

Question 21.

2017 WATER QUALITY DATA

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Climax Mine Water Quality Monitoring Plan Evaluation - 2017

Sampling Locations

Groundwater Sample Locations: ARwell, ARK-MW-001D, ARK-MW-002S, ARK-MW-002D, EVMW-1S, EVMW-1D, EVMW-2, EVMW-3S, EVMW-3D, EV-MW-004, EVS-1, EVS-2, EVS-3, GW#1, TM-MW-001D, GW#2, TM-MW-002D

Internal Surface Water Sample Locations: CC-SW1, EI-SW1

Surface Water Sample Locations: Arkansas #1, Arkansas #2, AI, BI, EPR Outlet

During 2017 water quality samples were successfully collected quarterly from the above sample locations with the exception of the following:

First Quarter:

- EVS-1, EVS-2, EVS-3, EI-SW1, Arkansas #1 – Frozen
- CC-SW1 – Inaccessible

Fourth Quarter:

- EVS-1 - Dry

Tabulated monitoring data for 2017 are attached. An evaluation of 2017 monitoring results are discussed below.

Discussion of Results: POC Wells

The pH at GW#2 in the Tenmile Creek Watershed was measured at just under the lower value of the NPL range during the first quarter. Climax notified DRMS and began sampling the well for pH only on a monthly basis until the pH was measured within the NPL range for three consecutive months. For all other NPLs, results were within acceptable limits.

Discussion of Results: Trend Evaluation of Groundwater and Surface Water Data

The 2017 analytical results for all sites were combined with historical data and evaluated for trends. The 2017 evaluation of trends did not indicate any decline in water quality at monitoring locations.

Discussion of Results: Outlier Identification and Data Validation

The 2017 groundwater and surface water data were analyzed for outliers. Dissolved fluoride results during the 2nd, 3rd, and some 4th quarter samples were determined to be invalid through the data validation process. Non-standard laboratory procedures caused the unnecessary dilution of samples prior to fluoride analysis, resulting in reporting of estimated values or non-detect results at elevated method detection limits. No other outliers or invalid data were observed in 2017 data.

**Table 1: Climax Groundwater
Indicator Monitoring Parameters**

Site Number	Sample Date	Comment	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Lead, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
ARwell	03/20/2017	--	-0.0001	-0.0005	0.07	-0.0001	0.319	0.0077	-0.01	7.63	29.9	166
	05/24/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.109	0.0076	-0.01	7.38	26.7	160
	08/14/2017	--	-0.0001	-0.0004	0.08	-0.0001	0.061	0.0076	-0.01	7.26	26.4	157
	11/20/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.122	0.0078	-0.01	7.68	28.8	162
ARK-MW-001D	01/18/2017	Equipment Failure*	--	--	--	--	--	--	--	--	--	--
	02/15/2017	Equipment Failure*	--	--	--	--	--	--	--	--	--	--
	03/20/2017	--	-0.0001	-0.0005	0.12	0.002	0.062	0.0288	-0.01	8.05	42.7	209
	04/17/2017	--	-0.0001	-0.0005	0.14	-0.0001	0.188	0.0297	-0.01	7.85	42.3	213
	05/24/2017	--	-0.0001	-0.0004	0.11	-0.0001	0.068	0.0314	-0.01	8.02	47.1	216
	06/29/2017	--	-0.0001	-0.0004	0.13	-0.0001	0.149	0.0317	-0.01	7.98	41.4	208
	07/19/2017	--	-0.0001	-0.0004	0.13	-0.0001	0.152	0.0294	-0.01	8.03	46.9	214
	08/14/2017	--	-0.0001	-0.0004	0.11	-0.0001	0.088	0.032	-0.01	7.77	45.2	218
	09/11/2017	--	-0.0001	-0.0004	0.11	-0.0001	0.05	0.0305	-0.01	7.87	45.1	209
	09/11/2017	Duplicate	-0.0001	-0.0004	0.09	-0.0001	0.011	0.0282	-0.01	--	45.2	209
	10/04/2017	--	-0.0001	-0.0004	0.08	-0.0001	0.091	0.0327	-0.01	7.94	39.2	213
	11/20/2017	--	-0.0001	-0.0004	0.11	-0.0001	0.1	0.0296	-0.01	8.11	42.9	207
	12/18/2017	--	-0.0001	-0.0004	0.1	-0.0001	0.029	0.0296	-0.01	7.81	44	206
ARK-MW-002D	03/20/2017	--	-0.0001	0.0009	0.1	0.0024	0.055	0.0231	-0.01	8.54	36	285
	03/20/2017	Duplicate	-0.001	0.0007	0.1	0.002	0.054	0.025	-0.01	--	38.1	282
	05/24/2017	--	-0.0001	0.0024	0.56	0.003	0.064	0.0239	-0.01	8.39	42.9	288
	08/14/2017	--	0.0005	-0.0004	-0.02	0.0004	0.067	0.0245	-0.01	8.12	36.8	287
	11/20/2017	--	-0.0001	-0.0004	-0.02	0.0003	0.067	0.0214	-0.01	8.41	27.2	283
ARK-MW-002S	03/20/2017	--	0.0001	-0.0005	1.23	0.0001	3.14	0.0096	-0.01	7.44	9.5	626
	05/24/2017	--	-0.0001	-0.0004	2.24	-0.0001	3.46	0.0141	-0.01	7.28	4.6	654
	08/14/2017	--	0.0001	0.001	0.66	-0.0001	3.48	0.0139	-0.01	6.84	2.8	621
	11/20/2017	--	-0.0001	-0.0004	1.25	-0.0001	3.53	0.0084	-0.01	7.3	-1	619
EVMW-1D	03/20/2017	--	-0.0001	-0.0005	0.03	-0.0001	0.186	0.0025	-0.01	7.62	369	630
	06/13/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.186	0.0019	-0.01	7.8	382	644
	08/21/2017	--	0.0001	0.0011	-0.02	0.0001	0.2	0.0034	0.01	7.64	375	652
	11/07/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.111	0.0032	-0.01	7.75	426	689
EVMW-1S	03/20/2017	--	-0.0001	-0.0005	1.48	-0.0001	0.612	0.416	-0.01	7.41	475	869
	06/13/2017	--	-0.0001	-0.0004	0.43	-0.0001	0.552	0.362	-0.01	7.49	433	768
	08/21/2017	--	0.0001	-0.0004	0.44	-0.0001	0.689	0.414	-0.01	7.37	456	845
	11/07/2017	--	-0.0001	-0.0004	0.44	-0.0001	0.62	0.398	-0.01	7.47	517	895
	11/07/2017	Duplicate	-0.0001	-0.0004	0.48	-0.0001	0.615	0.397	-0.01	--	518	900
EVMW-2	03/14/2017	--	-0.0001	0.0012	-0.02	-0.0001	0.057	0.007	-0.01	7.71	31.2	294
	06/13/2017	--	-0.0001	-0.0004	-0.02	0.0001	0.074	0.0033	-0.01	7.7	28.1	296
	08/21/2017	--	-0.0001	0.0014	-0.02	0.0002	0.039	0.0058	-0.01	7.73	34.6	300
	10/30/2017	--	-0.0001	0.0006	-0.02	0.0002	0.07	0.0045	0.01	7.85	30.3	302
EVMW-3D	03/13/2017	--	-0.0001	0.0016	-0.02	-0.0001	0.043	0.0008	0.03	7.57	8.7	237
	06/19/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.077	0.0018	-0.01	7.88	6.1	244
	09/11/2017	--	-0.0001	0.0005	-0.02	-0.0001	0.066	0.0013	-0.01	7.66	5.2	254
	10/30/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.071	0.0021	0.06	7.6	35.6	266

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

* ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 1: Climax Groundwater
Indicator Monitoring Parameters**

