

Official Draft Public Notice Version **December 22nd, 2025**

The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

**FACT SHEET
BLX MAYFLOWER LLC
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0026140
MINOR INDUSTRIAL**

FACILITY CONTACTS

Operator:	BLX Mayflower, LLC
Person Name:	Kurt Krieg
Position:	Executive Vice President, Resort Development
Person Name:	Kent Fawcett
Position:	Project Manager
Phone Number:	(435) 214-0513
Permittee Name:	BLX Mayflower, LLC
Facility Name:	Mayflower Mine and Star Mine
Mailing and Facility Address:	9109 N. Mayflower Village Drive Park City, Utah 84098
Telephone:	(435) 214-0513
Actual Address:	9109 N. Mayflower Village Drive

DESCRIPTION OF FACILITY

Mayflower Mountain Resort is an all-seasons resort under construction in Park City, Utah. When complete, the 5,600-acre resort will include at least seven ski lifts and will have the capacity to house more than 2,400 residents with new condos, single-family homes, townhomes, and three hotels. The property was purchased in October of 2016 by BLX Mayflower, LLC. The property includes both inactive Mayflower and Star of Utah Mine adits, both of which still discharge into waters of the state and constitute the “Facilities” subject to the UPDES permit. In November 2019, a pipe was installed to carry discharge water from the exit of the Mayflower Mine to McHenry Creek. Prior to this pipe, the mine discharge ran through a mine waste impoundment within Big Dutch Pete drainage, which flows into Jordanelle Reservoir. Similarly, in 2022, the Star Mine discharge water was rerouted around the Star Mine waste rock pile and now enters Glencoe Canyon Creek down below the regraded and capped pile, which then flows into McHenry Creek. McHenry Creek flows into Jordanelle Reservoir. Due to the low volume and infrequent nature of discharge from Star of Utah Mine there are no limitations for the associated outfall, however, water quality monitoring is required.

Shortly after the Permittee acquired the property, they entered the State of Utah’s Voluntary Cleanup Program in May 2017. Since then, the Permittee has been working with the Utah Division of Environmental Response and Remediation to address historic contamination at the Mayflower Mine site by ensuring that soils at the site meet Environmental Protection Agency (EPA) Regional Screening Levels and Division of

Water Quality (DWQ) ground water protection standards or are otherwise contained to avoid leaving the Mayflower Mine site in the future.

The Wasatch Mountains have long been mined for a variety of minerals, including gold, silver, and lead. Mining activity in these areas can be traced back to the 1870's and continued until the 1940's when mining activities became cost prohibitive. Mayflower Mine and Star Mine are unique as they operated until 1972, after which they were no longer profitable and were abandoned. The abandoned mines are now on private land owned by BLX Mayflower LLC and/or affiliates. The Permittee has never conducted any mining in the area since taking over the claims, nor do they plan to in the future.

Mine adits are clearly defined point sources under Section 502(14) of the Clean Water Act (CWA) 33 U.S.C. § 1362(14). Therefore, under the CWA, even historic, abandoned, and long-term inactive mines require a permit to discharge to Waters of the State or Waters of the United States. However, due to the extensive numbers of these abandoned mines, questionable ownerships of former mining claims, and limited federal and State resources, EPA Region VIII and the states in Region VIII have not made permitting these discharges a high priority. In December of 1993, EPA Region VIII issued a letter to the States in the region with a priority list for permitting historic mines in the region.

Based on Table 1 below from the 1993 EPA Region VIII Letter, the abandoned mines on this property can be described as "inactive source(s) owned by someone with activity in an area but not mining." This establishes a medium permitting priority for the site. Based on the 1993 letter mentioned below, the priority for this site was previously low, but was increased when the Permittee acquired the property to build Mayflower Mountain Resort.

The 1993 EPA Region VIII Letter set permitting priorities for historic mines in the region and suggested applicable effluent limits.

Table 1. NPDES Priorities at Historic mines and Applicable Effluent Limits.				
Priority	Situation	Basis of NPDES Limits		Storm Water Permit
		Technology	Water Quality Standards	
High	Historic sources influence by active mining.	ELG – 40 CFR 440, BPT, BAT, or NSPS	Yes	Yes, combined with traditional permit
High	Historic Sources influenced by current mining activities (significant exploration, construction, etc.)	BPJ, usually equivalent to BAT	Yes	Yes
High	Historic Sources influenced by current mining activities (minor exploration, construction, etc.)	BPJ	Yes	Yes
Medium	Inactive sources created since 1972 owned by current operator	BPJ	Yes	Yes
Medium	Inactive sources owned by operator with nearby mining operations	BPJ	Yes	Yes

Medium	Inactive sources owned by someone with activity in an area, but not mining	BPJ	Yes	Yes
Low	Inactive sources owned by someone with no activity in the area.	BPJ	Yes	Yes

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Compliance Schedules Related to Water Treatment Facility:

The Permittee requested (DWQ-2025-005804) a Compliance Schedule to allow for relaxation in Outfall 001 limitations while the Permittee implement new treatment technology to further reduce toxicity in the effluent. The Permittee has been diligent in evaluating different technologies to reduce toxicity and feels confident that toxicity can be controlled with the combination of several treatment options currently being evaluated. However, the toxicity of the water at Outfall 001 has recently been variable, with longer periods of non-toxic conditions making pilot testing of treatment options impractical. Prior pilot testing during periods where Outfall 001 was toxic indicated that a reverse osmosis treatment would reduce toxicity and metals concentrations, as well as a granular activated carbon (GAC) system that also showed a reduction of heavy metals in the effluent, which will likely lead to a reduction of toxicity found during whole effluent toxicity (WET) testing.

