Finley Resources, Inc. – Uinta Basin, Utah Well Pads
On-Site Partial Compliance Evaluations (PCE)

Inspection Date:	8/2/2022
Inspection Report Date:	8/25/2022
Inspection Report Prepared By:	KATELYN BERGL Digitally signed by KATELYN BERGL Date: 2022.08.25 15:08:45 -06'00' Katelyn Bergl, US EPA
Inspection Report Reviewed By:	SCOTT PATEFIELD Digitally signed by SCOTT PATEFIELD Date: 2022.08.25 16:07:25 -06'00' Scott Patefield, Manager, Enforcement and Compliance Assurance Division, Air and Toxics Enforcement Branch, US EPA Region 8
EPA Inspectors:	Inspectors from EPA Region 8, Enforcement and Compliance Assurance Division, Air and Toxics Enforcement Branch • Katelyn Bergl, Environmental Engineer • Colin Lecortz, Physical Scientist
Company Representatives:	Jason Lachance, Senior Facilities Engineer, Finley Resources Inc. Nate Adamson, LDAR Technician, Finley Resources Inc. Christian Wilkerson, Environmental Technician, Finley Resources Inc.
State Representatives:	None
Tribal Representatives:	N/A
Parent Company Name:	Finley Resources, Inc.
Parent Company Address:	PO Box 2200 Fort Worth, Texas 76113
Facilities County/State Location:	Uintah County, Utah
EPA Region:	Region 8
Specific Facility Information:	See Table 1, p. 2

Inspection Information

As part of a regional effort to evaluate emissions from tanks and operation of combustion devices and to assess compliance with applicable regulations and requirements for storage vessels and combustion devices (e.g. NSPS OOOO, NSPS OOOOa, State of Utah Approval Orders, State of Utah Air Quality Regulations for the Oil and Gas Industry), inspectors from the United States Environmental Protection Agency (EPA) visited several Finley Resources, Inc. well pads in the Uinta Basin, Utah. Audio, visual, and olfactory (AVO) notations of emissions and observations of improperly-operating control devices were made, and optical gas imaging (OGI) cameras were used to detect emissions from tanks and combustion sources. Table 1, on page 2, lists the well pads inspected.

Table 1 – Facility Information					
Site Number	**Inspection Date**	**Facility Name/Site ID**	**Latitude**	**Longitude**	**Well API ID(s)**
1	8/2/2022	Gooseneck 13-13A-4-2	40.131018	-109.7300363	4304756161
2	8/2/2022	Gooseneck 14-16B-4-2	40.130209	-109.7301573	4304754490
3	8/2/2022	Hackford 11-15A-4-2	40.1430258	-109.7398388	4304756115
4	8/2/2022	Gardner 36-2A-3-2 Gardner 3-36-3-2E Gardner 36-3B-3-2	40.183693	-109.720125	4304755761 4304755097 4304755764

In general, the inspection team used the following approach for the site inspections:

1. Take a video in visual mode of an overview of the site operations and scan the site for safety issues using the OGI camera in high-sensitivity mode (HSM).
2. Take a photograph of the site/Well ID sign(s).
3. Make notations about the site operation including the number of each major type of site process equipment present (e.g., number of separators/heater treaters, number of tanks, and number of tank emission control devices).
4. Note any AVO indications of emissions from the tanks, closed vent system, and control devices, and note any AVO indications that the control device(s) were not functioning properly.
5. Survey site operations using OGI (auto, manual, and/or high-sensitivity modes), detecting emissions escaping from tanks, closed vent system, and control devices.

General Facility Information

Table 2, p. 3, documents the primary equipment observed onsite at each location, as well as whether indications existed, such as pump jack movement, separator operation, or tank heater operation, that the site was currently receiving materials produced from associated wells. At all well pads inspected, the vapor space from produced water tanks was vented to and in direct communication with the closed vent system header that serviced the oil tanks. Note that, when used in the table below, “ECD” means Enclosed Combustion Device and “BPR” means backpressure regulator.

Table 2 - Observed Site Characteristics During Inspection										
Site Number	**Facility Name/Site ID**	**Tank Battery ID**	**Processing Indication**	**# Wells**	**# Separators/ Treaters**	**Total # Tanks**	**Oil Tanks # and Size**	**Produced Water Tanks # and Size**	**# Control Devices**	**Control Device Info**
1	Gooseneck 14-16B-4-2	Gooseneck 14-16B-4-2	Pump jack operating	1	1	3	2 – 400 bbl	1 – 400 bbl	1	48" Cimarron ECD
2	Gooseneck 13-13A-4-2	Gooseneck 13-13A-4-2	Pump jack operating	1	1	3	2 – 400 bbl	1 – 400 bbl	1	48" Cimarron ECD
3	Hackford 11-15A-4-2	Hackford 11-15A-4-2	Pump jack operating	1	1	3	2 – 400 bbl	1 – 400 bbl	1	48" Cimarron ECD;
4	Gardner 36-2A-3-2 Gardner 3-36-3-2E Gardner 36-3B-3-2	Gardner 36-2A-3-2	Pump jack operating	3	2 (1 test, 1 bulk)	7[1]	5 – 400 bbl (2 test tanks; 3 bulk tanks)	2 – 400 bbl (1 test tank; 1 bulk tank)	1	30" Cimarron ECD; No BPR Installed

[1] The Gardner 36-2A-3-2 tank battery consists of both "test" and "bulk" storage systems. Finley personnel stated that the test and bulk systems can be operated in series or isolated from one another to run in parallel or to be closed-off, and each of the three well pads can be directed to either the test and/or bulk system. Finley personnel was unsure of the configuration at the time of the inspection.

