p-Bromofluorobenzene			0.50	100	80	127			
Surr: Toluene-d8			0.50	100	80	123			
Method: E624									Batch: R283606
Lab ID: LCS072117	Laboratory Control Sample				Run: SV5972.I_170721A				07/21/17 10:36
Bromodichloromethane	5.04	ug/L	0.50	101	74	128			
Bromoform	5.08	ug/L	0.50	102	66	128			
Chlorodibromomethane	5.12	ug/L	0.50	102	74	125			
Chloroform	4.76	ug/L	0.50	95	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	97	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	99	80	123			
Lab ID: BLK072117	Method Blank				Run: SV5972.I_170721A				07/21/17 11:07
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	93	71	139			
Surr: p-Bromofluorobenzene			0.50	126	80	127			
Surr: Toluene-d8			0.50	102	80	123			
Lab ID: B17071467-003GMS	Sample Matrix Spike				Run: SV5972.I_170721A				07/21/17 20:50
Bromodichloromethane	5.44	ug/L	0.50	109	74	128			
Bromoform	5.68	ug/L	0.50	114	66	128			
Chlorodibromomethane	5.52	ug/L	0.50	110	74	125			
Chloroform	4.92	ug/L	0.50	98	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	97	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	100	80	123			
Lab ID: B17071467-003GMSD	Sample Matrix Spike Duplicate				Run: SV5972.I_170721A				07/21/17 21:20
Bromodichloromethane	5.12	ug/L	0.50	102	74	128	6.1	20	
Bromoform	5.48	ug/L	0.50	110	66	128	3.6	20	
Chlorodibromomethane	5.24	ug/L	0.50	105	74	125	5.2	20	
Chloroform	4.80	ug/L	0.50	96	68	124	2.5	20	
Surr: 1,2-Dichloroethane-d4			0.50	96	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	98	80	123			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ANALYTICAL SUMMARY REPORT

August 24, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17070469 Quote ID: C129 - Quarterly Long List

Project Name: SW Alluvium

Energy Laboratories, Inc. Casper WY received the following 3 samples for United Nuclear Corporation on 7/14/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17070469-001	SBL-1	07/11/17 08:47	07/14/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070469-002	EPA-25	07/11/17 10:00	07/14/17	Aqueous	Same As Above
C17070469-003	627	07/11/17 11:10	07/14/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey L. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.08.24 15:14:23 -06:00

CLIENT: United Nuclear Corporation
Project: SW Alluvium
Work Order: C17070469

Report Date: 08/24/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/02/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_170718A	
Lab ID: ICV-9186		Initial Calibration Verification Standard							07/17/17 17:55	
pH		6.93	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R225077	
Lab ID: MBLK		Method Blank				Run: MANTECH_170718A			07/17/17 17:59	
Alkalinity, Total as CaCO3		ND	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_170718A			07/17/17 18:07	
Alkalinity, Total as CaCO3		258	mg/L	5.0	103	90	110			
Lab ID: C17070468-002ADUP		Sample Duplicate				Run: MANTECH_170718A			07/17/17 19:53	
Alkalinity, Total as CaCO3		76.7	mg/L	5.0				1.1	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/02/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS170717B	
Lab ID: MB-1_170717B		Method Blank				Run: BAL-18_170717B			07/17/17 17:04	
Solids, Total Dissolved TDS @ 180 C		7	mg/L	7						
Lab ID: LCS-2_170717B		Laboratory Control Sample				Run: BAL-18_170717B			07/17/17 17:04	
Solids, Total Dissolved TDS @ 180 C		1090	mg/L	11	98	90	110			
Lab ID: C17070411-001A DUP		Sample Duplicate				Run: BAL-18_170717B			07/17/17 17:04	
Solids, Total Dissolved TDS @ 180 C		494	mg/L	10				1.2	5	
Lab ID: C17070469-003A DUP		Sample Duplicate				Run: BAL-18_170717B			07/17/17 17:08	
Solids, Total Dissolved TDS @ 180 C		4170	mg/L	40				0.4	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/02/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A4500-H B**								Analytical Run: PHSC_101-C_170717A		
Lab ID: **pH 6.86**		Initial Calibration Verification Standard							07/17/17 12:15	
pH		6.88	s.u.	0.010	100	98	102			
Method: **A4500-H B**									Batch: R225049	
Lab ID: **C17070469-001ADUP**		Sample Duplicate				Run: PHSC_101-C_170717A			07/17/17 14:52	
pH		6.79	s.u.	0.010				0.3	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/02/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_170723A	
Lab ID: ICV		Initial Calibration Verification Standard							07/23/17 10:56	
Nitrogen, Ammonia as N		0.994	mg/L	0.050	99	90	110			
Method: A4500-NH3 G									Batch: R225275	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170723A			07/23/17 10:54	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170723A			07/23/17 10:57	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17070424-011DMS		Sample Matrix Spike				Run: FIA201-C_170723A			07/23/17 11:16	
Nitrogen, Ammonia as N		0.778	mg/L	0.050	78	90	110			S
Lab ID: C17070424-011DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170723A			07/23/17 11:17	
Nitrogen, Ammonia as N		0.808	mg/L	0.050	81	90	110	3.8	10	S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 08/02/17

Project: SW Alluvium **Work Order:** C17070469

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC2-C_170720A	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							07/20/17 14:11	
Chloride			9.99	mg/L	1.0	100	90	110			
Sulfate			38.1	mg/L	1.0	95	90	110			
Method:	**E300.0**									Batch: R225279	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170720A			07/20/17 14:28	
Chloride			ND	mg/L	0.05						
Sulfate			ND	mg/L	0.05						
Lab ID:	**LFB072017-1**	2	Laboratory Fortified Blank				Run: IC2-C_170720A			07/20/17 14:45	
Chloride			9.90	mg/L	1.0	99	90	110			
Sulfate			38.9	mg/L	1.0	97	90	110			
Lab ID:	**C17070426-003AMS**	2	Sample Matrix Spike				Run: IC2-C_170720A			07/20/17 23:45	
Chloride			13.0	mg/L	1.0	106	80	120			
Sulfate			82.7	mg/L	1.0	105	80	120			
Lab ID:	**C17070426-003AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170720A			07/21/17 00:03	
Chloride			13.1	mg/L	1.0	106	80	120	0.3	20	
Sulfate			82.2	mg/L	1.0	104	80	120	0.7	20	
Lab ID:	**C17070469-003AMS**	2	Sample Matrix Spike				Run: IC2-C_170720A			07/21/17 03:49	
Chloride			231	mg/L	2.1	99	80	120			
Sulfate			2880	mg/L	8.3	89	80	120			
Lab ID:	**C17070469-003AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170720A			07/21/17 04:07	
Chloride			231	mg/L	2.1	99	80	120	0.2	20	
Sulfate			2860	mg/L	8.3	87	80	120	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/02/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_170721B	
Lab ID: ICV		Initial Calibration Verification Standard							07/21/17 16:27	
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110			
Method: E353.2									Batch: R225270	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170721B			07/21/17 16:28	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170721B			07/21/17 16:29	
Nitrogen, Nitrate+Nitrite as N		1.07	mg/L	0.010	108	90	110			
Lab ID: C17070223-001CMS		Sample Matrix Spike				Run: FIA201-C_170721B			07/21/17 16:33	
Nitrogen, Nitrate+Nitrite as N		1.57	mg/L	0.010	106	90	110			
Lab ID: C17070223-001CMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170721B			07/21/17 16:34	
Nitrogen, Nitrate+Nitrite as N		1.57	mg/L	0.010	106	90	110	0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/02/17
Work Order: C17070469

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**									Analytical Run: ICP203-B_170719A	
Lab ID:	**ICV**	3	Continuing Calibration Verification Standard							07/19/17 11:25	
Calcium			25.3	mg/L	1.0	101	95	105			
Magnesium			24.9	mg/L	1.0	100	95	105			
Sodium			24.8	mg/L	1.0	99	95	105			
Method:	**E200.7**									Batch: R283406	
Lab ID:	**MB-6500DIS170719A**	3	Method Blank				Run: ICP203-B_170719A			07/19/17 11:32	
Calcium			0.10	mg/L	0.01						
Magnesium			ND	mg/L	0.01						
Sodium			0.03	mg/L	0.03						
Lab ID:	**LFB-6500DIS170719A**	3	Laboratory Fortified Blank				Run: ICP203-B_170719A			07/19/17 11:39	
Calcium			50.1	mg/L	1.0	100	85	115			
Magnesium			48.8	mg/L	1.0	98	85	115			
Sodium			49.7	mg/L	1.0	99	85	115			
Lab ID:	**C17070469-003BMS2**	3	Sample Matrix Spike				Run: ICP203-B_170719A			07/20/17 01:26	
Calcium			748	mg/L	1.0	104	70	130			
Magnesium			461	mg/L	1.0	100	70	130			
Sodium			599	mg/L	1.0	101	70	130			
Lab ID:	**C17070469-003BMSD**	3	Sample Matrix Spike Duplicate				Run: ICP203-B_170719A			07/20/17 01:29	
Calcium			690	mg/L	1.0	81	70	130	8.1	20	
Magnesium			426	mg/L	1.0	86	70	130	7.8	20	
Sodium			545	mg/L	1.0	79	70	130	9.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/02/17
Project: SW Alluvium **Work Order:** C17070469

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**									Analytical Run: ICP203-B_170720A	
Lab ID:	**ICV**	3	Continuing Calibration Verification Standard							07/20/17 12:59	
Aluminum			2.47	mg/L	0.10	99	95	105			
Potassium			25.1	mg/L	1.0	101	95	105			
Vanadium			2.50	mg/L	0.10	100	95	105			
Method:	**E200.7**									Batch: 111682	
Lab ID:	**MB-111682**	2	Method Blank				Run: ICP203-B_170720A			07/21/17 10:25	
Aluminum			0.01	mg/L	0.010						
Vanadium			ND	mg/L	0.004						
Lab ID:	**LCS-111682**	2	Laboratory Control Sample				Run: ICP203-B_170720A			07/21/17 10:28	
Aluminum			2.48	mg/L	0.030	99	85	115			
Vanadium			0.500	mg/L	0.010	100	85	115			
Lab ID:	**B17071459-001BMS3**	2	Sample Matrix Spike				Run: ICP203-B_170720A			07/21/17 10:42	
Aluminum			2.68	mg/L	0.049	102	70	130			
Vanadium			0.500	mg/L	0.022	100	70	130			
Lab ID:	**B17071459-001BMSD**	2	Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/21/17 10:46	
Aluminum			2.62	mg/L	0.049	100	70	130	2.1	20	
Vanadium			0.498	mg/L	0.022	100	70	130	0.4	20	
Lab ID:	**B17071471-001CMS3**	2	Sample Matrix Spike				Run: ICP203-B_170720A			07/21/17 12:15	
Aluminum			2.52	mg/L	0.098	101	70	130			
Vanadium			0.481	mg/L	0.043	96	70	130			
Lab ID:	**B17071471-001CMSD**	2	Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/21/17 12:19	
Aluminum			2.61	mg/L	0.098	104	70	130	3.5	20	
Vanadium			0.515	mg/L	0.043	103	70	130	6.7	20	
Method:	**E200.7**									Batch: R283486	
Lab ID:	**MB-6500DIS170718A**		Method Blank				Run: ICP203-B_170720A			07/20/17 13:06	
Potassium			ND	mg/L	0.08						
Lab ID:	**LFB-6500DIS170718A**		Laboratory Fortified Blank				Run: ICP203-B_170720A			07/20/17 13:13	
Potassium			50.3	mg/L	1.0	101	85	115			
Lab ID:	**B17071466-011BMS2**		Sample Matrix Spike				Run: ICP203-B_170720A			07/20/17 21:14	
Potassium			51.4	mg/L	1.0	103	70	130			
Lab ID:	**B17071466-011BMSD**		Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/20/17 21:18	
Potassium			52.3	mg/L	1.0	105	70	130	1.8	20	
Lab ID:	**B17071462-001CMS2**		Sample Matrix Spike				Run: ICP203-B_170720A			07/21/17 10:11	
Potassium			49.8	mg/L	1.0	97	70	130			
Lab ID:	**B17071462-001CMSD**		Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/21/17 10:14	
Potassium			50.4	mg/L	1.0	98	70	130	1.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/02/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_170720A	
Lab ID: QCS	7	Initial Calibration Verification Standard							07/21/17 00:17	
Cadmium		0.0265	mg/L	0.0010	106	90	110			
Cobalt		0.0501	mg/L	0.010	100	90	110			
Lead		0.0495	mg/L	0.010	99	90	110			
Manganese		0.252	mg/L	0.010	101	90	110			
Molybdenum		0.0469	mg/L	0.0050	94	90	110			
Nickel		0.0528	mg/L	0.010	106	90	110			
Uranium		0.0204	mg/L	0.0010	102	90	110			
Method: E200.8										Batch: 111682
Lab ID: MB-111682	8	Method Blank				Run: ICPMS202-B_170720A			07/21/17 02:37	
Beryllium		ND	mg/L	0.00002						
Cadmium		0.00005	mg/L	0.00002						
Cobalt		0.00008	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		0.001	mg/L	0.00004						
Molybdenum		ND	mg/L	0.00007						
Nickel		0.0007	mg/L	0.00006						
Uranium		0.00004	mg/L	0.00002						
Lab ID: LCS-111682	8	Laboratory Control Sample				Run: ICPMS202-B_170720A			07/21/17 02:50	
Beryllium		0.234	mg/L	0.0010	94	85	115			
Cadmium		0.253	mg/L	0.0010	101	85	115			
Cobalt		0.486	mg/L	0.0050	97	85	115			
Lead		0.499	mg/L	0.0010	100	85	115			
Manganese		2.39	mg/L	0.0010	96	85	115			
Molybdenum		0.507	mg/L	0.0010	101	85	115			
Nickel		0.483	mg/L	0.0050	96	85	115			
Uranium		0.478	mg/L	0.00030	96	85	115			
Lab ID: B17071471-001CMS3	8	Sample Matrix Spike				Run: ICPMS202-B_170720A			07/21/17 04:03	
Beryllium		0.231	mg/L	0.0010	92	70	130			
Cadmium		0.249	mg/L	0.0010	100	70	130			
Cobalt		0.545	mg/L	0.0050	109	70	130			
Lead		0.514	mg/L	0.0010	103	70	130			
Manganese		2.67	mg/L	0.0010	106	70	130			
Molybdenum		0.617	mg/L	0.0010	123	70	130			
Nickel		0.540	mg/L	0.0050	105	70	130			
Uranium		0.528	mg/L	0.00030	105	70	130			
Lab ID: B17071471-001CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170720A			07/21/17 04:05	
Beryllium		0.236	mg/L	0.0010	95	70	130	2.4	20	
Cadmium		0.252	mg/L	0.0010	101	70	130	1.0	20	
Cobalt		0.518	mg/L	0.0050	103	70	130	5.0	20	
Lead		0.526	mg/L	0.0010	105	70	130	2.4	20	
Manganese		2.59	mg/L	0.0010	102	70	130	3.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/02/17
Project: SW Alluvium **Work Order:** C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 111682
Lab ID: B17071471-001CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170720A				07/21/17 04:05
Molybdenum		0.534	mg/L	0.0010	107	70	130	14	20	
Nickel		0.510	mg/L	0.0050	99	70	130	5.7	20	
Uranium		0.511	mg/L	0.00030	102	70	130	3.2	20	
Method: E200.8										Analytical Run: ICPMS202-B_170726A
Lab ID: QCS		Initial Calibration Verification Standard								07/26/17 16:02
Beryllium		0.0250	mg/L	0.0010	100	90	110			
Method: E200.8										Batch: 111682
Lab ID: MB-111682		Method Blank				Run: ICPMS202-B_170726A				07/26/17 21:36
Beryllium		ND	mg/L	0.00002						
Method: E200.8										Analytical Run: ICPMS206-B_170724A
Lab ID: QCS	3	Initial Calibration Verification Standard								07/24/17 18:27
Aluminum		0.258	mg/L	0.10	103	90	110			
Lead		0.0511	mg/L	0.010	102	90	110			
Nickel		0.0509	mg/L	0.010	102	90	110			
Method: E200.8										Batch: 111682
Lab ID: MB-111682	3	Method Blank				Run: ICPMS206-B_170724A				07/24/17 23:30
Aluminum		0.003	mg/L	0.0009						
Lead		ND	mg/L	0.00003						
Nickel		ND	mg/L	0.00009						
Lab ID: LCS-111682	3	Laboratory Control Sample				Run: ICPMS206-B_170724A				07/24/17 23:47
Aluminum		2.45	mg/L	0.030	98	85	115			
Lead		0.523	mg/L	0.0010	105	85	115			
Nickel		0.498	mg/L	0.0050	100	85	115			
Lab ID: B17071471-001CMS3	3	Sample Matrix Spike				Run: ICPMS206-B_170724A				07/25/17 01:21
Aluminum		2.45	mg/L	0.030	98	70	130			
Lead		0.494	mg/L	0.0010	99	70	130			
Nickel		0.490	mg/L	0.0050	98	70	130			
Lab ID: B17071471-001CMSD	3	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170724A				07/25/17 01:24
Aluminum		2.49	mg/L	0.030	99	70	130	1.7	20	
Lead		0.521	mg/L	0.0010	104	70	130	5.4	20	
Nickel		0.504	mg/L	0.0050	101	70	130	2.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/01/17
Work Order: C17070469

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**						'tical Run: SELENIUM PSA MILLENIUM_170721A			
Lab ID:	**ICV-38024**	Initial Calibration Verification Standard								07/21/17 12:21
Selenium-IV		0.0197	mg/L	0.0010	98	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								07/21/17 12:22
Selenium-IV		0.0207	mg/L	0.0010	104	90	110			
Method:	**A3114 B**									Batch: 38024
Lab ID:	**MB-38024**	Method Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:25
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-38024**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:28
Selenium-IV		0.0199	mg/L	0.0010	100	85	115			
Lab ID:	**C17070469-001EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:31
Selenium-IV		0.0207	mg/L	0.0010	99	70	130			
Lab ID:	**C17070469-001EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:32
Selenium-IV		0.0210	mg/L	0.0010	101	70	130	1.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/01/17
Work Order: C17070469

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_170728A			
Lab ID:	**AS-ICV 25ppb-7/28/2017**	Initial Calibration Verification Standard								07/28/17 14:52
Arsenic-III		25.2	ug/L	5.0	101	87.6	114			
Lab ID:	**AS-50.0-7/28/2017**	Continuing Calibration Verification Standard								07/28/17 15:04
Arsenic-III		51.6	ug/L	5.0	103	85	115			
Method:	**E1632AM**									Batch: R127182
Lab ID:	**AS-LFB 50ppb-7/28/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:28
Arsenic-III		50.8	ug/L	5.0	102	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:40
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**H17070393-001A MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1707				07/28/17 16:04
Arsenic-III		49.0	ug/L	5.0	98	55	146			
Lab ID:	**H17070393-001A MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1707				07/28/17 16:16
Arsenic-III		49.2	ug/L	5.0	98	55	146	0.4	20	
Lab ID:	**H17070304-003E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1707				07/28/17 18:52
Arsenic-III		51.7	ug/L	5.0	103	55	146			
Lab ID:	**H17070304-003E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1707				07/28/17 19:04
Arsenic-III		51.2	ug/L	5.0	102	55	146	0.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1029
Lab ID: MB-GA-1029	3	Method Blank				Run: G542M-2_170802A				08/07/17 16:54
Gross Alpha minus Rn & U		0.2	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.3	pCi/L							
Gross Alpha minus Rn & U MDC		0.4	pCi/L							
Lab ID: LCS-GA-1029		Laboratory Control Sample				Run: G542M-2_170802A				08/07/17 16:54
Gross Alpha minus Rn & U		34	pCi/L		100	80	120			
Lab ID: C17070469-001FMS		Sample Matrix Spike				Run: G542M-2_170802A				08/07/17 18:47
Gross Alpha minus Rn & U		62	pCi/L		92	70	130			
Lab ID: C17070469-001FMSD		Sample Matrix Spike Duplicate				Run: G542M-2_170802A				08/07/17 18:47
Gross Alpha minus Rn & U		59	pCi/L		86	70	130	6.1	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8582
Lab ID: LCS-RA226-8582		Laboratory Control Sample				Run: G542M_170802A				08/14/17 14:12
Radium 226		8.8	pCi/L		87	80	120			
Lab ID: MB-RA226-8582	3	Method Blank				Run: G542M_170802A				08/14/17 14:12
Radium 226		0.02	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17070469-001FMS		Sample Matrix Spike				Run: G542M_170802A				08/14/17 14:12
Radium 226		15	pCi/L		72	70	130			
Lab ID: C17070469-001FMSD		Sample Matrix Spike Duplicate				Run: G542M_170802A				08/14/17 14:12
Radium 226		16	pCi/L		76	70	130	6.7	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0									Batch: RA-TH-ISO-2598	
Lab ID: LCS-RA-TH-ISO-2598		Laboratory Control Sample				Run: EGG-ORTEC_2_170807A			08/10/17 09:35	
Thorium 230		6.6	pCi/L		114	80	120			
Lab ID: C17070469-002FMS		Sample Matrix Spike				Run: EGG-ORTEC_2_170807A			08/10/17 09:35	
Thorium 230		14	pCi/L		109	70	130			
Lab ID: C17070469-002FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_170807A			08/10/17 09:35	
Thorium 230		13	pCi/L		104	70	130	4.8	20	
Lab ID: MB-RA-TH-ISO-2598	3	Method Blank				Run: EGG-ORTEC_2_170807A			08/10/17 09:35	
Thorium 230		0.08	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070469

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0849	
Lab ID:	**LCS-PB-210-0849**		Laboratory Control Sample				Run: TRICARB LSC_170808A			08/18/17 15:02	
Lead 210			20	pCi/L		107	80	120			
Lab ID:	**MB-PB-210-0849**	3	Method Blank				Run: TRICARB LSC_170808A			08/18/17 16:04	
Lead 210			0.2	pCi/L							U
Lead 210 precision (±)			0.7	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17070426-001CMS**		Sample Matrix Spike				Run: TRICARB LSC_170808A			08/20/17 09:22	
Lead 210			50	pCi/L		128	70	130			
Lab ID:	**C17070426-001CMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_170808A			08/20/17 10:16	
Lead 210			45	pCi/L		114	70	130	11	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 08/22/17
Work Order: C17070469

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5556
Lab ID: LCS-228-RA226-8582		Laboratory Control Sample				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		8.2	pCi/L		81	80	120			
Lab ID: MB-RA226-8582	3	Method Blank				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		0.04	pCi/L							U
Radium 228 precision (±)		1.0	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C17070470-011FMS		Sample Matrix Spike				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		23	pCi/L		97	70	130			
Lab ID: C17070470-011FMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		22	pCi/L		93	70	130	3.3	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

August 16, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17070470 Quote ID: C129 - Quarterly Long List

Project Name: Zone 1

Energy Laboratories, Inc. Casper WY received the following 11 samples for United Nuclear Corporation on 7/14/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17070470-001	614	07/11/17 12:40	07/14/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070470-002	515-A	07/11/17 14:00	07/14/17	Aqueous	Same As Above
C17070470-003	604	07/11/17 15:10	07/14/17	Aqueous	Same As Above
C17070470-004	EPA-7	07/11/17 16:05	07/14/17	Aqueous	Same As Above
C17070470-005	EPA-5	07/11/17 16:50	07/14/17	Aqueous	Same As Above
C17070470-006	EPA-4	07/12/17 08:40	07/14/17	Aqueous	Same As Above
C17070470-007	EPA-2	07/12/17 09:40	07/14/17	Aqueous	Same As Above
C17070470-008	EPA-2 Duplicate	07/12/17 10:30	07/14/17	Aqueous	Same As Above
C17070470-009	TWQ-142	07/12/17 11:10	07/14/17	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C17070470-010	Rinsate	07/12/17 11:56 07/14/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved 624-Purgeable Organics 624-Purgeable Organics
C17070470-011	Field Blank	07/12/17 12:10 07/14/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.08.16 10:27:24 -06:00

CLIENT: United Nuclear Corporation
Project: Zone 1
Work Order: C17070470

Report Date: 08/16/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

Sample ID EPA-5:
Nitrogen, Nitrate+Nitrite as N reported by method E353.2 is lower than the data obtained by method E300.0 used for an internal data check. The data from both methods was confirmed by re-analysis. Method E353.2 is analyzed from the preserved sample and method E300.0 is analyzed from the unpreserved sample. Nitrogen, Nitrate+Nitrite as N by method E300.0 was 12 mg/L.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_170718A	
Lab ID: ICV-9186		Initial Calibration Verification Standard							07/17/17 17:55	
pH		6.93	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R225077	
Lab ID: MBLK	3	Method Blank				Run: MANTECH_170718A			07/17/17 17:59	
Alkalinity, Total as CaCO3		ND	mg/L	1						
Carbonate as CO3		ND	mg/L	1						
Bicarbonate as HCO3		ND	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_170718A			07/17/17 18:07	
Alkalinity, Total as CaCO3		258	mg/L	5.0	103	90	110			
Lab ID: C17070470-007ADUP	3	Sample Duplicate				Run: MANTECH_170718A			07/17/17 21:43	
Alkalinity, Total as CaCO3		236	mg/L	5.0				0.6	10	
Carbonate as CO3		ND	mg/L	5.0					10	
Bicarbonate as HCO3		288	mg/L	5.0				0.6	10	
Method: A2320 B									Analytical Run: MANTECH_170718B	
Lab ID: ICV-9186		Initial Calibration Verification Standard							07/18/17 12:26	
pH		6.93	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R225101	
Lab ID: MBLK	3	Method Blank				Run: MANTECH_170718B			07/18/17 12:31	
Alkalinity, Total as CaCO3		1	mg/L	1						
Carbonate as CO3		ND	mg/L	1						
Bicarbonate as HCO3		2	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_170718B			07/18/17 12:39	
Alkalinity, Total as CaCO3		253	mg/L	5.0	101	90	110			
Lab ID: C17070470-002ADUP	3	Sample Duplicate				Run: MANTECH_170718B			07/18/17 12:58	
Alkalinity, Total as CaCO3		680	mg/L	5.0				0.1	10	
Carbonate as CO3		ND	mg/L	5.0					10	
Bicarbonate as HCO3		830	mg/L	5.0				0.1	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS170717B	
Lab ID: MB-1_170717B		Method Blank				Run: BAL-18_170717B			07/17/17 17:04	
Solids, Total Dissolved TDS @ 180 C		7	mg/L	7						
Lab ID: LCS-2_170717B		Laboratory Control Sample				Run: BAL-18_170717B			07/17/17 17:04	
Solids, Total Dissolved TDS @ 180 C		1090	mg/L	11	98	90	110			
Lab ID: C17070411-001A DUP		Sample Duplicate				Run: BAL-18_170717B			07/17/17 17:04	
Solids, Total Dissolved TDS @ 180 C		494	mg/L	10				1.2	5	
Method: A2540 C									Batch: TDS170718B	
Lab ID: MB-1_170718B		Method Blank				Run: BAL-18_170718A			07/18/17 13:32	
Solids, Total Dissolved TDS @ 180 C		7	mg/L	7						
Lab ID: LCS-2_170718B		Laboratory Control Sample				Run: BAL-18_170718A			07/18/17 13:32	
Solids, Total Dissolved TDS @ 180 C		1120	mg/L	11	100	90	110			
Lab ID: C17070470-002A DUP		Sample Duplicate				Run: BAL-18_170718A			07/18/17 13:33	
Solids, Total Dissolved TDS @ 180 C		10300	mg/L	100				1.8	5	

Qualifiers:

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A4500-H B**								Analytical Run: PHSC_101-C_170717A		
Lab ID:	**pH 6.86**	Initial Calibration Verification Standard								07/17/17 12:15	
pH			6.88	s.u.	0.010	100	98	102			
Lab ID:	**CCV - pH 7**	Continuing Calibration Verification Standard								07/17/17 14:41	
pH			7.06	s.u.	0.010	101	98	102			
Method:	**A4500-H B**									Batch: R225049	
Lab ID:	**C17070470-010ADUP**	Sample Duplicate					Run: PHSC_101-C_170717A			07/17/17 15:25	
pH			6.56	s.u.	0.010				0.5	3	
Method:	**A4500-H B**								Analytical Run: PHSC_101-C_170718A		
Lab ID:	**pH 6.86**	Initial Calibration Verification Standard								07/18/17 11:40	
pH			6.88	s.u.	0.010	100	98	102			
Method:	**A4500-H B**									Batch: R225086	
Lab ID:	**C17070018-001CDUP**	Sample Duplicate					Run: PHSC_101-C_170718A			07/18/17 12:06	
pH			7.85	s.u.	0.010				0.1	3	

Qualifiers:

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MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_170723A	
Lab ID: ICV		Initial Calibration Verification Standard							07/23/17 10:56	
Nitrogen, Ammonia as N		0.994	mg/L	0.050	99	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard							07/23/17 11:12	
Nitrogen, Ammonia as N		0.932	mg/L	0.050	93	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard							07/23/17 11:29	
Nitrogen, Ammonia as N		0.939	mg/L	0.050	94	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard							07/23/17 11:48	
Nitrogen, Ammonia as N		0.927	mg/L	0.050	93	90	110			
Method: A4500-NH3 G									Batch: R225275	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170723A			07/23/17 10:54	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170723A			07/23/17 10:57	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17070424-011DMS		Sample Matrix Spike				Run: FIA201-C_170723A			07/23/17 11:16	
Nitrogen, Ammonia as N		0.778	mg/L	0.050	78	90	110			S
Lab ID: C17070424-011DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170723A			07/23/17 11:17	
Nitrogen, Ammonia as N		0.808	mg/L	0.050	81	90	110	3.8	10	S
Lab ID: C17070470-007DMS		Sample Matrix Spike				Run: FIA201-C_170723A			07/23/17 11:33	
Nitrogen, Ammonia as N		1.14	mg/L	0.050	106	90	110			
Lab ID: C17070470-007DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170723A			07/23/17 11:34	
Nitrogen, Ammonia as N		1.12	mg/L	0.050	104	90	110	1.8	10	
Lab ID: C17070573-003BMS		Sample Matrix Spike				Run: FIA201-C_170723A			07/23/17 11:52	
Nitrogen, Ammonia as N		0.869	mg/L	0.050	87	90	110			S
Lab ID: C17070573-003BMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170723A			07/23/17 11:53	
Nitrogen, Ammonia as N		0.863	mg/L	0.050	86	90	110	0.7	10	S

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 08/15/17
Project: Zone 1 **Work Order:** C17070470

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC2-C_170720A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							07/20/17 14:11	
Chloride			9.99	mg/L	1.0	100	90	110			
Sulfate			38.1	mg/L	1.0	95	90	110			
Method:	**E300.0**									Batch: R225279	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170720A			07/20/17 14:28	
Chloride			ND	mg/L	0.05						
Sulfate			ND	mg/L	0.05						
Lab ID:	**LFB072017-1**	2	Laboratory Fortified Blank				Run: IC2-C_170720A			07/20/17 14:45	
Chloride			9.90	mg/L	1.0	99	90	110			
Sulfate			38.9	mg/L	1.0	97	90	110			
Lab ID:	**C17070469-003AMS**	2	Sample Matrix Spike				Run: IC2-C_170720A			07/21/17 03:49	
Chloride			231	mg/L	2.1	99	80	120			
Sulfate			2880	mg/L	8.3	89	80	120			
Lab ID:	**C17070469-003AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170720A			07/21/17 04:07	
Chloride			231	mg/L	2.1	99	80	120	0.2	20	
Sulfate			2860	mg/L	8.3	87	80	120	0.6	20	
Lab ID:	**C17070470-010AMS**	2	Sample Matrix Spike				Run: IC2-C_170720A			07/21/17 07:53	
Chloride			10.6	mg/L	1.0	105	80	120			
Sulfate			44.9	mg/L	1.0	103	80	120			
Lab ID:	**C17070470-010AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170720A			07/21/17 08:11	
Chloride			5.32	mg/L	1.0	52	80	120	66	20	SR
Sulfate			24.5	mg/L	1.0	52	80	120	59	20	SR

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
S - Spike recovery outside of advisory limits.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 08/15/17
Project: Zone 1 **Work Order:** C17070470

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC2-C_170724A	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							07/24/17 12:49	
Chloride			9.88	mg/L	1.0	99	90	110			
Sulfate			37.9	mg/L	1.0	95	90	110			
Method:	**E300.0**									Batch: R225340	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170724A			07/24/17 13:07	
Chloride			ND	mg/L	0.05						
Sulfate			ND	mg/L	0.05						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC2-C_170724A			07/24/17 13:26	
Chloride			9.76	mg/L	1.0	98	90	110			
Sulfate			38.7	mg/L	1.0	97	90	110			
Lab ID:	**C17070470-010AMS**	2	Sample Matrix Spike				Run: IC2-C_170724A			07/24/17 14:21	
Chloride			10.1	mg/L	1.0	99	80	120			
Sulfate			42.9	mg/L	1.0	98	80	120			
Lab ID:	**C17070470-010AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170724A			07/24/17 14:40	
Chloride			10.2	mg/L	1.0	100	80	120	0.4	20	
Sulfate			43.0	mg/L	1.0	98	80	120	0.2	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_170721B	
Lab ID: ICV	Initial Calibration Verification Standard								07/21/17 16:27	
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110			
Method: E353.2									Batch: R225270	
Lab ID: MBLK	Method Blank					Run: FIA201-C_170721B			07/21/17 16:28	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB	Laboratory Fortified Blank					Run: FIA201-C_170721B			07/21/17 16:29	
Nitrogen, Nitrate+Nitrite as N		1.07	mg/L	0.010	108	90	110			
Lab ID: C17070470-001DMS	Sample Matrix Spike					Run: FIA201-C_170721B			07/21/17 16:50	
Nitrogen, Nitrate+Nitrite as N		297	mg/L	1.0	101	90	110			
Lab ID: C17070470-001DMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_170721B			07/21/17 16:51	
Nitrogen, Nitrate+Nitrite as N		297	mg/L	1.0	101	90	110	0.0	10	
Lab ID: C17070470-011DMS	Sample Matrix Spike					Run: FIA201-C_170721B			07/21/17 17:06	
Nitrogen, Nitrate+Nitrite as N		1.12	mg/L	0.010	113	90	110			S
Lab ID: C17070470-011DMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_170721B			07/21/17 17:08	
Nitrogen, Nitrate+Nitrite as N		1.11	mg/L	0.010	112	90	110	0.9	10	S

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/11/17
Project: Zone 1 **Work Order:** C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_170719A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							07/19/17 11:25	
Calcium		25.3	mg/L	1.0	101	95	105			
Magnesium		24.9	mg/L	1.0	100	95	105			
Potassium		24.6	mg/L	1.0	98	95	105			
Sodium		24.8	mg/L	1.0	99	95	105			
Method: E200.7									Batch: R283406	
Lab ID: MB-6500DIS170719A	4	Method Blank				Run: ICP203-B_170719A			07/19/17 11:32	
Calcium		0.10	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Potassium		ND	mg/L	0.08						
Sodium		0.03	mg/L	0.03						
Lab ID: LFB-6500DIS170719A	4	Laboratory Fortified Blank				Run: ICP203-B_170719A			07/19/17 11:39	
Calcium		50.1	mg/L	1.0	100	85	115			
Magnesium		48.8	mg/L	1.0	98	85	115			
Potassium		49.7	mg/L	1.0	99	85	115			
Sodium		49.7	mg/L	1.0	99	85	115			
Lab ID: C17070470-004BMS2	4	Sample Matrix Spike				Run: ICP203-B_170719A			07/20/17 00:12	
Calcium		939	mg/L	1.0	89	70	130			
Magnesium		1290	mg/L	1.0	86	70	130			
Potassium		501	mg/L	1.0	98	70	130			
Sodium		816	mg/L	1.9	89	70	130			
Lab ID: C17070470-004BMSD	4	Sample Matrix Spike Duplicate				Run: ICP203-B_170719A			07/20/17 00:16	
Calcium		888	mg/L	1.0	78	70	130	5.7	20	
Magnesium		1230	mg/L	1.0	72	70	130	5.3	20	
Potassium		477	mg/L	1.0	93	70	130	4.9	20	
Sodium		765	mg/L	1.9	78	70	130	6.5	20	
Lab ID: B17071467-003BMS2	4	Sample Matrix Spike				Run: ICP203-B_170719A			07/20/17 01:26	
Calcium		748	mg/L	1.0	104	70	130			
Magnesium		461	mg/L	1.0	100	70	130			
Potassium		247	mg/L	1.0	97	70	130			
Sodium		599	mg/L	1.0	101	70	130			
Lab ID: B17071467-003BMSD	4	Sample Matrix Spike Duplicate				Run: ICP203-B_170719A			07/20/17 01:29	
Calcium		690	mg/L	1.0	81	70	130	8.1	20	
Magnesium		426	mg/L	1.0	86	70	130	7.8	20	
Potassium		223	mg/L	1.0	87	70	130	10	20	
Sodium		545	mg/L	1.0	79	70	130	9.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/11/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_170720A	
Lab ID: ICV		Continuing Calibration Verification Standard							07/20/17 12:59	
Potassium		25.1	mg/L	1.0	101	95	105			
Method: E200.7									Batch: R283486	
Lab ID: MB-6500DIS170718A		Method Blank				Run: ICP203-B_170720A			07/20/17 13:06	
Potassium		ND	mg/L	0.08						
Lab ID: LFB-6500DIS170718A		Laboratory Fortified Blank				Run: ICP203-B_170720A			07/20/17 13:13	
Potassium		50.3	mg/L	1.0	101	85	115			
Lab ID: B17071458-002CMS2		Sample Matrix Spike				Run: ICP203-B_170720A			07/20/17 20:04	
Potassium		50.3	mg/L	1.0	97	70	130			
Lab ID: B17071458-002CMSD		Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/20/17 20:07	
Potassium		49.1	mg/L	1.0	94	70	130	2.5	20	
Lab ID: C17070470-011BMS2		Sample Matrix Spike				Run: ICP203-B_170720A			07/20/17 21:14	
Potassium		51.4	mg/L	1.0	103	70	130			
Lab ID: C17070470-011BMSD		Sample Matrix Spike Duplicate				Run: ICP203-B_170720A			07/20/17 21:18	
Potassium		52.3	mg/L	1.0	105	70	130	1.8	20	