This requested Compliance Schedule was granted as the Permittee has demonstrated that certain technologies can effectively reduce toxicity. The Compliance Schedule allows the Permittee time to install the chosen treatment system. Two Compliance Schedules related to the treatment system were incorporated into the Permit as follows. The Level II Antidegradation Review submission requirement was removed from this Permit at the request of the Permittee, as the discharge is not expected to increase flow or pollutant concentration, and a path forward has been identified.

a. Water Treatment Compliance Schedule

Date	Milestone
November 30, 2027	Complete Construction and Obtain Approval from DWQ
January 1, 2028	Final WET Effluent Limitations in Effect

The above schedule allows for one month for water treatment optimization.

b. WET, Iron, and Zinc Compliance Schedule

Date	WET Effluent Limitations at Outfall 001	Iron Limitations at Outfall 001	Zinc Limitations at Outfall 001
Permit Issuance – December 31, 2027	No limitation Monitoring Only	No limitation Monitoring Only	No limitation Monitoring Only
January 1, 2028	Must Pass WET Testing	1.194	0.411

Permit Limits and Monitoring:

Daily maximum flow was removed from the Permit, and only a maximum monthly average flow remains to allow for flexibility and variability in flow from wet weather events that are out of the control of the Permittee.

DISCHARGE

DESCRIPTION OF DISCHARGE

Final discharge from Outfall 001 is exclusively from the inactive Mayflower Mine, and final discharge from Outfall 002 is exclusively from the inactive Star Mine. The Permittee has been reporting self-monitoring results on Discharge Monitoring Reports (DMRs) on a monthly basis.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 40° 36' 58" and longitude 111° 26' 28". The effluent from the Mayflower Mine flows through a pipe through the site, empties into a man-made channel, and then flows into McHenry Creek.
002	Located at latitude 40° 36' 50" and longitude 111° 27' 41". The effluent from the Star of Utah Mine flows directly into Glencoe Canyon Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION

Discharge occurs into McHenry Creek and Glencoe Canyon Creek, which flow into Jordanelle Reservoir, which is a Class 1C, 2B, 3A, and 4, according to Utah Administrative Code (UAC) R317-2-13:

Class 1C --	Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.
Class 2B --	Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.
Class 3A --	Protected for cold water species of game fish and other cold-water aquatic life, including the necessary aquatic organisms in their food chain.
Class 4 --	Protected for agricultural uses including irrigation of crops and stock watering.

TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS

According to the 303(d) list in *Utah's 2024 Integrated Report*, McHenry Creek (McHenry Creek and tributaries from Jordanelle Reservoir to headwaters, UT16020203-016_00) meets water quality criteria with new data.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in 40 Code of Federal Regulations Part 122.44 and UAC R317-8-4.2, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (UAC R317-1-3.2) or Utah Water Quality Standards (UAC R317-2) as applicable. In cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits or multiple limits have been developed, Best Professional Judgment (BPJ) of the permitting authority may be used where applicable. BPJ refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards, or other relevant information.

Permit limits can also be derived from the wasteload analysis (WLA), which incorporates Secondary Treatment Standards, Water Quality Standards, including any applicable TMDL impairments as appropriate, Antidegradation Reviews (ADR), and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During this UPDES renewal permit development, a WLA and ADR Level I were completed as appropriate and determined that this discharge will not cause a violation of water quality standards. The WLA indicates that the effluent limitations will be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

Limitations on pH are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. Limitations for dissolved oxygen (DO), WET, Iron, and Zinc are derived from the attached WLA. Limitations for total suspended solids (TSS) have been carried over from the previous Permit pursuant to UAC R317-8-4.2(11). It has been determined that this discharge will not cause a violation of water quality standards. The Permittee is expected to be able to comply with these limitations.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential (RP) analysis on all new and renewal applications received after that date. RP for this Permit renewal was conducted following DWQ's September 10, 2015, Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a framework for what routine monitoring or effluent limitations are required

A quantitative RP analysis was performed on iron and zinc at Outfall 001 and iron at Outfall 002 to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: iron and zinc. Therefore, effluent limitations for Outfall 001 were carried over in this Permit, and monitoring will remain at Outfall 002. A copy of the RP analysis is included at the end of this Fact Sheet.

The Permit limitations are:

Parameter	Table 1: Effluent Limitations Outfall 001 ^(a)				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	1.0	--	--	--	--
TSS, mg/L	25	35	--	--	--
DO, mg/L	--	--	--	5.0	--
WET, Chronic Biomonitoring	--	--	--	--	IC ₂₅ > 78% effluent
pH, Standard Units	--	--	--	6.5	9
Iron, mg/L ^(g)	--	--	--	--	1.194
Zinc, mg/L ^(g)	--	--	--	--	0.411

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous Permit. The Permit requires reports to be submitted monthly and quarterly, as applicable, on DMR forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results shall be submitted using NetDMR

unless the Permittee has successfully petitioned for an exception. Lab sheets for biomonitoring, metals and toxic organics shall be attached to the DMRs.