Table 3, below, describes Inspection Observations and Areas of Concern identified during the inspection. The Inspection Observations and Areas of Concern table lists the emissions or other operational issues noted by the inspector, lists the method of detection used by the inspector, and lists any visual-spectrum or OGI photo and/or video files taken of the activity or emissions source. Note that, when used in the table below, "UBHC" means unburned hydrocarbons (as observed with OGI).

Areas of concern are potential noncompliance issues with applicable requirements. Emissions from the blowdown valve at Gardner 36-2A-3-2 were verbally conveyed by Ms. Bergl and Mr. Lecortz to Mr. Adamson and Mr. Wilkerson of Finley Resources at the time of the inspection.

Table 3 – Inspection Observations and Areas of Concern

Site Number	Tank Battery ID	Equipment or Location	AVO Observation Details	OGI Emissions Observed?	OGI Observation Details	Additional Observation Notes	Picture/Video File ID(s)
1	Gooseneck 14-16B-4-2	ECD	Mild hydrocarbon odors	Y	Small plume of UBHC from top of ECD – visible in HSM and auto mode		MOV_3043;
2	Gooseneck 13-13A-4-2	ECD	Mild hydrocarbon odors	Y	UBHC from top of ECD		MOV_3046; MOV_3047
2	Gooseneck 13-13A-4-2	Oil Tank 2	Tank 1 PRV Seal appeared cracked and possible unsealed	N	N/A		N/A
4	Gardner 36-2A-3-2	ECD	N/A	Y	Intermittent whiffs of UBHC from top of ECD – visible in HSM	No BPR on vent line	MOV_3059
4	Gardner 36-2A-3-2	Bulk Oil Tank 2	N/A	Y	Intermittent emissions from the blowdown pipe on Bulk oil Tank #2 – visible in auto and HSM mode.	Blowdown valve was confirmed by Nate Adamson to have been open at the time of inspection. Mr. Adamson closed the valve while EPA personnel were still onsite. EPA's OGI equipment was shut off at this point due to weather, so cessation of emissions was not confirmed during the inspection.	MOV_3057; MOV_3058
4	Gardner 36-2A-3-2	Knock-out Line	N/A	N	N/A	The vent line between the ECD and the knock-out drum	DC_3055; DC_3056

						appeared to be improperly sloped in a manner that could potentially cause liquids to drain to the ECD.	

Table 4, below, lists the photos and videos taken at each site to document facility operations.

Table 4 – Photo/Video Log				
Site Number	**Date**	**Picture/Video File ID(s)**	**Photographer**	**Description**
1	8/2/2022	DC_3041	Katelyn Bergl	Site ID sign on tank battery
1	8/2/2022	MOV_3042	Katelyn Bergl	Site overview and OGI scan
1	8/2/2022	MOV_3043	Katelyn Bergl	Combustor –Small plume of UBHC observed.
2	8/2/2022	MOV_3045	Katelyn Bergl	Initial OGI scan
2	8/2/2022	MOV_3046	Katelyn Bergl	Combustor – visible heat signature – some UBHC visible
2	8/2/2022	MOV_3047	Katelyn Bergl	Combustor – visible heat signature – some UBHC visible
2	8/2/2022	DC_3048	Katelyn Bergl	Site ID sign on tank battery
3	8/2/2022	MOV_3049	Katelyn Bergl	Site overview and OGI scan
3	8/2/2022	DC_3050	Katelyn Bergl	Site ID sign on tank battery
4	8/2/2022	DC_3053	Katelyn Bergl	Entry Sign
4	8/2/2022	MOV_3054	Katelyn Bergl	Site overview and OGI scan
4	8/2/2022	DC_3055	Katelyn Bergl	Vapor Line from knockout to combustor; Side View
4	8/2/2022	DC_3056	Katelyn Bergl	Vapor Line from knockout to combustor; Front View
4	8/2/2022	MOV_3057	Katelyn Bergl	Bulk Oil Tank 2 – Intermittent emissions off blowdown pipe on top of tank. Perpendicular View.
4	8/2/2022	MOV_3058	Katelyn Bergl	Bulk Oil Tank 2 – Intermittent emissions off blowdown pipe on top of tank. Alternate View.
4	8/2/2022	MOV_3059	Katelyn Bergl	Combustor – visible heat signature – small whiffs of UBHC visible

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202
Phone 800-227-8917
http://www.epa.gov/region08

Enclosure 1

NPDES Evaluation Sampling Inspection (ESI) Report

NPDES ICIS Number: CO-0000621

Facility Name and Address: CF&I Steel, L.P. dba Evraz Rocky Mountain Steel
2100 South Freeway
Pueblo, CO 81004

Applicable Effluent Limitation Guidelines: 40 C.F.R. PART 420 - Iron and Steel Manufacturing Point Source Category