Qualifiers:

RL - Analyte reporting limit.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/11/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_170720A	
Lab ID: QCS	10	Initial Calibration Verification Standard							07/21/17 04:42	
Aluminum		0.264	mg/L	0.10	106	90	110			
Beryllium		0.0260	mg/L	0.0010	104	90	110			
Cadmium		0.0260	mg/L	0.0010	104	90	110			
Cobalt		0.0526	mg/L	0.010	105	90	110			
Lead		0.0487	mg/L	0.010	97	90	110			
Manganese		0.264	mg/L	0.010	106	90	110			
Molybdenum		0.0471	mg/L	0.0050	94	90	110			
Nickel		0.0522	mg/L	0.010	104	90	110			
Uranium		0.0205	mg/L	0.0010	102	90	110			
Vanadium		0.0498	mg/L	0.10	100	90	110			
Method: E200.8										Batch: 111683
Lab ID: MB-111683	10	Method Blank				Run: ICPMS202-B_170720A			07/21/17 05:03	
Aluminum		0.002	mg/L	0.0009						
Beryllium		ND	mg/L	0.00002						
Cadmium		0.00002	mg/L	0.00002						
Cobalt		ND	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		ND	mg/L	0.00004						
Molybdenum		0.0007	mg/L	0.00007						
Nickel		ND	mg/L	0.00006						
Uranium		0.00005	mg/L	0.00002						
Vanadium		0.0004	mg/L	0.0002						
Lab ID: LCS-111683	10	Laboratory Control Sample				Run: ICPMS202-B_170720A			07/21/17 05:08	
Aluminum		2.33	mg/L	0.030	93	85	115			
Beryllium		0.246	mg/L	0.0010	98	85	115			
Cadmium		0.259	mg/L	0.0010	104	85	115			
Cobalt		0.512	mg/L	0.0050	102	85	115			
Lead		0.507	mg/L	0.0010	101	85	115			
Manganese		2.43	mg/L	0.0010	97	85	115			
Molybdenum		0.494	mg/L	0.0010	99	85	115			
Nickel		0.508	mg/L	0.0050	102	85	115			
Uranium		0.496	mg/L	0.00030	99	85	115			
Vanadium		0.499	mg/L	0.010	100	85	115			
Lab ID: C17070470-010CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_170720A			07/21/17 06:26	
Aluminum		2.37	mg/L	0.030	95	70	130			
Beryllium		0.211	mg/L	0.0010	84	70	130			
Cadmium		0.262	mg/L	0.0010	105	70	130			
Cobalt		0.538	mg/L	0.0050	108	70	130			
Lead		0.523	mg/L	0.0010	105	70	130			
Manganese		2.63	mg/L	0.0010	105	70	130			
Molybdenum		0.605	mg/L	0.0010	121	70	130			
Nickel		0.544	mg/L	0.0050	109	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/11/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 111683
Lab ID: C17070470-010CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_170720A			07/21/17 06:26	
Uranium		0.483	mg/L	0.00030	97	70	130			
Vanadium		0.550	mg/L	0.010	110	70	130			
Lab ID: C17070470-010CMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170720A			07/21/17 06:29	
Aluminum		2.30	mg/L	0.030	92	70	130	3.3	20	
Beryllium		0.204	mg/L	0.0010	82	70	130	3.1	20	
Cadmium		0.270	mg/L	0.0010	108	70	130	2.8	20	
Cobalt		0.557	mg/L	0.0050	111	70	130	3.4	20	
Lead		0.525	mg/L	0.0010	105	70	130	0.4	20	
Manganese		2.80	mg/L	0.0010	112	70	130	6.5	20	
Molybdenum		0.608	mg/L	0.0010	122	70	130	0.6	20	
Nickel		0.574	mg/L	0.0050	115	70	130	5.4	20	
Uranium		0.486	mg/L	0.00030	97	70	130	0.7	20	
Vanadium		0.594	mg/L	0.010	119	70	130	7.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/11/17
Project: Zone 1 **Work Order:** C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_170725A	
Lab ID: QCS	3	Initial Calibration Verification Standard							07/25/17 17:40	
Beryllium		0.0247	mg/L	0.0010	99	90	110			
Cadmium		0.0256	mg/L	0.0010	102	90	110			
Uranium		0.0202	mg/L	0.0010	101	90	110			
Method: E200.8									Batch: 111683	
Lab ID: MB-111683	10	Method Blank				Run: ICPMS202-B_170725A			07/25/17 22:39	
Aluminum		ND	mg/L	0.0009						
Beryllium		ND	mg/L	0.00002						
Cadmium		0.00008	mg/L	0.00002						
Cobalt		ND	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		ND	mg/L	0.00004						
Molybdenum		0.0003	mg/L	0.00007						
Nickel		ND	mg/L	0.00006						
Uranium		ND	mg/L	0.00002						
Vanadium		ND	mg/L	0.0002						
Method: E200.8									Batch: 111684	
Lab ID: MB-111684	10	Method Blank				Run: ICPMS202-B_170725A			07/26/17 00:37	
Aluminum		0.006	mg/L	0.0009						
Beryllium		ND	mg/L	0.00002						
Cadmium		ND	mg/L	0.00002						
Cobalt		ND	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		ND	mg/L	0.00004						
Molybdenum		0.0006	mg/L	0.00007						
Nickel		0.0001	mg/L	0.00006						
Uranium		0.00002	mg/L	0.00002						
Vanadium		ND	mg/L	0.0002						
Lab ID: LCS-111684	10	Laboratory Control Sample				Run: ICPMS202-B_170725A			07/26/17 00:42	
Aluminum		2.40	mg/L	0.030	96	85	115			
Beryllium		0.273	mg/L	0.0010	109	85	115			
Cadmium		0.262	mg/L	0.0010	105	85	115			
Cobalt		0.478	mg/L	0.0050	96	85	115			
Lead		0.506	mg/L	0.0010	101	85	115			
Manganese		2.43	mg/L	0.0010	97	85	115			
Molybdenum		0.528	mg/L	0.0010	106	85	115			
Nickel		0.477	mg/L	0.0050	95	85	115			
Uranium		0.502	mg/L	0.00030	100	85	115			
Vanadium		0.500	mg/L	0.010	100	85	115			
Lab ID: C17070470-011CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_170725A			07/26/17 00:45	
Aluminum		2.39	mg/L	0.030	95	70	130			
Beryllium		0.273	mg/L	0.0010	109	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/11/17

Project: Zone 1 **Work Order:** C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 111684
Lab ID: C17070470-011CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_170725A				07/26/17 00:45
Cadmium		0.262	mg/L	0.0010	105	70	130			
Cobalt		0.483	mg/L	0.0050	97	70	130			
Lead		0.509	mg/L	0.0010	102	70	130			
Manganese		2.42	mg/L	0.0010	97	70	130			
Molybdenum		0.551	mg/L	0.0010	110	70	130			
Nickel		0.475	mg/L	0.0050	95	70	130			
Uranium		0.508	mg/L	0.00030	102	70	130			
Vanadium		0.502	mg/L	0.010	100	70	130			
Lab ID: C17070470-011CMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170725A				07/26/17 00:48
Aluminum		2.42	mg/L	0.030	97	70	130	1.4	20	
Beryllium		0.279	mg/L	0.0010	112	70	130	2.2	20	
Cadmium		0.267	mg/L	0.0010	107	70	130	1.9	20	
Cobalt		0.491	mg/L	0.0050	98	70	130	1.6	20	
Lead		0.509	mg/L	0.0010	102	70	130	0.1	20	
Manganese		2.44	mg/L	0.0010	98	70	130	0.6	20	
Molybdenum		0.552	mg/L	0.0010	110	70	130	0.2	20	
Nickel		0.480	mg/L	0.0050	96	70	130	1.0	20	
Uranium		0.519	mg/L	0.00030	104	70	130	2.2	20	
Vanadium		0.510	mg/L	0.010	102	70	130	1.5	20	
Method: E200.8										Analytical Run: ICPMS202-B_170726A
Lab ID: QCS	6	Initial Calibration Verification Standard								07/26/17 16:02
Aluminum		0.245	mg/L	0.10	98	90	110			
Beryllium		0.0250	mg/L	0.0010	100	90	110			
Cobalt		0.0507	mg/L	0.010	101	90	110			
Lead		0.0486	mg/L	0.010	97	90	110			
Molybdenum		0.0460	mg/L	0.0050	92	90	110			
Nickel		0.0503	mg/L	0.010	101	90	110			
Method: E200.8										Batch: 111683
Lab ID: MB-111683	10	Method Blank				Run: ICPMS202-B_170726A				07/26/17 22:16
Aluminum		0.004	mg/L	0.0009						
Beryllium		ND	mg/L	0.00002						
Cadmium		ND	mg/L	0.00002						
Cobalt		ND	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		ND	mg/L	0.00004						
Molybdenum		ND	mg/L	0.00007						
Nickel		ND	mg/L	0.00006						
Uranium		0.00003	mg/L	0.00002						
Vanadium		ND	mg/L	0.0002						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/11/17
Work Order: C17070470

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**									Analytical Run: ICPMS202-B_170727A	
Lab ID:	**QCS**		Initial Calibration Verification Standard							07/27/17 10:47	
Beryllium			0.0249	mg/L	0.0010	100	90	110			
Method:	**E200.8**									Batch: 111683	
Lab ID:	**MB-111683**	10	Method Blank				Run: ICPMS202-B_170727A			07/27/17 19:14	
Aluminum			ND	mg/L	0.0009						
Beryllium			ND	mg/L	0.00002						
Cadmium			ND	mg/L	0.00002						
Cobalt			ND	mg/L	0.00003						
Lead			ND	mg/L	0.00005						
Manganese			ND	mg/L	0.00004						
Molybdenum			ND	mg/L	0.00007						
Nickel			ND	mg/L	0.00006						
Uranium			ND	mg/L	0.00002						
Vanadium			ND	mg/L	0.0002						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/11/17

Project: Zone 1 **Work Order:** C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Analytical Run: ICPMS206-B_170724A		
Lab ID: QCS	9	Initial Calibration Verification Standard								07/25/17 02:25
Aluminum		0.256	mg/L	0.10	102	90	110			
Cadmium		0.0245	mg/L	0.0010	98	90	110			
Cobalt		0.0513	mg/L	0.010	103	90	110			
Lead		0.0517	mg/L	0.010	103	90	110			
Manganese		0.258	mg/L	0.010	103	90	110			
Molybdenum		0.0494	mg/L	0.0050	99	90	110			
Nickel		0.0517	mg/L	0.010	103	90	110			
Uranium		0.0212	mg/L	0.0010	106	90	110			
Vanadium		0.0494	mg/L	0.10	99	90	110			
Method: E200.8										Batch: 111684
Lab ID: MB-111684	10	Method Blank				Run: ICPMS206-B_170724A				07/25/17 01:34
Aluminum		ND	mg/L	0.0009						
Beryllium		ND	mg/L	0.00008						
Cadmium		ND	mg/L	0.00003						
Cobalt		ND	mg/L	0.00002						
Lead		ND	mg/L	0.00003						
Manganese		0.0002	mg/L	0.00006						
Molybdenum		0.00003	mg/L	0.00003						
Nickel		ND	mg/L	0.00009						
Uranium		ND	mg/L	0.00003						
Vanadium		ND	mg/L	0.00007						
Lab ID: LCS-111684	9	Laboratory Control Sample				Run: ICPMS206-B_170724A				07/25/17 02:55
Aluminum		2.28	mg/L	0.030	91	85	115			
Cadmium		0.253	mg/L	0.0010	101	85	115			
Cobalt		0.489	mg/L	0.0050	98	85	115			
Lead		0.524	mg/L	0.0010	105	85	115			
Manganese		2.56	mg/L	0.0010	102	85	115			
Molybdenum		0.509	mg/L	0.0010	102	85	115			
Nickel		0.517	mg/L	0.0050	103	85	115			
Uranium		0.520	mg/L	0.00030	104	85	115			
Vanadium		0.512	mg/L	0.010	102	85	115			
Lab ID: C17070470-011CMS3	10	Sample Matrix Spike				Run: ICPMS206-B_170724A				07/25/17 02:58
Aluminum		2.34	mg/L	0.030	94	70	130			
Beryllium		0.216	mg/L	0.0010	86	70	130			
Cadmium		0.259	mg/L	0.0010	104	70	130			
Cobalt		0.506	mg/L	0.0050	101	70	130			
Lead		0.522	mg/L	0.0010	104	70	130			
Manganese		2.68	mg/L	0.0010	107	70	130			
Molybdenum		0.517	mg/L	0.0010	103	70	130			
Nickel		0.516	mg/L	0.0050	103	70	130			
Uranium		0.529	mg/L	0.00030	106	70	130			
Vanadium		0.504	mg/L	0.010	101	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/11/17

Project: Zone 1 **Work Order:** C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Batch: 111684	
Lab ID: C17070470-011CMS3	10	Sample Matrix Spike				Run: ICPMS206-B_170724A			07/25/17 02:58	
Lab ID: C17070470-011CMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170724A			07/25/17 03:02	
Aluminum		2.45	mg/L	0.030	98	70	130	4.4	20	
Beryllium		0.225	mg/L	0.0010	90	70	130	4.2	20	
Cadmium		0.262	mg/L	0.0010	105	70	130	1.2	20	
Cobalt		0.494	mg/L	0.0050	99	70	130	2.3	20	
Lead		0.524	mg/L	0.0010	105	70	130	0.4	20	
Manganese		2.56	mg/L	0.0010	102	70	130	4.6	20	
Molybdenum		0.512	mg/L	0.0010	102	70	130	1.0	20	
Nickel		0.511	mg/L	0.0050	102	70	130	0.9	20	
Uranium		0.539	mg/L	0.00030	108	70	130	1.9	20	
Vanadium		0.512	mg/L	0.010	102	70	130	1.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/11/17

Project: Zone 1 **Work Order:** C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS206-B_170801A	
Lab ID: QCS	2	Initial Calibration Verification Standard							07/31/17 16:36	
Manganese		0.255	mg/L	0.010	102	90	110			
Vanadium		0.0476	mg/L	0.10	95	90	110			
Method: E200.8									Batch: 111683	
Lab ID: MB-111683	10	Method Blank				Run: ICPMS206-B_170801A			07/31/17 16:53	
Aluminum		0.007	mg/L	0.0009						
Beryllium		ND	mg/L	0.00008						
Cadmium		0.00004	mg/L	0.00003						
Cobalt		0.00003	mg/L	0.00002						
Lead		0.0001	mg/L	0.00003						
Manganese		0.0005	mg/L	0.00006						
Molybdenum		0.00004	mg/L	0.00003						
Nickel		0.0004	mg/L	0.00009						
Uranium		ND	mg/L	0.00003						
Vanadium		ND	mg/L	0.00007						
Lab ID: LCS-111683	9	Laboratory Control Sample				Run: ICPMS206-B_170801A			07/31/17 17:14	
Aluminum		2.72	mg/L	0.030	109	85	115			
Cadmium		0.262	mg/L	0.0010	105	85	115			
Cobalt		0.515	mg/L	0.0050	103	85	115			
Lead		0.520	mg/L	0.0010	104	85	115			
Manganese		2.56	mg/L	0.0010	102	85	115			
Molybdenum		0.554	mg/L	0.0010	111	85	115			
Nickel		0.537	mg/L	0.0050	107	85	115			
Uranium		0.535	mg/L	0.00030	107	85	115			
Vanadium		0.549	mg/L	0.010	110	85	115			
Lab ID: B17071460-001BMS3	10	Sample Matrix Spike				Run: ICPMS206-B_170801A			07/31/17 17:17	
Aluminum		2.60	mg/L	0.030	101	70	130			
Beryllium		0.169	mg/L	0.0016	68	70	130			S
Cadmium		0.269	mg/L	0.0010	108	70	130			
Cobalt		0.472	mg/L	0.0050	94	70	130			
Lead		0.400	mg/L	0.0010	80	70	130			
Manganese		2.52	mg/L	0.0013	96	70	130			
Molybdenum		0.478	mg/L	0.0010	95	70	130			
Nickel		0.602	mg/L	0.0050	113	70	130			
Uranium		0.539	mg/L	0.00059	92	70	130			
Vanadium		0.585	mg/L	0.010	117	70	130			
Lab ID: B17071460-001BMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170801A			07/31/17 17:20	
Aluminum		2.66	mg/L	0.030	103	70	130	2.1	20	
Beryllium		0.167	mg/L	0.0016	67	70	130	1.2	20	S
Cadmium		0.252	mg/L	0.0010	101	70	130	6.7	20	
Cobalt		0.491	mg/L	0.0050	98	70	130	3.9	20	
Lead		0.414	mg/L	0.0010	83	70	130	3.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/11/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 111683
Lab ID: B17071460-001BMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170801A			07/31/17 17:20	
Manganese		2.55	mg/L	0.0013	97	70	130	1.3	20	
Molybdenum		0.544	mg/L	0.0010	108	70	130	13	20	
Nickel		0.590	mg/L	0.0050	111	70	130	2.1	20	
Uranium		0.553	mg/L	0.00059	95	70	130	2.6	20	
Vanadium		0.574	mg/L	0.010	115	70	130	1.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 08/11/17

Project: Zone 1 **Work Order:** C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS206-B_170808A	
Lab ID: QCS		Initial Calibration Verification Standard							08/10/17 06:07	
Beryllium		0.0256	mg/L	0.0010	103	90	110			
Method: E200.8									Batch: 111683	
Lab ID: MB-111683	10	Method Blank				Run: ICPMS206-B_170808A			08/10/17 09:43	
Aluminum		ND	mg/L	0.0009						
Beryllium		ND	mg/L	0.00008						
Cadmium		ND	mg/L	0.00003						
Cobalt		ND	mg/L	0.00002						
Lead		ND	mg/L	0.00003						
Manganese		ND	mg/L	0.00006						
Molybdenum		ND	mg/L	0.00003						
Nickel		ND	mg/L	0.00009						
Uranium		ND	mg/L	0.00003						
Vanadium		ND	mg/L	0.00007						
Lab ID: LCS-111683	9	Laboratory Control Sample				Run: ICPMS206-B_170808A			08/10/17 10:21	
Aluminum		2.53	mg/L	0.010	101	85	115			
Beryllium		0.242	mg/L	0.0010	97	85	115			
Cadmium		0.257	mg/L	0.0010	103	85	115			
Cobalt		0.522	mg/L	0.0010	104	85	115			
Lead		0.486	mg/L	0.0010	97	85	115			
Manganese		2.55	mg/L	0.0010	102	85	115			
Molybdenum		0.509	mg/L	0.0050	102	85	115			
Nickel		0.492	mg/L	0.0010	98	85	115			
Vanadium		0.477	mg/L	0.010	95	85	115			
Lab ID: B17071460-001BMS3	10	Sample Matrix Spike				Run: ICPMS206-B_170808A			08/10/17 10:24	
Aluminum		2.96	mg/L	0.030	114	70	130			
Beryllium		0.250	mg/L	0.0010	100	70	130			
Cadmium		0.260	mg/L	0.0010	104	70	130			
Cobalt		0.488	mg/L	0.0050	97	70	130			
Lead		0.415	mg/L	0.0010	83	70	130			
Manganese		2.76	mg/L	0.0010	106	70	130			
Molybdenum		0.488	mg/L	0.0010	97	70	130			
Nickel		0.534	mg/L	0.0050	100	70	130			
Uranium		0.596	mg/L	0.00030	104	70	130			
Vanadium		0.498	mg/L	0.010	100	70	130			
Lab ID: B17071460-001BMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170808A			08/10/17 10:27	
Aluminum		2.92	mg/L	0.030	113	70	130	1.3	20	
Beryllium		0.242	mg/L	0.0010	97	70	130	3.1	20	
Cadmium		0.252	mg/L	0.0010	101	70	130	3.1	20	
Cobalt		0.488	mg/L	0.0050	97	70	130	0.0	20	
Lead		0.404	mg/L	0.0010	80	70	130	2.8	20	
Manganese		2.76	mg/L	0.0010	106	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/11/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 111683
Lab ID: B17071460-001BMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170808A			08/10/17 10:27	
Molybdenum		0.486	mg/L	0.0010	96	70	130	0.3	20	
Nickel		0.519	mg/L	0.0050	97	70	130	2.7	20	
Uranium		0.576	mg/L	0.00030	100	70	130	3.5	20	
Vanadium		0.486	mg/L	0.010	97	70	130	2.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/01/17
Work Order: C17070470

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**					'tical Run: SELENIUM PSA MILLENIUM_170721A				
Lab ID:	**ICV-38024**	Initial Calibration Verification Standard								07/21/17 12:21
Selenium-IV		0.0197	mg/L	0.0010	98	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								07/21/17 12:54
Selenium-IV		0.0213	mg/L	0.0010	106	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								07/21/17 13:23
Selenium-IV		0.0210	mg/L	0.0010	105	90	110			
Method:	**A3114 B**									Batch: 38024
Lab ID:	**MB-38024**	Method Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:25
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-38024**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:28
Selenium-IV		0.0199	mg/L	0.0010	100	85	115			
Lab ID:	**H17070304-008EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:57
Selenium-IV		0.0214	mg/L	0.0010	107	70	130			
Lab ID:	**H17070304-008EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				07/21/17 12:59
Selenium-IV		0.0216	mg/L	0.0010	108	70	130	0.7	20	
Method:	**A3114 B**									Batch: 38025
Lab ID:	**MB-38025**	Method Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 13:25
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-38025**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				07/21/17 13:26
Selenium-IV		0.0209	mg/L	0.0010	104	85	115			
Lab ID:	**C17070470-007EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				07/21/17 13:29
Selenium-IV		0.0200	mg/L	0.0010	100	70	130			
Lab ID:	**C17070470-007EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				07/21/17 13:31
Selenium-IV		0.0204	mg/L	0.0010	102	70	130	1.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/01/17
Work Order: C17070470

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_170728A			
Lab ID:	**AS-ICV 25ppb-7/28/2017**	Initial Calibration Verification Standard								07/28/17 14:52
Arsenic-III		25.2	ug/L	5.0	101	87.6	114			
Lab ID:	**AS-50.0-7/28/2017**	Continuing Calibration Verification Standard								07/28/17 18:16
Arsenic-III		51.1	ug/L	5.0	102	85	115			
Lab ID:	**AS-50.0-7/28/2017**	Continuing Calibration Verification Standard								07/28/17 21:04
Arsenic-III		48.5	ug/L	5.0	97	85	115			
Method:	**E1632AM**									Batch: R127182
Lab ID:	**AS-LFB 50ppb-7/28/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:28
Arsenic-III		50.8	ug/L	5.0	102	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:40
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**C17070470-002E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1707				07/28/17 21:40
Arsenic-III		50.3	ug/L	5.0	98	55	146			
Lab ID:	**C17070470-002E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1707				07/28/17 21:52
Arsenic-III		51.7	ug/L	5.0	101	55	146	2.8	20	
Lab ID:	**H17070411-001E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1707				07/29/17 00:28
Arsenic-III		49.7	ug/L	5.0	99	55	146			
Lab ID:	**H17070411-001E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1707				07/29/17 00:41
Arsenic-III		51.0	ug/L	5.0	102	55	146	2.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1030
Lab ID: MB-GA-1030	3	Method Blank				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		0.08	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.3	pCi/L							
Gross Alpha minus Rn & U MDC		0.5	pCi/L							
Lab ID: LCS-GA-1030		Laboratory Control Sample				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		32	pCi/L		96	80	120			
Lab ID: C17070424-007FMS		Sample Matrix Spike				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		59	pCi/L		88	70	130			
Lab ID: C17070424-007FMSD		Sample Matrix Spike Duplicate				Run: G5000W_170802A				08/09/17 14:58
Gross Alpha minus Rn & U		59	pCi/L		89	70	130	0.8	20	
Method: E900.1										Batch: GA-1031
Lab ID: MB-GA-1031	3	Method Blank				Run: G542M-2_170807A				08/10/17 14:32
Gross Alpha minus Rn & U		0.3	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.4	pCi/L							
Gross Alpha minus Rn & U MDC		0.6	pCi/L							
Lab ID: LCS-GA-1031		Laboratory Control Sample				Run: G542M-2_170807A				08/10/17 14:32
Gross Alpha minus Rn & U		35	pCi/L		104	80	120			
Lab ID: C17070490-003CMS		Sample Matrix Spike				Run: G542M-2_170807A				08/10/17 14:32
Gross Alpha minus Rn & U		66	pCi/L		94	70	130			
Lab ID: C17070490-003CMSD		Sample Matrix Spike Duplicate				Run: G542M-2_170807A				08/10/17 14:32
Gross Alpha minus Rn & U		61	pCi/L		86	70	130	8.6	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8582
Lab ID: LCS-RA226-8582		Laboratory Control Sample				Run: G542M_170802A				08/14/17 14:12
Radium 226		8.8	pCi/L		87	80	120			
Lab ID: MB-RA226-8582	3	Method Blank				Run: G542M_170802A				08/14/17 14:12
Radium 226		0.02	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17070469-001FMS		Sample Matrix Spike				Run: G542M_170802A				08/14/17 14:12
Radium 226		15	pCi/L		72	70	130			
Lab ID: C17070469-001FMSD		Sample Matrix Spike Duplicate				Run: G542M_170802A				08/14/17 14:12
Radium 226		16	pCi/L		76	70	130	6.7	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2598
Lab ID: LCS-RA-TH-ISO-2598		Laboratory Control Sample				Run: EGG-ORTEC_2_170807A				08/10/17 09:35
Thorium 230		6.6	pCi/L		114	80	120			
Lab ID: C17070469-002FMS		Sample Matrix Spike				Run: EGG-ORTEC_2_170807A				08/10/17 09:35
Thorium 230		14	pCi/L		109	70	130			
Lab ID: C17070469-002FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_170807A				08/10/17 09:35
Thorium 230		13	pCi/L		104	70	130	4.8	20	
Lab ID: MB-RA-TH-ISO-2598	3	Method Blank				Run: EGG-ORTEC_2_170807A				08/10/17 09:35
Thorium 230		0.08	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0847	
Lab ID:	**LCS-PB-210-0847**		Laboratory Control Sample				Run: TRICARB LSC_170806A			08/11/17 13:57	
Lead 210			18	pCi/L		96	80	120			
Lab ID:	**MB-PB-210-0847**	3	Method Blank				Run: TRICARB LSC_170806A			08/11/17 14:57	
Lead 210			0.3	pCi/L							U
Lead 210 precision (±)			0.7	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17070470-006FMS**		Sample Matrix Spike				Run: TRICARB LSC_170806A			08/12/17 13:48	
Lead 210			49	pCi/L		109	70	130			
Lab ID:	**C17070470-006FMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_170806A			08/12/17 14:44	
Lead 210			54	pCi/L		120	70	130	10	30	
Lab ID:	**C17070699-003CDUP**	3	Sample Duplicate				Run: TRICARB LSC_170806A			08/14/17 05:12	
Lead 210			0.36	pCi/L					86	30	UR
Lead 210 precision (±)			0.74	pCi/L							
Lead 210 MDC			1.2	pCi/L							

- For all R qualified analytes the RERs are less than the limit of 2.0. This batch is approved.

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 08/15/17
Work Order: C17070470

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5556
Lab ID: LCS-228-RA226-8582		Laboratory Control Sample				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		8.2	pCi/L		81	80	120			
Lab ID: MB-RA226-8582	3	Method Blank				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		0.04	pCi/L							U
Radium 228 precision (±)		1.0	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C17070470-011FMS		Sample Matrix Spike				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		23	pCi/L		97	70	130			
Lab ID: C17070470-011FMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170802B				08/09/17 13:06
Radium 228		22	pCi/L		93	70	130	3.3	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

August 30, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17070656 Quote ID: C129 - Quarterly Long List

Project Name: Zone 3

Energy Laboratories, Inc. Casper WY received the following 6 samples for United Nuclear Corporation on 7/20/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17070656-001	613	07/17/17 08:32	07/20/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Acidity, Total as CaCO3 Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070656-002	517	07/17/17 09:32	07/20/17	Aqueous	Same As Above
C17070656-003	708	07/17/17 11:11	07/20/17	Aqueous	Same As Above
C17070656-004	711	07/17/17 12:45	07/20/17	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C17070656-005	EPA-13	07/17/17 14:18 07/20/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070656-006	420	07/17/17 15:45 07/20/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey L. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.08.30 10:26:53 -06:00

CLIENT: United Nuclear Corporation
Project: Zone 3
Work Order: C17070656

Report Date: 08/30/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/04/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2310 B									Batch: 170728_1_ACID-W	
Lab ID: MBLK-1_170707		Method Blank				Run: ACIDITY_170728A			07/28/17 08:59	
Acidity, Total as CaCO3		5	mg/L	2						
Lab ID: LCS-1_170707		Laboratory Control Sample				Run: ACIDITY_170728A			07/28/17 09:00	
Acidity, Total as CaCO3		1060	mg/L	5.0	107	90	110			
Lab ID: C17070656-001ADUP		Sample Duplicate				Run: ACIDITY_170728A			07/28/17 09:01	
Acidity, Total as CaCO3		3480	mg/L	5.0				1.4	10	
Method: A2310 B									Batch: R225433	
Lab ID: MBLK		Method Blank				Run: MANTECH_170727A			07/27/17 09:46	
Acidity, Total as CaCO3		ND	mg/L	1						
Lab ID: LCS_170711		Laboratory Control Sample				Run: MANTECH_170727A			07/27/17 10:03	
Acidity, Total as CaCO3		996	mg/L	5.0	101	90	110			
Lab ID: C17070656-002ADUP		Sample Duplicate				Run: MANTECH_170727A			07/27/17 10:20	
Acidity, Total as CaCO3		603	mg/L	5.0				1.7	10	
Method: A2310 B									Batch: R225696	
Lab ID: MBLK		Method Blank				Run: MANTECH_170803B			08/03/17 12:56	
Acidity, Total as CaCO3		ND	mg/L	1						
Lab ID: LCS_170711		Laboratory Control Sample				Run: MANTECH_170803B			08/03/17 13:11	
Acidity, Total as CaCO3		906	mg/L	5.0	92	90	110			
Lab ID: C17070874-002ADUP		Sample Duplicate				Run: MANTECH_170803B			08/03/17 13:30	
Acidity, Total as CaCO3		739	mg/L	5.0				0.9	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/04/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B										Batch: R225280
Lab ID: MBLK	Method Blank					Run: MANTECH_170721A			07/21/17 15:10	
Alkalinity, Total as CaCO3		2	mg/L	1						
Lab ID: LCS_170118	Laboratory Control Sample					Run: MANTECH_170721A			07/21/17 15:20	
Alkalinity, Total as CaCO3		240	mg/L	5.0	95	90	110			
Lab ID: C17070634-006ADUP	Sample Duplicate					Run: MANTECH_170721A			07/21/17 15:36	
Alkalinity, Total as CaCO3		211	mg/L	5.0				0.0	10	
Lab ID: C17070656-005ADUP	Sample Duplicate					Run: MANTECH_170721A			07/21/17 16:34	
Alkalinity, Total as CaCO3		34.3	mg/L	5.0				2.7	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/04/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS170721A
Lab ID: MB-1_170721A		Method Blank				Run: BAL-18_170721A				07/21/17 12:06
Solids, Total Dissolved TDS @ 180 C		7	mg/L	7						
Lab ID: LCS-2_170721A		Laboratory Control Sample				Run: BAL-18_170721A				07/21/17 12:06
Solids, Total Dissolved TDS @ 180 C		1040	mg/L	11	93	90	110			
Lab ID: C17070656-001A DUP		Sample Duplicate				Run: BAL-18_170721A				07/21/17 12:06
Solids, Total Dissolved TDS @ 180 C		10600	mg/L	100				1.5	5	
Method: A2540 C										Batch: TDS170724A
Lab ID: MB-49_170724A		Method Blank				Run: BAL-18_170724B				07/24/17 12:04
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-50_170724A		Laboratory Control Sample				Run: BAL-18_170724B				07/24/17 14:40
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	11	0	90	110			S
Lab ID: C17070656-001A DUP		Sample Duplicate				Run: BAL-18_170724B				07/24/17 14:41
Solids, Total Dissolved TDS @ 180 C		11300	mg/L	100				1.5	5	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/04/17
Work Order: C17070656

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A4500-H B**								Analytical Run: PHSC_101-C_170721A		
Lab ID:	**pH 6.86**	Initial Calibration Verification Standard								07/21/17 09:31	
pH			6.86	s.u.	0.010	100	98	102			
Method:	**A4500-H B**									Batch: R225226	
Lab ID:	**C17070656-001ADUP**	Sample Duplicate					Run: PHSC_101-C_170721A			07/21/17 10:31	
pH			3.00	s.u.	0.010				0.0	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/04/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_170731A	
Lab ID: ICV		Initial Calibration Verification Standard							07/31/17 13:12	
Nitrogen, Ammonia as N		0.959	mg/L	0.050	96	90	110			
Method: A4500-NH3 G									Batch: R225564	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170731A			07/31/17 13:11	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170731A			07/31/17 13:13	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17070656-001DMS		Sample Matrix Spike				Run: FIA201-C_170731A			07/31/17 13:16	
Nitrogen, Ammonia as N		238	mg/L	5.0	94	90	110			E
Lab ID: C17070656-001DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170731A			07/31/17 13:17	
Nitrogen, Ammonia as N		241	mg/L	5.0	97	90	110	1.3	10	E

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

E - Estimated value. Result exceeds the instrument upper quantitation limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 08/04/17
Project: Zone 3 **Work Order:** C17070656