Site Number	Sample Date	Comment	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Lead, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
EVMW-3S	03/14/2017	--	-0.0001	0.0012	-0.02	-0.0001	0.081	0.0035	-0.01	7.27	11.8	194
	06/19/2017	--	-0.0001	0.0006	-0.02	-0.0001	0.017	0.0025	-0.01	7.2	5.9	158
	08/28/2017	--	-0.0001	0.0005	-0.02	-0.0001	0.021	0.0047	0.03	--	10.6	222
	09/11/2017	pH only	--	--	--	--	--	--	--	7.1	--	--
	10/30/2017	--	-0.0001	-0.0004	0.04	-0.0001	0.043	0.006	0.01	7.68	8.6	218
EV-MW-004	03/06/2017	--	-0.0001	-0.0005	-0.02	-0.0001	0.105	0.0029	0.02	7.7	45.4	276
	06/13/2017	--	-0.0001	-0.0004	0.02	-0.0001	0.109	0.0056	0.07	7.62	55.9	291
	08/21/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.064	0.0032	-0.01	7.39	52.6	295
	11/07/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.023	0.0032	-0.01	7.63	60.8	294
EVS-1	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.0001	0.0011	-0.02	-0.0001	-0.005	0.0702	-0.01	7.92	24	216
	08/28/2017	--	-0.0001	0.0023	-0.02	-0.0001	-0.005	0.0902	0.01	7.82	11.5	243
	10/16/2017	Dry	--	--	--	--	--	--	--	--	--	--
EVS-2	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0073	-0.01	7.33	12.9	108
	08/28/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0087	-0.01	7.92	54.5	219
	10/16/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0081	-0.01	7.65	64.4	242
EVS-3	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0051	-0.01	7.88	28.3	140
	08/28/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0073	-0.01	7.77	62.3	239
	10/17/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0079	-0.01	7.38	84.2	281
GW#1	03/01/2017	--	0.0019	0.0016	-0.02	0.0002	-0.005	0.155	0.39	6.58	234	375
	05/15/2017	--	0.0017	0.0026	-0.02	-0.0001	-0.005	0.144	0.33	6.53	153	282
	08/07/2017	--	0.0002	-0.0004	-0.02	-0.0001	-0.005	0.147	0.34	6.27	181	325
	10/04/2017	--	0.0019	0.0005	-0.02	-0.0001	-0.005	0.154	0.38	7.56	192	337
TM-MW-001D	03/01/2017	--	-0.0001	-0.0005	-0.02	-0.0001	0.005	0.0361	-0.01	8.35	180	314
	05/15/2017	--	-0.0001	-0.0005	-0.02	-0.0001	0.01	0.0398	-0.01	8.17	189	340
	09/11/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.012	0.0358	-0.01	8.39	180	314
	10/04/2017	--	-0.0001	-0.0004	-0.02	-0.0001	0.005	0.0456	-0.01	8.21	189	331
GW#2	03/01/2017	--	-0.0001	0.0034	-0.02	0.0002	-0.005	0.0013	0.03	6.45	38.5	106
	03/08/2017	pH only	--	--	--	--	--	--	--	6.5	--	--
	04/19/2017	pH only	--	--	--	--	--	--	--	6.7	--	--
	05/15/2017	--	-0.0001	0.0023	-0.02	-0.0001	-0.005	0.0011	0.02	6.88	37.4	107
	06/26/2017	pH only	--	--	--	--	--	--	--	6.23	--	--
	07/20/2017	pH only	--	--	--	--	--	--	--	6.66	--	--
	08/07/2017	--	-0.0001	0.0007	-0.02	-0.0001	-0.005	0.0012	-0.01	6.41	26.4	94.4
	09/11/2017	pH only	--	--	--	--	--	--	--	6.98	--	--
	10/04/2017	--	-0.0001	0.0004	-0.02	-0.0001	-0.005	0.0014	-0.01	7.21	26	86.2
	11/22/2017	pH only	--	--	--	--	--	--	--	7.04	--	--
TM-MW-002D	03/08/2017	--	-0.0001	-0.0005	-0.02	-0.0001	-0.005	0.0068	-0.01	8.24	57.9	156
	05/15/2017	--	-0.0001	-0.0005	-0.02	-0.0001	-0.005	0.0071	-0.01	7.83	56.4	168
	08/07/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0071	-0.01	7.46	67.8	180
	10/04/2017	--	-0.0001	-0.0004	-0.02	-0.0001	-0.005	0.0068	-0.01	8.1	55.2	157

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

* ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 2: Climax Groundwater
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Aluminum, Dissolved (mg/L)	Antimony, Dissolved (mg/L)	Arsenic, Dissolved (mg/L)	Barium, Dissolved (mg/L)	Beryllium, Dissolved (mg/L)	Calcium, Dissolved (mg/L)	Chromium (CrIII + CrVI), Dissolved (mg/L)	Cobalt, Dissolved (mg/L)	Magnesium, Dissolved (mg/L)
ARwell	03/20/2017	--	0.03	-0.0004	-0.0002	0.074	-0.00005	34.5	-0.0005	0.00061	13.6
	05/24/2017	--	-0.03	-0.0004	0.0002	0.077	-0.00005	31	-0.0005	0.00035	13.5
	08/14/2017	--	-0.03	-0.0004	0.0002	0.067	-0.00005	30.6	0.0014	0.00043	13.2
	11/20/2017	--	-0.03	-0.0004	-0.0002	0.06	-0.00005	34.7	-0.0005	0.00041	14
ARK-MW-001D	01/18/2017	Equipment Failure*	--	--	--	--	--	--	--	--	--
	02/15/2017	Equipment Failure*	--	--	--	--	--	--	--	--	--
	03/20/2017	--	-0.03	-0.0004	0.0002	0.029	-0.00005	25.8	-0.0005	0.0001	19.1
	04/17/2017	--	-0.03	0.0019	-0.0002	0.021	-0.00005	27.4	-0.0005	0.00015	19.2
	05/24/2017	--	-0.03	-0.0004	0.0003	0.026	-0.00005	25.6	-0.0005	0.0001	18.6
	06/29/2017	--	-0.03	-0.0004	-0.0002	0.024	-0.00005	24.8	-0.0005	0.00005	17.9
	07/19/2017	--	-0.03	-0.0004	-0.0002	0.024	-0.00005	25.7	-0.0005	0.00013	18.8
	08/14/2017	--	-0.03	-0.0004	0.0004	0.025	-0.00005	24.7	-0.0005	-0.00005	18
	09/11/2017	--	-0.03	-0.0004	-0.0002	0.027	-0.00005	25.2	-0.0005	0.00021	18.4
	09/11/2017	Duplicate	-0.03	-0.0004	-0.0002	0.03	-0.00005	25.6	-0.0005	0.0001	18.4
	10/04/2017	--	-0.03	-0.0004	-0.0002	0.024	-0.00005	24	-0.0005	0.00006	18.4
	11/20/2017	--	-0.03	-0.0004	0.0002	0.022	-0.00005	25.1	-0.0005	-0.00005	18.8
	12/18/2017	--	-0.03	-0.0004	0.0003	0.025	-0.00005	28.7	-0.0005	0.00012	18.9
ARK-MW-002D	03/20/2017	--	0.16	0.0007	0.001	0.012	-0.00005	3.3	0.0005	0.00015	0.9
	03/20/2017	Duplicate	0.17	-0.004	-0.002	0.012	-0.0005	3.2	0.001	0.00016	0.8
	05/24/2017	--	0.97	0.0005	0.0014	0.018	0.00015	3.3	0.0011	0.00051	1.1
	08/14/2017	--	-0.03	0.0004	0.0023	0.013	-0.00005	3.8	-0.0005	0.00017	0.9
	11/20/2017	--	-0.03	-0.0004	0.002	0.009	-0.00005	4	-0.0005	0.00007	0.9
ARK-MW-002S	03/20/2017	--	0.05	-0.0004	0.001	0.342	-0.00005	172	0.0005	0.00325	27.7
	05/24/2017	--	-0.03	-0.0004	0.0017	0.312	-0.00005	175	-0.0005	0.00434	27.9
	08/14/2017	--	-0.03	-0.0004	0.0013	0.277	-0.00005	159	-0.0005	0.00291	26.3
	11/20/2017	--	-0.03	-0.0004	0.001	0.36	-0.00005	166	-0.0005	0.00241	26.7
EVMW-1D	03/20/2017	--	0.04	-0.0004	0.0003	0.041	-0.00005	69.8	0.0008	0.00055	27.9
	06/13/2017	--	-0.03	-0.0004	0.0004	0.038	-0.00005	68.9	-0.0005	0.00062	27.4
	08/21/2017	--	-0.03	-0.0004	0.0005	0.037	-0.00005	69.6	-0.0005	0.00069	27.8
	11/07/2017	--	-0.03	-0.0004	0.0005	0.035	-0.00005	71	-0.0005	0.00062	28.1
EVMW-1S	03/20/2017	--	0.05	-0.0004	-0.0002	0.022	0.00009	175	-0.0005	0.0009	61.8
	06/13/2017	--	-0.03	-0.0004	-0.0002	0.021	-0.00005	142	-0.0005	0.00098	48
	08/21/2017	--	-0.03	-0.0004	-0.0002	0.024	-0.00005	164	-0.0005	0.00153	54.5
	11/07/2017	--	-0.03	-0.0004	-0.0002	0.022	-0.00005	163	-0.0005	0.00113	54.9
	11/07/2017	Duplicate	-0.03	-0.0004	-0.0002	0.021	-0.00005	162	-0.0005	0.00115	54.6
EVMW-2	03/14/2017	--	-0.03	-0.0004	-0.0002	0.152	-0.00005	36	-0.0005	0.00042	47.3
	06/13/2017	--	-0.03	-0.0004	0.0003	0.111	-0.00005	43.2	-0.0005	0.00036	40
	08/21/2017	--	-0.03	-0.0004	0.0004	0.103	-0.00005	45.7	-0.0005	0.00028	40.9
	10/30/2017	--	-0.03	-0.0004	0.0003	0.105	-0.00005	45	0.0005	0.00074	39.1
EVMW-3D	03/13/2017	--	-0.03	-0.0004	-0.0002	0.361	-0.00005	10.9	-0.0005	0.00035	8
	06/19/2017	--	-0.03	-0.0004	0.0004	0.316	-0.00005	10.8	-0.0005	0.0003	7.2
	09/11/2017	--	-0.03	-0.0004	-0.0002	0.31	0.00006	11.2	-0.0005	0.00028	7.3
	10/30/2017	--	-0.03	-0.0004	0.0006	0.322	-0.00005	10.1	-0.0005	0.00036	6.8
EVMW-3S	03/14/2017	--	-0.03	-0.0004	-0.0002	0.116	0.00005	35.1	-0.0005	0.00235	23.3
	06/19/2017	--	-0.03	-0.0004	-0.0002	0.114	-0.00005	33	-0.0005	0.00065	17.3
	08/28/2017	--	-0.03	-0.0004	-0.0002	0.138	-0.00005	44.8	-0.0005	0.00125	24.5
	10/30/2017	--	-0.03	-0.0004	-0.0002	0.158	-0.00005	44.4	-0.0005	0.00399	24.6