ESI dates: September 1, 2022, September 6, 2022, November 1, 2022, November 2, 2022, February 1 2023

Report Review		
Drafter Name	**Address/Phone Number**	**Date**
Al Garcia	U.S. EPA Region 8 1595 Wynkoop Street 8WP-CWW Denver, Colorado 80202 303-312-6382	**06/01/2023**
Reviewer Name	Address/Phone Number	**Date**
Treasure Bailley	U.S. EPA Region 8 1595 Wynkoop Street LSAD-TAB-HS Denver, Colorado 80202 303-312-6480	**06/05/2023**
Reviewer Name	Address/Phone Number	**Date**
Daniel Guth	U.S. EPA Region 8 1595 Wynkoop Street 8WP-CWW Denver, Colorado 80202	**06/05/2023**

	303-312-6121	
Supervisor Signature/Name	**Address/Phone Number**	**Date**
MICHAEL BOEGLIN Digitally signed by MICHAEL BOEGLIN Date: 2023.07.24 15:01:35 -06'00'	U.S. EPA Region 8 1595 Wynkoop Street 8WP-CWW Denver, Colorado 80202	**07/24/2023**
Michael Boeglin, Section Supervisor	303-312-6250	

1 Objective

On five dates between September 2022 and February 2023, the U.S. EPA Region 8 conducted a National Pollutant Discharge Elimination System (NPDES) Evaluation Sampling Inspection (ESI) at the Colorado Fuel and Iron (CF&I) Steel, L.P. dba EVRAZ Rocky Mountain Steel facility (Evraz; the Facility) located at 2100 South Freeway, Pueblo, CO 81004. on the five sampling dates comprising the ESI include September 1, 2022, September 6, 2022, November 1, 2022, November 2, 2022, and February 1, 2023. The objective of the ESI was to gather information, independent of the facility's own monitoring under its NPDES permit, necessary to determine any impact of wastewater discharges and stormwater runoff from the Evraz site on the water quality of Salt Creek. An additional objective was to determine water quality impacts of runoff from the neighboring Harsco Metals and Minerals property on Salt Creek.

2 Participants

EPA:

- Al Garcia, Pretreatment Coordinator, NPDES Clean Water Branch
- Treasure Bailley, Geologist, Technical Assistance Branch, Laboratory Services and Applied Sciences Division
- Bill Schroeder, Aquatic Biologist, Laboratory Services and Applied Sciences Division
- Ryan Monahan, Biologist, Laboratory Services and Applied Sciences Division

EVRAZ:

- Jim Rodacy, Environmental Manager
- Nathan Hoffmeyer, Environmental Protection Specialist
- Greg Eastman, Environmental Technician
- Shawn Hefrel – Safety Specialist
- Dmitry Belov, Senior Director of Operations (September 1, 2022 site visit only)
- David Ferryman, Senior Vice President (September 1, 2022 site visit only)

3 Facility Description

Evraz and its predecessor, CF&I, is an integrated iron and steel manufacturing plant located on approximately 639 acres at the southeast boundary of the City of Pueblo at 2100 South Freeway, Pueblo CO 81004. The CF&I and subsequently, Evraz have operated for over 100 years in Pueblo, CO. The site layout for the Evraz facility, generated from Google Earth is in shown in Figure 1.

The plant is divided into the North Mill and the South Mill, that is naturally separated by the Bessemer Ditch, an open ditch which carries water for the Bessemer Irrigation Ditch company. The Bessemer Ditch Irrigation Company controls the flow of the water in the open ditch and Evraz does not use the water nor exercise any control over the operation of the ditch. The Facility is operated 24 hours/day, 7 days/week. The Facility and its processes are subject to the Iron and Steel Manufacturing Point Source Category found in 40 C.F.R. § 420.

Figure 1 - Evraz Plant Site - generated from Google Earth

According to the fact sheet for the NPDES permit issued by the Colorado Department of Public Health and Environment (CDPHE) on February 28, 2011, the plant produces steel products from various types of scrap metal in the rod/bar mill, rail mill, seamless mill, wire mill (owned by Davis Mill) and the steelmaking facility. The manufactured products include seamless pipe, railroad rail, rods/bars and various semi-finished products. The active operations/processes within the North Mill site include the following:

- Rail Mill with 2 scale pits
- Continuous casters
- Electric arc furnace
- Rail head hardening unit
- Domestic wastewater treatment facility
- Former 25" Structure Mill now used as a warehouse
- Central shops area
- Locomotive repair area
- North Mills wastewater treatment clarifier

The active operations/processes within the South Mill site include the following:

- Wire Mill and wire mill treatment plant
- Rod/Bar Mill with 3 scale pits
- Seamless Pipe Mill with 3 scale pits
- South Mills Collection Basin and clarifier
- 90-Day Hazardous Waste Accumulation building
- Cooling tower
- South Mills Recycle System

The South Mill process wastewater is treated in the South Mill treatment system consisting of a clarifier, sand filtration, solids removal and oily waste polishing ponds. The North Mill process wastewaters combine with treated domestic wastewater in the North Mill treatment pond, consisting of equalization and oil booms. Based on information gathered from the ESI, the Facility discharges treated regulated process wastewater from the South Mill treatment system and treated regulated process and domestic wastewaters from the North Mill treatment system to Salt Creek, which runs from south to north along the east boundary of the Facility. In addition, the Facility discharges non-contact cooling water from the Wire Mill West to Salt Creek.

