WORTHINGTON MILLER ENVIRONMENTAL, LLC
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Fort Collins, Colorado 80526
970.672.8770

October 19, 2018

Ryan Schierman
Program Manager
Uranium Recovery Program
Wyoming Department of Environmental Quality
200 West 17th Street, Lower Level
Cheyenne, WY 82002

RE: Source Material License SUA-56; Western Nuclear, Inc., Split Rock Uranium Mill Tailings Facility; Surface Water and Groundwater Monitoring Report for Second Half of 2018

Dear Mr. Schierman:

The combined surface water and groundwater sampling results for the second half of 2018 for the Split Rock Uranium mill tailings facility are enclosed. This monitoring was performed as required by license conditions 24 and 74.

Figure 1 shows the location of the monitor wells and the surface water sample locations. The analytical results for all monitoring wells and surface water locations for the second half of 2018 are presented in Table 1. In addition, the results of the point of compliance wells, WN-5 and WN-21, along with the Protection Standards and ACLs specific to them per license conditions 74B and 74C are included in Table 1-A. Graphs are included in the enclosure, which show the temporal changes in water quality for key constituents. Laboratory data reports for each well and surface water location are also included.

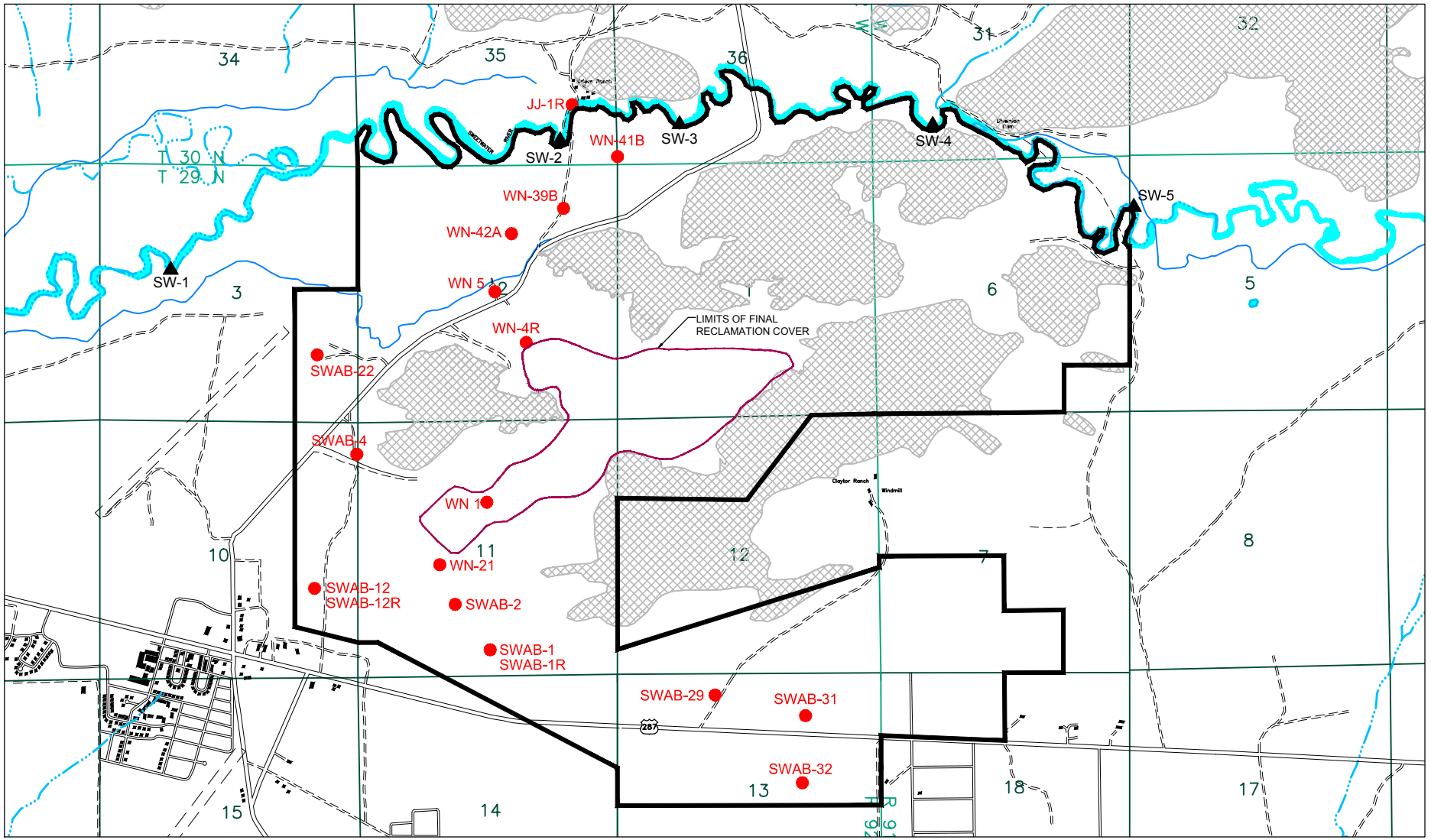
The surface water and groundwater quality data are consistent with historical values and all parameters meet the required limits in the license.

If you have any questions, please contact me at your convenience.

Sincerely,

Louis Miller
Consulting Engineer

Enclosure
cc. Steve Hall, Navarro
Tashina Jasso, DOE
Anne Thomas, WNI



WORTHINGTON
MILLER
ENVIRONMENTAL, LLC.

FIGURE 1
SURFACE WATER AND GROUND WATER MONITORING LOCATIONS

Date:	SEPTEMBER 2018
Project:	Jeffrey City
File:	SW-GW-MON-2018

Table 1. WNI Split Rock Mill - Groundwater and Surface Water Quality

Second Half 2018 (Sampled: 8/28/18 - 8/30/18)

Parameter[1]	JJ-1R	SWAB-1R	SWAB-2	SWAB-4	SWAB-12R	SWAB-22	SWAB-29	SWAB-31	SWAB-32	WN-1	WN-4R	WN-5	WN-21
Aluminum (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.5	<0.1	<0.1
Ammonia, Free as N[2] (mg/L)	<0.0008	<0.0006	0.0125	0.0047	<0.0024	0.0038	0.0030	0.0042	<0.0047	1.1967	0.3608	<0.0003	0.0347
Antimony (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Arsenic (mg/L)	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Beryllium (mg/L)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Cadmium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.003	0.016	<0.001	<0.001
Chloride (mg/L)	12	26	18	35	17	23	6	10	12	27	75	102	15
Conductivity Field (mS/cm)	596	2650	1804	1364	503	515	436	397	449	3610	5310	3240	524
Fluoride (mg/L)	0.5	0.1	0.6	0.3	0.2	0.3	0.2	0.3	0.3	1.8	5.7	<0.1	0.2
Lead (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese (mg/L)	0.24	<0.05	0.31	0.08	<0.05	<0.05	0.08	<0.05	<0.05	23.2	87.3	0.58	0.18
Molybdenum (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	0.41	<0.05	<0.05
Nitrate + Nitrite as N (mg/L)	<0.01	129	120	23	0.48	0.15	0.05	0.46	1.37	27.5	204	43.8	2.06
pH Field (std units)	7.51	7.37	7.53	7.68	8.01	8.06	7.84	7.63	8.32	7.05	6.46	7.09	7.94
pH Lab (std units)	7.22	7.32	7.07	7.37	7.7	7.47	7.5	7.32	7.95	6.81	6.25	6.88	7.67
Radium-226 (pCi/L)	0.3	0.2	<0.2	0.7	<0.2	<0.2	<0.2	<0.2	0.2	0.7	<0.2	<0.2	<0.2
Radium-228 (pCi/L)	2.6	<1.8	<2	5.7	2.7	2.6	<2.3	2.5	<2.3	3	<2.2	<2.5	<2.5
Selenium (mg/L)	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	0.011	0.009	0.017	0.055	0.016	<0.005
Sulfate (mg/L)	36	1040	582	504	82	54	43	26	46	2640	2770	1680	80
TDS (mg/L)	412	2630	1780	1210	362	351	304	260	304	3470	4490	3700	370
Tempurature Field (C)	16.6	13.9	12.2	23.9	13.3	11	14.5	15.4	10.8	13.2	13.2	13.8	13.1
Thallium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.014	0.001	<0.001	<0.001
Thorium-230 (pCi/L)	<0.09	<0.1	<0.09	<0.1	<0.09	0.2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.3	<0.2
Uranium (mg/L)	0.01	1.75	0.68	0.87	0.034	0.023	0.027	0.027	0.12	1.41	0.079	1.52	0.051
Water Elevation (ft)	NA	6294.95	6292.65	6291.35	6298.3	6288.45	6277.2	6269.95	6271.85	6294.15	6285.3	6280.7	6293.85

Notes:

(1) All metals are dissolved analyte concentrations.

(2) Free ammonia concentration calculated from the laboratory reported total ammonia concentration and field measured pH, consistent with the method used to determine the ACL for ammonia.

(3) Well SWAB-1R installed as replacement for SWAB-1. Water Elevation taken at SWAB-1.

(4) Well SWAB-12R installed as replacement for SWAB-12. Water Elevation taken at SWAB-12.

Table 1. WNI Split Rock Mill - Groundwater and Surface Water Quality

Second Half 2018 (Sampled: 8/28/18 - 8/30/18)

Parameter[1]	WN-39B	WN-41B	WN-42A	SW-1	SW-2	SW-3	SW-4	SW-5
Aluminum (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ammonia, Free as N[2] (mg/L)	<0.0045	<0.0073	<0.0004	<0.0152	<0.0157	<0.0133	<0.0142	<0.0167
Antimony (mg/L)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Arsenic (mg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Beryllium (mg/L)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Cadmium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloride (mg/L)	18	409	67	11	14	15	16	16
Conductivity Field (mS/cm)	5940	2260	3580	362	372	389	399	397
Fluoride (mg/L)	0.2	1.1	<0.1	0.3	0.3	0.3	0.3	0.3
Lead (mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese (mg/L)	<0.05	<0.05	0.19	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate + Nitrite as N (mg/L)	8.6	0.14	<0.01	<0.01	<0.01	0.03	<0.01	<0.01
pH Field (std units)	8.29	8.53	7.23	8.94	8.96	8.86	8.9	9
pH Lab (std units)	7.86	8.11	6.99	8.23	8.39	8.31	8.4	8.47
Radium-226 (pCi/L)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Radium-228 (pCi/L)	<2.7	<2.1	<3	<2.7	<2.6	<2.6	<2.7	<2
Selenium (mg/L)	<0.005	<0.005	0.074	<0.005	<0.005	<0.005	<0.005	<0.005
Sulfate (mg/L)	109	391	1900	40	43	46	48	49
TDS (mg/L)	433	1450	4190	244	261	268	275	278
Tempurature Field (C)	11.4	11.1	13.1	17.0	16.4	16.6	17.0	18.0
Thallium (mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium-230 (pCi/L)	<0.1	<0.09	<0.2	<0.1	<0.2	<0.2	<0.2	<0.1
Uranium (mg/L)	0.111	0.008	1.01	0.004	0.005	0.007	0.008	0.008
Water Elevation (ft)	6272.5	6270.9	6275.4	NA	NA	NA	NA	NA

Notes:

(1) All metals are dissolved analyte concentrations.

(2) Free ammonia concentration calculated from the laboratory reported total ammonia concentration and field measured pH, consistent with the method used to determine the ACL for ammonia.

(3) Well SWAB-1R installed as replacement for SWAB-1. Water Elevation taken at SWAB-1.

(4) Well SWAB-12R installed as replacement for SWAB-12. Water Elevation taken at SWAB-12.

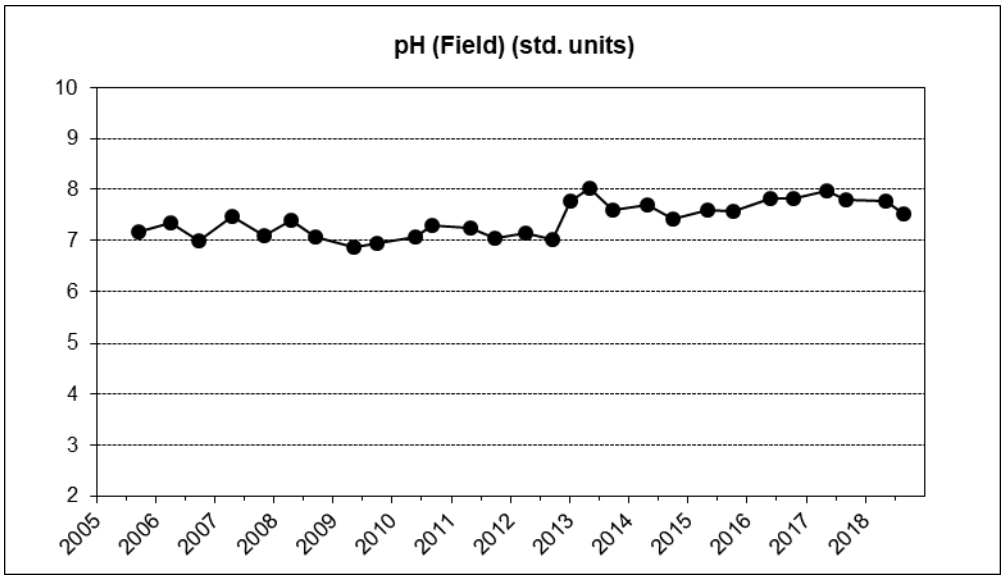
Table 1-A. WNI Split Rock Mill - Point of Compliance Well Water Quality
Second Half 2018 - Sampled 8/28/2018 - 8/30/2018

Well	pH-Field (std units)	Cond -Field (µS/cm)	Temp - Field (C)	Water Elevation (ft)	Aluminum (mg/L)	Ammonia, free as N (mg/L)[1]	Antimony (mg/L)	Arsenic (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Lead (mg/L)
Protection Std/ACL (WN-5)					37	0.50	0.006	0.05	0.01	0.01		4	0.05
WN-5	7.09	3240	13.8	6280.7	<0.1	<0.0003	<0.003	<0.01	<0.004	<0.001	102	<0.1	<0.005
Protection Std/ACL (WN-21)					37	0.69	0.006	0.05	0.01	0.01		4	0.05
WN-21	7.94	524	13.1	6293.85	<0.1	0.0347	<0.003	<0.01	<0.004	<0.001	15	0.2	<0.005

Well	Manganese (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Nitrate + Nitrite as N (mg/L)	Radium-226 (pCi/L)	Radium-228 (pCi/L)	Selenium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Thallium (mg/L)	Thorium-230 (pCi/L)	Uranium (mg/L)
Protection Std/ACL (WN-5)	225	0.66	0.05	317	7.2		0.05			0.002	0.95	4.8
WN-5	0.58	<0.1	<0.05	43.8	<0.2	<2.5	0.016	1680	3700	<0.001	<0.3	1.52
Protection Std/ACL (WN-21)	35	0.22	0.05	70.7	19.9		0.05			0.002	0.95	3.4
WN-21	0.18	<0.1	<0.05	2.06	<0.2	<2.5	<0.005	80	370	<0.001	<0.2	0.051

(1) Free ammonia concentration calculated from the laboratory reported total ammonia concentration and field measured pH, consistent with the method used to determine the ACL for ammonia. For comparison, the ammonia ACL is expressed as NH3 -N, converted from NH3 values stated in licence conditions 74B and 74C.

JJ-1R


pH (Field) (std. units)
10
9
8
7
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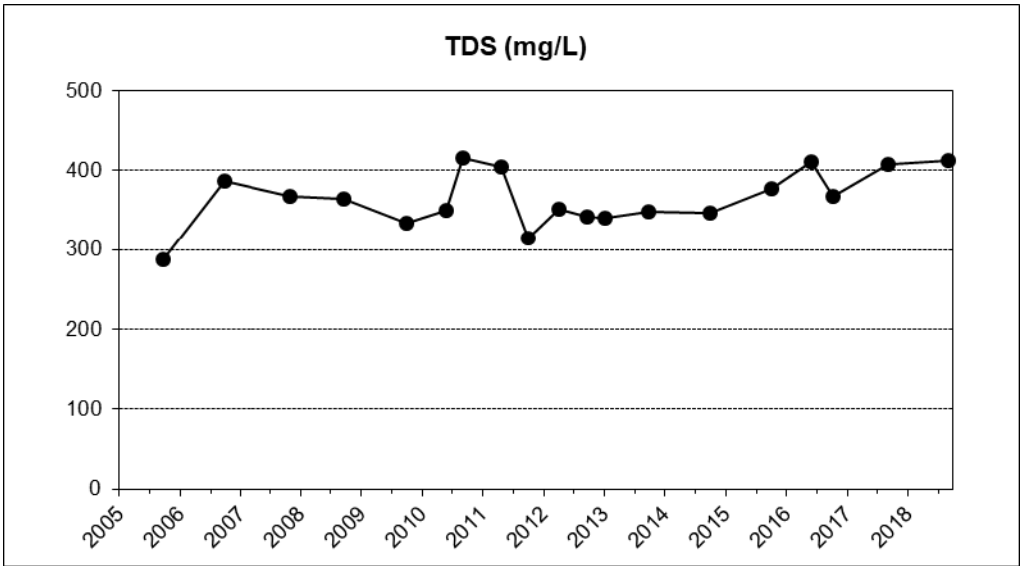
TDS (mg/L)
500
400
300
200
100
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2005
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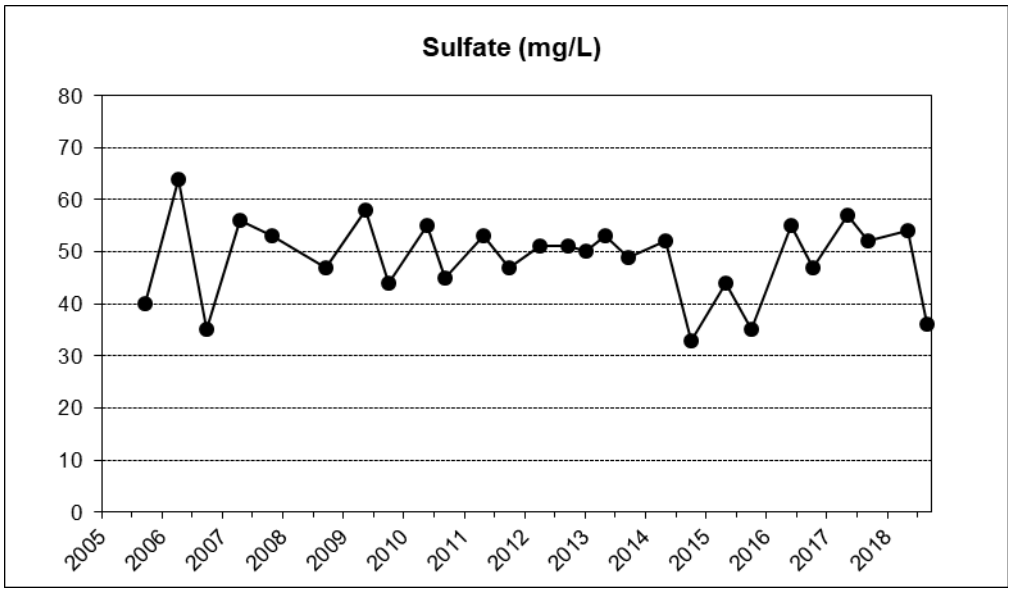
2018

JJ-1R


Sulfate (mg/L)
80
70
60
50
40
30
20
10
0
2005
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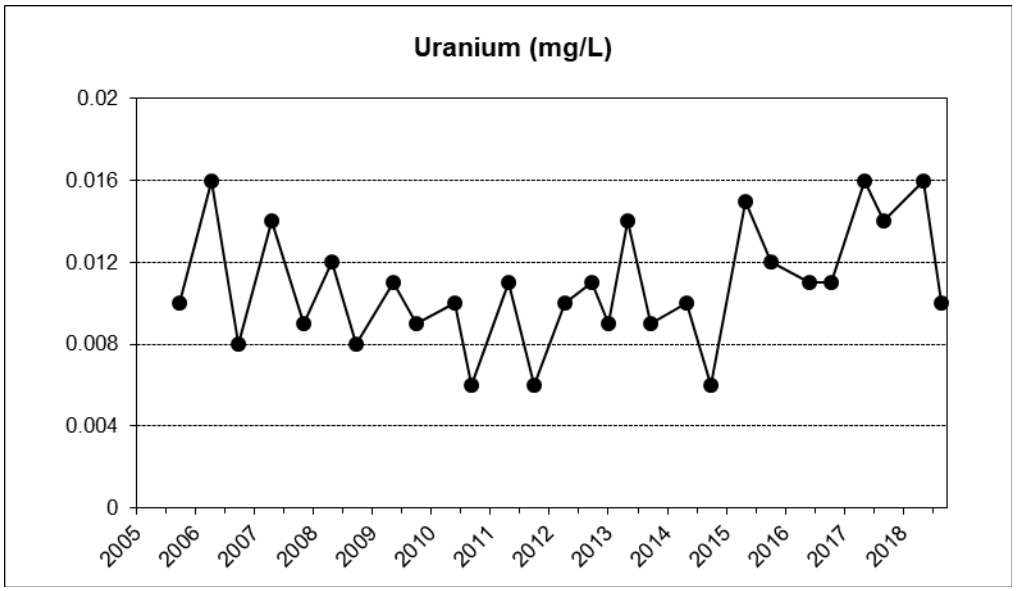
Uranium (mg/L)
0.02
0.016
0.012
0.008
0.004
0
2005
2006
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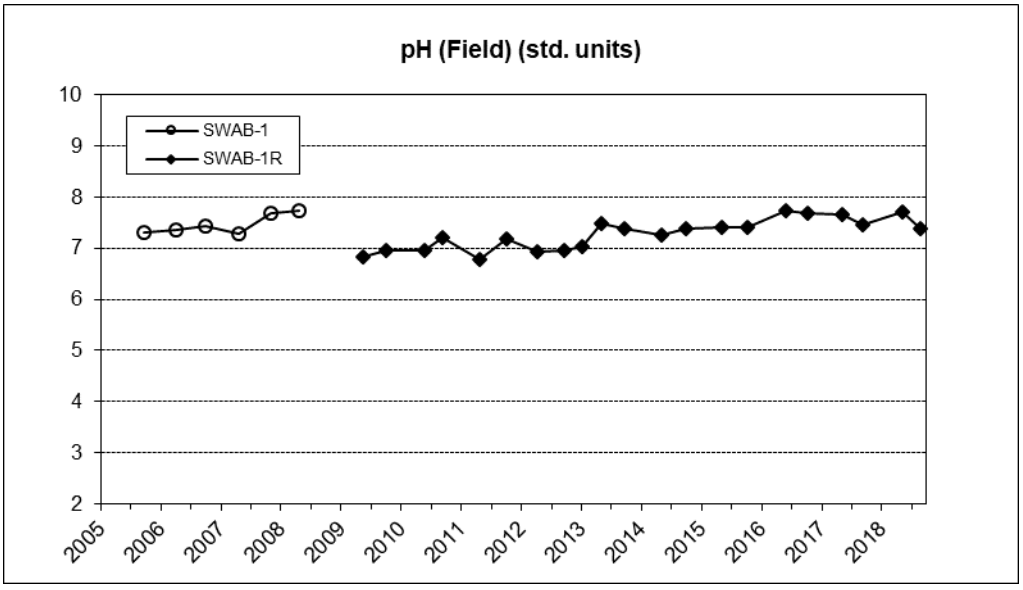
2018

SWAB-1 and 1R


pH (Field) (std. units)
SWAB-1
SWAB-1R
10
9
8
7
6
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4
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2005
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2011
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2014
2015
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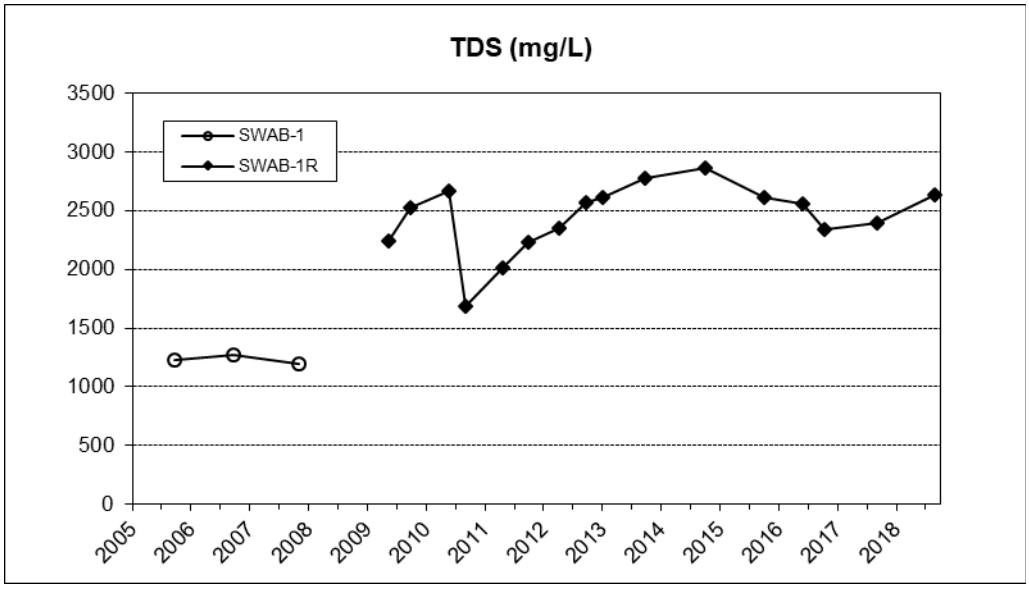
TDS (mg/L)
SWAB-1
SWAB-1R
3500
3000
2500
2000
1500
1000
500
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2005
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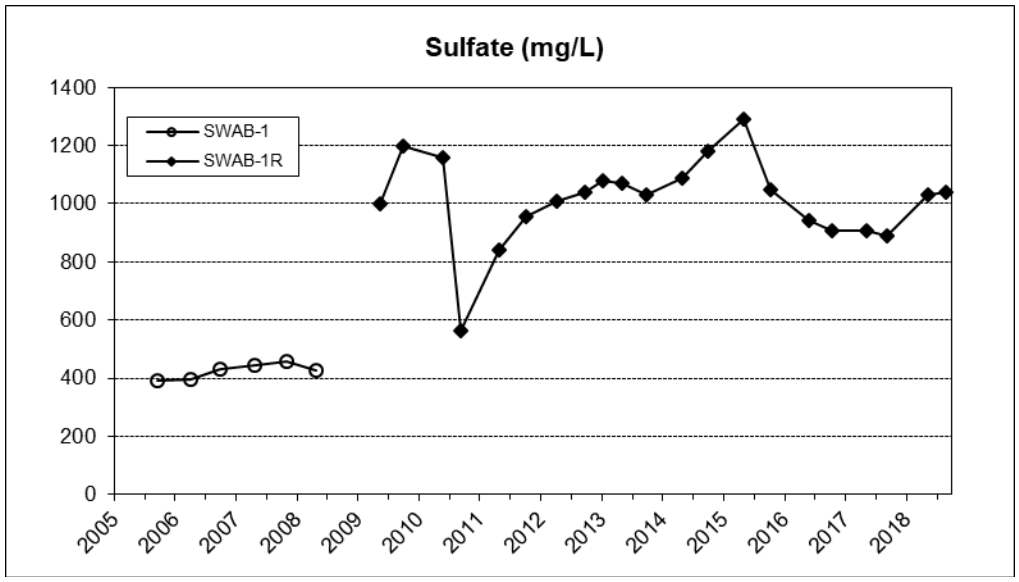
2018

SWAB-1 and 1R


Sulfate (mg/L)
SWAB-1
SWAB-1R
1400
1200
1000
800
600
400
200
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
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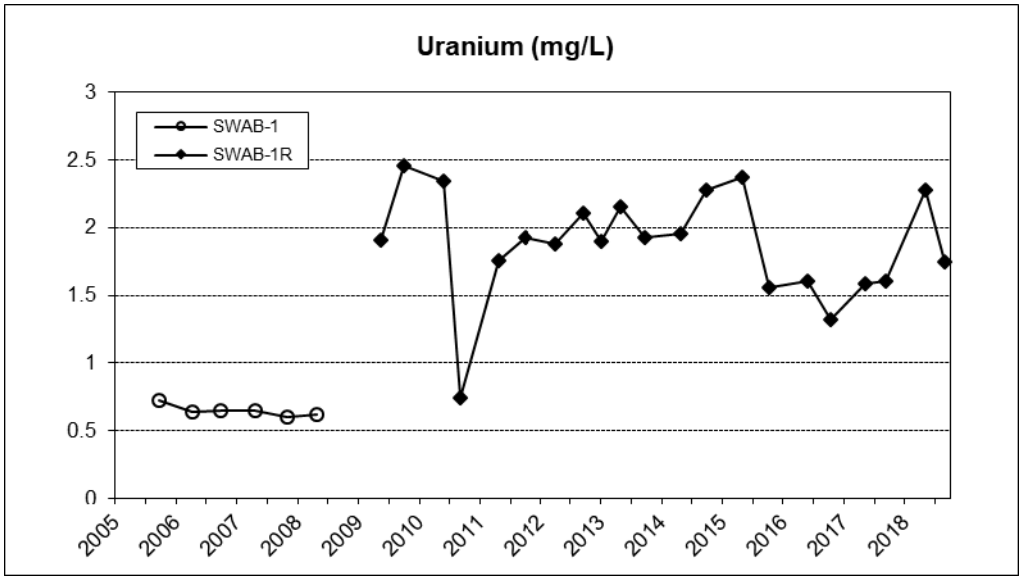
2018


Uranium (mg/L)
SWAB-1
SWAB-1R
3
2.5
2
1.5
1
0.5
0
2005
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2007
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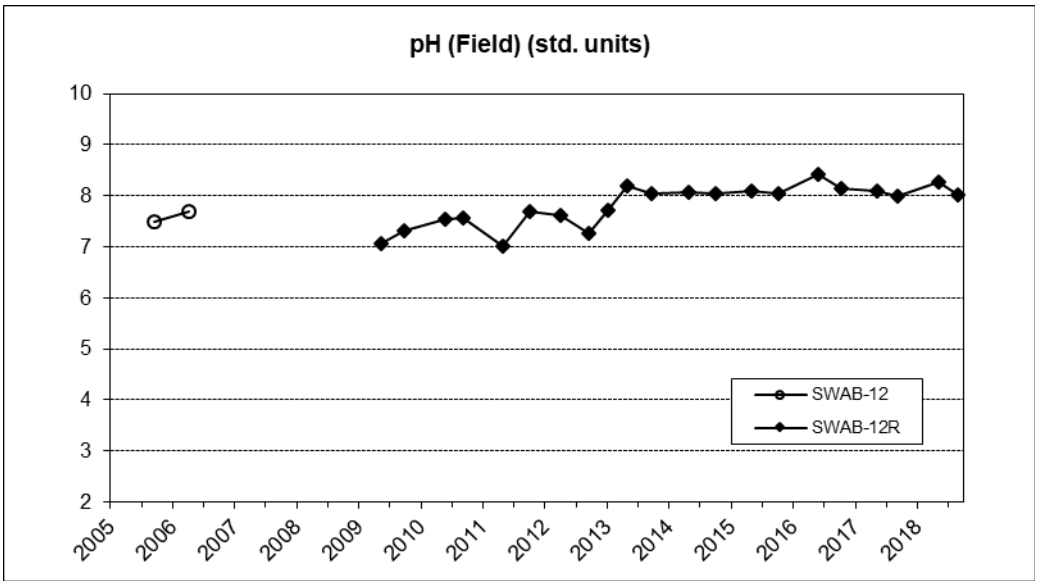
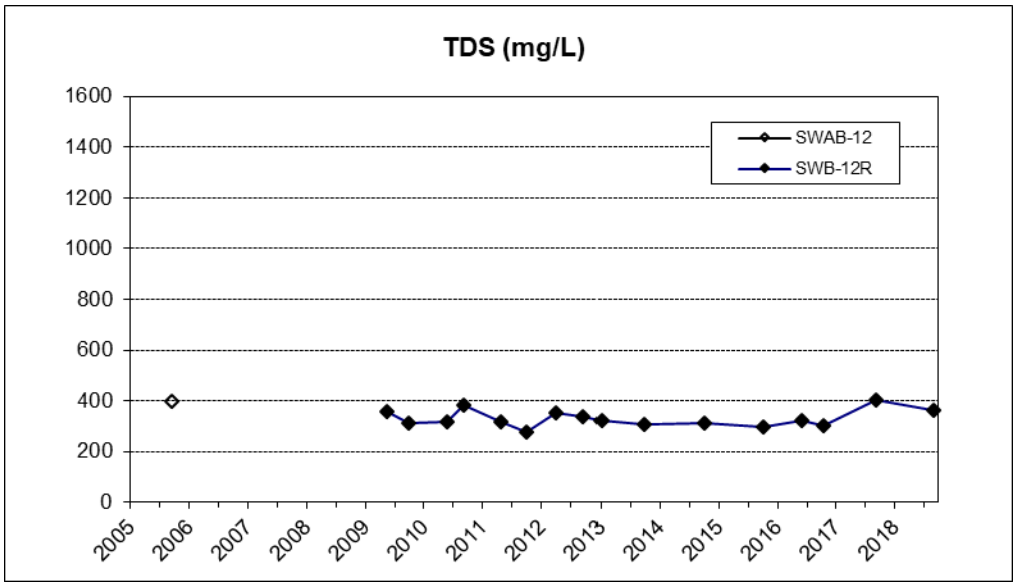
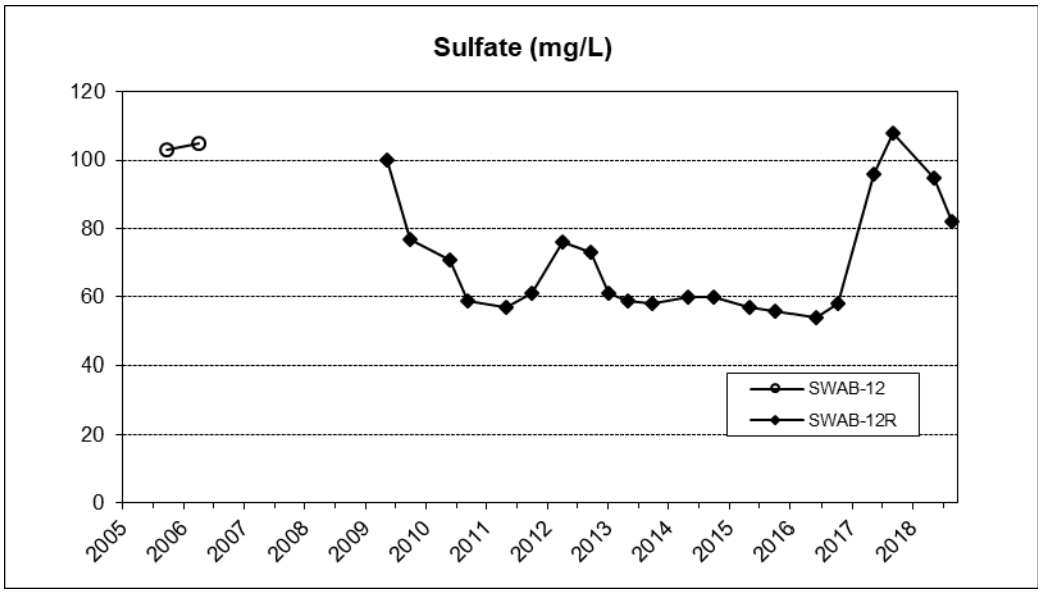
2018

