

Rio Tinto

Kennecott Uranium Company
42 Miles NW of Rawlins
P.O. Box 1500
Rawlins, WY 82301-1500
USA
T +1 (307) 328 1476
F +1 (307) 324 4925

August 27, 2018

Ms. Andrea Kock, Deputy Director
Division of Decommissioning, Uranium recovery & Waste Programs
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, Maryland 20852-2738

Dear Ms. Kock:

**Subject: Revised Pages and Missing Pages for Sweetwater Uranium Project –
Docket Number 40-8584 – Source Material License #SUA-1350, License
Condition 12.3 – Required Reporting for Period January 1, 2017 –
December 31, 2017**

In the above referenced document submitted on February 22, 2018, it was discovered that some pages were inadvertently omitted while others required correction. The following pertains:

- Annual ALARA Audit - 2017
 - Four (4) pages containing the Potable Water Quality Summary were inadvertently omitted. They are attached to this cover letter and are as follows:
 - Potable Water Quality Summary – 2017 – Provides coliform count summaries for the water.
 - Potable Water Quality Summary – 2017 Drake #1 – Provides water quality data for the Drake #1 well.
 - Potable Water Quality Summary – 2017 PWW-1 – Provides water quality data for the PWW-1 well.
 - Potable Water Quality Summary – 2017 PWW-2 – Provides water quality data for the PWW-2 well.
 - These pages should be inserted after the Radon Daughter monitoring Assessment in the 2017 Annual ALARA Audit
- Annual Corrective Action Program Review – 2017
 - A corrected page 35 for the text of the report is provided.
 - A corrected final page of the Tailings Impoundment Fluid Levels table for insertion in Appendix 1 is provided.
 - A corrected Sweetwater Tailings Impoundment Fluid Levels graph for insertion in Appendix 1 is provided.

NMSSDI

- A corrected final page of the Sweetwater Pit Water Levels table for insertion in Appendix 1 is provided.
- A corrected Sweetwater Pit Water Levels graph for insertion in Appendix 1 is provided.

Kennecott Uranium Company apologizes for any inconvenience that there errors or omissions have caused.

If you have any questions please do not hesitate to contact me

Sincerely yours,

A handwritten signature in black ink, appearing to read "Oscar Paulson". The signature is fluid and cursive, with the first name "Oscar" and last name "Paulson" clearly distinguishable.

Oscar Paulson
Facility Supervisor

cc: James Webb – Project Manager (2)
Director –USNRC DNMS – Region IV (w/o enc.)
Rich Atkinson – Cedar Mountain Ventures, LLC.

POTABLE WATER QUALITY SUMMARY

2017

Coliform Count Summary

Date	Drake #1 (well head)	Administration Building Water Supply (PWW-1 or PWW-2) (kitchen sink cold tap)
01/09/17	TOTT	TOTT
01/10/17	Good	Good
01/11/17	TOTT	TOTT
02/06/17	Good	Good
03/06/17	TOTT	TOTT
03/13/17	Good	Good
04/03/17	Good	Good
05/01/17	Good	Good
06/19/17	Good	Good
07/10/17	Good	Good
08/01/17	Good	Good
09/05/17	Good	Good
10/02/17	Good	Good
11/6/17	Good	Good
12/4/17	Good	Good

The Administration Building can be supplied by either PWW-1 or PWW-2. The water is tested monthly at the point of use and the results apply to whichever well is supplying the building at that time. The Senior Facility Technician, Site Operation Technician, and Security Guard Trailers are supplied by Drake #1 well, which is tested monthly.

Note: TOTT = Sample was too old to test when received by laboratory.