Table 2: Self-Monitoring and Reporting Requirements Outfall 001^(a)			
Parameter	Frequency	Sample Type	Units
Total Flow ^{(b)(c)}	Monthly	Measure	MGD
TSS	Monthly	Composite	mg/L
pH	Monthly	Grab	SU
DO ^(d)	Monthly	Grab	mg/L
WET – Biomonitoring ^(e)			
Ceriodaphnia - Chronic	2 nd & 4 th Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	1 st & 3 rd Quarter	Composite	Pass/Fail
Iron	Monthly	Composite	mg/L
Zinc	Monthly	Composite	mg/L
Metals, Arsenic, Total Barium, Total Cadmium, Total Chromium, Total Copper, Total Iron, Total Lead, Total Mercury, Total Selenium, Total Silver, Total Zinc, Total Effluent	Quarterly	Composite	mg/L

Table 3: Self-Monitoring and Reporting Requirements Outfall 002^(a)			
Parameter	Frequency	Sample Type	Units
Total Flow ^{(b)(c)}	Quarterly	Measure	MGD
TSS	Quarterly	Grab	mg/L
pH	Quarterly	Grab	SU
DO	Quarterly	Grab	mg/L
WET – Biomonitoring ^(f)			
Ceriodaphnia - Chronic	Once during Permit cycle	Composite	Pass/Fail
Metals, Arsenic, Total Barium, Total Cadmium, Total Chromium, Total Copper, Total Iron, Total Lead, Total Mercury, Total Selenium, Total Silver, Total Zinc, Total Effluent	Quarterly	Composite	mg/L

Notes Tables 1, 2 and 3

- a. See Definitions, *Part VIII*, for definition of terms.
- b. Flow measurements of influent/effluent volume shall be made in such a manner that the Permittee can affirmatively demonstrate that representative values are being obtained.
- c. If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- d. DO sample and compliance point is located at latitude 40° 37' 15 " and longitude 111° 26' 15".
- e. Chronic Ceriodaphnia will be tested during the 2nd and 4th quarters and chronic fathead minnows will be tested during the 1st and 3rd quarters. Effective at Permit issuance, WET limits will be monitoring only through December 31, 2027. See Part I.C.3. for more information.
- f. WET Testing must be conducted at the frequency listed in the table, but can be done at any time during the year to accommodate access issues. The Permittee shall use 100% effluent for the WET test.
- g. Effective at Permit issuance, Iron and Zinc limits will be monitoring only through December 31, 2027. See Part I.C.3. for more information.

BIOSOLIDS

The State of Utah has adopted the 40 C.F.R. § 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this Facility does not receive, generate, treat or dispose of biosolids. Therefore 40 C.F.R. § 503 shall not apply.

STORM WATER

Separate storm water Permits may be required based on the types of activities occurring on site.

Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities may be required based on the Standard Industrial Classification (SIC) code for the facility and the types of industrial activities occurring. If the facility is not already covered, it has 30 days from when this Permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water Permit prior to the period of construction.

Information on storm water Permit requirements can be found at <http://stormwater.utah.gov>

PRETREATMENT REQUIREMENTS

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of the CWA, the Permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR Part 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR Part 403.12(p)(1)*, the Permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR Part 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

The Permittee is a minor industrial facility that will be continuously discharging from Outfall 001. Given the RP analysis above indicates that there is reasonable potential for toxicity to be present, numerical WET limitations are included in the Permit for Outfall 001. The Facility will be required to conduct quarterly chronic WET testing, using alternating species.

Outfall 002 discharges intermittently, and toxicity is neither an existing concern nor likely to be present in the discharge, based on data collected and reported thus far. The monitoring location is located just above a reconstructed wetland area and runs around the Star Mine waste rock pile that has been regraded and capped. The Permit will contain a toxicity limitation re-opener provision that allows for modification of the Permit should additional information indicate the presence of toxicity in the discharge.

PERMIT DURATION

It is recommended that this Permit be effective for a duration of five (5) years.

Drafted and Reviewed by
Lindsay Cowles, Discharge Permit Writer
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Jordan Bryant, Storm Water
Sandy Wingert, TMDL/Watershed Protection
Lindsay Cowles, Reasonable Potential Analysis
Suzan Tahir, Wasteload Analysis/ADR
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE INFORMATION (to be updated after)

1st PUBLIC NOTICE

Began: October 23, 2025
Ended: November 24, 2025

2nd PUBLIC NOTICE

Began: Month Day, Year
Ended: Month Day, Year

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Notice of the draft Permit was published on State of Utah and/or DWQ's website for at least 30 days as required.

During the public notice and comment period provided under UAC R317-8-6.5, any interested person may submit written comments on the draft Permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in UAC R317-8-6.12.

ADDENDUM TO FACT SHEET

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes, they are considered minor changes and the Permit is not required to be re Public Noticed as provided in UAC R317-8-5.6(3)

Responsiveness Summary

Comments from the Permittee were received on November 13, 2025 (DWQ-2025-008804), during the first Public Notice Comment Period. These comments were addressed by DWQ (DWQ-2025-008806) in a Response Document dated December 2025, and the Permit was modified and sent back to Public Notice. This Response Document is available upon request.