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC2-C_170725A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							07/25/17 15:06	
Chloride			9.96	mg/L	1.0	100	90	110			
Sulfate			38.2	mg/L	1.0	95	90	110			
Method:	**E300.0**									Batch: R225403	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170725A			07/25/17 15:24	
Chloride			ND	mg/L	0.05						
Sulfate			ND	mg/L	0.05						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC2-C_170725A			07/25/17 15:43	
Chloride			10.4	mg/L	1.0	104	90	110			
Sulfate			40.7	mg/L	1.0	102	90	110			
Lab ID:	**C17070491-007AMS**	2	Sample Matrix Spike				Run: IC2-C_170725A			07/26/17 05:32	
Chloride			1030	mg/L	5.2	101	80	120			
Sulfate			6600	mg/L	21	99	80	120			
Lab ID:	**C17070491-007AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170725A			07/26/17 05:50	
Chloride			1030	mg/L	5.2	101	80	120	0.1	20	
Sulfate			6640	mg/L	21	101	80	120	0.6	20	
Method:	**E300.0**								Analytical Run: IC2-C_170803A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							08/03/17 15:10	
Chloride			9.90	mg/L	1.0	99	90	110			
Sulfate			38.5	mg/L	1.0	96	90	110			
Method:	**E300.0**									Batch: R225730	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170803A			08/03/17 15:31	
Chloride			ND	mg/L	0.08						
Sulfate			ND	mg/L	0.1						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC2-C_170803A			08/03/17 15:50	
Chloride			10.1	mg/L	1.0	101	90	110			
Sulfate			39.6	mg/L	1.0	99	90	110			
Lab ID:	**C17080124-001AMS**	2	Sample Matrix Spike				Run: IC2-C_170803A			08/03/17 16:45	
Chloride			14.6	mg/L	1.0	108	80	120			
Sulfate			52.2	mg/L	1.0	105	80	120			
Lab ID:	**C17080124-001AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170803A			08/03/17 17:04	
Chloride			14.4	mg/L	1.0	106	80	120	1.5	20	
Sulfate			51.4	mg/L	1.0	103	80	120	1.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/04/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_170728A	
Lab ID: ICV		Initial Calibration Verification Standard							07/28/17 16:12	
Nitrogen, Nitrate+Nitrite as N		0.968	mg/L	0.010	97	90	110			
Method: E353.2									Batch: R225513	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170728A			07/28/17 16:13	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170728A			07/28/17 16:15	
Nitrogen, Nitrate+Nitrite as N		0.977	mg/L	0.010	99	90	110			
Lab ID: C17070553-001CMS		Sample Matrix Spike				Run: FIA201-C_170728A			07/28/17 16:18	
Nitrogen, Nitrate+Nitrite as N		11.2	mg/L	0.050	100	90	110			
Lab ID: C17070553-001CMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170728A			07/28/17 16:19	
Nitrogen, Nitrate+Nitrite as N		11.3	mg/L	0.050	101	90	110	0.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_170727A	
Lab ID: ICV	5	Continuing Calibration Verification Standard							07/27/17 09:08	
Aluminum		2.47	mg/L	0.10	99	95	105			
Beryllium		1.26	mg/L	0.010	101	95	105			
Manganese		2.49	mg/L	0.010	100	95	105			
Nickel		2.44	mg/L	0.050	98	95	105			
Vanadium		2.51	mg/L	0.10	100	95	105			
Method: E200.7									Batch: 111894	
Lab ID: MB-111894	5	Method Blank				Run: ICP203-B_170727A			07/27/17 10:09	
Aluminum		ND	mg/L	0.010						
Beryllium		ND	mg/L	0.0001						
Manganese		ND	mg/L	0.0007						
Nickel		ND	mg/L	0.004						
Vanadium		ND	mg/L	0.004						
Lab ID: LCS-111894	5	Laboratory Control Sample				Run: ICP203-B_170727A			07/27/17 10:12	
Aluminum		2.71	mg/L	0.10	109	85	115			
Beryllium		0.277	mg/L	0.010	111	85	115			
Manganese		2.75	mg/L	0.010	110	85	115			
Nickel		0.540	mg/L	0.010	108	85	115			
Vanadium		0.557	mg/L	0.10	111	85	115			
Lab ID: C17070656-001CMS3	5	Sample Matrix Spike				Run: ICP203-B_170727A			07/27/17 10:29	
Aluminum		568	mg/L	1.5		70	130			A
Beryllium		0.443	mg/L	0.0014	111	70	130			
Manganese		50.9	mg/L	0.0058		70	130			A
Nickel		2.43	mg/L	0.037	112	70	130			
Vanadium		1.89	mg/L	0.043	110	70	130			
Lab ID: C17070656-001CMSD	5	Sample Matrix Spike Duplicate				Run: ICP203-B_170727A			07/27/17 10:40	
Aluminum		577	mg/L	1.5		70	130	1.5	20	A
Beryllium		0.450	mg/L	0.0014	114	70	130	1.5	20	
Manganese		51.7	mg/L	0.0058		70	130	1.5	20	A
Nickel		2.39	mg/L	0.037	104	70	130	1.7	20	
Vanadium		1.93	mg/L	0.043	118	70	130	2.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_170731A	
Lab ID: ICV		Continuing Calibration Verification Standard							07/31/17 09:49	
Aluminum		2.50	mg/L	0.10	100	95	105			
Method: E200.7									Batch: 111894	
Lab ID: MB-111894	5	Method Blank				Run: ICP203-B_170731A			07/31/17 14:53	
Aluminum		ND	mg/L	0.010						
Beryllium		ND	mg/L	0.0001						
Manganese		ND	mg/L	0.0007						
Nickel		ND	mg/L	0.004						
Vanadium		ND	mg/L	0.004						
Method: E200.7									Analytical Run: ICP203-B_170802A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							08/02/17 11:40	
Calcium		25.3	mg/L	1.0	101	95	105			
Magnesium		25.5	mg/L	1.0	102	95	105			
Potassium		25.1	mg/L	1.0	101	95	105			
Sodium		25.2	mg/L	1.0	101	95	105			
Method: E200.7									Batch: R284225	
Lab ID: MB-6500DIS170801A	4	Method Blank				Run: ICP203-B_170802A			08/02/17 11:47	
Calcium		ND	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Potassium		ND	mg/L	0.08						
Sodium		ND	mg/L	0.03						
Lab ID: LFB-6500DIS170801A	4	Laboratory Fortified Blank				Run: ICP203-B_170802A			08/02/17 11:54	
Calcium		48.3	mg/L	1.0	97	85	115			
Magnesium		49.2	mg/L	1.0	98	85	115			
Potassium		47.9	mg/L	1.0	96	85	115			
Sodium		48.0	mg/L	1.0	96	85	115			
Lab ID: B17071883-002BMS2	4	Sample Matrix Spike				Run: ICP203-B_170802A			08/02/17 12:51	
Calcium		677	mg/L	1.0	96	70	130			
Magnesium		779	mg/L	1.0	97	70	130			
Potassium		495	mg/L	1.0	98	70	130			
Sodium		2210	mg/L	1.9	88	70	130			
Lab ID: B17071883-002BMSD	4	Sample Matrix Spike Duplicate				Run: ICP203-B_170802A			08/02/17 12:55	
Calcium		680	mg/L	1.0	97	70	130	0.4	20	
Magnesium		780	mg/L	1.0	97	70	130	0.2	20	
Potassium		494	mg/L	1.0	98	70	130	0.2	20	
Sodium		2220	mg/L	1.9	91	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 07/31/17
Project: Zone 3 **Work Order:** C17070656

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**								Analytical Run: ICP204-B_170725A		
Lab ID:	**ICV**	4	Continuing Calibration Verification Standard							07/25/17 14:29	
Calcium			25.1	mg/L	1.0	100	95	105			
Magnesium			25.0	mg/L	1.0	100	95	105			
Potassium			24.8	mg/L	1.0	99	95	105			
Sodium			24.7	mg/L	1.0	99	95	105			
Method:	**E200.7**									Batch: R283763	
Lab ID:	**MB-7400DIS170725A**	4	Method Blank				Run: ICP204-B_170725A			07/25/17 14:37	
Calcium			ND	mg/L	0.1						
Magnesium			ND	mg/L	0.003						
Potassium			ND	mg/L	0.03						
Sodium			0.04	mg/L	0.02						
Lab ID:	**LFB-7400DIS170725A**	4	Laboratory Fortified Blank				Run: ICP204-B_170725A			07/25/17 14:45	
Calcium			49.2	mg/L	1.0	98	85	115			
Magnesium			49.3	mg/L	1.0	99	85	115			
Potassium			49.1	mg/L	1.0	98	85	115			
Sodium			48.8	mg/L	1.0	97	85	115			
Lab ID:	**C17070656-001BMS2**	4	Sample Matrix Spike				Run: ICP204-B_170725A			07/25/17 17:06	
Calcium			906	mg/L	1.4	96	70	130			
Magnesium			1190	mg/L	1.0	99	70	130			
Potassium			486	mg/L	1.0	97	70	130			
Sodium			716	mg/L	3.1	97	70	130			
Lab ID:	**C17070656-001BMSD**	4	Sample Matrix Spike Duplicate				Run: ICP204-B_170725A			07/25/17 17:10	
Calcium			921	mg/L	1.4	99	70	130	1.6	20	
Magnesium			1210	mg/L	1.0	103	70	130	1.5	20	
Potassium			499	mg/L	1.0	100	70	130	2.7	20	
Sodium			725	mg/L	3.1	99	70	130	1.3	20	
Method:	**E200.7**								Analytical Run: ICP204-B_170726A		
Lab ID:	**ICV**		Continuing Calibration Verification Standard							07/26/17 10:53	
Calcium			25.2	mg/L	1.0	101	95	105			
Method:	**E200.7**									Batch: R283820	
Lab ID:	**MB-7400DIS170726A**		Method Blank				Run: ICP204-B_170726A			07/26/17 11:01	
Calcium			ND	mg/L	0.1						
Lab ID:	**LFB-7400DIS170726A**		Laboratory Fortified Blank				Run: ICP204-B_170726A			07/26/17 11:09	
Calcium			49.7	mg/L	1.0	99	85	115			
Lab ID:	**B17071730-003CMS2**		Sample Matrix Spike				Run: ICP204-B_170726A			07/26/17 12:09	
Calcium			135	mg/L	1.0	96	70	130			
Lab ID:	**B17071730-003CMSD**		Sample Matrix Spike Duplicate				Run: ICP204-B_170726A			07/26/17 12:13	
Calcium			135	mg/L	1.0	97	70	130	0.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_170726A	
Lab ID: QCS	9	Initial Calibration Verification Standard							07/27/17 01:53	
Beryllium		0.0247	mg/L	0.0010	99	90	110			
Cadmium		0.0251	mg/L	0.0010	101	90	110			
Cobalt		0.0511	mg/L	0.010	102	90	110			
Lead		0.0492	mg/L	0.010	98	90	110			
Manganese		0.259	mg/L	0.010	103	90	110			
Molybdenum		0.0451	mg/L	0.0050	90	90	110			
Nickel		0.0512	mg/L	0.010	102	90	110			
Uranium		0.0202	mg/L	0.0010	101	90	110			
Vanadium		0.0494	mg/L	0.10	99	90	110			
Method: E200.8										Batch: 111894
Lab ID: MB-111894	10	Method Blank				Run: ICPMS202-B_170726A			07/27/17 02:46	
Aluminum		0.002	mg/L	0.0009						
Beryllium		ND	mg/L	0.00002						
Cadmium		0.00005	mg/L	0.00002						
Cobalt		0.004	mg/L	0.00003						
Lead		0.0002	mg/L	0.00005						
Manganese		ND	mg/L	0.00004						
Molybdenum		0.0004	mg/L	0.00007						
Nickel		ND	mg/L	0.00006						
Uranium		0.0001	mg/L	0.00002						
Vanadium		ND	mg/L	0.0002						
Lab ID: LCS-111894	10	Laboratory Control Sample				Run: ICPMS202-B_170726A			07/27/17 02:54	
Aluminum		2.62	mg/L	0.030	105	85	115			
Beryllium		0.238	mg/L	0.0010	95	85	115			
Cadmium		0.268	mg/L	0.0010	107	85	115			
Cobalt		0.554	mg/L	0.0050	110	85	115			
Lead		0.531	mg/L	0.0010	106	85	115			
Manganese		2.72	mg/L	0.0010	109	85	115			
Molybdenum		0.519	mg/L	0.0010	104	85	115			
Nickel		0.527	mg/L	0.0050	105	85	115			
Uranium		0.542	mg/L	0.00030	108	85	115			
Vanadium		0.572	mg/L	0.010	115	85	115			
Lab ID: C17070656-001CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_170726A			07/27/17 02:56	
Aluminum		512	mg/L	0.030		70	130			A
Beryllium		0.353	mg/L	0.0010	76	70	130			
Cadmium		0.301	mg/L	0.0010	103	70	130			
Cobalt		2.53	mg/L	0.0050	111	70	130			
Lead		0.538	mg/L	0.0010	106	70	130			
Manganese		51.6	mg/L	0.0010		70	130			A
Molybdenum		0.536	mg/L	0.0010	104	70	130			
Nickel		2.36	mg/L	0.0050	73	70	130			
Uranium		1.23	mg/L	0.00030	93	70	130			

Qualifiers:

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ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Batch: 111894	
Lab ID: C17070656-001CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_170726A			07/27/17 02:56	
Vanadium		2.05	mg/L	0.010	115	70	130			
Lab ID: C17070656-001CMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_170726A			07/27/17 02:59	
Aluminum		519	mg/L	0.030		70	130	1.4	20	A
Beryllium		0.355	mg/L	0.0010	77	70	130	0.5	20	
Cadmium		0.300	mg/L	0.0010	103	70	130	0.2	20	
Cobalt		2.60	mg/L	0.0050	125	70	130	2.8	20	
Lead		0.540	mg/L	0.0010	106	70	130	0.2	20	
Manganese		52.6	mg/L	0.0010		70	130	1.9	20	A
Molybdenum		0.532	mg/L	0.0010	104	70	130	0.7	20	
Nickel		2.40	mg/L	0.0050	81	70	130	1.8	20	
Uranium		1.24	mg/L	0.00030	96	70	130	1.1	20	
Vanadium		2.08	mg/L	0.010	120	70	130	1.3	20	
Method: E200.8									Analytical Run: ICPMS202-B_170727A	
Lab ID: QCS	7	Initial Calibration Verification Standard							07/27/17 22:02	
Aluminum		0.263	mg/L	0.10	105	90	110			
Beryllium		0.0266	mg/L	0.0010	106	90	110			
Cadmium		0.0259	mg/L	0.0010	104	90	110			
Cobalt		0.0516	mg/L	0.010	103	90	110			
Lead		0.0495	mg/L	0.010	99	90	110			
Molybdenum		0.0456	mg/L	0.0050	91	90	110			
Uranium		0.0208	mg/L	0.0010	104	90	110			
Method: E200.8									Batch: 111894	
Lab ID: MB-111894	10	Method Blank				Run: ICPMS202-B_170727A			07/27/17 22:23	
Aluminum		0.002	mg/L	0.0009						
Beryllium		ND	mg/L	0.00002						
Cadmium		0.00004	mg/L	0.00002						
Cobalt		ND	mg/L	0.00003						
Lead		0.00008	mg/L	0.00005						
Manganese		ND	mg/L	0.00004						
Molybdenum		0.0007	mg/L	0.00007						
Nickel		ND	mg/L	0.00006						
Uranium		0.00007	mg/L	0.00002						
Vanadium		ND	mg/L	0.0002						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/09/17
Work Order: C17070656

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**						'tical Run: SELENIUM PSA MILLENIUM_170727B			
Lab ID:	**ICV-38095**	Initial Calibration Verification Standard								07/27/17 12:49
Selenium-IV		0.0208	mg/L	0.0010	104	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								07/27/17 13:17
Selenium-IV		0.0213	mg/L	0.0010	107	90	110			
Method:	**A3114 B**									Batch: 38095
Lab ID:	**MB-38095**	Method Blank				Run: SELENIUM PSA MILLENIUM_				07/27/17 12:54
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-38095**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				07/27/17 12:55
Selenium-IV		0.0208	mg/L	0.0010	104	85	115			
Lab ID:	**H17070411-006EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				07/27/17 13:22
Selenium-IV		0.0208	mg/L	0.0010	104	70	130			
Lab ID:	**H17070411-006EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				07/27/17 13:24
Selenium-IV		0.0203	mg/L	0.0010	101	70	130	2.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/09/17
Work Order: C17070656

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_170728A			
Lab ID:	**AS-ICV 25ppb-7/28/2017**	Initial Calibration Verification Standard								07/28/17 14:52
Arsenic-III		25.2	ug/L	5.0	101	87.6	114			
Lab ID:	**AS-50.0-7/28/2017**	Continuing Calibration Verification Standard								07/28/17 23:52
Arsenic-III		45.8	ug/L	5.0	92	85	115			
Lab ID:	**AS-50.0-7/28/2017**	Continuing Calibration Verification Standard								07/29/17 02:41
Arsenic-III		48.5	ug/L	5.0	97	85	115			
Method:	**E1632AM**									Batch: R127182
Lab ID:	**AS-LFB 50ppb-7/28/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:28
Arsenic-III		50.8	ug/L	5.0	102	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1707				07/28/17 15:40
Arsenic-III		ND	ug/L	0.2						
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_170803A			
Lab ID:	**AS-ICV 25ppb-8/3/2017**	Initial Calibration Verification Standard								08/03/17 13:25
Arsenic-III		24.9	ug/L	5.0	100	87.6	114			
Lab ID:	**AS-50.0-8/3/2017**	Continuing Calibration Verification Standard								08/03/17 13:37
Arsenic-III		50.0	ug/L	5.0	100	85	115			
Method:	**E1632AM**									Batch: R127305
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1708				08/03/17 14:13
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**AS-LFB 50ppb-8/3/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1708				08/03/17 15:22
Arsenic-III		48.2	ug/L	5.0	96	55	146			
Lab ID:	**C17070656-006E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1708				08/03/17 15:46
Arsenic-III		45.7	ug/L	5.0	91	55	146			
Lab ID:	**C17070656-006E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1708				08/03/17 15:58
Arsenic-III		47.2	ug/L	5.0	94	55	146	3.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/09/17
Work Order: C17070656

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_170807A			
Lab ID:	**AS-ICV 25ppb-8/7/2017**	Initial Calibration Verification Standard								08/07/17 13:53
Arsenic-III		25.0	ug/L	5.0	100	87.6	114			
Lab ID:	**AS-50.0-8/7/2017**	Continuing Calibration Verification Standard								08/07/17 14:05
Arsenic-III		50.1	ug/L	5.0	100	85	115			
Method:	**E1632AM**									Batch: R127392
Lab ID:	**AS-LFB 50ppb-8/7/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1708				08/07/17 14:29
Arsenic-III		51.9	ug/L	5.0	104	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1708				08/07/17 14:41
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**C17070656-004E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1708				08/07/17 15:17
Arsenic-III		52.2	ug/L	5.0	102	55	146			
Lab ID:	**C17070656-004E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1708				08/07/17 15:29
Arsenic-III		51.4	ug/L	5.0	100	55	146	1.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070656

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624								Analytical Run: R283750	
Lab ID: CCV072517	Continuing Calibration Verification Standard							07/25/17 08:58	
Bromodichloromethane	4.96	ug/L	0.50	99	70	130			
Bromoform	5.72	ug/L	0.50	114	70	130			
Chlorodibromomethane	5.28	ug/L	0.50	106	70	130			
Chloroform	5.12	ug/L	0.50	102	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	116	71	139			
Surr: p-Bromofluorobenzene			0.50	108	80	127			
Surr: Toluene-d8			0.50	93	80	123			
Method: E624								Batch: R283750	
Lab ID: lcs072517	Laboratory Control Sample				Run: SV5972.I_170725A			07/25/17 09:38	
Bromodichloromethane	5.12	ug/L	0.50	102	74	128			
Bromoform	5.36	ug/L	0.50	107	66	128			
Chlorodibromomethane	5.12	ug/L	0.50	102	74	125			
Chloroform	4.84	ug/L	0.50	97	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	91	71	139			
Surr: p-Bromofluorobenzene			0.50	107	80	127			
Surr: Toluene-d8			0.50	99	80	123			
Lab ID: blk072517	Method Blank				Run: SV5972.I_170725A			07/25/17 10:39	
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	126	71	139			
Surr: p-Bromofluorobenzene			0.50	128	80	127			S
Surr: Toluene-d8			0.50	95	80	123			
Lab ID: C17070656-002Gms	Sample Matrix Spike				Run: SV5972.I_170725A			07/25/17 16:00	
Bromodichloromethane	4.92	ug/L	0.50	98	74	128			
Bromoform	5.12	ug/L	0.50	102	66	128			
Chlorodibromomethane	4.92	ug/L	0.50	98	74	125			
Chloroform	8.72	ug/L	0.50	101	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	102	71	139			
Surr: p-Bromofluorobenzene			0.50	107	80	127			
Surr: Toluene-d8			0.50	97	80	123			
Lab ID: C17070656-002Gmsd	Sample Matrix Spike Duplicate				Run: SV5972.I_170725A			07/25/17 16:32	
Bromodichloromethane	5.08	ug/L	0.50	102	74	128	3.2	20	
Bromoform	5.04	ug/L	0.50	101	66	128	1.6	20	
Chlorodibromomethane	5.08	ug/L	0.50	102	74	125	3.2	20	
Chloroform	8.76	ug/L	0.50	102	68	124	0.5	20	
Surr: 1,2-Dichloroethane-d4			0.50	99	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	97	80	123			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/29/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1032
Lab ID: MB-GA-1032	3	Method Blank				Run: G542M-2_170807B				08/10/17 16:26
Gross Alpha minus Rn & U			pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.3	pCi/L							
Gross Alpha minus Rn & U MDC		0.6	pCi/L							
Lab ID: LCS-GA-1032		Laboratory Control Sample				Run: G542M-2_170807B				08/10/17 16:26
Gross Alpha minus Rn & U		34	pCi/L		102	80	120			
Lab ID: C17070623-004CMS		Sample Matrix Spike				Run: G542M-2_170807B				08/11/17 08:16
Gross Alpha minus Rn & U		67	pCi/L		94	70	130			
Lab ID: C17070623-004CMSD		Sample Matrix Spike Duplicate				Run: G542M-2_170807B				08/11/17 08:16
Gross Alpha minus Rn & U		69	pCi/L		98	70	130	4.1	20	
Method: E900.1										Batch: GA-1033
Lab ID: MB-GA-1033	3	Method Blank				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		0.1	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.3	pCi/L							
Gross Alpha minus Rn & U MDC		0.5	pCi/L							
Lab ID: LCS-GA-1033		Laboratory Control Sample				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		35	pCi/L		105	80	120			
Lab ID: C17070658-003CMS		Sample Matrix Spike				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		70	pCi/L		99	70	130			
Lab ID: C17070658-003CMSD		Sample Matrix Spike Duplicate				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		70	pCi/L		100	70	130	0.3	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/29/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8584
Lab ID: LCS-RA226-8584		Laboratory Control Sample				Run: G542M_170803A				08/15/17 11:58
Radium 226		8.5	pCi/L		85	80	120			
Lab ID: MB-RA226-8584	3	Method Blank				Run: G542M_170803A				08/15/17 11:58
Radium 226		0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17070656-001FMS		Sample Matrix Spike				Run: G542M_170803A				08/15/17 11:58
Radium 226		28	pCi/L		78	70	130			
Lab ID: C17070656-001FMSD		Sample Matrix Spike Duplicate				Run: G542M_170803A				08/15/17 13:34
Radium 226		31	pCi/L		93	70	130	11	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/29/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2600
Lab ID: LCS-RA-TH-ISO-2600		Laboratory Control Sample				Run: EGG-ORTEC_170809A				08/15/17 11:37
Thorium 230		6.2	pCi/L		111	80	120			
Lab ID: C17070490-020CMS		Sample Matrix Spike				Run: EGG-ORTEC_170809A				08/15/17 11:36
Thorium 230		22	pCi/L		87	70	130			
Lab ID: C17070490-020CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_170809A				08/15/17 11:36
Thorium 230		25	pCi/L		97	70	130	11	20	
Lab ID: MB-RA-TH-ISO-2600	3	Method Blank				Run: EGG-ORTEC_170809A				08/15/17 17:07
Thorium 230		0.05	pCi/L							U
Thorium 230 precision (±)		0.08	pCi/L							
Thorium 230 MDC		0.1	pCi/L							
Method: E908.0										Batch: RA-TH-ISO-2601
Lab ID: LCS-RA-TH-ISO-2601		Laboratory Control Sample				Run: EGG-ORTEC_2_170810A				08/15/17 11:39
Thorium 230		5.8	pCi/L		102	80	120			
Lab ID: C17070623-004CMS		Sample Matrix Spike				Run: EGG-ORTEC_2_170810A				08/15/17 11:39
Thorium 230		12	pCi/L		105	70	130			
Lab ID: C17070623-004CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_170810A				08/15/17 11:39
Thorium 230		12	pCi/L		101	70	130	3.7	20	
Lab ID: MB-RA-TH-ISO-2601	3	Method Blank				Run: EGG-ORTEC_2_170810A				08/15/17 11:39
Thorium 230		0.03	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/29/17
Work Order: C17070656

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0847	
Lab ID:	**LCS-PB-210-0847**		Laboratory Control Sample				Run: TRICARB LSC_170806A			08/11/17 13:57	
Lead 210			18	pCi/L		96	80	120			
Lab ID:	**MB-PB-210-0847**	3	Method Blank				Run: TRICARB LSC_170806A			08/11/17 14:57	
Lead 210			0.3	pCi/L							U
Lead 210 precision (±)			0.7	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17070470-006FMS**		Sample Matrix Spike				Run: TRICARB LSC_170806A			08/12/17 13:48	
Lead 210			49	pCi/L		109	70	130			
Lab ID:	**C17070470-006FMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_170806A			08/12/17 14:44	
Lead 210			54	pCi/L		120	70	130	10	30	
Lab ID:	**C17070699-003CDUP**	3	Sample Duplicate				Run: TRICARB LSC_170806A			08/14/17 05:12	
Lead 210			0.36	pCi/L					86	30	UR
Lead 210 precision (±)			0.74	pCi/L							
Lead 210 MDC			1.2	pCi/L							

- For all R qualified analytes the RERs are less than the limit of 2.0. This batch is approved.

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/29/17
Work Order: C17070656

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5558
Lab ID: LCS-228-RA226-8584		Laboratory Control Sample				Run: TENNELEC-3_170803A				08/10/17 11:51
Radium 228		9.2	pCi/L		94	80	120			
Lab ID: MB-RA226-8584	3	Method Blank				Run: TENNELEC-3_170803A				08/10/17 11:51
Radium 228		-0.1	pCi/L							U
Radium 228 precision (±)		1	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C17070656-006FMS		Sample Matrix Spike				Run: TENNELEC-3_170803A				08/10/17 11:51
Radium 228		27	pCi/L		101	70	130			
Lab ID: C17070656-006FMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170803A				08/10/17 11:51
Radium 228		26	pCi/L		94	70	130	4.7	20	
Method: RA-05										Batch: RA228-5573
Lab ID: LCS-228-RA226-8605		Laboratory Control Sample				Run: TENNELEC-3_170822B				08/29/17 08:54
Radium 228		8.2	pCi/L		80	80	120			
Lab ID: MB-RA226-8605	3	Method Blank				Run: TENNELEC-3_170822B				08/29/17 08:54
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.6	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C17080400-001DMS		Sample Matrix Spike				Run: TENNELEC-3_170822B				08/29/17 08:54
Radium 228		21	pCi/L		80	70	130			
Lab ID: C17080400-001DMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170822B				08/29/17 08:54
Radium 228		21	pCi/L		83	70	130	3.5	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

September 20, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17070708 Quote ID: C129 - Quarterly Long List

Project Name: Zone 3

Energy Laboratories, Inc. Casper WY received the following 8 samples for United Nuclear Corporation on 7/21/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17070708-001	EPA-14	07/18/17 08:38	07/21/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070708-002	719	07/18/17 10:10	07/21/17	Aqueous	Same As Above
C17070708-003	MW-7	07/18/17 12:36	07/21/17	Aqueous	Same As Above
C17070708-004	NW-3	07/18/17 14:15	07/21/17	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C17070708-005	717	07/18/17 14:22 07/21/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Acidity, Total as CaCO3 Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070708-006	717 Duplicate	07/18/17 16:02 07/21/17	Aqueous	Same As Above
C17070708-007	Rinsate	07/18/17 17:30 07/21/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17070708-008	Field Blank	07/18/17 17:35 07/21/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.09.20 13:06:32 -06:00

CLIENT: United Nuclear Corporation
Project: Zone 3
Work Order: C17070708

Report Date: 09/20/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/31/17
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2310 B									Analytical Run: ACIDITY_170729A	
Lab ID: ICV-1_		Initial Calibration Verification Standard							07/29/17 10:42	
pH		6.79	s.u.	0.010	99	98	102			
Method: A2310 B									Batch: 170729_1_ACID-W	
Lab ID: MBLK-1_170706		Method Blank				Run: ACIDITY_170729A			07/29/17 10:43	
Acidity, Total as CaCO3		2	mg/L	2						
Lab ID: LCS-1_170706		Laboratory Control Sample				Run: ACIDITY_170729A			07/29/17 10:43	
Acidity, Total as CaCO3		1070	mg/L	5.0	108	90	110			
Lab ID: C17070708-005ADUP		Sample Duplicate				Run: ACIDITY_170729A			07/29/17 10:45	
Acidity, Total as CaCO3		2010	mg/L	5.0				0.2	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/31/17
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_170727C	
Lab ID: ICV-9186		Initial Calibration Verification Standard							07/27/17 12:15	
pH		6.92	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R225480	
Lab ID: MBLK		Method Blank				Run: MANTECH_170727C			07/27/17 15:48	
Alkalinity, Total as CaCO3		2	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_170727C			07/27/17 16:00	
Alkalinity, Total as CaCO3		243	mg/L	5.0	96	90	110			
Lab ID: C17070702-001ADUP		Sample Duplicate				Run: MANTECH_170727C			07/27/17 16:16	
Alkalinity, Total as CaCO3		339	mg/L	5.0				0.9	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/31/17
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS170724A
Lab ID: MB-25_170724A		Method Blank				Run: BAL-18_170724B				07/24/17 11:59
Solids, Total Dissolved TDS @ 180 C		8	mg/L	7						
Lab ID: LCS-26_170724A		Laboratory Control Sample				Run: BAL-18_170724B				07/24/17 11:59
Solids, Total Dissolved TDS @ 180 C		1100	mg/L	11	98	90	110			
Lab ID: C17070699-001A DUP		Sample Duplicate				Run: BAL-18_170724B				07/24/17 12:00
Solids, Total Dissolved TDS @ 180 C		1480	mg/L	20				1.0	5	
Lab ID: C17070708-005A DUP		Sample Duplicate				Run: BAL-18_170724B				07/24/17 12:02
Solids, Total Dissolved TDS @ 180 C		7470	mg/L	100				2.4	5	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/31/17
Work Order: C17070708

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A4500-H B**									Analytical Run: PHSC_101-C_170724A	
Lab ID:	**pH 6.86**		Initial Calibration Verification Standard							07/24/17 10:28	
pH			6.85	s.u.	0.010	100	98	102			
Method:	**A4500-H B**									Batch: R225281	
Lab ID:	**C17070699-001ADUP**		Sample Duplicate				Run: PHSC_101-C_170724A			07/24/17 12:15	
pH			7.68	s.u.	0.010				0.1	3	
Lab ID:	**C17070708-004ADUP**		Sample Duplicate				Run: PHSC_101-C_170724A			07/24/17 12:47	
pH			6.85	s.u.	0.010				0.0	3	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Report Date: 08/31/17
Project: Zone 3
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_170731A	
Lab ID: ICV	Initial Calibration Verification Standard								07/31/17 13:12	
Nitrogen, Ammonia as N		0.959	mg/L	0.050	96	90	110			
Method: A4500-NH3 G									Batch: R225564	
Lab ID: MBLK	Method Blank					Run: FIA201-C_170731A			07/31/17 13:11	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB	Laboratory Fortified Blank					Run: FIA201-C_170731A			07/31/17 13:13	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17070656-001DMS	Sample Matrix Spike					Run: FIA201-C_170731A			07/31/17 13:16	
Nitrogen, Ammonia as N		238	mg/L	5.0	94	90	110			E
Lab ID: C17070656-001DMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_170731A			07/31/17 13:17	
Nitrogen, Ammonia as N		241	mg/L	5.0	97	90	110	1.3	10	E
Lab ID: C17070708-005DMS	Sample Matrix Spike					Run: FIA201-C_170731A			07/31/17 13:33	
Nitrogen, Ammonia as N		63.1	mg/L	1.3	94	90	110			E
Lab ID: C17070708-005DMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_170731A			07/31/17 13:34	
Nitrogen, Ammonia as N		64.4	mg/L	1.3	99	90	110	2.0	10	E

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

E - Estimated value. Result exceeds the instrument upper quantitation limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 08/31/17
Project: Zone 3 **Work Order:** C17070708

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC2-C_170727A	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							07/27/17 14:11	
Chloride			10.7	mg/L	1.0	107	90	110			
Sulfate			40.3	mg/L	1.0	101	90	110			
Method:	**E300.0**									Batch: R225491	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170727A			07/27/17 14:29	
Chloride			ND	mg/L	0.05						
Sulfate			ND	mg/L	0.05						
Lab ID:	**LFB072717-1**	2	Laboratory Fortified Blank				Run: IC2-C_170727A			07/27/17 14:48	
Chloride			10.0	mg/L	1.0	100	90	110			
Sulfate			39.9	mg/L	1.0	100	90	110			
Lab ID:	**C17070697-003AMS**	2	Sample Matrix Spike				Run: IC2-C_170727A			07/28/17 08:54	
Chloride			300	mg/L	1.0	82	80	120			
Sulfate			1060	mg/L	4.2	89	80	120			
Lab ID:	**C17070697-003AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170727A			07/28/17 09:13	
Chloride			299	mg/L	1.0	81	80	120	0.3	20	
Sulfate			1070	mg/L	4.2	91	80	120	0.5	20	
Method:	**E300.0**									Analytical Run: IC2-C_170727B	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							07/27/17 14:11	
Chloride			10.8	mg/L	1.0	108	90	110			
Sulfate			40.3	mg/L	1.0	101	90	110			
Method:	**E300.0**									Batch: R225549	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_170727B			07/27/17 14:29	
Chloride			ND	mg/L	0.05						
Sulfate			ND	mg/L	0.05						
Lab ID:	**LFB072717-2**	2	Laboratory Fortified Blank				Run: IC2-C_170727B			07/28/17 12:54	
Chloride			9.66	mg/L	1.0	97	90	110			
Sulfate			38.0	mg/L	1.0	95	90	110			
Lab ID:	**C17070708-003AMS**	2	Sample Matrix Spike				Run: IC2-C_170727B			07/28/17 13:31	
Chloride			229	mg/L	2.1	97	80	120			
Sulfate			3390	mg/L	8.3	86	80	120			
Lab ID:	**C17070708-003AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_170727B			07/28/17 13:49	
Chloride			228	mg/L	2.1	97	80	120	0.2	20	
Sulfate			3390	mg/L	8.3	87	80	120	0.1	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 08/31/17

Project: Zone 3 **Work Order:** C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_170728A	
Lab ID: ICV		Initial Calibration Verification Standard							07/28/17 16:12	
Nitrogen, Nitrate+Nitrite as N		0.968	mg/L	0.010	97	90	110			
Method: E353.2									Batch: R225513	
Lab ID: MBLK		Method Blank				Run: FIA201-C_170728A			07/28/17 16:13	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_170728A			07/28/17 16:15	
Nitrogen, Nitrate+Nitrite as N		0.977	mg/L	0.010	99	90	110			
Lab ID: C17070694-002DMS		Sample Matrix Spike				Run: FIA201-C_170728A			07/28/17 17:08	
Nitrogen, Nitrate+Nitrite as N		4.40	mg/L	0.020	100	90	110			
Lab ID: C17070694-002DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170728A			07/28/17 17:09	
Nitrogen, Nitrate+Nitrite as N		4.38	mg/L	0.020	99	90	110	0.5	10	
Lab ID: C17070708-003DMS		Sample Matrix Spike				Run: FIA201-C_170728A			07/28/17 17:25	
Nitrogen, Nitrate+Nitrite as N		1.44	mg/L	0.010	105	90	110			
Lab ID: C17070708-003DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_170728A			07/28/17 17:26	
Nitrogen, Nitrate+Nitrite as N		1.41	mg/L	0.010	102	90	110	2.1	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/03/17
Work Order: C17070708

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**								Analytical Run: ICP203-B_170727A	
Lab ID:	**ICV**	Continuing Calibration Verification Standard							07/27/17 09:08	
Potassium		25.4	mg/L	1.0	102	95	105			
Sodium		25.4	mg/L	1.0	102	95	105			
Method:	**E200.7**								Batch: R283892	
Lab ID:	**MB-6500DIS170727A**	Method Blank				Run: ICP203-B_170727A			07/27/17 09:15	
Potassium		ND	mg/L	0.08						
Sodium		ND	mg/L	0.03						
Lab ID:	**LFB-6500DIS170727A**	Laboratory Fortified Blank				Run: ICP203-B_170727A			07/27/17 09:22	
Potassium		48.9	mg/L	1.0	98	85	115			
Sodium		49.2	mg/L	1.0	98	85	115			
Lab ID:	**C17070708-004BMS2**	Sample Matrix Spike				Run: ICP203-B_170727A			07/27/17 22:07	
Potassium		263	mg/L	1.0	102	70	130			
Sodium		429	mg/L	1.0	105	70	130			
Lab ID:	**C17070708-004BMSD2**	Sample Matrix Spike Duplicate				Run: ICP203-B_170727A			07/27/17 22:11	
Potassium		274	mg/L	1.0	107	70	130	4.1	20	
Sodium		449	mg/L	1.0	113	70	130	4.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/03/17
Work Order: C17070708

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**								Analytical Run: ICP203-B_170728A	
Lab ID:	**ICV**	Continuing Calibration Verification Standard							07/28/17 09:30	
Calcium		24.8	mg/L	1.0	99	95	105			
Magnesium		24.5	mg/L	1.0	98	95	105			
Potassium		24.8	mg/L	1.0	99	95	105			
Sodium		24.8	mg/L	1.0	99	95	105			
Method:	**E200.7**								Batch: 111931	
Lab ID:	**MB-111931**	Method Blank				Run: ICP203-B_170728A			07/29/17 02:09	
Aluminum		ND	mg/L	0.010						
Lab ID:	**LCS-111931**	Laboratory Control Sample				Run: ICP203-B_170728A			07/29/17 02:12	
Aluminum		2.69	mg/L	0.10	108	85	115			
Lab ID:	**B17072116-001CMS3**	Sample Matrix Spike				Run: ICP203-B_170728A			07/29/17 02:36	
Aluminum		2.74	mg/L	0.049	104	70	130			
Lab ID:	**B17072116-001CMSD3**	Sample Matrix Spike Duplicate				Run: ICP203-B_170728A			07/29/17 02:40	
Aluminum		2.82	mg/L	0.049	107	70	130	2.7	20	
Method:	**E200.7**								Batch: R283978	
Lab ID:	**MB-6500DIS170728A**	Method Blank				Run: ICP203-B_170728A			07/28/17 09:37	
Calcium		ND	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Potassium		ND	mg/L	0.08						
Sodium		ND	mg/L	0.03						
Lab ID:	**LFB-6500DIS170728A**	Laboratory Fortified Blank				Run: ICP203-B_170728A			07/28/17 09:44	
Calcium		50.0	mg/L	1.0	100	85	115			
Magnesium		49.6	mg/L	1.0	99	85	115			
Potassium		49.4	mg/L	1.0	99	85	115			
Sodium		49.9	mg/L	1.0	100	85	115			
Lab ID:	**B17072108-003BMS2**	Sample Matrix Spike				Run: ICP203-B_170728A			07/28/17 15:48	
Calcium		1280	mg/L	1.0	97	70	130			
Magnesium		1090	mg/L	1.0	98	70	130			
Potassium		991	mg/L	1.6	99	70	130			
Sodium		3300	mg/L	1.0	99	70	130			
Lab ID:	**B17072108-003BMSD2**	Sample Matrix Spike Duplicate				Run: ICP203-B_170728A			07/28/17 15:51	
Calcium		1240	mg/L	1.0	93	70	130	3.2	20	
Magnesium		1050	mg/L	1.0	94	70	130	3.5	20	
Potassium		946	mg/L	1.6	94	70	130	4.7	20	
Sodium		3190	mg/L	1.0	87	70	130	3.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/03/17
Work Order: C17070708