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

*ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 2: Climax Groundwater
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Mercury, Dissolved (mg/L)	Nickel, Dissolved (mg/L)	Potassium, Dissolved (mg/L)	Selenium, Dissolved (mg/L)	Silver, Dissolved (mg/L)	Sodium, Dissolved (mg/L)	Thallium, Dissolved (mg/L)	Vanadium, Dissolved (mg/L)
ARwell	03/20/2017	--	-0.0002	0.007	1.2	-0.0001	-0.01	7.1	-0.0001	-0.005
	05/24/2017	--	-0.0002	-0.0006	1.2	-0.0001	-0.01	7.7	-0.0001	-0.005
	08/14/2017	--	-0.0002	0.0155	1.1	-0.0001	-0.01	6.2	-0.0001	-0.005
	11/20/2017	--	-0.0002	0.0119	1	-0.0001	-0.01	6.6	-0.0001	-0.005
ARK-MW-001D	01/18/2017	Equipment Failure*	--	--	--	--	--	--	--	--
	02/15/2017	Equipment Failure*	--	--	--	--	--	--	--	--
	03/20/2017	--	-0.0002	-0.0006	1.8	-0.0001	-0.01	24.9	-0.0001	-0.005
	04/17/2017	--	-0.0002	-0.0006	2	-0.0001	-0.01	26.9	-0.0001	-0.005
	05/24/2017	--	-0.0002	-0.0006	1.7	-0.0001	-0.01	25.6	-0.0001	-0.005
	06/29/2017	--	-0.0002	-0.0006	1.7	-0.0001	-0.01	25.7	-0.0001	-0.005
	07/19/2017	--	-0.0002	-0.0006	1.9	-0.0001	-0.01	26.1	-0.0001	-0.005
	08/14/2017	--	-0.0002	-0.0006	1.7	-0.0001	-0.01	25.1	-0.0001	-0.005
	09/11/2017	--	-0.0002	-0.0006	1.7	-0.0002	-0.01	25	-0.0001	-0.005
	09/11/2017	Duplicate	-0.0002	-0.0006	1.7	-0.0001	-0.01	25	-0.0001	-0.005
	10/04/2017	--	-0.0002	-0.0006	1.8	-0.0001	-0.01	27.3	-0.0001	-0.005
	11/20/2017	--	-0.0002	-0.0006	1.5	-0.0001	-0.01	26.5	-0.0001	-0.005
	12/18/2017	--	-0.0002	-0.0006	1.9	-0.0001	-0.01	25.4	-0.0001	-0.005
ARK-MW-002D	03/20/2017	--	-0.0002	-0.0006	0.7	0.0012	-0.01	97.7	-0.0001	0.009
	03/20/2017	Duplicate	-0.0002	-0.0006	0.6	0.002	-0.01	102	-0.001	0.008
	05/24/2017	--	-0.0002	0.001	0.8	0.0013	-0.01	99	-0.0001	-0.005
	08/14/2017	--	-0.0002	-0.0006	0.6	0.0002	-0.01	113	-0.0001	-0.005
	11/20/2017	--	-0.0002	-0.0006	0.3	0.001	-0.01	116	-0.0001	-0.005
ARK-MW-002S	03/20/2017	--	-0.0002	0.0171	3.4	-0.0001	-0.01	32.9	-0.0001	-0.005
	05/24/2017	--	-0.0002	0.029	3.3	0.0002	-0.01	32.2	-0.0001	-0.005
	08/14/2017	--	-0.0002	0.0137	3.3	0.0001	-0.01	35.1	-0.0001	-0.005
	11/20/2017	--	-0.0002	0.0121	3.2	0.0001	-0.01	31.4	-0.0001	-0.005
EVMW-1D	03/20/2017	--	-0.0002	0.0007	1.7	-0.0001	-0.01	91.6	-0.0001	-0.005
	06/13/2017	--	-0.0002	0.0009	1.6	-0.0001	-0.01	94.6	-0.0001	-0.005
	08/21/2017	--	-0.0002	0.0016	1.6	-0.0001	-0.01	97.3	-0.0001	-0.005
	11/07/2017	--	-0.0002	0.0019	1.7	-0.0001	-0.01	95.1	-0.0001	-0.005
EVMW-1S	03/20/2017	--	-0.0002	0.0012	2.1	-0.0001	-0.01	23	-0.0001	-0.005
	06/13/2017	--	-0.0002	0.0084	2	-0.0001	-0.01	21.3	-0.0001	-0.005
	08/21/2017	--	-0.0002	0.0214	2.6	-0.0001	-0.01	23.1	-0.0001	-0.005
	11/07/2017	--	-0.0002	0.0071	2.4	-0.0001	-0.01	21.1	-0.0001	-0.005
	11/07/2017	Duplicate	-0.0002	0.0105	2.3	-0.0001	-0.01	21	-0.0001	-0.005
EVMW-2	03/14/2017	--	-0.0002	-0.0006	2.3	-0.0001	-0.01	3.7	-0.0001	-0.005
	06/13/2017	--	-0.0002	0.0011	2.2	-0.0001	-0.01	7.3	-0.0001	-0.005
	08/21/2017	--	-0.0002	0.0015	2.3	-0.0001	-0.01	6.8	-0.0001	-0.005
	10/30/2017	--	-0.0002	0.0013	2.2	-0.001	-0.01	8.9	-0.0001	-0.005
EVMW-3D	03/13/2017	--	-0.0002	0.0006	2.8	-0.0001	-0.01	68.8	-0.0001	-0.005
	06/19/2017	--	-0.0002	0.0008	3.2	-0.0001	-0.01	76.8	-0.0001	-0.005
	09/11/2017	--	-0.0002	0.0007	3	0.0005	-0.01	75.6	-0.0001	-0.005
	10/30/2017	--	-0.0002	0.0008	3.1	-0.001	-0.01	76.1	-0.0001	-0.005
EVMW-3S	03/14/2017	--	-0.0002	0.0064	2.4	0.0003	-0.01	4.2	-0.0001	-0.005
	06/19/2017	--	-0.0002	0.0055	1.7	0.0002	-0.01	2.3	-0.0001	-0.005
	08/28/2017	--	-0.0002	0.0111	2.4	0.0002	-0.01	3.6	-0.0001	-0.005
	10/30/2017	--	-0.0002	0.0222	2.3	-0.001	-0.01	3.6	-0.0001	-0.005