DWQ-2025-006854

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ATTACHMENT 1

Effluent Monitoring Data

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Effluent Monitoring Data for Outfall 001

Month	Flow Maximum Monthly Average (MGD)	Flow, Daily Maximum (MGD)	TSS Maximum Monthly Average (mg/L)	TSS Maximum Weekly Average (mg/L)	DO (mg/L)	pH Daily Minimum (SU)	pH Daily Maximum (SU)	Iron Daily Maximum (mg/L)	Zinc Daily Maximum (mg/L)
12/31/2020	0.3838	0.4091	4	4	5	7.2	7.2	0.99	0.32
1/31/2021	0.3548	0.3658	4	4	5	7.3	7.3	0.97	0.28
2/28/2021	0.3305	0.3471	4	4	3.6	7	7	1.31	0.26
3/31/2021	0.3122	0.3277	0	0	3.5	7.3	7.3	1.49	0.23
4/30/2021	0.3122	0.3277	4	4	2.24	7.7	7.7	2.32	0.26
5/31/2021	0.3065	0.3354	0	0	4	7.2	7.2	0.85	0.19
6/30/2021	0.3115	0.3296	0	0	6.2	7.2	7.2	0.85	0.24
7/31/2021	0.2774	0.2928	4	4	3.4	7.3	7.3	1.03	0.25
8/31/2021	0.27	0.29	0	0	7.2	6.9	6.9	1.08	0.25
9/30/2021	0.27	0.29	4	4	7.3	7.4	7.4	0.98	0.23
10/31/2021	0.27	0.29	0	0	7.7	7.2	7.2	1.23	0.24
11/30/2021	0.27	0.29	ND	ND	7.41	7.26	7.26	0.98	0.252
12/31/2021	0.3264	0.3632	ND	ND	7.11	7.08	7.08	1.32	0.273
1/31/2022	0.2368	0.3154	4.2	4.2	7.16	7.63	7.63	0.97	0.268
2/28/2022	0.2298	0.2527	4	4	8.6	7.7	7.7	1.32	0.31
3/31/2022	0.2619	0.3503	ND	ND	8.1	7.5	7.5	1.32	0.24
4/30/2022	0.2736	0.3341	7	7	7.5	7.2	7.2	1.72	0.23
5/31/2022	0.2901	0.3277	ND	ND	7	6.8	6.8	1.22	0.22
6/30/2022	0.2876	0.3173	ND	ND	7	7.6	7.6	0.9	0.26
7/31/2022	0.2855	0.3173	ND	ND	8.5	7.2	7.2	1.22	0.26
8/31/2022	0.2855	0.3173	5	5	7.3	6.9	6.9	1.38	0.23
9/30/2022	0.3183	0.3587	7	7	8.2	7.1	7.1	1.34	0.25
10/31/2022	0.312	0.3975	ND	ND	7.7	7.4	7.4	1.34	0.24
11/30/2022	0.3648	0.4208	ND	ND	8.9	6.8	6.8	3.1	0.25
12/31/2022	0.3222	0.3904	5	5	7.6	7.5	7.5	1.7	0.23
1/31/2023	0.2896	0.3555	4	4	8.9	7.4	7.4	1.52	0.29
2/28/2023	0.284	0.3917	4	4	7.7	7.2	7.2	1.33	0.25
3/31/2023	0.2749	0.3341	4	4	8.6	7.3	7.3	1.52	0.26
4/30/2023	0.3149	0.3923	4	4	9.1	7.4	7.4	1.53	0.25
5/31/2023	0.4981	0.9527	5	5	7.8	7.3	7.3	1.27	0.47
6/30/2023	0.9614	1.1084	11	11	8	6.9	6.9	1.27	0.44
7/31/2023	0.5797	0.7394	5	5	8.3	7.2	7.2	1.01	0.38
8/31/2023	0.5235	0.5733	4	4	6.3	7.7	7.7	1.47	0.33
9/30/2023	0.5038	0.5649	ND	ND	7.8	7.2	7.2	1.45	0.27
10/31/2023	0.4936	0.5442	6	6	7.7	7.3	7.3	0.88	0.27
11/30/2023	0.4449	0.4828	4	4	9.3	7.6	7.6	1.45	0.25
12/31/2023	0.4318	0.4847	ND	ND	6.8	7.6	7.6	1.08	0.24
1/31/2024	0.4398	0.4938	7	7	7.4	7.6	7.6	1.12	0.23
2/29/2024	0.4249	0.4893	4	4	8.7	7.6	7.6	1.12	0.24
3/31/2024	0.4627	0.5235	ND	ND	8	7.2	7.2	0.85	0.18
4/30/2024	0.4851	0.5823	4	4	8.7	7.5	7.5	1.13	0.22
5/31/2024	0.6393	0.7704	ND	ND	9.8	7.4	7.4	1.06	0.22
6/30/2024	0.6392	0.7704	ND	ND	8.2	7.2	7.2	0.78	0.15
7/31/2024	0.6118	0.6437	ND	ND	8.8	7.3	7.3	1.06	0.13
8/31/2024	0.6061	0.6263	ND	ND	7	7.5	7.5	0.69	0.09
9/30/2024	0.5807	0.6108	ND	ND	6.2	7.4	7.4	0.74	0.08
10/31/2024	0.5409	0.5681	ND	ND	7.8	7.9	7.9	0.74	0.07
11/30/2024	0.5756	0.592	ND	ND	7.6	7.4	7.4	0.78	0.06
12/31/2024	0.5639	0.5927	ND	ND	8.8	7.8	7.8	0.48	0.06
1/31/2025	0.5341	0.5616	ND	ND	8.3	7.6	7.6	0.65	0.05
2/28/2025	0.5399	0.5597	4	4	8.2	7.6	7.6	0.8	0.07
3/31/2025	0.5004	0.5513	ND	ND	7.7	6.5	6.5	0.65	0.06
4/30/2025	0.5015	0.581	ND	ND	8	7.8	7.8	0.34	0.06