KENNECOTT URANIUM COMPANY						
POTABLE WATER QUALITY SUMMARY						
2017						
DRAKE #1						
CHEMICAL ANALYSIS SUMMARY:						
Use Suitability	Domestic *	DRAKE #1	DRAKE #1	DRAKE #1	DRAKE #1	
Parameter	Concentration **	03/08/17	04/03/17	07/24/17	10/09/17	
Ammonia (NH3-N)	0.5	-	-	-	-	
Arsenic (As)	0.05	0.002	0.001	0.002	0.002	
Barium (Ba)	2	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Boron (B)	0.75	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Cadmium (Cd)	0.005	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	
Chloride (Cl)	250	3	3	3	3	
Chromium (Cr)	0.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Copper (Cu)	1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Cyanide (CN)	0.2	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	
Fluoride (F)	4	0.2	0.1	0.1	0.1	
Hydrogen Sulfide (H2S)	0.05	-	-	-	-	
Iron (Fe)	0.3	ND (.05)	ND (.05)	ND (.05)	ND (.05)	
Lead (Pb)	0.015	ND (0.01)	ND (0.01)	ND (0.01)	0.02	
Manganese (Mn)	0.05	0.02	0.01	0.02	0.02	
Mercury (Hg)	0.002	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	
Nitrogen, Nitrate+Nitrite as N		ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Nitrite (NO2-N)	1	-	-	-	-	
Oil and Grease	Virtually Free	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Phenol	0.001	-	-	-	-	
Selenium (Se)	0.05	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	
Silver (Ag)	0.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Sulfate (SO4)	250	62	59	58	62	
Total Dissolved Solids (TDS)	500	168	192	201	208	
Zinc (Zn)	5	ND (0.01)	0.02	ND (0.01)	0.03	
pH (Standard Units)	6.5 - 8.5	8.27	8.31	8.21	8.21	
Combined Ra226/Ra228 (pCi/L)	5.0 pCi/l	3.2	4.1	3.6	3.6	
Natural Uranium (pCi/L)	pCi/L	0.2	0.2	0.2	0.2	
Uranium - Suspended	mg/L	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	
Uranium - Total	mg/L	ND (.0003)	ND (.0003)	ND (.0003)	0.0003	
Lead 210 (pCi/L)	pCi/L	1.1 ± 0.8	0.7 ± 0.8	1.6 ± 0.8	-5 ± 0.9	
Total Strontium 90 (pCi/L)	8.0 pCi/l	-	-	-	-	
Gross Alpha Radioactivity *** (pCi/l)	15.0 pCi/l	1.8 ± 0.6	2.4 ± 0.9	1.6 ± 0.6	1.5 ± 0.6	
* This list does not include all constituents in the national drinking water standards.						
** mg/L, unless otherwise indicated						
*** Including Radium 226 but excluding Radon and Uranium						

KENNECOTT URANIUM COMPANY						
POTABLE WATER QUALITY SUMMARY						
2017						
PWW-1						
CHEMICAL ANALYSIS SUMMARY:						
Use Suitability	Domestic *	PWW-1	PWW-1	PWW-1	PWW-1	
Parameter	Concentration **	02/20/17	4/4/2017	7/24/2017	10/24/2017	
Ammonia (NH3-N)	0.5	-	-	-	-	
Arsenic (As)	0.05	0.002	0.002	0.002	0.002	
Barium (Ba)	2	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Boron (B)	0.75	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Cadmium (Cd)	0.005	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	
Chloride (Cl)	250	3	3	3	2	
Chromium (Cr)	0.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Copper (Cu)	1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Cyanide (CN)	0.2	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	
Fluoride (F)	4	0.1	0.1	0.1	0.1	
Hydrogen Sulfide (H2S)	0.05	-	-	-	-	
Iron (Fe)	0.3	0.06	0.08	ND (0.05)	ND (0.05)	
Lead (Pb)	0.015	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Manganese (Mn)	0.05	0.01	0.01	0.01	0.01	
Mercury (Hg)	0.002	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	
Nitrogen, Nitrate+Nitrite as N		ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Nitrite (NO2-N)	1	-	-	-	-	
Oil and Grease	Virtually Free	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Phenol	0.001	-	-	-	-	
Selenium (Se)	0.05	0.001	ND (0.001)	ND (0.001)	ND (0.001)	
Silver (Ag)	0.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Sulfate (SO4)	250	48	50	48	46	
Total Dissolved Solids (TDS)	500	180	180	170	194	
Zinc (Zn)	5	ND (0.01)	0.02	ND (0.01)	ND (0.01)	
pH (Standard Units)	6.5 - 8.5	8.52	8.46	8.36	8.31	
Combined Ra226/Ra228 (pCi/L)	5.0 pCi/l	1.64	2.76	1.4	2	
Natural Uranium (pCi/L)	pCi/L	1.1	1.7	2.4	0.5	
Uranium - Suspended	mg/L	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	
Uranium - Total	mg/L	0.0018	0.002	0.0034	0.0006	
Lead 210 (pCi/L)	pCi/L	0.1 ± 0.7	1.2 ± 0.9	1.4 ± 0.8	1.1 ± 0.9	
Total Strontium 90 (pCi/L)	8.0 pCi/l	-	-	-	-	
Gross Alpha Radioactivity *** (pCi/L)	15.0 pCi/l	1.1 ± 0.5	2.0 ± 0.8	1.1 ± 0.5	0.8 ± 0.5	
* This list does not include all constituents in the national drinking water standards.						
** mg/L, unless otherwise indicated						
*** Including Radium 226 but excluding Radon and Uranium						