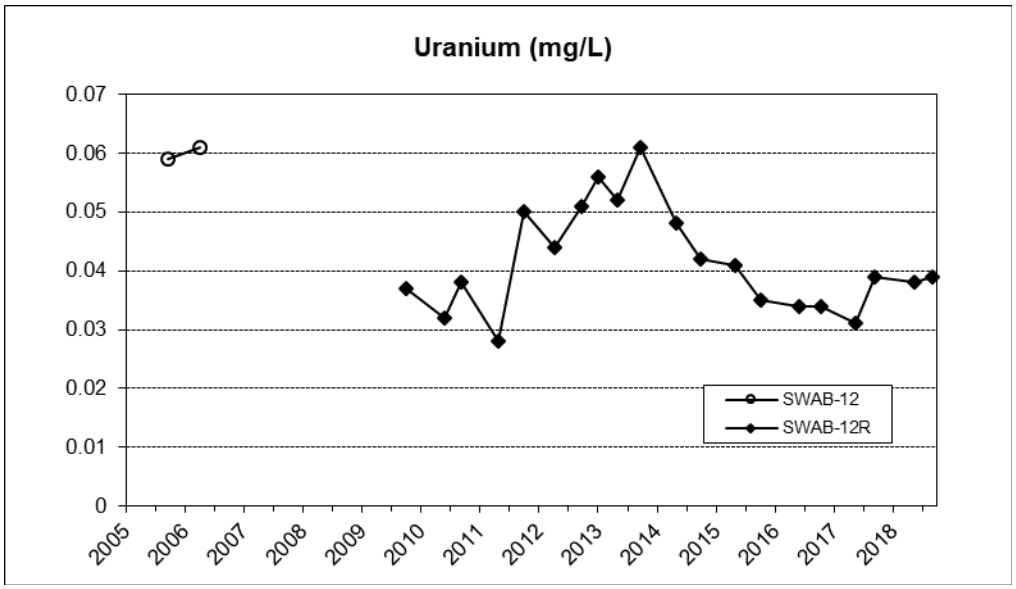
SWAB-12 and 12R



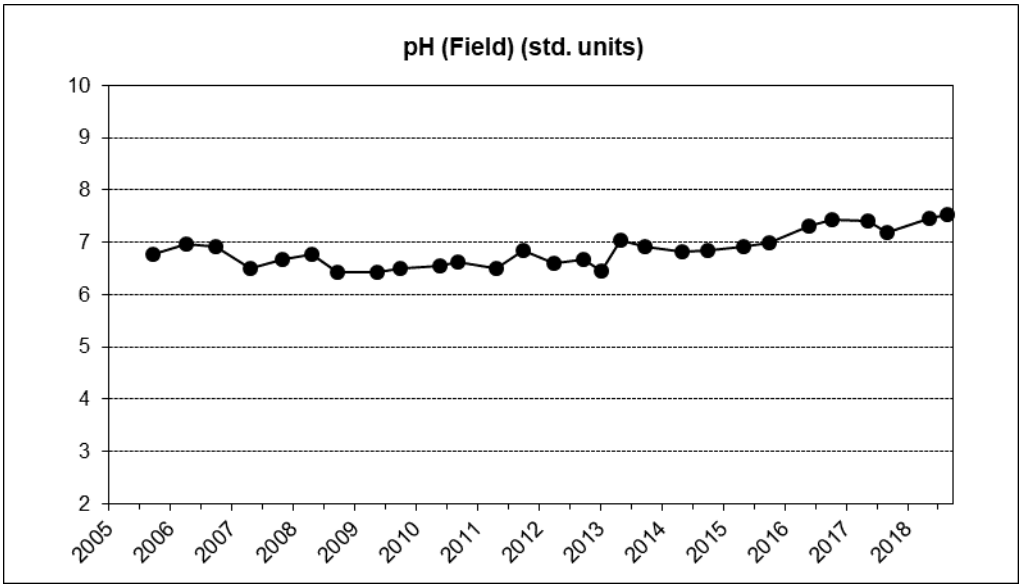


SWAB-12 and 12R





SWAB-2


pH (Field) (std. units)
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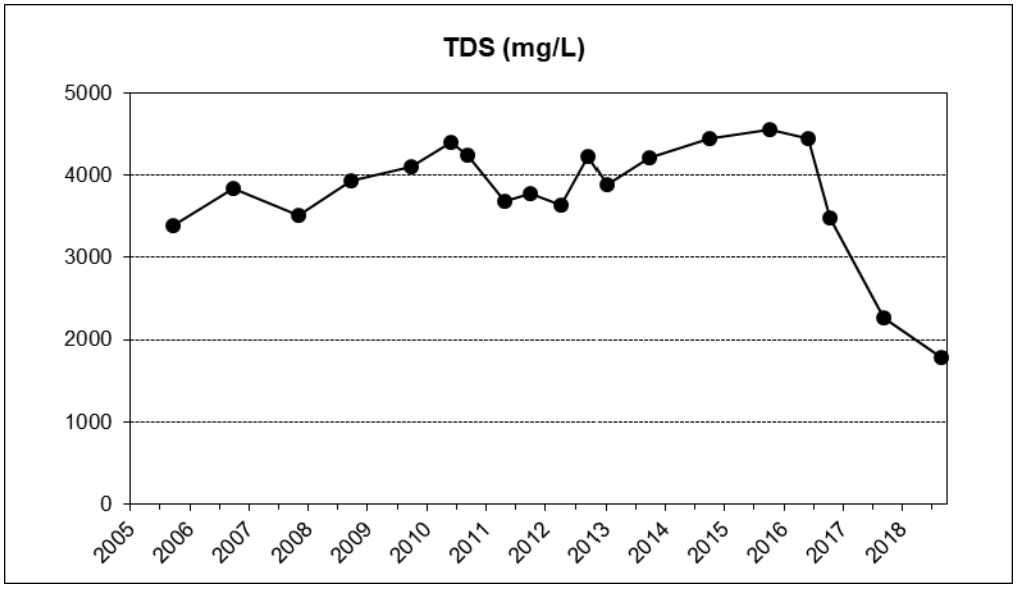
TDS (mg/L)
5000
4000
3000
2000
1000
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2005
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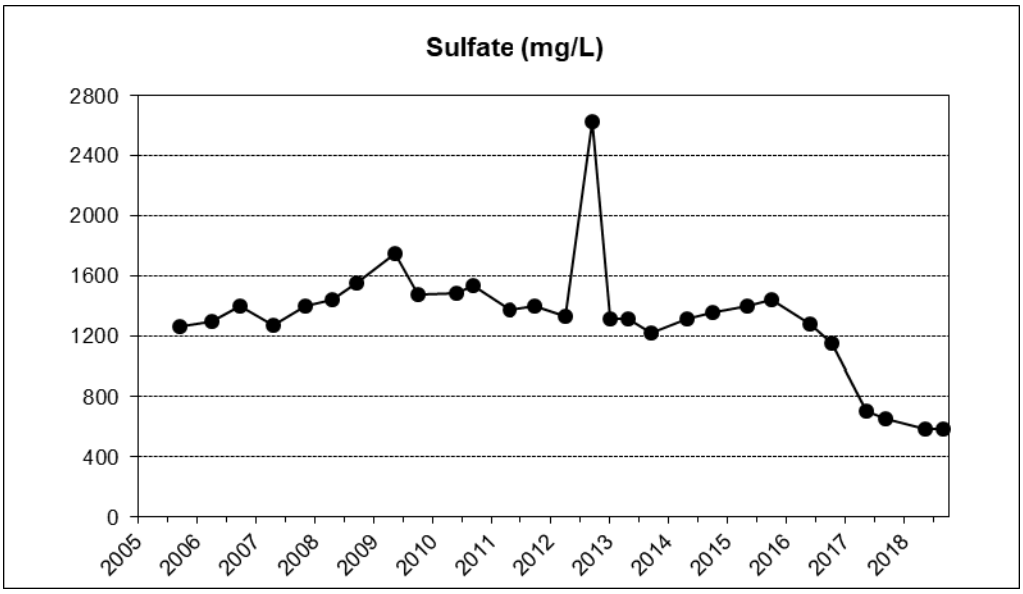
SWAB-2


Sulfate (mg/L)
2800
2400
2000
1600
1200
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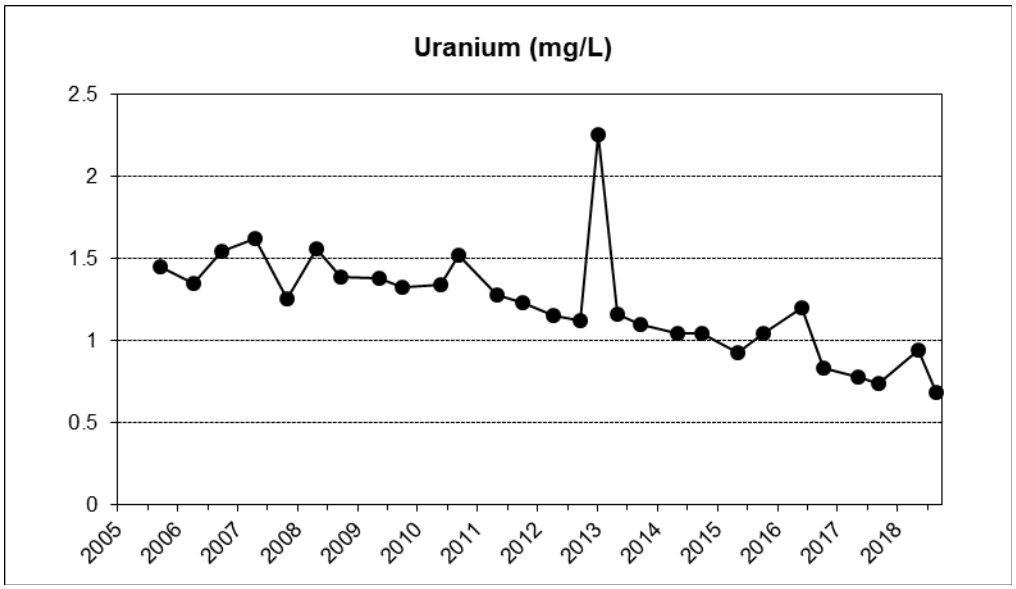
Uranium (mg/L)
2.5
2
1.5
1
0.5
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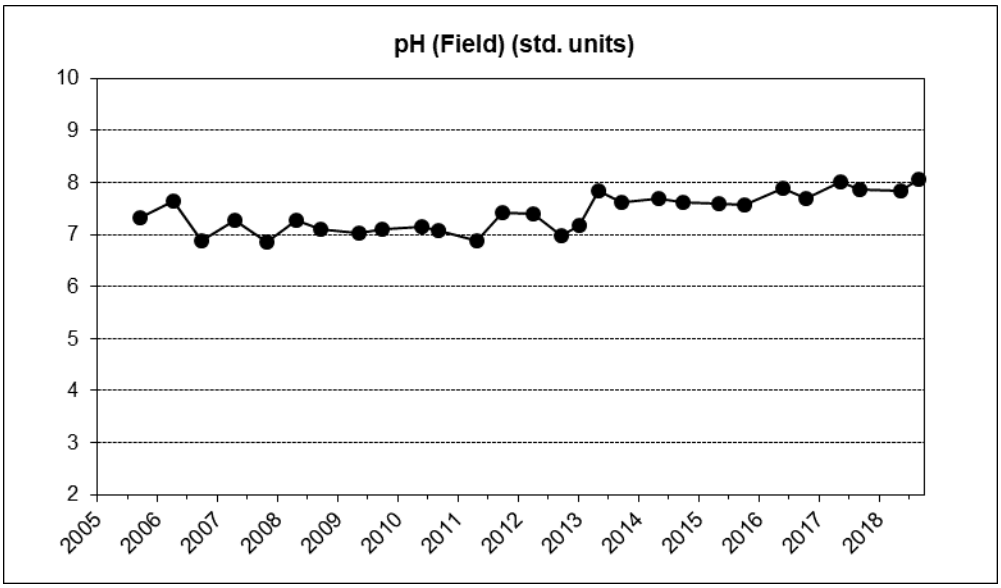
SWAB-22


pH (Field) (std. units)
10
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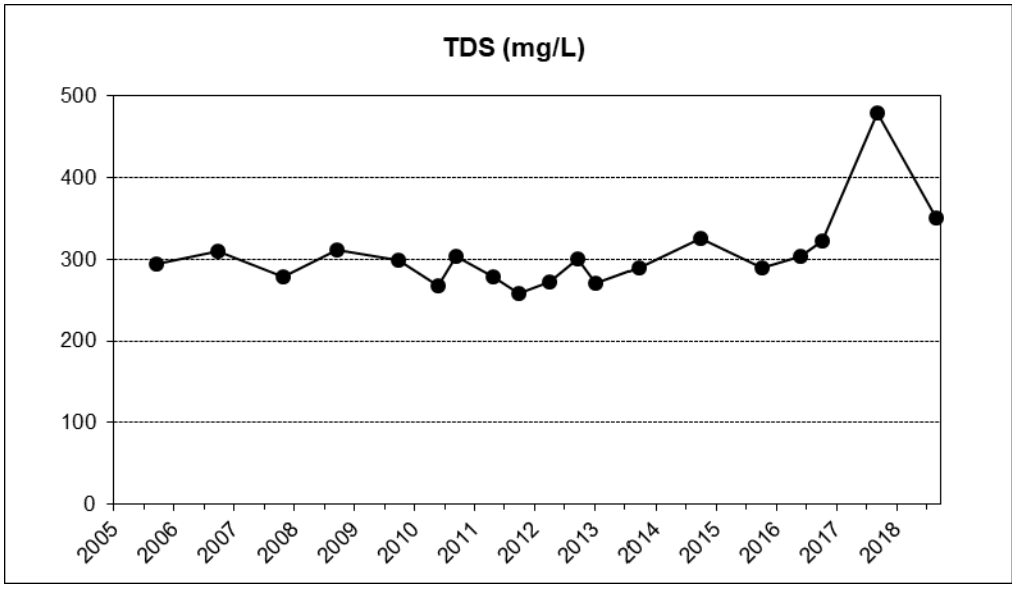
TDS (mg/L)
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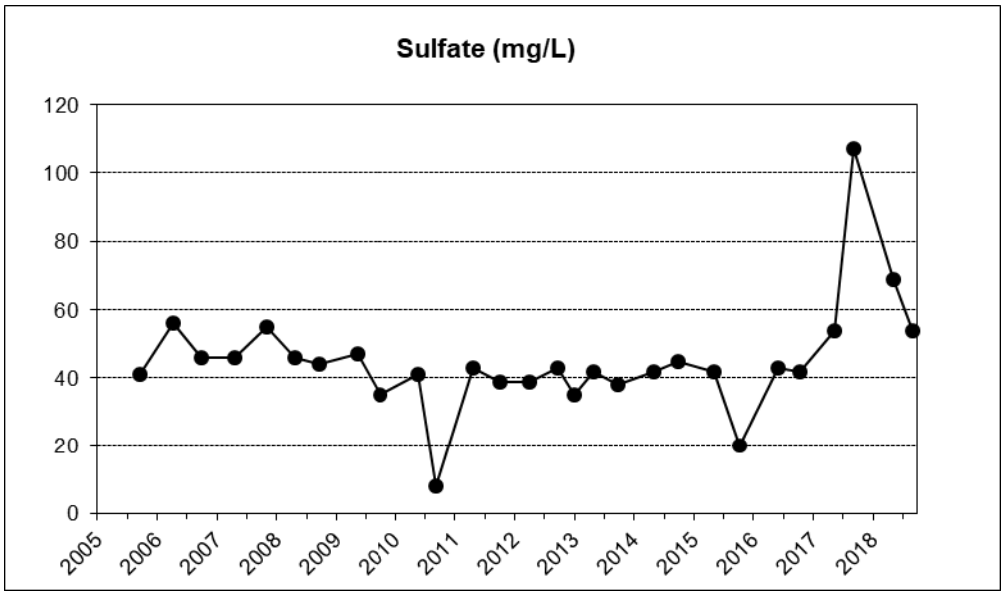
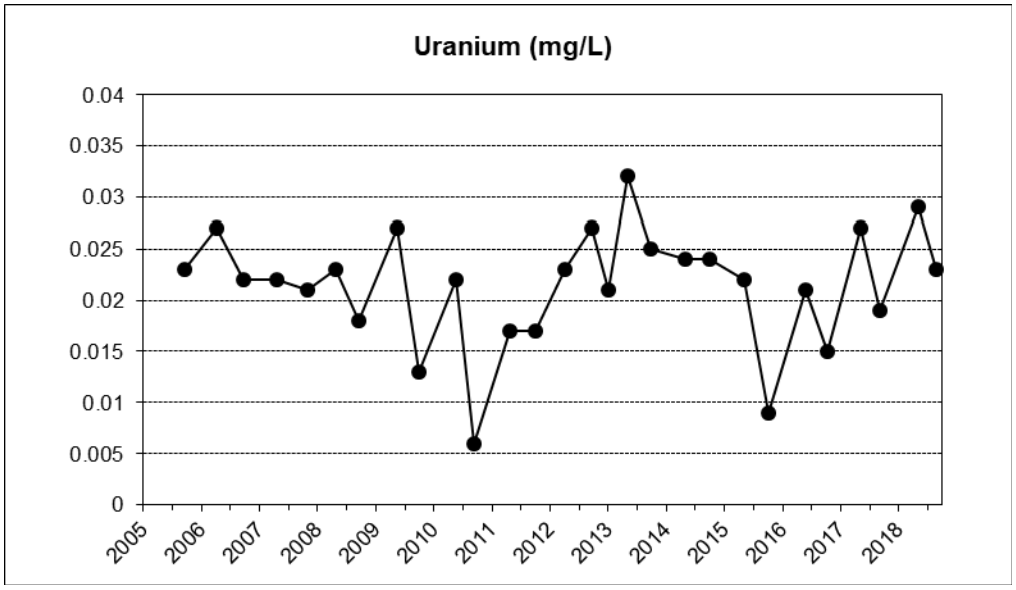
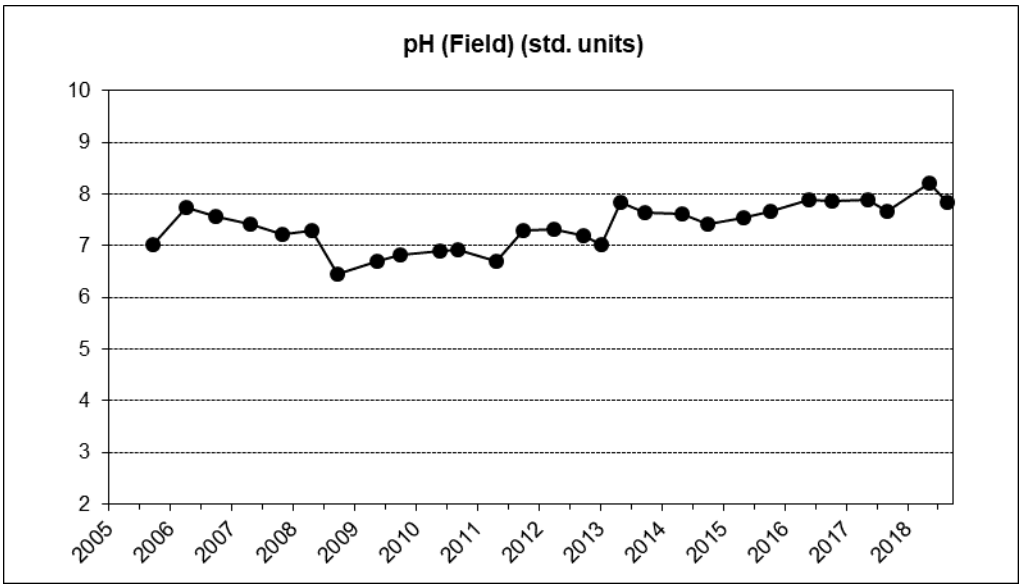
2015
2016
2017
2018