3.1 April 26, 1979 Judgment Decree

The Salt Creek watershed contains 37.2 square miles and stretches about 18 miles long before connecting with the Arkansas River. The natural drainage system within the Salt Creek watershed is supplied by the Minnequa Canal, which diverts stream flow from the mainstem of the Arkansas Creek near Florence, CO at Lat 38.4144, Long -105.1601. The Minnequa Canal flows approximately 45 miles where it terminates

into Salt Creek at Lat 38.1554, Long -104.7108. The Salt Creek natural drainage system flows from the area southwest of Pueblo to the two St. Charles Reservoirs. Evraz draws water from the St. Charles reservoirs for use in process through an intake located in the northwest corner of the northern reservoir (St. Charles Reservoir #2) and the water is treated by continuously backwashed revolving screens. The backwash water from the screens is discharged into the natural Salt Creek drainage system, which is diverted along with dam seepage to Lake Minnequa.

Salt Creek is a tributary of the Arkansas River and is within the Middle Arkansas segment 4b: Mainstream of Rock Creek, Salt Creek, and Peck Creek from their sources to the confluence with the Arkansas River. Segment 4b is classified for agriculture, aquatic life warm 1, and recreation E (primary contact). The CDPHE has established water quality standards for Salt Creek as part of Middle Arkansas segment 4b in Regulation 32.

Evraz discharges treated process wastewaters from the North Mill and South Mill treatment systems as well as treated domestic wastewater into Salt Creek, which runs adjacent to the Facility. In a 1979 Judgment and Decree, CDPHE agreed to not regulate Salt Creek as "state waters" under the Colorado Water Quality Control Act. State waters are defined as, "any and all surface and subsurface waters which are contained in or flow in or through [the State of Colorado], but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed" (5 CCR 1002-31.5(39)).

The CDPHE established a memorandum of understanding (MOU) with Evraz in 2018. The purpose of this MOU is to memorialize the agreement of Evraz and CDPHE to respect and adhere to the terms of the 1979 Judgment and Decree, which was entered in the Colorado District Court case styled CF&I Steel Corporation v. The Colorado Department of Health, Division of Administration (Civil Action No. 79 CV 305, Apr. 26, 1979) ("Judgment and Decree") and the associated "Stipulation of Settlement" and "Stipulation" between CDPHE's Division of Administration and CF&I Steel Corporation, both dated April 23, 1979 (collectively, "Stipulations").

As a result of the 1979 Judgment and Decree and the 2018 MOU, the NPDES permit # C00000621 issued by the CDPHE establishes the following compliance monitoring points for the process and domestic wastewater discharged from Evraz, as shown in Figure 2:

Outfall 001A: The combined discharge point for all the waste streams from the North and South Mi1ls to the Arkansas River, 38º 15'31" N, 104º 33' 40" W

Outfall 002A: The internal discharge point following the domestic wastewater treatment facility in the North Mills area, 38º 14' 29" N, 104º 35' 45" W.

The latest renewal of the Evraz NPDES permit was issued by CDPHE on February 28, 2011, expired on March 31, 2016 and is currently administratively extended.