KENNECOTT URANIUM COMPANY						
POTABLE WATER QUALITY SUMMARY						
2017						
PWW-2						
CHEMICAL ANALYSIS SUMMARY:						
Use Suitability	Domestic *	PWW-2	PWW-2	PWW-2	PWW-2	
Parameter	Concentration **	03/14/17	04/04/17	7/26/2017	10/9/2017	
Ammonia (NH ₃ -N)	0.5	-	-	-	-	
Arsenic (As)	0.05	0.002	0.002	0.002	0.002	
Barium (Ba)	2	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Boron (B)	0.75	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Cadmium (Cd)	0.005	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	
Chloride (Cl)	250	2	2	2	2	
Chromium (Cr)	0.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Copper (Cu)	1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Cyanide (CN)	0.2	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	
Fluoride (F)	4	0.1	0.1	0.1	0.1	
Hydrogen Sulfide (H ₂ S)	0.05	-	-	-	-	
Iron (Fe)	0.3	0.19	0.17	0.4	0.22	
Lead (Pb)	0.015	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Manganese (Mn)	0.05	0.01	0.01	0.02	0.01	
Mercury (Hg)	0.002	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	
Nitrogen, Nitrate+Nitrite as N		ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	
Nitrite (NO ₂ -N)	1	-	-	-	-	
Oil and Grease	Virtually Free	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	
Phenol	0.001	-	-	-	-	
Selenium (Se)	0.05	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)	
Silver (Ag)	0.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
Sulfate (SO ₄)	250	45	45	40	45	
Total Dissolved Solids (TDS)	500	170	170	160	176	
Zinc (Zn)	5	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	
pH (Standard Units)	6.5 - 8.5	8.4	8.52	8.46	8.4	
Combined Ra226/Ra228 (pCi/L)	5.0 pCi/l	1.05	0.46	2	1.4	
Natural Uranium (pCi/L)	pCi/L	1.4	1.4	1.3	1.5	
Uranium - Suspended	mg/L	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	
Uranium - Total	mg/L	0.0021	0.0022	0.0022	0.002	
Lead 210 (pCi/L)	pCi/L	0.39 ± 0.76	1.0 ± 0.9	1.3 ± 0.8	-5 ± 0.9	
Total Strontium 90 (pCi/L)	8.0 pCi/l	-	-	-	-	
Gross Alpha Radioactivity *** (pCi/L)	15.0 pCi/l	1.4 ± 0.9	0.9 ± 0.6	0.7 ± 0.4	0.6 ± 0.4	
* This list does not include all constituents in the national drinking water standards.						
** mg/L, unless otherwise indicated						
*** Including Radium 226 but excluding Radon and Uranium						

The 27 million gallon per year limit was considered appropriate given the calculated evaporative capacity of the impoundment. This change was made by SEE #23 – Establishment of Annual Pumpback Volume Based upon Tailings Impoundment Evaporative Capacity. In 2017 a total of 26,747,640 gallons were pumped into the impoundment, below the limit of 27 million gallons established by Safety and Environmental Evaluation #23 (SEE-23).

It is currently planned for 2018 to operate the pumpback wells at the following approximate flow rates:

<u>WELL #</u>	<u>Gallons per Minute</u>
TMW-96	3.0
TMW-97	4.0
TMW-59	7.5
TMW-75	3.5
TMW-17	9.0
TMW-7	3.0
TMW-57	3.5
TMW-18	10.0
TMW-58	<u>7.5</u>
Total:	51.0

This is subject to change based upon further results from the characterization work, and the Corrective Action Program (CAP) Revision report planned for submission by August 2018.

TMWs 59 and 18 have the highest Total Dissolved Solids concentrations (2020 ppm – July 31, 2017, and 1990 ppm – July 31, 2017 so they will be operated at the highest flow rates with the other less contaminated wells pumped at lower rates so that the total pumped volume does not exceed 27 million gallons, as specified in Safety and Environmental Evaluation (SEE) #23.

Since execution of Safety and Environmental Evaluation (SEE) #23 on May 31, 2013, pumpback rates were increased and 26,747,640 gallons were pumped into the impoundment in 2017. Observations of the impoundment show that to date there have been no problems in evaporating the additional volume.