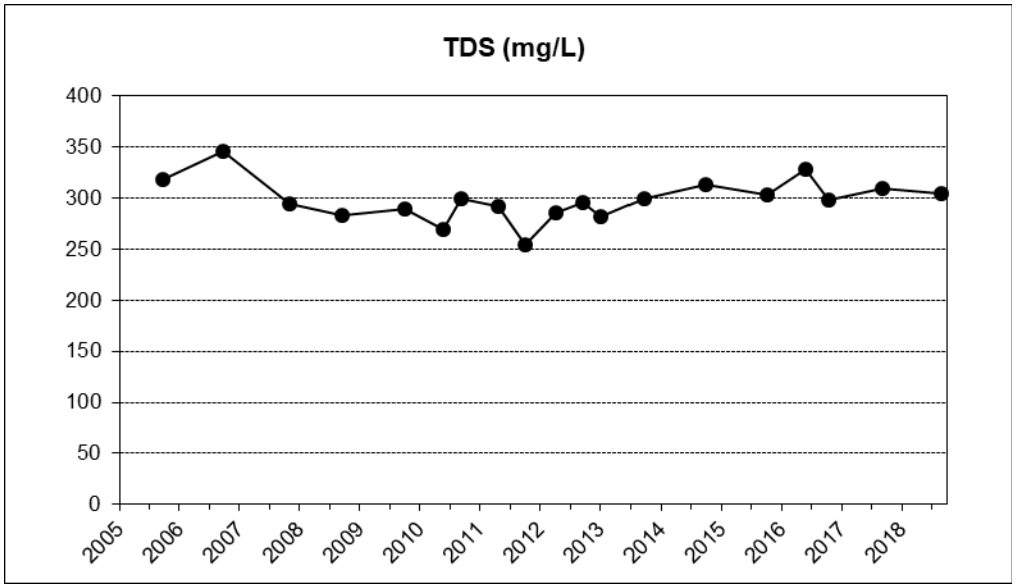
SWAB-22


Sulfate (mg/L)
120
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

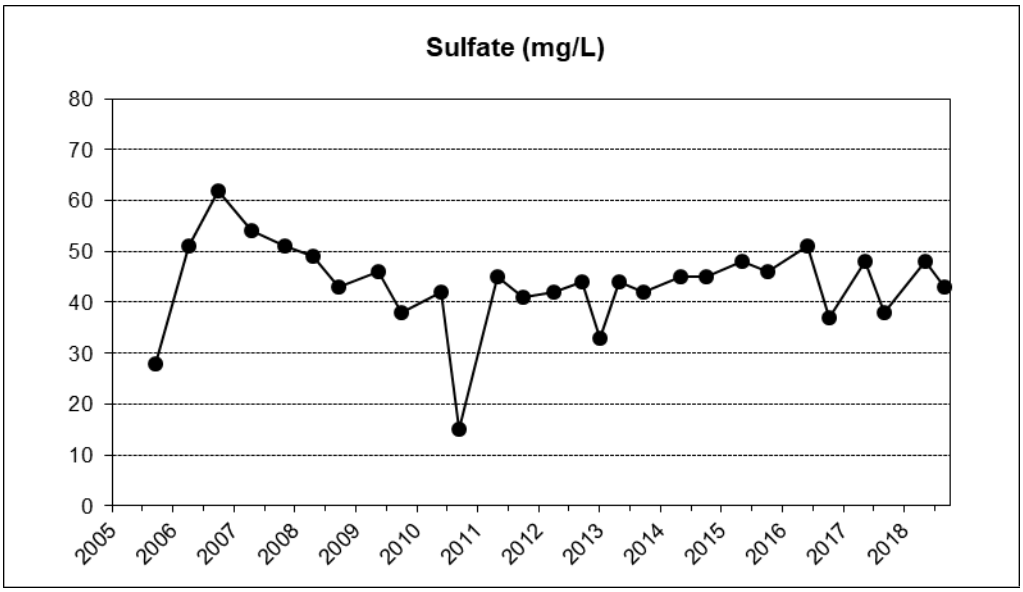

Uranium (mg/L)
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

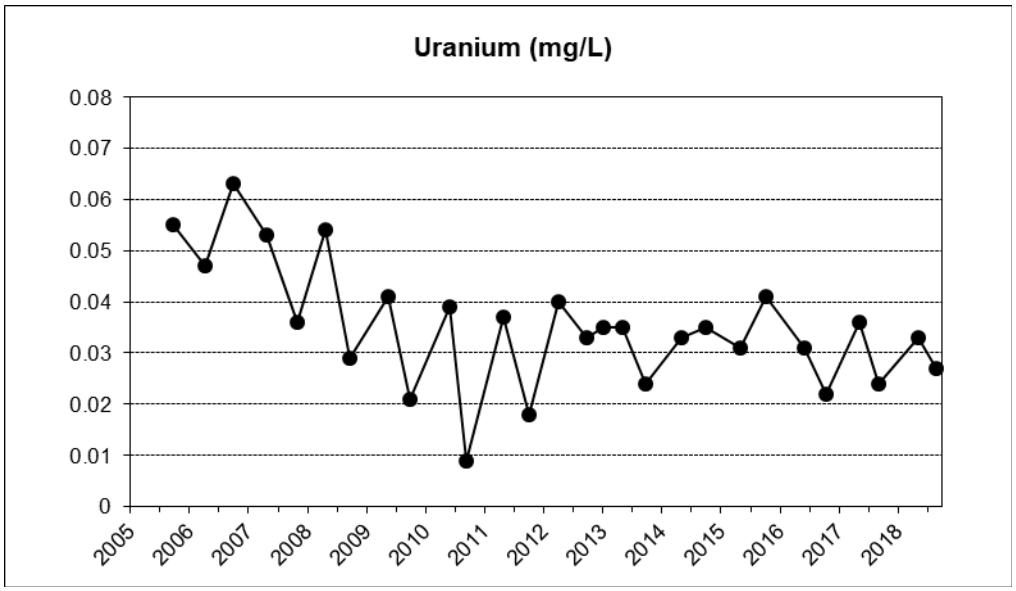
SWAB-29


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

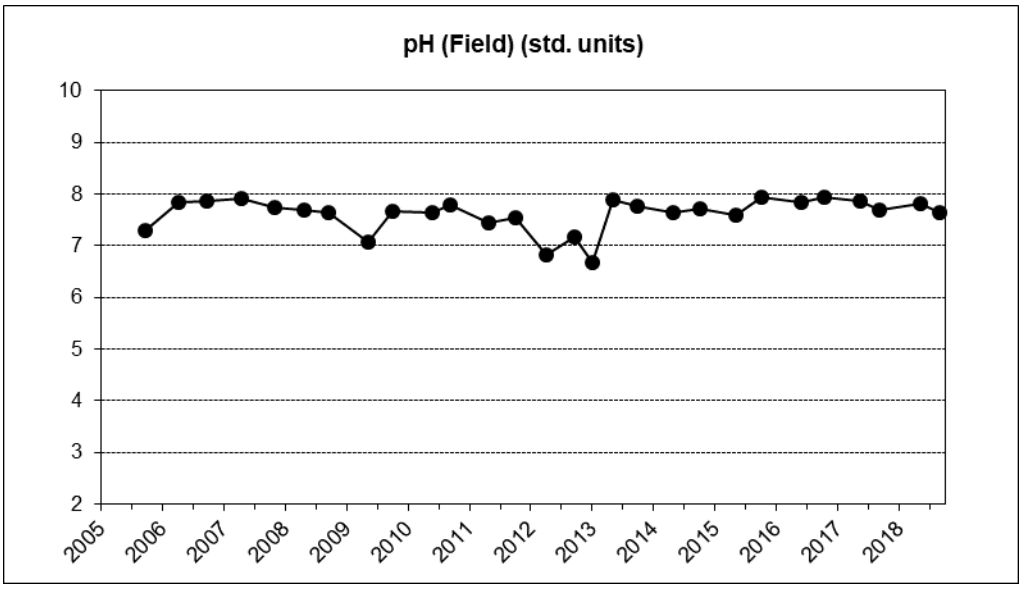

TDS (mg/L)
400
350
300
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

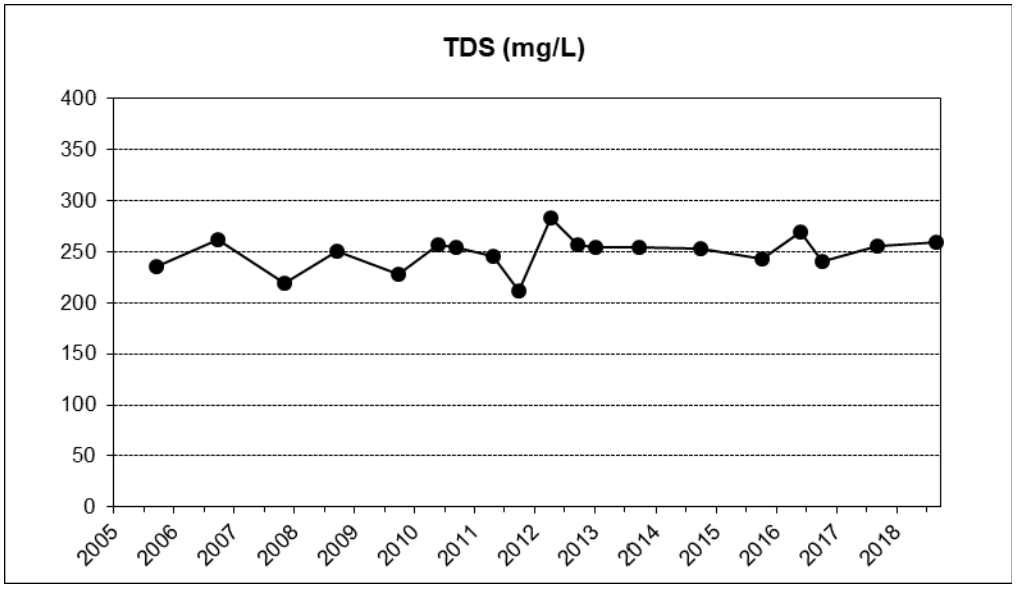
SWAB-29


Sulfate (mg/L)
80
70
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

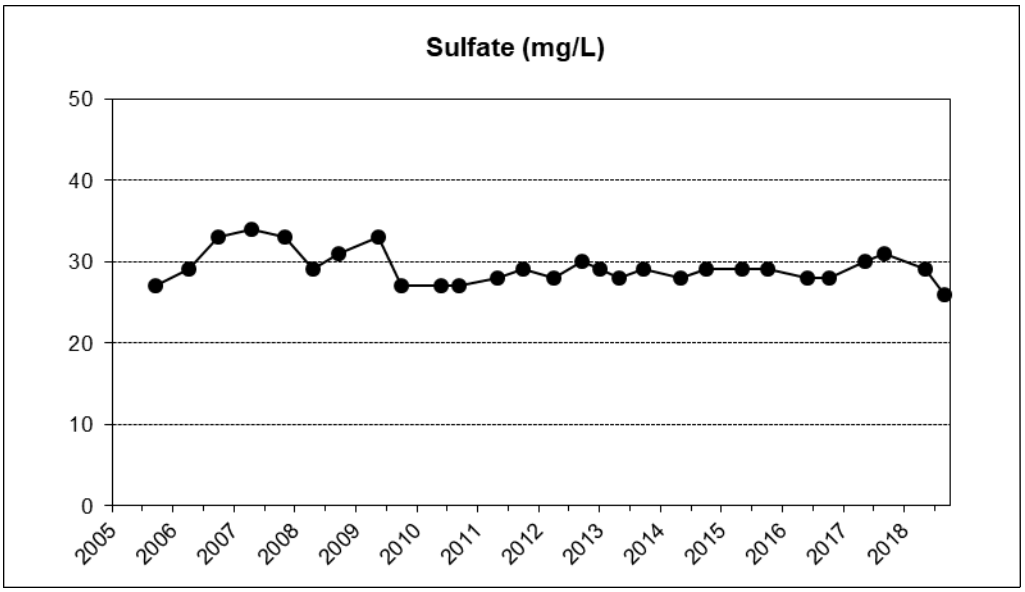

Uranium (mg/L)
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

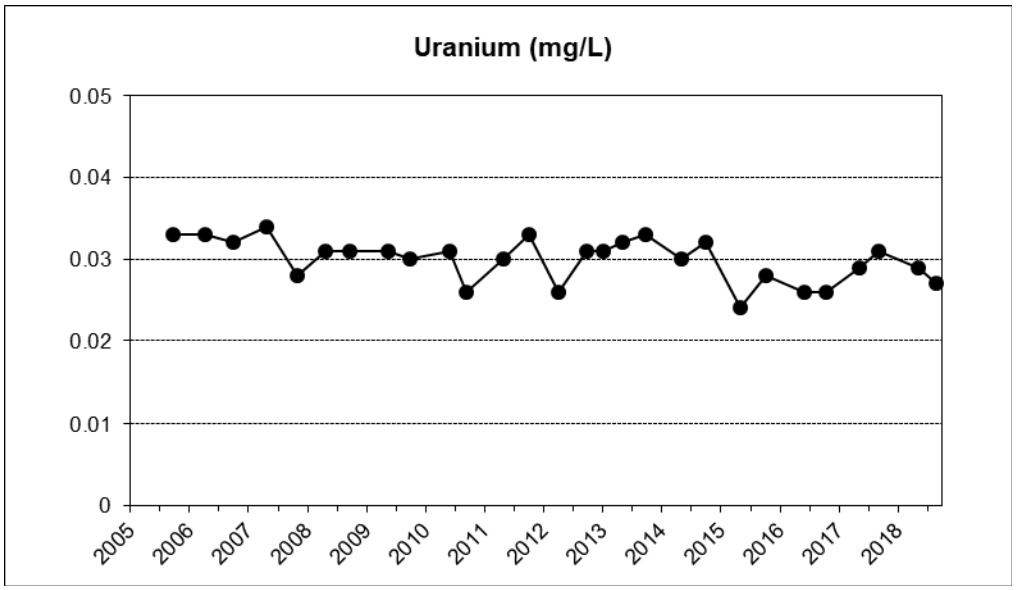
SWAB-31


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

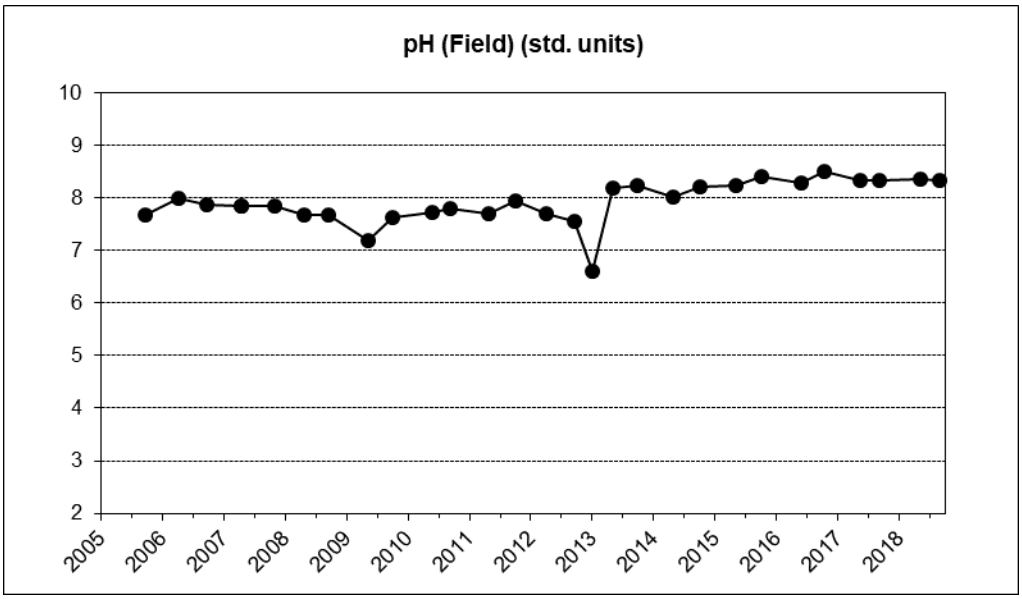

TDS (mg/L)
400
350
300
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

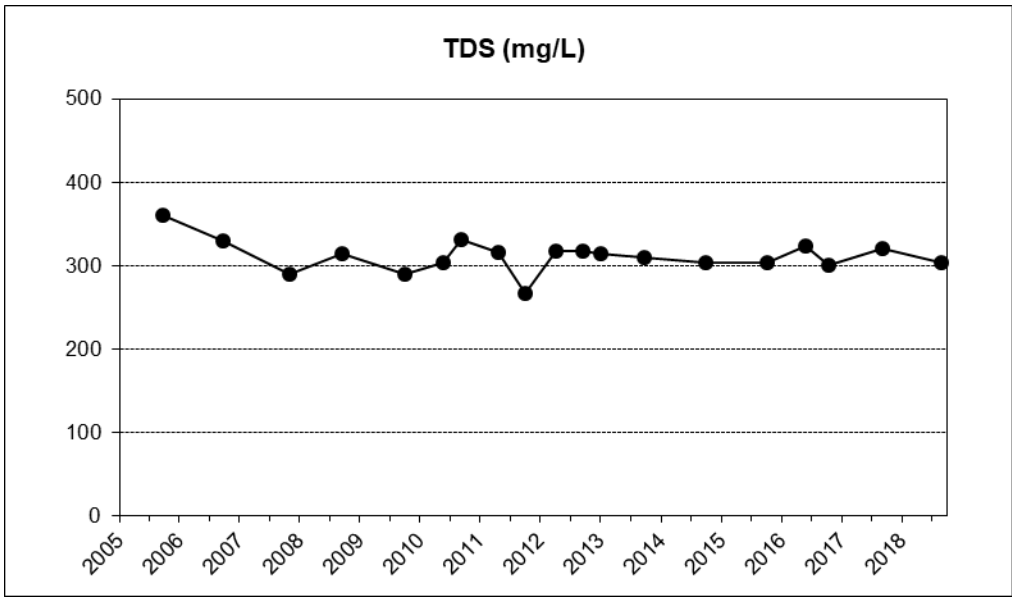
SWAB-31


Sulfate (mg/L)
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

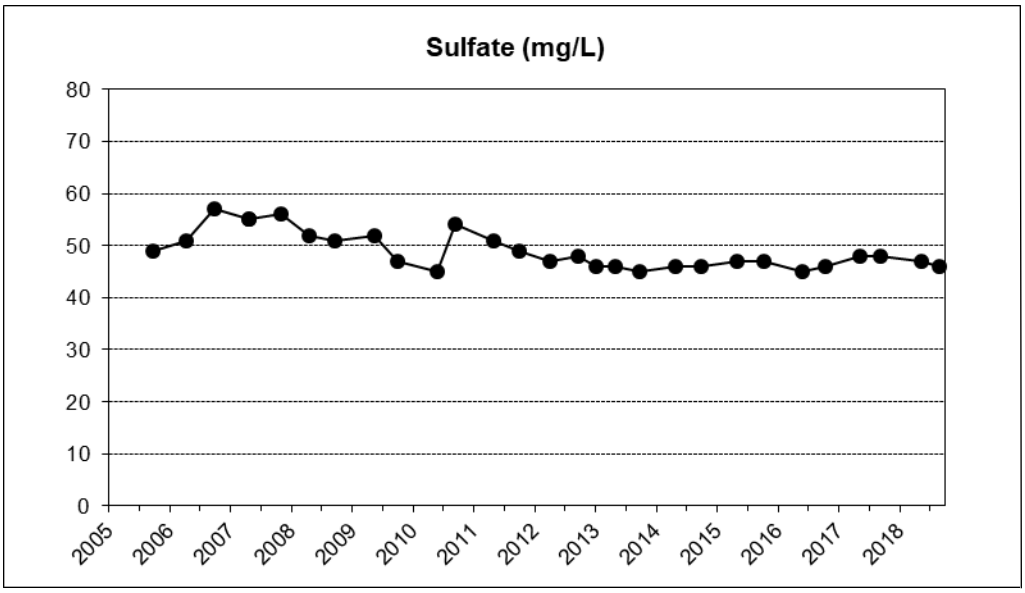

Uranium (mg/L)
0.05
0.04
0.03
0.02
0.01
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

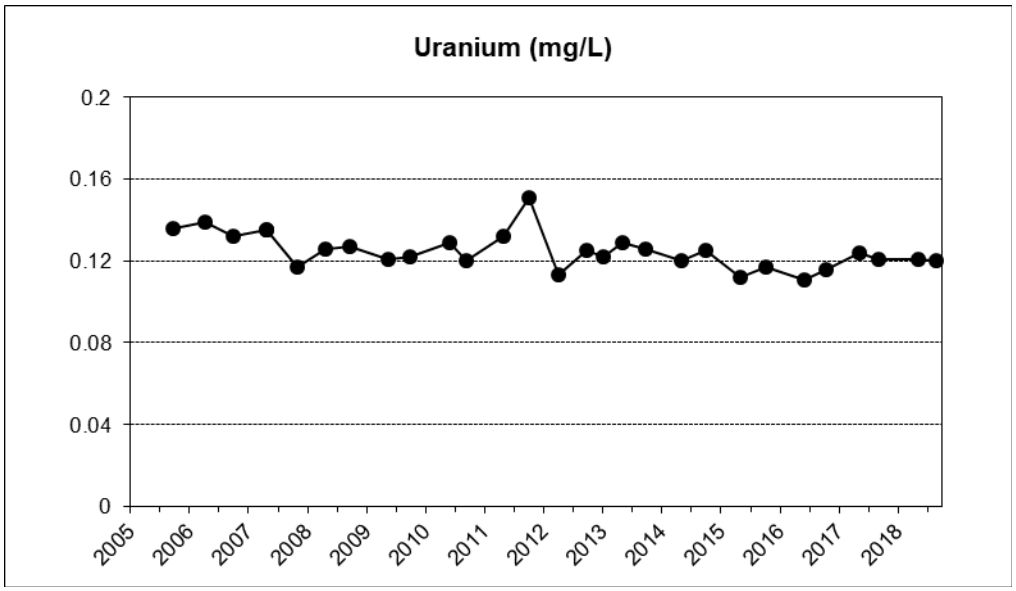
SWAB-32


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

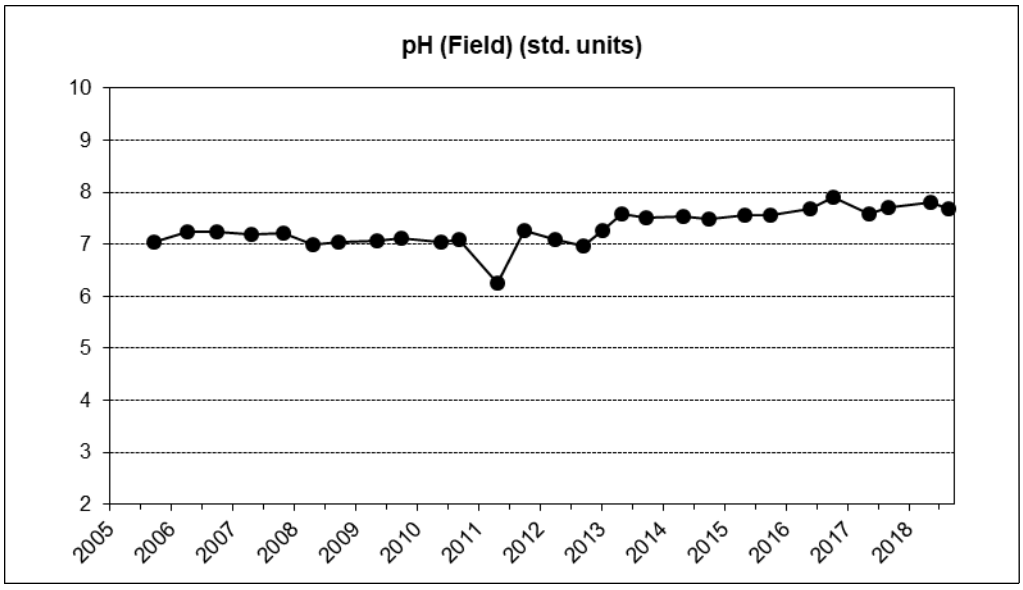

TDS (mg/L)
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

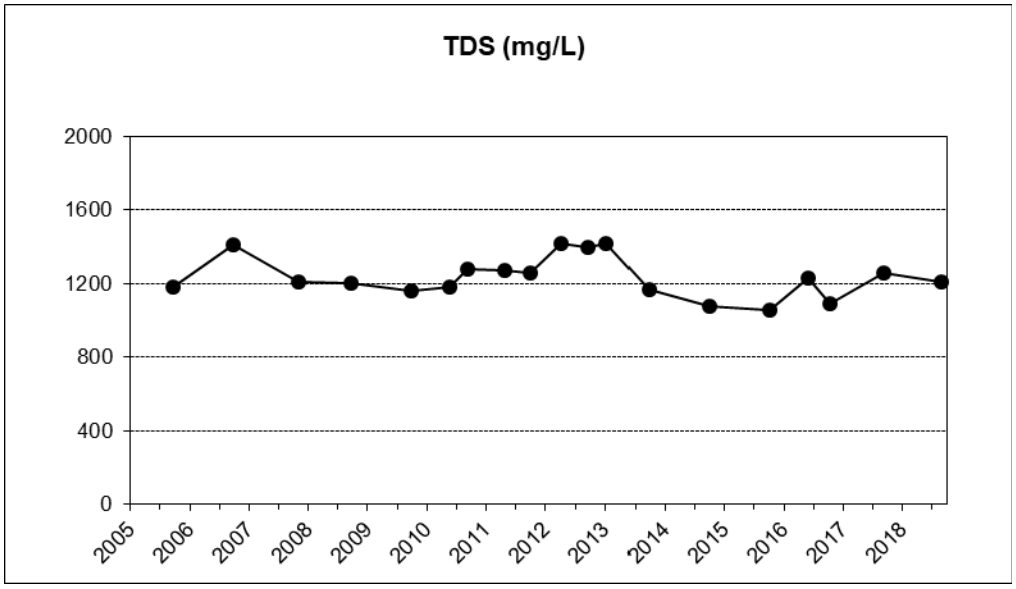
SWAB-32


Sulfate (mg/L)
80
70
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

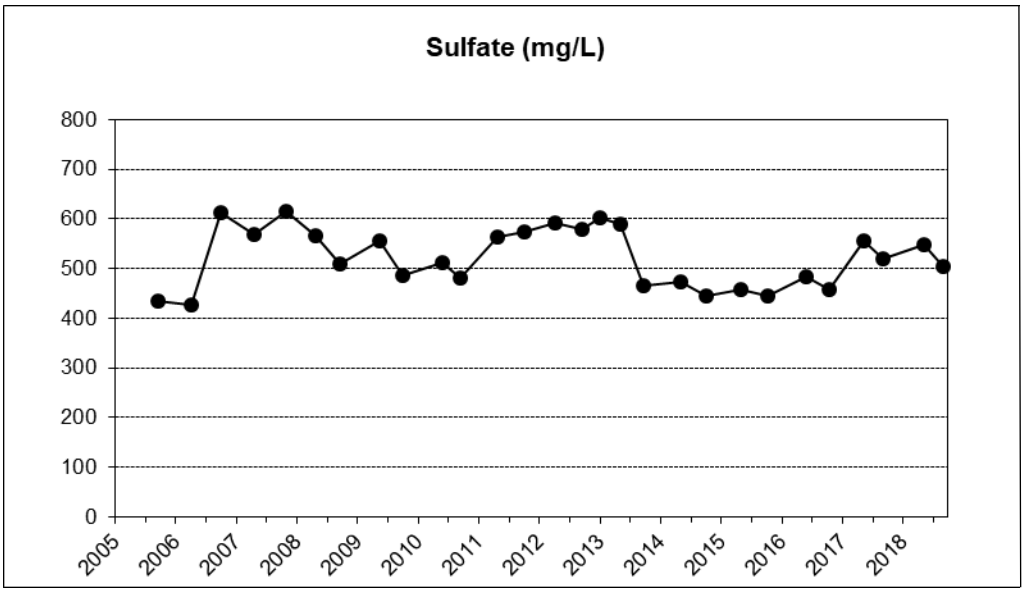

Uranium (mg/L)
0.2
0.16
0.12
0.08
0.04
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

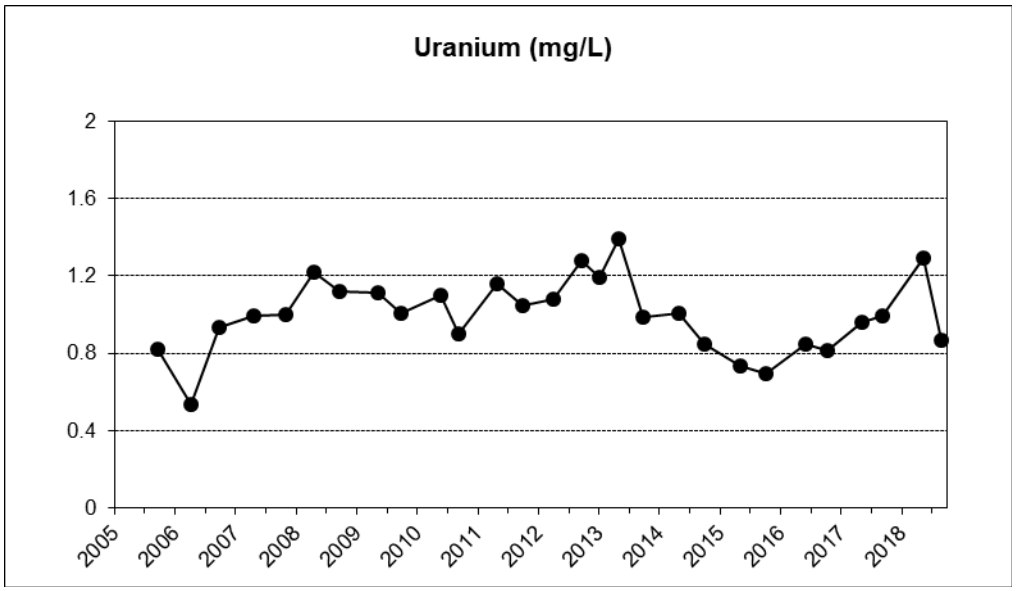
SWAB-4


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

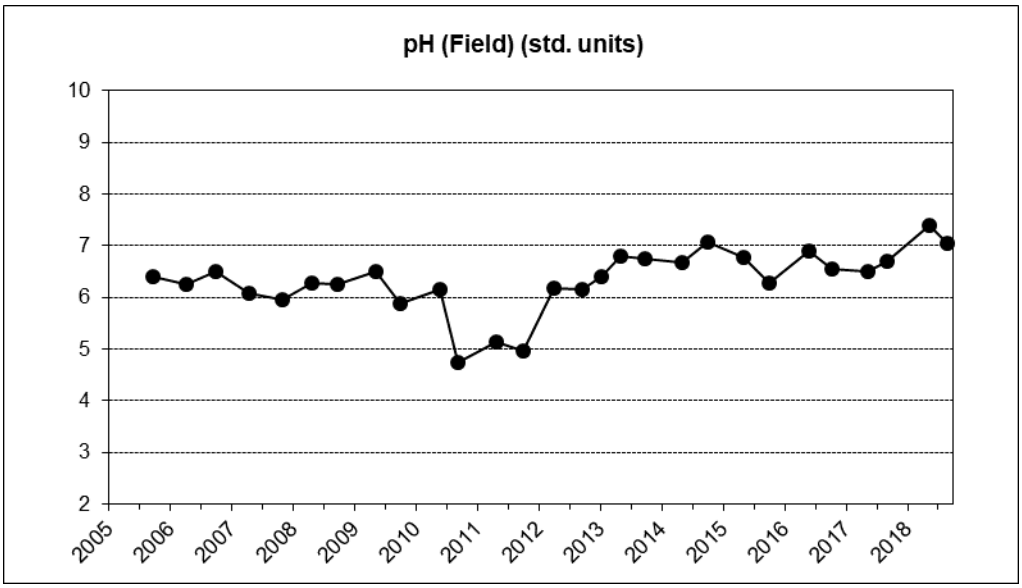

TDS (mg/L)
2000
1600
1200
800
400
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

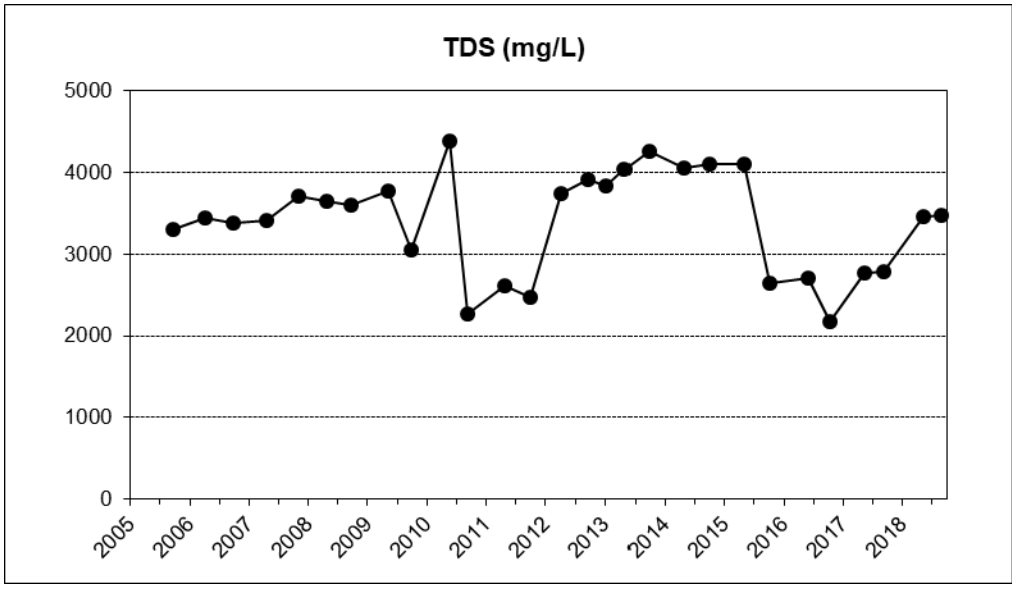
SWAB-4


Sulfate (mg/L)
800
700
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

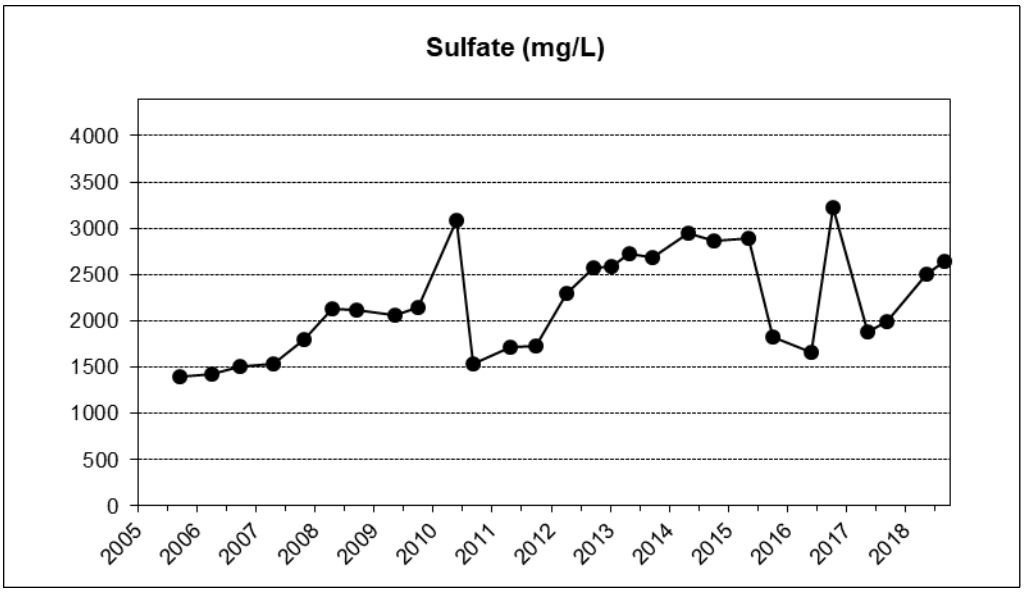

Uranium (mg/L)
2
1.6
1.2
0.8
0.4
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

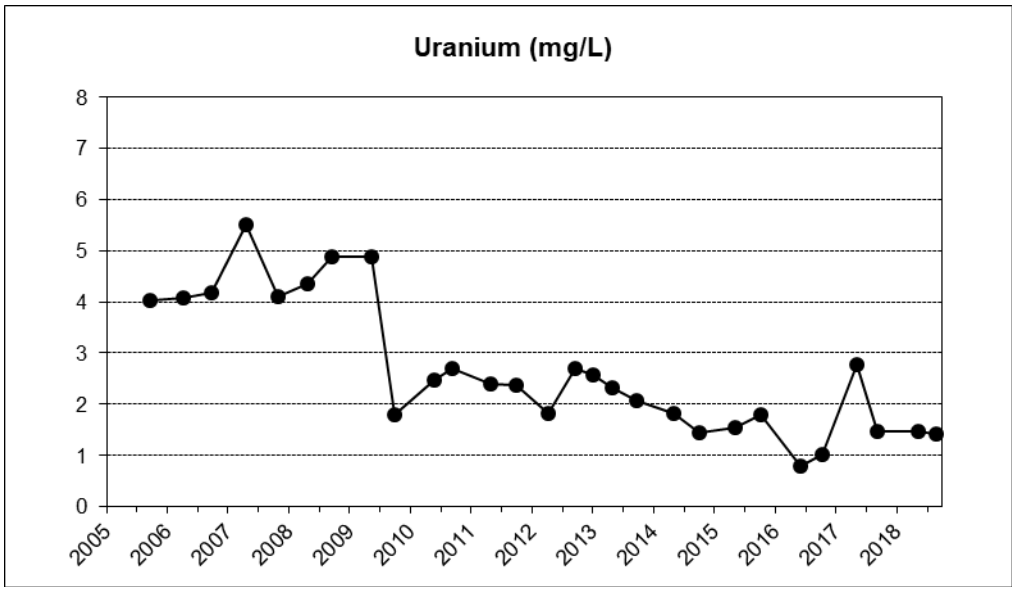
WN-1


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

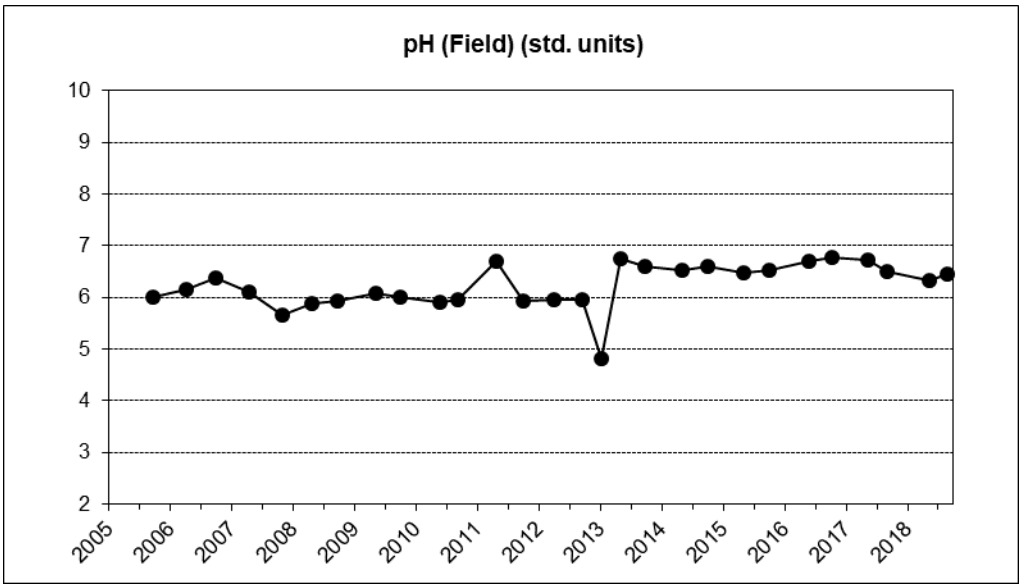

TDS (mg/L)
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

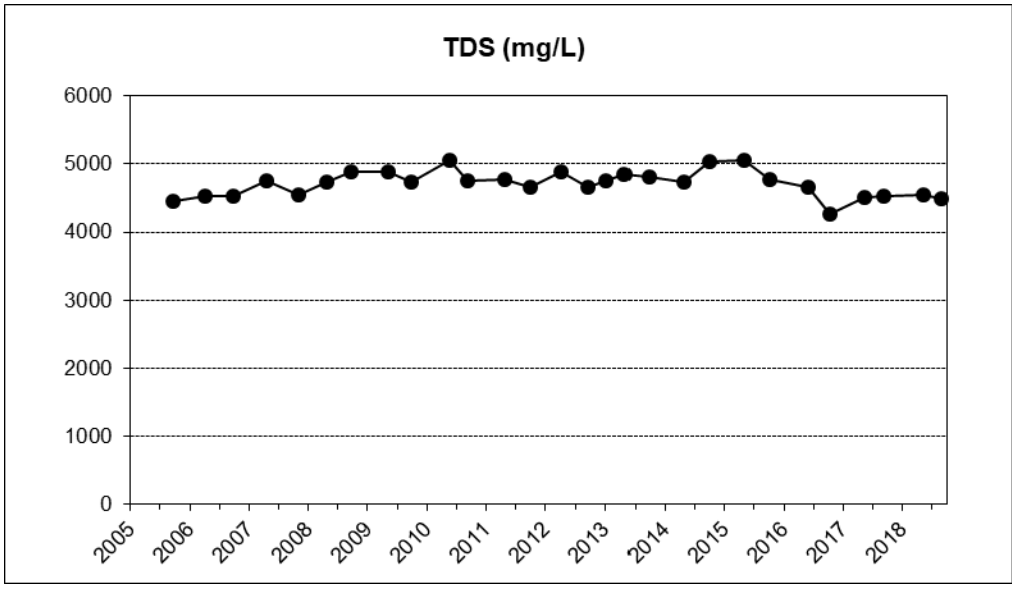
WN-1


Sulfate (mg/L)
4000
3500
3000
2500
2000
1500
1000
500
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