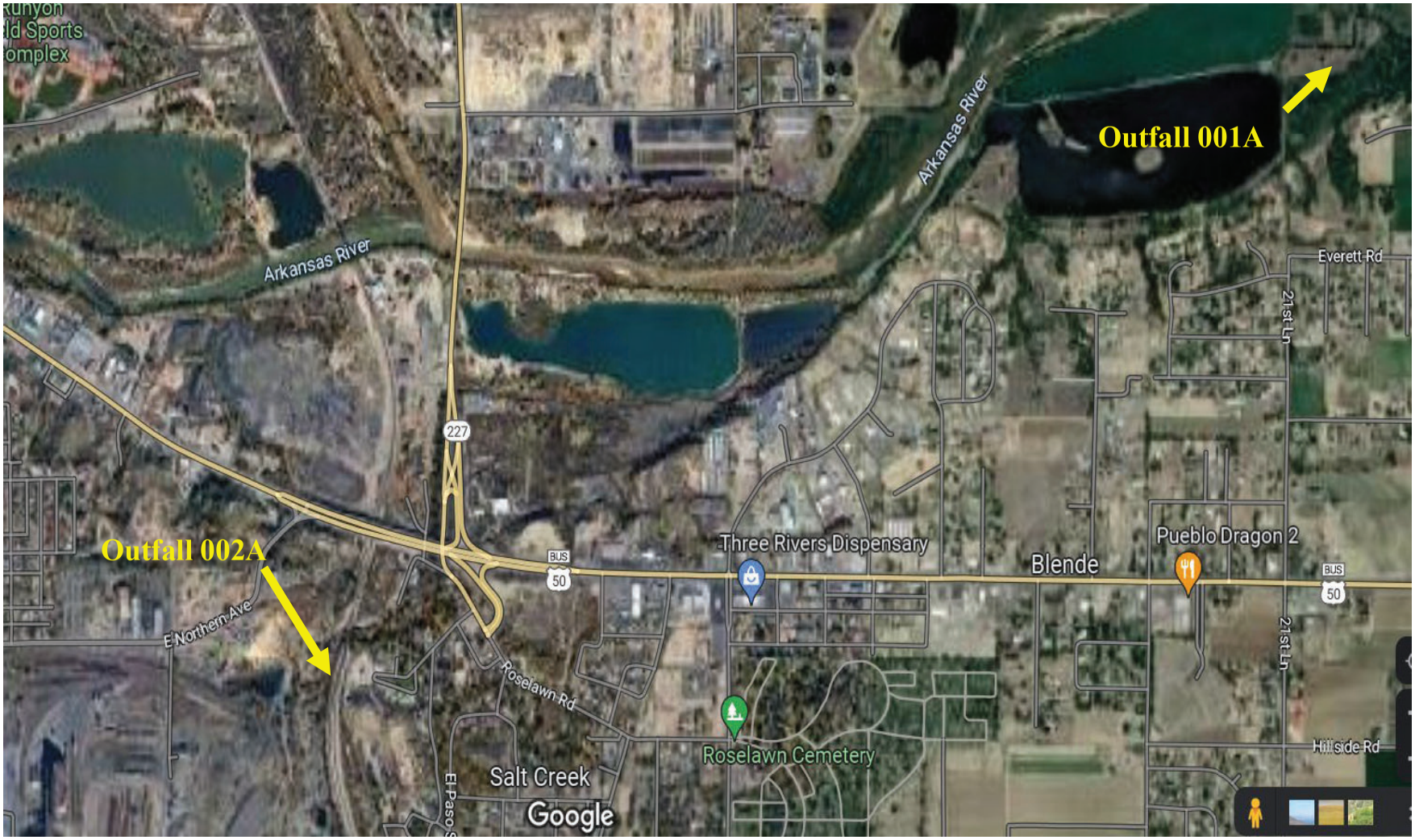

Figure 2 - Evraz Outfalls 001A and 002A-generated from Google Earth

4 EPA Sampling Objectives

The objective of the sampling was to evaluate the impact of wastewaters discharged by Evraz and stormwater runoff from the manufacturing plant site on Salt Creek.

4.1 Sampling Locations

The initial sampling locations on Salt Creek were established to collect data to determine the following:

- Water quality in Salt Creek prior to use by Evraz
- Collect data of non-contact cooling and treated process and wastewater from the South Mill site
- Determine impacts of any run-off from the Harsco site to Salt Creek
- Collect data of treated process and domestic wastewaters from the North Mill site
- Water quality of Salt Creek entering and exiting the community of Salt Creek
- Compliance Monitoring at 001A-discharge to the Arkansas River

These sampling sites were established in Table 4 and Figure 2 of the August 9, 2022 QAPP and the subsequent September 11, 2022 addendum:

Table 1 - Salt Creek Sampling Locations

Site ID	Name	Latitude	Longitude	Description
SC-USE1	Salt Creek Upstream Evraz Option 1	38.159867	-104.695145	Salt Creek upstream of Evraz –Little Burnt Mill Road
SC-USE	Salt Creek Upstream Evraz	38.18148	-104.646263	Salt Creek upstream of Evraz
SC-WMILL	Salt Creek Upstream of Evraz South Mill Treatment System Discharge	38.225815	-104.602745	Salt Creek Upstream of Evraz South Mill Treatment System Discharge
SC-SMILL	Evraz South Mill Treatment System Discharge	38.226759	-104.601651	Evraz South Mill Treatment System Discharge into Salt Creek
SC-HARSCO-UPS	Salt Creek Upstream of Harsco	38.229365	-104.598725	Salt Creek Upstream of potential runoff from Harsco Metals and Minerals
SC-HARSCO-DWS	Salt Creek Downstream of Harsco	38.234848	-104.593899	Salt Creek Downstream of potential runoff from Harsco Metals and Minerals
SC-002	Salt Creek Outfall 002A	38.24331	-104.593534	Salt Creek downstream of Outfall 002A
SC-USP	Salt Creek Upstream Public Access	38.244296	-104.592186	Salt Creek upstream of public access; railway right of way
SC-DSP	Salt Creek Downstream Public Access	38.246062	-104.589509	Salt Creek downstream of public access
SC-001A	Salt Creek Outfall 001A	38.256804	-104561726	Salt Creek Outfall 001A, discharge location to Arkansas River downstream of Evraz

On February 1, 2023, Evraz notified EPA that the South Mills treatment system was down due to clarifier maintenance (*2023-02-01 - Salt Creek Sampling at Evraz Photo Log, photos # 96-99*) and an alternate treatment for the South Mill regulated process wastewater was performed at the "Black Lake" (*2023-02-01 - Salt Creek Sampling at Evraz Photo Log, photos # 100-99*) about 750 feet west of the South Mill clarifier (*2023-02-01 - Salt Creek Sampling at Evraz Photo Log, photo # 102*). As a result of the temporary closure of the South Mill treatment system and the concern of non-representative sampling at the SC-WMill location which is the non-contact cooling water sluice leading to Salt Creek, EPA established alternate sampling locations at the following:

Table 2 - Alternate Sampling Locations on February 1, 2023

Site ID	Name	Latitude	Longitude	Description
SC-WMILLB	Discharge of non-contact cooling water from the Wire Mill West, prior to sluice leading to Salt Creek	38.2264	-104.6036	Alternate Sampling Location: Discharge of non-contact cooling water from Wire Mill West
SC-SMILLB	Evraz effluent from the Black Lake	38.22593	-104.60357	Alternate Sampling Location: Evraz Effluent from the Black Lake

4.2 Sampling Procedures

EPA conducted field monitoring at each site for temperature, conductivity, dissolved oxygen and pH using a YSI Exo1 multiparameter sonde and total chlorine using a Hach DR300 pocket colorimeter. In addition, EPA collected sample aliquots in the stream using 1-gallon cubitainers as subsamplers and filling bottles for the parameters listed in Table 3. In addition, EPA filtered in the field for dissolved parameters listed in Table 3. Observations regarding conditions at the sampling sites were collected in field notebooks maintained for the evaluation sampling inspections.

The YSI Exo1 multiparameter sonde was calibrated pre and post for every sampling event in accordance with the YSI EXO2 Sonde Multiprobe Operation, Calibration, and Maintenance Procedure- R8 EQOP-015 Rev.: 2.0.

Table 3 - Sampling Parameters

Parameter[1]	Analytical Laboratory	Data Quality Objective	Units	Method[2]
Aluminum, total	EPA Region 8	1261	ug/L	EPA Method 200.7
Arsenic	EPA Region 8	340	ug/L	EPA Method 200.8
Arsenic, total	EPA Region 8	7.6	ug/L	EPA Method 200.8
Cadmium	EPA Region 8	1.2	ug/L	EPA Method 200.8
Calcium	EPA Region 8	100	ug/L	EPA Method 200.7
Chromium	CDPHE	1	ug/L	EPA Method 200.7
Chromium, total	CDPHE	1	ug/L	EPA Method 200.7
Chromium III	CDPHE	131	ug/L	Calculated
Chromium III, total	CDPHE	100	ug/L	Calculated
Chromium VI	CDPHE	11	ug/L	SM 3500-Cr D
Chromium VI, total	CDPHE	11	ug/L	SM 3500-Cr D
Copper	EPA Region 8	16	ug/L	EPA Method 200.8
Iron, total	EPA Region 8	1000	ug/L	EPA Method 200.7
Lead	EPA Region 8	5.3	ug/L	EPA Method 200.8
Magnesium	EPA Region 8	50	ug/L	EPA Method 200.7
Manganese	EPA Region 8	2078	ug/L	EPA Method 200.8
Mercury, total	EPA Region 7	0.01	ug/L	SW-846 7473
Molybdenum, total	EPA Region 8	150	ug/L	EPA Method 200.8
Nickel	EPA Region 8	94	ug/L	EPA Method 200.8
Selenium	EPA Region 8	4.6	ug/L	EPA Method 200.7
Silver	EPA Region 8	1	ug/L	EPA Method 200.7
Uranium	EPA Region 8	16.8	ug/L	EPA Method 200.8
Zinc	EPA Region 8	227	ug/L	EPA Method 200.8
Ammonia (as N)	EPA Region 8	1	mg/L	EPA Method 350.1

Boron	EPA Region 8	0.75	mg/L	EPA Method 200.7
Chloride	EPA Region 8	2	mg/L	EPA Method 300.0
Nitrate	EPA Region 8	100	mg/L	EPA Method 353.2
Nitrite	EPA Region 8	0.05	mg/L	EPA Method 353.2
Phosphorus	EPA Region 8	0.17	mg/L	EPA Method 365.1
Sulfate	EPA Region 8	5	mg/L	EPA Method 300.0
Hardness as CaCO3	EPA Region 8	--	mg/L	Calculated
PFAS	EPA Region 8	--	ng/L	Mod. Method 8327
Chlorine	Field Team	0.011	mg/L	HACH DR300
pH	Field Team	6.5-9.0	su	Multiparameter Probe
Temperature	Field Team	13.8-28.6	°C	Multiparameter Probe
Specific Conductance	Field Team	0	uS/cm	Multiparameter Probe
Dissolved Oxygen	Field Team	5	mg/L	Multiparameter Probe

1. *Metals: dissolved fraction unless "total" is indicated*
2. *Where alternate methods approved under 40 CFR 136 are available at the laboratory, or where no method is specified under 40 CFR 136 those may be substituted for the methods listed in this table. Where 40 CFR 136 approved methods exist but are not available, another method (listed above) may be used for screening information only.*

On February 1, 2023, EPA added volatile organic compounds and diesel range organics to supplement the initial parameters established in Table 3.

Table 4 - Additional Parameters added to the February 1, 2023 Sampling Event

Parameter	Analytical Laboratory	Data Quality Objective	Units	Method
Volatile Organic Compounds	EPA Region 8	---	ug/L	EPA Method 8260
Diesel Range Organics	EPA Region 8	---	ug/L	EPA Method 8015 GC/MS

4.3 Sampling Events

The Table 1 sampling locations were sampled on September 1, 2023, September 6,2023, November 1, 2023. The Table 1 sampling locations, except for SC-SMill and SC-WMill replaced by alternate sampling

locations identified in Table 2, were sampled on February 1, 2023. Photologs that documented stream and environmental conditions upstream and downstream of the sampling locations were generated for each sampling event and are enclosed with this report.

