



Climax Mine
Highway 91 - Fremont Pass
Climax, CO 80429
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August 13, 2024

Mr. Dustin Czapla, Environmental Protection Specialist
Colorado Division of Reclamation, Mining and Safety
1313 Sherman St., Rm. 215
Denver, CO 80203

[sent via e-mail]

**Re: Mayflower Pump Station EPF Failure – Climax Mine Permit No. M-1977-493 –
Water Quality Sample Results**

Dear Mr. Czapla:

The purpose of this submittal is to provide analytical water quality results from samples collected at the time of the Mayflower Pump Station EPF Failure.

On Thursday, July 18, 2024, at approximately 2:45 pm, an event occurred at Climax Mine at the Mayflower Pump Station, which is considered as a potential failure or imminent failure of an Environmental Protection Facility (EPF) pursuant to Rule 8.1(b). Climax left a voicemail with Environmental Protection Specialist Dustin Czapla at approximately 11:20 am on July 19, 2024, in accordance with Rule 8.2.1(a), and spoke with him at approximately 2:00 pm on July 22, 2024. Climax also notified Colorado Department of Health and Environment via the Spill Hotline within 24 hours (incident/spill no. 2024-691).

Description of Incident

Incident occurred at the Climax Mine located at Fremont Pass – Highway 91, Climax, CO 80429. At approximately 2:45 pm on July 18, 2024, a routine pipe jetting job was completed and the Mayflower Pump Station was going to be brought back online. The pumps were turned on in auto sequence-auto control mode. The line was filling with the variable frequency drive (VFD) – pumps 2 and 3 started at the same time, this made pumps trip/power out. A trip occurred and operator was able to clear alarm – hit auto start again – observed that the line pressure dropped to zero and turned the pumps off. Water hammer occurred and caused the blind flange at the end of a pipeline junction at the Pump Station to fail and caused process water to be released into a Climax Mine drainage that eventually leads to Climax's Colorado Discharge Permit System (CDPS) permit (No. CO0000248) Outfall 001A that represents the beginning of Tenmile Creek.

Water Quality Sample Results

Two samples were collected at Climax CDPS Permit Outfall 001A during the event. The first sample was collected at 4:25 pm on the day of the event; it had a field pH of 7.61 standard units [s.u.] at Outfall 001A (the compliance point on Tenmile Creek) and was analyzed for Climax's CDPS analytical suite. The second sample was collected at 6:35 am on July 19 (approximately 16 hours after the event) and had a field pH of 7.73 s.u. at Outfall 001A. It was also analyzed for

Climax's CDPS analytical suite. Results are summarized below in Table 1 with comparison to applicable CDPS permit limits at Outfall 001A. Note that none of the measured analytes exceeded the applicable permit limit. The laboratory analytical data are attached to this submittal.

Table 1. Outfall 001A Sample Analytical Results

Analyte	Analytical Method	Units	7/18/2024 16:25	7/19/2024 06:35	CO0000248 Limit*
Conductivity	Field	µmhos/cm	375	570	
pH	Field	Standard Unit	7.61	7.73	6.5-9.0
Temperature	Field	C	11.1	7.9	
Boron, Total	M200.8 ICP-MS	mg/l	0.0032	0.0031	
Cadmium, PD	M200.8 ICP-MS	mg/l	0.000092	0.000081	0.0012
Chromium, PD	M200.8\CP-MS	mg/l	ND [0.0005]	ND [0.0005]	
Iron, TR	M200.8\CP-MS	mg/l	0.0131	0.0252	
Manganese, PD	M200.8\CP-MS	mg/l	0.0232	0.0208	2.618
Molybdenum, TR	M200.8\CP-MS	mg/l	0.00040	0.00118	
Nickle, PD	M200.8\CP-MS	mg/l	ND [0.0004]	ND [0.0004]	
Selenium, PD	M200.8\CP-MS	mg/l	0.00011	ND [0.0001]	
Zinc, PD	M200.8\CP-MS	mg/l	0.0140	0.0968	
Sulfide as S	SM4500S2-D	mg/l	ND [0.02]	ND [0.02]	

Notes:

ND [0.02] – The constituent was analyzed for, but not detected above the associated value

PD – potentially dissolved

TR - total recoverable

S – Sulfur

C – Degrees Celsius

µmhos/cm – micromhos per centimeter

mg/l – milligrams per liter

*- Limits listed are the most conservative (lowest) values of 30-day Average or Daily Maximum if available.

Please feel free to contact me at (719) 427-0070 or at edetmer@fmi.com if you need any further information regarding this matter. Thank you for your continued assistance with Climax Mine.