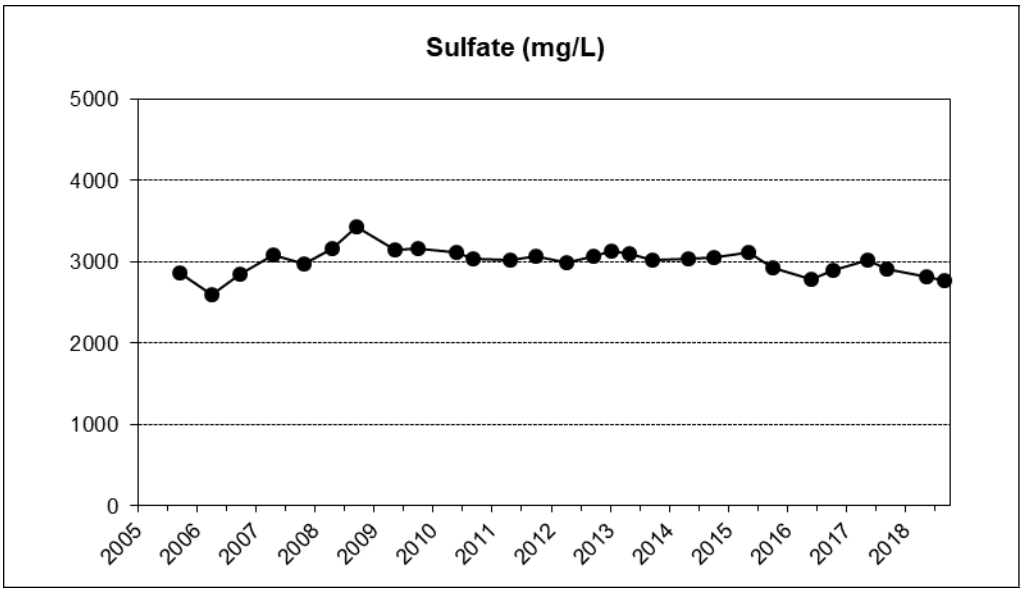

Uranium (mg/L)
8
7
6
5
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

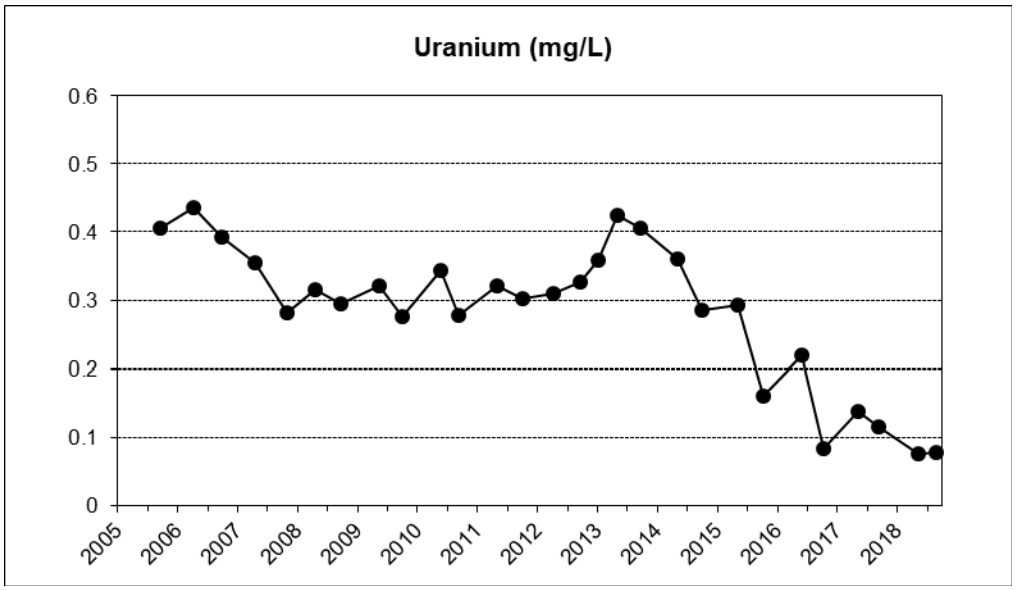
WN-4R


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

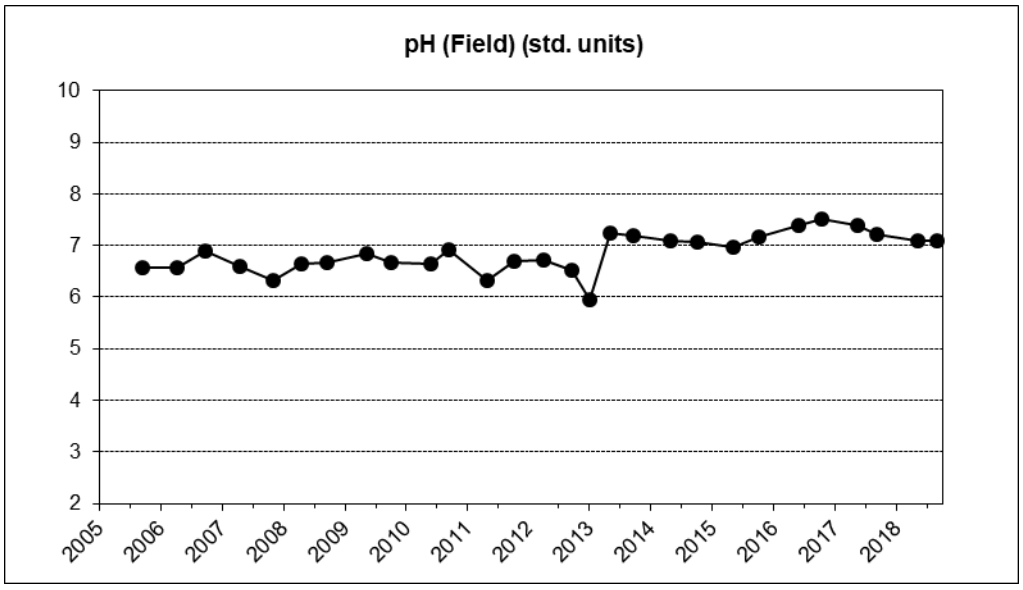

TDS (mg/L)
6000
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

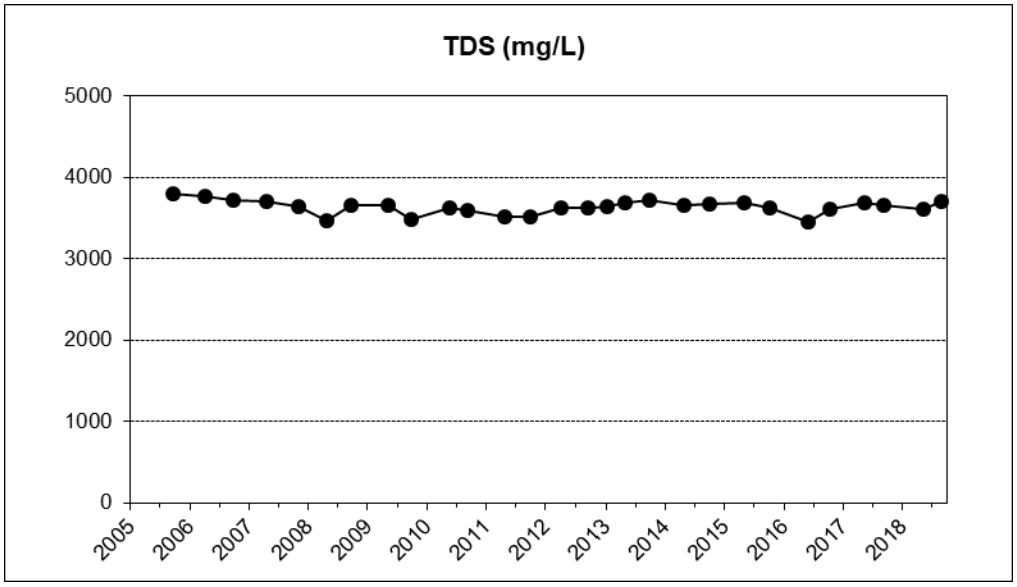
WN-4R


Sulfate (mg/L)
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

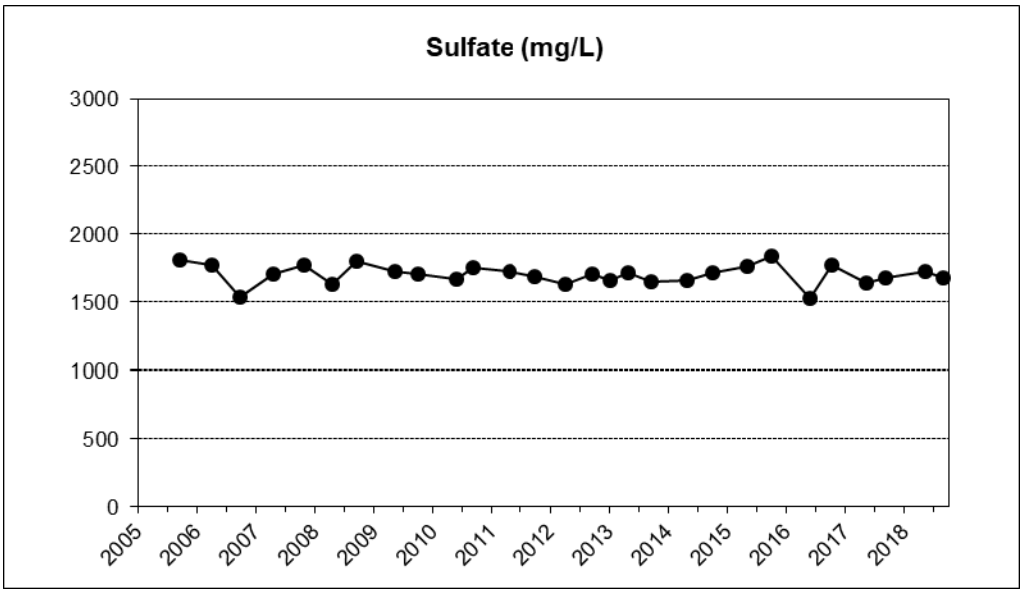

Uranium (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

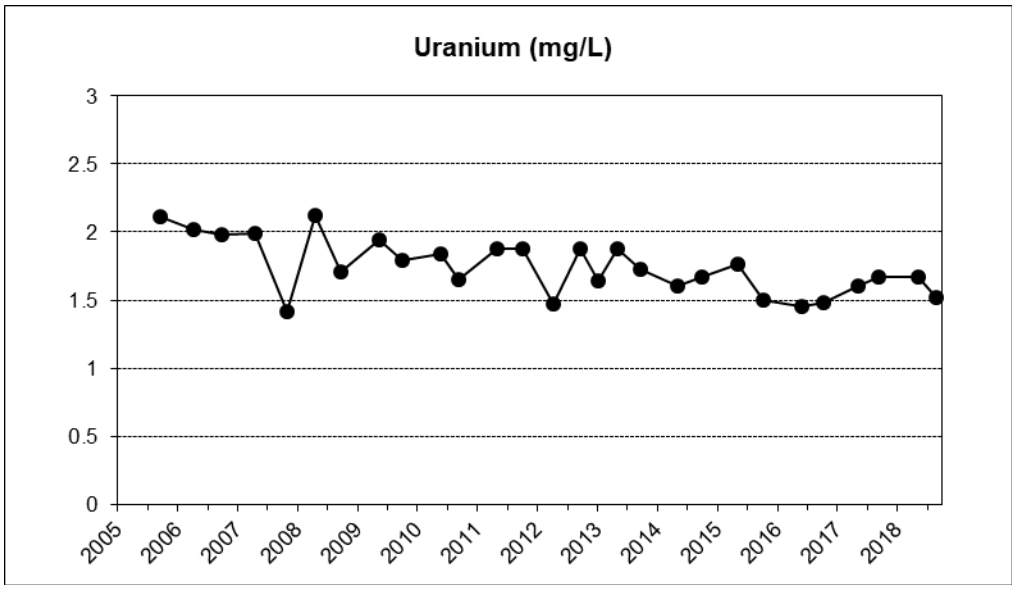
WN-5


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

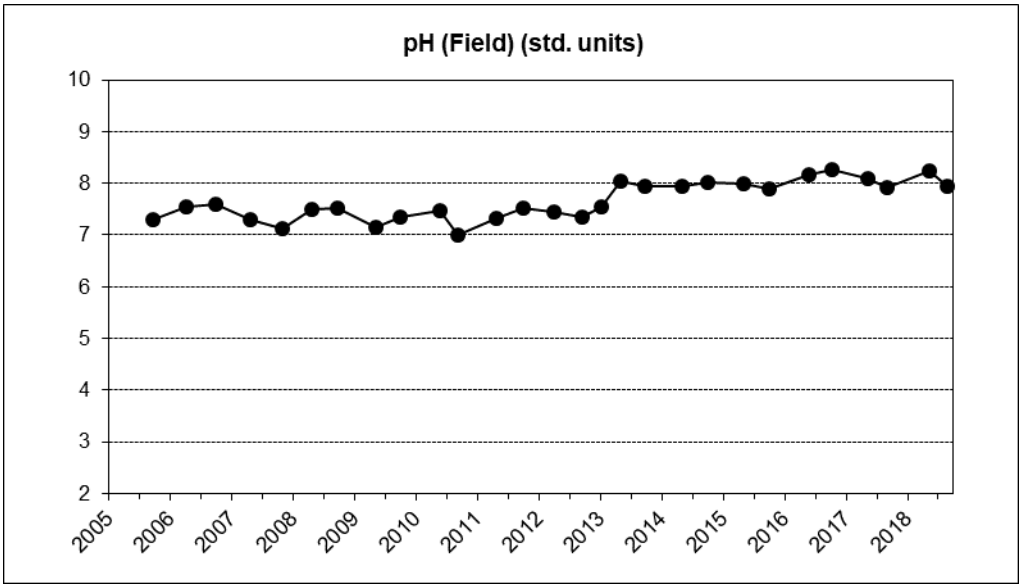

TDS (mg/L)
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

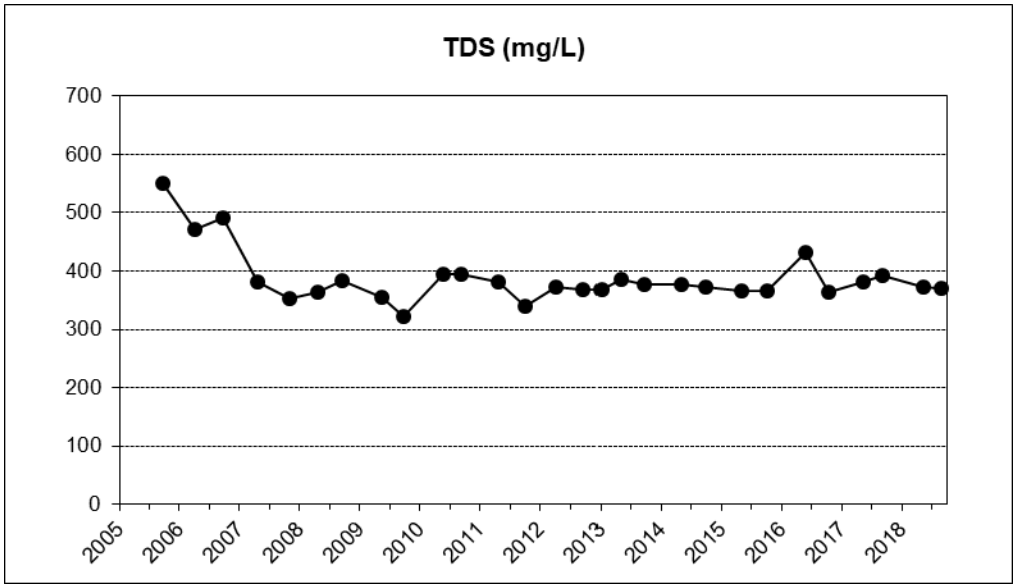
WN-5


Sulfate (mg/L)
3000
2500
2000
1500
1000
500
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

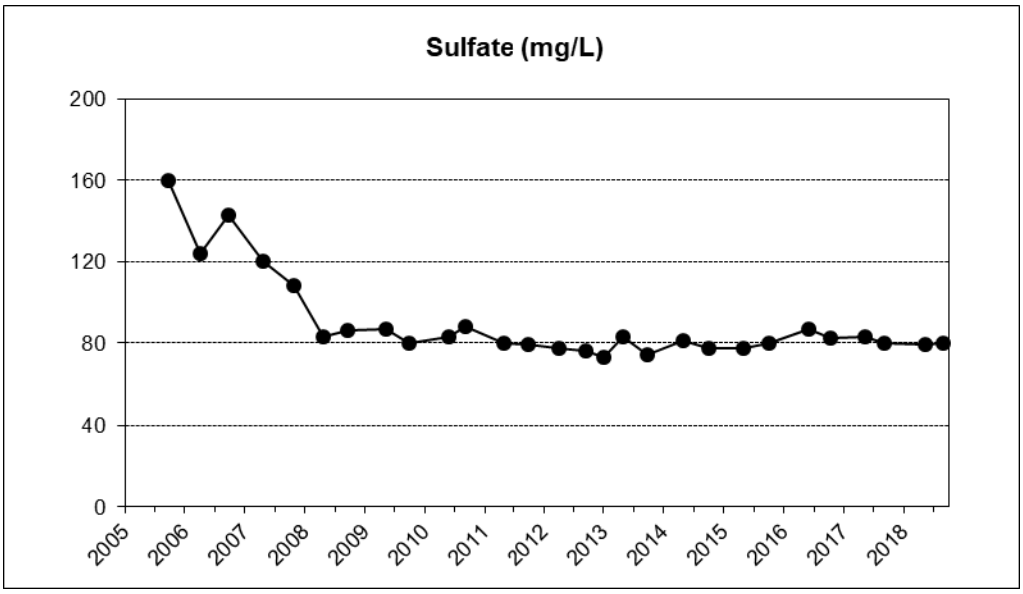

Uranium (mg/L)
3
2.5
2
1.5
1
0.5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

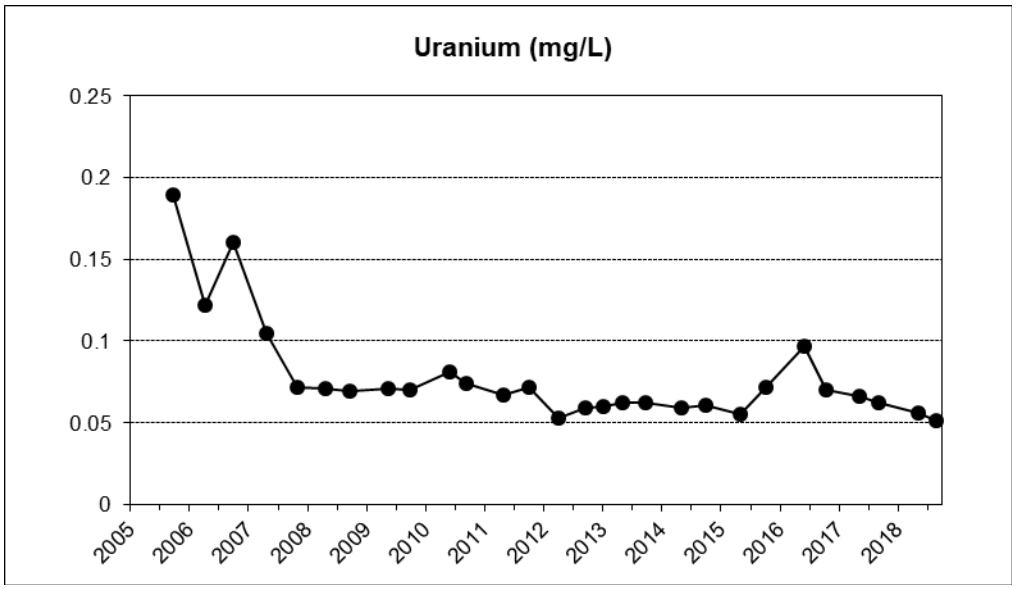
WN-21


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

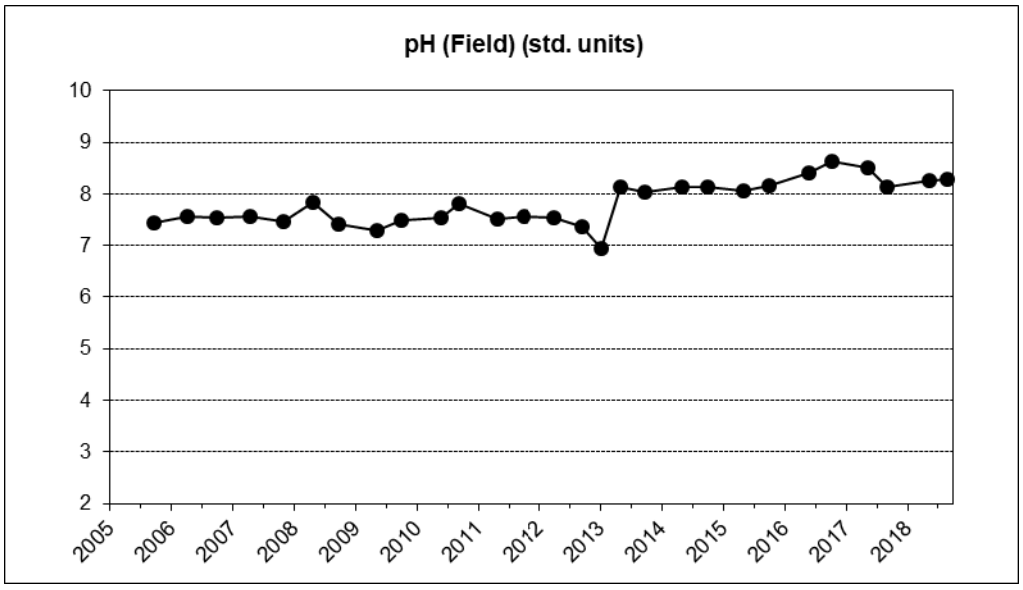

TDS (mg/L)
700
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

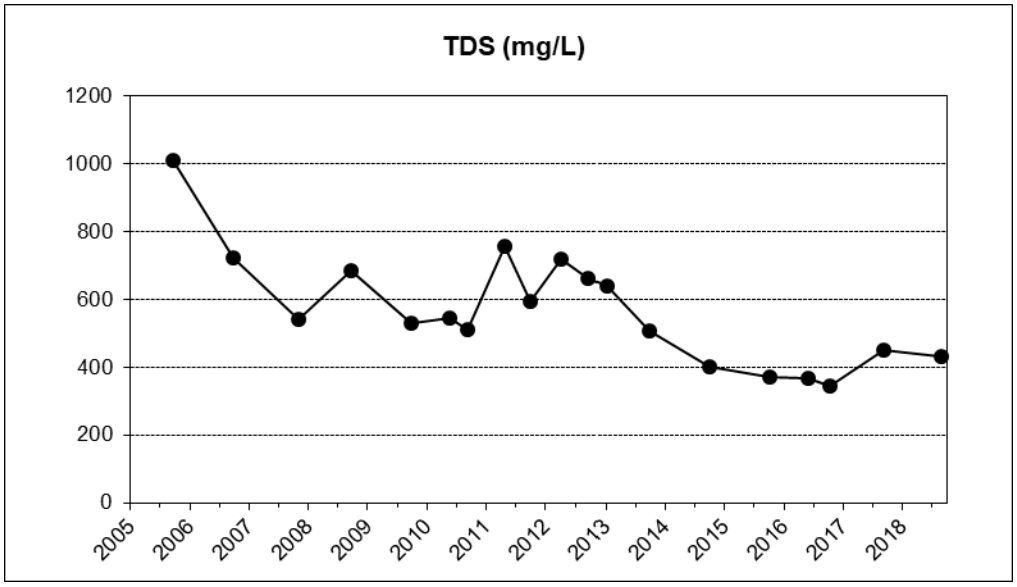
WN-21


Sulfate (mg/L)
200
160
120
80
40
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

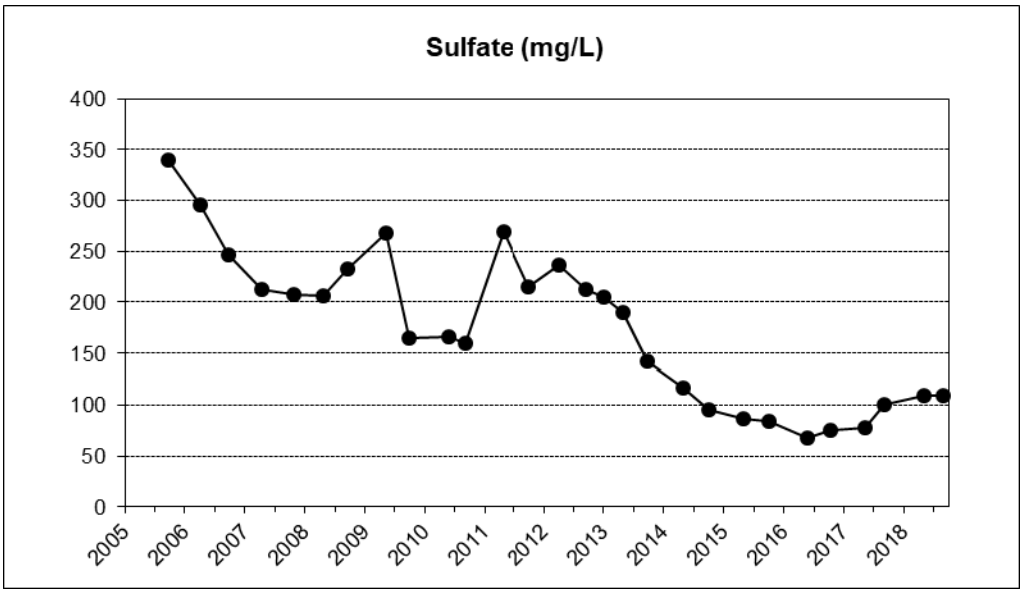

Uranium (mg/L)
0.25
0.2
0.15
0.1
0.05
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

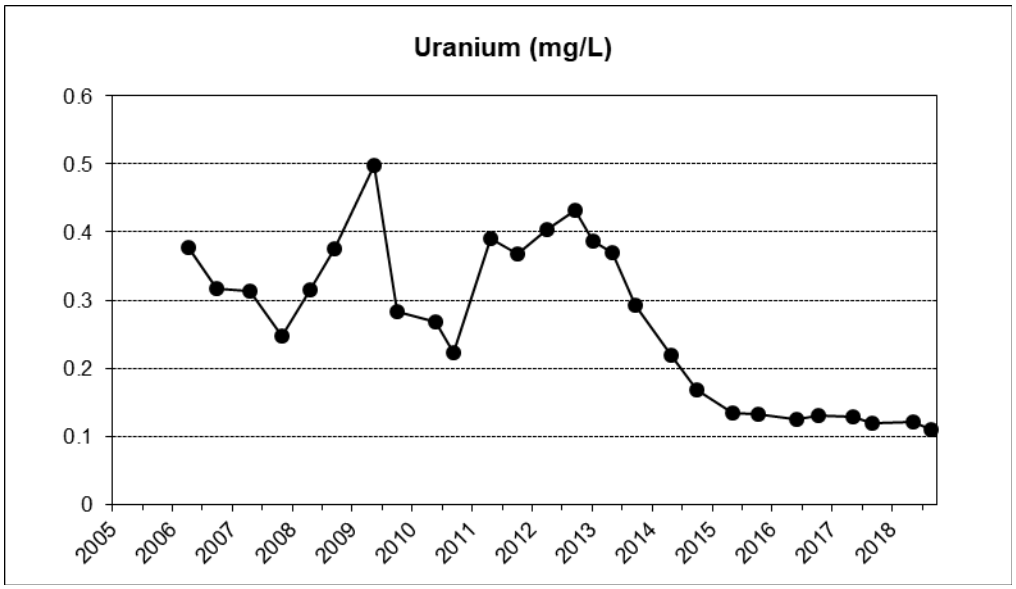
WN-39B


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

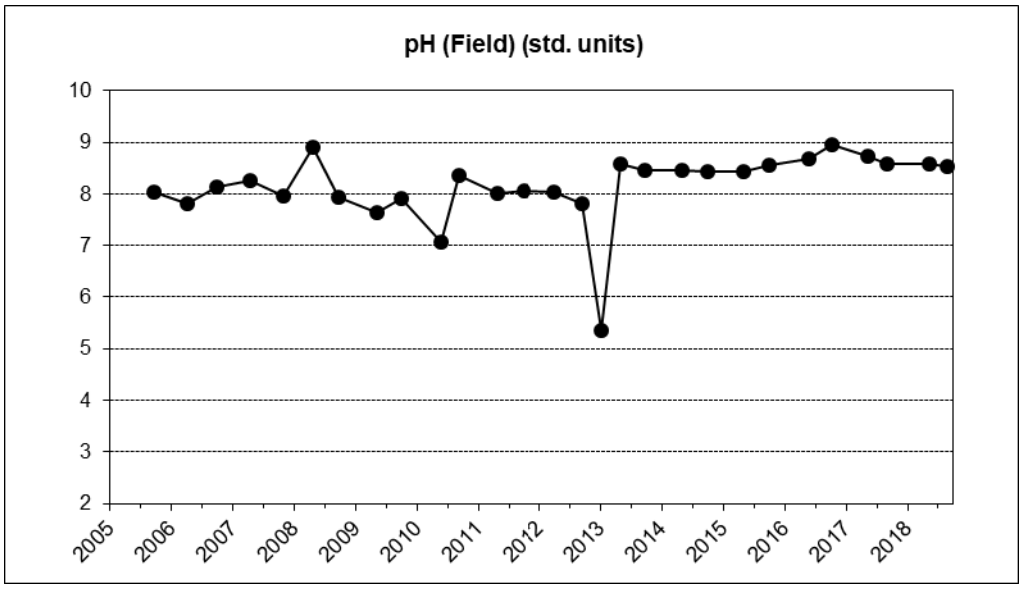

TDS (mg/L)
1200
1000
800
600
400
200
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