The following groundwater contour maps are included with this report:

- *Figure 3 – 2017 Spring Groundwater Surface Map* shows the groundwater contours around the site tailings impoundment and Catchment Basin in spring 2017.
- *Figure 4 – 2017 Fall Groundwater Surface Map* shows the groundwater contours around the tailings impoundment and Catchment Basin in fall 2017.

Five (5) foot contours are in dark blue while one (1) foot contours are in light blue on both maps. These maps show the extent of the cone of depression created by the pumpback wells. These maps were created using groundwater elevation data from any aquifer monitor wells in existence at the time data was collected, regardless of the completion depth, since the piezometric surface is believed to be a property of the aquifer as a whole.

No water levels were collected within one (1) week of operation of PWW-1 and/or PWW-2 so that the operation of these wells would not interfere with the depiction of the potentiometric surface created by the operation of the pumpback wells.

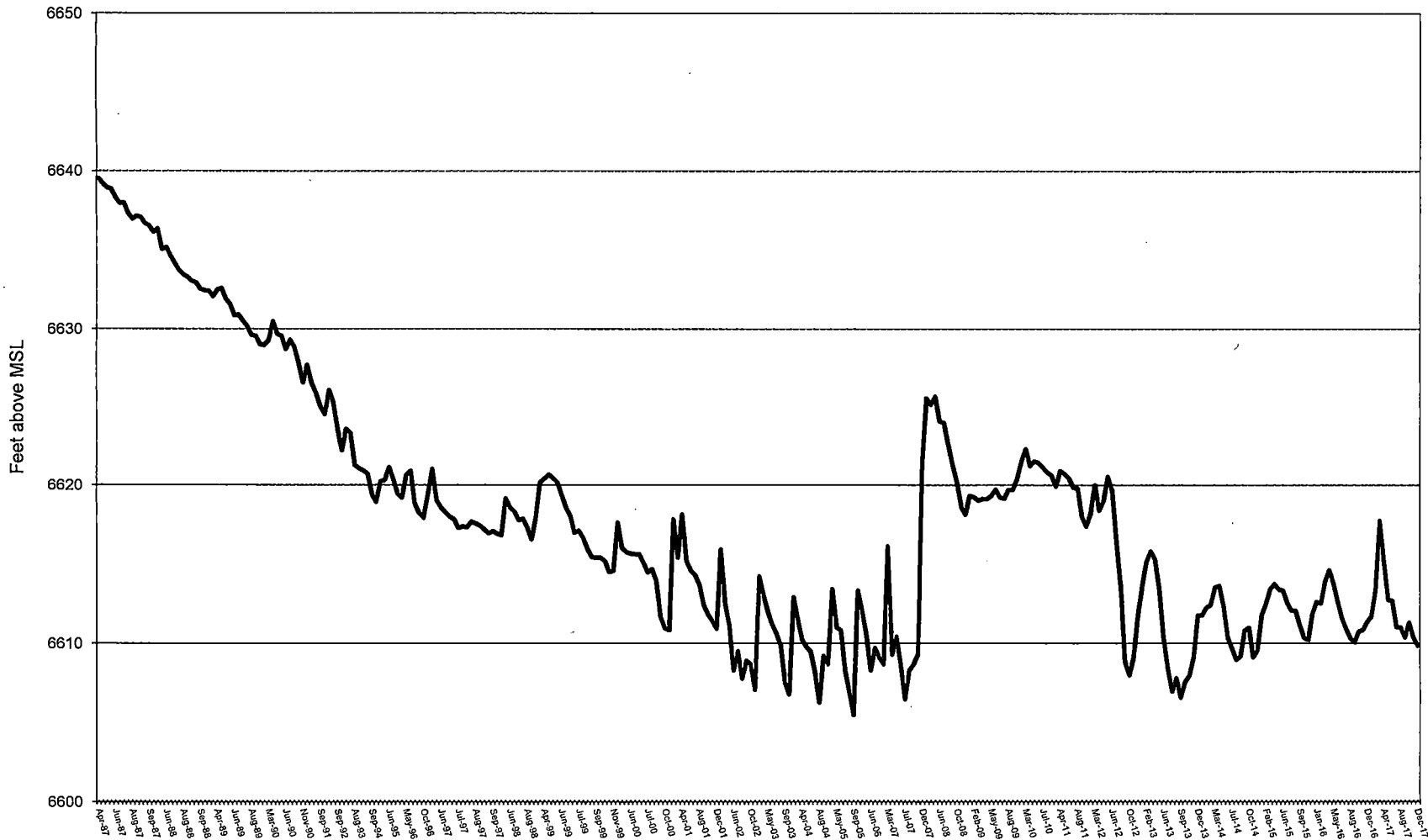
The Spring 2017 Map is based solely on monitor wells in existence in the Spring of 2017 so it does not include data from any MAC or DAC wells since they were only completed in the second half of 2017.