4.3.1 September 1, 2023

The EPA sampling team consisting of Al Garcia, Treasure Bailley, Bill Schroeder and Ryan Monahan entered the Evraz Administrative building located at 2100 South Freeway, Pueblo, CO 81004 at approximately 0730 and introduced themselves to Mr. Dmitry Belov, Senior Director of Operations. Al Garcia provided his credentials to Mr. Belov and described the purpose of the ESI. Mr. Belov contacted Mr. Jim Rodacy, Environmental Manager and Mr. Shawn Hefrel, Safety Specialist and we met in a conference room in which EPA again presented credentials, provided the purpose of the ESI and requested access to the site. Mr. Rodacy asked if EPA could provide split samples of the sampling event and Mr. Garcia stated that EPA is not providing split samples, but Evraz may conduct an independent sampling event to gather data identical to EPA. However, Mr. Garcia stated that providing a split sample or Evraz conducting an independent sample is not a requirement. Mr. Rodacy then proceeded to determine if they had the resources and bottles to conduct an independent sampling event. Initial access was provided, and the sampling team proceeded with the safety training provided by Mr. Hefrel in the conference room.

After the safety training was completed and the EPA team was about to conduct sampling, Mr. David Ferryman, Senior Vice President entered the conference room at approximately 0930 and requested EPA provide a letter of intent and postpone the sampling event, because this unannounced sampling event was described by Mr. Ferryman as "unprecedented." Mr. Garcia explained that this event is not unprecedented, and EPA performs unannounced sampling and inspection activities as part of its normal field activities. Mr. Ferryman again requested that EPA postpone the sampling event because of construction activities and that Evraz did not have the necessary resources and sample bottles to conduct an independent sampling event. Mr. Garcia again reiterated that it is not a requirement that Evraz take an independent sampling event and asked Mr. Ferryman directly if he was denying access to the site. Mr. Ferryman again stated that the facility is not prepared to take samples and that construction of the South Mill rail mill is ongoing and the facility is not prepared to escort us around the site, due to safety concerns.

Mr. Garcia then contacted Ms. Peggy Livingston, EPA Senior Assistant Regional Counsel to report that EPA is not able to gain access to conduct sampling. Ms. Livingston was put in contact with Evraz's General Counsel, Eileen Tierney to discuss the situation. According to Ms. Tierney, Evraz is "not trying to be difficult" but they object to having no advance notice and they want to reschedule for Tuesday of next week (September 6, 2022) because of construction activities and the inability to take duplicate samples.

Due to not being able to access the site, EPA decided to sample the sampling locations identified in Table 1 as public right of way properties, SC-DSP, SC-USP and SC-USE1. These sampling sites were sampled for the parameters using the procedures identified in Section 4.2.

- SC-DSP – sampled at 1250 – observations at this site: creek is slate-black in color and turns clear when filtered.
- SC-USP – sampled at 1406 – observations at this site: creek is turbid and slate-black in color and

turns clear when filtered, difficult to see the bottom of the creek. Oily, diesel, gas smell.

- SC-USE1 – sampled at 1515 – observations at this site: creek is a turbid brown but not slate-black in color

4.3.1.1 Conversation with Dominick Bucciarelli:

During the sampling event at SC-DSP located at Socorro Place and under the Hwy 50 Bridge, Mr. Dominick Bucciarelli, owner of the house located at 1201 Socorro Place and surrounding area bordering Salt Creek, approached the sampling teams with questions about our purpose. Mr. Bucciarelli had concerns we were dumping trash, as the dead-end location of Socorro Place under the HWY 50 bridge is a location where the public has dumped trash. We observed evidence of trash dumping at multiple locations on Socorro Place as it crosses under the bridge. In addition, there were constructed campfire rings located next to the banks of Salt Creek as it flowed under the bridge. A homeless person was observed across the banks of Salt Creek near Roselawn Drive.

We assured Mr. Bucciarelli that we were not dumping trash and then he asked if we were cleaning up the trash. I explained our purpose to test the water quality of Salt Creek at the sampling location named SC-DSP, which represents the water quality of Salt Creek after it leaves the Salt Creek community. After I explained the scope of our sampling activities, I asked Mr. Bucciarelli if he is aware of evidence of the public accessing Salt Creek for recreational or fishing activities. He told stories of kids that have swam in the creek and coming out "greasy" and mentioned kids that have drowned in the creek. He also talked about citizens that have historically fished in the Salt Creek on his property and that he does not allow fishing on his property because all they would catch is channel catfish, that, due to the nature of Salt Creek, are not safe to eat. Mr. Bucciarelli also mentioned that he used to fish Salt Creek but stopped because the fish are not safe to eat.

4.3.2 September 6, 2022

The sampling team consisting of Al Garcia, Treasure Bailley, Bill Schroeder and Ryan Monahan met Evraz personnel consisting of Mr. Jim Rodacy, Mr. Nathan Hoffmeyer, and Mr. Shawn Hefrel in the parking lot of the Evraz Administrative building located at 2100 South Freeway, Pueblo, CO 81004 at approximately 0730.