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

*ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 2: Climax Groundwater
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Bicarbonate (HCO ₃) (mg/L)	Total Alkalinity (mg/L)	Chloride, Dissolved (mg/L)	Cyanide, Total (mg/L)	Cyanide (WAD) (mg/L)	Fluoride, Dissolved (mg/L)	Total Nitrite + Nitrate as N (mg/L)	Total Organic Carbon (TOC) (mg/L)
ARwell	03/20/2017	--	124	124	2.7	-0.003	-0.003	0.51	-0.02	-1
	05/24/2017	--	125	125	3.2	-0.003	-0.003	-4	-0.02	-1
	08/14/2017	--	123	123	4.1	-0.003	-0.003	-5	-0.02	-1
	11/20/2017	--	120	120	3.3	-0.003	-0.003	0.51	-0.02	-1
ARK-MW-001D	01/18/2017	Equipment Failure*	--	--	--	--	--	--	--	--
	02/15/2017	Equipment Failure*	--	--	--	--	--	--	--	--
	03/20/2017	--	144	151	0.6	-0.003	-0.003	1.77	-0.02	-1
	04/17/2017	--	145	152	0.6	-0.003	-0.003	1.86	-0.02	-1
	05/24/2017	--	150	150	1.5	-0.003	-0.003	4	-0.02	-1
	06/29/2017	--	149	153	1	0.003	-0.003	1.83	-0.02	1.3
	07/19/2017	--	151	151	0.8	-0.003	-0.003	1.83	-0.02	-1
	08/14/2017	--	168	168	0.9	-0.003	-0.003	-5	-0.02	-1
	09/11/2017	--	147	152	1.1	-0.003	-0.003	-5	-0.02	-1
	09/11/2017	Duplicate	146	151	1.1	-0.003	-0.003	-5	-0.02	-1
	10/04/2017	--	163	164	1.1	-0.003	-0.003	1.78	-0.02	-1
	11/20/2017	--	144	146	1.2	-0.003	-0.003	1.85	-0.02	-1
	12/18/2017	--	148	148	1.9	-0.003	-0.003	1.96	-0.02	-1
ARK-MW-002D	03/20/2017	--	204	220	5.4	-0.003	-0.003	7.2	-0.02	10.8
	03/20/2017	Duplicate	189	203	6	-0.003	-0.003	7.4	-0.02	27.4
	05/24/2017	--	196	204	2.9	-0.003	-0.003	12	-0.02	31.3
	08/14/2017	--	201	209	4	-0.003	-0.003	-5	-0.02	3
	11/20/2017	--	195	202	3.2	-0.003	-0.003	7.79	-0.02	9
ARK-MW-002S	03/20/2017	--	532	532	51.4	-0.003	-0.003	0.14	-0.02	15
	05/24/2017	--	573	573	50.8	-0.003	-0.003	5	-0.02	16.5
	08/14/2017	--	537	537	62.7	-0.003	-0.003	-5	0.03	14
	11/20/2017	--	535	535	60.3	-0.003	-0.003	0.25	-0.02	10.6
EVMW-1D	03/20/2017	--	104	105	5.7	-0.003	-0.003	0.14	-0.02	-1
	06/13/2017	--	105	105	5.6	-0.003	-0.003	-10	-0.02	1
	08/21/2017	--	123	123	5.8	-0.003	-0.003	-5	-0.02	-1
	11/07/2017	--	99.9	99.9	5.5	-0.003	-0.003	0.15	-0.02	-1
EVMW-1S	03/20/2017	--	206	206	4.1	-0.003	-0.003	0.12	-0.02	1.3
	06/13/2017	--	193	193	3	-0.003	-0.003	-10	-0.02	1.7
	08/21/2017	--	229	229	4.3	-0.003	-0.003	-5	-0.02	-1
	11/07/2017	--	216	216	3.8	-0.003	-0.003	0.19	-0.02	-1
	11/07/2017	Duplicate	224	224	3.9	-0.003	-0.003	0.19	-0.02	-1
EVMW-2	03/14/2017	--	259	282	1	-0.003	-0.003	0.06	-0.02	-1
	06/13/2017	--	278	285	1.2	-0.003	-0.003	-10	-0.02	1
	08/21/2017	--	277	277	1	-0.003	-0.003	-5	-0.02	-1
	10/30/2017	--	259	264	1.1	-0.003	-0.003	-5	-0.02	-1
EVMW-3D	03/13/2017	--	211	219	4.3	-0.003	-0.003	0.26	-0.02	-1
	06/19/2017	--	218	222	4.5	-0.003	-0.003	-10	0.04	2.4
	09/11/2017	--	233	241	4.5	-0.003	-0.003	-5	0.06	-1
	10/30/2017	--	207	214	4	-0.003	-0.003	-5	0.02	2.8
EVMW-3S	03/14/2017	--	185	190	0.5	-0.003	-0.003	0.09	-0.02	2.3
	06/19/2017	--	158	158	1	-0.003	-0.003	-10	-0.02	2.4
	08/28/2017	--	221	221	0.9	-0.003	-0.003	-5	-0.02	-1
	10/30/2017	--	228	228	0.8	-0.003	-0.003	-5	0.03	1.6