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**									Batch: R283978
Lab ID:	**C17070708-006BMS2**	Sample Matrix Spike				Run: ICP203-B_170728A				07/28/17 16:36
Calcium		956	mg/L	1.0	100	70	130			
Magnesium		1010	mg/L	1.0	103	70	130			
Potassium		517	mg/L	1.0	103	70	130			
Sodium		678	mg/L	1.9	102	70	130			
Lab ID:	**C17070708-006BMSD2**	Sample Matrix Spike Duplicate				Run: ICP203-B_170728A				07/28/17 16:39
Calcium		957	mg/L	1.0	100	70	130	0.1	20	
Magnesium		1010	mg/L	1.0	103	70	130	0.2	20	
Potassium		508	mg/L	1.0	102	70	130	1.7	20	
Sodium		676	mg/L	1.9	101	70	130	0.3	20	
Method:	**E200.7**									Analytical Run: ICP203-B_170731A
Lab ID:	**ICV**	Continuing Calibration Verification Standard								07/31/17 09:49
Calcium		25.4	mg/L	1.0	102	95	105			
Magnesium		25.0	mg/L	1.0	100	95	105			
Method:	**E200.7**									Batch: R284064
Lab ID:	**MB-6500DIS170731A**	Method Blank				Run: ICP203-B_170731A				07/31/17 09:56
Calcium		0.02	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Lab ID:	**LFB-6500DIS170731A**	Laboratory Fortified Blank				Run: ICP203-B_170731A				07/31/17 10:03
Calcium		49.5	mg/L	1.0	99	85	115			
Magnesium		49.0	mg/L	1.0	98	85	115			
Lab ID:	**B17071932-001BMS2**	Sample Matrix Spike				Run: ICP203-B_170731A				07/31/17 14:45
Calcium		259	mg/L	1.0	94	70	130			
Magnesium		312	mg/L	1.0	99	70	130			
Lab ID:	**B17071932-001BMSD2**	Sample Matrix Spike Duplicate				Run: ICP203-B_170731A				07/31/17 14:49
Calcium		259	mg/L	1.0	93	70	130	0.2	20	
Magnesium		311	mg/L	1.0	98	70	130	0.3	20	
Method:	**E200.7**									Analytical Run: ICP203-B_170802A
Lab ID:	**ICV**	Continuing Calibration Verification Standard								08/02/17 11:40
Aluminum		2.50	mg/L	0.10	100	95	105			
Method:	**E200.7**									Batch: 111931
Lab ID:	**MB-111931**	Method Blank				Run: ICP203-B_170802A				08/02/17 14:35
Aluminum		ND	mg/L	0.010						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/03/17
Work Order: C17070708

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Analytical Run: ICPMS206-B_170727A	
Lab ID: QCS	Initial Calibration Verification Standard								07/27/17 18:39
Aluminum	0.244	mg/L	0.10	98	90	110			
Cadmium	0.0257	mg/L	0.0010	103	90	110			
Cobalt	0.0494	mg/L	0.010	99	90	110			
Lead	0.0477	mg/L	0.010	95	90	110			
Manganese	0.261	mg/L	0.010	104	90	110			
Molybdenum	0.0473	mg/L	0.0050	95	90	110			
Nickel	0.0508	mg/L	0.010	102	90	110			
Uranium	0.0192	mg/L	0.0010	96	90	110			
Vanadium	0.0483	mg/L	0.10	97	90	110			
Method: E200.8								Batch: 111931	
Lab ID: MB-111931	Method Blank				Run: ICPMS206-B_170727A				07/27/17 16:38
Aluminum	ND	mg/L	0.0009						
Beryllium	ND	mg/L	0.00008						
Cadmium	ND	mg/L	0.00003						
Cobalt	ND	mg/L	0.00002						
Lead	ND	mg/L	0.00003						
Manganese	ND	mg/L	0.00006						
Molybdenum	ND	mg/L	0.00003						
Nickel	ND	mg/L	0.00009						
Uranium	ND	mg/L	0.00003						
Vanadium	ND	mg/L	0.00007						
Lab ID: LCS-111931	Laboratory Control Sample				Run: ICPMS206-B_170727A				07/27/17 16:46
Aluminum	2.58	mg/L	0.030	103	85	115			
Beryllium	0.253	mg/L	0.0010	101	85	115			
Cadmium	0.268	mg/L	0.0010	107	85	115			
Cobalt	0.537	mg/L	0.0050	107	85	115			
Lead	0.514	mg/L	0.0010	103	85	115			
Manganese	2.68	mg/L	0.0010	107	85	115			
Molybdenum	0.524	mg/L	0.0010	105	85	115			
Nickel	0.524	mg/L	0.0050	105	85	115			
Uranium	0.516	mg/L	0.00030	103	85	115			
Vanadium	0.528	mg/L	0.010	106	85	115			
Lab ID: B17072116-001CMS3	Sample Matrix Spike				Run: ICPMS206-B_170727A				07/28/17 00:00
Aluminum	2.42	mg/L	0.030	93	70	130			
Beryllium	0.215	mg/L	0.0010	86	70	130			
Cadmium	0.252	mg/L	0.0010	101	70	130			
Cobalt	0.475	mg/L	0.0050	95	70	130			
Lead	0.513	mg/L	0.0010	103	70	130			
Manganese	2.51	mg/L	0.0010	100	70	130			
Molybdenum	0.458	mg/L	0.0010	91	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/03/17
Work Order: C17070708

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**								Batch: 111931	
Lab ID:	**B17072116-001CMS3**	Sample Matrix Spike				Run: ICPMS206-B_170727A			07/28/17 00:00	
Nickel		0.514	mg/L	0.0050	103	70	130			
Uranium		0.570	mg/L	0.00030	114	70	130			
Vanadium		0.555	mg/L	0.010	111	70	130			
Lab ID:	**B17072116-001CMSD3**	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170727A			07/28/17 00:03	
Aluminum		2.48	mg/L	0.030	96	70	130	2.4	20	
Beryllium		0.217	mg/L	0.0010	87	70	130	0.9	20	
Cadmium		0.250	mg/L	0.0010	100	70	130	0.7	20	
Cobalt		0.479	mg/L	0.0050	96	70	130	1.0	20	
Lead		0.500	mg/L	0.0010	100	70	130	2.5	20	
Manganese		2.48	mg/L	0.0010	99	70	130	1.3	20	
Molybdenum		0.458	mg/L	0.0010	91	70	130	0.0	20	
Nickel		0.504	mg/L	0.0050	101	70	130	2.0	20	
Uranium		0.521	mg/L	0.00030	104	70	130	8.9	20	
Vanadium		0.545	mg/L	0.010	109	70	130	1.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/03/17
Work Order: C17070708

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**								Analytical Run: ICPMS206-B_170801A	
Lab ID:	**QCS**	Initial Calibration Verification Standard							07/31/17 16:36	
Beryllium		0.0262	mg/L	0.0010	105	90	110			
Lead		0.0497	mg/L	0.010	99	90	110			
Method:	**E200.8**								Batch: 111931	
Lab ID:	**MB-111931**	Method Blank				Run: ICPMS206-B_170801A			08/01/17 03:12	
Aluminum		ND	mg/L	0.0009						
Beryllium		ND	mg/L	0.00008						
Cadmium		ND	mg/L	0.00003						
Cobalt		ND	mg/L	0.00002						
Lead		ND	mg/L	0.00003						
Manganese		0.00006	mg/L	0.00006						
Molybdenum		0.00004	mg/L	0.00003						
Nickel		ND	mg/L	0.00009						
Uranium		ND	mg/L	0.00003						
Vanadium		ND	mg/L	0.00007						
Lab ID:	**LCS-111931**	Laboratory Control Sample				Run: ICPMS206-B_170801A			08/01/17 03:19	
Aluminum		2.62	mg/L	0.010	105	85	115			
Beryllium		0.255	mg/L	0.0010	102	85	115			
Cadmium		0.274	mg/L	0.0010	110	85	115			
Cobalt		0.509	mg/L	0.0010	102	85	115			
Lead		0.526	mg/L	0.0010	105	85	115			
Manganese		2.62	mg/L	0.0010	105	85	115			
Molybdenum		0.512	mg/L	0.0050	102	85	115			
Nickel		0.520	mg/L	0.0010	104	85	115			
Uranium		0.575	mg/L	0.0010	115	85	115			
Vanadium		0.501	mg/L	0.010	100	85	115			
Lab ID:	**B17072051-001CMS3**	Sample Matrix Spike				Run: ICPMS206-B_170801A			08/01/17 03:22	
Aluminum		2.74	mg/L	0.030	108	70	130			
Beryllium		0.261	mg/L	0.0010	104	70	130			
Cadmium		0.265	mg/L	0.0010	106	70	130			
Cobalt		0.500	mg/L	0.0050	100	70	130			
Lead		0.523	mg/L	0.0010	104	70	130			
Manganese		2.69	mg/L	0.0010	105	70	130			
Molybdenum		0.522	mg/L	0.0010	104	70	130			
Nickel		0.519	mg/L	0.0050	103	70	130			
Uranium		0.598	mg/L	0.00030	120	70	130			
Vanadium		0.517	mg/L	0.010	100	70	130			
Lab ID:	**B17072051-001CMSD3**	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170801A			08/01/17 03:25	
Aluminum		2.69	mg/L	0.030	106	70	130	2.0	20	
Beryllium		0.260	mg/L	0.0010	104	70	130	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/03/17
Work Order: C17070708

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Batch: 111931
Lab ID: B17072051-001CMSD3	Sample Matrix Spike Duplicate				Run: ICPMS206-B_170801A			08/01/17 03:25	
Cadmium	0.273	mg/L	0.0010	109	70	130	3.0	20	
Cobalt	0.502	mg/L	0.0050	100	70	130	0.4	20	
Lead	0.522	mg/L	0.0010	104	70	130	0.0	20	
Manganese	2.72	mg/L	0.0010	107	70	130	1.2	20	
Molybdenum	0.514	mg/L	0.0010	103	70	130	1.5	20	
Nickel	0.529	mg/L	0.0050	105	70	130	1.9	20	
Uranium	0.590	mg/L	0.00030	118	70	130	1.4	20	
Vanadium	0.524	mg/L	0.010	101	70	130	1.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 08/01/17
Work Order: C17070708

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624								Analytical Run: R283843	
Lab ID: CCV072617	Continuing Calibration Verification Standard							07/26/17 09:43	
Bromodichloromethane	4.72	ug/L	0.50	94	70	130			
Bromoform	4.92	ug/L	0.50	98	70	130			
Chlorodibromomethane	4.60	ug/L	0.50	92	70	130			
Chloroform	4.68	ug/L	0.50	94	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	90	71	139			
Surr: p-Bromofluorobenzene			0.50	106	80	127			
Surr: Toluene-d8			0.50	102	80	123			
Method: E624								Batch: R283843	
Lab ID: LCS072617	Laboratory Control Sample				Run: SV5972.I_170726B			07/26/17 10:25	
Chloroform	4.68	ug/L	0.50	94	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	92	71	139			
Surr: p-Bromofluorobenzene			0.50	106	80	127			
Surr: Toluene-d8			0.50	100	80	123			
Lab ID: BLK072617	Method Blank				Run: SV5972.I_170726B			07/26/17 11:26	
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	90	71	139			
Surr: p-Bromofluorobenzene			0.50	128	80	127			S
Surr: Toluene-d8			0.50	104	80	123			
Lab ID: C17070708-005Gms	Sample Matrix Spike				Run: 5971A.I_170727B			07/27/17 15:04	
Bromodichloromethane	6.08	ug/L	0.50	122	74	128			
Bromoform	5.12	ug/L	0.50	102	66	128			
Chlorodibromomethane	6.00	ug/L	0.50	120	74	125			
Chloroform	6.00	ug/L	0.50	112	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	102	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	104	80	123			
Lab ID: C17070708-005Gmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_170727B			07/27/17 15:33	
Bromodichloromethane	5.72	ug/L	0.50	114	74	128	6.1	20	
Bromoform	4.96	ug/L	0.50	99	66	128	3.2	20	
Chlorodibromomethane	5.64	ug/L	0.50	113	74	125	6.2	20	
Chloroform	5.56	ug/L	0.50	103	68	124	7.6	20	
Surr: 1,2-Dichloroethane-d4			0.50	100	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	100	80	123			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 09/20/17
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1033
Lab ID: MB-GA-1033	3	Method Blank				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		0.1	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.3	pCi/L							
Gross Alpha minus Rn & U MDC		0.5	pCi/L							
Lab ID: LCS-GA-1033		Laboratory Control Sample				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		35	pCi/L		105	80	120			
Lab ID: C17070658-003CMS		Sample Matrix Spike				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		70	pCi/L		99	70	130			
Lab ID: C17070658-003CMSD		Sample Matrix Spike Duplicate				Run: G542M-2_170810A				08/14/17 15:00
Gross Alpha minus Rn & U		70	pCi/L		100	70	130	0.3	20	
Method: E900.1										Batch: GA-1034
Lab ID: MB-GA-1034	3	Method Blank				Run: G542M-2_170810B				08/14/17 16:55
Gross Alpha minus Rn & U		0.3	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.3	pCi/L							
Gross Alpha minus Rn & U MDC		0.5	pCi/L							
Lab ID: LCS-GA-1034		Laboratory Control Sample				Run: G542M-2_170810B				08/14/17 16:55
Gross Alpha minus Rn & U		35	pCi/L		103	80	120			
Lab ID: C17070814-001CMS		Sample Matrix Spike				Run: G542M-2_170810B				08/14/17 18:30
Gross Alpha minus Rn & U		64	pCi/L		95	70	130			
Lab ID: C17070814-001CMSD		Sample Matrix Spike Duplicate				Run: G542M-2_170810B				08/14/17 18:30
Gross Alpha minus Rn & U		64	pCi/L		95	70	130	0.1	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 09/20/17
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8590
Lab ID: LCS-RA226-8590		Laboratory Control Sample				Run: G542M_170810B				08/21/17 14:03
Radium 226		9.7	pCi/L		94	80	120			
Lab ID: MB-RA226-8590	3	Method Blank				Run: G542M_170810B				08/21/17 14:03
Radium 226		0.2	pCi/L							U
Radium 226 precision (±)		0.2	pCi/L							
Radium 226 MDC		0.3	pCi/L							
Lab ID: C17070708-001FMS		Sample Matrix Spike				Run: G542M_170810B				08/21/17 14:03
Radium 226		30	pCi/L		115	70	130			
Lab ID: C17070708-001FMSD		Sample Matrix Spike Duplicate				Run: G542M_170810B				08/21/17 14:03
Radium 226		29	pCi/L		110	70	130	3.4	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 09/20/17
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0									Batch: RA-TH-ISO-2609	
Lab ID: LCS-RA-TH-ISO-2609		Laboratory Control Sample				Run: EGG-ORTEC_170829A			09/01/17 09:17	
Thorium 230		6.5	pCi/L		110	80	120			
Lab ID: C17070708-002FMS		Sample Matrix Spike				Run: EGG-ORTEC_170829A			09/01/17 09:17	
Thorium 230		23	pCi/L		113	70	130			
Lab ID: C17070708-002FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_170829A			09/01/17 09:17	
Thorium 230		21	pCi/L		106	70	130	7.0	20	
Lab ID: MB-RA-TH-ISO-2609	3	Method Blank				Run: EGG-ORTEC_170829A			09/01/17 09:17	
Thorium 230		0.3	pCi/L							
Thorium 230 precision (±)		0.2	pCi/L							
Thorium 230 MDC		0.2	pCi/L							
Method: E908.0									Batch: RA-TH-ISO-2603	
Lab ID: LCS-RA-TH-ISO-2603		Laboratory Control Sample				Run: EGG-ORTEC_2_170814A			08/17/17 09:33	
Thorium 230		5.8	pCi/L		101	80	120			
Lab ID: C17070699-003CMS		Sample Matrix Spike				Run: EGG-ORTEC_2_170814A			08/17/17 09:33	
Thorium 230		10	pCi/L		90	70	130			
Lab ID: C17070699-003CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_170814A			08/17/17 09:33	
Thorium 230		10	pCi/L		89	70	130	1.3	20	
Lab ID: MB-RA-TH-ISO-2603	3	Method Blank				Run: EGG-ORTEC_2_170814A			08/17/17 09:33	
Thorium 230		0.07	pCi/L							U
Thorium 230 precision (±)		0.09	pCi/L							
Thorium 230 MDC		0.1	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 09/20/17
Work Order: C17070708

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**										Batch: PB-210-0850
Lab ID:	**LCS-PB-210-0850**		Laboratory Control Sample				Run: TRICARB LSC_170810A				08/23/17 15:52
Lead 210			23	pCi/L		108	80	120			
Lab ID:	**MB-PB-210-0850**	3	Method Blank				Run: TRICARB LSC_170810A				08/23/17 16:50
Lead 210			0.02	pCi/L							U
Lead 210 precision (±)			0.8	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17070468-001CMS**		Sample Matrix Spike				Run: TRICARB LSC_170810A				08/24/17 01:58
Lead 210			51	pCi/L		119	70	130			
Lab ID:	**C17070468-001CMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_170810A				08/24/17 02:54
Lead 210			51	pCi/L		118	70	130	1.7	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 09/20/17
Work Order: C17070708

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5563
Lab ID: LCS-228-RA226-8590		Laboratory Control Sample				Run: TENNELEC-3_170810B				08/16/17 15:37
Radium 228		8.9	pCi/L		84	80	120			
Lab ID: MB-RA226-8590	3	Method Blank				Run: TENNELEC-3_170810B				08/16/17 15:37
Radium 228		0.6	pCi/L							U
Radium 228 precision (±)		1	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C17070708-002FMS		Sample Matrix Spike				Run: TENNELEC-3_170810B				08/16/17 15:37
Radium 228		27	pCi/L		87	70	130			
Lab ID: C17070708-002FMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170810B				08/16/17 15:37
Radium 228		25	pCi/L		80	70	130	5.9	20	
Method: RA-05										Batch: RA228-5590
Lab ID: LCS-228-RA228-5590		Laboratory Control Sample				Run: TENNELEC-3_170908B				09/13/17 09:02
Radium 228		8.9	pCi/L		89	80	120			
Lab ID: MB-228-RA228-5590	3	Method Blank				Run: TENNELEC-3_170908B				09/13/17 09:02
Radium 228		0.1	pCi/L							U
Radium 228 precision (±)		0.8	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C17080149-006CMS		Sample Matrix Spike				Run: TENNELEC-3_170908B				09/13/17 09:02
Radium 228		21	pCi/L		103	70	130			
Lab ID: C17080149-006CMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_170908B				09/13/17 09:02
Radium 228		19	pCi/L		94	70	130	8.6	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

August 01, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17070709 Quote ID: C129 - Quarterly Long List

Project Name: Zone 3

Energy Laboratories, Inc. Casper WY received the following 6 samples for United Nuclear Corporation on 7/21/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17070709-001	NBL-2	07/18/17 16:54	07/21/17	Aqueous	Alkalinity Anions by Ion Chromatography pH Solids, Total Dissolved
C17070709-002	NW-1	07/19/17 10:15	07/21/17	Aqueous	Same As Above
C17070709-003	NW-4	07/19/17 10:36	07/21/17	Aqueous	Same As Above
C17070709-004	NW-2	07/19/17 10:55	07/21/17	Aqueous	Same As Above
C17070709-005	RW-A	07/19/17 11:18	07/21/17	Aqueous	Same As Above
C17070709-006	NW-5	07/19/17 11:38	07/21/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.08.01 16:17:15 -06:00

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070709

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_170727C	
Lab ID: ICV-9186		Initial Calibration Verification Standard							07/27/17 12:15	
pH		6.92	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R225480	
Lab ID: MBLK		Method Blank				Run: MANTECH_170727C			07/27/17 15:48	
Alkalinity, Total as CaCO3		2	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_170727C			07/27/17 16:00	
Alkalinity, Total as CaCO3		243	mg/L	5.0	96	90	110			
Lab ID: C17070709-001ADUP		Sample Duplicate				Run: MANTECH_170727C			07/27/17 17:22	
Alkalinity, Total as CaCO3		254	mg/L	5.0				0.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070709

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS170724A
Lab ID: MB-25_170724A		Method Blank				Run: BAL-18_170724B				07/24/17 11:59
Solids, Total Dissolved TDS @ 180 C		8	mg/L	7						
Lab ID: LCS-26_170724A		Laboratory Control Sample				Run: BAL-18_170724B				07/24/17 11:59
Solids, Total Dissolved TDS @ 180 C		1100	mg/L	11	98	90	110			
Lab ID: C17070708-005A DUP		Sample Duplicate				Run: BAL-18_170724B				07/24/17 12:02
Solids, Total Dissolved TDS @ 180 C		7470	mg/L	100				2.4	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 07/31/17
Work Order: C17070709

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A4500-H B**									Analytical Run: PHSC_101-C_170724A	
Lab ID: **pH 6.86**		Initial Calibration Verification Standard							07/24/17 10:28	
pH		6.85	s.u.	0.010	100	98	102			
Method: **A4500-H B**									Batch: R225281	
Lab ID: **C17070708-004ADUP**		Sample Duplicate				Run: PHSC_101-C_170724A			07/24/17 12:47	
pH		6.85	s.u.	0.010				0.0	3	
Lab ID: **C17070709-006ADUP**		Sample Duplicate				Run: PHSC_101-C_170724A			07/24/17 13:27	
pH		5.37	s.u.	0.010				0.4	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 07/31/17

Project: Zone 3 **Work Order:** C17070709

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC2-C_170727B	
Lab ID:	**ICV**		Initial Calibration Verification Standard							07/27/17 14:11	
Chloride			10.8	mg/L	1.0	108	90	110			
Method:	**E300.0**									Batch: R225549	
Lab ID:	**ICB**		Method Blank				Run: IC2-C_170727B			07/27/17 14:29	
Chloride			ND	mg/L	0.05						
Lab ID:	**LFB072717-2**		Laboratory Fortified Blank				Run: IC2-C_170727B			07/28/17 12:54	
Chloride			9.66	mg/L	1.0	97	90	110			
Lab ID:	**C17070708-003AMS**		Sample Matrix Spike				Run: IC2-C_170727B			07/28/17 13:31	
Chloride			229	mg/L	2.1	97	80	120			
Lab ID:	**C17070708-003AMSD**		Sample Matrix Spike Duplicate				Run: IC2-C_170727B			07/28/17 13:49	
Chloride			228	mg/L	2.1	97	80	120	0.2	20	
Lab ID:	**C17070709-005AMS**		Sample Matrix Spike				Run: IC2-C_170727B			07/28/17 17:49	
Chloride			222	mg/L	2.1	98	80	120			
Lab ID:	**C17070709-005AMSD**		Sample Matrix Spike Duplicate				Run: IC2-C_170727B			07/28/17 18:07	
Chloride			223	mg/L	2.1	98	80	120	0.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

APPENDIX – D (2 OF 2)

FOURTH QUARTER

LABORATORY QUALITY CONTROL AND

PERFORMANCE REPORT

ANALYTICAL SUMMARY REPORT

November 09, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17100193 Quote ID: C129 - Quarterly Long List

Project Name: SW Alluvium

Energy Laboratories, Inc. Casper WY received the following 11 samples for United Nuclear Corporation on 10/5/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17100193-001	509-D	10/02/17 08:47	10/05/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100193-002	EPA-23	10/02/17 09:38	10/05/17	Aqueous	Same As Above
C17100193-003	803	10/02/17 10:34	10/05/17	Aqueous	Same As Above
C17100193-004	808	10/02/17 11:58	10/05/17	Aqueous	Same As Above
C17100193-005	802	10/02/17 12:47	10/05/17	Aqueous	Same As Above
C17100193-006	632	10/02/17 13:31	10/05/17	Aqueous	Same As Above
C17100193-007	801	10/02/17 14:15	10/05/17	Aqueous	Same As Above
C17100193-008	GW-1	10/02/17 15:03	10/05/17	Aqueous	Same As Above
C17100193-009	EPA-28	10/02/17 16:00	10/05/17	Aqueous	Same As Above
C17100193-010	EPA-28 Duplicate	10/02/17 16:42	10/05/17	Aqueous	Same As Above
C17100193-011	624	10/02/17 17:30	10/05/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

ANALYTICAL SUMMARY REPORT

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.11.09 16:32:37 -07:00

CLIENT: United Nuclear Corporation
Project: SW Alluvium
Work Order: C17100193

Report Date: 11/09/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_171006B	
Lab ID: ICV-9186		Initial Calibration Verification Standard							10/06/17 16:28	
pH		6.92	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R228052	
Lab ID: MBLK		Method Blank				Run: MANTECH_171006B			10/06/17 20:35	
Alkalinity, Total as CaCO3		1	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171006B			10/06/17 20:45	
Alkalinity, Total as CaCO3		259	mg/L	5.0	103	90	110			
Lab ID: C17100150-004ADUP		Sample Duplicate				Run: MANTECH_171006B			10/06/17 21:00	
Alkalinity, Total as CaCO3		64.9	mg/L	5.0				1.6	10	
Lab ID: C17100193-003ADUP		Sample Duplicate				Run: MANTECH_171006B			10/06/17 22:41	
Alkalinity, Total as CaCO3		1300	mg/L	5.0				0.5	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS171009B	
Lab ID: MB-49_171009B		Method Blank				Run: BAL-18_171009A			10/09/17 13:01	
Solids, Total Dissolved TDS @ 180 C		8	mg/L	7						
Lab ID: LCS-50_171009B		Laboratory Control Sample				Run: BAL-18_171009A			10/09/17 13:01	
Solids, Total Dissolved TDS @ 180 C		1040	mg/L	11	93	90	110			
Lab ID: C17100158-015A DUP		Sample Duplicate				Run: BAL-18_171009A			10/09/17 13:07	
Solids, Total Dissolved TDS @ 180 C		2470	mg/L	40				0.2	5	
Lab ID: MB-73_171009B		Method Blank				Run: BAL-18_171009A			10/09/17 13:17	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-74_171009B		Laboratory Control Sample				Run: BAL-18_171009A			10/09/17 13:18	
Solids, Total Dissolved TDS @ 180 C		1070	mg/L	11	96	90	110			
Lab ID: C17100193-010A DUP		Sample Duplicate				Run: BAL-18_171009A			10/09/17 13:20	
Solids, Total Dissolved TDS @ 180 C		4890	mg/L	40				1.2	5	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A4500-H B**									Analytical Run: PHSC_101-C_171006A	
Lab ID: **6.86**		Initial Calibration Verification Standard							10/06/17 09:16	
pH		6.85	s.u.	0.010	100	98	102			
Method: **A4500-H B**									Batch: R227999	
Lab ID: **C17100158-015ADUP**		Sample Duplicate				Run: PHSC_101-C_171006A			10/06/17 11:26	
pH		7.39	s.u.	0.010				0.1	3	
Lab ID: **C17100200-001ADUP**		Sample Duplicate				Run: PHSC_101-C_171006A			10/06/17 11:58	
pH		7.61	s.u.	0.010				0.1	3	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/19/17
Project: SW Alluvium **Work Order:** C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_171008A	
Lab ID: ICV		Initial Calibration Verification Standard							10/08/17 11:52	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	106	90	110			
Method: A4500-NH3 G									Batch: R228046	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171008A			10/08/17 11:51	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171008A			10/08/17 11:53	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17100132-002DMS		Sample Matrix Spike				Run: FIA201-C_171008A			10/08/17 12:13	
Nitrogen, Ammonia as N		1.53	mg/L	0.050	96	90	110			
Lab ID: C17100132-002DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171008A			10/08/17 12:14	
Nitrogen, Ammonia as N		1.46	mg/L	0.050	90	90	110	4.1	10	
Lab ID: C17100193-005DMS		Sample Matrix Spike				Run: FIA201-C_171008A			10/08/17 12:31	
Nitrogen, Ammonia as N		0.839	mg/L	0.050	84	90	110			S
Lab ID: C17100193-005DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171008A			10/08/17 12:32	
Nitrogen, Ammonia as N		0.856	mg/L	0.050	86	90	110	2.0	10	S

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/19/17

Project: SW Alluvium **Work Order:** C17100193

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC3-C_171009A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							10/09/17 15:04	
Chloride			9.93	mg/L	1.0	99	90	110			
Sulfate			38.9	mg/L	1.0	97	90	110			
Method:	**E300.0**									Batch: R228100	
Lab ID:	**ICB**	2	Method Blank				Run: IC3-C_171009A			10/09/17 15:21	
Chloride			ND	mg/L	0.09						
Sulfate			ND	mg/L	0.10						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC3-C_171009A			10/09/17 15:55	
Chloride			10.1	mg/L	1.0	101	90	110			
Sulfate			39.1	mg/L	1.0	98	90	110			
Lab ID:	**C17100158-011AMS**	2	Sample Matrix Spike				Run: IC3-C_171009A			10/09/17 20:42	
Chloride			75.7	mg/L	1.0	101	80	120			
Sulfate			535	mg/L	2.1	93	80	120			
Lab ID:	**C17100158-011AMSD**	2	Sample Matrix Spike Duplicate				Run: IC3-C_171009A			10/09/17 20:58	
Chloride			76.1	mg/L	1.0	101	80	120	0.5	20	
Sulfate			531	mg/L	2.1	91	80	120	0.7	20	
Lab ID:	**C17100193-006AMS**	2	Sample Matrix Spike				Run: IC3-C_171009A			10/10/17 00:38	
Chloride			435	mg/L	2.1	96	80	120			
Sulfate			3970	mg/L	8.3		80	120			A
Lab ID:	**C17100193-006AMSD**	2	Sample Matrix Spike Duplicate				Run: IC3-C_171009A			10/10/17 00:55	
Chloride			429	mg/L	2.1	93	80	120	1.3	20	
Sulfate			3960	mg/L	8.3		80	120	0.1	20	A

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

MDC - Minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_171009A	
Lab ID: ICV		Initial Calibration Verification Standard							10/09/17 13:02	
Nitrogen, Nitrate+Nitrite as N		1.00	mg/L	0.010	100	90	110			
Method: E353.2									Batch: R228084	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171009A			10/09/17 13:03	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171009A			10/09/17 13:04	
Nitrogen, Nitrate+Nitrite as N		0.990	mg/L	0.010	100	90	110			
Lab ID: C17100172-002AMS		Sample Matrix Spike				Run: FIA201-C_171009A			10/09/17 13:40	
Nitrogen, Nitrate+Nitrite as N		2.00	mg/L	0.010	99	90	110			
Lab ID: C17100172-002AMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171009A			10/09/17 13:41	
Nitrogen, Nitrate+Nitrite as N		2.00	mg/L	0.010	99	90	110	0.0	10	
Lab ID: C17100193-007DMS		Sample Matrix Spike				Run: FIA201-C_171009A			10/09/17 13:57	
Nitrogen, Nitrate+Nitrite as N		111	mg/L	0.50	105	90	110			
Lab ID: C17100193-007DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171009A			10/09/17 13:58	
Nitrogen, Nitrate+Nitrite as N		107	mg/L	0.50	97	90	110	3.7	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 10/19/17

Project: SW Alluvium **Work Order:** C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_171010A	
Lab ID: ICV	7	Continuing Calibration Verification Standard							10/10/17 10:12	
Aluminum		2.42	mg/L	0.10	97	95	105			
Beryllium		1.25	mg/L	0.010	100	95	105			
Cadmium		2.43	mg/L	0.010	97	95	105			
Manganese		2.45	mg/L	0.010	98	95	105			
Molybdenum		2.44	mg/L	0.10	98	95	105			
Nickel		2.42	mg/L	0.050	97	95	105			
Vanadium		2.48	mg/L	0.10	99	95	105			
Method: E200.7									Batch: 114500	
Lab ID: MB-114500	7	Method Blank				Run: ICP203-B_171010A			10/10/17 21:49	
Aluminum		ND	mg/L	0.010						
Beryllium		ND	mg/L	0.0001						
Cadmium		ND	mg/L	0.0010						
Manganese		ND	mg/L	0.0006						
Molybdenum		ND	mg/L	0.007						
Nickel		ND	mg/L	0.004						
Vanadium		ND	mg/L	0.004						
Lab ID: LCS-114500	7	Laboratory Control Sample				Run: ICP203-B_171010A			10/10/17 21:53	
Aluminum		2.59	mg/L	0.030	104	85	115			
Beryllium		0.268	mg/L	0.0010	107	85	115			
Cadmium		0.264	mg/L	0.0010	105	85	115			
Manganese		2.58	mg/L	0.0010	103	85	115			
Molybdenum		0.541	mg/L	0.0071	108	85	115			
Nickel		0.502	mg/L	0.0050	100	85	115			
Vanadium		0.531	mg/L	0.010	106	85	115			
Lab ID: C17100193-001CMS3	7	Sample Matrix Spike				Run: ICP203-B_171010A			10/10/17 22:07	
Aluminum		2.65	mg/L	0.098	106	70	130			
Beryllium		0.302	mg/L	0.0014	121	70	130			
Cadmium		0.264	mg/L	0.0099	105	70	130			
Manganese		7.59	mg/L	0.0058	129	70	130			
Molybdenum		0.557	mg/L	0.071	111	70	130			
Nickel		0.506	mg/L	0.037	101	70	130			
Vanadium		0.602	mg/L	0.043	120	70	130			
Lab ID: C17100193-001CMSD	7	Sample Matrix Spike Duplicate				Run: ICP203-B_171010A			10/10/17 22:10	
Aluminum		2.80	mg/L	0.098	112	70	130	5.2	20	
Beryllium		0.306	mg/L	0.0014	122	70	130	1.4	20	
Cadmium		0.278	mg/L	0.0099	111	70	130	5.3	20	
Manganese		7.67	mg/L	0.0058	133	70	130	1.1	20	S
Molybdenum		0.585	mg/L	0.071	117	70	130	4.9	20	
Nickel		0.556	mg/L	0.037	111	70	130	9.4	20	
Vanadium		0.619	mg/L	0.043	124	70	130	2.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7										Batch: 114500
Lab ID: C17100193-011CMS3	7	Sample Matrix Spike				Run: ICP203-B_171010A				10/10/17 23:10
Aluminum		2.80	mg/L	0.098	101	70	130			
Beryllium		0.221	mg/L	0.0014	89	70	130			
Cadmium		0.211	mg/L	0.0099	84	70	130			
Manganese		2.27	mg/L	0.0058	86	70	130			
Molybdenum		0.414	mg/L	0.071	83	70	130			
Nickel		0.376	mg/L	0.037	53	70	130			S
Vanadium		0.430	mg/L	0.043	86	70	130			
Lab ID: C17100193-011CMSD	7	Sample Matrix Spike Duplicate				Run: ICP203-B_171010A				10/10/17 23:14
Aluminum		2.94	mg/L	0.098	107	70	130	5.2	20	
Beryllium		0.254	mg/L	0.0014	102	70	130	14	20	
Cadmium		0.234	mg/L	0.0099	94	70	130	11	20	
Manganese		2.57	mg/L	0.0058	98	70	130	12	20	
Molybdenum		0.466	mg/L	0.071	93	70	130	12	20	
Nickel		0.397	mg/L	0.037	57	70	130	5.4	20	S
Vanadium		0.548	mg/L	0.043	110	70	130	24	20	R