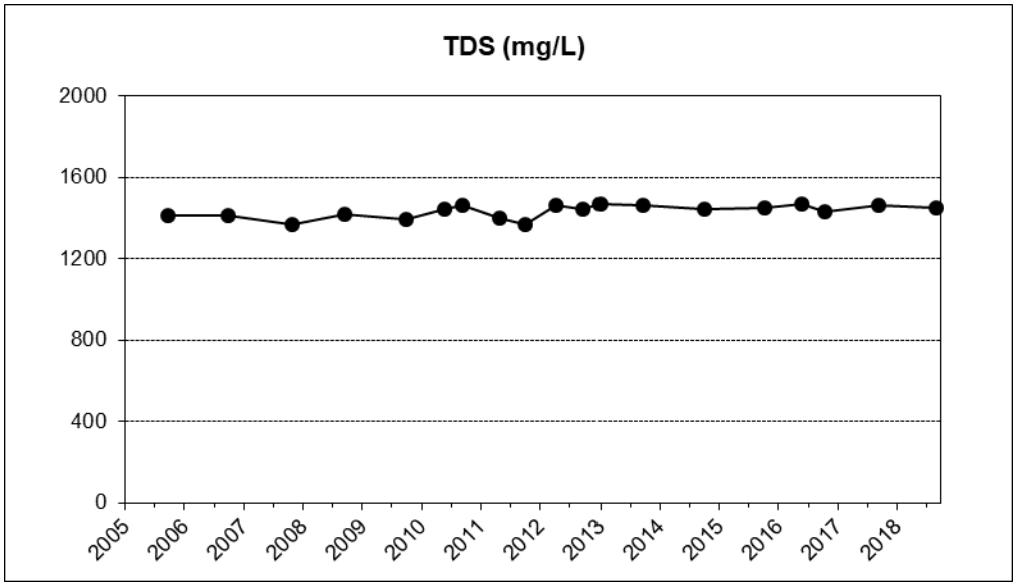
WN-39B


Sulfate (mg/L)
400
350
300
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

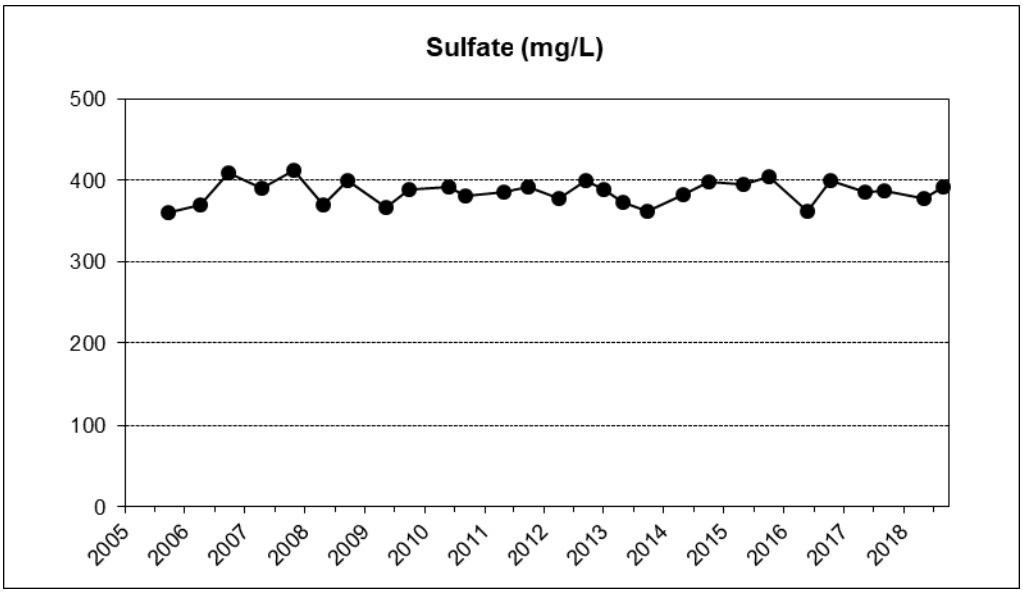

Uranium (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

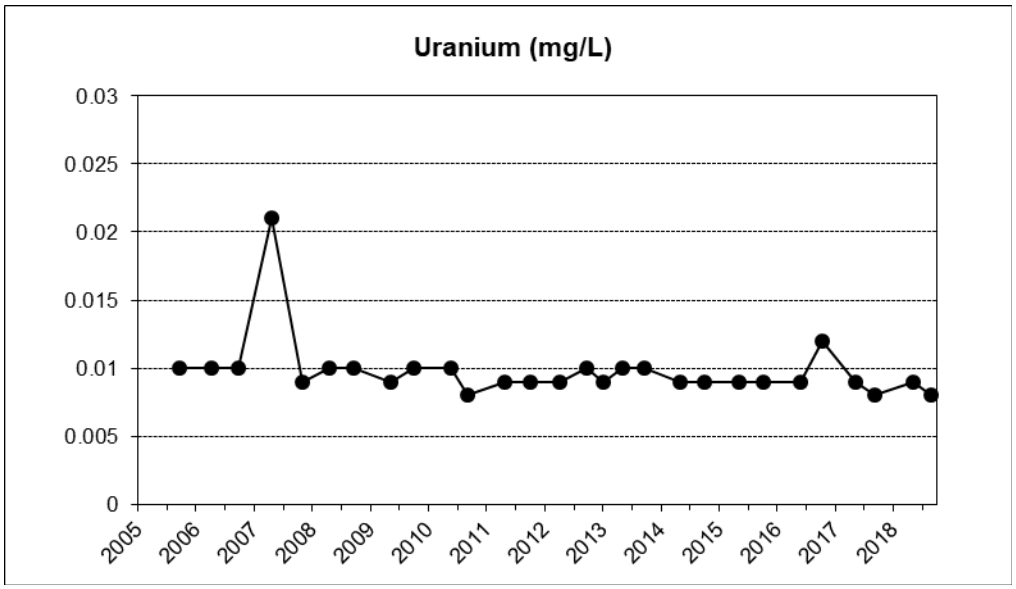
WN-41B


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

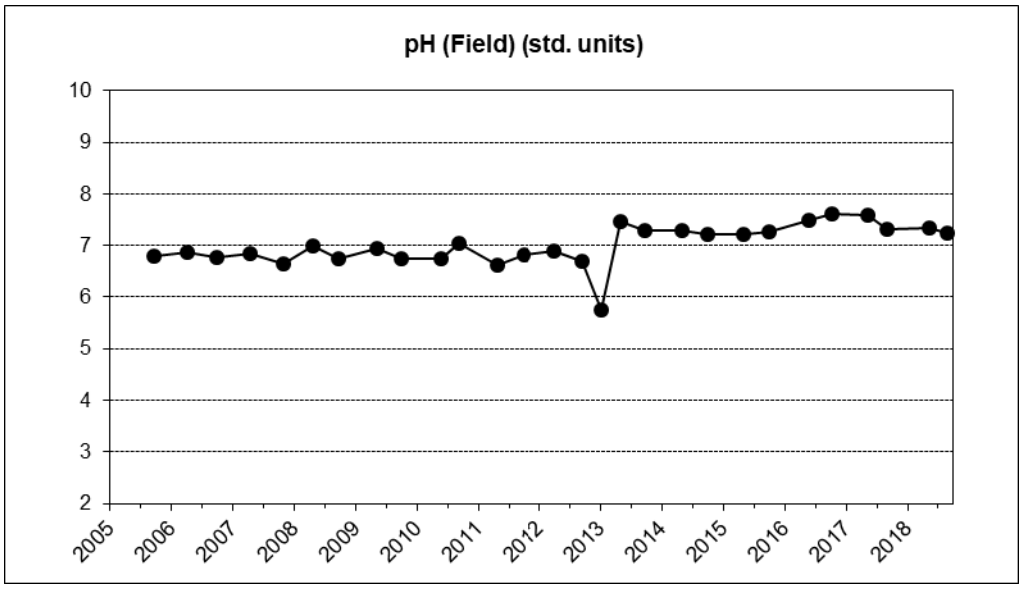

TDS (mg/L)
2000
1600
1200
800
400
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

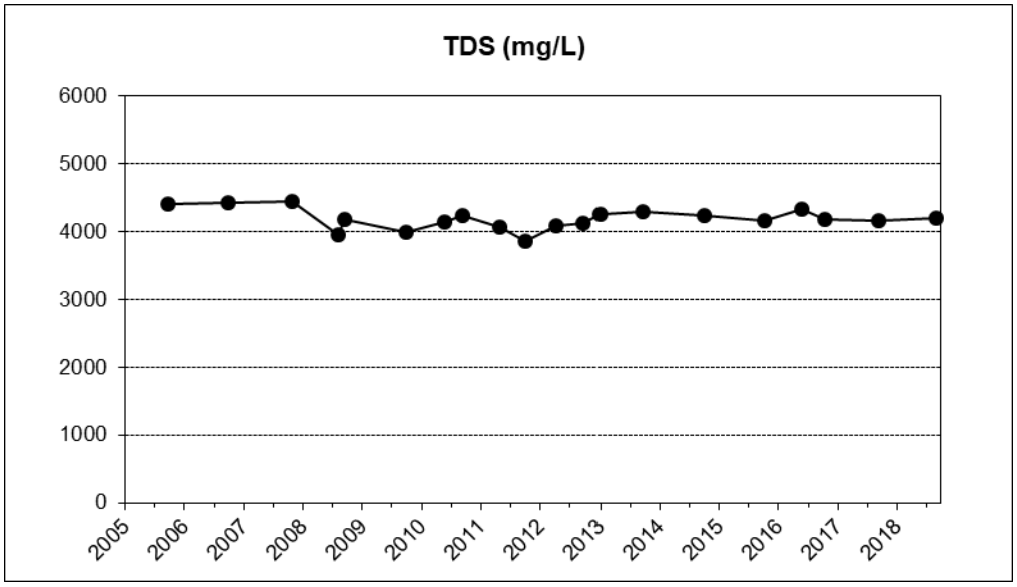
WN-41B


Sulfate (mg/L)
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

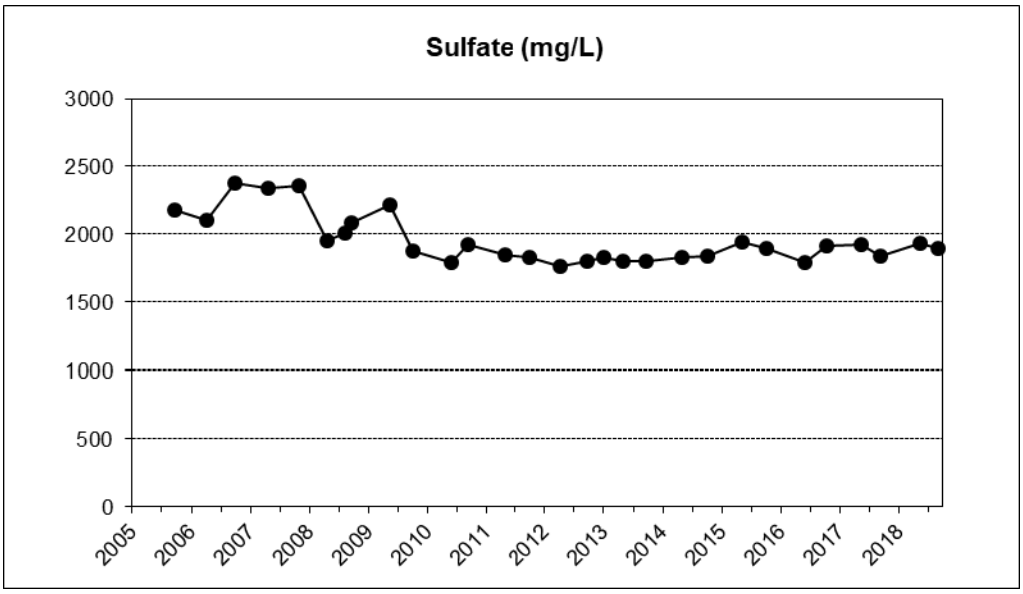

Uranium (mg/L)
0.03
0.025
0.02
0.015
0.01
0.005
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

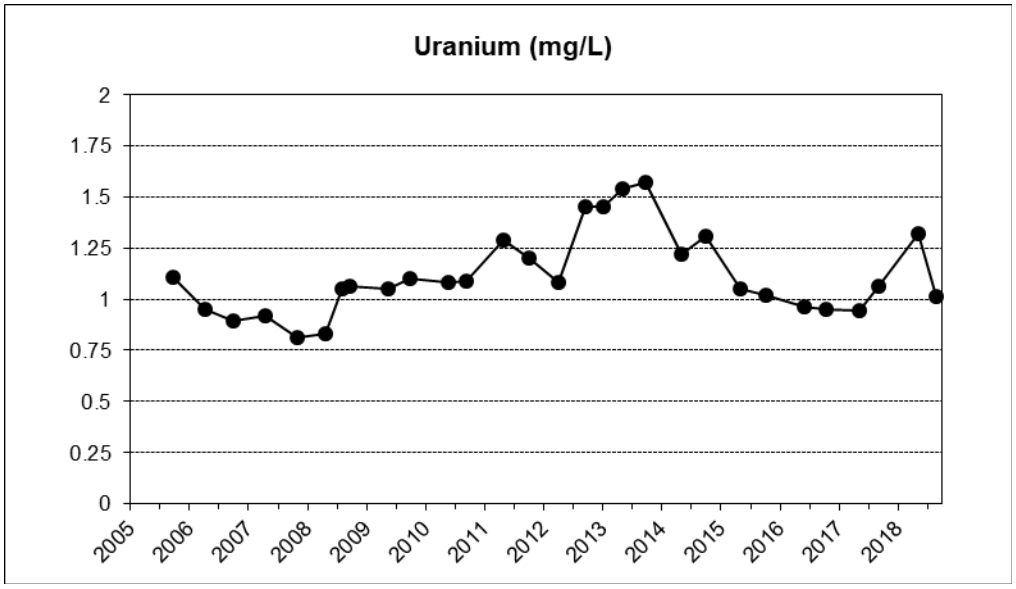
WN-42A


pH (Field) (std. units)
10
9
8
7
6
5
4
3
2
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

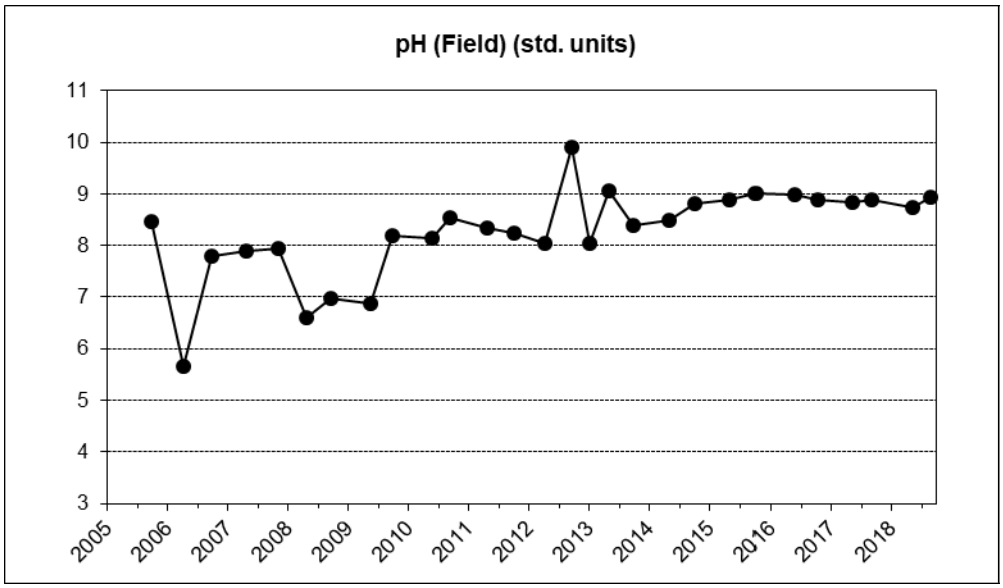

TDS (mg/L)
6000
5000
4000
3000
2000
1000
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

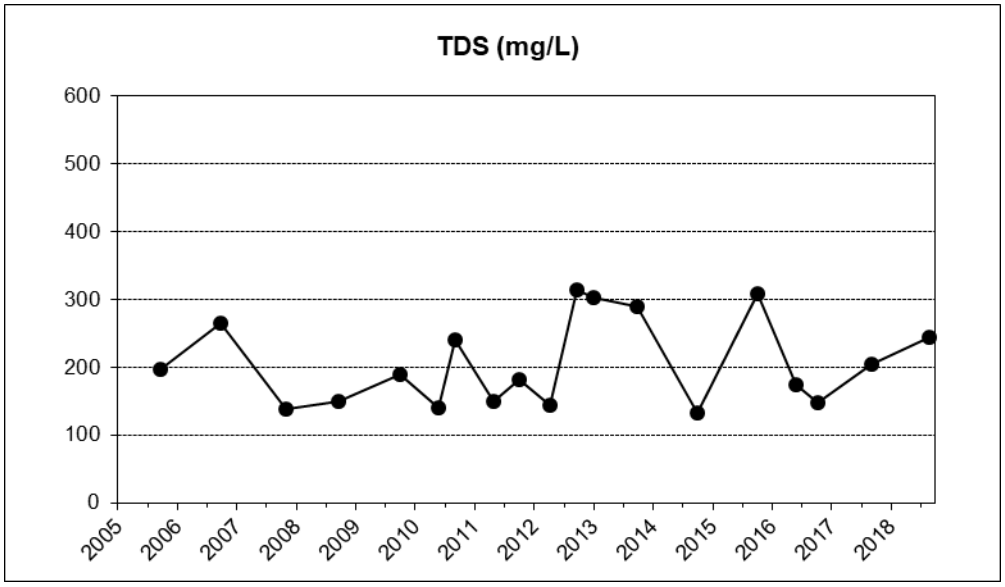
WN-42A


Sulfate (mg/L)
3000
2500
2000
1500
1000
500
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

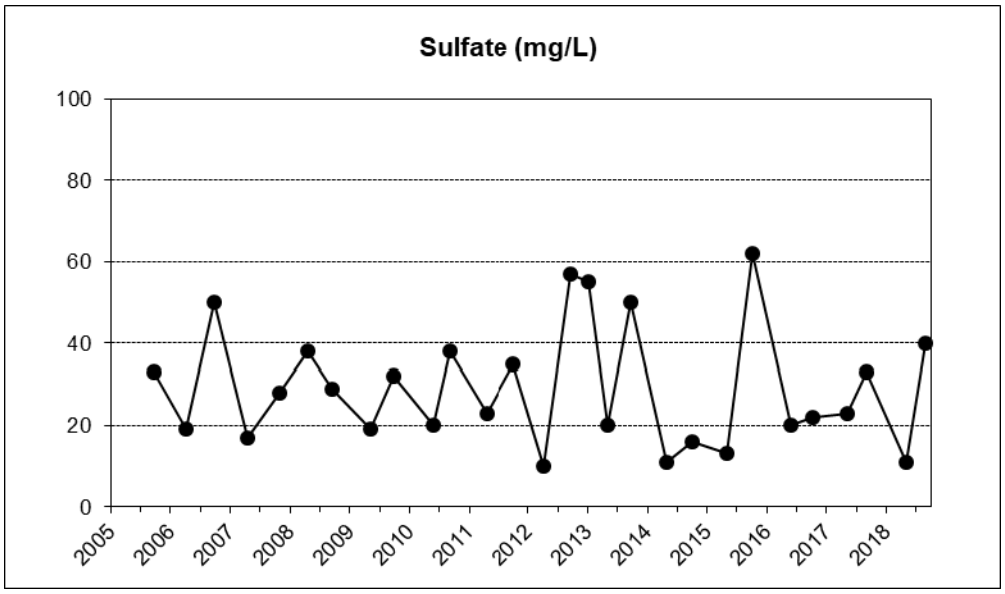

Uranium (mg/L)
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

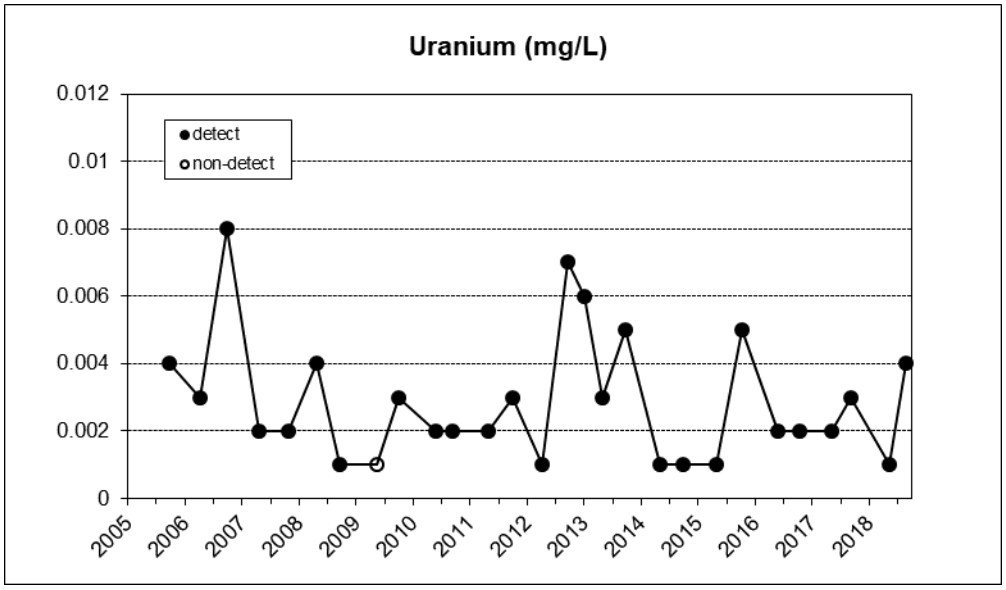
SW-1


pH (Field) (std. units)
11
10
9
8
7
6
5
4
3
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

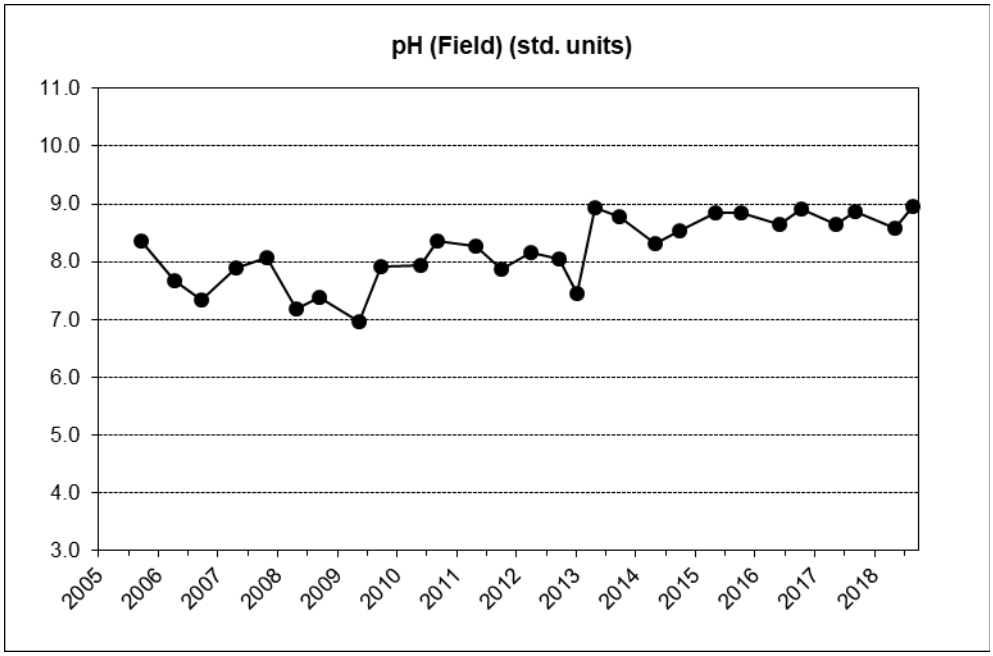

TDS (mg/L)
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

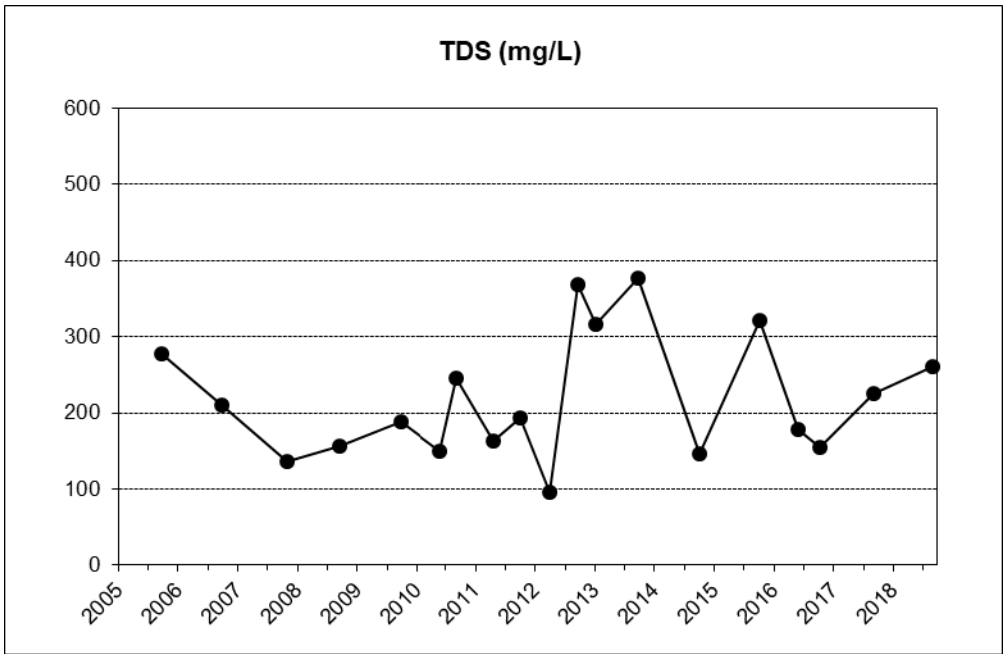
SW-1


Sulfate (mg/L)
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

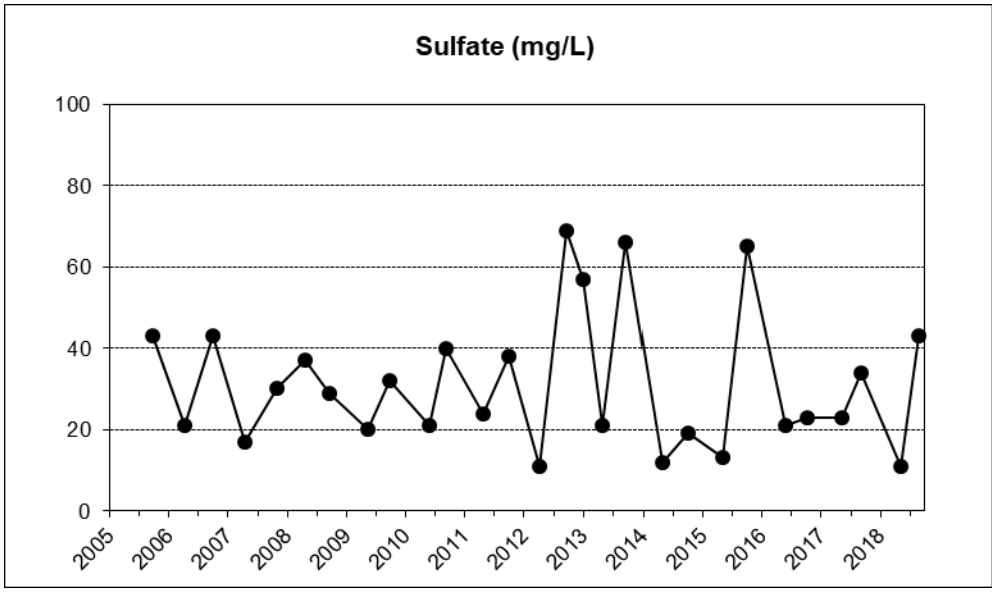

Uranium (mg/L)
0.012
0.01
0.008
0.006
0.004
0.002
0
detect
non-detect
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

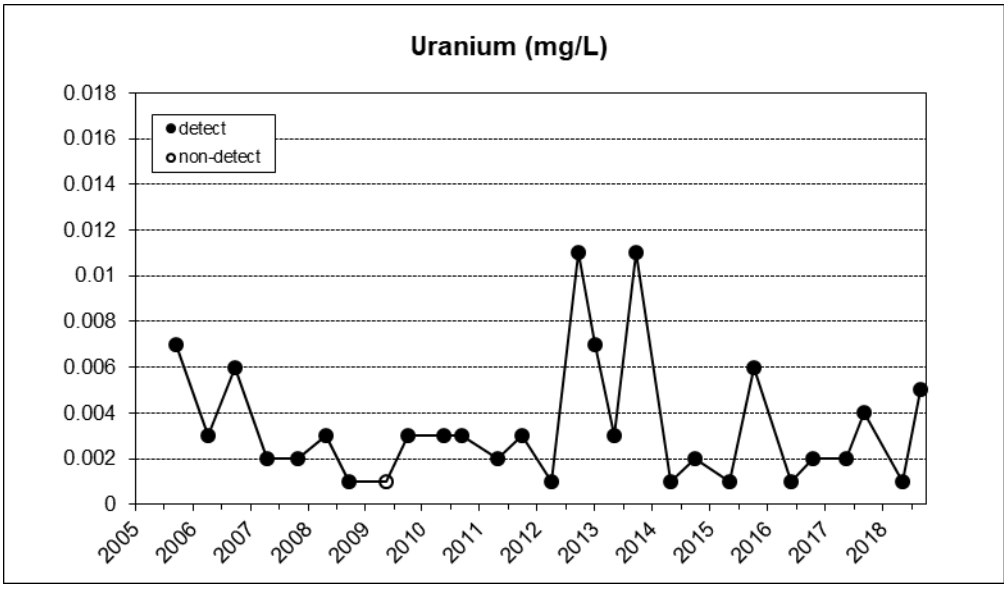
SW-2


pH (Field) (std. units)
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

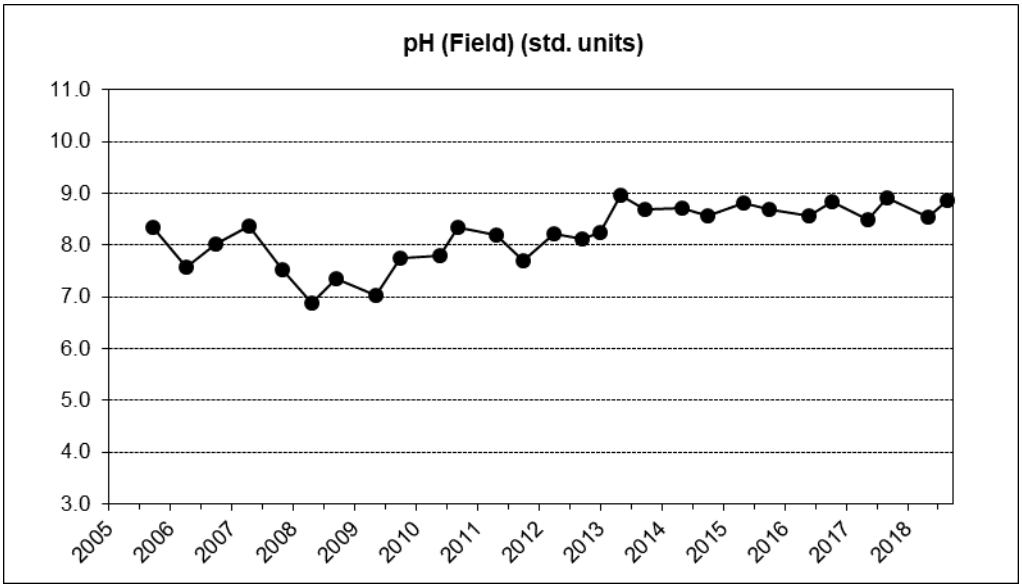

TDS (mg/L)
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

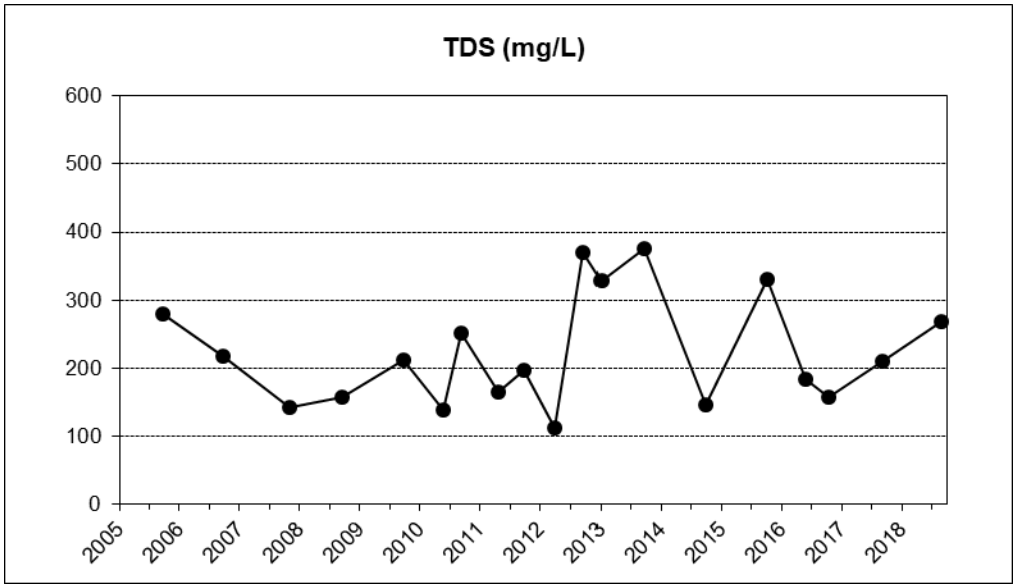
SW-2


Sulfate (mg/L)
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

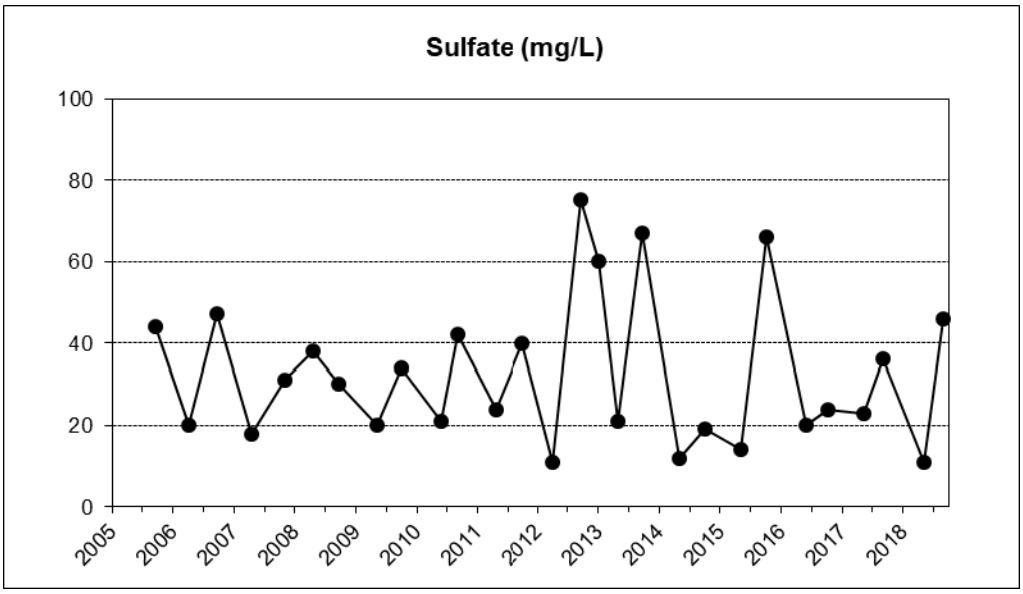

Uranium (mg/L)
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
detect
non-detect
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