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

*ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 2: Climax Groundwater
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Aluminum, Dissolved (mg/L)	Antimony, Dissolved (mg/L)	Arsenic, Dissolved (mg/L)	Barium, Dissolved (mg/L)	Beryllium, Dissolved (mg/L)	Calcium, Dissolved (mg/L)	Chromium (CrIII + CrVI), Dissolved (mg/L)	Cobalt, Dissolved (mg/L)	Magnesium, Dissolved (mg/L)
EV-MW-004	03/06/2017	--	-0.03	-0.0004	0.0006	0.027	-0.00005	45.8	-0.0005	0.00078	26.6
	06/13/2017	--	-0.03	-0.0004	0.0005	0.038	-0.00005	47.5	-0.0005	0.00068	27.5
	08/21/2017	--	-0.03	-0.0004	0.0003	0.034	-0.00005	50.2	-0.0005	0.00044	29.3
	11/07/2017	--	-0.03	-0.0004	0.0003	0.03	-0.00005	48.9	-0.0005	0.00034	28.1
EVS-1	03/22/2017	Frozen	--	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.03	-0.0004	-0.0002	0.072	-0.00005	54.5	-0.0005	0.00019	17.4
	08/28/2017	--	-0.03	-0.0004	-0.0002	0.109	-0.00005	60.1	-0.0005	0.00021	19.8
	10/16/2017	Dry	--	--	--	--	--	--	--	--	--
EVS-2	03/22/2017	Frozen	--	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.03	-0.0004	-0.0002	0.056	-0.00005	25.2	-0.0005	0.00008	9.4
	08/28/2017	--	-0.03	-0.0004	-0.0002	0.131	-0.00005	47.8	-0.0005	0.00013	19.5
	10/16/2017	--	-0.03	-0.0004	-0.0002	0.137	-0.00005	53.7	-0.0005	0.00019	23.1
EVS-3	03/22/2017	Frozen	--	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.03	-0.0004	-0.0002	0.049	-0.00005	27.8	-0.0005	0.00009	11.6
	08/28/2017	--	-0.03	-0.0004	-0.0002	0.091	-0.00005	48.6	-0.0005	0.00014	20.2
	10/17/2017	--	-0.03	-0.0004	-0.0002	0.099	-0.00005	62.1	-0.0005	0.00021	26
GW#1	03/01/2017	--	0.05	-0.0004	-0.0002	0.031	0.00039	84.7	0.0012	0.00015	8.5
	05/15/2017	--	0.03	-0.0004	-0.0002	0.028	0.00034	67.5	-0.0005	0.0003	6.9
	08/07/2017	--	-0.03	-0.0004	-0.0002	0.027	0.00035	76.3	-0.0005	0.00022	7.8
	10/04/2017	--	0.05	-0.0004	-0.0002	0.032	0.00036	81.9	-0.0005	0.00019	8.6
TM-MW-001D	03/01/2017	--	-0.03	-0.0004	-0.0002	0.021	-0.00005	22.1	0.0011	0.00012	1.2
	05/15/2017	--	-0.03	0.0008	0.0014	0.021	-0.00005	22.6	-0.0005	0.00014	1.3
	09/11/2017	--	-0.03	0.0005	0.001	0.021	-0.00005	23.2	-0.0005	0.00011	1.2
	10/04/2017	--	-0.03	0.0007	0.0013	0.022	-0.00005	24.2	-0.0005	0.00007	1.2
GW#2	03/01/2017	--	-0.03	-0.0004	-0.0002	0.055	0.00005	22.9	0.0013	0.00011	4.2
	05/15/2017	--	-0.03	-0.0004	-0.0002	0.052	-0.00005	20	-0.0005	0.00011	3.8
	08/07/2017	--	-0.03	-0.0004	-0.0002	0.046	-0.00005	19.8	-0.0005	0.00006	3.7
	10/04/2017	--	-0.03	-0.0004	-0.0002	0.053	-0.00005	20.5	-0.0005	0.00006	3.7
TM-MW-002D	03/08/2017	--	-0.03	0.0029	0.0025	0.019	-0.00005	13.9	-0.0005	0.0001	9
	05/15/2017	--	-0.03	0.0049	0.0044	0.027	-0.00005	14.1	-0.0005	0.00016	9.5
	08/07/2017	--	-0.03	0.0024	0.002	0.019	-0.00005	14.5	-0.0005	0.00006	9.5
	10/04/2017	--	-0.03	0.0016	0.001	0.024	-0.00005	14.7	-0.0005	-0.00005	9.6

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

*ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 2: Climax Groundwater
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Mercury, Dissolved (mg/L)	Nickel, Dissolved (mg/L)	Potassium, Dissolved (mg/L)	Selenium, Dissolved (mg/L)	Silver, Dissolved (mg/L)	Sodium, Dissolved (mg/L)	Thallium, Dissolved (mg/L)	Vanadium, Dissolved (mg/L)
EV-MW-004	03/06/2017	--	-0.0002	0.0016	1.5	-0.0001	-0.01	17.1	-0.0001	-0.005
	06/13/2017	--	-0.0002	0.0018	1.6	-0.0001	-0.01	19.2	-0.0001	-0.005
	08/21/2017	--	-0.0002	0.0015	1.6	-0.0001	-0.01	19	-0.0001	-0.005
	11/07/2017	--	-0.0002	0.0014	1.6	-0.0001	-0.01	16.9	-0.0001	-0.005
EVS-1	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.0002	-0.0006	1.6	-0.0001	-0.01	1.7	-0.0001	-0.005
	08/28/2017	--	-0.0002	-0.0006	1.7	-0.0001	-0.01	2.7	-0.0001	-0.005
	10/16/2017	Dry	--	--	--	--	--	--	--	--
EVS-2	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.0002	-0.0006	0.7	0.0002	-0.01	0.8	-0.0001	-0.005
	08/28/2017	--	-0.0002	-0.0006	1	-0.0001	-0.01	1.2	-0.0001	-0.005
	10/16/2017	--	-0.0002	-0.0006	0.9	-0.0001	-0.01	1.4	-0.0001	-0.005
EVS-3	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/19/2017	--	-0.0002	-0.0006	0.7	0.0002	-0.01	0.8	-0.0001	-0.005
	08/28/2017	--	-0.0002	-0.0006	1	-0.0001	-0.01	1.2	-0.0001	-0.005
	10/17/2017	--	-0.0002	-0.0006	0.9	-0.0001	-0.01	1.4	-0.0001	-0.005
GW#1	03/01/2017	--	-0.0002	0.0033	6.2	0.0003	-0.01	7.6	-0.0001	-0.005
	05/15/2017	--	-0.0002	0.003	5.2	0.0002	-0.01	5.9	-0.0001	-0.005
	08/07/2017	--	-0.0002	0.0032	5.6	0.0001	-0.01	6.8	-0.0001	-0.005
	10/04/2017	--	-0.0002	0.0034	5.9	0.0001	-0.01	7	-0.0001	-0.005
TM-MW-001D	03/01/2017	--	-0.0002	-0.0006	0.7	-0.0001	-0.01	77.5	-0.0001	-0.005
	05/15/2017	--	-0.0002	-0.0006	0.6	-0.0001	-0.01	76.3	-0.0001	-0.005
	09/11/2017	--	-0.0002	-0.0006	0.7	0.0004	-0.01	78	-0.0001	-0.005
	10/04/2017	--	-0.0002	-0.0006	0.6	0.0005	-0.01	79.4	-0.0001	-0.005
GW#2	03/01/2017	--	-0.0002	-0.0006	1.4	-0.0001	-0.01	4.3	-0.0001	-0.005
	05/15/2017	--	-0.0002	-0.0006	1.3	0.0002	-0.01	3.9	-0.0001	-0.005
	08/07/2017	--	-0.0002	-0.0006	1.3	0.0006	-0.01	4	-0.0001	-0.005
	10/04/2017	--	-0.0002	-0.0006	1.3	0.0001	-0.01	4	-0.0001	-0.005
TM-MW-002D	03/08/2017	--	-0.0002	-0.0006	2.7	-0.0001	-0.01	24.1	-0.0001	-0.005
	05/15/2017	--	-0.0002	-0.0006	2.9	-0.0001	-0.01	25.7	-0.0001	-0.005
	08/07/2017	--	-0.0002	-0.0006	3	-0.0001	-0.01	26.3	-0.0001	-0.005
	10/04/2017	--	-0.0002	-0.0006	3	-0.0001	-0.01	26.4	-0.0001	-0.005