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 10/19/17

Project: SW Alluvium **Work Order:** C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_171011A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							10/11/17 10:59	
Calcium		24.6	mg/L	1.0	98	95	105			
Magnesium		24.4	mg/L	1.0	98	95	105			
Potassium		24.6	mg/L	1.0	99	95	105			
Sodium		24.5	mg/L	1.0	98	95	105			
Method: E200.7									Batch: R288174	
Lab ID: MB-6500DIS171011A	4	Method Blank				Run: ICP203-B_171011A			10/11/17 11:06	
Calcium		0.02	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Potassium		ND	mg/L	0.08						
Sodium		ND	mg/L	0.03						
Lab ID: LFB-6500DIS171011A	4	Laboratory Fortified Blank				Run: ICP203-B_171011A			10/11/17 11:13	
Calcium		48.8	mg/L	1.0	98	85	115			
Magnesium		47.7	mg/L	1.0	95	85	115			
Potassium		48.9	mg/L	1.0	98	85	115			
Sodium		48.8	mg/L	1.0	98	85	115			
Lab ID: C17100193-003BMS2	4	Sample Matrix Spike				Run: ICP203-B_171011A			10/11/17 23:16	
Calcium		1070	mg/L	1.0	91	70	130			
Magnesium		1150	mg/L	1.0	97	70	130			
Potassium		498	mg/L	1.0	97	70	130			
Sodium		729	mg/L	1.9	96	70	130			
Lab ID: C17100193-003BMSD	4	Sample Matrix Spike Duplicate				Run: ICP203-B_171011A			10/11/17 23:27	
Calcium		1090	mg/L	1.0	96	70	130	2.5	20	
Magnesium		1180	mg/L	1.0	103	70	130	2.7	20	
Potassium		509	mg/L	1.0	100	70	130	2.2	20	
Sodium		739	mg/L	1.9	98	70	130	1.5	20	
Lab ID: B17100700-001AMS2	4	Sample Matrix Spike				Run: ICP203-B_171011A			10/12/17 00:09	
Calcium		167	mg/L	1.0	90	70	130			
Magnesium		111	mg/L	1.0	101	70	130			
Potassium		68.6	mg/L	1.0	97	70	130			
Sodium		175	mg/L	1.0	93	70	130			
Lab ID: B17100700-001AMSD	4	Sample Matrix Spike Duplicate				Run: ICP203-B_171011A			10/12/17 00:13	
Calcium		170	mg/L	1.0	96	70	130	1.8	20	
Magnesium		114	mg/L	1.0	106	70	130	2.3	20	
Potassium		70.2	mg/L	1.0	100	70	130	2.2	20	
Sodium		178	mg/L	1.0	99	70	130	1.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_171013A	
Lab ID: ICV	2	Continuing Calibration Verification Standard							10/13/17 13:59	
Molybdenum		2.43	mg/L	0.10	97	95	105			
Nickel		2.43	mg/L	0.050	97	95	105			
Method: E200.7									Batch: 114500	
Lab ID: MB-114500	2	Method Blank				Run: ICP203-B_171013A			10/13/17 17:31	
Molybdenum		ND	mg/L	0.007						
Nickel		0.004	mg/L	0.004						
Lab ID: LCS-114500	2	Laboratory Control Sample				Run: ICP203-B_171013A			10/13/17 17:34	
Molybdenum		0.560	mg/L	0.0071	112	85	115			
Nickel		0.575	mg/L	0.0050	114	85	115			
Lab ID: C17100193-011CMS3	2	Sample Matrix Spike				Run: ICP203-B_171013A			10/13/17 18:20	
Molybdenum		0.525	mg/L	0.071	105	70	130			
Nickel		0.478	mg/L	0.037	96	70	130			
Lab ID: C17100193-011CMSD	2	Sample Matrix Spike Duplicate				Run: ICP203-B_171013A			10/13/17 18:23	
Molybdenum		0.517	mg/L	0.071	103	70	130	1.4	20	
Nickel		0.439	mg/L	0.037	88	70	130	8.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 10/19/17

Project: SW Alluvium **Work Order:** C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_171016A	
Lab ID: QCS	10	Initial Calibration Verification Standard							10/16/17 16:32	
Aluminum		0.266	mg/L	0.10	107	90	110			
Beryllium		0.0268	mg/L	0.0010	107	90	110			
Cadmium		0.0269	mg/L	0.0010	108	90	110			
Cobalt		0.0531	mg/L	0.010	106	90	110			
Lead		0.0516	mg/L	0.010	103	90	110			
Manganese		0.268	mg/L	0.010	107	90	110			
Molybdenum		0.0490	mg/L	0.0050	98	90	110			
Nickel		0.0537	mg/L	0.010	107	90	110			
Uranium		0.0206	mg/L	0.0010	103	90	110			
Vanadium		0.0522	mg/L	0.10	104	90	110			
Method: E200.8										Batch: 114500
Lab ID: MB-114500	10	Method Blank				Run: ICPMS202-B_171016A			10/16/17 17:14	
Aluminum		0.001	mg/L	0.0009						
Beryllium		0.00004	mg/L	0.00002						
Cadmium		0.00005	mg/L	0.00002						
Cobalt		0.00003	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		0.0002	mg/L	0.00004						
Molybdenum		0.0003	mg/L	0.00005						
Nickel		0.00006	mg/L	0.00006						
Uranium		0.0001	mg/L	0.00002						
Vanadium		ND	mg/L	0.0002						
Lab ID: LCS-114500	10	Laboratory Control Sample				Run: ICPMS202-B_171016A			10/16/17 17:19	
Aluminum		2.58	mg/L	0.010	103	85	115			
Beryllium		0.277	mg/L	0.0010	111	85	115			
Cadmium		0.268	mg/L	0.0010	107	85	115			
Cobalt		0.505	mg/L	0.0010	101	85	115			
Lead		0.514	mg/L	0.0010	103	85	115			
Manganese		2.46	mg/L	0.0010	99	85	115			
Molybdenum		0.526	mg/L	0.0050	105	85	115			
Nickel		0.516	mg/L	0.0010	103	85	115			
Uranium		0.494	mg/L	0.0010	99	85	115			
Vanadium		0.504	mg/L	0.010	101	85	115			
Lab ID: C17100193-001CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_171016A			10/16/17 17:22	
Aluminum		2.45	mg/L	0.030	98	70	130			
Beryllium		0.254	mg/L	0.0010	102	70	130			
Cadmium		0.257	mg/L	0.0010	103	70	130			
Cobalt		0.535	mg/L	0.0050	104	70	130			
Lead		0.536	mg/L	0.0010	107	70	130			
Manganese		6.76	mg/L	0.0010	106	70	130			
Molybdenum		0.544	mg/L	0.0010	109	70	130			
Nickel		0.539	mg/L	0.0050	103	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 114500
Lab ID: C17100193-001CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_171016A			10/16/17 17:22	
Uranium		0.769	mg/L	0.00030	101	70	130			
Vanadium		0.543	mg/L	0.010	108	70	130			
Lab ID: C17100193-001CMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171016A			10/16/17 17:24	
Aluminum		2.50	mg/L	0.030	100	70	130	2.1	20	
Beryllium		0.257	mg/L	0.0010	103	70	130	1.0	20	
Cadmium		0.259	mg/L	0.0010	103	70	130	0.6	20	
Cobalt		0.531	mg/L	0.0050	103	70	130	0.9	20	
Lead		0.542	mg/L	0.0010	108	70	130	1.0	20	
Manganese		6.78	mg/L	0.0010	107	70	130	0.3	20	
Molybdenum		0.544	mg/L	0.0010	109	70	130	0.0	20	
Nickel		0.538	mg/L	0.0050	103	70	130	0.1	20	
Uranium		0.777	mg/L	0.00030	103	70	130	1.0	20	
Vanadium		0.552	mg/L	0.010	110	70	130	1.6	20	
Lab ID: C17100193-011CMS3	10	Sample Matrix Spike				Run: ICPMS202-B_171016A			10/16/17 18:03	
Aluminum		3.16	mg/L	0.030	118	70	130			
Beryllium		0.257	mg/L	0.0010	103	70	130			
Cadmium		0.256	mg/L	0.0010	102	70	130			
Cobalt		0.529	mg/L	0.0050	105	70	130			
Lead		0.539	mg/L	0.0010	108	70	130			
Manganese		2.70	mg/L	0.0010	102	70	130			
Molybdenum		0.536	mg/L	0.0010	107	70	130			
Nickel		0.538	mg/L	0.0050	105	70	130			
Uranium		0.565	mg/L	0.00030	105	70	130			
Vanadium		0.544	mg/L	0.010	109	70	130			
Lab ID: C17100193-011CMSD	10	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171016A			10/16/17 18:06	
Aluminum		3.16	mg/L	0.030	118	70	130	0.1	20	
Beryllium		0.255	mg/L	0.0010	102	70	130	0.7	20	
Cadmium		0.257	mg/L	0.0010	103	70	130	0.4	20	
Cobalt		0.514	mg/L	0.0050	102	70	130	2.9	20	
Lead		0.541	mg/L	0.0010	108	70	130	0.3	20	
Manganese		2.70	mg/L	0.0010	102	70	130	0.3	20	
Molybdenum		0.546	mg/L	0.0010	109	70	130	2.0	20	
Nickel		0.527	mg/L	0.0050	103	70	130	2.0	20	
Uranium		0.571	mg/L	0.00030	106	70	130	1.0	20	
Vanadium		0.540	mg/L	0.010	108	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**									Analytical Run: ICPMS207-B_171027A	
Lab ID:	**QCS**	3	Initial Calibration Verification Standard							10/27/17 14:31	
Aluminum			0.249	mg/L	0.10	100	90	110			
Cobalt			0.0480	mg/L	0.010	96	90	110			
Uranium			0.0219	mg/L	0.0010	109	90	110			
Method:	**E200.8**									Batch: 114500	
Lab ID:	**MB-114500**	3	Method Blank				Run: ICPMS207-B_171027A			10/27/17 17:33	
Aluminum			ND	mg/L	0.01						
Cobalt			ND	mg/L	0.0003						
Uranium			ND	mg/L	0.0001						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/20/17
Work Order: C17100193

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**					'tical Run: SELENIUM PSA MILLENIUM_171010A				
Lab ID:	**ICV-39100**	Initial Calibration Verification Standard								10/10/17 13:08
Selenium-IV		0.0198	mg/L	0.0010	99	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/10/17 13:09
Selenium-IV		0.0206	mg/L	0.0010	103	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/10/17 13:36
Selenium-IV		0.0199	mg/L	0.0010	100	90	110			
Method:	**A3114 B**									Batch: 39100
Lab ID:	**MB-39100**	Method Blank				Run: SELENIUM PSA MILLENIUM_				10/10/17 13:12
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-39100**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				10/10/17 13:14
Selenium-IV		0.0208	mg/L	0.0010	104	85	115			
Lab ID:	**C17100193-001EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				10/10/17 13:17
Selenium-IV		0.0209	mg/L	0.0010	105	70	130			
Lab ID:	**C17100193-001EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				10/10/17 13:19
Selenium-IV		0.0205	mg/L	0.0010	103	70	130	2.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/20/17
Work Order: C17100193

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_171016A			
Lab ID:	**AS-ICV 25ppb-10/16/201**	Initial Calibration Verification Standard								10/16/17 14:27
Arsenic-III		24.8	ug/L	5.0	99	87.6	114			
Lab ID:	**AS-50.0-10/16/2017**	Continuing Calibration Verification Standard								10/16/17 14:39
Arsenic-III		49.7	ug/L	5.0	99	85	115			
Lab ID:	**AS-50.0-10/16/2017**	Continuing Calibration Verification Standard								10/16/17 17:51
Arsenic-III		47.8	ug/L	5.0	96	85	115			
Method:	**E1632AM**									Batch: R129389
Lab ID:	**AS-LFB 50ppb-10/16/201**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1710				10/16/17 15:03
Arsenic-III		47.0	ug/L	5.0	94	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1710				10/16/17 15:15
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**H17100121-001A MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1710				10/16/17 15:39
Arsenic-III		47.6	ug/L	5.0	95	55	146			
Lab ID:	**H17100121-001A MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1710				10/16/17 15:51
Arsenic-III		47.4	ug/L	5.0	95	55	146	0.5	20	
Lab ID:	**C17100193-008E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1710				10/16/17 18:27
Arsenic-III		43.1	ug/L	5.0	86	55	146			
Lab ID:	**C17100193-008E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1710				10/16/17 18:40
Arsenic-III		43.2	ug/L	5.0	86	55	146	0.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R288365
Lab ID: ccvA101317	Continuing Calibration Verification Standard								10/13/17 22:42
Bromodichloromethane	5.32	ug/L	0.50	106	70	130			
Bromoform	4.68	ug/L	0.50	94	70	130			
Chlorodibromomethane	5.08	ug/L	0.50	102	70	130			
Chloroform	5.16	ug/L	0.50	103	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	105	71	139			
Surr: p-Bromofluorobenzene			0.50	101	80	127			
Surr: Toluene-d8			0.50	103	80	123			
Lab ID: ccvB101317	Continuing Calibration Verification Standard								10/14/17 10:56
Bromodichloromethane	5.76	ug/L	0.50	115	70	130			
Bromoform	5.20	ug/L	0.50	104	70	130			
Chlorodibromomethane	5.52	ug/L	0.50	110	70	130			
Chloroform	5.52	ug/L	0.50	110	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	110	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	101	80	123			
Lab ID: ccvC101417	Continuing Calibration Verification Standard								10/14/17 23:12
Bromodichloromethane	5.68	ug/L	0.50	114	70	130			
Bromoform	5.08	ug/L	0.50	102	70	130			
Chlorodibromomethane	5.60	ug/L	0.50	112	70	130			
Chloroform	5.48	ug/L	0.50	110	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	106	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	104	80	123			
Method: E624									Batch: R288365
Lab ID: lcsA101317	Laboratory Control Sample				Run: 5971A.I_171013B				10/13/17 23:12
Bromodichloromethane	6.12	ug/L	0.50	122	74	128			
Bromoform	5.40	ug/L	0.50	108	66	128			
Chlorodibromomethane	5.92	ug/L	0.50	118	74	125			
Chloroform	5.40	ug/L	0.50	108	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	102	71	139			
Surr: p-Bromofluorobenzene			0.50	103	80	127			
Surr: Toluene-d8			0.50	101	80	123			
Lab ID: blkA101317	Method Blank				Run: 5971A.I_171013B				10/14/17 00:10
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	98	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100193

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624								Batch: R288365	
Lab ID: blkA101317	Method Blank				Run: 5971A.I_171013B			10/14/17 00:10	
Surr: Toluene-d8			0.50	102	80	123			
Lab ID: b17100695-001ams	Sample Matrix Spike				Run: 5971A.I_171013B			10/14/17 21:44	
Bromodichloromethane	11.2	ug/L	1.0	112	74	128			
Bromoform	9.60	ug/L	1.0	96	66	128			
Chlorodibromomethane	10.7	ug/L	1.0	107	74	125			
Chloroform	11.8	ug/L	1.0	102	68	124			
Surr: 1,2-Dichloroethane-d4			1.0	101	71	139			
Surr: p-Bromofluorobenzene			1.0	102	80	127			
Surr: Toluene-d8			1.0	97	80	123			
- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.									
Lab ID: b17100695-001amsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171013B			10/14/17 22:13	
Bromodichloromethane	10.9	ug/L	1.0	109	74	128	2.9	20	
Bromoform	9.28	ug/L	1.0	93	66	128	3.4	20	
Chlorodibromomethane	10.1	ug/L	1.0	101	74	125	6.2	20	
Chloroform	11.5	ug/L	1.0	99	68	124	2.7	20	
Surr: 1,2-Dichloroethane-d4			1.0	101	71	139			
Surr: p-Bromofluorobenzene			1.0	100	80	127			
Surr: Toluene-d8			1.0	100	80	123			
- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.									

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/02/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1045
Lab ID: MB-GA-1045	3	Method Blank				Run: G5000W_171029A				11/01/17 14:40
Gross Alpha minus Rn & U		0.1	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.4	pCi/L							
Gross Alpha minus Rn & U MDC		0.7	pCi/L							
Lab ID: LCS-GA-1045		Laboratory Control Sample				Run: G5000W_171029A				11/01/17 14:40
Gross Alpha minus Rn & U		34	pCi/L		100	80	120			
Lab ID: C17100193-004FMS		Sample Matrix Spike				Run: G5000W_171029A				11/01/17 17:46
Gross Alpha minus Rn & U		59	pCi/L		87	70	130			
Lab ID: C17100193-004FMSD		Sample Matrix Spike Duplicate				Run: G5000W_171029A				11/01/17 17:46
Gross Alpha minus Rn & U		65	pCi/L		95	70	130	8.9	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/02/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8700
Lab ID: LCS-RA226-8700		Laboratory Control Sample				Run: G5000W_171010E				10/24/17 10:20
Radium 226		8.3	pCi/L		82	80	120			
Lab ID: MB-RA226-8700	3	Method Blank				Run: G5000W_171010E				10/24/17 10:20
Radium 226		0.1	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17100193-009FMS		Sample Matrix Spike				Run: G5000W_171010E				10/24/17 11:55
Radium 226		17	pCi/L		77	70	130			
Lab ID: C17100193-009FMSD		Sample Matrix Spike Duplicate				Run: G5000W_171010E				10/24/17 11:56
Radium 226		16	pCi/L		70	70	130	10.0	20	

Qualifiers:

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/02/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2630
Lab ID: LCS-RA-TH-ISO-2630		Laboratory Control Sample				Run: EGG-ORTEC_2_171019A				10/25/17 11:21
Thorium 230		6.1	pCi/L		108	80	120			
Lab ID: C17090642-006CMS		Sample Matrix Spike				Run: EGG-ORTEC_2_171019A				10/25/17 11:21
Thorium 230		12	pCi/L		105	70	130			
Lab ID: C17090642-006CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_171019A				10/25/17 11:21
Thorium 230		13	pCi/L		114	70	130	7.7	20	
Lab ID: MB-RA-TH-ISO-2630	3	Method Blank				Run: EGG-ORTEC_2_171019A				10/25/17 11:21
Thorium 230		0.006	pCi/L							U
Thorium 230 precision (±)		0.08	pCi/L							
Thorium 230 MDC		0.2	pCi/L							
Method: E908.0										Batch: RA-TH-ISO-2634
Lab ID: LCS-RA-TH-ISO-2634		Laboratory Control Sample				Run: EGG-ORTEC_2_171024A				10/27/17 10:48
Thorium 230		6.9	pCi/L		120	80	120			
Lab ID: MB-RA-TH-ISO-2634	3	Method Blank				Run: EGG-ORTEC_2_171024A				10/27/17 10:48
Thorium 230		0.06	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Lab ID: C17100295-002FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_171024A				10/30/17 09:41
Thorium 230		23	pCi/L		93	70	130	17	20	
Lab ID: C17100295-002FMS		Sample Matrix Spike				Run: EGG-ORTEC_2_171024A				10/27/17 10:48
Thorium 230		27	pCi/L		109	70	130			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/02/17
Work Order: C17100193

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0866	
Lab ID:	**LCS-PB-210-0866**		Laboratory Control Sample				Run: PACKARD 3100TR_171005A			10/06/17 18:38	
Lead 210			21	pCi/L		102	80	120			
Lab ID:	**MB-PB-210-0866**	3	Method Blank				Run: PACKARD 3100TR_171005A			10/06/17 19:42	
Lead 210			0.08	pCi/L							U
Lead 210 precision (±)			0.8	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17100193-001FMS**		Sample Matrix Spike				Run: PACKARD 3100TR_171005A			10/07/17 04:41	
Lead 210			35	pCi/L		85	70	130			
Lab ID:	**C17100193-001FMSD**		Sample Matrix Spike Duplicate				Run: PACKARD 3100TR_171005A			10/07/17 05:53	
Lead 210			37	pCi/L		91	70	130	5.5	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/02/17
Work Order: C17100193

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5638
Lab ID: LCS-228-RA226-8700		Laboratory Control Sample				Run: TENNELEC-3_171010B				10/18/17 20:54
Radium 228		8.7	pCi/L		83	80	120			
Lab ID: MB-RA226-8700	3	Method Blank				Run: TENNELEC-3_171010B				10/18/17 20:54
Radium 228		0.6	pCi/L							U
Radium 228 precision (±)		0.9	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C17100193-010FMS		Sample Matrix Spike				Run: TENNELEC-3_171010B				10/18/17 20:54
Radium 228		22	pCi/L		95	70	130			
Lab ID: C17100193-010FMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_171010B				10/18/17 20:54
Radium 228		21	pCi/L		90	70	130	5.5	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

November 10, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17100294 Quote ID: C129 - Quarterly Long List

Project Name: SW Alluvium

Energy Laboratories, Inc. Casper WY received the following 3 samples for United Nuclear Corporation on 10/6/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17100294-001	SBL-1	10/03/17 08:53	10/06/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100294-002	EPA-25	10/03/17 10:02	10/06/17	Aqueous	Same As Above
C17100294-003	627	10/03/17 11:07	10/06/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey L. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.11.10 08:32:44 -07:00

CLIENT: United Nuclear Corporation
Project: SW Alluvium
Work Order: C17100294

Report Date: 11/10/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/26/17

Project: SW Alluvium **Work Order:** C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_171010B	
Lab ID: ICV-9186		Initial Calibration Verification Standard							10/10/17 16:55	
pH		6.96	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R228150	
Lab ID: MBLK		Method Blank				Run: MANTECH_171010B			10/10/17 21:17	
Alkalinity, Total as CaCO3		3	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171010B			10/10/17 21:28	
Alkalinity, Total as CaCO3		259	mg/L	5.0	102	90	110			
Lab ID: C17100293-001ADUP		Sample Duplicate				Run: MANTECH_171010B			10/10/17 23:09	
Alkalinity, Total as CaCO3		31.8	mg/L	5.0				3.9	10	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/26/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS171009B	
Lab ID: MB-121_171009B		Method Blank				Run: BAL-18_171009A			10/09/17 14:21	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-122_171009B		Laboratory Control Sample				Run: BAL-18_171009A			10/09/17 14:21	
Solids, Total Dissolved TDS @ 180 C		1000	mg/L	11	90	90	110			
Lab ID: C17100293-002A DUP		Sample Duplicate				Run: BAL-18_171009A			10/09/17 14:22	
Solids, Total Dissolved TDS @ 180 C		45.7	mg/L	10				6.8	5	R

- Since the difference between the analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/26/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B									Analytical Run: PHSC_101-C_171009A	
Lab ID: 6.86		Initial Calibration Verification Standard							10/09/17 09:31	
pH		6.86	s.u.	0.010	100	98	102			
Method: A4500-H B									Batch: R228055	
Lab ID: C17100284-003ADUP		Sample Duplicate				Run: PHSC_101-C_171009A			10/09/17 13:07	
pH		7.18	s.u.	0.010				0.0	3	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/26/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_171008A	
Lab ID: ICV		Initial Calibration Verification Standard							10/08/17 11:52	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	106	90	110			
Method: A4500-NH3 G									Batch: R228046	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171008A			10/08/17 11:51	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171008A			10/08/17 11:53	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17100234-009DMS		Sample Matrix Spike				Run: FIA201-C_171008A			10/08/17 13:05	
Nitrogen, Ammonia as N		0.789	mg/L	0.050	75	90	110			S
Lab ID: C17100234-009DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171008A			10/08/17 13:07	
Nitrogen, Ammonia as N		0.767	mg/L	0.050	73	90	110	2.9	10	S

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/26/17

Project: SW Alluvium **Work Order:** C17100294

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC3-C_171010A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							10/10/17 15:22	
Chloride			9.87	mg/L	1.0	99	90	110			
Sulfate			38.4	mg/L	1.0	96	90	110			
Method:	**E300.0**									Batch: R228149	
Lab ID:	**ICB**	2	Method Blank				Run: IC3-C_171010A			10/10/17 15:39	
Chloride			ND	mg/L	0.09						
Sulfate			ND	mg/L	0.10						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC3-C_171010A			10/10/17 15:56	
Chloride			10.0	mg/L	1.0	100	90	110			
Sulfate			39.0	mg/L	1.0	97	90	110			
Lab ID:	**C17100294-001AMS**	2	Sample Matrix Spike				Run: IC3-C_171010A			10/11/17 08:31	
Chloride			586	mg/L	5.2	103	80	120			
Sulfate			7430	mg/L	21	95	80	120			
Lab ID:	**C17100294-001AMSD**	2	Sample Matrix Spike Duplicate				Run: IC3-C_171010A			10/11/17 08:48	
Chloride			588	mg/L	5.2	103	80	120	0.4	20	
Sulfate			7470	mg/L	21	98	80	120	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/26/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_171009A	
Lab ID: ICV		Initial Calibration Verification Standard							10/09/17 13:02	
Nitrogen, Nitrate+Nitrite as N		1.00	mg/L	0.010	100	90	110			
Method: E353.2									Batch: R228084	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171009A			10/09/17 13:03	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171009A			10/09/17 13:04	
Nitrogen, Nitrate+Nitrite as N		0.990	mg/L	0.010	100	90	110			
Lab ID: C17100293-001DMS		Sample Matrix Spike				Run: FIA201-C_171009A			10/09/17 15:04	
Nitrogen, Nitrate+Nitrite as N		10.7	mg/L	0.050	96	90	110			
Lab ID: C17100293-001DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171009A			10/09/17 15:05	
Nitrogen, Nitrate+Nitrite as N		10.9	mg/L	0.050	101	90	110	2.3	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/24/17
Work Order: C17100294

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**								Analytical Run: ICP203-B_171011A	
Lab ID:	**ICV**	Continuing Calibration Verification Standard							10/11/17 10:59	
Calcium		24.6	mg/L	1.0	98	95	105			
Magnesium		24.4	mg/L	1.0	98	95	105			
Potassium		24.6	mg/L	1.0	99	95	105			
Sodium		24.5	mg/L	1.0	98	95	105			
Method:	**E200.7**									Batch: R288174
Lab ID:	**MB-6500DIS171011A**	Method Blank				Run: ICP203-B_171011A			10/11/17 11:06	
Calcium		0.02	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Potassium		ND	mg/L	0.08						
Sodium		ND	mg/L	0.03						
Lab ID:	**LFB-6500DIS171011A**	Laboratory Fortified Blank				Run: ICP203-B_171011A			10/11/17 11:13	
Calcium		48.8	mg/L	1.0	98	85	115			
Magnesium		47.7	mg/L	1.0	95	85	115			
Potassium		48.9	mg/L	1.0	98	85	115			
Sodium		48.8	mg/L	1.0	98	85	115			
Lab ID:	**B17100875-011BMS2**	Sample Matrix Spike				Run: ICP203-B_171011A			10/12/17 05:43	
Calcium		49.8	mg/L	1.0	99	70	130			
Magnesium		49.5	mg/L	1.0	99	70	130			
Potassium		50.0	mg/L	1.0	100	70	130			
Sodium		49.8	mg/L	1.0	99	70	130			
Lab ID:	**B17100875-011BMSD2**	Sample Matrix Spike Duplicate				Run: ICP203-B_171011A			10/12/17 05:46	
Calcium		49.4	mg/L	1.0	99	70	130	0.8	20	
Magnesium		49.3	mg/L	1.0	99	70	130	0.4	20	
Potassium		49.8	mg/L	1.0	100	70	130	0.4	20	
Sodium		49.3	mg/L	1.0	98	70	130	1.0	20	
Lab ID:	**MB-114474**	Method Blank				Run: ICP203-B_171011A			10/12/17 06:43	
Calcium		0.08	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Potassium		0.1	mg/L	0.08						
Sodium		0.07	mg/L	0.03						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/24/17
Work Order: C17100294

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP203-B_171013A	
Lab ID: ICV	Continuing Calibration Verification Standard							10/13/17 13:59	
Aluminum	2.50	mg/L	0.10	100	95	105			
Beryllium	1.25	mg/L	0.010	100	95	105			
Cadmium	2.43	mg/L	0.010	97	95	105			
Manganese	2.48	mg/L	0.010	99	95	105			
Molybdenum	2.43	mg/L	0.10	97	95	105			
Nickel	2.43	mg/L	0.050	97	95	105			
Vanadium	2.51	mg/L	0.10	100	95	105			
Method: E200.7								Batch: 114601	
Lab ID: MB-114601	Method Blank				Run: ICP203-B_171013A			10/13/17 22:42	
Aluminum	ND	mg/L	0.010						
Beryllium	ND	mg/L	0.0001						
Cadmium	ND	mg/L	0.0010						
Manganese	ND	mg/L	0.0006						
Molybdenum	ND	mg/L	0.007						
Nickel	ND	mg/L	0.004						
Vanadium	ND	mg/L	0.004						
Lab ID: LCS-114601	Laboratory Control Sample				Run: ICP203-B_171013A			10/13/17 22:46	
Aluminum	2.45	mg/L	0.030	98	85	115			
Beryllium	0.243	mg/L	0.0010	97	85	115			
Cadmium	0.244	mg/L	0.0010	98	85	115			
Manganese	2.43	mg/L	0.0010	97	85	115			
Molybdenum	0.488	mg/L	0.0071	98	85	115			
Nickel	0.481	mg/L	0.0050	96	85	115			
Vanadium	0.490	mg/L	0.010	98	85	115			
Lab ID: C17100294-001CDIL	Serial Dilution				Run: ICP203-B_171013A			10/13/17 23:00	
Aluminum	ND	mg/L	0.49		0	0		10	
Beryllium	ND	mg/L	0.0071		0	0		10	
Cadmium	ND	mg/L	0.050		0	0		10	
Manganese	4.24	mg/L	0.029		0	0	5.5	10	
Molybdenum	ND	mg/L	0.36		0	0		10	
Nickel	ND	mg/L	0.19		0	0		10	
Vanadium	ND	mg/L	0.22		0	0		10	
Lab ID: C17100294-001CPDS	Post Digestion/Distillation Spike				Run: ICP203-B_171013A			10/13/17 23:03	
Aluminum	48.2	mg/L	0.10	93	70	130			
Beryllium	4.82	mg/L	0.0015	94	70	130			
Cadmium	4.74	mg/L	0.010	92	70	130			
Manganese	52.3	mg/L	0.0059	94	70	130			
Molybdenum	9.74	mg/L	0.073	95	70	130			
Nickel	9.56	mg/L	0.038	92	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/24/17
Work Order: C17100294

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**								Batch: 114601	
Lab ID:	**C17100294-001CPDS**	Post Digestion/Distillation Spike				Run: ICP203-B_171013A			10/13/17 23:03	
Vanadium		9.77	mg/L	0.044	95	70	130			
Lab ID:	**C17100294-001CMS3**	Sample Matrix Spike				Run: ICP203-B_171013A			10/13/17 23:07	
Aluminum		2.89	mg/L	0.098	98	70	130			
Beryllium		0.246	mg/L	0.0014	98	70	130			
Cadmium		0.243	mg/L	0.0099	97	70	130			
Manganese		6.45	mg/L	0.0058	97	70	130			
Molybdenum		0.480	mg/L	0.071	96	70	130			
Nickel		0.557	mg/L	0.037	88	70	130			
Vanadium		0.504	mg/L	0.043	101	70	130			
Lab ID:	**C17100294-001CMSD3**	Sample Matrix Spike Duplicate				Run: ICP203-B_171013A			10/13/17 23:10	
Aluminum		4.55	mg/L	0.098	165	70	130	44	20	SR
Beryllium		0.250	mg/L	0.0014	100	70	130	1.7	20	
Cadmium		0.244	mg/L	0.0099	98	70	130	0.4	20	
Manganese		6.62	mg/L	0.0058	104	70	130	2.5	20	
Molybdenum		0.559	mg/L	0.071	112	70	130	15	20	
Nickel		0.624	mg/L	0.037	101	70	130	11	20	
Vanadium		0.522	mg/L	0.043	104	70	130	3.5	20	

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/24/17
Work Order: C17100294

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**							Analytical Run: ICPMS202-B_171016A		
Lab ID:	**QCS**	Initial Calibration Verification Standard							10/16/17 16:32	
Cadmium		0.0269	mg/L	0.0010	108	90	110			
Cobalt		0.0531	mg/L	0.010	106	90	110			
Method:	**E200.8**								Batch: 114601	
Lab ID:	**MB-114601**	Method Blank				Run: ICPMS202-B_171016A			10/16/17 21:45	
Beryllium		0.00007	mg/L	0.00002						
Cadmium		0.00005	mg/L	0.00002						
Cobalt		0.00004	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Uranium		0.0002	mg/L	0.00002						
Lab ID:	**LCS-114601**	Laboratory Control Sample				Run: ICPMS202-B_171016A			10/16/17 22:06	
Beryllium		0.285	mg/L	0.0010	114	85	115			
Cadmium		0.261	mg/L	0.0010	104	85	115			
Cobalt		0.522	mg/L	0.0010	104	85	115			
Lead		0.500	mg/L	0.0010	100	85	115			
Uranium		0.483	mg/L	0.0010	97	85	115			
Lab ID:	**C17100294-001CMS3**	Sample Matrix Spike				Run: ICPMS202-B_171016A			10/16/17 22:09	
Beryllium		0.264	mg/L	0.0010	105	70	130			
Cadmium		0.253	mg/L	0.0010	101	70	130			
Cobalt		0.586	mg/L	0.0050	110	70	130			
Lead		0.521	mg/L	0.0010	104	70	130			
Uranium		0.541	mg/L	0.00030	106	70	130			
Lab ID:	**C17100294-001CMSD3**	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171016A			10/16/17 22:19	
Beryllium		0.262	mg/L	0.0010	105	70	130	0.7	20	
Cadmium		0.251	mg/L	0.0010	100	70	130	0.9	20	
Cobalt		0.580	mg/L	0.0050	109	70	130	1.1	20	
Lead		0.522	mg/L	0.0010	104	70	130	0.1	20	
Uranium		0.542	mg/L	0.00030	106	70	130	0.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/24/17
Work Order: C17100294

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**								Analytical Run: ICPMS202-B_171018A	
Lab ID:	**QCS**	Initial Calibration Verification Standard							10/19/17 21:00	
Lead		0.0506	mg/L	0.010	101	90	110			
Method:	**E200.8**								Batch: 114601	
Lab ID:	**MB-114601**	Method Blank				Run: ICPMS202-B_171018A			10/20/17 02:25	
Beryllium		0.0003	mg/L	0.00002						
Cadmium		0.0004	mg/L	0.00002						
Cobalt		0.0008	mg/L	0.00003						
Lead		0.0006	mg/L	0.00005						
Uranium		0.0004	mg/L	0.00002						
Lab ID:	**LCS-114601**	Laboratory Control Sample				Run: ICPMS202-B_171018A			10/20/17 02:38	
Beryllium		0.270	mg/L	0.0010	108	85	115			
Cadmium		0.261	mg/L	0.0010	104	85	115			
Cobalt		0.536	mg/L	0.0010	107	85	115			
Lead		0.536	mg/L	0.0010	107	85	115			
Uranium		0.490	mg/L	0.0010	98	85	115			
Lab ID:	**C17100294-001CMS3**	Sample Matrix Spike				Run: ICPMS202-B_171018A			10/20/17 02:40	
Beryllium		0.225	mg/L	0.0010	90	70	130			
Cadmium		0.245	mg/L	0.0010	98	70	130			
Cobalt		0.598	mg/L	0.0050	113	70	130			
Lead		0.532	mg/L	0.0010	106	70	130			
Uranium		0.495	mg/L	0.00030	97	70	130			
Lab ID:	**C17100294-001CMSD3**	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171018A			10/20/17 02:43	
Beryllium		0.230	mg/L	0.0010	92	70	130	2.2	20	
Cadmium		0.246	mg/L	0.0010	98	70	130	0.5	20	
Cobalt		0.589	mg/L	0.0050	111	70	130	1.5	20	
Lead		0.525	mg/L	0.0010	105	70	130	1.4	20	
Uranium		0.482	mg/L	0.00030	95	70	130	2.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/24/17
Work Order: C17100294

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**							Analytical Run: ICPMS202-B_171020A		
Lab ID:	**QCS**	Initial Calibration Verification Standard							10/20/17 21:23	
Beryllium		0.0251	mg/L	0.0010	100	90	110			
Uranium		0.0205	mg/L	0.0010	103	90	110			
Method:	**E200.8**								Batch: 114601	
Lab ID:	**MB-114601**	Method Blank				Run: ICPMS202-B_171020A			10/21/17 01:25	
Beryllium		0.00006	mg/L	0.00002						
Cadmium		0.00006	mg/L	0.00002						
Cobalt		ND	mg/L	0.00003						
Lead		0.0002	mg/L	0.00005						
Uranium		0.0002	mg/L	0.00002						
Lab ID:	**LCS-114601**	Laboratory Control Sample				Run: ICPMS202-B_171020A			10/21/17 01:27	
Beryllium		0.228	mg/L	0.0010	91	85	115			
Cadmium		0.257	mg/L	0.0010	103	85	115			
Cobalt		0.547	mg/L	0.0010	109	85	115			
Lead		0.523	mg/L	0.0010	105	85	115			
Uranium		0.495	mg/L	0.0010	99	85	115			
Lab ID:	**C17100294-001CMS3**	Sample Matrix Spike				Run: ICPMS202-B_171020A			10/21/17 01:51	
Beryllium		0.270	mg/L	0.0010	108	70	130			
Cadmium		0.248	mg/L	0.0010	99	70	130			
Cobalt		0.550	mg/L	0.0050	104	70	130			
Lead		0.506	mg/L	0.0010	101	70	130			
Uranium		0.524	mg/L	0.00030	103	70	130			
Lab ID:	**C17100294-001CMSD3**	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171020A			10/21/17 01:53	
Beryllium		0.257	mg/L	0.0010	103	70	130	4.9	20	
Cadmium		0.258	mg/L	0.0010	103	70	130	4.0	20	
Cobalt		0.580	mg/L	0.0050	109	70	130	5.1	20	
Lead		0.528	mg/L	0.0010	105	70	130	4.1	20	
Uranium		0.550	mg/L	0.00030	108	70	130	4.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100294