ATTACHMENT 2

Wasteload Analysis

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**Utah Division of Water Quality
Statement of Basis
ADDENDUM
Wasteload Analysis and Antidegradation Level I Review**

Date: October 8, 2025

Prepared by: Suzan Tahir
Standards and Technical Services

Facility: BLX Mayflower, LLC
UPDES No. UT0026140

Receiving water: McHenry Creek (1C, 2B, 3A, 4)

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

Discharge

Outfall 001: McHenry Creek, 1.0 MGD maximum daily flow and 0.7 maximum monthly flow.

Outfall 002: Glencoe Canyon Creek, 1.0 MGD maximum daily flow and 1.0 maximum monthly flow

Receiving Water

The receiving water for Outfall 001 is McHenry Creek → Jordanelle Reservoir.

The receiving water for Outfall 002 is Glencoe Canyon Creek → McHenry Canyon Creek → Jordanelle Reservoir.

Per UAC R317-2-13.5(b), the designated beneficial uses of Provo River and tributaries from Murdock Diversion to headwaters is 1C, 2B, 3A, and 4.

- *Class 1C - Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.*
- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*
- *Class 3A - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.*
- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.*

Ambient water quality for the receiving water was characterized using data from DWQ Monitoring Station #4997730, McHenry Creek above All Canals, from the period 1983-1985 and 2019.

Critical flow

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to insufficient data to calculate the 7Q10 flow, the 20th percentile of flow measurements from DWQ Monitoring Station #4997730, McHenry Creek above All Canals for the period 1983-1985 was considered the critical low flow for this analysis (Table 1).

Table 1: Critical Low Flow

Receiving Water	Flow (cfs)
McHenry Canyon Creek	0.3
Glencoe Canyon Creek	0.0

TMDL

According to the 303(d) list in *Utah's 2024 Integrated Report*, McHenry Creek (McHenry Creek and tributaries from Jordanelle Reservoir to headwaters, UT16020203-016_00) meets water quality criteria with new data.

Mixing Zone

Per UAC R317-2-5, the discharge is considered instantaneously fully mixed if the discharge is more than twice the ambient flow.

Parameters of Concern

The potential parameters of concern identified for the discharges were dissolved metals due to the legacy mine drains and dissolved oxygen based on the permit application. Additional parameters

of concern may become apparent as a result of reasonable potential analysis, technology-based standards, or other factors as determined by the UPDES Permit Writer.

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC₅₀ (lethal concentration, 50%) percent effluent for acute toxicity and the IC₂₅ (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC₅₀ is typically 100% effluent and does not need to be determined by the WLA.

Table 2: WET Limits for IC₂₅

Outfall	Percent Effluent
Outfall 001	78%
Outfall 002	100%

Note: WET testing for ceriodaphnia chronic 96Hr failed at outfall 001 every quarter except in May of 2022 and in the current second quarter of 2025.

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a mass balance mixing analysis (UDWQ 2012). Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in this wasteload.

Antidegradation Level II Review

A Level II Antidegradation Review (ADR) is not required for this facility as the permitted outfalls will not have any potential increase in concentrations and loads of pollutants to the receiving waters.

Utah Division of Water Quality
Wasteload Analysis
BLX Mayflower, LLC
UPDES No. UT0026140

Documents:

WLA Document:

MayflowerWLA_2025.docx

Wasteload Analysis and Addendums:

MayflowerWLA_2025.xlsm,

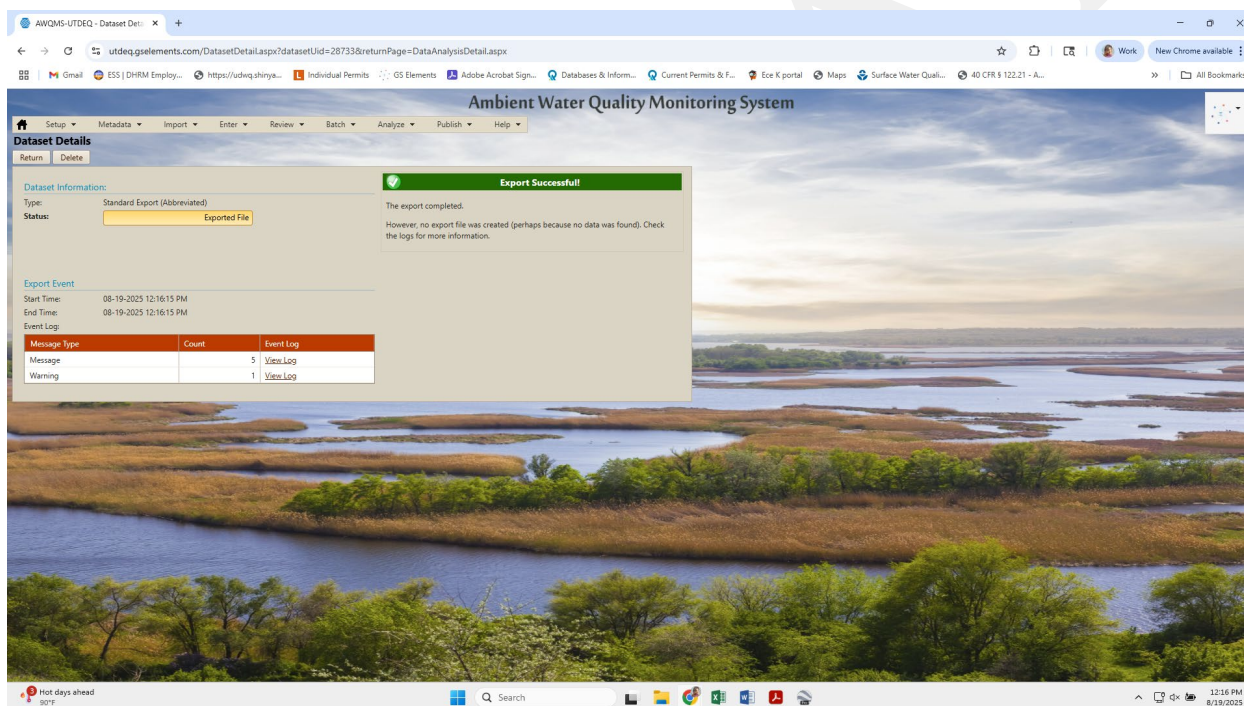
Appendix A-Outfall 001-2025.pdf,

Appendix B-Outfall 002-2025.pdf

References:

Utah Division of Water Quality. 2024. *Final 2024 Integrated Report on Water Quality*

Utah Division of Water Quality. 2021. *Utah Wasteload Analysis Procedures Version 2.0.*



Note: No export could be created for 2015-2025.

WASTELOAD ANALYSIS [WLA]

Date: 8/19/2025

Appendix A: Mass Balance Mixing Analysis for Conservative Constituents

Discharging Facility:	BLX Mayflower, Inc.		
UPDES No:	UT-0026140		
Outfall No:	001		
Permit Flow [MGD]:	1.0 Annual	Max. Daily	
	0.7 Annual	Max. Monthly	
Receiving Water:	McHenry Creek		
Stream Classification:	1C, 2B, 3A, 4		
Stream Flows [cfs]:	0.3 All Seasons	Critical Low Flow	
Fully Mixed:	YES		
Acute River Width:	100%		
Chronic River Width:	100%		
Mixed Flow Acute Conditions [cfs]:	1.85		
Mixed Flow Chronic Conditions [cfs]:	1.38		
Mixed Hardness [mg/L]:	493.1		

Modeling Information

A mass balance mixing analysis was used to determine the effluent limits.

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort reflect the environmental conditions expected at low stream flows.

Effluent Limitations for Protection of Drinking Water Sources (Class 1C Waters)

	Maximum Concentration		
	Standard	Background	Limit
Dissolved Metals (µg/L)			
Arsenic	10.0	4.7	11.0
Barium	1000	0.09	1194
Beryllium	4.0	2.0	4.4
Cadmium	10.0	2.0	11.6
Chromium	50.0	5.5	58.6
Lead	15.0	47.4	15.0
Mercury	2.0	0.006	2.4
Selenium	50.0	0.6	59.6
Silver	50.0	1.0	59.5
Inorganics			
Bromate (mg/L)	0.0	0.0	0.0
Chlorite (mg/L)	1.0	0.0	1.0
Fluoride (mg/L)	4.0	0.0	4.0
Nitrates as N	10.0	0.0	10.0
Radiological			
Gross Alpha (pCi/L)	15.0	0.0	17.9
Gross Beta (mrem/yr)	4.0	0.0	4.8
Radium 226, 228 (pCi/L)	5.0	0.0	6.0
Strontium 90 (pCi/L)	8.0	0.0	9.6
Tritium (pCi/L)	20000	0.0	23881
Uranium (pCi/L)	30.0	0.0	35.8

Effluent Limitations for Protection of Recreation (Class 2B Waters)

Physical Parameter	Concentration	
	Minimum	Maximum
pH	6.5	9.0
Turbidity Increase (NTU)		10.0

Effluent Limitations for Protection of Aquatic Wildlife (Class 3A Waters)

Whole Effluent Toxicity (WET) Limits		Maximum
Dilution Ratio		0.3 :1
IC25		78% percent effluent
Temperature (deg C)		Maximum
Instantaneous		20.0
Change		2.0
Dissolved Oxygen (mg/L)		Minimum Concentration
Instantaneous		4.0
7-day Average		5.0
30-day Average		6.5