The Fall 2017 Map was created using data collected in early Fall. These groundwater contour maps, in addition to using data from the monitor wells shown on the map, that are measured monthly, also use water level measurements from regional wells beyond the maps borders to provide regional context to the contouring program. These regional wells are measured only semi-annually (late Spring and Fall of each year) in relation to the site's State of Wyoming permit to Mine. As such, the map only uses early Fall water level data in its preparation so that the water levels used reflect a short duration of time. Only two (2) characterization plan wells were completed anywhere near close in time to when the regional wells were measured (those being MAC-2 and 3) so only water elevations from these two (2) characterization plan wells were used in the preparation of the Fall 2017 map. Water levels in all nine (9) MAC and DAC wells are measured monthly. Future maps will incorporate water level data from all of them.

Tailings Impoundment Fluid Levels

		WATER LEVEL
DATE	DATE	OF POND (Ft)
Sep-15	09/02/15	6611.13
Oct-15	10/15/2015	6610.33
Nov-15	11/9/2015	6610.19
Dec-15	12/16/2015	6611.87
Jan-16	1/20/2016	6612.59
Feb-16	2/8/2016	6612.53
Mar-16	3/3/2016	6613.87
Apr-16	4/4/2016	6614.60
May-16	5/2/2016	6613.74
Jun-16	6/13/2016	6612.59
Jul-16	7/5/2016	6611.54
Jul-16	7/28/2016	6610.87
Aug-16	8/4/2016	6610.30
Sep-16	9/12/2016	6610.05
Oct-16	10/10/2016	6610.71
Nov-16	11/1/2016	6610.83
Dec-16	12/12/2016	6611.34
Jan-17	1/2/2017	6611.66
Feb-17	2/15/2017	6613.36
Mar-17	3/13/2017	6617.71
Apr-17	4/3/2017	6615.16
May-17	5/4/2017	6612.73
Jun-17	6/1/2017	6612.69
Jul-17	7/10/2017	6611.00
Aug-17	8/2/2017	6610.97
Sep-17	9/5/2017	6610.34
Oct-17	10/5/2017	6611.27
Nov-17	11/02/17	6610.34
Dec-17	12/07/17	6609.83

KENNECOTT URANIUM COMPANY
SweetwaterTailings Impoundment Fluid Levels
April 14, 1987 through December 15, 2017



Notes:

- Pool elevation measured by surveying fluid elevation in pool in impoundment's southeast corner.
- Rise in pool elevation due to changes in size/configuration of pool caused by ongoing tailings regrading work.

KENNECOTT URANIUM COMPANY
Sweetwater Pit Water Levels
Recovery of water level after suspension of dewatering
activities in May, 1983

DATE	ELAPSED TIME DAYS	WATER ELEVATION	WATER LEVEL CHANGE
07/21/15	11775	6538.78	113.78
08/12/15	11797	6538.46	113.46
09/01/15	11817	6538.46	113.46
10/13/15	11859	6538.16	113.16
12/15/15	11922	6538.31	113.31
01/15/16	11953	6538.27	113.27
02/15/16	11984	6538.53	113.53
03/15/16	12013	6538.62	113.62
04/15/16	12044	6538.90	113.90
05/15/16	12074	6539.02	114.02
06/15/16	12105	6539.13	114.13
07/15/16	12135	6538.97	113.97
08/15/16	12166	6538.53	113.53
09/15/16	12197	6538.20	113.20
10/12/16	12224	6538.07	113.07
11/10/16	12253	6538.07	113.07
12/15/16	12288	6538.06	113.06
01/15/17	12319	6538.12	113.12
02/15/17	12350	6538.22	113.22
03/15/17	12378	6538.95	113.95
04/15/17	12409	6538.99	113.99
05/15/17	12439	6539.02	114.02
06/15/17	12470	6539.08	114.08
07/15/17	12500	6538.56	113.56
08/15/17	12531	6538.44	113.44
09/15/17	12562	6538.22	113.22
10/15/17	12592	6538.04	113.04
11/15/17	12623	6537.94	112.94
12/15/17	12653	6537.94	112.94

*Blue color is updated levels with yearly QA/QC PVC Survey

KENNECOTT URANIUM COMPANY
Sweetwater Pit Water Levels
April 25, 1983 through December 15, 2017