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**					'tical Run: SELENIUM PSA MILLENIUM_171012B				
Lab ID:	**ICV-39144**	Initial Calibration Verification Standard								10/12/17 17:43
Selenium-IV		0.0200	mg/L	0.0010	100	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/12/17 17:44
Selenium-IV		0.0197	mg/L	0.0010	98	90	110			
Method:	**A3114 B**									Batch: 39144
Lab ID:	**MB-39144**	Method Blank				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:47
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-39144**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:49
Selenium-IV		0.0197	mg/L	0.0010	98	85	115			
Lab ID:	**C17100294-001EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:52
Selenium-IV		0.0205	mg/L	0.0010	102	70	130			
Lab ID:	**C17100294-001EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:54
Selenium-IV		0.0200	mg/L	0.0010	100	70	130	2.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/19/17
Work Order: C17100294

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_171016A			
Lab ID:	**AS-ICV 25ppb-10/16/201**	Initial Calibration Verification Standard								10/16/17 14:27
Arsenic-III		24.8	ug/L	5.0	99	87.6	114			
Lab ID:	**AS-50.0-10/16/2017**	Continuing Calibration Verification Standard								10/16/17 17:51
Arsenic-III		47.8	ug/L	5.0	96	85	115			
Method:	**E1632AM**									Batch: R129389
Lab ID:	**AS-LFB 50ppb-10/16/201**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1710				10/16/17 15:03
Arsenic-III		47.0	ug/L	5.0	94	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1710				10/16/17 15:15
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**H17100155-008E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1710				10/16/17 18:27
Arsenic-III		43.1	ug/L	5.0	86	55	146			
Lab ID:	**H17100155-008E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1710				10/16/17 18:40
Arsenic-III		43.2	ug/L	5.0	86	55	146	0.1	20	
Lab ID:	**H17100200-004E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1710				10/16/17 21:16
Arsenic-III		41.8	ug/L	5.0	84	55	146			
Lab ID:	**H17100200-004E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1710				10/16/17 21:28
Arsenic-III		43.0	ug/L	5.0	86	55	146	2.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/31/17
Work Order: C17100294

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R288365
Lab ID: ccvC101417	Continuing Calibration Verification Standard								10/14/17 23:12
Bromodichloromethane	5.68	ug/L	0.50	114	70	130			
Bromoform	5.08	ug/L	0.50	102	70	130			
Chlorodibromomethane	5.60	ug/L	0.50	112	70	130			
Chloroform	5.48	ug/L	0.50	110	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	106	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	104	80	123			
Method: E624									Batch: R288365
Lab ID: lcsA101317	Laboratory Control Sample				Run: 5971A.I_171013B				10/13/17 23:12
Bromodichloromethane	6.12	ug/L	0.50	122	74	128			
Bromoform	5.40	ug/L	0.50	108	66	128			
Chlorodibromomethane	5.92	ug/L	0.50	118	74	125			
Chloroform	5.40	ug/L	0.50	108	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	102	71	139			
Surr: p-Bromofluorobenzene			0.50	103	80	127			
Surr: Toluene-d8			0.50	101	80	123			
Lab ID: blkA101317	Method Blank				Run: 5971A.I_171013B				10/14/17 00:10
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	98	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	102	80	123			
Lab ID: b17100695-001ams	Sample Matrix Spike				Run: 5971A.I_171013B				10/14/17 21:44
Bromodichloromethane	11.2	ug/L	1.0	112	74	128			
Bromoform	9.60	ug/L	1.0	96	66	128			
Chlorodibromomethane	10.7	ug/L	1.0	107	74	125			
Chloroform	11.8	ug/L	1.0	102	68	124			
Surr: 1,2-Dichloroethane-d4			1.0	101	71	139			
Surr: p-Bromofluorobenzene			1.0	102	80	127			
Surr: Toluene-d8			1.0	97	80	123			
- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.									
Lab ID: b17100695-001amsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171013B				10/14/17 22:13
Bromodichloromethane	10.9	ug/L	1.0	109	74	128	2.9	20	
Bromoform	9.28	ug/L	1.0	93	66	128	3.4	20	
Chlorodibromomethane	10.1	ug/L	1.0	101	74	125	6.2	20	
Chloroform	11.5	ug/L	1.0	99	68	124	2.7	20	
Surr: 1,2-Dichloroethane-d4			1.0	101	71	139			
Surr: p-Bromofluorobenzene			1.0	100	80	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 10/31/17
Work Order: C17100294

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R288365
Lab ID: b17100695-001amsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171013B				10/14/17 22:13
Surr: Toluene-d8			1.0	100	80	123			

- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/06/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1046
Lab ID: MB-GA-1046	3	Method Blank				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		0.3	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.4	pCi/L							
Gross Alpha minus Rn & U MDC		0.6	pCi/L							
Lab ID: LCS-GA-1046		Laboratory Control Sample				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		34	pCi/L		100	80	120			
Lab ID: C17100294-001FMS		Sample Matrix Spike				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		68	pCi/L		100	70	130			
Lab ID: C17100294-001FMSD		Sample Matrix Spike Duplicate				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		62	pCi/L		91	70	130	9.0	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/06/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8709
Lab ID: LCS-RA226-8709		Laboratory Control Sample				Run: G542M-2_171013A				10/24/17 09:47
Radium 226		10	pCi/L		104	80	120			
Lab ID: MB-RA226-8709	3	Method Blank				Run: G542M-2_171013A				10/24/17 09:47
Radium 226		0.06	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17100255-003GMS		Sample Matrix Spike				Run: G542M-2_171013A				10/24/17 09:47
Radium 226		23	pCi/L		104	70	130			
Lab ID: C17100255-003GMSD		Sample Matrix Spike Duplicate				Run: G542M-2_171013A				10/24/17 09:47
Radium 226		23	pCi/L		101	70	130	3.5	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/06/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2634
Lab ID: LCS-RA-TH-ISO-2634		Laboratory Control Sample				Run: EGG-ORTEC_2_171024A				10/27/17 10:48
Thorium 230		6.9	pCi/L		120	80	120			
Lab ID: MB-RA-TH-ISO-2634	3	Method Blank				Run: EGG-ORTEC_2_171024A				10/27/17 10:48
Thorium 230		0.06	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Lab ID: C17100295-002FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_171024A				10/30/17 09:41
Thorium 230		23	pCi/L		93	70	130	17	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/06/17
Work Order: C17100294

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0868	
Lab ID:	**LCS-PB-210-0868**		Laboratory Control Sample				Run: TRICARB LSC_171013A			10/17/17 15:17	
Lead 210			20	pCi/L		94	80	120			
Lab ID:	**MB-PB-210-0868**	3	Method Blank				Run: TRICARB LSC_171013A			10/17/17 16:19	
Lead 210			-0.1	pCi/L							U
Lead 210 precision (±)			0.9	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17100294-001FMS**		Sample Matrix Spike				Run: TRICARB LSC_171013A			10/18/17 00:27	
Lead 210			51	pCi/L		121	70	130			
Lab ID:	**C17100294-001FMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_171013A			10/18/17 01:20	
Lead 210			47	pCi/L		110	70	130	8.5	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: SW Alluvium

Report Date: 11/06/17
Work Order: C17100294

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5642
Lab ID: LCS-228-RA226-8709		Laboratory Control Sample				Run: TENNELEC-3_171013C			10/19/17 22:51	
Radium 228		10	pCi/L		102	80	120			
Lab ID: MB-RA226-8709	3	Method Blank				Run: TENNELEC-3_171013C			10/19/17 22:51	
Radium 228		0.4	pCi/L							U
Radium 228 precision (±)		0.7	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C17100255-005GMS		Sample Matrix Spike				Run: TENNELEC-3_171013C			10/19/17 22:51	
Radium 228		23	pCi/L		93	70	130			
Lab ID: C17100255-005GMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_171013C			10/19/17 22:51	
Radium 228		22	pCi/L		88	70	130	4.8	20	
Method: RA-05										Batch: RA228-5651
Lab ID: LCS-228-RA228-5651		Laboratory Control Sample				Run: TENNELEC-3_171026A			10/29/17 16:58	
Radium 228		8.5	pCi/L		85	80	120			
Lab ID: MB-228-RA228-5651	3	Method Blank				Run: TENNELEC-3_171026A			10/29/17 16:58	
Radium 228		0.1	pCi/L							U
Radium 228 precision (±)		0.9	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C17100294-002FDUP	3	Sample Duplicate				Run: TENNELEC-3_171026A			10/29/17 16:58	
Radium 228		0.90	pCi/L					64	20	UR
Radium 228 precision (±)		0.89	pCi/L							
Radium 228 MDC		1.4	pCi/L							
- For all R qualified analytes the RERs are less than the limit of 2.0. This batch is approved.										
Lab ID: TAP WATER-MS		Sample Matrix Spike				Run: TENNELEC-3_171026A			10/29/17 16:58	
Radium 228		10	pCi/L		96	70	130			

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

ANALYTICAL SUMMARY REPORT

November 10, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17100295 Quote ID: C129 - Quarterly Long List

Project Name: Zone 1

Energy Laboratories, Inc. Casper WY received the following 11 samples for United Nuclear Corporation on 10/6/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17100295-001	614	10/03/17 12:34	10/06/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100295-002	515-A	10/03/17 13:51	10/06/17	Aqueous	Same As Above
C17100295-003	604	10/03/17 15:07	10/06/17	Aqueous	Same As Above
C17100295-004	EPA-7	10/03/17 16:01	10/06/17	Aqueous	Same As Above
C17100295-005	EPA-5	10/03/17 16:42	10/06/17	Aqueous	Same As Above
C17100295-006	EPA-4	10/04/17 08:31	10/06/17	Aqueous	Same As Above
C17100295-007	EPA-2	10/04/17 09:48	10/06/17	Aqueous	Same As Above
C17100295-008	EPA-2 Duplicate	10/04/17 10:45	10/06/17	Aqueous	Same As Above
C17100295-009	TWQ-142	10/04/17 11:30	10/06/17	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C17100295-010	Rinsate	10/04/17 12:14 10/06/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved 624-Purgeable Organics 624-Purgeable Organics
C17100295-011	Field Blank	10/04/17 12:20 10/06/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey A. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.11.10 09:16:35 -07:00

CLIENT: United Nuclear Corporation
Project: Zone 1
Work Order: C17100295

Report Date: 11/10/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 10/26/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_171010B	
Lab ID: ICV-9186		Initial Calibration Verification Standard							10/10/17 16:55	
pH		6.96	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R228150	
Lab ID: MBLK		Method Blank				Run: MANTECH_171010B			10/10/17 21:17	
Alkalinity, Total as CaCO3		3	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171010B			10/10/17 21:28	
Alkalinity, Total as CaCO3		259	mg/L	5.0	102	90	110			
Lab ID: C17100293-001ADUP		Sample Duplicate				Run: MANTECH_171010B			10/10/17 23:09	
Alkalinity, Total as CaCO3		31.8	mg/L	5.0				3.9	10	
Lab ID: MBLK		Method Blank				Run: MANTECH_171010B			10/11/17 00:30	
Alkalinity, Total as CaCO3		1	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171010B			10/11/17 00:41	
Alkalinity, Total as CaCO3		264	mg/L	5.0	105	90	110			
Lab ID: C17100295-003ADUP		Sample Duplicate				Run: MANTECH_171010B			10/11/17 00:55	
Alkalinity, Total as CaCO3		24.6	mg/L	5.0				1.9	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 10/26/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS171009B	
Lab ID: MB-121_171009B		Method Blank				Run: BAL-18_171009A			10/09/17 14:21	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-122_171009B		Laboratory Control Sample				Run: BAL-18_171009A			10/09/17 14:21	
Solids, Total Dissolved TDS @ 180 C		1000	mg/L	11	90	90	110			
Lab ID: C17100293-002A DUP		Sample Duplicate				Run: BAL-18_171009A			10/09/17 14:22	
Solids, Total Dissolved TDS @ 180 C		45.7	mg/L	10				6.8	5	R
- Since the difference between the analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.										
Lab ID: C17100295-004A DUP		Sample Duplicate				Run: BAL-18_171009A			10/09/17 14:25	
Solids, Total Dissolved TDS @ 180 C		7160	mg/L	100				1.9	5	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/26/17

Project: Zone 1 **Work Order:** C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A4500-H B**								Analytical Run: PHSC_101-C_171009A		
Lab ID: **6.86**		Initial Calibration Verification Standard							10/09/17 09:31	
pH		6.86	s.u.	0.010	100	98	102			
Method: **A4500-H B**									Batch: R228055	
Lab ID: **C17100295-001ADUP**		Sample Duplicate				Run: PHSC_101-C_171009A			10/09/17 13:49	
pH		6.55	s.u.	0.010				0.3	3	
Lab ID: **C17100295-003ADUP**		Sample Duplicate				Run: PHSC_101-C_171009A			10/09/17 14:31	
pH		5.43	s.u.	0.010				0.0	3	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 10/26/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_171008A	
Lab ID: ICV		Initial Calibration Verification Standard							10/08/17 11:52	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	106	90	110			
Method: A4500-NH3 G									Batch: R228046	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171008A			10/08/17 11:51	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171008A			10/08/17 11:53	
Nitrogen, Ammonia as N		1.02	mg/L	0.050	103	90	110			
Lab ID: C17100295-001DMS		Sample Matrix Spike				Run: FIA201-C_171008A			10/08/17 13:23	
Nitrogen, Ammonia as N		178	mg/L	5.0	104	90	110			
Lab ID: C17100295-001DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171008A			10/08/17 13:24	
Nitrogen, Ammonia as N		178	mg/L	5.0	104	90	110	0.0	10	
Lab ID: C17100295-011DMS		Sample Matrix Spike				Run: FIA201-C_171008A			10/08/17 13:40	
Nitrogen, Ammonia as N		1.09	mg/L	0.050	108	90	110			
Lab ID: C17100295-011DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171008A			10/08/17 13:41	
Nitrogen, Ammonia as N		1.07	mg/L	0.050	106	90	110	1.9	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/26/17

Project: Zone 1 **Work Order:** C17100295

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**								Analytical Run: IC3-C_171010A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							10/10/17 15:22	
Chloride			9.87	mg/L	1.0	99	90	110			
Sulfate			38.4	mg/L	1.0	96	90	110			
Method:	**E300.0**									Batch: R228149	
Lab ID:	**ICB**	2	Method Blank				Run: IC3-C_171010A			10/10/17 15:39	
Chloride			ND	mg/L	0.09						
Sulfate			ND	mg/L	0.10						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC3-C_171010A			10/10/17 15:56	
Chloride			10.0	mg/L	1.0	100	90	110			
Sulfate			39.0	mg/L	1.0	97	90	110			
Lab ID:	**C17100294-001AMS**	2	Sample Matrix Spike				Run: IC3-C_171010A			10/11/17 08:31	
Chloride			586	mg/L	5.2	103	80	120			
Sulfate			7430	mg/L	21	95	80	120			
Lab ID:	**C17100294-001AMSD**	2	Sample Matrix Spike Duplicate				Run: IC3-C_171010A			10/11/17 08:48	
Chloride			588	mg/L	5.2	103	80	120	0.4	20	
Sulfate			7470	mg/L	21	98	80	120	0.6	20	
Method:	**E300.0**								Analytical Run: IC3-C_171011A		
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							10/11/17 14:39	
Chloride			9.99	mg/L	1.0	100	90	110			
Sulfate			38.5	mg/L	1.0	96	90	110			
Method:	**E300.0**									Batch: R228185	
Lab ID:	**ICB**	2	Method Blank				Run: IC3-C_171011A			10/11/17 14:56	
Chloride			ND	mg/L	0.09						
Sulfate			ND	mg/L	0.10						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC3-C_171011A			10/11/17 15:13	
Chloride			10.0	mg/L	1.0	100	90	110			
Sulfate			38.7	mg/L	1.0	97	90	110			
Lab ID:	**C17100295-008AMS**	2	Sample Matrix Spike				Run: IC3-C_171011A			10/11/17 16:03	
Chloride			125	mg/L	1.0	100	80	120			
Sulfate			2210	mg/L	4.2		80	120			A
Lab ID:	**C17100295-008AMSD**	2	Sample Matrix Spike Duplicate				Run: IC3-C_171011A			10/11/17 16:20	
Chloride			124	mg/L	1.0	100	80	120	0.5	20	
Sulfate			2200	mg/L	4.2		80	120	0.3	20	A

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

MDC - Minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 10/26/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_171009A	
Lab ID: ICV		Initial Calibration Verification Standard							10/09/17 13:02	
Nitrogen, Nitrate+Nitrite as N		1.00	mg/L	0.010	100	90	110			
Method: E353.2									Batch: R228084	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171009A			10/09/17 13:03	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171009A			10/09/17 13:04	
Nitrogen, Nitrate+Nitrite as N		0.990	mg/L	0.010	100	90	110			
Lab ID: C17100293-001DMS		Sample Matrix Spike				Run: FIA201-C_171009A			10/09/17 15:04	
Nitrogen, Nitrate+Nitrite as N		10.7	mg/L	0.050	96	90	110			
Lab ID: C17100293-001DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171009A			10/09/17 15:05	
Nitrogen, Nitrate+Nitrite as N		10.9	mg/L	0.050	101	90	110	2.3	10	
Lab ID: C17100295-003DMS		Sample Matrix Spike				Run: FIA201-C_171009A			10/09/17 15:21	
Nitrogen, Nitrate+Nitrite as N		106	mg/L	0.50	100	90	110			
Lab ID: C17100295-003DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171009A			10/09/17 15:22	
Nitrogen, Nitrate+Nitrite as N		104	mg/L	0.50	97	90	110	1.4	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP203-B_171011A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							10/11/17 10:59	
Calcium		24.6	mg/L	1.0	98	95	105			
Magnesium		24.4	mg/L	1.0	98	95	105			
Potassium		24.6	mg/L	1.0	99	95	105			
Sodium		24.5	mg/L	1.0	98	95	105			
Method: E200.7									Batch: R288174	
Lab ID: MB-6500DIS171011A	4	Method Blank				Run: ICP203-B_171011A			10/11/17 11:06	
Calcium		0.02	mg/L	0.01						
Magnesium		ND	mg/L	0.01						
Potassium		ND	mg/L	0.08						
Sodium		ND	mg/L	0.03						
Lab ID: LFB-6500DIS171011A	4	Laboratory Fortified Blank				Run: ICP203-B_171011A			10/11/17 11:13	
Calcium		48.8	mg/L	1.0	98	85	115			
Magnesium		47.7	mg/L	1.0	95	85	115			
Potassium		48.9	mg/L	1.0	98	85	115			
Sodium		48.8	mg/L	1.0	98	85	115			
Lab ID: C17100295-002BMS2	4	Sample Matrix Spike				Run: ICP203-B_171011A			10/12/17 04:32	
Calcium		1480	mg/L	1.0	102	70	130			
Magnesium		2560	mg/L	1.2	115	70	130			
Potassium		1100	mg/L	1.6	108	70	130			
Sodium		1780	mg/L	3.8	113	70	130			
Lab ID: C17100295-002BMSD	4	Sample Matrix Spike Duplicate				Run: ICP203-B_171011A			10/12/17 04:35	
Calcium		1470	mg/L	1.0	102	70	130	0.5	20	
Magnesium		2570	mg/L	1.2	115	70	130	0.2	20	
Potassium		1110	mg/L	1.6	109	70	130	0.8	20	
Sodium		1770	mg/L	3.8	112	70	130	0.5	20	
Lab ID: C17100295-011BMS2	4	Sample Matrix Spike				Run: ICP203-B_171011A			10/12/17 05:43	
Calcium		49.8	mg/L	1.0	99	70	130			
Magnesium		49.5	mg/L	1.0	99	70	130			
Potassium		50.0	mg/L	1.0	100	70	130			
Sodium		49.8	mg/L	1.0	99	70	130			
Lab ID: C17100295-011BMSD	4	Sample Matrix Spike Duplicate				Run: ICP203-B_171011A			10/12/17 05:46	
Calcium		49.4	mg/L	1.0	99	70	130	0.8	20	
Magnesium		49.3	mg/L	1.0	99	70	130	0.4	20	
Potassium		49.8	mg/L	1.0	100	70	130	0.4	20	
Sodium		49.3	mg/L	1.0	98	70	130	1.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**									Analytical Run: ICP203-B_171031A	
Lab ID:	**ICV**	2	Continuing Calibration Verification Standard							10/31/17 11:33	
Aluminum			2.51	mg/L	0.10	100	95	105			
Beryllium			1.25	mg/L	0.010	100	95	105			
Method:	**E200.7**									Batch: 114600	
Lab ID:	**MB-114600**	2	Method Blank				Run: ICP203-B_171031A			11/01/17 03:48	
Aluminum			ND	mg/L	0.010						
Beryllium			ND	mg/L	0.0001						
Lab ID:	**LCS-114600**	2	Laboratory Control Sample				Run: ICP203-B_171031A			11/01/17 03:52	
Aluminum			2.47	mg/L	0.030	99	85	115			
Beryllium			0.249	mg/L	0.0010	100	85	115			
Lab ID:	**B17100873-001BMS3**	2	Sample Matrix Spike				Run: ICP203-B_171031A			11/01/17 04:07	
Aluminum			4.27	mg/L	0.030	127	70	130			
Beryllium			0.241	mg/L	0.0010	96	70	130			
Lab ID:	**B17100873-001BMSD**	2	Sample Matrix Spike Duplicate				Run: ICP203-B_171031A			11/01/17 04:17	
Aluminum			4.27	mg/L	0.030	128	70	130	0.1	20	
Beryllium			0.246	mg/L	0.0010	98	70	130	2.0	20	
Lab ID:	**C17100295-011CMS3**	2	Sample Matrix Spike				Run: ICP203-B_171031A			11/01/17 05:15	
Aluminum			2.48	mg/L	0.030	99	70	130			
Beryllium			0.251	mg/L	0.0010	100	70	130			
Lab ID:	**C17100295-011CMSD**	2	Sample Matrix Spike Duplicate				Run: ICP203-B_171031A			11/01/17 05:18	
Aluminum			2.40	mg/L	0.030	96	70	130	3.3	20	
Beryllium			0.246	mg/L	0.0010	98	70	130	1.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP204-B_171012A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							10/12/17 12:30	
Calcium		25.1	mg/L	1.0	101	95	105			
Magnesium		24.9	mg/L	1.0	99	95	105			
Potassium		24.9	mg/L	1.0	99	95	105			
Sodium		24.7	mg/L	1.0	99	95	105			
Method: E200.7									Batch: R288261	
Lab ID: MB-7400DIS171012A	4	Method Blank				Run: ICP204-B_171012A			10/12/17 12:37	
Calcium		ND	mg/L	0.1						
Magnesium		ND	mg/L	0.003						
Potassium		ND	mg/L	0.03						
Sodium		ND	mg/L	0.02						
Lab ID: LFB-7400DIS171012A	4	Laboratory Fortified Blank				Run: ICP204-B_171012A			10/12/17 12:45	
Calcium		49.3	mg/L	1.0	99	85	115			
Magnesium		48.1	mg/L	1.0	96	85	115			
Potassium		48.7	mg/L	1.0	97	85	115			
Sodium		47.9	mg/L	1.0	96	85	115			
Lab ID: B17100879-001AMS2	4	Sample Matrix Spike				Run: ICP204-B_171012A			10/12/17 19:47	
Calcium		250	mg/L	1.0	99	70	130			
Magnesium		250	mg/L	1.0	100	70	130			
Potassium		257	mg/L	1.0	102	70	130			
Sodium		253	mg/L	1.6	101	70	130			
Lab ID: B17100879-001AMSD	4	Sample Matrix Spike Duplicate				Run: ICP204-B_171012A			10/12/17 19:51	
Calcium		252	mg/L	1.0	100	70	130	0.8	20	
Magnesium		250	mg/L	1.0	100	70	130	0.1	20	
Potassium		256	mg/L	1.0	102	70	130	0.5	20	
Sodium		252	mg/L	1.6	101	70	130	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_171016A	
Lab ID: QCS	8	Initial Calibration Verification Standard							10/16/17 16:32	
Cadmium		0.0269	mg/L	0.0010	108	90	110			
Cobalt		0.0531	mg/L	0.010	106	90	110			
Lead		0.0516	mg/L	0.010	103	90	110			
Manganese		0.268	mg/L	0.010	107	90	110			
Molybdenum		0.0490	mg/L	0.0050	98	90	110			
Nickel		0.0537	mg/L	0.010	107	90	110			
Uranium		0.0206	mg/L	0.0010	103	90	110			
Vanadium		0.0522	mg/L	0.10	104	90	110			
Method: E200.8									Batch: 114600	
Lab ID: MB-114600	8	Method Blank				Run: ICPMS202-B_171016A			10/16/17 20:13	
Cadmium		0.00005	mg/L	0.00002						
Cobalt		0.00006	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		0.0004	mg/L	0.00004						
Molybdenum		0.0003	mg/L	0.00005						
Nickel		ND	mg/L	0.00006						
Uranium		0.0002	mg/L	0.00002						
Vanadium		0.0004	mg/L	0.0002						
Lab ID: LCS-114600	8	Laboratory Control Sample				Run: ICPMS202-B_171016A			10/16/17 20:19	
Cadmium		0.262	mg/L	0.0010	105	85	115			
Cobalt		0.506	mg/L	0.0010	101	85	115			
Lead		0.513	mg/L	0.0010	103	85	115			
Manganese		2.41	mg/L	0.0010	96	85	115			
Molybdenum		0.492	mg/L	0.0050	98	85	115			
Nickel		0.515	mg/L	0.0010	103	85	115			
Uranium		0.496	mg/L	0.0010	99	85	115			
Vanadium		0.489	mg/L	0.010	98	85	115			
Lab ID: B17100873-001BMS3	8	Sample Matrix Spike				Run: ICPMS202-B_171016A			10/16/17 20:21	
Cadmium		0.260	mg/L	0.0010	104	70	130			
Cobalt		0.512	mg/L	0.0050	102	70	130			
Lead		0.530	mg/L	0.0010	106	70	130			
Manganese		2.47	mg/L	0.0010	98	70	130			
Molybdenum		0.555	mg/L	0.0010	104	70	130			
Nickel		0.507	mg/L	0.0050	101	70	130			
Uranium		0.529	mg/L	0.00030	106	70	130			
Vanadium		0.520	mg/L	0.010	104	70	130			
Lab ID: B17100873-001BMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171016A			10/16/17 20:24	
Cadmium		0.261	mg/L	0.0010	105	70	130	0.7	20	
Cobalt		0.527	mg/L	0.0050	105	70	130	2.9	20	
Lead		0.536	mg/L	0.0010	107	70	130	1.1	20	
Manganese		2.53	mg/L	0.0010	100	70	130	2.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 114600
Lab ID: B17100873-001BMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171016A			10/16/17 20:24	
Molybdenum		0.553	mg/L	0.0010	104	70	130	0.5	20	
Nickel		0.522	mg/L	0.0050	104	70	130	3.0	20	
Uranium		0.533	mg/L	0.00030	106	70	130	0.6	20	
Vanadium		0.529	mg/L	0.010	105	70	130	1.7	20	
Lab ID: C17100295-011CMS3	8	Sample Matrix Spike				Run: ICPMS202-B_171016A			10/16/17 21:27	
Cadmium		0.258	mg/L	0.0010	103	70	130			
Cobalt		0.549	mg/L	0.0050	110	70	130			
Lead		0.508	mg/L	0.0010	102	70	130			
Manganese		2.50	mg/L	0.0010	100	70	130			
Molybdenum		0.544	mg/L	0.0010	109	70	130			
Nickel		0.562	mg/L	0.0050	112	70	130			
Uranium		0.492	mg/L	0.00030	98	70	130			
Vanadium		0.495	mg/L	0.010	99	70	130			
Lab ID: C17100295-011CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171016A			10/16/17 21:29	
Cadmium		0.261	mg/L	0.0010	105	70	130	1.2	20	
Cobalt		0.541	mg/L	0.0050	108	70	130	1.5	20	
Lead		0.507	mg/L	0.0010	101	70	130	0.2	20	
Manganese		2.55	mg/L	0.0010	102	70	130	2.1	20	
Molybdenum		0.555	mg/L	0.0010	111	70	130	2.1	20	
Nickel		0.557	mg/L	0.0050	111	70	130	0.8	20	
Uranium		0.502	mg/L	0.00030	100	70	130	2.2	20	
Vanadium		0.495	mg/L	0.010	99	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**								Analytical Run: ICPMS207-B_171026A		
Lab ID:	**QCS**	3	Initial Calibration Verification Standard							10/26/17 16:04	
Beryllium			0.0251	mg/L	0.0010	100	90	110			
Lead			0.0495	mg/L	0.010	99	90	110			
Uranium			0.0217	mg/L	0.0010	108	90	110			
Method:	**E200.8**									Batch: 114600	
Lab ID:	**MB-114600**	3	Method Blank				Run: ICPMS207-B_171026A			10/27/17 07:45	
Beryllium			ND	mg/L	0.00005						
Lead			ND	mg/L	0.00006						
Uranium			ND	mg/L	0.0001						
Lab ID:	**LCS-114600**	3	Laboratory Control Sample				Run: ICPMS207-B_171026A			10/27/17 07:51	
Beryllium			0.252	mg/L	0.0010	101	85	115			
Lead			0.512	mg/L	0.0010	102	85	115			
Uranium			0.505	mg/L	0.00030	101	85	115			
Lab ID:	**B17100873-001BMS3**	3	Sample Matrix Spike				Run: ICPMS207-B_171026A			10/27/17 07:58	
Beryllium			0.241	mg/L	0.0010	96	70	130			
Lead			0.510	mg/L	0.0010	102	70	130			
Uranium			0.502	mg/L	0.00065	100	70	130			
Lab ID:	**B17100873-001BMSD**	3	Sample Matrix Spike Duplicate				Run: ICPMS207-B_171026A			10/27/17 08:01	
Beryllium			0.246	mg/L	0.0010	98	70	130	2.1	20	
Lead			0.518	mg/L	0.0010	104	70	130	1.5	20	
Uranium			0.504	mg/L	0.00065	101	70	130	0.4	20	
Lab ID:	**C17100295-011CMS3**	3	Sample Matrix Spike				Run: ICPMS207-B_171026A			10/27/17 09:11	
Beryllium			0.249	mg/L	0.0010	100	70	130			
Lead			0.507	mg/L	0.0010	101	70	130			
Uranium			0.498	mg/L	0.00030	100	70	130			
Lab ID:	**C17100295-011CMSD**	3	Sample Matrix Spike Duplicate				Run: ICPMS207-B_171026A			10/27/17 09:14	
Beryllium			0.243	mg/L	0.0010	97	70	130	2.3	20	
Lead			0.507	mg/L	0.0010	101	70	130	0.0	20	
Uranium			0.498	mg/L	0.00030	100	70	130	0.1	20	
Method:	**E200.8**								Analytical Run: ICPMS207-B_171102A		
Lab ID:	**QCS**	2	Initial Calibration Verification Standard							11/02/17 12:31	
Lead			0.0494	mg/L	0.010	99	90	110			
Uranium			0.0208	mg/L	0.0010	104	90	110			
Method:	**E200.8**									Batch: 114600	
Lab ID:	**MB-114600**	2	Method Blank				Run: ICPMS207-B_171102A			11/02/17 13:28	
Lead			ND	mg/L	0.00006						
Uranium			ND	mg/L	0.0001						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 10/25/17
Work Order: C17100295

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**						'tical Run: SELENIUM PSA MILLENIUM_171012B			
Lab ID:	**ICV-39144**	Initial Calibration Verification Standard								10/12/17 17:43
Selenium-IV		0.0200	mg/L	0.0010	100	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/12/17 17:44
Selenium-IV		0.0197	mg/L	0.0010	98	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/12/17 18:11
Selenium-IV		0.0194	mg/L	0.0010	97	90	110			
Method:	**A3114 B**									Batch: 39144
Lab ID:	**MB-39144**	Method Blank				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:47
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-39144**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:49
Selenium-IV		0.0197	mg/L	0.0010	98	85	115			
Lab ID:	**H17100199-001EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:52
Selenium-IV		0.0205	mg/L	0.0010	102	70	130			
Lab ID:	**H17100199-001EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				10/12/17 17:54
Selenium-IV		0.0200	mg/L	0.0010	100	70	130	2.0	20	
Lab ID:	**C17100295-008EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				10/12/17 18:14
Selenium-IV		0.0193	mg/L	0.0010	97	70	130			
Lab ID:	**C17100295-008EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				10/12/17 18:16
Selenium-IV		0.0194	mg/L	0.0010	97	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 10/25/17
Work Order: C17100295

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**								Analytical Run: ARSENIC SPECIATION_171016A	
Lab ID:	**AS-ICV 25ppb-10/16/201**	Initial Calibration Verification Standard							10/16/17 14:27	
Arsenic-III		24.8	ug/L	5.0	99	87.6	114			
Lab ID:	**AS-50.0-10/16/2017**	Continuing Calibration Verification Standard							10/16/17 17:51	
Arsenic-III		47.8	ug/L	5.0	96	85	115			
Lab ID:	**AS-50.0-10/16/2017**	Continuing Calibration Verification Standard							10/16/17 20:40	
Arsenic-III		43.7	ug/L	5.0	87	85	115			
Method:	**E1632AM**								Batch: R129389	
Lab ID:	**AS-LFB 50ppb-10/16/201**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1710			10/16/17 15:03	
Arsenic-III		47.0	ug/L	5.0	94	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1710			10/16/17 15:15	
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**C17100295-004E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1710			10/16/17 21:16	
Arsenic-III		41.8	ug/L	5.0	84	55	146			
Lab ID:	**C17100295-004E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1710			10/16/17 21:28	
Arsenic-III		43.0	ug/L	5.0	86	55	146	2.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R288365
Lab ID: ccvB101317	Continuing Calibration Verification Standard								10/14/17 10:56
Bromodichloromethane	5.76	ug/L	0.50	115	70	130			
Bromoform	5.20	ug/L	0.50	104	70	130			
Chlorodibromomethane	5.52	ug/L	0.50	110	70	130			
Chloroform	5.52	ug/L	0.50	110	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	110	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	101	80	123			
Lab ID: ccvC101417	Continuing Calibration Verification Standard								10/14/17 23:12
Bromodichloromethane	5.68	ug/L	0.50	114	70	130			
Bromoform	5.08	ug/L	0.50	102	70	130			
Chlorodibromomethane	5.60	ug/L	0.50	112	70	130			
Chloroform	5.48	ug/L	0.50	110	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	106	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	104	80	123			
Method: E624									Batch: R288365
Lab ID: lcsA101317	Laboratory Control Sample				Run: 5971A.I_171013B				10/13/17 23:12
Bromodichloromethane	6.12	ug/L	0.50	122	74	128			
Bromoform	5.40	ug/L	0.50	108	66	128			
Chlorodibromomethane	5.92	ug/L	0.50	118	74	125			
Chloroform	5.40	ug/L	0.50	108	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	102	71	139			
Surr: p-Bromofluorobenzene			0.50	103	80	127			
Surr: Toluene-d8			0.50	101	80	123			
Lab ID: blkA101317	Method Blank				Run: 5971A.I_171013B				10/14/17 00:10
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	98	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	102	80	123			
Lab ID: b17100695-001ams	Sample Matrix Spike				Run: 5971A.I_171013B				10/14/17 21:44
Bromodichloromethane	11.2	ug/L	1.0	112	74	128			
Bromoform	9.60	ug/L	1.0	96	66	128			
Chlorodibromomethane	10.7	ug/L	1.0	107	74	125			
Chloroform	11.8	ug/L	1.0	102	68	124			
Surr: 1,2-Dichloroethane-d4			1.0	101	71	139			
Surr: p-Bromofluorobenzene			1.0	102	80	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R288365
Lab ID: b17100695-001ams	Sample Matrix Spike				Run: 5971A.I_171013B				10/14/17 21:44
Surr: Toluene-d8			1.0	97	80	123			
- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.									
Lab ID: b17100695-001amsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171013B				10/14/17 22:13
Bromodichloromethane	10.9	ug/L	1.0	109	74	128	2.9	20	
Bromoform	9.28	ug/L	1.0	93	66	128	3.4	20	
Chlorodibromomethane	10.1	ug/L	1.0	101	74	125	6.2	20	
Chloroform	11.5	ug/L	1.0	99	68	124	2.7	20	
Surr: 1,2-Dichloroethane-d4			1.0	101	71	139			
Surr: p-Bromofluorobenzene			1.0	100	80	127			
Surr: Toluene-d8			1.0	100	80	123			
- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.									