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit
*ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 2: Climax Groundwater
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Bicarbonate (HCO ₃) (mg/L)	Total Alkalinity (mg/L)	Chloride, Dissolved (mg/L)	Cyanide, Total (mg/L)	Cyanide (WAD) (mg/L)	Fluoride, Dissolved (mg/L)	Total Nitrite + Nitrate as N (mg/L)	Total Organic Carbon (TOC) (mg/L)
EV-MW-004	03/06/2017	--	221	227	1.2	-0.003	-0.003	0.14	-0.02	5.4
	06/13/2017	--	227	227	1.1	-0.003	-0.003	-10	-0.02	6.3
	08/21/2017	--	231	231	1.6	-0.003	-0.003	-5	-0.02	-1
	11/07/2017	--	223	223	1.6	-0.003	-0.003	0.11	-0.02	2.3
EVS-1	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/19/2017	--	188	190	1.9	-0.003	-0.003	-10	-0.02	4.3
	08/28/2017	--	227	231	5.8	-0.003	-0.003	-5	-0.02	4.8
	10/16/2017	Dry	--	--	--	--	--	--	--	--
EVS-2	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/19/2017	--	95.3	95.3	0.8	-0.003	-0.003	-10	-0.02	1.6
	08/28/2017	--	152	153	2.2	-0.003	-0.003	-5	-0.02	-1
	10/16/2017	--	156	156	3.4	-0.003	-0.003	-5	-0.02	-1
EVS-3	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/19/2017	--	114	114	1	-0.003	-0.003	-10	-0.02	4
	08/28/2017	--	166	170	1.8	-0.003	-0.003	-5	-0.02	-1
	10/17/2017	--	165	168	4	-0.003	-0.003	-5	-0.02	-1
GW#1	03/01/2017	--	40.5	40.5	7.8	-0.003	-0.003	1.05	0.17	4.5
	05/15/2017	--	46.9	46.9	14.1	-0.003	-0.003	-4	0.2	-1
	08/07/2017	--	47.6	47.6	17.3	-0.003	-0.003	1.07	0.23	-1
	10/04/2017	--	42.7	42.7	14.3	-0.003	-0.003	1.01	0.19	-1
TM-MW-001D	03/01/2017	--	45.9	45.9	1.1	-0.003	-0.003	3.15	-0.02	3.6
	05/15/2017	--	51.4	51.4	1.4	-0.003	-0.003	17	-0.02	-1
	09/11/2017	--	47.4	47.4	1.6	-0.003	-0.003	-5	-0.02	10.3
	10/04/2017	--	51.6	51.6	1.5	-0.003	-0.003	3.17	-0.02	-1
GW#2	03/01/2017	--	52.8	52.8	2.7	-0.003	-0.003	0.1	0.44	4.2
	05/15/2017	--	54.6	54.6	2	-0.003	-0.003	5	0.58	-1
	08/07/2017	--	60.8	60.8	2	-0.003	-0.003	0.08	0.41	-1
	10/04/2017	--	46.9	46.9	2	-0.003	-0.003	0.07	0.4	-1
TM-MW-002D	03/08/2017	--	75.2	77.6	0.9	-0.003	-0.003	0.44	-0.02	-1
	05/15/2017	--	96.7	97.8	0.9	-0.003	-0.003	-4	-0.02	-1
	08/07/2017	--	93.1	93.1	1.3	-0.003	-0.003	0.46	-0.02	-1
	10/04/2017	--	76.7	77.4	1	-0.003	-0.003	0.43	-0.02	-1

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

*ARK-MW-001D well head leaked during Q1 2017 leading to a frozen standpipe.

**Table 3: Climax Internal Surface Water
Indicator Monitoring Parameters**

Site Number	Sample Date	Comment	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
CC-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--
	06/26/2017	--	0.02	0.005	0.0103	6.96	12.2	38
	08/22/2017	--	-0.02	-0.005	0.0018	7.67	23.6	66
	10/16/2017	--	0.04	0.01	0.0018	7.92	33.1	82
EI-SW1	03/22/2017	Frozen	--	--	--	--	--	--
	06/26/2017	--	-0.02	-0.005	0.0105	7.85	4.2	100
	06/26/2017	Duplicate	-0.02	-0.005	0.0138	--	5	106
	08/22/2017	--	-0.02	-0.005	0.0013	7.6	28.1	154
	10/16/2017	--	-0.02	-0.005	0.0013	7.31	10	174

**Table 4: Climax Internal Surface Water
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Aluminum, Dissolved (mg/L)	Antimony, Dissolved (mg/L)	Arsenic, Dissolved (mg/L)	Barium, Dissolved (mg/L)	Beryllium, Dissolved (mg/L)	Cadmium, Dissolved (mg/L)	Calcium, Dissolved (mg/L)	Chromium (CrIII + CrVI), Dissolved (mg/L)
CC-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--
	06/26/2017	--	0.03	-0.0004	-0.0002	0.02	-0.00005	0.0451	9.7	-0.0005
	08/22/2017	--	-0.03	-0.0004	-0.0002	0.015	-0.00005	-0.0001	15.7	-0.0005
	10/16/2017	--	-0.03	-0.0004	-0.0002	0.021	-0.00005	-0.0001	20.2	-0.0005
EI-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--
	06/26/2017	--	-0.03	-0.0004	-0.0002	0.153	-0.00005	0.0459	33	-0.0005
	06/26/2017	Duplicate	-0.03	-0.0004	-0.0002	0.155	-0.00005	0.06	33.5	-0.0005
	08/22/2017	--	-0.03	-0.0004	-0.0002	0.204	-0.00005	-0.0001	47.2	-0.0005
	10/16/2017	--	-0.03	-0.0004	-0.0002	0.204	-0.00005	-0.0001	51.7	-0.0005

Site Number	Sample Date	Comment	Cobalt, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Lead, Dissolved (mg/L)	Magnesium, Dissolved (mg/L)	Mercury, Total (mg/L)	Nickel, Dissolved (mg/L)	Potassium, Dissolved (mg/L)	Selenium, Dissolved (mg/L)
CC-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--
	06/26/2017	--	0.0206	0.0101	0.0002	1.6	-0.0002	0.0018	0.6	-0.001
	08/22/2017	--	0.00009	-0.0004	-0.0001	2.4	-0.0002	-0.0006	0.5	-0.001
	10/16/2017	--	0.00007	0.0004	-0.0001	3.1	-0.0002	-0.0006	0.7	-0.001
EI-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--
	06/26/2017	--	0.0206	0.0115	0.0001	4.4	-0.0002	0.0018	0.5	-0.001
	06/26/2017	Duplicate	0.028	0.0116	0.0003	4.5	-0.0002	0.0023	0.5	-0.001
	08/22/2017	--	0.00022	-0.0004	-0.0001	7.9	-0.0002	-0.0006	0.5	-0.001
	10/16/2017	--	0.00016	-0.0004	-0.0001	9.2	-0.0002	-0.0006	0.5	-0.001

Site Number	Sample Date	Comment	Silver, Dissolved (mg/L)	Sodium, Dissolved (mg/L)	Thallium, Dissolved (mg/L)	Vanadium, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	Nitrogen, Ammonia, Total (mg/L)	Alkalinity, Bicarbonate (mg/L)	Alkalinity, Total (mg/L)
CC-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--
	06/26/2017	--	-0.01	0.6	-0.0001	-0.005	0.02	-0.05	21.5	21.5
	08/22/2017	--	-0.01	0.9	-0.0001	-0.005	0.01	-0.05	29.2	29.2
	10/16/2017	--	-0.01	1.1	-0.0001	-0.005	0.01	-0.05	31.2	31.2
EI-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--	--
	06/26/2017	--	-0.01	1	-0.0001	-0.005	-0.01	-0.05	99.4	99.4
	06/26/2017	Duplicate	-0.01	1.1	-0.0001	-0.005	-0.01	-0.05	99	99
	08/22/2017	--	-0.01	1.8	-0.0001	-0.005	-0.01	-0.05	142	151
	10/16/2017	--	-0.01	2.2	-0.0001	-0.005	-0.01	-0.05	155	155