Metals-Total Recoverable

Parameter	Chronic (4-day ave)			Acute (1-hour ave)		
	Standard ¹	Background	Limit	Standard ¹	Background	Limit
Aluminum (µg/L)	87.0	43.5	N/A	750	43.5	887
Arsenic (µg/L)	150.0	4.7	190.3	340	4.7	405
Cadmium (µg/L)	2.0	2.0	2.0	6.5	2.0	7.4
Chromium VI (µg/L)	11.0	5.5	12.5	16.0	5.5	18.0
Chromium III (µg/L)	231	2.5	294	1,773	2.5	2,117
Copper (µg/L)	29.3	25.00	30.5	49.6	25.0	54.4
Cyanide (µg/L) ²	5.2	2.6	5.9	22.0	2.6	25.8
Iron (µg/L)		0.52		1,000	0.52	1,194
Lead (µg/L)	10.9	47.4	10.9	281	47.4	326
Mercury (µg/L) ²	0.012	0.006	0.014	2.4	0.006	2.9
Nickel (µg/L)	168	5.0	213	1,513	5.0	1,806
Selenium (µg/L)	4.6	0.6	5.7	18.4	0.6	21.9
Silver (µg/L)		1.0		34.9	1.0	41.5
Tributyltin (µg/L) ²	0.072	0.036	0.082	0.46	0.036	0.54
Zinc (µg/L)	382	217	428	379	217	411

1: Based upon a Hardness of 400 mg/l as CaCO₃

2: Background concentration assumed 50% of chronic standard

3: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaCO₃ in the receiving water after mixing, the 87 ug/l chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/l acute aluminum criterion (expressed as total recoverable).

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

Parameter	Maximum Concentration		
	Standard	Background	Limit
Total Dissolved Solids (mg/L)	1200	376	1360
Boron (mg/L)	0.75	0.38	0.82
Arsenic, Dissolved (µg/L)	100	4.7	118
Cadmium, Dissolved (µg/L)	10	2.0	11.6
Chromium, Dissolved (µg/L)	100	5.5	118
Copper, Dissolved (µg/L)	200	25.0	234
Lead, Dissolved (µg/L)	100	47.4	110
Selenium, Dissolved (µg/L)	50	0.6	60
Gross Alpha (pCi/L)	15	0.0	18

WASTELOAD ANALYSIS [WLA]

Date: 8/19/2025

Appendix A: Mass Balance Mixing Analysis for Conservative Constituents

Discharging Facility:	Star Mine		
UPDES No:	UT-0026140		
Outfall No:	002		
Permit Flow [MGD]:	1.000 Annual	Max. Daily	
	1.000 Annual	Max. Monthly	
Receiving Water:	Glencoe Canyon Creek		
Stream Classification:	1C, 2B, 3A, 4		
Stream Flows [cfs]:	0.000 All Seasons	Critical Low Flow	
Fully Mixed:	YES		
Acute River Width:	100%		
Chronic River Width:	100%		
Mixed Flow [cfs]:	1.547		
Mixed Hardness [mg/L]:	400.0		

Modeling Information

A mass balance mixing analysis was used to determine the effluent limits.

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort reflect the environmental conditions expected at low stream flows.

Effluent Limitations for Protection of Drinking Water Sources (Class 1C Waters)

	Maximum Concentration		
	Standard	Background	Limit
Dissolved Metals (µg/L)			
Arsenic	10.0	0.0	10.0
Barium	1000	0.0	1000
Beryllium	4.0	0.0	4.0
Cadmium	10.0	0.0	10.0
Chromium	50.0	0.0	50.0
Lead	15.0	0.0	15.0
Mercury	2.0	0.0	2.0
Selenium	50.0	0.0	50.0
Silver	50.0	0.0	50.0
Inorganics			
Bromate (mg/L)	0.0	0.0	0.0
Chlorite (mg/L)	1.0	0.0	1.0
Fluoride (mg/L)	4.0	0.0	4.0
Nitrates as N	10.0	0.0	10.0
Radiological			
Gross Alpha (pCi/L)	15.0	0.0	15.0
Gross Beta (mrem/yr)	4.0	0.0	4.0
Radium 226, 228 (pCi/L)	5.0	0.0	5.0
Strontium 90 (pCi/L)	8.0	0.0	8.0
Tritium (pCi/L)	20000	0.0	20003
Uranium (pCi/L)	30.0	0.0	30.0

Effluent Limitations for Protection of Recreation (Class 2B Waters)

Physical Parameter	Concentration	
	Minimum	Maximum
pH	6.5	9.0
Turbidity Increase (NTU)		10.0

Effluent Limitations for Protection of Aquatic Wildlife (Class 3A Waters)

Whole Effluent Toxicity (WET) Limits		Maximum
Dilution Ratio		1.0 :1
IC25		100% percent effluent
Temperature (deg C)		Maximum
Instantaneous		20.0
Change		2.0
Dissolved Oxygen (mg/L)		Minimum Concentration
Instantaneous		4.0
7-day Average		5.0
30-day Average		6.5