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624								Analytical Run: R288368	
Lab ID: ccv101517	Continuing Calibration Verification Standard							10/15/17 12:07	
Bromodichloromethane	5.36	ug/L	0.50	107	70	130			
Bromoform	4.76	ug/L	0.50	95	70	130			
Chlorodibromomethane	5.28	ug/L	0.50	106	70	130			
Chloroform	5.12	ug/L	0.50	102	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	95	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	105	80	123			
Method: E624								Batch: R288368	
Lab ID: lcs101517	Laboratory Control Sample				Run: 5971A.I_171015A			10/15/17 12:45	
Bromodichloromethane	4.96	ug/L	0.50	99	74	128			
Bromoform	4.28	ug/L	0.50	86	66	128			
Chlorodibromomethane	4.80	ug/L	0.50	96	74	125			
Chloroform	4.72	ug/L	0.50	94	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	97	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	102	80	123			
Lab ID: blk101517	Method Blank				Run: 5971A.I_171015A			10/15/17 13:44	
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	96	71	139			
Surr: p-Bromofluorobenzene			0.50	105	80	127			
Surr: Toluene-d8			0.50	104	80	123			
Lab ID: b17100559-001dms	Sample Matrix Spike				Run: 5971A.I_171015A			10/15/17 16:40	
Bromodichloromethane	5.16	ug/L	0.50	103	74	128			
Bromoform	4.52	ug/L	0.50	90	66	128			
Chlorodibromomethane	4.96	ug/L	0.50	99	74	125			
Chloroform	4.84	ug/L	0.50	97	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	99	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	103	80	123			
- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.									
Lab ID: b17100559-001dmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171015A			10/15/17 17:10	
Bromodichloromethane	5.40	ug/L	0.50	108	74	128	4.5	20	
Bromoform	4.60	ug/L	0.50	92	66	128	1.8	20	
Chlorodibromomethane	5.24	ug/L	0.50	105	74	125	5.5	20	
Chloroform	4.92	ug/L	0.50	98	68	124	1.6	20	
Surr: 1,2-Dichloroethane-d4			0.50	94	71	139			
Surr: p-Bromofluorobenzene			0.50	103	80	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/03/17
Work Order: C17100295

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E624**									Batch: R288368
Lab ID:	**b17100559-001dmsd**	Sample Matrix Spike Duplicate				Run: 5971A.I_171015A				10/15/17 17:10
Surr: Toluene-d8				0.50	101	80	123			
- 2-Chloroethyl vinyl ether is not recovered from acid-preserved samples.										
Method:	**E624**									Analytical Run: R288415
Lab ID:	**ccv101617**	Continuing Calibration Verification Standard								10/16/17 09:42
Chloroform		5.24	ug/L	0.50	105	70	130			
Method:	**E624**									Batch: R288415
Lab ID:	**lcs101617**	Laboratory Control Sample				Run: 5971A.I_171016B				10/16/17 10:21
Chloroform		4.96	ug/L	0.50	99	68	124			
Lab ID:	**blk101617**	Method Blank				Run: 5971A.I_171016B				10/16/17 11:20
Chloroform		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/06/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1046
Lab ID: MB-GA-1046	3	Method Blank				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		0.3	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.4	pCi/L							
Gross Alpha minus Rn & U MDC		0.6	pCi/L							
Lab ID: LCS-GA-1046		Laboratory Control Sample				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		34	pCi/L		100	80	120			
Lab ID: C17100294-001FMS		Sample Matrix Spike				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		68	pCi/L		100	70	130			
Lab ID: C17100294-001FMSD		Sample Matrix Spike Duplicate				Run: G542M-2_171029A				11/01/17 15:40
Gross Alpha minus Rn & U		62	pCi/L		91	70	130	9.0	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/06/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8714
Lab ID: LCS-RA226-8714		Laboratory Control Sample				Run: G542M-2_171016B				10/24/17 13:01
Radium 226		10	pCi/L		102	80	120			
Lab ID: MB-RA226-8714	3	Method Blank				Run: G542M-2_171016B				10/24/17 13:01
Radium 226		-0.02	pCi/L							U
Radium 226 precision (±)		0.10	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17100295-002FMS		Sample Matrix Spike				Run: G542M-2_171016B				10/24/17 13:01
Radium 226		20	pCi/L		80	70	130			
Lab ID: C17100295-002FMSD		Sample Matrix Spike Duplicate				Run: G542M-2_171016B				10/24/17 13:01
Radium 226		22	pCi/L		91	70	130	11	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/06/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0									Batch: RA-TH-ISO-2634	
Lab ID: LCS-RA-TH-ISO-2634		Laboratory Control Sample				Run: EGG-ORTEC_2_171024A			10/27/17 10:48	
Thorium 230		6.9	pCi/L		120	80	120			
Lab ID: MB-RA-TH-ISO-2634	3	Method Blank				Run: EGG-ORTEC_2_171024A			10/27/17 10:48	
Thorium 230		0.06	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Lab ID: C17100295-002FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_171024A			10/30/17 09:41	
Thorium 230		23	pCi/L		93	70	130	17	20	
Lab ID: C17100295-002FMS		Sample Matrix Spike				Run: EGG-ORTEC_2_171024A			10/27/17 10:48	
Thorium 230		27	pCi/L		109	70	130			
Method: E908.0									Batch: RA-TH-ISO-2635	
Lab ID: LCS-RA-TH-ISO-2635		Laboratory Control Sample				Run: EGG-ORTEC_2_171026A			11/06/17 10:28	
Thorium 230		5.4	pCi/L		96	80	120			
Lab ID: C17100400-004CMS		Sample Matrix Spike				Run: EGG-ORTEC_2_171026A			11/06/17 10:28	
Thorium 230		13	pCi/L		117	70	130			
Lab ID: C17100400-004CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_171026A			11/06/17 10:28	
Thorium 230		11	pCi/L		100	70	130	16	20	
Lab ID: MB-RA-TH-ISO-2635	3	Method Blank				Run: EGG-ORTEC_2_171026A			11/06/17 10:28	
Thorium 230		0.007	pCi/L							U
Thorium 230 precision (±)		0.09	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/06/17
Work Order: C17100295

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0868RRR	
Lab ID:	**LCS-PB-210-0868**		Laboratory Control Sample				Run: PACKARD 3100TR_171013B			10/30/17 10:58	
Lead 210			20	pCi/L		96	80	120			
Lab ID:	**MB-PB-210-0868**	3	Method Blank				Run: PACKARD 3100TR_171013B			10/30/17 12:01	
Lead 210			-0.7	pCi/L							U
Lead 210 precision (±)			0.7	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17100294-001FMS**		Sample Matrix Spike				Run: PACKARD 3100TR_171013B			10/30/17 21:12	
Lead 210			48	pCi/L		112	70	130			
Lab ID:	**C17100294-001FMSD**		Sample Matrix Spike Duplicate				Run: PACKARD 3100TR_171013B			10/30/17 22:08	
Lead 210			49	pCi/L		115	70	130	3.5	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 1

Report Date: 11/06/17
Work Order: C17100295

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5643
Lab ID: LCS-228-RA226-8714		Laboratory Control Sample				Run: TENNELEC-3_171016A				10/19/17 19:30
Radium 228		8.9	pCi/L		85	80	120			
Lab ID: MB-RA226-8714	3	Method Blank				Run: TENNELEC-3_171016A				10/19/17 19:30
Radium 228		0.6	pCi/L							U
Radium 228 precision (±)		0.9	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C17100318-001AMS		Sample Matrix Spike				Run: TENNELEC-3_171016A				10/19/17 19:30
Radium 228		25	pCi/L		112	70	130			
Lab ID: C17100318-001AMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_171016A				10/19/17 19:30
Radium 228		21	pCi/L		90	70	130	18	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

November 16, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17100456 Quote ID: C129 - Quarterly Long List

Project Name: Zone 3

Energy Laboratories, Inc. Casper WY received the following 9 samples for United Nuclear Corporation on 10/12/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17100456-001	613	10/09/17 08:35	10/12/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Acidity, Total as CaCO3 Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100456-002	517	10/09/17 09:25	10/12/17	Aqueous	Same As Above
C17100456-003	708	10/09/17 10:30	10/12/17	Aqueous	Same As Above
C17100456-004	711	10/09/17 11:47	10/12/17	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C17100456-005	EPA-13	10/09/17 12:48	10/12/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100456-006	420	10/09/17 13:55	10/12/17	Aqueous	Same As Above
C17100456-007	717	10/09/17 15:00	10/12/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Acidity, Total as CaCO3 Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100456-008	717 Duplicate	10/09/17 15:46	10/12/17	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C17100456-009	EPA-14	10/09/17 16:30 10/12/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey L. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.11.16 09:00:18 -07:00

CLIENT: United Nuclear Corporation
Project: Zone 3
Work Order: C17100456

Report Date: 11/16/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

NOTE:
The analytes reported with an H qualifier is representing re-check data. The analytes were re-analyzed after an initial anion/cation balance calculation was completed and found to be greater than +/- 5%. After re-analysis the anion/cation balance QA check fell within +/- 5%. The re-analysis data is being reported.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/15/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2310 B									Analytical Run: ACIDITY_171015A	
Lab ID: ICV-1_		Initial Calibration Verification Standard							10/15/17 20:22	
pH		6.90	s.u.	0.010	101	98	102			
Method: A2310 B									Batch: 171015_1_ACID-W	
Lab ID: MBLK-1_171015		Method Blank				Run: ACIDITY_171015A			10/15/17 20:23	
Acidity, Total as CaCO3		3	mg/L	2						
Lab ID: LCS-1_171015		Laboratory Control Sample				Run: ACIDITY_171015A			10/15/17 20:24	
Acidity, Total as CaCO3		1070	mg/L	5.0	108	90	110			
Lab ID: C17100387-004ADUP		Sample Duplicate				Run: ACIDITY_171015A			10/15/17 20:25	
Acidity, Total as CaCO3		1780	mg/L	5.0				1.4	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 11/15/17

Project: Zone-3 **Work Order:** C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_171013B	
Lab ID: ICV-9186		Initial Calibration Verification Standard							10/13/17 11:39	
pH		6.92	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R228249	
Lab ID: MBLK		Method Blank				Run: MANTECH_171013B			10/13/17 11:43	
Alkalinity, Total as CaCO3		2	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171013B			10/13/17 11:51	
Alkalinity, Total as CaCO3		267	mg/L	5.0	106	90	110			
Lab ID: C17100456-008ADUP		Sample Duplicate				Run: MANTECH_171013B			10/13/17 13:20	
Alkalinity, Total as CaCO3		ND	mg/L	5.0					10	
Method: A2320 B									Analytical Run: MANTECH_171110B	
Lab ID: ICV		Initial Calibration Verification Standard							11/10/17 13:47	
pH		6.96	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R229326	
Lab ID: MBLK		Method Blank				Run: MANTECH_171110B			11/10/17 13:51	
Alkalinity, Total as CaCO3		4	mg/L	1						
Lab ID: LCS		Laboratory Control Sample				Run: MANTECH_171110B			11/10/17 13:59	
Alkalinity, Total as CaCO3		265	mg/L	5.0	104	90	110			
Lab ID: C17100456-009ADUP		Sample Duplicate				Run: MANTECH_171110B			11/10/17 14:09	
Alkalinity, Total as CaCO3		4.83	mg/L	5.0					10	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/15/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS171015A	
Lab ID: MB-1_171015A		Method Blank				Run: BAL-18_171015A			10/15/17 21:12	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-2_171015A		Laboratory Control Sample				Run: BAL-18_171015A			10/15/17 21:13	
Solids, Total Dissolved TDS @ 180 C		1050	mg/L	11	95	90	110			
Lab ID: C17100303-002A DUP		Sample Duplicate				Run: BAL-18_171015A			10/15/17 21:13	
Solids, Total Dissolved TDS @ 180 C		2820	mg/L	39				4.3	5	
Lab ID: C17100456-008A DUP		Sample Duplicate				Run: BAL-18_171015A			10/15/17 21:15	
Solids, Total Dissolved TDS @ 180 C		7330	mg/L	100				0.8	5	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 11/15/17

Project: Zone-3 **Work Order:** C17100456

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A4500-H B**								Analytical Run: PHSC_101-C_171013A		
Lab ID:	**6.86**	Initial Calibration Verification Standard								10/13/17 09:44	
pH			6.88	s.u.	0.010	100	98	102			
Method:	**A4500-H B**									Batch: R228230	
Lab ID:	**C17100439-001ADUP**	Sample Duplicate					Run: PHSC_101-C_171013A			10/13/17 10:33	
pH			8.23	s.u.	0.010				0.2	3	
Lab ID:	**C17100456-004ADUP**	Sample Duplicate					Run: PHSC_101-C_171013A			10/13/17 11:07	
pH			3.27	s.u.	0.010				0.0	3	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/15/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_171014A	
Lab ID: ICV		Initial Calibration Verification Standard							10/14/17 12:05	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	106	90	110			
Method: A4500-NH3 G									Batch: R228251	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171014A			10/14/17 12:04	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171014A			10/14/17 12:06	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	107	90	110			
Lab ID: C17090606-002AMS		Sample Matrix Spike				Run: FIA201-C_171014A			10/14/17 12:09	
Nitrogen, Ammonia as N		22.0	mg/L	0.50	110	90	110			E
Lab ID: C17090606-002AMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171014A			10/14/17 12:10	
Nitrogen, Ammonia as N		21.7	mg/L	0.50	107	90	110	1.4	10	E
Lab ID: C17100456-008DMS		Sample Matrix Spike				Run: FIA201-C_171014A			10/14/17 12:25	
Nitrogen, Ammonia as N		93.4	mg/L	2.5	107	90	110			
Lab ID: C17100456-008DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171014A			10/14/17 12:26	
Nitrogen, Ammonia as N		92.4	mg/L	2.5	105	90	110	1.1	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
E - Estimated value. Result exceeds the instrument upper quantitation limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 11/15/17

Project: Zone-3 **Work Order:** C17100456

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC2-C_171013A	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							10/13/17 15:25	
Chloride			9.59	mg/L	1.0	96	90	110			
Sulfate			38.9	mg/L	1.0	97	90	110			
Method:	**E300.0**									Batch: R228269	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_171013A			10/13/17 15:42	
Chloride			0.04	mg/L	0.03						
Sulfate			ND	mg/L	0.04						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC2-C_171013A			10/13/17 16:00	
Chloride			9.72	mg/L	1.0	97	90	110			
Sulfate			41.4	mg/L	1.0	104	90	110			
Lab ID:	**C17100439-002AMS**	2	Sample Matrix Spike				Run: IC2-C_171013A			10/13/17 20:56	
Chloride			310	mg/L	1.0	100	80	120			
Sulfate			1530	mg/L	4.2	100	80	120			
Lab ID:	**C17100439-002AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_171013A			10/13/17 21:13	
Chloride			310	mg/L	1.0	100	80	120	0.1	20	
Sulfate			1530	mg/L	4.2	99	80	120	0.3	20	
Lab ID:	**C17100456-005AMS**	2	Sample Matrix Spike				Run: IC2-C_171013A			10/14/17 01:00	
Chloride			557	mg/L	5.2	103	80	120			
Sulfate			7300	mg/L	21	99	80	120			
Lab ID:	**C17100456-005AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_171013A			10/14/17 01:17	
Chloride			556	mg/L	5.2	103	80	120	0.2	20	
Sulfate			7310	mg/L	21	100	80	120	0.2	20	

Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/15/17
Work Order: C17100456

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC3-C_171108A	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							11/08/17 16:56	
Chloride			9.68	mg/L	1.0	97	90	110			
Sulfate			39.6	mg/L	1.0	99	90	110			
Method:	**E300.0**									Batch: R229259	
Lab ID:	**ICB**	2	Method Blank				Run: IC3-C_171108A			11/08/17 17:13	
Chloride			ND	mg/L	0.09						
Sulfate			0.1	mg/L	0.10						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC3-C_171108A			11/08/17 17:31	
Chloride			10.1	mg/L	1.0	101	90	110			
Sulfate			41.6	mg/L	1.0	104	90	110			
Lab ID:	**C17110172-001AMS**	2	Sample Matrix Spike				Run: IC3-C_171108A			11/08/17 18:22	
Chloride			42.7	mg/L	1.0	102	80	120			
Sulfate			293	mg/L	1.0	102	80	120			
Lab ID:	**C17110172-001AMSD**	2	Sample Matrix Spike Duplicate				Run: IC3-C_171108A			11/08/17 18:39	
Chloride			43.4	mg/L	1.0	105	80	120	1.4	20	
Sulfate			297	mg/L	1.0	107	80	120	1.4	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/15/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_171019A	
Lab ID: ICV		Initial Calibration Verification Standard							10/19/17 11:36	
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110			
Method: E353.2									Batch: R228442	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171019A			10/19/17 11:37	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171019A			10/19/17 11:39	
Nitrogen, Nitrate+Nitrite as N		0.989	mg/L	0.010	100	90	110			
Lab ID: C17100456-001DMS		Sample Matrix Spike				Run: FIA201-C_171019A			10/19/17 11:41	
Nitrogen, Nitrate+Nitrite as N		6.56	mg/L	0.050	93	90	110			
Lab ID: C17100456-001DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171019A			10/19/17 11:42	
Nitrogen, Nitrate+Nitrite as N		6.56	mg/L	0.050	93	90	110	0.0	10	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 10/28/17
Work Order: C17100456

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.7**										Batch: 114809
Lab ID:	**MB-114809**	2	Method Blank				Run: ICP203-B_171018A				10/19/17 03:16
Aluminum			ND	mg/L	0.010						
Manganese			ND	mg/L	0.0006						
Lab ID:	**LCS-114809**	2	Laboratory Control Sample				Run: ICP203-B_171018A				10/19/17 03:20
Aluminum			2.35	mg/L	0.030	94	85	115			
Manganese			2.37	mg/L	0.0010	95	85	115			
Lab ID:	**B17101342-001CMS3**	2	Sample Matrix Spike				Run: ICP203-B_171018A				10/19/17 04:13
Aluminum			2.62	mg/L	0.049	101	70	130			
Manganese			2.68	mg/L	0.0029	104	70	130			
Lab ID:	**B17101342-001CMSD**	2	Sample Matrix Spike Duplicate				Run: ICP203-B_171018A				10/19/17 04:17
Aluminum			2.52	mg/L	0.049	97	70	130	3.8	20	
Manganese			2.62	mg/L	0.0029	102	70	130	2.3	20	
Method:	**E200.7**										Analytical Run: ICP203-B_171027A
Lab ID:	**ICV**	2	Continuing Calibration Verification Standard								10/27/17 15:21
Aluminum			2.49	mg/L	0.10	100	95	105			
Manganese			2.44	mg/L	0.010	98	95	105			
Method:	**E200.7**										Batch: 114809
Lab ID:	**MB-114809**	2	Method Blank				Run: ICP203-B_171027A				10/27/17 17:54
Aluminum			ND	mg/L	0.010						
Manganese			ND	mg/L	0.0006						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 10/28/17

Project: Zone-3 **Work Order:** C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP204-B_171019A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							10/19/17 12:33	
Calcium		25.0	mg/L	1.0	100	95	105			
Magnesium		24.8	mg/L	1.0	99	95	105			
Potassium		24.7	mg/L	1.0	99	95	105			
Sodium		24.7	mg/L	1.0	99	95	105			
Method: E200.7									Batch: R288689	
Lab ID: MB-7400DIS171019A	4	Method Blank				Run: ICP204-B_171019A			10/19/17 12:40	
Calcium		ND	mg/L	0.1						
Magnesium		ND	mg/L	0.003						
Potassium		ND	mg/L	0.03						
Sodium		0.04	mg/L	0.02						
Lab ID: LFB-7400DIS171019A	4	Laboratory Fortified Blank				Run: ICP204-B_171019A			10/19/17 12:48	
Calcium		50.1	mg/L	1.0	100	85	115			
Magnesium		49.5	mg/L	1.0	99	85	115			
Potassium		50.4	mg/L	1.0	101	85	115			
Sodium		50.0	mg/L	1.0	100	85	115			
Lab ID: B17101290-001AMS2	4	Sample Matrix Spike				Run: ICP204-B_171019A			10/19/17 15:19	
Calcium		98.2	mg/L	1.0	98	70	130			
Magnesium		98.3	mg/L	1.0	98	70	130			
Potassium		97.4	mg/L	1.0	97	70	130			
Sodium		484	mg/L	1.0	93	70	130			
Lab ID: B17101290-001AMSD	4	Sample Matrix Spike Duplicate				Run: ICP204-B_171019A			10/19/17 15:23	
Calcium		97.9	mg/L	1.0	97	70	130	0.3	20	
Magnesium		98.1	mg/L	1.0	98	70	130	0.2	20	
Potassium		97.4	mg/L	1.0	97	70	130	0.0	20	
Sodium		481	mg/L	1.0	90	70	130	0.5	20	
Lab ID: C17100456-007BMS2	4	Sample Matrix Spike				Run: ICP204-B_171019A			10/19/17 16:10	
Calcium		915	mg/L	1.4	94	70	130			
Magnesium		982	mg/L	1.0	97	70	130			
Potassium		479	mg/L	1.0	95	70	130			
Sodium		645	mg/L	3.1	96	70	130			
Lab ID: C17100456-007BMSD	4	Sample Matrix Spike Duplicate				Run: ICP204-B_171019A			10/19/17 16:13	
Calcium		916	mg/L	1.4	94	70	130	0.1	20	
Magnesium		986	mg/L	1.0	98	70	130	0.4	20	
Potassium		486	mg/L	1.0	97	70	130	1.4	20	
Sodium		649	mg/L	3.1	97	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 10/28/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_171024A	
Lab ID: QCS	7	Initial Calibration Verification Standard							10/25/17 03:20	
Beryllium		0.0260	mg/L	0.0010	104	90	110			
Cadmium		0.0276	mg/L	0.0010	110	90	110			
Cobalt		0.0519	mg/L	0.010	104	90	110			
Lead		0.0507	mg/L	0.010	101	90	110			
Molybdenum		0.0496	mg/L	0.0050	99	90	110			
Nickel		0.0530	mg/L	0.010	106	90	110			
Vanadium		0.0501	mg/L	0.10	100	90	110			
Method: E200.8										Batch: 114809
Lab ID: MB-114809	8	Method Blank				Run: ICPMS202-B_171024A				10/25/17 07:04
Beryllium		0.0001	mg/L	0.00002						
Cadmium		0.0001	mg/L	0.00002						
Cobalt		0.0002	mg/L	0.00003						
Lead		0.00006	mg/L	0.00005						
Molybdenum		0.0003	mg/L	0.00005						
Nickel		0.0008	mg/L	0.00006						
Uranium		ND	mg/L	0.00002						
Vanadium		0.0005	mg/L	0.0002						
Lab ID: LCS-114809	8	Laboratory Control Sample				Run: ICPMS202-B_171024A				10/25/17 07:10
Beryllium		0.242	mg/L	0.0010	97	85	115			
Cadmium		0.256	mg/L	0.0010	102	85	115			
Cobalt		0.474	mg/L	0.0010	95	85	115			
Lead		0.517	mg/L	0.0010	103	85	115			
Molybdenum		0.506	mg/L	0.0050	101	85	115			
Nickel		0.496	mg/L	0.0010	99	85	115			
Uranium		0.511	mg/L	0.0010	102	85	115			
Vanadium		0.490	mg/L	0.010	98	85	115			
Lab ID: B17101342-001CMS3	8	Sample Matrix Spike				Run: ICPMS202-B_171024A				10/25/17 07:12
Beryllium		0.228	mg/L	0.0010	91	70	130			
Cadmium		0.252	mg/L	0.0010	101	70	130			
Cobalt		0.511	mg/L	0.0050	102	70	130			
Lead		0.548	mg/L	0.0010	109	70	130			
Molybdenum		0.566	mg/L	0.0010	110	70	130			
Nickel		0.506	mg/L	0.0050	100	70	130			
Uranium		0.571	mg/L	0.00030	114	70	130			
Vanadium		0.533	mg/L	0.010	104	70	130			
Lab ID: B17101342-001CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171024A				10/25/17 07:15
Beryllium		0.226	mg/L	0.0010	90	70	130	0.9	20	
Cadmium		0.250	mg/L	0.0010	100	70	130	0.6	20	
Cobalt		0.502	mg/L	0.0050	100	70	130	1.8	20	
Lead		0.550	mg/L	0.0010	110	70	130	0.4	20	
Molybdenum		0.559	mg/L	0.0010	109	70	130	1.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 10/28/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 114809
Lab ID: B17101342-001CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171024A			10/25/17 07:15	
Nickel		0.504	mg/L	0.0050	99	70	130	0.4	20	
Uranium		0.569	mg/L	0.00030	114	70	130	0.3	20	
Vanadium		0.532	mg/L	0.010	104	70	130	0.2	20	
Lab ID: C17100456-009CMS3	8	Sample Matrix Spike				Run: ICPMS202-B_171024A			10/25/17 08:15	
Beryllium		0.240	mg/L	0.0010	92	70	130			
Cadmium		0.260	mg/L	0.0010	103	70	130			
Cobalt		0.857	mg/L	0.0050	92	70	130			
Lead		0.529	mg/L	0.0010	105	70	130			
Molybdenum		0.551	mg/L	0.0010	109	70	130			
Nickel		0.861	mg/L	0.0050	96	70	130			
Uranium		0.616	mg/L	0.00030	112	70	130			
Vanadium		0.523	mg/L	0.010	104	70	130			
Lab ID: C17100456-009CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171024A			10/25/17 08:21	
Beryllium		0.237	mg/L	0.0010	90	70	130	1.2	20	
Cadmium		0.249	mg/L	0.0010	98	70	130	4.3	20	
Cobalt		0.856	mg/L	0.0050	92	70	130	0.1	20	
Lead		0.521	mg/L	0.0010	103	70	130	1.5	20	
Molybdenum		0.534	mg/L	0.0010	105	70	130	3.2	20	
Nickel		0.855	mg/L	0.0050	95	70	130	0.7	20	
Uranium		0.606	mg/L	0.00030	110	70	130	1.6	20	
Vanadium		0.499	mg/L	0.010	100	70	130	4.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 10/28/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS202-B_171026A	
Lab ID: QCS	2	Initial Calibration Verification Standard							10/27/17 03:30	
Beryllium		0.0251	mg/L	0.0010	101	90	110			
Uranium		0.0213	mg/L	0.0010	106	90	110			
Method: E200.8									Batch: 114809	
Lab ID: MB-114809	8	Method Blank				Run: ICPMS202-B_171026A			10/27/17 03:51	
Beryllium		ND	mg/L	0.00002						
Cadmium		ND	mg/L	0.00002						
Cobalt		ND	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Molybdenum		0.0002	mg/L	0.00005						
Nickel		0.0003	mg/L	0.00006						
Uranium		ND	mg/L	0.00002						
Vanadium		0.001	mg/L	0.0002						
Lab ID: LCS-114809	8	Laboratory Control Sample				Run: ICPMS202-B_171026A			10/27/17 04:25	
Beryllium		0.223	mg/L	0.0010	89	85	115			
Cadmium		0.252	mg/L	0.0010	101	85	115			
Cobalt		0.496	mg/L	0.0010	99	85	115			
Lead		0.502	mg/L	0.0010	101	85	115			
Molybdenum		0.498	mg/L	0.0050	100	85	115			
Nickel		0.494	mg/L	0.0010	99	85	115			
Uranium		0.504	mg/L	0.0010	101	85	115			
Vanadium		0.518	mg/L	0.010	103	85	115			
Lab ID: C17100456-009CMS3	8	Sample Matrix Spike				Run: ICPMS202-B_171026A			10/27/17 04:27	
Beryllium		0.226	mg/L	0.0010	86	70	130			
Cadmium		0.251	mg/L	0.0010	99	70	130			
Cobalt		0.880	mg/L	0.0050	99	70	130			
Lead		0.507	mg/L	0.0010	100	70	130			
Molybdenum		0.520	mg/L	0.0010	102	70	130			
Nickel		0.840	mg/L	0.0050	97	70	130			
Uranium		0.589	mg/L	0.00030	108	70	130			
Vanadium		0.525	mg/L	0.010	105	70	130			
Lab ID: C17100456-009CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS202-B_171026A			10/27/17 04:30	
Beryllium		0.221	mg/L	0.0010	84	70	130	2.2	20	
Cadmium		0.250	mg/L	0.0010	99	70	130	0.1	20	
Cobalt		0.887	mg/L	0.0050	100	70	130	0.8	20	
Lead		0.503	mg/L	0.0010	100	70	130	0.7	20	
Molybdenum		0.532	mg/L	0.0010	105	70	130	2.3	20	
Nickel		0.845	mg/L	0.0050	98	70	130	0.5	20	
Uranium		0.596	mg/L	0.00030	109	70	130	1.2	20	
Vanadium		0.539	mg/L	0.010	107	70	130	2.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/03/17
Work Order: C17100456

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**						'tical Run: SELENIUM PSA MILLENIUM_171024B			
Lab ID:	**ICV-39251**	Initial Calibration Verification Standard								10/24/17 12:22
Selenium-IV		0.0199	mg/L	0.0010	100	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/24/17 12:26
Selenium-IV		0.0203	mg/L	0.0010	102	90	110			
Method:	**A3114 B**									Batch: 39251
Lab ID:	**MB-39251**	Method Blank				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:29
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-39251**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:31
Selenium-IV		0.0205	mg/L	0.0010	103	85	115			
Lab ID:	**C17100456-001EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:34
Selenium-IV		0.0203	mg/L	0.0010	101	70	130			
Lab ID:	**C17100456-001EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:36
Selenium-IV		0.0202	mg/L	0.0010	101	70	130	0.5	20	
Lab ID:	**H17100384-002EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:56
Selenium-IV		0.0202	mg/L	0.0010	101	70	130			
Lab ID:	**H17100384-002EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:58
Selenium-IV		0.0204	mg/L	0.0010	102	70	130	1.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/03/17
Work Order: C17100456

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**							Analytical Run: ARSENIC SPECIATION_171101A		
Lab ID:	**AS-ICV 25ppb-11/1/2017**	Initial Calibration Verification Standard								11/01/17 14:24
Arsenic-III		24.5	ug/L	5.0	98	87.6	114			
Lab ID:	**AS-50.0-11/1/2017**	Continuing Calibration Verification Standard								11/01/17 14:36
Arsenic-III		50.2	ug/L	5.0	100	85	115			
Lab ID:	**AS-50.0-11/1/2017**	Continuing Calibration Verification Standard								11/02/17 10:01
Arsenic-III		52.0	ug/L	5.0	104	85	115			
Method:	**E1632AM**									Batch: R129853
Lab ID:	**AS-LFB 50ppb-11/1/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1711				11/01/17 15:00
Arsenic-III		49.6	ug/L	5.0	99	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1711				11/01/17 15:12
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**H17100540-001A MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1711				11/01/17 15:36
Arsenic-III		59.6	ug/L	5.0	100	55	146			
Lab ID:	**H17100540-001A MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1711				11/01/17 15:48
Arsenic-III		58.3	ug/L	5.0	98	55	146	2.3	20	
Lab ID:	**H17100384-001E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1711				11/01/17 18:37
Arsenic-III		49.5	ug/L	5.0	99	55	146			
Lab ID:	**H17100384-001E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1711				11/01/17 18:49
Arsenic-III		49.8	ug/L	5.0	100	55	146	0.6	20	
Lab ID:	**C17100456-006E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1711				11/02/17 10:37
Arsenic-III		52.3	ug/L	5.0	105	55	146			
Lab ID:	**C17100456-006E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1711				11/02/17 10:49
Arsenic-III		52.5	ug/L	5.0	105	55	146	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/03/17
Work Order: C17100456

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R288647
Lab ID: ccvA101817	Continuing Calibration Verification Standard								10/18/17 22:49
Bromodichloromethane	5.36	ug/L	0.50	107	70	130			
Bromoform	4.96	ug/L	0.50	99	70	130			
Chlorodibromomethane	5.16	ug/L	0.50	103	70	130			
Chloroform	5.44	ug/L	0.50	109	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	109	71	139			
Surr: p-Bromofluorobenzene			0.50	104	80	127			
Surr: Toluene-d8			0.50	98	80	123			
Method: E624									Batch: R288647
Lab ID: lcsA101817	Laboratory Control Sample				Run: 5971A.I_171018B				10/18/17 23:18
Bromodichloromethane	5.84	ug/L	0.50	117	74	128			
Bromoform	4.76	ug/L	0.50	95	66	128			
Chlorodibromomethane	5.56	ug/L	0.50	111	74	125			
Chloroform	5.36	ug/L	0.50	107	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	107	71	139			
Surr: p-Bromofluorobenzene			0.50	100	80	127			
Surr: Toluene-d8			0.50	100	80	123			
Lab ID: blkA101817	Method Blank				Run: 5971A.I_171018B				10/19/17 00:17
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	82	71	139			
Surr: p-Bromofluorobenzene			0.50	105	80	127			
Surr: Toluene-d8			0.50	106	80	123			
Lab ID: b17101269-001ams	Sample Matrix Spike				Run: 5971A.I_171018B				10/19/17 09:05
Bromodichloromethane	6.12	ug/L	0.50	122	74	128			
Bromoform	4.92	ug/L	0.50	98	66	128			
Chlorodibromomethane	5.68	ug/L	0.50	114	74	125			
Chloroform	7.28	ug/L	0.50	114	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	102	71	139			
Surr: p-Bromofluorobenzene			0.50	101	80	127			
Surr: Toluene-d8			0.50	96	80	123			
Lab ID: b17101269-001amsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171018B				10/19/17 09:34
Bromodichloromethane	6.04	ug/L	0.50	121	74	128	1.3	20	
Bromoform	4.72	ug/L	0.50	94	66	128	4.1	20	
Chlorodibromomethane	5.52	ug/L	0.50	110	74	125	2.9	20	
Chloroform	6.84	ug/L	0.50	106	68	124	6.2	20	
Surr: 1,2-Dichloroethane-d4			0.50	99	71	139			
Surr: p-Bromofluorobenzene			0.50	101	80	127			
Surr: Toluene-d8			0.50	99	80	123			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/03/17
Work Order: C17100456

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R288710
Lab ID: ccv101917	Continuing Calibration Verification Standard								10/19/17 10:34
Bromodichloromethane	5.28	ug/L	0.50	106	70	130			
Bromoform	4.44	ug/L	0.50	89	70	130			
Chlorodibromomethane	4.84	ug/L	0.50	97	70	130			
Chloroform	5.28	ug/L	0.50	106	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	97	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	100	80	123			
Method: E624									Batch: R288710
Lab ID: lcs101917	Laboratory Control Sample				Run: 5971A.I_171019B				10/19/17 11:08
Bromodichloromethane	5.76	ug/L	0.50	115	74	128			
Bromoform	4.64	ug/L	0.50	93	66	128			
Chlorodibromomethane	5.32	ug/L	0.50	106	74	125			
Chloroform	5.48	ug/L	0.50	110	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	99	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	102	80	123			
Lab ID: blk101917	Method Blank				Run: 5971A.I_171019B				10/19/17 12:36
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	98	71	139			
Surr: p-Bromofluorobenzene			0.50	103	80	127			
Surr: Toluene-d8			0.50	99	80	123			
Lab ID: lcsA101917	Laboratory Control Sample				Run: 5971A.I_171019B				10/19/17 23:28
Bromodichloromethane	6.08	ug/L	0.50	122	74	128			
Bromoform	5.28	ug/L	0.50	106	66	128			
Chlorodibromomethane	5.96	ug/L	0.50	119	74	125			
Chloroform	5.64	ug/L	0.50	113	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	106	71	139			
Surr: p-Bromofluorobenzene			0.50	106	80	127			
Surr: Toluene-d8			0.50	101	80	123			
Lab ID: blkA101917	Method Blank				Run: 5971A.I_171019B				10/20/17 00:56
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	102	71	139			
Surr: p-Bromofluorobenzene			0.50	107	80	127			
Surr: Toluene-d8			0.50	97	80	123			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/03/17
Work Order: C17100456