Site Number	Sample Date	Comment	Chloride, Dissolved (mg/L)	Cyanide, WAD (mg/L)	Cyanide, Total (mg/L)	Fluoride, Dissolved (mg/L)	Hardness (mg/L)	Total Nitrate + Nitrite as N (mg/L)	Total Organic Carbon (mg/L)
CC-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--
	06/26/2017	--	0.9	-0.003	-0.003	-10	31	0.11	1.2
	08/22/2017	--	0.6	-0.003	-0.003	0.34	49	0.14	-1
	10/16/2017	--	0.7	-0.003	-0.003	-5	63	0.25	-1
EI-SW1	03/22/2017	Inaccessible	--	--	--	--	--	--	--
	06/26/2017	--	1	-0.003	-0.003	-10	101	0.07	1.3
	06/26/2017	Duplicate	1.1	-0.003	-0.003	-10	102	0.07	-1
	08/22/2017	--	0.7	-0.003	-0.003	0.11	150	0.06	-1
	10/16/2017	--	0.9	-0.003	-0.003	-5	167	0.14	-1

**Table 5: Climax River and EPR Surface Water
Indicator Monitoring Parameters**

Site Number	Sample Date	Comment	Aluminum, Dissolved (mg/L)	Cadmium, Dissolved (mg/L)	Calcium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Lead, Dissolved (mg/L)	Magnesium, Dissolved (mg/L)
Arkansas #1	03/22/2017	Frozen	--	--	--	--	--	--	--
	06/26/2017	--	-0.03	0.0477	5.5	0.0107	0.03	0.0002	1.2
	08/14/2017	--	-0.03	-0.0001	9.9	0.0007	0.06	-0.0001	2.6
	10/16/2017	--	-0.03	-0.0001	13.6	-0.0004	0.08	0.0002	3.6
Arkansas #2	03/20/2017	--	0.04	-0.0001	28.8	-0.0005	0.17	-0.0001	6.3
	06/26/2017	--	-0.03	0.0248	6.8	0.0056	0.03	0.0001	1.5
	08/14/2017	--	-0.03	-0.0001	11.4	0.0008	0.03	0.0001	2.7
	10/16/2017	--	-0.03	-0.0001	16.8	0.0005	0.05	-0.0001	4.1
AI	03/13/2017	--	-0.03	-0.0001	18.5	0.0025	-0.02	-0.0001	9.9
	06/20/2017	--	-0.03	-0.0001	9.5	-0.0004	0.04	-0.0001	4.5
	08/28/2017	--	-0.03	-0.0001	18.3	-0.0004	-0.02	-0.0001	8.7
	10/16/2017	--	-0.03	-0.0001	14.6	-0.0004	-0.02	-0.0001	7.6
BI	03/13/2017	--	-0.03	-0.0001	19.7	-0.0005	-0.02	-0.0001	10.3
	06/20/2017	--	-0.03	-0.0001	10.7	-0.0004	0.04	-0.0001	5
	08/28/2017	--	-0.03	-0.0001	20.8	-0.0004	-0.02	-0.0001	9.5
	10/16/2017	--	-0.03	-0.0001	19.2	-0.0004	-0.02	-0.0001	9
EPR Outlet	03/20/2017	--	0.03	-0.0001	25.3	-0.0005	-0.02	-0.0001	11
	06/20/2017	--	-0.03	-0.0001	23.7	0.0004	-0.02	-0.0001	10.2
	08/28/2017	--	-0.03	-0.0001	22.7	-0.0004	-0.02	-0.0001	9.7
	10/16/2017	--	-0.03	-0.0001	23.6	0.0005	-0.02	-0.0001	10.3

**Table 5: Climax River and EPR Surface Water
Indicator Monitoring Parameters**

Site Number	Sample Date	Comment	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
Arkansas #1	03/22/2017	Frozen	--	--	--	--	--	--	--
	06/26/2017	--	-0.005	0.0109	-0.01	6.48	3.6	24	19
	08/14/2017	--	0.013	0.0019	-0.01	8.1	10.1	52	35
	10/16/2017	--	0.02	0.0018	-0.01	7.76	21.1	54	49
Arkansas #2	03/20/2017	--	0.48	0.0164	0.03	7.94	32	144	98
	06/26/2017	--	0.013	0.0054	0.01	7.13	-1	18	23
	08/14/2017	--	0.027	0.0054	-0.01	7.92	13.1	56	40
	10/16/2017	--	0.048	0.0086	-0.01	7.94	24.2	88	59
AI	03/13/2017	--	-0.005	0.0006	-0.01	7.68	17.3	88	87
	06/20/2017	--	-0.005	0.003	-0.01	7.32	1.5	72	42
	08/28/2017	--	-0.005	0.0082	-0.01	7.12	13.7	92	82
	10/16/2017	--	-0.005	0.0005	-0.01	8.1	11.5	64	68
BI	03/13/2017	--	-0.005	0.0037	-0.01	7.81	12.5	84	92
	06/20/2017	--	-0.005	0.0045	-0.01	7.52	4.1	74	47
	08/28/2017	--	-0.005	0.0177	-0.01	7.5	18.1	98	91
	10/16/2017	--	-0.005	0.0134	-0.01	7.85	16.2	98	85
EPR Outlet	03/20/2017	--	-0.005	0.0381	-0.01	7.24	27.3	120	108
	06/20/2017	--	-0.005	0.0276	-0.01	7.6	24.7	122	101
	08/28/2017	--	-0.005	0.0318	-0.01	7.87	24.2	104	97
	10/16/2017	--	-0.005	0.0308	-0.01	8.04	22.6	96	101

**Table 6: Climax River and EPR Surface Water
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Antimony, Dissolved (mg/L)	Arsenic, Dissolved (mg/L)	Arsenic,Total Recoverable (mg/L)	Barium, Dissolved (mg/L)	Beryllium, Dissolved (mg/L)	Chromium (Cr III + Cr VI), Dissolved (mg/L)	Cobalt, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)
Arkansas #1	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/26/2017	--	-0.0004	-0.0002	-0.0002	0.012	-0.00005	-0.0005	0.0215	0.06
	08/14/2017	--	-0.0004	-0.0002	-0.0002	0.018	-0.00005	-0.0005	-0.00005	0.09
	10/16/2017	--	-0.0004	-0.0002	-0.0002	0.02	-0.00005	-0.0005	0.00006	0.12
Arkansas #2	03/20/2017	--	-0.0004	-0.0002	-0.0002	0.055	-0.00005	-0.0005	0.00012	0.27
	06/26/2017	--	-0.0004	-0.0002	-0.0002	0.014	-0.00005	-0.0005	0.0113	0.06
	08/14/2017	--	-0.0004	-0.0002	-0.0002	0.019	-0.00005	-0.0005	0.00006	0.08
	10/16/2017	--	-0.0004	-0.0002	-0.0002	0.024	-0.00005	-0.0005	0.00009	0.12
AI	03/13/2017	--	-0.0004	-0.0002	0.0002	0.06	-0.00005	-0.0005	0.00007	-0.02
	06/20/2017	--	-0.0004	-0.0002	0.0004	0.037	0.00006	-0.0005	0.00006	0.53
	08/28/2017	--	-0.0004	-0.0002	0.0002	0.059	-0.00005	-0.0005	0.00005	-0.02
	10/16/2017	--	-0.0004	-0.0002	-0.0002	0.059	-0.00005	-0.0005	0.00007	-0.02
BI	03/13/2017	--	-0.0004	-0.0002	0.0002	0.059	-0.00005	-0.0005	-0.00005	-0.02
	06/20/2017	--	-0.0004	-0.0002	0.0004	0.039	0.00005	-0.0005	0.00006	1.04
	08/28/2017	--	-0.0004	-0.0002	0.0003	0.056	-0.00005	-0.0005	0.00006	0.49
	10/16/2017	--	-0.0004	-0.0002	-0.0002	0.055	-0.00005	-0.0005	0.00009	-0.02
EPR Outlet	03/20/2017	--	-0.0004	-0.0002	0.0002	0.047	-0.00005	-0.0005	-0.00005	-0.02
	06/20/2017	--	-0.0004	-0.0002	0.0002	0.041	-0.00005	-0.0005	0.0001	0.12
	08/28/2017	--	-0.0004	-0.0002	0.0002	0.038	-0.00005	-0.0005	0.00006	0.03
	10/16/2017	--	-0.0004	-0.0002	-0.0002	0.046	-0.00005	-0.0005	0.00011	0.02