Sincerely,



Eric Detmer, P.E.
Environmental Manager

Attachment

FMI- Climax Mine Company

Project ID:

Sample ID: OUTFALL 001A

ACZ Sample ID: **L89157-01**

Date Sampled: 07/18/24 16:25

Date Received: 07/23/24

Sample Matrix: Surface Water

Field Data

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)			*****							NEED
Hydrogen sulfide, un-ionized			*****							NEED
pH (Field)			*****							NEED
Temperature (Field)			0.0							NEED

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidify and filter (Potentially Dissolved)	Colorado 5 CCR 1002-31.5.31 (2009)								07/23/24 17:19	cdp
Total Hot Block Digestion ICP-MS	EPA 200.2								07/28/24 20:06	jrj
Total Recoverable Digestion ICP-MS	EPA 200.2								07/28/24 13:24	scp

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Boron, total	EPA 200.8	1	0.0032	B	*	mg/L	0.001	0.005	07/30/24 18:14	aps
Cadmium, potentially dissolved	EPA 200.8	1	0.000092	BH	*	mg/L	0.00005	0.00025	07/24/24 15:17	jrj
Chromium, potentially dissolved	EPA 200.8	1	<0.0005	UH	*	mg/L	0.0005	0.002	07/24/24 15:17	jrj
Iron, total recoverable	EPA 200.8	1	0.0131	B	*	mg/L	0.007	0.02	07/29/24 11:13	aps
Manganese, potentially dissolved	EPA 200.8	1	0.0232	H	*	mg/L	0.0004	0.002	07/24/24 15:17	jrj
Molybdenum, total recoverable	EPA 200.8	1	0.00040	B		mg/L	0.0002	0.0005	07/29/24 11:13	aps
Nickel, potentially dissolved	EPA 200.8	1	<0.0004	UH	*	mg/L	0.0004	0.001	07/24/24 15:17	jrj
Selenium, potentially dissolved	EPA 200.8	1	0.00011	BH	*	mg/L	0.0001	0.00025	07/24/24 15:17	jrj
Zinc, potentially dissolved	EPA 200.8	1	0.0140	BH	*	mg/L	0.006	0.015	07/24/24 15:17	jrj

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfide as S	SM 4500-S2 D-2011	1	<0.02	U	*	mg/L	0.02	0.1	07/25/24 15:42	rsc/jck

FMI- Climax Mine Company

Project ID:

Sample ID: OUTFALL 001A

ACZ Sample ID: **L89157-02**

Date Sampled: 07/19/24 06:35

Date Received: 07/23/24

Sample Matrix: Surface Water

Field Data

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity (Field)			*****							NEED
Hydrogen sulfide, un-ionized			*****							NEED
pH (Field)			*****							NEED
Temperature (Field)			0.0							NEED

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidify and filter (Potentially Dissolved)	Colorado 5 CCR 1002-31.5.31 (2009)								07/23/24 17:23	cdp
Total Hot Block Digestion ICP-MS	EPA 200.2								07/28/24 20:17	jrj
Total Recoverable Digestion ICP-MS	EPA 200.2								07/28/24 13:36	scp

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Boron, total	EPA 200.8	1	0.0031	B	*	mg/L	0.001	0.005	07/30/24 18:16	aps
Cadmium, potentially dissolved	EPA 200.8	1	0.000081	B		mg/L	0.00005	0.00025	07/24/24 15:23	jrj
Chromium, potentially dissolved	EPA 200.8	1	<0.0005	U		mg/L	0.0005	0.002	07/24/24 15:23	jrj
Iron, total recoverable	EPA 200.8	1	0.0252		*	mg/L	0.007	0.02	07/29/24 11:15	aps
Manganese, potentially dissolved	EPA 200.8	1	0.0208			mg/L	0.0004	0.002	07/24/24 15:23	jrj
Molybdenum, total recoverable	EPA 200.8	1	0.00118			mg/L	0.0002	0.0005	07/29/24 11:15	aps
Nickel, potentially dissolved	EPA 200.8	1	<0.0004	U		mg/L	0.0004	0.001	07/24/24 15:23	jrj
Selenium, potentially dissolved	EPA 200.8	1	<0.0001	U		mg/L	0.0001	0.00025	07/24/24 15:23	jrj
Zinc, potentially dissolved	EPA 200.8	1	0.0968			mg/L	0.006	0.015	07/24/24 15:23	jrj

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Sulfide as S	SM 4500-S2 D-2011	1	<0.02	U	*	mg/L	0.02	0.1	07/25/24 15:53	rsc/jck