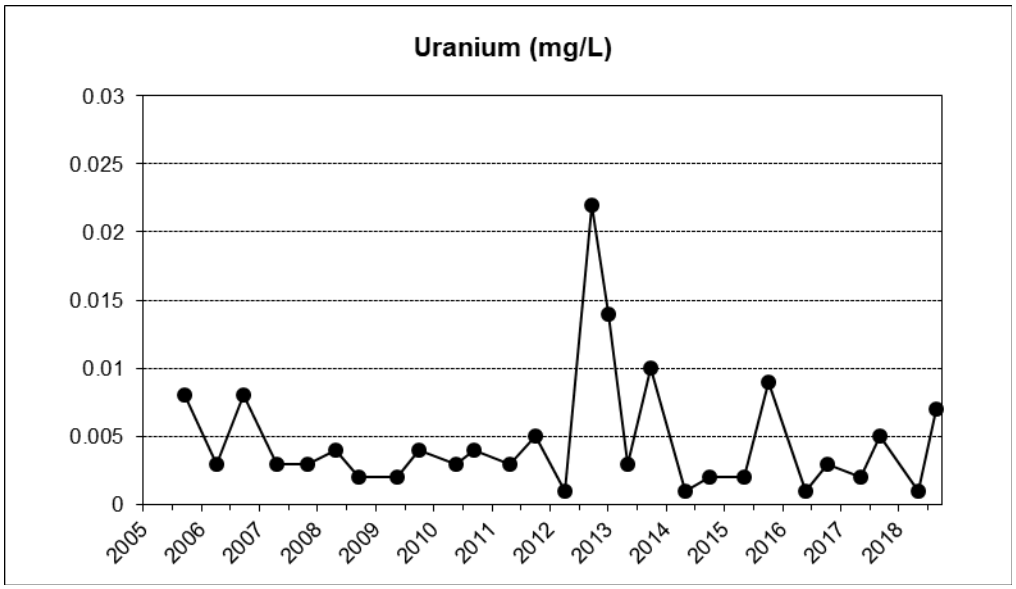
SW-3


pH (Field) (std. units)
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

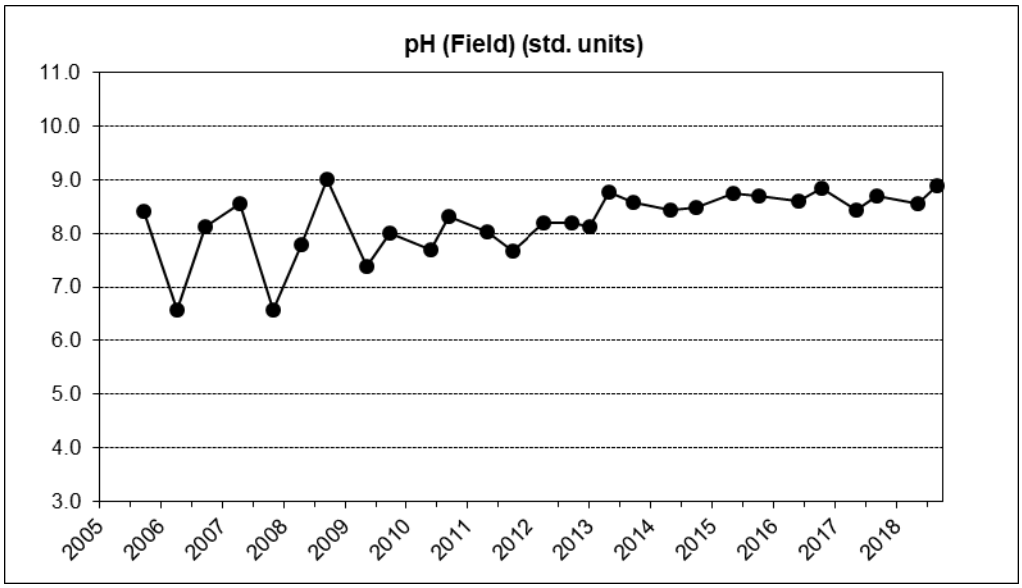

TDS (mg/L)
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

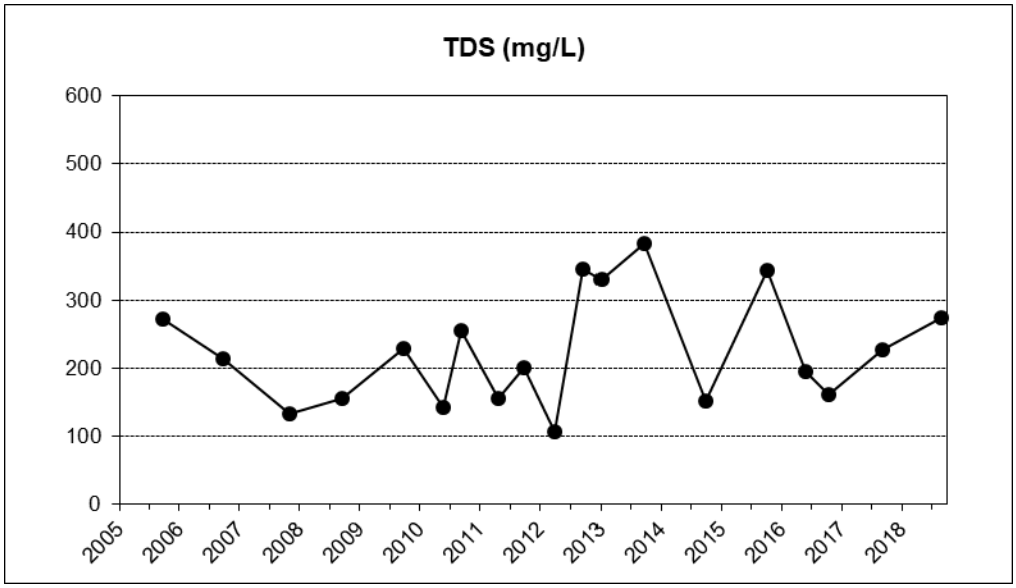
SW-3


Sulfate (mg/L)
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

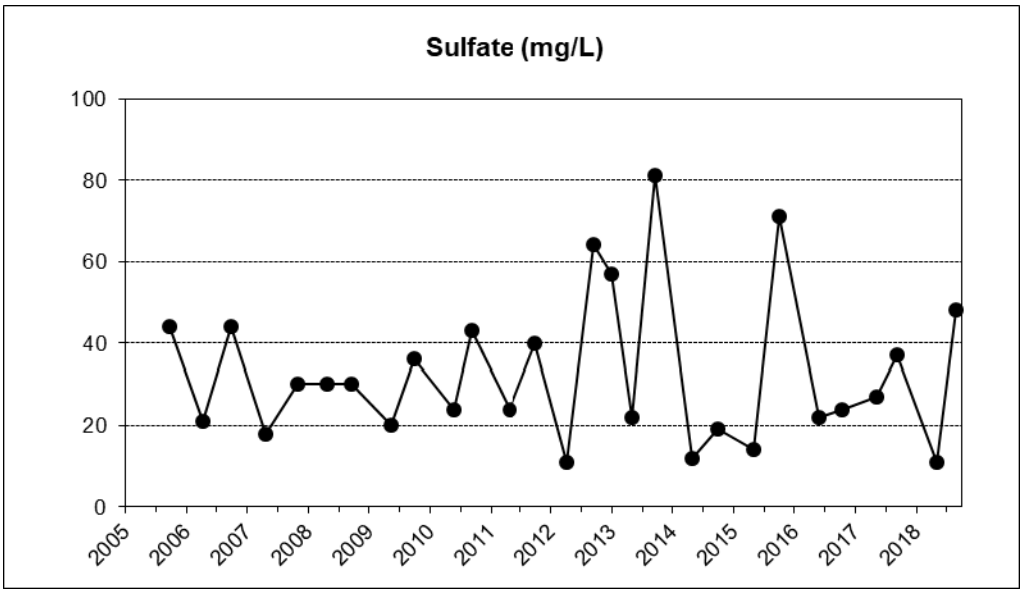

Uranium (mg/L)
0.03
0.025
0.02
0.015
0.01
0.005
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

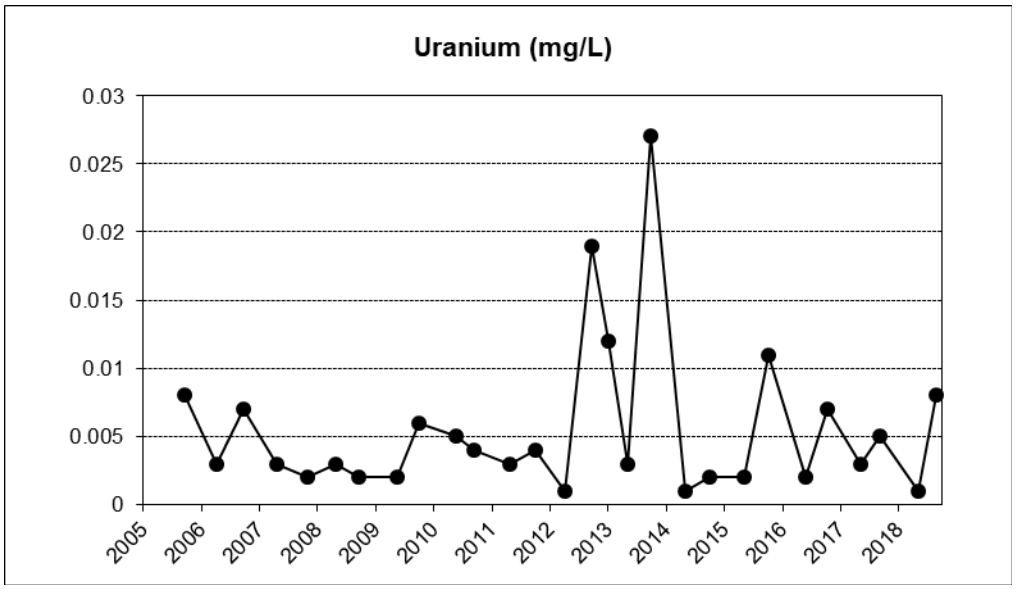
SW-4


pH (Field) (std. units)
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

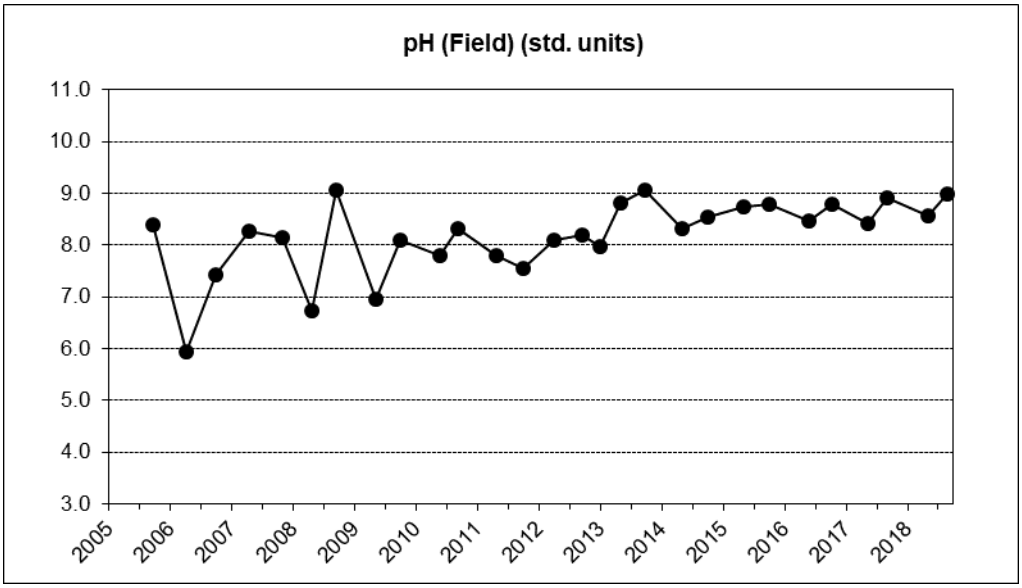

TDS (mg/L)
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

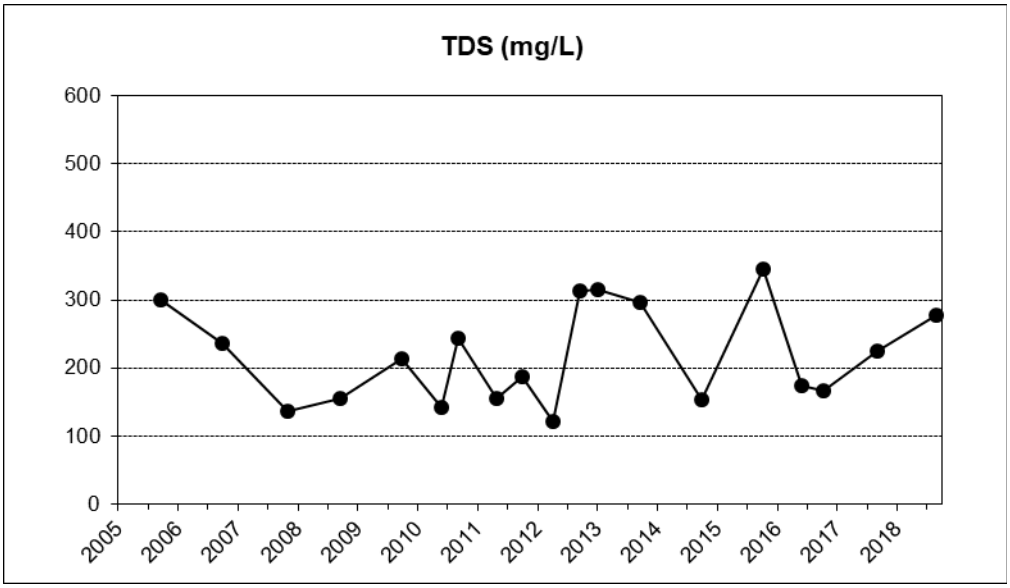
SW-4


Sulfate (mg/L)
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

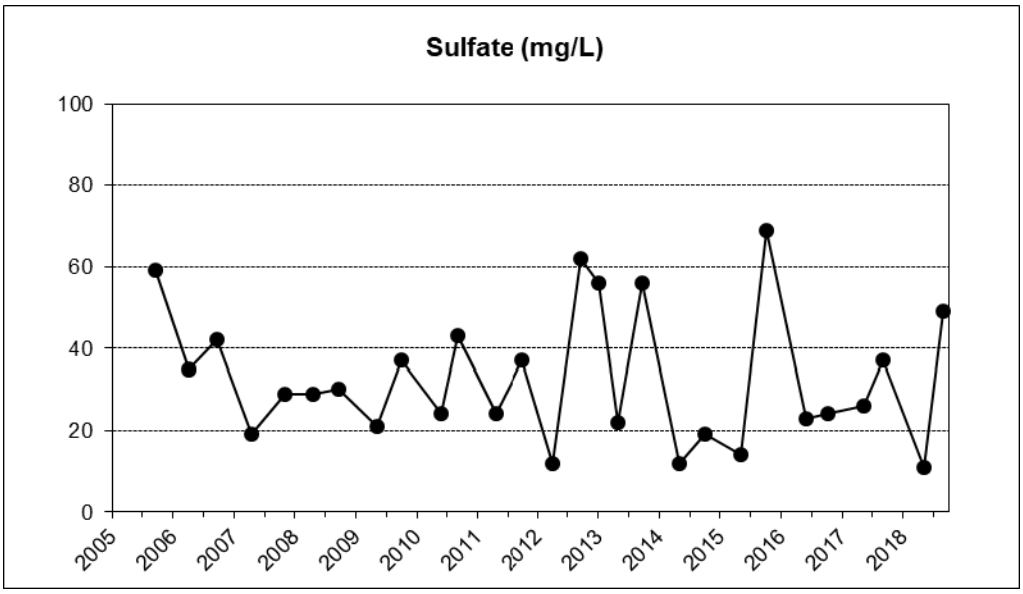

Uranium (mg/L)
0.03
0.025
0.02
0.015
0.01
0.005
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

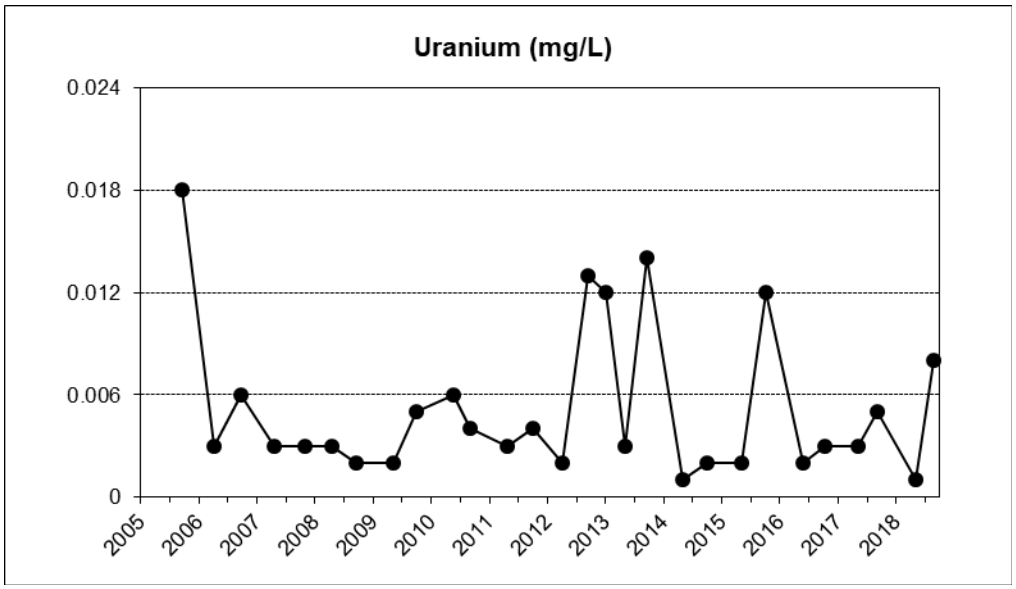
SW-5


pH (Field) (std. units)
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


TDS (mg/L)
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

SW-5


Sulfate (mg/L)
100
80
60
40
20
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


Uranium (mg/L)
0.024
0.018
0.012
0.006
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

ANALYTICAL SUMMARY REPORT

October 04, 2018

Western Nuclear Inc
Split Rock Mill
Jeffrey City, WY 82310

Work Order: C18081086 Quote ID: C5164 - Annual Analysis

Project Name: Split Rock Mill GWPP

Energy Laboratories, Inc. Casper WY received the following 25 samples for Western Nuclear Inc on 8/30/2018 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C18081086-001	SWAB-4	08/29/18 14:08	08/30/18	Aqueous	Metals by ICP/ICPMS, Dissolved Client Provided Field Parameters Fluoride Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Radium 226, Dissolved Radium 228, Dissolved Thorium, Isotopic, Dissolved Solids, Total Dissolved
C18081086-002	SWAB-12R	08/29/18 14:39	08/30/18	Aqueous	Same As Above
C18081086-003	SWAB-22	08/29/18 09:12	08/30/18	Aqueous	Same As Above
C18081086-004	SWAB-29	08/29/18 16:10	08/30/18	Aqueous	Same As Above
C18081086-005	SWAB-31	08/30/18 08:42	08/30/18	Aqueous	Same As Above
C18081086-006	SWAB-32	08/29/18 16:20	08/30/18	Aqueous	Same As Above
C18081086-007	SWR-UG	08/28/18 10:30	08/30/18	Aqueous	Same As Above
C18081086-008	SWR-A	08/28/18 10:45	08/30/18	Aqueous	Same As Above
C18081086-009	SWR-B	08/28/18 11:10	08/30/18	Aqueous	Same As Above
C18081086-010	SWR-C	08/28/18 11:43	08/30/18	Aqueous	Same As Above
C18081086-011	WN-1	08/29/18 15:01	08/30/18	Aqueous	Same As Above
C18081086-012	WN-4R	08/29/18 13:46	08/30/18	Aqueous	Same As Above
C18081086-013	WN-5	08/29/18 11:49	08/30/18	Aqueous	Same As Above
C18081086-014	WN-21	08/29/18 15:22	08/30/18	Aqueous	Same As Above
C18081086-015	WN-39B	08/29/18 11:11	08/30/18	Aqueous	Same As Above
C18081086-016	WN-41B	08/29/18 10:51	08/30/18	Aqueous	Same As Above

ANALYTICAL SUMMARY REPORT

C18081086-017	WN-42A	08/29/18 11:27	08/30/18	Aqueous	Metals by ICP/ICPMS, Dissolved Client Provided Field Parameters Fluoride Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Preservation by the Laboratory Radium 226, Dissolved Radium 228, Dissolved Thorium, Isotopic, Dissolved Solids, Total Dissolved
C18081086-018	JJ-1R	08/29/18 10:30	08/30/18	Aqueous	Metals by ICP/ICPMS, Dissolved Client Provided Field Parameters Fluoride Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Radium 226, Dissolved Radium 228, Dissolved Thorium, Isotopic, Dissolved Solids, Total Dissolved
C18081086-019	SWAB-1R	08/29/18 15:41	08/30/18	Aqueous	Same As Above
C18081086-020	SWAB-2	08/29/18 08:43	08/30/18	Aqueous	Same As Above
C18081086-021	SWR-DG	08/29/18 12:07	08/30/18	Aqueous	Same As Above
C18081086-022	Field Blank	08/30/18 09:15	08/30/18	Aqueous	Same As Above
C18081086-023	WN-1R	08/29/18 15:01	08/30/18	Aqueous	Same As Above
C18081086-024	WN-5R	08/29/18 11:49	08/30/18	Aqueous	Same As Above
C18081086-025	WN-5S	08/29/18 11:49	08/30/18	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:

CLIENT: Western Nuclear Inc
Project: Split Rock Mill GWPP
Work Order: C18081086

Revised Date: 10/04/18
Report Date: 10/01/18

CASE NARRATIVE

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

Prep Comments for Sample WN-42A (C18081086-017), Test PRESERVATION: - The sample fraction submitted for Nutrients was received in the laboratory with a pH of ~ 5.5. This is outside of the method specified requirement of pH < 2. Proper preservation was added before sample analysis.

REVISED/SUPPLEMENTAL REPORT
Revised 10/4/2018
Per request from Jill Richards on 10/4/2018, to correct the Sample ID for C18081086-025 to WW-5S.
The report has been revised and replaces any previously issued report in its entirety.

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-001
Client Sample ID: SWAB-4

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 14:08
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	35	mg/L		1		E300.0	09/04/18 18:55 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:02 / ljl
Sulfate	504	mg/L	D	2		E300.0	09/04/18 18:55 / ljl
PHYSICAL PROPERTIES							
pH	7.37	s.u.	H	0.01		A4500-H B	08/31/18 12:29 / kjp
pH Measurement Temp	15	°C				A4500-H B	08/31/18 12:29 / kjp
Solids, Total Dissolved TDS @ 180 C	1210	mg/L		10		A2540 C	08/31/18 15:31 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	0.20	mg/L		0.05		E350.1	09/02/18 18:20 / ljl
Nitrogen, Nitrate+Nitrite as N	23.0	mg/L	D	0.2		E353.2	08/30/18 17:02 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 17:20 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 17:20 / eli-b
Arsenic	0.01	mg/L		0.01		E200.8	09/09/18 17:20 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 17:20 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 17:20 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 17:20 / eli-b
Manganese	0.08	mg/L		0.05		E200.8	09/09/18 17:20 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 17:20 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 17:20 / eli-b
Selenium	0.008	mg/L		0.005		E200.8	09/09/18 17:20 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 17:20 / eli-b
Uranium	0.870	mg/L		0.001		E200.8	09/09/18 17:20 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.7	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	5.7	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 precision (±)	1.6	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 MDC	2.0	pCi/L				RA-05	09/21/18 08:21 / arh
Thorium 230	0.04	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.07	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.68	s.u.				FIELD	08/29/18 14:08 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-002
Client Sample ID: SWAB-12R

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 14:39
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	17	mg/L		1		E300.0	09/04/18 19:15 / ljl
Fluoride	0.2	mg/L		0.1		A4500-F C	09/06/18 16:08 / ljl
Sulfate	82	mg/L		1		E300.0	09/04/18 19:15 / ljl
PHYSICAL PROPERTIES							
pH	7.70	s.u.	H	0.01		A4500-H B	08/31/18 12:32 / kjp
pH Measurement Temp	14	°C				A4500-H B	08/31/18 12:32 / kjp
Solids, Total Dissolved TDS @ 180 C	362	mg/L	D	10		A2540 C	08/31/18 15:31 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:24 / ljl
Nitrogen, Nitrate+Nitrite as N	0.48	mg/L		0.01		E353.2	08/30/18 17:03 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 17:23 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 17:23 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 17:23 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 17:23 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 17:23 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 17:23 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 17:23 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 17:23 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 17:23 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 17:23 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 17:23 / eli-b
Uranium	0.034	mg/L		0.001		E200.8	09/09/18 17:23 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	-0.03	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	2.7	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 precision (±)	1.2	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 MDC	2.3	pCi/L				RA-05	09/21/18 08:21 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.05	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.09	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.01	s.u.				FIELD	08/29/18 14:39 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-003
Client Sample ID: SWAB-22

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 09:12
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	23	mg/L		1		E300.0	09/04/18 20:12 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:13 / ljl
Sulfate	54	mg/L		1		E300.0	09/04/18 20:12 / ljl
PHYSICAL PROPERTIES							
pH	7.47	s.u.	H	0.01		A4500-H B	08/31/18 12:35 / kjp
pH Measurement Temp	14	°C				A4500-H B	08/31/18 12:35 / kjp
Solids, Total Dissolved TDS @ 180 C	351	mg/L		10		A2540 C	08/31/18 15:32 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	0.07	mg/L		0.05		E350.1	09/02/18 18:25 / ljl
Nitrogen, Nitrate+Nitrite as N	0.15	mg/L		0.01		E353.2	08/30/18 17:04 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 17:39 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 17:39 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 17:39 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 17:39 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 17:39 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 17:39 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 17:39 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 17:39 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 17:39 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 17:39 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 17:39 / eli-b
Uranium	0.023	mg/L		0.001		E200.8	09/09/18 17:39 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	2.6	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 precision (±)	1.4	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 MDC	2.3	pCi/L				RA-05	09/21/18 08:21 / arh
Thorium 230	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.09	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.06	s.u.				FIELD	08/29/18 09:12 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-004
Client Sample ID: SWAB-29

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 16:10
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	6	mg/L		1		E300.0	09/04/18 20:32 / ljl
Fluoride	0.2	mg/L		0.1		A4500-F C	09/06/18 16:17 / ljl
Sulfate	43	mg/L		1		E300.0	09/04/18 20:32 / ljl
PHYSICAL PROPERTIES							
pH	7.50	s.u.	H	0.01		A4500-H B	08/31/18 12:37 / kjp
pH Measurement Temp	14	°C				A4500-H B	08/31/18 12:37 / kjp
Solids, Total Dissolved TDS @ 180 C	304	mg/L		10		A2540 C	08/31/18 15:32 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	0.09	mg/L		0.05		E350.1	09/02/18 18:26 / ljl
Nitrogen, Nitrate+Nitrite as N	0.05	mg/L		0.01		E353.2	08/30/18 17:08 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 17:47 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 17:47 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 17:47 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 17:47 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 17:47 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 17:47 / eli-b
Manganese	0.08	mg/L		0.05		E200.8	09/09/18 17:47 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 17:47 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 17:47 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 17:47 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 17:47 / eli-b
Uranium	0.027	mg/L		0.001		E200.8	09/09/18 17:47 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.07	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	2.0	pCi/L	U			RA-05	09/21/18 08:21 / arh
Radium 228 precision (±)	1.2	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 MDC	2.3	pCi/L				RA-05	09/21/18 08:21 / arh
Thorium 230	-0.02	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.06	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.84	s.u.				FIELD	08/29/18 16:10 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-005
Client Sample ID: SWAB-31

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/30/18 08:42
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	10	mg/L		1		E300.0	09/04/18 20:51 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:20 / ljl
Sulfate	26	mg/L		1		E300.0	09/04/18 20:51 / ljl
PHYSICAL PROPERTIES							
pH	7.32	s.u.	H	0.01		A4500-H B	08/31/18 12:40 / kjp
pH Measurement Temp	14	°C				A4500-H B	08/31/18 12:40 / kjp
Solids, Total Dissolved TDS @ 180 C	260	mg/L		10		A2540 C	08/31/18 15:32 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	0.20	mg/L		0.05		E350.1	09/02/18 18:27 / ljl
Nitrogen, Nitrate+Nitrite as N	0.46	mg/L		0.01		E353.2	08/30/18 17:12 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 17:51 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 17:51 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 17:51 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 17:51 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 17:51 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 17:51 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 17:51 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 17:51 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 17:51 / eli-b
Selenium	0.011	mg/L		0.005		E200.8	09/09/18 17:51 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 17:51 / eli-b
Uranium	0.027	mg/L		0.001		E200.8	09/09/18 17:51 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	2.5	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 precision (±)	1.2	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 MDC	2.2	pCi/L				RA-05	09/21/18 08:21 / arh
Thorium 230	-0.009	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.06	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.63	s.u.				FIELD	08/30/18 08:42 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-006
Client Sample ID: SWAB-32

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 16:20
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	12	mg/L		1		E300.0	09/04/18 21:10 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:22 / ljl
Sulfate	46	mg/L		1		E300.0	09/04/18 21:10 / ljl
PHYSICAL PROPERTIES							
pH	7.95	s.u.	H	0.01		A4500-H B	08/31/18 12:43 / kjp
pH Measurement Temp	15	°C				A4500-H B	08/31/18 12:43 / kjp
Solids, Total Dissolved TDS @ 180 C	304	mg/L		10		A2540 C	08/31/18 15:32 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:29 / ljl
Nitrogen, Nitrate+Nitrite as N	1.37	mg/L		0.01		E353.2	08/30/18 17:13 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 17:55 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 17:55 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 17:55 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 17:55 / eli-b
Cadmium	0.001	mg/L		0.001		E200.8	09/09/18 17:55 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 17:55 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 17:55 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 17:55 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 17:55 / eli-b
Selenium	0.009	mg/L		0.005		E200.8	09/09/18 17:55 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 17:55 / eli-b
Uranium	0.120	mg/L		0.001		E200.8	09/09/18 17:55 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	2.0	pCi/L	U			RA-05	09/21/18 08:21 / arh
Radium 228 precision (±)	1.4	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 MDC	2.3	pCi/L				RA-05	09/21/18 08:21 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.05	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.32	s.u.				FIELD	08/29/18 16:20 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-007
Client Sample ID: SWR-UG

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/28/18 10:30
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	11	mg/L		1		E300.0	09/04/18 21:29 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:25 / ljl
Sulfate	40	mg/L		1		E300.0	09/04/18 21:29 / ljl
PHYSICAL PROPERTIES							
pH	8.23	s.u.	H	0.01		A4500-H B	08/31/18 12:46 / kjp
pH Measurement Temp	15	°C				A4500-H B	08/31/18 12:46 / kjp
Solids, Total Dissolved TDS @ 180 C	244	mg/L		10		A2540 C	08/31/18 16:21 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:30 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	08/30/18 17:14 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 17:59 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 17:59 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 17:59 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 17:59 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 17:59 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 17:59 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 17:59 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 17:59 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 17:59 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 17:59 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 17:59 / eli-b
Uranium	0.004	mg/L		0.001		E200.8	09/09/18 17:59 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	0.4	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.6	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.7	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.07	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.94	s.u.				FIELD	08/28/18 10:30 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-008
Client Sample ID: SWR-A

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/28/18 10:45
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	14	mg/L		1		E300.0	09/03/18 22:10 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:28 / ljl
Sulfate	43	mg/L		1		E300.0	09/03/18 22:10 / ljl
PHYSICAL PROPERTIES							
pH	8.39	s.u.	H	0.01		A4500-H B	08/31/18 12:49 / kjp
pH Measurement Temp	15	°C				A4500-H B	08/31/18 12:49 / kjp
Solids, Total Dissolved TDS @ 180 C	261	mg/L		10		A2540 C	08/31/18 16:21 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:31 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	08/30/18 17:15 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 18:18 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:18 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:18 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:18 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 18:18 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:18 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 18:18 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:18 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 18:18 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 18:18 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 18:18 / eli-b
Uranium	0.005	mg/L		0.001		E200.8	09/09/18 18:18 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.05	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	1	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.6	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.6	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	-0.03	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.07	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.96	s.u.				FIELD	08/28/18 10:45 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-009
Client Sample ID: SWR-B

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/28/18 11:10
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	15	mg/L		1		E300.0	09/03/18 23:08 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:32 / ljl
Sulfate	46	mg/L		1		E300.0	09/03/18 23:08 / ljl
PHYSICAL PROPERTIES							
pH	8.31	s.u.	H	0.01		A4500-H B	08/31/18 13:01 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:01 / kjp
Solids, Total Dissolved TDS @ 180 C	268	mg/L		10		A2540 C	08/31/18 16:21 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:32 / ljl
Nitrogen, Nitrate+Nitrite as N	0.03	mg/L		0.01		E353.2	08/30/18 17:16 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 18:22 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:22 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:22 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:22 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 18:22 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:22 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 18:22 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:22 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 18:22 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 18:22 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 18:22 / eli-b
Uranium	0.007	mg/L		0.001		E200.8	09/09/18 18:22 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	0.8	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.6	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.6	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	-0.02	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.06	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.86	s.u.				FIELD	08/28/18 11:10 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-010
Client Sample ID: SWR-C