Utah Division of Water Quality

Metals-Total Recoverable

Parameter	Chronic (4-day ave)			Acute (1-hour ave)		
	Standard ¹	Background	Limit	Standard ¹	Background	Limit
Aluminum (µg/L)	87.0	0.0	N/A	750	0.0	750
Arsenic (µg/L)	150.0	0.0	150.0	340	0.0	340
Cadmium (µg/L)	2.0	0.0	2.0	6.5	0.0	6.5
Chromium VI (µg/L)	11.0	0.0	11.0	16.0	0.0	16.0
Chromium III (µg/L)	231	0.0	231	1,773	0.0	1,774
Copper (µg/L)	29.3	0.0	29.3	49.6	0.0	49.6
Cyanide (µg/L) ²	5.2	0.0	5.2	22.0	0.0	22.0
Iron (µg/L)		0.0		1,000	0.0	1,000
Lead (µg/L)	10.9	0.0	10.9	281	0.0	281
Mercury (µg/L) ²	0.012	0.0	0.012	2.4	0.0	2.4
Nickel (µg/L)	168	0.0	168	1,513	0.0	1,513
Selenium (µg/L)	4.6	0.0	4.6	18.4	0.0	18.4
Silver (µg/L)		0.0		34.9	0.0	34.9
Tributyltin (µg/L) ²	0.072	0.0	0.072	0.46	0.0	0.46
Zinc (µg/L)	382	0.0	382	379	0.0	379

1: Based upon a Hardness of 400 mg/l as CaCO₃

2: Background concentration assumed 50% of chronic standard

3: Where the pH is equal to or greater than 7.0 and the hardness is equal to or greater than 50 ppm as CaCO₃ in the receiving water after mixing, the 87 ug/l chronic criterion (expressed as total recoverable) will not apply, and aluminum will be regulated based on compliance with the 750 ug/l acute aluminum criterion (expressed as total recoverable).

Effluent Limitation for Protection of Agriculture (Class 4 Waters)

Parameter	Maximum Concentration		
	Standard	Background	Limit
Total Dissolved Solids (mg/L)	1200	0.0	1200
Boron (mg/L)	0.75	0.0	0.75
Arsenic, Dissolved (µg/L)	100	0.0	100
Cadmium, Dissolved (µg/L)	10	0.0	10.0
Chromium, Dissolved (µg/L)	100	0.0	100
Copper, Dissolved (µg/L)	200	0.0	200
Lead, Dissolved (µg/L)	100	0.0	100
Selenium, Dissolved (µg/L)	50	0.0	50
Gross Alpha (pCi/L)	15	0.0	15

ATTACHMENT 3

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential (RP) analysis for the inclusion of limits for parameters in the Permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal Permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis¹. They are;

- Outcome A: A new effluent limitation will be placed in the Permit.
- Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the Permit,
- Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the Permit,
- Outcome D: No limitation or routine monitoring requirements are in the Permit.

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at some of the metals is needed. The initial screening check for metals showed that the full model needed to be run on iron and zinc at Outfall 001 and iron at Outfall 002.

The RP model was run on iron and zinc at Outfall 001 using the most recent data back through 2021. This resulted in 21 data points for iron and 53 for zinc. Reviewing the data showed that there could be at least one outlier in the data. The EPA ProUCL model was used to evaluate the data. This produced zero outliers for iron and one outlier for zinc. The outlier for zinc was excluded from the data set and RP was rerun at both the 95% and 99% confidence levels. The results of the model are that there is acute and chronic RP at 95% and 99% confidence for both iron and zinc. This result indicates that the inclusion of an effluent limit for iron and zinc is required currently (Outcome C).

The RP model was run on iron at Outfall 002 using the most recent data back through 2021. This resulted in 16 data points for iron. The EPA ProUCL model was used to evaluate the data. This produced one outlier for iron. In addition, review of the data indicated another possible outlier. The two outliers for iron were excluded from the data set and RP was rerun at both the 95% and 99% confidence levels. The results of the model are that there is not acute and chronic RP at 95% but there is acute and chronic RP at 99% confidence. Monitoring will remain in the Permit as the same frequency as the previous permit (Outcome C).

A Summary of the RP Analysis Model inputs and outputs are included in the following table.

¹ See Reasonable Potential Analysis Guidance for definitions of terms

RP input/output summary

RP Procedure Output	Outfall Number: 001			
Parameter	Iron		Zinc	
Distribution	Lognormal		Lognormal	
Reporting Limit	0.001		0.01	
Significant Figures	2		2	
Maximum Reported Effluent Conc.	2.32		0.47	
Coefficient of Variation (CV)	0.49		0.60	
Acute Criterion	1.194		0.411	
Chronic Criterion	1.194		0.428	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	3	4.6	0.48	0.79
RP Multiplier	1.3	2	1	1.7
RP for Acute?	YES	YES	YES	YES
RP for Chronic?	YES	YES	YES	YES
Outcome	C		C	

RP Procedure Output	Outfall Number: 002	
Parameter	Iron	
Distribution	Lognormal	
Reporting Limit	0.001	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.506	
Coefficient of Variation (CV)	0.43	
Acute Criterion	1.000	
Chronic Criterion	1.000	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.700	4.6
RP Multiplier	1.4	2.1
RP for Acute?	NO	YES
RP for Chronic?	NO	YES
Outcome	C	