Site Number	Sample Date	Comment	Mercury, Total (mg/L)	Nickel, Dissolved (mg/L)	Potassium, Dissolved (mg/L)	Selenium, Dissolved (mg/L)	Silver, Dissolved (mg/L)	Sodium, Dissolved (mg/L)	Thallium, Dissolved (mg/L)	Vanadium, Dissolved (mg/L)
Arkansas #1	03/22/2017	Frozen	--	--	--	--	--	--	--	--
	06/26/2017	--	-0.0002	0.0019	-0.2	-0.001	-0.01	0.4	-0.0001	0.006
	08/14/2017	--	-0.0002	0.0006	0.2	-0.001	-0.01	0.7	-0.0001	-0.005
	10/16/2017	--	-0.0002	-0.0006	0.6	-0.001	-0.01	1	-0.0001	-0.005
Arkansas #2	03/20/2017	--	-0.0002	-0.0006	1	-0.001	-0.01	13.3	-0.0001	-0.005
	06/26/2017	--	-0.0002	0.001	-0.2	-0.001	-0.01	0.8	-0.0001	-0.005
	08/14/2017	--	-0.0002	-0.0006	0.3	-0.001	-0.01	1.3	-0.0001	-0.005
	10/16/2017	--	-0.0002	-0.0006	0.6	-0.001	-0.01	2.5	-0.0001	-0.005
AI	03/13/2017	--	-0.0002	-0.0006	0.5	-0.001	-0.01	1	-0.0001	-0.005
	06/20/2017	--	-0.0002	-0.0006	0.6	-0.001	-0.01	0.6	-0.0001	-0.005
	08/28/2017	--	-0.0002	-0.0006	0.8	-0.001	-0.01	0.8	-0.0001	-0.005
	10/16/2017	--	-0.0002	-0.0006	0.5	-0.001	-0.01	0.7	-0.0001	-0.005
BI	03/13/2017	--	-0.0002	-0.0006	0.6	-0.001	-0.01	1.1	-0.0001	-0.005
	06/20/2017	--	-0.0002	-0.0006	0.6	-0.001	-0.01	0.6	-0.0001	-0.005
	08/28/2017	--	-0.0002	-0.0006	0.9	-0.001	-0.01	0.9	-0.0001	-0.005
	10/16/2017	--	-0.0002	-0.0006	0.7	-0.001	-0.01	0.8	-0.0001	-0.005
EPR Outlet	03/20/2017	--	-0.0002	-0.0006	1	-0.001	-0.01	1	-0.0001	-0.005
	06/20/2017	--	-0.0002	-0.0006	0.9	-0.001	-0.01	1	-0.0001	-0.005
	08/28/2017	--	-0.0002	-0.0006	1	-0.001	-0.01	0.9	-0.0001	-0.005
	10/16/2017	--	-0.0002	-0.0006	0.8	-0.001	-0.01	0.9	-0.0001	-0.005

Note: Negative values indicate a non-detect result; the absolute value is the Method Detection Limit

**Table 6: Climax River and EPR Surface Water
Baseline Monitoring Parameters**

Site Number	Sample Date	Comment	Ammonia (NH3) as N, (mg/L)	Bicarbonate (HCO3) (mg/L)	Total Alkalinity (mg/L)	Chloride, Dissolved (mg/L)	Cyanide, WAD (mg/L)	Cyanide, Total (mg/L)	Fluoride, Dissolved (mg/L)	Total Nitrite + Nitrate as N (mg/L)	Total Organic Carbon (mg/L)
Arkansas #1	03/22/2017	Frozen	--	--	--	--	--	--	--	--	--
	06/26/2017	--	-0.05	15.4	15.4	0.9	-0.003	-0.003	-10	0.13	-1
	08/14/2017	--	-0.05	28.9	28.9	-0.5	-0.003	-0.003	0.11	0.18	-1
	10/16/2017	--	-0.05	32.9	32.9	0.7	-0.003	-0.003	-5	0.27	-1
Arkansas #2	03/20/2017	--	-0.05	55.5	55.5	33.7	-0.003	-0.003	0.55	0.16	1.1
	06/26/2017	--	-0.05	20.9	20.9	1.2	-0.003	-0.003	-10	0.06	1.3
	08/14/2017	--	-0.05	30.3	30.3	1.2	-0.003	-0.003	0.19	0.07	-1
	10/16/2017	--	-0.05	36.6	36.6	3.1	-0.003	-0.003	-5	0.08	-1
AI	03/13/2017	--	-0.05	77.7	80.2	-0.5	-0.003	-0.003	0.1	0.11	1.1
	06/20/2017	--	-0.05	37	37	0.9	-0.003	-0.006	-10	-0.02	5.8
	08/28/2017	--	0.07	74.1	74.1	0.8	-0.003	-0.003	-5	-0.02	-1
	10/16/2017	--	-0.05	59.8	59.8	0.9	-0.003	-0.003	-5	-0.02	1.8
BI	03/13/2017	--	-0.05	81	83.5	-0.5	-0.003	-0.003	0.11	0.11	1.2
	06/20/2017	--	-0.05	42.3	42.3	0.8	-0.003	-0.003	-10	-0.02	5.8
	08/28/2017	--	-0.05	78.9	78.9	0.8	-0.003	-0.003	-5	0.03	1.2
	10/16/2017	--	-0.05	70.7	70.7	0.8	-0.003	-0.003	-5	0.02	1.9
EPR Outlet	03/20/2017	--	-0.05	83.1	85	-0.5	-0.003	-0.003	0.3	0.06	2.7
	06/20/2017	--	-0.05	77	77	1	-0.003	-0.008	-10	0.06	3.1
	08/28/2017	--	-0.05	77.6	77.6	0.8	-0.003	-0.003	-5	0.06	1.7
	10/16/2017	--	-0.05	79.8	79.8	0.8	-0.003	-0.003	-5	0.03	2.4



REVISIONS				CLIMAX OPERATIONS		DIVISION: ENVIRONMENTAL DEPT.		
REV No		BY	DATE	SCALE: 1:13,655	SHEET SIZE: ANSIB	AREA:		
1	MODIFIED LAYOUT	JD	1/23/18	ENG'D BY:	DATE:	TITLE:	2017 ANNUAL REPORT MAP 5 - WQMP SITES EAGLE RIVER WATERSHED	
2				DWN BY: JD	DATE: 1/23/18		DWG. NO.	
3				CHKD BY: JH	DATE: 2/8/18		REVISION:	
				APVD BY: JH	DATE: 2/8/18		SHT.	OF



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REVISIONS				SCALE:		SHEET SIZE		DIVISION:	
REV No		BY	DATE	1:30,000	ANSI B			AREA:	
A	MODIFIED LAYOUT	JD	1/23/18	ENG'D BY:	DATE:	CLIMAX OPERATIONS  Climax Molybdenum A Freeport-McMoRan Company			
1				DWN BY: JD	DATE: 1/23/18				
2				CHKD BY: JH	DATE: 2/8/18				
3				APVD BY: JH	DATE: 2/8/18				
								TITLE:	
								2017 ANNUAL REPORT	
								MAP 6 - WQMP SITES	
								TENMILE CREEK WATERSHED	
								DWG. NO.	
								REVISION:	
								SHT.	OF



REVISIONS				SCALE:	SHEET SIZE	DIVISION: ENVIRONMENTAL DEPT.		
REV No		BY	DATE	1:20,000	ANSI B	AREA:		
A	MODIFIED LAYOUT	JD	1/23/18	ENG'D BY:	DATE:	TITLE:	2017 ANNUAL REPORT MAP 7 - WQMP SITES ARKANSAS RIVER WATERSHED	DWG. NO.
1				DWN BY: JD	DATE: 1/23/18			REVISION:
2				CHKD BY: JH	DATE: 2/8/18			SHT. OF
3				APVD BY: JH	DATE: 2/8/18			

CLIMAX OPERATIONS

Climax Molybdenum

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