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Batch: R288710
Lab ID: b17101565-001bms	Sample Matrix Spike				Run: 5971A.I_171019B				10/20/17 01:54
Bromodichloromethane	10.8	ug/L	1.0	108	74	128			
Bromoform	9.20	ug/L	1.0	92	66	128			
Chlorodibromomethane	10.3	ug/L	1.0	103	74	125			
Chloroform	10.6	ug/L	1.0	106	68	124			
Surr: 1,2-Dichloroethane-d4			1.0	105	71	139			
Surr: p-Bromofluorobenzene			1.0	105	80	127			
Surr: Toluene-d8			1.0	99	80	123			
Lab ID: b17101565-001bmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171019B				10/20/17 02:24
Bromodichloromethane	10.7	ug/L	1.0	107	74	128	0.7	20	
Bromoform	9.12	ug/L	1.0	91	66	128	0.9	20	
Chlorodibromomethane	10.1	ug/L	1.0	101	74	125	2.4	20	
Chloroform	10.2	ug/L	1.0	102	68	124	4.6	20	
Surr: 1,2-Dichloroethane-d4			1.0	99	71	139			
Surr: p-Bromofluorobenzene			1.0	105	80	127			
Surr: Toluene-d8			1.0	99	80	123			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/10/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1047R
Lab ID: MB-GA-1047	3	Method Blank				Run: G542M_171103A			11/07/17 15:27	
Gross Alpha minus Rn & U		-0.05	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.4	pCi/L							
Gross Alpha minus Rn & U MDC		0.6	pCi/L							
Lab ID: LCS-GA-1047		Laboratory Control Sample				Run: G542M_171103A			11/07/17 15:27	
Gross Alpha minus Rn & U		30	pCi/L		91	80	120			
Lab ID: C17100459-002CDUP	3	Sample Duplicate				Run: G542M_171103A			11/07/17 15:27	
Gross Alpha minus Rn & U		2.3	pCi/L					0.5	20	
Gross Alpha minus Rn & U Precision (±)		0.73	pCi/L							
Gross Alpha minus Rn & U MDC		0.59	pCi/L							
Lab ID: C17100506-002FMS		Sample Matrix Spike				Run: G542M_171103A			11/07/17 17:07	
Gross Alpha minus Rn & U		69	pCi/L		94	70	130			
Lab ID: C17100506-002FMSD		Sample Matrix Spike Duplicate				Run: G542M_171103A			11/07/17 17:07	
Gross Alpha minus Rn & U		68	pCi/L		93	70	130	1.6	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/10/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8717
Lab ID: LCS-RA226-8717		Laboratory Control Sample				Run: G542M_171018A				10/30/17 11:30
Radium 226		8.2	pCi/L		82	80	120			
Lab ID: MB-RA226-8717	3	Method Blank				Run: G542M_171018A				10/30/17 11:30
Radium 226		0.01	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C17100476-001AMS		Sample Matrix Spike				Run: G542M_171018A				10/30/17 11:30
Radium 226		19	pCi/L		88	70	130			
Lab ID: C17100476-001AMSD		Sample Matrix Spike Duplicate				Run: G542M_171018A				10/30/17 11:30
Radium 226		18	pCi/L		82	70	130	5.1	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/10/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2637
Lab ID: LCS-RA-TH-ISO-2637		Laboratory Control Sample				Run: EGG-ORTEC_171030A				11/06/17 10:22
Thorium 230		5.6	pCi/L		99	80	120			
Lab ID: C17100506-001FMS		Sample Matrix Spike				Run: EGG-ORTEC_171030A				11/06/17 10:22
Thorium 230		17	pCi/L		82	70	130			
Lab ID: C17100506-001FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_171030A				11/06/17 10:22
Thorium 230		19	pCi/L		91	70	130	11	20	
Lab ID: MB-RA-TH-ISO-2637	3	Method Blank				Run: EGG-ORTEC_171030A				11/06/17 10:22
Thorium 230		0.06	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Method: E908.0										Batch: RA-TH-ISO-2635
Lab ID: LCS-RA-TH-ISO-2635		Laboratory Control Sample				Run: EGG-ORTEC_2_171026A				11/06/17 10:28
Thorium 230		5.4	pCi/L		96	80	120			
Lab ID: C17100400-004CMS		Sample Matrix Spike				Run: EGG-ORTEC_2_171026A				11/06/17 10:28
Thorium 230		13	pCi/L		117	70	130			
Lab ID: C17100400-004CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_171026A				11/06/17 10:28
Thorium 230		11	pCi/L		100	70	130	16	20	
Lab ID: MB-RA-TH-ISO-2635	3	Method Blank				Run: EGG-ORTEC_2_171026A				11/06/17 10:28
Thorium 230		0.007	pCi/L							U
Thorium 230 precision (±)		0.09	pCi/L							
Thorium 230 MDC		0.2	pCi/L							

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/10/17
Work Order: C17100456

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0870	
Lab ID:	**LCS-PB-210-0870**		Laboratory Control Sample				Run: PACKARD 3100TR_171013A			10/18/17 15:00	
Lead 210			15	pCi/L		94	80	120			
Lab ID:	**MB-PB-210-0870**	3	Method Blank				Run: PACKARD 3100TR_171013A			10/18/17 16:05	
Lead 210			-5	pCi/L							U
Lead 210 precision (±)			0.9	pCi/L							
Lead 210 MDC			2	pCi/L							
Lab ID:	**C17100400-001CMS**		Sample Matrix Spike				Run: PACKARD 3100TR_171013A			10/19/17 00:12	
Lead 210			25	pCi/L		69	70	130			S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the RPD recoveries are acceptable, the response is considered to be matrix related. The batch is approved.											
Lab ID:	**C17100400-001CMSD**		Sample Matrix Spike Duplicate				Run: PACKARD 3100TR_171013A			10/19/17 01:23	
Lead 210			27	pCi/L		74	70	130	6.9	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone-3

Report Date: 11/10/17
Work Order: C17100456

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5646
Lab ID: LCS-228-RA226-8717		Laboratory Control Sample				Run: TENNELEC-3_171018A				10/25/17 17:40
Radium 228		8.3	pCi/L		80	80	120			
Lab ID: MB-RA226-8717	3	Method Blank				Run: TENNELEC-3_171018A				10/25/17 17:40
Radium 228		0.5	pCi/L							U
Radium 228 precision (±)		0.8	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C17100477-001AMS		Sample Matrix Spike				Run: TENNELEC-3_171018A				10/25/17 17:40
Radium 228		19	pCi/L		86	70	130			
Lab ID: C17100477-001AMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_171018A				10/25/17 17:40
Radium 228		17	pCi/L		78	70	130	10.0	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

November 14, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17100506 Quote ID: C129 - Quarterly Long List

Project Name: Zone 3

Energy Laboratories, Inc. Casper WY received the following 8 samples for United Nuclear Corporation on 10/13/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17100506-001	719	10/10/17 08:27	10/13/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100506-002	NBL-2	10/10/17 12:30	10/13/17	Aqueous	Same As Above
C17100506-003	MW-7	10/10/17 14:05	10/13/17	Aqueous	Same As Above
C17100506-004	NW-3	10/10/17 15:32	10/13/17	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C17100506-005	Rinsate	10/10/17 16:00 10/13/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved 624-Purgeable Organics 624-Purgeable Organics
C17100506-006	Field Blank	10/10/17 16:15 10/13/17	Aqueous	Same As Above
C17100506-007	RW-A	10/10/17 16:32 10/13/17	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Anion - Cation Balance Arsenic Speciation, Total Selenium-IV, Total Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Metals Preparation by EPA 200.2 CVAA Selenium Prep Gross Alpha minus Rn222 and Uranium Lead 210, Total Radium 226, Total Radium 228, Total Thorium, Isotopic Solids, Total Dissolved Solids, Total Dissolved - Calculated 624-Purgeable Organics 624-Purgeable Organics
C17100506-008	RW-11	10/10/17 17:00 10/13/17	Aqueous	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey L. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.11.14 13:41:01 -07:00

CLIENT: United Nuclear Corporation
Project: Zone 3
Work Order: C17100506

Report Date: 11/14/17

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as ELI-H were subcontracted to Energy Laboratories, 3161 E.Lyndale Ave., Helena, MT, EPA Number MT00945.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/26/17
Project: Zone 3 **Work Order:** C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_171015A	
Lab ID: ICV-9186		Initial Calibration Verification Standard							10/15/17 19:33	
pH		6.93	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R228306	
Lab ID: MBLK		Method Blank				Run: MANTECH_171015A			10/15/17 19:38	
Alkalinity, Total as CaCO3		2	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171015A			10/15/17 19:46	
Alkalinity, Total as CaCO3		259	mg/L	5.0	103	90	110			
Lab ID: C17100484-010ADUP		Sample Duplicate				Run: MANTECH_171015A			10/15/17 21:30	
Alkalinity, Total as CaCO3		152	mg/L	5.0				0.0	10	
Lab ID: MBLK		Method Blank				Run: MANTECH_171015A			10/15/17 22:42	
Alkalinity, Total as CaCO3		ND	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171015A			10/15/17 22:53	
Alkalinity, Total as CaCO3		260	mg/L	5.0	104	90	110			
Lab ID: C17100506-002ADUP		Sample Duplicate				Run: MANTECH_171015A			10/15/17 23:09	
Alkalinity, Total as CaCO3		283	mg/L	5.0				0.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/26/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS171015A	
Lab ID: MB-1_171015A		Method Blank				Run: BAL-18_171015A			10/15/17 21:12	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-2_171015A		Laboratory Control Sample				Run: BAL-18_171015A			10/15/17 21:13	
Solids, Total Dissolved TDS @ 180 C		1050	mg/L	11	95	90	110			
Lab ID: C17100456-008A DUP		Sample Duplicate				Run: BAL-18_171015A			10/15/17 21:15	
Solids, Total Dissolved TDS @ 180 C		7330	mg/L	100				0.8	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/26/17
Work Order: C17100506

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A4500-H B**								Analytical Run: PHSC_101-C_171015A		
Lab ID:	**6.86**	Initial Calibration Verification Standard								10/15/17 19:05	
pH			6.88	s.u.	0.010	100	98	102			
Method:	**A4500-H B**									Batch: R228257	
Lab ID:	**C17100491-001ADUP**	Sample Duplicate					Run: PHSC_101-C_171015A			10/15/17 20:06	
pH			7.84	s.u.	0.010				0.3	3	
Lab ID:	**C17100506-002ADUP**	Sample Duplicate					Run: PHSC_101-C_171015A			10/15/17 20:48	
pH			6.78	s.u.	0.010				0.3	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Report Date: 10/26/17
Project: Zone 3
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-NH3 G									Analytical Run: FIA201-C_171014A	
Lab ID: ICV	Initial Calibration Verification Standard								10/14/17 12:05	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	106	90	110			
Method: A4500-NH3 G									Batch: R228251	
Lab ID: MBLK	Method Blank					Run: FIA201-C_171014A			10/14/17 12:04	
Nitrogen, Ammonia as N		ND	mg/L	0.008						
Lab ID: LFB	Laboratory Fortified Blank					Run: FIA201-C_171014A			10/14/17 12:06	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	107	90	110			
Lab ID: C17100456-008DMS	Sample Matrix Spike					Run: FIA201-C_171014A			10/14/17 12:25	
Nitrogen, Ammonia as N		93.4	mg/L	2.5	107	90	110			
Lab ID: C17100456-008DMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_171014A			10/14/17 12:26	
Nitrogen, Ammonia as N		92.4	mg/L	2.5	105	90	110	1.1	10	
Lab ID: C17100506-006DMS	Sample Matrix Spike					Run: FIA201-C_171014A			10/14/17 12:42	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	106	90	110			
Lab ID: C17100506-006DMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_171014A			10/14/17 12:43	
Nitrogen, Ammonia as N		1.06	mg/L	0.050	106	90	110	0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation **Report Date:** 10/26/17
Project: Zone 3 **Work Order:** C17100506

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC2-C_171017A	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							10/17/17 16:41	
Chloride			9.92	mg/L	1.0	99	90	110			
Sulfate			41.0	mg/L	1.0	103	90	110			
Method:	**E300.0**									Batch: R228367	
Lab ID:	**ICB**	2	Method Blank				Run: IC2-C_171017A			10/17/17 16:58	
Chloride			ND	mg/L	0.03						
Sulfate			0.2	mg/L	0.04						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC2-C_171017A			10/17/17 17:16	
Chloride			10.5	mg/L	1.0	105	90	110			
Sulfate			38.3	mg/L	1.0	95	90	110			
Lab ID:	**C17100492-004AMS**	2	Sample Matrix Spike				Run: IC2-C_171017A			10/18/17 02:15	
Chloride			55.8	mg/L	1.0	105	80	120			
Sulfate			526	mg/L	2.1	101	80	120			
Lab ID:	**C17100492-004AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_171017A			10/18/17 02:33	
Chloride			58.2	mg/L	1.0	110	80	120	4.3	20	
Sulfate			519	mg/L	2.1	97	80	120	1.3	20	
Lab ID:	**C17100506-006AMS**	2	Sample Matrix Spike				Run: IC2-C_171017A			10/18/17 06:19	
Chloride			21.5	mg/L	1.0	107	80	120			
Sulfate			87.0	mg/L	1.0	108	80	120			
Lab ID:	**C17100506-006AMSD**	2	Sample Matrix Spike Duplicate				Run: IC2-C_171017A			10/18/17 06:37	
Chloride			21.6	mg/L	1.0	108	80	120	0.7	20	
Sulfate			87.6	mg/L	1.0	109	80	120	0.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/26/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_171019A	
Lab ID: ICV		Initial Calibration Verification Standard							10/19/17 11:36	
Nitrogen, Nitrate+Nitrite as N		1.01	mg/L	0.010	101	90	110			
Method: E353.2									Batch: R228442	
Lab ID: MBLK		Method Blank				Run: FIA201-C_171019A			10/19/17 11:37	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.003						
Lab ID: LFB		Laboratory Fortified Blank				Run: FIA201-C_171019A			10/19/17 11:39	
Nitrogen, Nitrate+Nitrite as N		0.989	mg/L	0.010	100	90	110			
Lab ID: C17100506-001DMS		Sample Matrix Spike				Run: FIA201-C_171019A			10/19/17 12:31	
Nitrogen, Nitrate+Nitrite as N		1.07	mg/L	0.010	105	90	110			
Lab ID: C17100506-001DMSD		Sample Matrix Spike Duplicate				Run: FIA201-C_171019A			10/19/17 12:32	
Nitrogen, Nitrate+Nitrite as N		1.05	mg/L	0.010	103	90	110	1.9	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP204-B_171019A	
Lab ID: ICV	4	Continuing Calibration Verification Standard							10/19/17 12:33	
Calcium		25.0	mg/L	1.0	100	95	105			
Magnesium		24.8	mg/L	1.0	99	95	105			
Potassium		24.7	mg/L	1.0	99	95	105			
Sodium		24.7	mg/L	1.0	99	95	105			
Method: E200.7									Batch: R288689	
Lab ID: MB-7400DIS171019A	4	Method Blank				Run: ICP204-B_171019A			10/19/17 12:40	
Calcium		ND	mg/L	0.1						
Magnesium		ND	mg/L	0.003						
Potassium		ND	mg/L	0.03						
Sodium		0.04	mg/L	0.02						
Lab ID: LFB-7400DIS171019A	4	Laboratory Fortified Blank				Run: ICP204-B_171019A			10/19/17 12:48	
Calcium		50.1	mg/L	1.0	100	85	115			
Magnesium		49.5	mg/L	1.0	99	85	115			
Potassium		50.4	mg/L	1.0	101	85	115			
Sodium		50.0	mg/L	1.0	100	85	115			
Lab ID: C17100506-001BMS2	4	Sample Matrix Spike				Run: ICP204-B_171019A			10/19/17 21:44	
Calcium		925	mg/L	1.4	94	70	130			
Magnesium		1170	mg/L	1.0	94	70	130			
Potassium		511	mg/L	1.0	100	70	130			
Sodium		629	mg/L	3.1	97	70	130			
Lab ID: C17100506-001BMSD	4	Sample Matrix Spike Duplicate				Run: ICP204-B_171019A			10/19/17 21:48	
Calcium		939	mg/L	1.4	96	70	130	1.5	20	
Magnesium		1190	mg/L	1.0	98	70	130	1.8	20	
Potassium		508	mg/L	1.0	99	70	130	0.7	20	
Sodium		633	mg/L	3.1	97	70	130	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 11/10/17

Project: Zone 3 **Work Order:** C17100506

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E200.8**								Analytical Run: ICPMS202-B_171109A		
Lab ID:	**QCS**		Initial Calibration Verification Standard							11/09/17 12:48	
Uranium			0.0203	mg/L	0.0010	102	90	110			
Method:	**E200.8**									Batch: 114855	
Lab ID:	**MB-114855**		Method Blank				Run: ICPMS202-B_171109A			11/09/17 15:19	
Uranium			0.00009	mg/L	0.00002						
Lab ID:	**LCS-114855**		Laboratory Control Sample				Run: ICPMS202-B_171109A			11/09/17 15:48	
Uranium			0.517	mg/L	0.00030	103	85	115			
Lab ID:	**B17101532-007BMS3**		Sample Matrix Spike				Run: ICPMS202-B_171109A			11/09/17 15:50	
Uranium			0.532	mg/L	0.00030	105	70	130			
Lab ID:	**B17101532-007BMSD**		Sample Matrix Spike Duplicate				Run: ICPMS202-B_171109A			11/09/17 15:53	
Uranium			0.533	mg/L	0.00030	105	70	130	0.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS206-B_171027A	
Lab ID: QCS	9	Initial Calibration Verification Standard							10/27/17 20:10	
Aluminum		0.259	mg/L	0.10	103	90	110			
Cadmium		0.0255	mg/L	0.0010	102	90	110			
Cobalt		0.0534	mg/L	0.010	107	90	110			
Lead		0.0497	mg/L	0.010	99	90	110			
Manganese		0.258	mg/L	0.010	103	90	110			
Molybdenum		0.0471	mg/L	0.0050	94	90	110			
Nickel		0.0506	mg/L	0.010	101	90	110			
Uranium		0.0209	mg/L	0.0010	105	90	110			
Vanadium		0.0495	mg/L	0.10	99	90	110			
Method: E200.8									Batch: 114855	
Lab ID: MB-114855	8	Method Blank				Run: ICPMS206-B_171027A			10/28/17 04:14	
Cadmium		ND	mg/L	0.00003						
Cobalt		0.00004	mg/L	0.00002						
Lead		0.00005	mg/L	0.00003						
Manganese		ND	mg/L	0.00006						
Molybdenum		0.0002	mg/L	0.00003						
Nickel		ND	mg/L	0.00009						
Uranium		0.0002	mg/L	0.00003						
Vanadium		0.0003	mg/L	0.00007						
Lab ID: LCS-114855	8	Laboratory Control Sample				Run: ICPMS206-B_171027A			10/28/17 04:21	
Cadmium		0.232	mg/L	0.0010	93	85	115			
Cobalt		0.543	mg/L	0.0010	109	85	115			
Lead		0.527	mg/L	0.0010	105	85	115			
Manganese		2.66	mg/L	0.0010	107	85	115			
Molybdenum		0.500	mg/L	0.0050	100	85	115			
Nickel		0.438	mg/L	0.0010	88	85	115			
Uranium		0.566	mg/L	0.0010	113	85	115			
Vanadium		0.508	mg/L	0.010	102	85	115			
Lab ID: C17100506-001CMS3	8	Sample Matrix Spike				Run: ICPMS206-B_171027A			10/28/17 04:24	
Cadmium		0.224	mg/L	0.0010	89	70	130			
Cobalt		0.787	mg/L	0.0050	104	70	130			
Lead		0.485	mg/L	0.0010	97	70	130			
Manganese		9.21	mg/L	0.0010	114	70	130			
Molybdenum		0.482	mg/L	0.0010	93	70	130			
Nickel		0.735	mg/L	0.0050	86	70	130			
Uranium		0.536	mg/L	0.00030	104	70	130			
Vanadium		0.517	mg/L	0.010	103	70	130			
Lab ID: C17100506-001CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS206-B_171027A			10/28/17 04:28	
Cadmium		0.223	mg/L	0.0010	89	70	130	0.4	20	
Cobalt		0.769	mg/L	0.0050	100	70	130	2.4	20	
Lead		0.503	mg/L	0.0010	100	70	130	3.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation **Report Date:** 11/10/17

Project: Zone 3 **Work Order:** C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 114855
Lab ID: C17100506-001CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS206-B_171027A				10/28/17 04:28
Manganese		9.23	mg/L	0.0010	115	70	130	0.3	20	
Molybdenum		0.517	mg/L	0.0010	100	70	130	7.0	20	
Nickel		0.757	mg/L	0.0050	91	70	130	2.9	20	
Uranium		0.551	mg/L	0.00030	107	70	130	2.8	20	
Vanadium		0.526	mg/L	0.010	105	70	130	1.7	20	
Lab ID: MB-114855		Method Blank				Run: ICPMS206-B_171027A				10/29/17 11:53
Aluminum		0.0009	mg/L	0.0009						
Lab ID: LCS-114855		Laboratory Control Sample				Run: ICPMS206-B_171027A				10/29/17 12:00
Aluminum		2.42	mg/L	0.010	97	85	115			
Lab ID: C17100506-001CMS3		Sample Matrix Spike				Run: ICPMS206-B_171027A				10/29/17 12:04
Aluminum		2.77	mg/L	0.030	98	70	130			
Lab ID: C17100506-001CMSD		Sample Matrix Spike Duplicate				Run: ICPMS206-B_171027A				10/29/17 12:07
Aluminum		2.81	mg/L	0.030	97	70	130	14	20	
Method: E200.8										Analytical Run: ICPMS206-B_171101A
Lab ID: QCS		Initial Calibration Verification Standard								11/02/17 03:50
Beryllium		0.0268	mg/L	0.0010	107	90	110			
Method: E200.8										Batch: 114855
Lab ID: MB-114855		Method Blank				Run: ICPMS206-B_171101A				11/02/17 07:30
Beryllium		ND	mg/L	0.00008						
Lab ID: LCS-114855		Laboratory Control Sample				Run: ICPMS206-B_171101A				11/02/17 07:48
Beryllium		0.244	mg/L	0.0010	98	85	115			
Lab ID: C17100506-001CMS3		Sample Matrix Spike				Run: ICPMS206-B_171101A				11/02/17 08:01
Beryllium		0.244	mg/L	0.0010	97	70	130			
Lab ID: C17100506-001CMSD		Sample Matrix Spike Duplicate				Run: ICPMS206-B_171101A				11/02/17 08:05
Beryllium		0.249	mg/L	0.0010	99	70	130	1.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/03/17
Work Order: C17100506

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A3114 B**						'tical Run: SELENIUM PSA MILLENIUM_171024B			
Lab ID:	**ICV-39251**	Initial Calibration Verification Standard								10/24/17 12:22
Selenium-IV		0.0199	mg/L	0.0010	100	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/24/17 12:26
Selenium-IV		0.0203	mg/L	0.0010	102	90	110			
Lab ID:	**CCV**	Continuing Calibration Verification Standard								10/24/17 12:53
Selenium-IV		0.0199	mg/L	0.0010	99	90	110			
Method:	**A3114 B**									Batch: 39251
Lab ID:	**MB-39251**	Method Blank				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:29
Selenium-IV		ND	mg/L	0.0006						
Lab ID:	**LFB-39251**	Laboratory Fortified Blank				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:31
Selenium-IV		0.0205	mg/L	0.0010	103	85	115			
Lab ID:	**C17100506-002EMS**	Sample Matrix Spike				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:56
Selenium-IV		0.0202	mg/L	0.0010	101	70	130			
Lab ID:	**C17100506-002EMSD**	Sample Matrix Spike Duplicate				Run: SELENIUM PSA MILLENIUM_				10/24/17 12:58
Selenium-IV		0.0204	mg/L	0.0010	102	70	130	1.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/03/17
Work Order: C17100506

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E1632AM**						Analytical Run: ARSENIC SPECIATION_171101A			
Lab ID:	**AS-ICV 25ppb-11/1/2017**	Initial Calibration Verification Standard								11/01/17 14:24
Arsenic-III		24.5	ug/L	5.0	98	87.6	114			
Lab ID:	**AS-50.0-11/1/2017**	Continuing Calibration Verification Standard								11/01/17 18:00
Arsenic-III		50.9	ug/L	5.0	102	85	115			
Lab ID:	**AS-50.0-11/1/2017**	Continuing Calibration Verification Standard								11/02/17 10:01
Arsenic-III		52.0	ug/L	5.0	104	85	115			
Method:	**E1632AM**									Batch: R129853
Lab ID:	**AS-LFB 50ppb-11/1/2017**	Laboratory Fortified Blank				Run: ARSENIC SPECIATION_1711				11/01/17 15:00
Arsenic-III		49.6	ug/L	5.0	99	55	146			
Lab ID:	**ICB**	Method Blank				Run: ARSENIC SPECIATION_1711				11/01/17 15:12
Arsenic-III		ND	ug/L	0.2						
Lab ID:	**C17100506-001E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1711				11/01/17 18:37
Arsenic-III		49.5	ug/L	5.0	99	55	146			
Lab ID:	**C17100506-001E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1711				11/01/17 18:49
Arsenic-III		49.8	ug/L	5.0	100	55	146	0.6	20	
Lab ID:	**H17100337-006E MS**	Sample Matrix Spike				Run: ARSENIC SPECIATION_1711				11/02/17 10:37
Arsenic-III		52.3	ug/L	5.0	105	55	146			
Lab ID:	**H17100337-006E MSD**	Sample Matrix Spike Duplicate				Run: ARSENIC SPECIATION_1711				11/02/17 10:49
Arsenic-III		52.5	ug/L	5.0	105	55	146	0.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E624									Analytical Run: R288794
Lab ID: ccv102017	Continuing Calibration Verification Standard								10/20/17 10:43
Bromodichloromethane	4.88	ug/L	0.50	98	70	130			
Bromoform	4.32	ug/L	0.50	86	70	130			
Chlorodibromomethane	4.64	ug/L	0.50	93	70	130			
Chloroform	5.20	ug/L	0.50	104	70	130			
Surr: 1,2-Dichloroethane-d4			0.50	100	71	139			
Surr: p-Bromofluorobenzene			0.50	99	80	127			
Surr: Toluene-d8			0.50	98	80	123			
Method: E624									Batch: R288794
Lab ID: lcs102017	Laboratory Control Sample				Run: 5971A.I_171020B				10/20/17 12:16
Bromodichloromethane	5.64	ug/L	0.50	113	74	128			
Bromoform	4.68	ug/L	0.50	94	66	128			
Chlorodibromomethane	5.44	ug/L	0.50	109	74	125			
Chloroform	5.28	ug/L	0.50	106	68	124			
Surr: 1,2-Dichloroethane-d4			0.50	100	71	139			
Surr: p-Bromofluorobenzene			0.50	101	80	127			
Surr: Toluene-d8			0.50	100	80	123			
Lab ID: blk102017	Method Blank				Run: 5971A.I_171020B				10/20/17 13:15
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			0.50	99	71	139			
Surr: p-Bromofluorobenzene			0.50	102	80	127			
Surr: Toluene-d8			0.50	98	80	123			
Lab ID: C17100506-001Gms	Sample Matrix Spike				Run: 5971A.I_171020B				10/20/17 21:34
Bromodichloromethane	12.5	ug/L	1.0	125	74	128			
Bromoform	11.1	ug/L	1.0	111	66	128			
Chlorodibromomethane	12.2	ug/L	1.0	122	74	125			
Chloroform	12.2	ug/L	1.0	122	68	124			
Surr: 1,2-Dichloroethane-d4			1.0	109	71	139			
Surr: p-Bromofluorobenzene			1.0	102	80	127			
Surr: Toluene-d8			1.0	97	80	123			
Lab ID: C17100506-001Gmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_171020B				10/20/17 22:04
Bromodichloromethane	11.6	ug/L	1.0	116	74	128	7.3	20	
Bromoform	10.2	ug/L	1.0	102	66	128	9.0	20	
Chlorodibromomethane	11.3	ug/L	1.0	113	74	125	8.2	20	
Chloroform	11.1	ug/L	1.0	111	68	124	8.9	20	
Surr: 1,2-Dichloroethane-d4			1.0	102	71	139			
Surr: p-Bromofluorobenzene			1.0	104	80	127			
Surr: Toluene-d8			1.0	100	80	123			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E900.1										Batch: GA-1047R
Lab ID: MB-GA-1047	3	Method Blank				Run: G542M_171103A				11/07/17 15:27
Gross Alpha minus Rn & U		-0.05	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.4	pCi/L							
Gross Alpha minus Rn & U MDC		0.6	pCi/L							
Lab ID: LCS-GA-1047		Laboratory Control Sample				Run: G542M_171103A				11/07/17 15:27
Gross Alpha minus Rn & U		30	pCi/L		91	80	120			
Lab ID: C17100459-002CDUP	3	Sample Duplicate				Run: G542M_171103A				11/07/17 15:27
Gross Alpha minus Rn & U		2.3	pCi/L					0.5	20	
Gross Alpha minus Rn & U Precision (±)		0.73	pCi/L							
Gross Alpha minus Rn & U MDC		0.59	pCi/L							
Lab ID: C17100506-002FMS		Sample Matrix Spike				Run: G542M_171103A				11/07/17 17:07
Gross Alpha minus Rn & U		69	pCi/L		94	70	130			
Lab ID: C17100506-002FMSD		Sample Matrix Spike Duplicate				Run: G542M_171103A				11/07/17 17:07
Gross Alpha minus Rn & U		68	pCi/L		93	70	130	1.6	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-8721
Lab ID: LCS-RA226-8721		Laboratory Control Sample				Run: G542M-2_171020C				11/07/17 09:57
Radium 226		8.8	pCi/L		86	80	120			
Lab ID: MB-RA226-8721	3	Method Blank				Run: G542M-2_171020C				11/07/17 09:57
Radium 226		0.2	pCi/L							
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.1	pCi/L							
Lab ID: C17100502-001DMS		Sample Matrix Spike				Run: G542M-2_171020C				11/07/17 09:57
Radium 226		19	pCi/L		94	70	130			
Lab ID: C17100502-001DMSD		Sample Matrix Spike Duplicate				Run: G542M-2_171020C				11/07/17 09:57
Radium 226		19	pCi/L		94	70	130	0.9	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0									Batch: RA-TH-ISO-2637	
Lab ID: LCS-RA-TH-ISO-2637		Laboratory Control Sample				Run: EGG-ORTEC_171030A			11/06/17 10:22	
Thorium 230		5.6	pCi/L		99	80	120			
Lab ID: C17100506-001FMS		Sample Matrix Spike				Run: EGG-ORTEC_171030A			11/06/17 10:22	
Thorium 230		17	pCi/L		82	70	130			
Lab ID: C17100506-001FMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_171030A			11/06/17 10:22	
Thorium 230		19	pCi/L		91	70	130	11	20	
Lab ID: MB-RA-TH-ISO-2637	3	Method Blank				Run: EGG-ORTEC_171030A			11/06/17 10:22	
Thorium 230		0.06	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.3	pCi/L							
Method: E908.0									Batch: RA-TH-ISO-2638	
Lab ID: C17100459-002CMS		Sample Matrix Spike				Run: EGG-ORTEC_171101A			11/07/17 10:50	
Thorium 230		11	pCi/L		101	70	130			
Lab ID: C17100459-002CMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_171101A			11/07/17 10:50	
Thorium 230		12	pCi/L		106	70	130	4.7	20	
Lab ID: MB-RA-TH-ISO-2638	3	Method Blank				Run: EGG-ORTEC_171101A			11/07/17 16:29	
Thorium 230		0.1	pCi/L							U
Thorium 230 precision (±)		0.1	pCi/L							
Thorium 230 MDC		0.2	pCi/L							
Lab ID: LCS-RA-TH-ISO-2638		Laboratory Control Sample				Run: EGG-ORTEC_171101A			11/08/17 10:14	
Thorium 230		5.9	pCi/L		106	80	120			

Qualifiers:

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QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E909.0**									Batch: PB-210-0872	
Lab ID:	**LCS-PB-210-0872**		Laboratory Control Sample				Run: TRICARB LSC_171018A			10/24/17 17:35	
Lead 210			24	pCi/L		113	80	120			
Lab ID:	**MB-PB-210-0872**	3	Method Blank				Run: TRICARB LSC_171018A			10/24/17 18:34	
Lead 210			-0.3	pCi/L							U
Lead 210 precision (±)			0.9	pCi/L							
Lead 210 MDC			1	pCi/L							
Lab ID:	**C17100506-001FMS**		Sample Matrix Spike				Run: TRICARB LSC_171018A			10/25/17 02:51	
Lead 210			50	pCi/L		114	70	130			
Lab ID:	**C17100506-001FMSD**		Sample Matrix Spike Duplicate				Run: TRICARB LSC_171018A			10/25/17 03:48	
Lead 210			56	pCi/L		126	70	130	9.9	30	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
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U - Not detected at minimum detectable concentration

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 11/10/17
Work Order: C17100506

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5649
Lab ID: LCS-228-RA226-8721		Laboratory Control Sample				Run: TENNELEC-3_171020B				11/08/17 16:10
Radium 228		8.8	pCi/L		89	80	120			
Lab ID: MB-RA226-8721	3	Method Blank				Run: TENNELEC-3_171020B				11/08/17 16:10
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		0.8	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C17100515-005EMS		Sample Matrix Spike				Run: TENNELEC-3_171020B				11/08/17 16:10
Radium 228		17	pCi/L		87	70	130			
Lab ID: C17100515-005EMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_171020B				11/08/17 16:10
Radium 228		17	pCi/L		85	70	130	1.7	20	

Qualifiers:

RL - Analyte reporting limit.
MDC - Minimum detectable concentration
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

October 23, 2017

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C17100505

Project Name: Zone 3

Energy Laboratories, Inc. Casper WY received the following 4 samples for United Nuclear Corporation on 10/13/2017 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C17100505-001	NW-1	10/11/17 10:06	10/13/17	Aqueous	Alkalinity Anions by Ion Chromatography pH Solids, Total Dissolved
C17100505-002	NW-4	10/11/17 10:28	10/13/17	Aqueous	Same As Above
C17100505-003	NW-2	10/11/17 10:40	10/13/17	Aqueous	Same As Above
C17100505-004	NW-5	10/11/17 10:52	10/13/17	Aqueous	Acidity, Total as CaCO3 Alkalinity Anions by Ion Chromatography pH Solids, Total Dissolved

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

Tracey L. Archer
Project Manager

Digitally signed by
Tracey Archer
Date: 2017.10.23 11:27:53 -06:00

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/20/17
Work Order: C17100505

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2310 B									Analytical Run: ACIDITY_171018A	
Lab ID: ICV-1_	Initial Calibration Verification Standard								10/18/17 10:52	
pH		6.79	s.u.	0.010	99	98	102			
Method: A2310 B									Batch: 171018_1_ACID-W	
Lab ID: MBLK-1_171015	Method Blank					Run: ACIDITY_171018A			10/18/17 10:52	
Acidity, Total as CaCO3		2	mg/L	2						
Lab ID: LCS-1_171015	Laboratory Control Sample					Run: ACIDITY_171018A			10/18/17 10:53	
Acidity, Total as CaCO3		1060	mg/L	5.0	107	90	110			
Lab ID: C17100505-004ADUP	Sample Duplicate					Run: ACIDITY_171018A			10/18/17 10:55	
Acidity, Total as CaCO3		100	mg/L	5.0				0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/20/17
Work Order: C17100505

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Analytical Run: MANTECH_171015A	
Lab ID: ICV-9186		Initial Calibration Verification Standard							10/15/17 19:33	
pH		6.93	s.u.	0.010	101	98	102			
Method: A2320 B									Batch: R228306	
Lab ID: MBLK		Method Blank				Run: MANTECH_171015A			10/15/17 19:38	
Alkalinity, Total as CaCO3		2	mg/L	1						
Lab ID: LCS_170118		Laboratory Control Sample				Run: MANTECH_171015A			10/15/17 19:46	
Alkalinity, Total as CaCO3		259	mg/L	5.0	103	90	110			
Lab ID: C17100484-010ADUP		Sample Duplicate				Run: MANTECH_171015A			10/15/17 21:30	
Alkalinity, Total as CaCO3		152	mg/L	5.0				0.0	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/20/17
Work Order: C17100505

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS171017A
Lab ID: MB-1_171017A		Method Blank				Run: BAL-18_171017A				10/17/17 12:53
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-2_171017A		Laboratory Control Sample				Run: BAL-18_171017A				10/17/17 13:10
Solids, Total Dissolved TDS @ 180 C		1050	mg/L	11	94	90	110			
Lab ID: C17100483-002A DUP		Sample Duplicate				Run: BAL-18_171017A				10/17/17 13:21
Solids, Total Dissolved TDS @ 180 C		2230	mg/L	20				1.0	5	
Lab ID: MB-25_171017A		Method Blank				Run: BAL-18_171017A				10/17/17 13:23
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	7						
Lab ID: LCS-26_171017A		Laboratory Control Sample				Run: BAL-18_171017A				10/17/17 13:25
Solids, Total Dissolved TDS @ 180 C		1020	mg/L	11	92	90	110			
Lab ID: C17100505-003A DUP		Sample Duplicate				Run: BAL-18_171017A				10/17/17 13:27
Solids, Total Dissolved TDS @ 180 C		4840	mg/L	40				0.2	5	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/20/17
Work Order: C17100505

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**A4500-H B**								Analytical Run: PHSC_101-C_171015A		
Lab ID:	**6.86**	Initial Calibration Verification Standard								10/15/17 19:05	
pH			6.88	s.u.	0.010	100	98	102			
Method:	**A4500-H B**									Batch: R228257	
Lab ID:	**C17100491-001ADUP**	Sample Duplicate					Run: PHSC_101-C_171015A			10/15/17 20:06	
pH			7.84	s.u.	0.010				0.3	3	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: United Nuclear Corporation
Project: Zone 3

Report Date: 10/20/17
Work Order: C17100505

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC2-C_171017A	
Lab ID:	**ICV**		Initial Calibration Verification Standard							10/17/17 16:41	
Chloride			9.92	mg/L	1.0	99	90	110			
Method:	**E300.0**									Batch: R228367	
Lab ID:	**ICB**		Method Blank				Run: IC2-C_171017A			10/17/17 16:58	
Chloride			ND	mg/L	0.03						
Lab ID:	**LFB**		Laboratory Fortified Blank				Run: IC2-C_171017A			10/17/17 17:16	
Chloride			10.5	mg/L	1.0	105	90	110			
Lab ID:	**C17100492-004AMS**		Sample Matrix Spike				Run: IC2-C_171017A			10/18/17 02:15	
Chloride			55.8	mg/L	1.0	105	80	120			
Lab ID:	**C17100492-004AMSD**		Sample Matrix Spike Duplicate				Run: IC2-C_171017A			10/18/17 02:33	
Chloride			58.2	mg/L	1.0	110	80	120	4.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.