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/28/18 11:43
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	16	mg/L		1		E300.0	09/03/18 23:27 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 16:34 / ljl
Sulfate	48	mg/L		1		E300.0	09/03/18 23:27 / ljl
PHYSICAL PROPERTIES							
pH	8.40	s.u.	H	0.01		A4500-H B	08/31/18 13:07 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:07 / kjp
Solids, Total Dissolved TDS @ 180 C	275	mg/L		10		A2540 C	08/31/18 16:22 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:33 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	08/30/18 17:18 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 18:26 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:26 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:26 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:26 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 18:26 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:26 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 18:26 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:26 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 18:26 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 18:26 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 18:26 / eli-b
Uranium	0.008	mg/L		0.001		E200.8	09/09/18 18:26 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L	U			E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	0.06	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.6	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.7	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.08	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.90	s.u.				FIELD	08/28/18 11:43 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-011
Client Sample ID: WN-1

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 15:01
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	27	mg/L	D	2		E300.0	09/03/18 23:46 / ljl
Fluoride	1.8	mg/L		0.1		A4500-F C	09/06/18 16:45 / ljl
Sulfate	2640	mg/L	D	8		E300.0	09/03/18 23:46 / ljl
PHYSICAL PROPERTIES							
pH	6.81	s.u.	H	0.01		A4500-H B	08/31/18 13:10 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:10 / kjp
Solids, Total Dissolved TDS @ 180 C	3470	mg/L	D	30		A2540 C	08/31/18 16:22 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	214	mg/L	D	10		E350.1	09/02/18 18:51 / ljl
Nitrogen, Nitrate+Nitrite as N	27.5	mg/L	D	0.2		E353.2	08/30/18 17:19 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 18:30 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:30 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:30 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:30 / eli-b
Cadmium	0.003	mg/L		0.001		E200.8	09/09/18 18:30 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:30 / eli-b
Manganese	23.2	mg/L		0.05		E200.8	09/09/18 18:30 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:30 / eli-b
Nickel	0.10	mg/L		0.05		E200.8	09/09/18 18:30 / eli-b
Selenium	0.017	mg/L		0.005		E200.8	09/09/18 18:30 / eli-b
Thallium	0.014	mg/L		0.001		E200.8	09/09/18 18:30 / eli-b
Uranium	1.41	mg/L		0.001		E200.8	09/09/18 18:30 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.7	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 10:02 / arh
Radium 228	3.0	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.4	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.3	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	0.2	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.05	s.u.				FIELD	08/29/18 15:01 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-012
Client Sample ID: WN-4R

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 13:46
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	75	mg/L	D	2		E300.0	09/04/18 00:05 / ljl
Fluoride	5.7	mg/L		0.1		A4500-F C	09/06/18 16:52 / ljl
Sulfate	2770	mg/L	D	8		E300.0	09/04/18 00:05 / ljl
PHYSICAL PROPERTIES							
pH	6.25	s.u.	H	0.01		A4500-H B	08/31/18 13:12 / kjp
pH Measurement Temp	17	°C				A4500-H B	08/31/18 13:12 / kjp
Solids, Total Dissolved TDS @ 180 C	4490	mg/L	D	40		A2540 C	08/31/18 16:23 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	250	mg/L	D	10		E350.1	09/02/18 18:41 / ljl
Nitrogen, Nitrate+Nitrite as N	204	mg/L	D	2		E353.2	08/30/18 17:20 / ljl
METALS, DISSOLVED							
Aluminum	2.5	mg/L		0.1		E200.8	09/09/18 18:34 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:34 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:34 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:34 / eli-b
Cadmium	0.016	mg/L		0.001		E200.8	09/09/18 18:34 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:34 / eli-b
Manganese	87.3	mg/L		0.05		E200.8	09/09/18 18:34 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:34 / eli-b
Nickel	0.41	mg/L		0.05		E200.8	09/09/18 18:34 / eli-b
Selenium	0.055	mg/L		0.005		E200.8	09/09/18 18:34 / eli-b
Thallium	0.001	mg/L		0.001		E200.8	09/09/18 18:34 / eli-b
Uranium	0.079	mg/L		0.001		E200.8	09/09/18 18:34 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.1	pCi/L	U			E903.0	09/26/18 15:34 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 228	0.6	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.4	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.2	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	0.1	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	6.46	s.u.				FIELD	08/29/18 13:46 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-013
Client Sample ID: WN-5

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 11:49
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	102	mg/L		1		E300.0	09/04/18 00:25 / ljl
Fluoride	ND	mg/L		0.1		A4500-F C	09/06/18 16:59 / ljl
Sulfate	1680	mg/L	D	4		E300.0	09/04/18 00:25 / ljl
PHYSICAL PROPERTIES							
pH	6.88	s.u.	H	0.01		A4500-H B	08/31/18 13:15 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:15 / kjp
Solids, Total Dissolved TDS @ 180 C	3700	mg/L	D	40		A2540 C	08/31/18 16:23 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:42 / ljl
Nitrogen, Nitrate+Nitrite as N	43.8	mg/L	D	0.2		E353.2	08/30/18 17:21 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 18:50 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:50 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:50 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:50 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 18:50 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:50 / eli-b
Manganese	0.58	mg/L		0.05		E200.8	09/09/18 18:50 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:50 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 18:50 / eli-b
Selenium	0.016	mg/L		0.005		E200.8	09/09/18 18:50 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 18:50 / eli-b
Uranium	1.52	mg/L		0.001		E200.8	09/09/18 18:50 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.1	pCi/L	U			E903.0	09/26/18 15:34 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 228	1.4	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.2	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.5	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.3	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.09	s.u.				FIELD	08/29/18 11:49 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-014
Client Sample ID: WN-21

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 15:22
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	15	mg/L		1		E300.0	09/04/18 00:44 / ljl
Fluoride	0.2	mg/L		0.1		A4500-F C	09/06/18 17:02 / ljl
Sulfate	80	mg/L		1		E300.0	09/04/18 00:44 / ljl
PHYSICAL PROPERTIES							
pH	7.67	s.u.	H	0.01		A4500-H B	08/31/18 13:18 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:18 / kjp
Solids, Total Dissolved TDS @ 180 C	370	mg/L		10		A2540 C	08/31/18 16:23 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	0.83	mg/L		0.05		E350.1	09/02/18 18:43 / ljl
Nitrogen, Nitrate+Nitrite as N	2.06	mg/L	D	0.02		E353.2	08/30/18 17:25 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 18:53 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:53 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:53 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:53 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 18:53 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:53 / eli-b
Manganese	0.18	mg/L		0.05		E200.8	09/09/18 18:53 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:53 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 18:53 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 18:53 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 18:53 / eli-b
Uranium	0.051	mg/L		0.001		E200.8	09/09/18 18:53 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.07	pCi/L	U			E903.0	09/26/18 15:34 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 228	0.4	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.5	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.5	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	0.05	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.94	s.u.				FIELD	08/29/18 15:22 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-015
Client Sample ID: WN-39B

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 11:11
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	18	mg/L		1		E300.0	09/04/18 01:03 / ljl
Fluoride	0.2	mg/L		0.1		A4500-F C	09/06/18 17:05 / ljl
Sulfate	109	mg/L		1		E300.0	09/04/18 01:03 / ljl
PHYSICAL PROPERTIES							
pH	7.86	s.u.	H	0.01		A4500-H B	08/31/18 13:21 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:21 / kjp
Solids, Total Dissolved TDS @ 180 C	433	mg/L		10		A2540 C	08/31/18 16:23 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:44 / ljl
Nitrogen, Nitrate+Nitrite as N	8.6	mg/L	D	0.1		E353.2	08/30/18 17:28 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 18:57 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 18:57 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 18:57 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 18:57 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 18:57 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 18:57 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 18:57 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 18:57 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 18:57 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 18:57 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 18:57 / eli-b
Uranium	0.111	mg/L		0.001		E200.8	09/09/18 18:57 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.04	pCi/L	U			E903.0	09/26/18 15:34 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 228	0.3	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.6	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	2.7	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	-0.03	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.05	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.29	s.u.				FIELD	08/29/18 11:11 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-016
Client Sample ID: WN-41B

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 10:51
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	409	mg/L		1		E300.0	09/04/18 01:22 / ljl
Fluoride	1.1	mg/L		0.1		A4500-F C	09/06/18 17:07 / ljl
Sulfate	391	mg/L	D	2		E300.0	09/04/18 01:22 / ljl
PHYSICAL PROPERTIES							
pH	8.11	s.u.	H	0.01		A4500-H B	08/31/18 13:24 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:24 / kjp
Solids, Total Dissolved TDS @ 180 C	1450	mg/L	D	20		A2540 C	08/31/18 16:24 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:45 / ljl
Nitrogen, Nitrate+Nitrite as N	0.14	mg/L		0.01		E353.2	08/30/18 17:30 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 19:17 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 19:17 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 19:17 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 19:17 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 19:17 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 19:17 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 19:17 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 19:17 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 19:17 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 19:17 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 19:17 / eli-b
Uranium	0.008	mg/L		0.001		E200.8	09/09/18 19:17 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.06	pCi/L	U			E903.0	09/26/18 15:34 / arh
Radium 226 precision (±)	0.1	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 228	0.8	pCi/L	U			RA-05	09/21/18 08:21 / arh
Radium 228 precision (±)	1.3	pCi/L				RA-05	09/21/18 08:21 / arh
Radium 228 MDC	2.1	pCi/L				RA-05	09/21/18 08:21 / arh
Thorium 230	0.04	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.06	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.09	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.53	s.u.				FIELD	08/29/18 10:51 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-017
Client Sample ID: WN-42A

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 11:27
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	67	mg/L	D	2		E300.0	09/04/18 01:42 / ljl
Fluoride	ND	mg/L		0.1		A4500-F C	09/06/18 17:10 / ljl
Sulfate	1900	mg/L	D	8		E300.0	09/04/18 01:42 / ljl
PHYSICAL PROPERTIES							
pH	6.99	s.u.	H	0.01		A4500-H B	08/31/18 13:27 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:27 / kjp
Solids, Total Dissolved TDS @ 180 C	4190	mg/L	D	30		A2540 C	08/31/18 16:24 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:47 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	08/30/18 17:31 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 19:21 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 19:21 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 19:21 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 19:21 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 19:21 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 19:21 / eli-b
Manganese	0.19	mg/L		0.05		E200.8	09/09/18 19:21 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 19:21 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 19:21 / eli-b
Selenium	0.074	mg/L		0.005		E200.8	09/09/18 19:21 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 19:21 / eli-b
Uranium	1.01	mg/L		0.001		E200.8	09/09/18 19:21 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.01	pCi/L	U			E903.0	09/26/18 15:34 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 15:34 / arh
Radium 228	1.7	pCi/L	U			RA-05	09/21/18 09:54 / arh
Radium 228 precision (±)	1.4	pCi/L				RA-05	09/21/18 09:54 / arh
Radium 228 MDC	3.0	pCi/L				RA-05	09/21/18 09:54 / arh
Thorium 230	0.04	pCi/L	U			E908.0	09/24/18 10:49 / cnh
Thorium 230 precision (±)	0.1	pCi/L				E908.0	09/24/18 10:49 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:49 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.23	s.u.				FIELD	08/29/18 11:27 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-018
Client Sample ID: JJ-1R

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 10:30
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	12	mg/L		1		E300.0	09/04/18 02:39 / ljl
Fluoride	0.5	mg/L		0.1		A4500-F C	09/06/18 17:13 / ljl
Sulfate	36	mg/L		1		E300.0	09/04/18 02:39 / ljl
PHYSICAL PROPERTIES							
pH	7.22	s.u.	H	0.01		A4500-H B	08/31/18 13:30 / kjp
pH Measurement Temp	17	°C				A4500-H B	08/31/18 13:30 / kjp
Solids, Total Dissolved TDS @ 180 C	412	mg/L		10		A2540 C	08/31/18 16:24 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:48 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	08/30/18 17:32 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 19:33 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 19:33 / eli-b
Arsenic	0.01	mg/L		0.01		E200.8	09/09/18 19:33 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 19:33 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 19:33 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 19:33 / eli-b
Manganese	0.24	mg/L		0.05		E200.8	09/09/18 19:33 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 19:33 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 19:33 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 19:33 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 19:33 / eli-b
Uranium	0.010	mg/L		0.001		E200.8	09/09/18 19:33 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.3	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	2.6	pCi/L				RA-05	09/21/18 11:08 / arh
Radium 228 precision (±)	1.3	pCi/L				RA-05	09/21/18 11:08 / arh
Radium 228 MDC	1.9	pCi/L				RA-05	09/21/18 11:08 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.04	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.09	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.51	s.u.				FIELD	08/29/18 10:30 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-019
Client Sample ID: SWAB-1R

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 15:41
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	26	mg/L		1		E300.0	09/04/18 03:37 / ljl
Fluoride	0.1	mg/L		0.1		A4500-F C	09/06/18 17:16 / ljl
Sulfate	1040	mg/L	D	4		E300.0	09/04/18 03:37 / ljl
PHYSICAL PROPERTIES							
pH	7.32	s.u.	H	0.01		A4500-H B	08/31/18 13:33 / kjp
pH Measurement Temp	17	°C				A4500-H B	08/31/18 13:33 / kjp
Solids, Total Dissolved TDS @ 180 C	2630	mg/L	D	20		A2540 C	08/31/18 16:24 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:49 / ljl
Nitrogen, Nitrate+Nitrite as N	129	mg/L	D	1		E353.2	08/30/18 17:33 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 19:37 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 19:37 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 19:37 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 19:37 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 19:37 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 19:37 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/09/18 19:37 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 19:37 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 19:37 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 19:37 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 19:37 / eli-b
Uranium	1.75	mg/L		0.001		E200.8	09/09/18 19:37 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	1.8	pCi/L	U			RA-05	09/21/18 11:08 / arh
Radium 228 precision (±)	1.2	pCi/L				RA-05	09/21/18 11:08 / arh
Radium 228 MDC	1.8	pCi/L				RA-05	09/21/18 11:08 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.06	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.37	s.u.				FIELD	08/29/18 15:41 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-020
Client Sample ID: SWAB-2

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 08:43
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	18	mg/L		1		E300.0	09/04/18 03:56 / ljl
Fluoride	0.6	mg/L		0.1		A4500-F C	09/06/18 17:19 / ljl
Sulfate	582	mg/L	D	2		E300.0	09/04/18 03:56 / ljl
PHYSICAL PROPERTIES							
pH	7.07	s.u.	H	0.01		A4500-H B	08/31/18 13:39 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:39 / kjp
Solids, Total Dissolved TDS @ 180 C	1780	mg/L	D	20		A2540 C	08/31/18 16:25 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	0.75	mg/L		0.05		E350.1	09/02/18 18:50 / ljl
Nitrogen, Nitrate+Nitrite as N	120	mg/L	D	1		E353.2	08/30/18 17:34 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/09/18 19:40 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/09/18 19:40 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/09/18 19:40 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/09/18 19:40 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/09/18 19:40 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/09/18 19:40 / eli-b
Manganese	0.31	mg/L		0.05		E200.8	09/09/18 19:40 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/09/18 19:40 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/09/18 19:40 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/09/18 19:40 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/09/18 19:40 / eli-b
Uranium	0.680	mg/L		0.001		E200.8	09/09/18 19:40 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.2	pCi/L	U			E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	1.0	pCi/L	U			RA-05	09/21/18 11:08 / arh
Radium 228 precision (±)	1.3	pCi/L				RA-05	09/21/18 11:08 / arh
Radium 228 MDC	2.0	pCi/L				RA-05	09/21/18 11:08 / arh
Thorium 230	0.05	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.06	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.09	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.53	s.u.				FIELD	08/29/18 08:43 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-021
Client Sample ID: SWR-DG

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 12:07
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	16	mg/L		1		E300.0	09/04/18 04:15 / ljl
Fluoride	0.3	mg/L		0.1		A4500-F C	09/06/18 17:38 / ljl
Sulfate	49	mg/L		1		E300.0	09/04/18 04:15 / ljl
PHYSICAL PROPERTIES							
pH	8.47	s.u.	H	0.01		A4500-H B	08/31/18 13:41 / kjp
pH Measurement Temp	16	°C				A4500-H B	08/31/18 13:41 / kjp
Solids, Total Dissolved TDS @ 180 C	278	mg/L		10		A2540 C	08/31/18 16:25 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:55 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	08/30/18 17:36 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/13/18 11:20 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/13/18 11:20 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/13/18 11:20 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/15/18 02:58 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/13/18 11:20 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/13/18 11:20 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/13/18 11:20 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/13/18 11:20 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/13/18 11:20 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/13/18 11:20 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/13/18 11:20 / eli-b
Uranium	0.008	mg/L		0.001		E200.8	09/13/18 11:20 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.1	pCi/L	U			E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	2.0	pCi/L	U			RA-05	09/21/18 11:08 / arh
Radium 228 precision (±)	1.4	pCi/L				RA-05	09/21/18 11:08 / arh
Radium 228 MDC	2.0	pCi/L				RA-05	09/21/18 11:08 / arh
Thorium 230	-0.007	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.05	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.1	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	9.00	s.u.				FIELD	08/29/18 12:07 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-022
Client Sample ID: Field Blank

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/30/18 09:15
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	ND	mg/L		1		E300.0	09/04/18 04:35 / ljl
Fluoride	ND	mg/L		0.1		A4500-F C	09/06/18 17:44 / ljl
Sulfate	ND	mg/L		1		E300.0	09/04/18 04:35 / ljl
PHYSICAL PROPERTIES							
pH	5.74	s.u.	H	0.01		A4500-H B	08/31/18 13:44 / kjp
pH Measurement Temp	17	°C				A4500-H B	08/31/18 13:44 / kjp
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	08/31/18 16:25 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 18:58 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.01		E353.2	08/30/18 17:37 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/13/18 11:37 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/13/18 11:37 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/13/18 11:37 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/15/18 03:02 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/13/18 11:37 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/13/18 11:37 / eli-b
Manganese	ND	mg/L		0.05		E200.8	09/13/18 11:37 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/13/18 11:37 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/13/18 11:37 / eli-b
Selenium	ND	mg/L		0.005		E200.8	09/13/18 11:37 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/13/18 11:37 / eli-b
Uranium	ND	mg/L		0.001		E200.8	09/13/18 11:37 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.08	pCi/L	U			E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.3	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	0.8	pCi/L	U			RA-05	09/21/18 11:08 / arh
Radium 228 precision (±)	1.3	pCi/L				RA-05	09/21/18 11:08 / arh
Radium 228 MDC	2.2	pCi/L				RA-05	09/21/18 11:08 / arh
Thorium 230	0.02	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.05	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.09	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	8.87	s.u.				FIELD	08/30/18 09:15 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-023
Client Sample ID: WN-1R

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 15:01
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	33	mg/L	D	2		E300.0	09/04/18 04:54 / ljl
Fluoride	1.6	mg/L		0.1		A4500-F C	09/06/18 17:47 / ljl
Sulfate	2600	mg/L	D	8		E300.0	09/04/18 04:54 / ljl
PHYSICAL PROPERTIES							
pH	6.81	s.u.	H	0.01		A4500-H B	08/31/18 13:47 / kjp
pH Measurement Temp	17	°C				A4500-H B	08/31/18 13:47 / kjp
Solids, Total Dissolved TDS @ 180 C	3750	mg/L	D	30		A2540 C	08/31/18 16:26 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	256	mg/L	D	10		E350.1	09/06/18 16:59 / dmb
Nitrogen, Nitrate+Nitrite as N	35.4	mg/L	D	0.5		E353.2	08/30/18 17:38 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/13/18 11:41 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/13/18 11:41 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/13/18 11:41 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/15/18 03:06 / eli-b
Cadmium	0.002	mg/L		0.001		E200.8	09/13/18 11:41 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/13/18 11:41 / eli-b
Manganese	26.3	mg/L		0.05		E200.8	09/13/18 11:41 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/13/18 11:41 / eli-b
Nickel	0.07	mg/L		0.05		E200.8	09/13/18 11:41 / eli-b
Selenium	0.027	mg/L		0.005		E200.8	09/13/18 11:41 / eli-b
Thallium	0.011	mg/L		0.001		E200.8	09/13/18 11:41 / eli-b
Uranium	1.49	mg/L		0.001		E200.8	09/13/18 11:41 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	1.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.3	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	0.7	pCi/L	U			RA-05	09/21/18 12:42 / arh
Radium 228 precision (±)	1.3	pCi/L				RA-05	09/21/18 12:42 / arh
Radium 228 MDC	2.1	pCi/L				RA-05	09/21/18 12:42 / arh
Thorium 230	0.05	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.1	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.05	s.u.				FIELD	08/29/18 15:01 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-024
Client Sample ID: WN-5R

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 11:49
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	106	mg/L		1		E300.0	09/04/18 05:13 / ljl
Fluoride	ND	mg/L		0.1		A4500-F C	09/06/18 17:52 / ljl
Sulfate	1740	mg/L	D	4		E300.0	09/04/18 05:13 / ljl
PHYSICAL PROPERTIES							
pH	6.91	s.u.	H	0.01		A4500-H B	08/31/18 13:50 / kjp
pH Measurement Temp	17	°C				A4500-H B	08/31/18 13:50 / kjp
Solids, Total Dissolved TDS @ 180 C	3670	mg/L	D	30		A2540 C	08/31/18 16:26 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 19:01 / ljl
Nitrogen, Nitrate+Nitrite as N	46.0	mg/L	D	0.5		E353.2	08/30/18 17:42 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/13/18 11:45 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/13/18 11:45 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/13/18 11:45 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/15/18 03:10 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/13/18 11:45 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/13/18 11:45 / eli-b
Manganese	0.56	mg/L		0.05		E200.8	09/13/18 11:45 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/13/18 11:45 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/13/18 11:45 / eli-b
Selenium	0.016	mg/L		0.005		E200.8	09/15/18 03:10 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/13/18 11:45 / eli-b
Uranium	1.47	mg/L		0.001		E200.8	09/13/18 11:45 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.3	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	2.0	pCi/L	U			RA-05	09/21/18 11:07 / arh
Radium 228 precision (±)	1.1	pCi/L				RA-05	09/21/18 11:07 / arh
Radium 228 MDC	2.0	pCi/L				RA-05	09/21/18 11:07 / arh
Thorium 230	0.1	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.1	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.09	s.u.				FIELD	08/30/18 11:49 / ***

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: Western Nuclear Inc
Project: Split Rock Mill GWPP
Lab ID: C18081086-025
Client Sample ID: WN-5S

Revised Date: 10/04/18
Report Date: 10/01/18
Collection Date: 08/29/18 11:49
DateReceived: 08/30/18
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Chloride	106	mg/L		1		E300.0	09/04/18 05:32 / ljl
Fluoride	ND	mg/L		0.1		A4500-F C	09/06/18 17:58 / ljl
Sulfate	1750	mg/L	D	4		E300.0	09/04/18 05:32 / ljl
PHYSICAL PROPERTIES							
pH	6.90	s.u.	H	0.01		A4500-H B	08/31/18 13:53 / kjp
pH Measurement Temp	18	°C				A4500-H B	08/31/18 13:53 / kjp
Solids, Total Dissolved TDS @ 180 C	3730	mg/L	D	30		A2540 C	08/31/18 16:26 / kjp
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/02/18 19:02 / ljl
Nitrogen, Nitrate+Nitrite as N	44.2	mg/L	D	0.5		E353.2	08/30/18 17:45 / ljl
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.8	09/13/18 12:05 / eli-b
Antimony	ND	mg/L		0.003		E200.8	09/13/18 12:05 / eli-b
Arsenic	ND	mg/L		0.01		E200.8	09/13/18 12:05 / eli-b
Beryllium	ND	mg/L		0.004		E200.8	09/15/18 03:14 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	09/13/18 12:05 / eli-b
Lead	ND	mg/L		0.005		E200.8	09/13/18 12:05 / eli-b
Manganese	0.54	mg/L		0.05		E200.8	09/13/18 12:05 / eli-b
Molybdenum	ND	mg/L		0.1		E200.8	09/13/18 12:05 / eli-b
Nickel	ND	mg/L		0.05		E200.8	09/13/18 12:05 / eli-b
Selenium	0.021	mg/L		0.005		E200.8	09/13/18 12:05 / eli-b
Thallium	ND	mg/L		0.001		E200.8	09/13/18 12:05 / eli-b
Uranium	1.52	mg/L		0.001		E200.8	09/13/18 12:05 / eli-b
RADIONUCLIDES, DISSOLVED							
Radium 226	0.1	pCi/L	U			E903.0	09/26/18 11:11 / arh
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 226 MDC	0.2	pCi/L				E903.0	09/26/18 11:11 / arh
Radium 228	-0.3	pCi/L	U			RA-05	09/21/18 12:42 / arh
Radium 228 precision (±)	1.3	pCi/L				RA-05	09/21/18 12:42 / arh
Radium 228 MDC	2.3	pCi/L				RA-05	09/21/18 12:42 / arh
Thorium 230	0.03	pCi/L	U			E908.0	09/24/18 10:52 / cnh
Thorium 230 precision (±)	0.08	pCi/L				E908.0	09/24/18 10:52 / cnh
Thorium 230 MDC	0.2	pCi/L				E908.0	09/24/18 10:52 / cnh
CLIENT PROVIDED FIELD PARAMETERS							
Field pH	7.09	s.u.				FIELD	08/30/18 11:49 / ***

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Western Nuclear Inc
Report Date: 10/01/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C										Batch: TDS180831A
Lab ID: MB-1_180831A	Method Blank					Run: BAL-16_180831A				08/31/18 15:28
Solids, Total Dissolved TDS @ 180 C		8	mg/L							
Lab ID: LCS-2_180831A	Laboratory Control Sample					Run: BAL-16_180831A				08/31/18 15:28
Solids, Total Dissolved TDS @ 180 C		1130	mg/L	11	101	90	110			
Lab ID: C18081086-001A DUP	Sample Duplicate					Run: BAL-16_180831A				08/31/18 15:31
Solids, Total Dissolved TDS @ 180 C		1220	mg/L	10				0.9	5	
Lab ID: MB-25_180831A	Method Blank					Run: BAL-16_180831A				08/31/18 16:22
Solids, Total Dissolved TDS @ 180 C		ND	mg/L							
Lab ID: LCS-26_180831A	Laboratory Control Sample					Run: BAL-16_180831A				08/31/18 16:22
Solids, Total Dissolved TDS @ 180 C		1120	mg/L	11	101	90	110			
Lab ID: C18081086-011A DUP	Sample Duplicate					Run: BAL-16_180831A				08/31/18 16:23
Solids, Total Dissolved TDS @ 180 C		3560	mg/L	38				2.6	5	
Lab ID: C18081086-021A DUP	Sample Duplicate					Run: BAL-16_180831A				08/31/18 16:25
Solids, Total Dissolved TDS @ 180 C		276	mg/L	10				0.7	5	

Qualifiers:

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Western Nuclear Inc
Report Date: 10/01/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **A4500-F C**										Batch: R239328
Lab ID: **LCS**	Laboratory Control Sample					Run: MANTECH_180906A				09/06/18 15:54
Fluoride		1.97	mg/L	0.10	98	90	110			
Lab ID: **MBLK**	Method Blank					Run: MANTECH_180906A				09/06/18 16:00
Fluoride		ND	mg/L	0.04						
Lab ID: **C18081086-001AMS**	Sample Matrix Spike					Run: MANTECH_180906A				09/06/18 16:05
Fluoride		2.20	mg/L	0.10	97	90	110			
Lab ID: **C18081086-002ADUP**	Sample Duplicate					Run: MANTECH_180906A				09/06/18 16:10
Fluoride		0.160	mg/L	0.10				0.0	10	
Lab ID: **C18081086-011AMS**	Sample Matrix Spike					Run: MANTECH_180906A				09/06/18 16:48
Fluoride		3.65	mg/L	0.10	93	90	110			
Lab ID: **C18081086-012ADUP**	Sample Duplicate					Run: MANTECH_180906A				09/06/18 16:56
Fluoride		5.70	mg/L	0.10				0.0	10	
Lab ID: **LCS**	Laboratory Control Sample					Run: MANTECH_180906A				09/06/18 17:30
Fluoride		1.86	mg/L	0.10	93	90	110			
Lab ID: **MBLK**	Method Blank					Run: MANTECH_180906A				09/06/18 17:35
Fluoride		ND	mg/L	0.04						
Lab ID: **C18081086-023AMS**	Sample Matrix Spike					Run: MANTECH_180906A				09/06/18 17:49
Fluoride		3.38	mg/L	0.10	89	90	110			S
Lab ID: **C18081086-024ADUP**	Sample Duplicate					Run: MANTECH_180906A				09/06/18 17:55
Fluoride		0.0500	mg/L	0.10					10	

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: Western Nuclear Inc
Report Date: 10/01/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B									Analytical Run: PHSC_101-C_180831A	
Lab ID: 6.86	2	Initial Calibration Verification Standard							08/31/18 11:07	
pH		6.85	s.u.	0.010	100	98	102			
pH Measurement Temp		19.3	°C			0	0			
Method: A4500-H B									Batch: R239158	
Lab ID: C18081076-002ADUP	2	Sample Duplicate				Run: PHSC_101-C_180831A			08/31/18 12:23	
pH		7.06	s.u.	0.010				0.1	1.5	
pH Measurement Temp		14.0	°C							
Lab ID: C18081086-009ADUP	2	Sample Duplicate				Run: PHSC_101-C_180831A			08/31/18 13:04	
pH		8.32	s.u.	0.010				0.1	1.5	
pH Measurement Temp		15.7	°C							
Lab ID: C18081086-019ADUP	2	Sample Duplicate				Run: PHSC_101-C_180831A			08/31/18 13:36	
pH		7.33	s.u.	0.010				0.1	1.5	
pH Measurement Temp		16.5	°C							

Qualifiers:

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Western Nuclear Inc **Report Date:** 10/01/18

Project: Split Rock Mill GWPP **Work Order:** C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC3-C_180903A	
Lab ID: ICV	2	Initial Calibration Verification Standard							09/03/18 16:25	
Chloride		10.1	mg/L	1.0	101	90	110			
Sulfate		40.8	mg/L	1.0	102	90	110			
Method: E300.0									Batch: R239221	
Lab ID: ICB	2	Method Blank				Run: IC3-C_180903A			09/03/18 16:44	
Chloride		ND	mg/L	0.09						
Sulfate		0.1	mg/L	0.1						
Lab ID: LFB	2	Laboratory Fortified Blank				Run: IC3-C_180903A			09/03/18 17:03	
Chloride		10.2	mg/L	1.0	102	90	110			
Sulfate		41.4	mg/L	1.0	103	90	110			
Lab ID: C18080634-011AMS	2	Sample Matrix Spike				Run: IC3-C_180903A			09/03/18 18:01	
Chloride		1240	mg/L	10	103	80	120			
Sulfate		21600	mg/L	42		80	120			A
Lab ID: C18080634-011AMSD	2	Sample Matrix Spike Duplicate				Run: IC3-C_180903A			09/03/18 18:20	
Chloride		1410	mg/L	10	120	80	120	13	20	
Sulfate		31800	mg/L	42		80	120	38	20	AR
Lab ID: C18081086-008AMS	2	Sample Matrix Spike				Run: IC3-C_180903A			09/03/18 22:29	
Chloride		25.2	mg/L	1.0	107	80	120			
Sulfate		86.3	mg/L	1.0	107	80	120			
Lab ID: C18081086-008AMSD	2	Sample Matrix Spike Duplicate				Run: IC3-C_180903A			09/03/18 22:48	
Chloride		25.2	mg/L	1.0	107	80	120	0.0	20	
Sulfate		86.6	mg/L	1.0	108	80	120	0.3	20	
Lab ID: C18081086-018AMS	2	Sample Matrix Spike				Run: IC3-C_180903A			09/04/18 02:58	
Chloride		33.0	mg/L	1.0	105	80	120			
Sulfate		121	mg/L	1.0	105	80	120			
Lab ID: C18081086-018AMSD	2	Sample Matrix Spike Duplicate				Run: IC3-C_180903A			09/04/18 03:18	
Chloride		33.1	mg/L	1.0	105	80	120	0.2	20	
Sulfate		121	mg/L	1.0	106	80	120	0.2	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory 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: Western Nuclear Inc
Report Date: 10/01/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	**E300.0**									Analytical Run: IC3-C_180904A	
Lab ID:	**ICV**	2	Initial Calibration Verification Standard							09/04/18 13:17	
Chloride			10.2	mg/L	1.0	102	90	110			
Sulfate			41.1	mg/L	1.0	103	90	110			
Method:	**E300.0**									Batch: R239266	
Lab ID:	**ICB**	2	Method Blank				Run: IC3-C_180904A			09/04/18 13:36	
Chloride			ND	mg/L	0.09						
Sulfate			0.1	mg/L	0.1						
Lab ID:	**LFB**	2	Laboratory Fortified Blank				Run: IC3-C_180904A			09/04/18 13:56	
Chloride			10.3	mg/L	1.0	103	90	110			
Sulfate			41.5	mg/L	1.0	104	90	110			
Lab ID:	**C18081086-002AMS**	2	Sample Matrix Spike				Run: IC3-C_180904A			09/04/18 19:34	
Chloride			38.5	mg/L	1.0	105	80	120			
Sulfate			166	mg/L	1.0	105	80	120			
Lab ID:	**C18081086-002AMSD**	2	Sample Matrix Spike Duplicate				Run: IC3-C_180904A			09/04/18 19:53	
Chloride			38.2	mg/L	1.0	103	80	120	0.8	20	
Sulfate			165	mg/L	1.0	104	80	120	0.4	20	

Qualifiers:

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

QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Western Nuclear Inc
Report Date: 10/01/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E350.1										Analytical Run: FIA201-C_180902A
Lab ID: ICV	Initial Calibration Verification Standard									09/02/18 17:41
Nitrogen, Ammonia as N		1.01	mg/L	0.050	101	90	110			
Method: E350.1										Batch: R239200
Lab ID: MBLK	Method Blank					Run: FIA201-C_180902A				09/02/18 17:40
Nitrogen, Ammonia as N		ND	mg/L	0.03						
Lab ID: LFB	Laboratory Fortified Blank					Run: FIA201-C_180902A				09/02/18 17:42
Nitrogen, Ammonia as N		0.993	mg/L	0.050	100	90	110			
Lab ID: C18081086-001CMS	Sample Matrix Spike					Run: FIA201-C_180902A				09/02/18 18:21
Nitrogen, Ammonia as N		1.18	mg/L	0.050	98	90	110			
Lab ID: C18081086-001CMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_180902A				09/02/18 18:23
Nitrogen, Ammonia as N		1.16	mg/L	0.050	96	90	110	1.7	10	
Lab ID: C18081086-011CMS	Sample Matrix Spike					Run: FIA201-C_180902A				09/02/18 18:38
Nitrogen, Ammonia as N		320	mg/L	5.0	100	90	110			E
Lab ID: C18081086-011CMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_180902A				09/02/18 18:39
Nitrogen, Ammonia as N		321	mg/L	5.0	101	90	110	0.3	10	E
Lab ID: C18081086-021CMS	Sample Matrix Spike					Run: FIA201-C_180902A				09/02/18 18:56
Nitrogen, Ammonia as N		0.998	mg/L	0.050	96	90	110			
Lab ID: C18081086-021CMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_180902A				09/02/18 18:57
Nitrogen, Ammonia as N		0.981	mg/L	0.050	95	90	110	1.7	10	
Method: E350.1										Analytical Run: FIA201-C_180906A
Lab ID: ICV	Initial Calibration Verification Standard									09/06/18 16:53
Nitrogen, Ammonia as N		0.991	mg/L	0.050	99	90	110			
Method: E350.1										Batch: R239325
Lab ID: MBLK	Method Blank					Run: FIA201-C_180906A				09/06/18 16:52
Nitrogen, Ammonia as N		ND	mg/L	0.03						
Lab ID: LFB	Laboratory Fortified Blank					Run: FIA201-C_180906A				09/06/18 16:54
Nitrogen, Ammonia as N		0.938	mg/L	0.050	95	90	110			
Lab ID: C18090019-001BMS	Sample Matrix Spike					Run: FIA201-C_180906A				09/06/18 16:57
Nitrogen, Ammonia as N		0.942	mg/L	0.050	94	90	110			
Lab ID: C18090019-001BMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_180906A				09/06/18 16:58
Nitrogen, Ammonia as N		0.928	mg/L	0.050	93	90	110	1.5	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: Western Nuclear Inc
Report Date: 10/01/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2									Analytical Run: FIA201-C_180830A	
Lab ID: ICV	Initial Calibration Verification Standard								08/30/18 15:51	
Nitrogen, Nitrate+Nitrite as N		1.02	mg/L	0.010	102	90	110			
Method: E353.2									Batch: R239141	
Lab ID: MBLK	Method Blank					Run: FIA201-C_180830A			08/30/18 15:53	
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.006						
Lab ID: LFB	Laboratory Fortified Blank					Run: FIA201-C_180830A			08/30/18 15:54	
Nitrogen, Nitrate+Nitrite as N		1.03	mg/L	0.010	104	90	110			
Lab ID: C18081086-004CMS	Sample Matrix Spike					Run: FIA201-C_180830A			08/30/18 17:09	
Nitrogen, Nitrate+Nitrite as N		1.10	mg/L	0.010	105	90	110			
Lab ID: C18081086-004CMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_180830A			08/30/18 17:10	
Nitrogen, Nitrate+Nitrite as N		1.08	mg/L	0.010	103	90	110	1.9	10	
Lab ID: C18081086-014CMS	Sample Matrix Spike					Run: FIA201-C_180830A			08/30/18 17:26	
Nitrogen, Nitrate+Nitrite as N		4.04	mg/L	0.020	99	90	110			
Lab ID: C18081086-014CMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_180830A			08/30/18 17:27	
Nitrogen, Nitrate+Nitrite as N		4.10	mg/L	0.020	102	90	110	1.5	10	
Lab ID: C18081086-024CMS	Sample Matrix Spike					Run: FIA201-C_180830A			08/30/18 17:43	
Nitrogen, Nitrate+Nitrite as N		95.9	mg/L	0.50	100	90	110			
Lab ID: C18081086-024CMSD	Sample Matrix Spike Duplicate					Run: FIA201-C_180830A			08/30/18 17:44	
Nitrogen, Nitrate+Nitrite as N		98.0	mg/L	0.50	104	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: Western Nuclear Inc
Report Date: 09/17/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS206-B_180912A	
Lab ID: QCS	11	Initial Calibration Verification Standard							09/13/18 09:33	
Aluminum		0.248	mg/L	0.10	99	90	110			
Antimony		0.0490	mg/L	0.050	98	90	110			
Arsenic		0.0498	mg/L	0.0050	100	90	110			
Cadmium		0.0247	mg/L	0.0010	99	90	110			
Lead		0.0495	mg/L	0.010	99	90	110			
Manganese		0.248	mg/L	0.010	99	90	110			
Molybdenum		0.0483	mg/L	0.0050	97	90	110			
Nickel		0.0511	mg/L	0.010	102	90	110			
Selenium		0.0494	mg/L	0.0050	99	90	110			
Thallium		0.0497	mg/L	0.10	99	90	110			
Uranium		0.0212	mg/L	0.00030	106	90	110			
Method: E200.8										Batch: R307245
Lab ID: LRB	11	Method Blank				Run: ICPMS206-B_180912A			09/12/18 13:07	
Aluminum		ND	mg/L	0.0008						
Antimony		ND	mg/L	0.0004						
Arsenic		ND	mg/L	0.0002						
Cadmium		ND	mg/L	0.00003						
Lead		ND	mg/L	0.00005						
Manganese		ND	mg/L	0.00010						
Molybdenum		ND	mg/L	0.00005						
Nickel		ND	mg/L	0.0006						
Selenium		ND	mg/L	0.0003						
Thallium		ND	mg/L	0.00007						
Uranium		ND	mg/L	0.00005						
Lab ID: LFB	11	Laboratory Fortified Blank				Run: ICPMS206-B_180912A			09/12/18 13:16	
Aluminum		0.0514	mg/L	0.10	103	85	115			
Antimony		0.0470	mg/L	0.050	94	85	115			
Arsenic		0.0518	mg/L	0.0050	104	85	115			
Cadmium		0.0503	mg/L	0.0010	101	85	115			
Lead		0.0493	mg/L	0.010	99	85	115			
Manganese		0.0502	mg/L	0.010	100	85	115			
Molybdenum		0.0508	mg/L	0.0050	102	85	115			
Nickel		0.0521	mg/L	0.010	104	85	115			
Selenium		0.0507	mg/L	0.0050	101	85	115			
Thallium		0.0506	mg/L	0.10	101	85	115			
Uranium		0.0495	mg/L	0.00030	99	85	115			
Lab ID: C18081086-021BMS	11	Sample Matrix Spike				Run: ICPMS206-B_180912A			09/13/18 11:24	
Aluminum		0.0505	mg/L	0.030	94	70	130			
Antimony		0.0483	mg/L	0.0010	97	70	130			
Arsenic		0.0586	mg/L	0.0010	103	70	130			
Cadmium		0.0506	mg/L	0.0010	101	70	130			
Lead		0.0501	mg/L	0.0010	100	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Western Nuclear Inc
Report Date: 09/17/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: R307245
Lab ID: C18081086-021BMS	11	Sample Matrix Spike				Run: ICPMS206-B_180912A				09/13/18 11:24
Manganese		0.0683	mg/L	0.0010	102	70	130			
Molybdenum		0.0507	mg/L	0.0010	97	70	130			
Nickel		0.0479	mg/L	0.0050	94	70	130			
Selenium		0.0526	mg/L	0.0010	104	70	130			
Thallium		0.0493	mg/L	0.00050	99	70	130			
Uranium		0.0573	mg/L	0.00030	98	70	130			
Lab ID: C18081086-021BMSD	11	Sample Matrix Spike Duplicate				Run: ICPMS206-B_180912A				09/13/18 11:28
Aluminum		0.0503	mg/L	0.030	93	70	130	0.3	20	
Antimony		0.0490	mg/L	0.0010	98	70	130	1.4	20	
Arsenic		0.0594	mg/L	0.0010	105	70	130	1.4	20	
Cadmium		0.0506	mg/L	0.0010	101	70	130	0.1	20	
Lead		0.0500	mg/L	0.0010	100	70	130	0.0	20	
Manganese		0.0690	mg/L	0.0010	103	70	130	1.0	20	
Molybdenum		0.0508	mg/L	0.0010	97	70	130	0.0	20	
Nickel		0.0489	mg/L	0.0050	96	70	130	2.1	20	
Selenium		0.0540	mg/L	0.0010	107	70	130	2.6	20	
Thallium		0.0498	mg/L	0.00050	100	70	130	0.9	20	
Uranium		0.0571	mg/L	0.00030	98	70	130	0.3	20	
Lab ID: B18090259-004BMS	11	Sample Matrix Spike				Run: ICPMS206-B_180912A				09/13/18 12:34
Aluminum		0.246	mg/L	0.030	90	70	130			
Antimony		0.250	mg/L	0.0023	100	70	130			
Arsenic		0.246	mg/L	0.0010	98	70	130			
Cadmium		0.245	mg/L	0.0010	98	70	130			
Lead		0.242	mg/L	0.0010	97	70	130			
Manganese		0.268	mg/L	0.0010	101	70	130			
Molybdenum		0.246	mg/L	0.0010	98	70	130			
Nickel		0.239	mg/L	0.0050	96	70	130			
Selenium		0.243	mg/L	0.0016	97	70	130			
Thallium		0.232	mg/L	0.00050	93	70	130			
Uranium		0.233	mg/L	0.00030	93	70	130			
Lab ID: B18090259-004BMSD	11	Sample Matrix Spike Duplicate				Run: ICPMS206-B_180912A				09/13/18 12:38
Aluminum		0.249	mg/L	0.030	91	70	130	1.0	20	
Antimony		0.254	mg/L	0.0023	102	70	130	1.5	20	
Arsenic		0.252	mg/L	0.0010	101	70	130	2.6	20	
Cadmium		0.248	mg/L	0.0010	99	70	130	1.0	20	
Lead		0.243	mg/L	0.0010	97	70	130	0.4	20	
Manganese		0.269	mg/L	0.0010	102	70	130	0.5	20	
Molybdenum		0.249	mg/L	0.0010	99	70	130	1.2	20	
Nickel		0.233	mg/L	0.0050	93	70	130	2.4	20	
Selenium		0.249	mg/L	0.0016	99	70	130	2.5	20	
Thallium		0.238	mg/L	0.00050	95	70	130	2.3	20	
Uranium		0.235	mg/L	0.00030	94	70	130	0.8	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Western Nuclear Inc
Report Date: 09/17/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **E200.8**										Batch: R307245
Lab ID: **B18090259-004BMSD**	11	Sample Matrix Spike Duplicate				Run: ICPMS206-B_180912A				09/13/18 12:38

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Western Nuclear Inc
Report Date: 09/17/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: ICPMS207-B_180908A	
Lab ID: QCS	12	Initial Calibration Verification Standard							09/08/18 12:39	
Aluminum		0.248	mg/L	0.10	99	90	110			
Antimony		0.0503	mg/L	0.050	101	90	110			
Arsenic		0.0505	mg/L	0.0050	101	90	110			
Beryllium		0.0245	mg/L	0.0010	98	90	110			
Cadmium		0.0248	mg/L	0.0010	99	90	110			
Lead		0.0490	mg/L	0.010	98	90	110			
Manganese		0.252	mg/L	0.010	101	90	110			
Molybdenum		0.0490	mg/L	0.0050	98	90	110			
Nickel		0.0517	mg/L	0.010	103	90	110			
Selenium		0.0472	mg/L	0.0050	95	90	110			
Thallium		0.0487	mg/L	0.10	97	90	110			
Uranium		0.0214	mg/L	0.00030	107	90	110			
Method: E200.8									Batch: R307032	
Lab ID: LRB	12	Method Blank				Run: ICPMS207-B_180908A			09/08/18 12:55	
Aluminum		ND	mg/L	0.0009						
Antimony		ND	mg/L	0.0004						
Arsenic		ND	mg/L	0.0002						
Beryllium		ND	mg/L	0.0001						
Cadmium		ND	mg/L	0.00002						
Lead		ND	mg/L	0.00006						
Manganese		ND	mg/L	0.00010						
Molybdenum		ND	mg/L	0.00005						
Nickel		ND	mg/L	0.0006						
Selenium		ND	mg/L	0.0003						
Thallium		ND	mg/L	0.00004						
Uranium		ND	mg/L	0.00005						
Lab ID: LFB	12	Laboratory Fortified Blank				Run: ICPMS207-B_180908A			09/08/18 12:59	
Aluminum		0.0513	mg/L	0.10	103	85	115			
Antimony		0.0473	mg/L	0.050	95	85	115			
Arsenic		0.0533	mg/L	0.0050	107	85	115			
Beryllium		0.0496	mg/L	0.0010	99	85	115			
Cadmium		0.0512	mg/L	0.0010	102	85	115			
Lead		0.0513	mg/L	0.010	103	85	115			
Manganese		0.0536	mg/L	0.010	107	85	115			
Molybdenum		0.0522	mg/L	0.0050	104	85	115			
Nickel		0.0529	mg/L	0.010	106	85	115			
Selenium		0.0502	mg/L	0.0050	100	85	115			
Thallium		0.0511	mg/L	0.10	102	85	115			
Uranium		0.0518	mg/L	0.00030	104	85	115			
Lab ID: C18081086-002BMS	12	Sample Matrix Spike				Run: ICPMS207-B_180908A			09/09/18 17:27	
Aluminum		0.0571	mg/L	0.030	108	70	130			
Antimony		0.0522	mg/L	0.0010	104	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Western Nuclear Inc
Report Date: 09/17/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: R307032
Lab ID: C18081086-002BMS	12	Sample Matrix Spike				Run: ICPMS207-B_180908A				09/09/18 17:27
Arsenic		0.0519	mg/L	0.0010	99	70	130			
Beryllium		0.0542	mg/L	0.0010	108	70	130			
Cadmium		0.0504	mg/L	0.0010	101	70	130			
Lead		0.0511	mg/L	0.0010	102	70	130			
Manganese		0.0589	mg/L	0.0010	103	70	130			
Molybdenum		0.0513	mg/L	0.0010	98	70	130			
Nickel		0.0519	mg/L	0.0050	100	70	130			
Selenium		0.0522	mg/L	0.0010	97	70	130			
Thallium		0.0508	mg/L	0.00050	102	70	130			
Uranium		0.0845	mg/L	0.00030	102	70	130			
Lab ID: C18081086-002BMSD	12	Sample Matrix Spike Duplicate				Run: ICPMS207-B_180908A				09/09/18 17:31
Aluminum		0.0557	mg/L	0.030	105	70	130	2.4	20	
Antimony		0.0512	mg/L	0.0010	102	70	130	1.8	20	
Arsenic		0.0510	mg/L	0.0010	97	70	130	1.7	20	
Beryllium		0.0526	mg/L	0.0010	105	70	130	3.0	20	
Cadmium		0.0493	mg/L	0.0010	98	70	130	2.2	20	
Lead		0.0498	mg/L	0.0010	100	70	130	2.5	20	
Manganese		0.0576	mg/L	0.0010	101	70	130	2.2	20	
Molybdenum		0.0505	mg/L	0.0010	96	70	130	1.6	20	
Nickel		0.0515	mg/L	0.0050	99	70	130	0.7	20	
Selenium		0.0534	mg/L	0.0010	100	70	130	2.2	20	
Thallium		0.0497	mg/L	0.00050	99	70	130	2.3	20	
Uranium		0.0828	mg/L	0.00030	98	70	130	2.0	20	
Lab ID: C18081086-012BMS	12	Sample Matrix Spike				Run: ICPMS207-B_180908A				09/09/18 18:38
Aluminum		2.49	mg/L	0.030		70	130			A
Antimony		0.104	mg/L	0.0010	104	70	130			
Arsenic		0.108	mg/L	0.0010	100	70	130			
Beryllium		0.106	mg/L	0.0010	102	70	130			
Cadmium		0.113	mg/L	0.0010	97	70	130			
Lead		0.101	mg/L	0.0010	101	70	130			
Manganese		84.7	mg/L	0.0010		70	130			A
Molybdenum		0.104	mg/L	0.0010	97	70	130			
Nickel		0.490	mg/L	0.0050		70	130			A
Selenium		0.156	mg/L	0.0010	101	70	130			
Thallium		0.103	mg/L	0.00050	102	70	130			
Uranium		0.177	mg/L	0.00030	99	70	130			
Lab ID: C18081086-012BMSD	12	Sample Matrix Spike Duplicate				Run: ICPMS207-B_180908A				09/09/18 18:42
Aluminum		2.49	mg/L	0.030		70	130	0.3	20	A
Antimony		0.103	mg/L	0.0010	103	70	130	1.1	20	
Arsenic		0.108	mg/L	0.0010	100	70	130	0.4	20	
Beryllium		0.107	mg/L	0.0010	104	70	130	1.2	20	
Cadmium		0.112	mg/L	0.0010	96	70	130	0.7	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: Western Nuclear Inc
Report Date: 09/17/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Batch: R307032	
Lab ID: C18081086-012BMSD	12	Sample Matrix Spike Duplicate				Run: ICPMS207-B_180908A			09/09/18 18:42	
Lead		0.101	mg/L	0.0010	101	70	130	0.2	20	
Manganese		85.9	mg/L	0.0010		70	130	1.4	20	A
Molybdenum		0.102	mg/L	0.0010	95	70	130	2.1	20	
Nickel		0.497	mg/L	0.0050		70	130	1.3	20	A
Selenium		0.154	mg/L	0.0010	99	70	130	1.5	20	
Thallium		0.104	mg/L	0.00050	103	70	130	0.9	20	
Uranium		0.176	mg/L	0.00030	97	70	130	0.8	20	
Method: E200.8									Analytical Run: ICPMS207-B_180914A	
Lab ID: QCS	2	Initial Calibration Verification Standard							09/14/18 18:23	
Beryllium		0.0252	mg/L	0.0010	101	90	110			
Selenium		0.0496	mg/L	0.0050	99	90	110			
Method: E200.8									Batch: R307421	
Lab ID: LRB	2	Method Blank				Run: ICPMS207-B_180914A			09/14/18 18:39	
Beryllium		ND	mg/L	0.0001						
Selenium		ND	mg/L	0.0003						
Lab ID: LFB	2	Laboratory Fortified Blank				Run: ICPMS207-B_180914A			09/14/18 18:43	
Beryllium		0.0479	mg/L	0.0010	96	85	115			
Selenium		0.0513	mg/L	0.0050	103	85	115			
Lab ID: C18081086-025BMS	2	Sample Matrix Spike				Run: ICPMS207-B_180914A			09/15/18 03:18	
Beryllium		0.0394	mg/L	0.0010	79	70	130			
Selenium		0.0675	mg/L	0.0010	103	70	130			
Lab ID: C18081086-025BMSD	2	Sample Matrix Spike Duplicate				Run: ICPMS207-B_180914A			09/15/18 03:33	
Beryllium		0.0434	mg/L	0.0010	87	70	130	9.6	20	
Selenium		0.0670	mg/L	0.0010	102	70	130	0.7	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 Casper, WY Branch

Client: Western Nuclear Inc
Report Date: 09/27/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-9080
Lab ID: LCS-RA226-9080		Laboratory Control Sample				Run: G542M_180912B				09/26/18 11:11
Radium 226		11	pCi/L		113	80	120			
Lab ID: MB-RA226-9080	3	Method Blank				Run: G542M_180912B				09/26/18 11:11
Radium 226		-0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C18081086-018DMS		Sample Matrix Spike				Run: G542M_180912B				09/26/18 11:11
Radium 226		23	pCi/L		114	70	130			
Lab ID: C18081086-018DMSD		Sample Matrix Spike Duplicate				Run: G542M_180912B				09/26/18 11:11
Radium 226		26	pCi/L		129	70	130	12	20	
Method: E903.0										Batch: RA226-9077
Lab ID: LCS-RA226-9077		Laboratory Control Sample				Run: G542M-2_180911C				09/26/18 10:02
Radium 226		8.4	pCi/L		84	80	120			
Lab ID: MB-RA226-9077	3	Method Blank				Run: G542M-2_180911C				09/26/18 10:02
Radium 226		0.04	pCi/L							U
Radium 226 precision (±)		0.1	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C18081086-005DMS		Sample Matrix Spike				Run: G542M-2_180911C				09/26/18 10:02
Radium 226		18	pCi/L		88	70	130			
Lab ID: C18081086-005DMSD		Sample Matrix Spike Duplicate				Run: G542M-2_180911C				09/26/18 10:02
Radium 226		18	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: Western Nuclear Inc
Report Date: 09/27/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E908.0										Batch: RA-TH-ISO-2767
Lab ID: LCS-RA-TH-ISO-2767		Laboratory Control Sample				Run: EGG-ORTEC_180912A				09/24/18 10:49
Thorium 230		12	pCi/L		109	80	120			
Lab ID: C18081086-006DMS		Sample Matrix Spike				Run: EGG-ORTEC_180912A				09/24/18 10:49
Thorium 230		26	pCi/L		102	70	130			
Lab ID: C18081086-006DMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_180912A				09/24/18 10:49
Thorium 230		24	pCi/L		96	70	130	6.2	20	
Lab ID: MB-RA-TH-ISO-2767	3	Method Blank				Run: EGG-ORTEC_180912A				09/24/18 10:49
Thorium 230		-0.02	pCi/L							U
Thorium 230 precision (±)		0.05	pCi/L							
Thorium 230 MDC		0.1	pCi/L							
Method: E908.0										Batch: RA-TH-ISO-2768
Lab ID: LCS-RA-TH-ISO-2768		Laboratory Control Sample				Run: EGG-ORTEC_2_180919A				09/24/18 10:52
Thorium 230		11	pCi/L		95	80	120			
Lab ID: C18081086-019DMS		Sample Matrix Spike				Run: EGG-ORTEC_2_180919A				09/24/18 10:52
Thorium 230		24	pCi/L		95	70	130			
Lab ID: C18081086-019DMSD		Sample Matrix Spike Duplicate				Run: EGG-ORTEC_2_180919A				09/24/18 10:52
Thorium 230		26	pCi/L		103	70	130	8.3	20	
Lab ID: MB-RA-TH-ISO-2768	3	Method Blank				Run: EGG-ORTEC_2_180919A				09/24/18 10:52
Thorium 230		0.04	pCi/L							U
Thorium 230 precision (±)		0.06	pCi/L							
Thorium 230 MDC		0.10	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: Western Nuclear Inc
Report Date: 09/27/18
Project: Split Rock Mill GWPP
Work Order: C18081086

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-5871
Lab ID: LCS-228-RA226-9080		Laboratory Control Sample				Run: G542M-2_180912B				09/21/18 11:07
Radium 228		9.6	pCi/L		107	80	120			
Lab ID: MB-RA226-9080	3	Method Blank				Run: G542M-2_180912B				09/21/18 11:07
Radium 228		0.2	pCi/L							U
Radium 228 precision (±)		1	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C18081086-024DMS		Sample Matrix Spike				Run: G542M-2_180912B				09/21/18 11:07
Radium 228		19	pCi/L		99	70	130			
Lab ID: C18081086-024DMSD		Sample Matrix Spike Duplicate				Run: G542M-2_180912B				09/21/18 11:07
Radium 228		17	pCi/L		87	70	130	12	20	
Method: RA-05										Batch: RA228-5869
Lab ID: LCS-228-RA226-9077		Laboratory Control Sample				Run: TENNELEC-3_180911C				09/21/18 08:21
Radium 228		9.4	pCi/L		91	80	120			
Lab ID: MB-RA226-9077	3	Method Blank				Run: TENNELEC-3_180911C				09/21/18 08:21
Radium 228		1	pCi/L							U
Radium 228 precision (±)		1	pCi/L							
Radium 228 MDC		2	pCi/L							
Lab ID: C18081086-016DMS		Sample Matrix Spike				Run: TENNELEC-3_180911C				09/21/18 08:21
Radium 228		21	pCi/L		113	70	130			
Lab ID: C18081086-016DMSD		Sample Matrix Spike Duplicate				Run: TENNELEC-3_180911C				09/21/18 08:21
Radium 228		20	pCi/L		112	70	130	0.4	20	

Qualifiers:

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

Work Order Receipt Checklist

Western Nuclear Inc

C18081086

Login completed by: Tessa Parke
Date Received: 8/30/2018
Reviewed by: Kasey Vidick
Received by: dcq
Reviewed Date: 8/31/2018
Carrier name: Hand Del

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:	5.6°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:

Added preservative to the nutrient fraction for WN-42A. tla 10/1/2018

ENERGY LABORATORIES
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Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	Western Nuclear, Inc.
Contact	Brad DeWaard
Phone	307-349-1217
Mailing Address	P.O. Box 630
City, State, Zip	Jeffery City, WY 82310
Email	bradkd@wbcllss.net
Receive Invoice	☐Hard Copy ☑Email
Receive Report	☐Hard Copy ☑Email
Purchase Order	
Quote	
Bottle Order	

Report Information (if different than Account Information)

Company/Name	
Contact	Same
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report	☐Hard Copy ☐Email

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Project Information

Project Name, PWSID, Permit, etc.	Split Rock Mill GWDP
Sampler Name	Brad DeWaard
Sampler Phone	307-349-1217
Sample Origin State	WY
EPA/State Compliance	☐ Yes ☑ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
A - Air
W - Water
S - Soils/ Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

Analysis Requested

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	Field pH	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SWAB-4	5-29-18	1408	3	W	7.68	X		
2	SWAB-12R		1439			8.01			
3	SWAB-22		0912			8.06			
4	SWAB-29		1610			7.84			
5	SWAB-31	5-30-18	0842			7.68			
6	SWAB-32	5-29-18	1620			8.32			
7	SWR-UG	5-28-18	1030			8.94			
8	SWR-A		1045			8.96			
9	SWR-B		1110			8.86			
10	SWR-C		1143			8.90			C18081086

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Brad DeWaard	5/30/18 1151				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
					5-30-18 1153	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number (cash/check only)
Hand	8	Y N C B	Y N	5.4 °C	Y N	Y N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-11/17 v.2

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information *(Billing information)*

Company/Name	Western Nuclear, Inc.
Contact	
Phone	See Page 1 of 3
Mailing Address	
City, State, Zip	
Email	
Receive Invoice ☐Hard Copy ☐Email	Receive Report ☐Hard Copy ☐Email
Purchase Order / Quote / Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report ☐Hard Copy ☐Email	

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

Project Information

Project Name, PWSID, Permit, etc.	Split Rock Mill GWPP
Sampler Name	Sampler Phone
Sample Origin State	EPA/State Compliance ☐ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes

A -	Air
W-	Water
S -	Soils/ Solids
V -	Vegetation
B -	Bioassay
O -	Other
DW -	Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	Analysis Requested: Field pH	Analysis Requested: See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
1	WN-1	5-29-18	1501	3	W	7.05			
2	WN-4R		1346			6.46			
3	WN-5		1149			7.09			
4	WN-21		1522			7.44			
5	WN-39B		1111			8.29			
6	WN-41B		1051			8.53			
7	WN-42A		1127			7.23			
8	JJ-1R		1030			7.51			
9	SWAB-1R		1541			7.37			
10	SWAB-2		0843			7.53			

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Brad DeGeard	5/30/18 1151		Received by Laboratory (print)	5-30-18 1153	Damian Dias
	Relinquished by (print)	Date/Time	Signature			

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number *(cash/check only)*
Hand	8	Y (N) C B	Y (N)	5.1e °C	(Y) N	(Y) N	CC Cash Check_____	$	

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ELI-COC-11/17 v.2

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information *(Billing information)*

Company/Name	Western Nuclear, Inc.
Contact	
Phone	See page 1 of 3.
Mailing Address	
City, State, Zip	
Email	
Receive Invoice ☐Hard Copy ☐Email	Receive Report ☐Hard Copy ☐Email
Purchase Order / Quote / Bottle Order	

Report Information *(if different than Account Information)*

Company/Name	
Contact	
Phone	
Mailing Address	
City, State, Zip	
Email	
Receive Report ☐Hard Copy ☐Email	

Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

Comments

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O -	Other
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Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification *(Name, Location, Interval, etc.)*	Collection Date	Collection Time	Number of Containers	Matrix *(See Codes Above)*	Field pH	See Attached	RUSH TAT	ELI LAB ID *Laboratory Use Only*
1	SWR-DG	5-29-18	1207		W	9.00	X		
2	Field Blank	5-29-18	0915			6.87			
3	WN-1R		1501			7.05			
4	WN-5R		1149			7.09			
5	WN-5S		1149			7.09			
6									
7									
8									
9									
10									

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Brad Bullard	5/30/18 1151				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
					8-30-18 1153	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals	Intact	Receipt Temp	Temp Blank	On Ice	Payment Type	Amount	Receipt Number *(cash/check only)*
Hand	8	Y (N) C B	Y (N)	5.6 °C	(Y) N	(Y) N	CC Cash Check_____	$	

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ELI-COC-11/17 v.2

Spl. Rock Mill
Jeffrey City Wyoming
Western Nuclear, Inc

Table 1
Ground-Water Sampling Program

Monitoring Wells	Sampling Frequency	Parameters
1, 4R, 5, and 21	Semi-Annual 2L - Filt + HNO_3 100ml - Filt + H_2SO_4 250 ml - Filt Record Field pH on COC	Al, Sb, As, Ba, Cd, chloride, fluoride, Mn, Mo, Ni, ammonia, pH, nitrate, Pb, Ra-226 and -228, Se, sulfate Th-230, Tl, TDS, uranium, water levels
WN-38B, -41B, -42A, JJ-1R, SWAB-1, -2, -4, -12, -22, -29, -31, -32	Semi-Annual 100ml - Filt + HNO_3 100 ml - Filt	uranium, sulfate, water levels
	Annual SAME AS ABOVE	Al, Sb, As, Ba, Cd, chloride, fluoride, Mn, Mo, Ni, ammonia, pH, nitrate, Pb, Ra-226 and -228, Se, sulfate, Th-230, Tl, TDS, uranium, water levels

Surface Water Monitoring

On May 24, 2004, WNI requested that the NRC approve a new surface water sampling program to consist of 5 sampling points, each of which would be sampled for uranium and sulfate annually. On November 10, 2004, and January 18, 2005, the NRC provided comments regarding this surface water monitoring plan, suggesting that all locations be sampled semi-annually for the full list of parameters. On March 2, 2005, WNI submitted a revised sampling plan specifying that each surface water location be sampled semi-annually for uranium and sulfate.

On May 17, 2005, WNI and NRC staff discussed the discrepancy in the monitoring plan and came to a final agreement. The latest revision to the sampling plan will mimic the ground-water monitoring plan. All surface locations will be sampled semi-annually for uranium and sulfate and annually for the full suite of parameters. Table 2 contains a summary of the surface water monitoring plan.

Table 2
Surface Water Monitoring Program

Surface Water Locations	Sampling Frequency	Parameters
S-A, -B, -C, Upgradient, Downgradient	Semi-Annual SAME AS ABOVE	uranium, sulfate
	Annual SAME AS ABOVE	Al, Sb, As, Ba, Cd, chloride, fluoride, Mn, Mo, Ni, ammonia, pH, nitrate, Pb, Ra-226 and -228, Se, sulfate, Th-230, Tl, TDS, uranium, water levels