The sampling team was provided access to the plant site and sampled/gathered field monitoring data from the locations identified in Table 1. These sampling sites were sampled for the parameters using the procedures identified in Section 4.2. The sampling team was accompanied by Evraz personnel which took independent samples at these locations.

- SC-001A – sampled at 0940
- SC-DSP – sampled at 1025
- SC-USP – sampled at 1120 -- observations at this site: creek is definitely less dark in color than it was last week, can see the field multiprobe on the bottom of the creek. No oily or diesel smell.
- SC-002 – sampled at 1230
- SC-HARSCO-UPS – sampled at 1430
- SC-HARSCO-DWS – sampled at 1510

- SC-SMILL – sampled at 1315
- SC-WMILL – sampled at 1350
- SC-USE – sampled at 1600
- SC-USE1 – sampled at 1650

4.3.3 November 1, 2022

The sampling team consisting of Al Garcia and Treasure Bailley sampled and gathered field monitoring data at the public right of way site, SC-USP at 1355, upstream of where Salt Creek enters the community. This sampling site was sampled for the parameters using the procedures identified in Section 4.2.

4.3.4 November 2, 2022

The sampling team consisting of Al Garcia, Treasure Bailley, Bill Schroeder and Ryan Monahan met Evraz personnel consisting of Mr. Nathan Hoffmeyer, Mr. Greg Eastman, and Mr. Shawn Hefrel in the parking lot of the Evraz Administrative building located at 2100 South Freeway, Pueblo, CO 81004 at approximately 0700.

The sampling team was provided access to the plant site and sampled/gathered field monitoring data from the locations identified in Table 1. These sampling sites were sampled for the parameters using the procedures identified in Section 4.2. The sampling team was accompanied by Evraz personnel which took independent samples at these locations.

- SC-001A – sampled at 0750
- SC-DSP – sampled at 0825
- SC-USP – sampled at 0840
- SC-002 – sampled at 0930 – note: the sample was taken at a bridge crossing the outfall about 300 feet upstream of sampling point 002 due to safety concerns from elevated flow in the channel and a lack of stable footing to gather a sample.
- SC-HARSCO-UPS – sampled at 1000
- SC-HARSCO-DWS – sampled at 1033
- SC-SMILL – sampled at 1110
- SC-WMILL – sampled at 1220
- SC-USE – sampled at 1600
- SC-USE1 – sampled at 1310

4.3.5 February 1, 2023

The sampling team consisting of Al Garcia, Treasure Bailley and Bill Schroeder met Evraz personnel consisting of Mr. Jim Rodacy, Mr. Nathan Hoffmeyer, Mr. Greg Eastman, and Mr. Shawn Hefrel in the parking lot of the Evraz Administrative building located at 2100 South Freeway, Pueblo, CO 81004 at approximately 0700. The site had experienced a water main break in the North Mill and portions of adjacent streets were flooded, including Santa Fe (Hwy 50).

The sampling team was provided access to the plant site and sampled/gathered field monitoring data from the locations identified in Table 1. These sampling sites were sampled for the parameters using the

procedures identified in Section 4.2. In addition, two new parameters, 8260 volatile organic compounds (VOC) and diesel range organics were sampled at all locations. The sampling team was accompanied by Evraz personnel which took independent samples at these locations.

- SC-001A – sampled at 0750
- SC-DSP – sampled at 0850
- SC-USP – sampled at 0925
- SC-002 – sampled at 1020 – note: the sample was taken at a bridge crossing the outfall about 300 feet upstream of sampling point 002 due to safety concerns from elevated flow in the channel and a lack of stable footing to gather a sample.
- SC-HARSCO-DWS – sampled at 1115
- SC-HARSCO-UPS – sampled at 1150
- SC-SMILLB – sampled at 1305 – alternate location because the clarifier is not functional due to maintenance, therefore, the sample was taken about ¼ mile upstream of the South Mill treatment system at the outfall of the treatment pond named the Black Lake. New lat/longs were gathered for this alternate sampling location and were documented on the photolog.
- SC-WMILLB – sampled at 1355 – alternate location because of maintenance activity at the South Mill treatment system. The sample was taken about ¼ mile upstream of the "slide' leading down to Salt Creek. The new sampling location consists of the stream of non-contact cooling water. New lat/longs were gathered for this alternate sampling location and were documented on the photolog.
- SC-USE – sampled at 1530
- SC-USE1 – sampled at 1610

5 QA/QC and Data Assessment/Validation

Upon receipt of the analytical data reports, a data validation process was completed to ensure the analytical results meet the project objectives and the requirements identified in the Sampling Salt Creek and Evraz, Pueblo, Colorado Quality Assurance Project Plan (QAPP). The data validation process included review all analytical data, any applicable laboratory qualifications, notes from the laboratory chemists, notes from the field sampling staff, and a comparison of the duplicate samples.

5.1 Validation of September Analytical Results

Based on EPA's data validation process of the September 2022 sampling, it was determined that the analytical results for nearly all samples met the field and laboratory QA/QC procedures established to minimize and identify potential errors stemming from field and laboratory activities. These QA/QC procedures, which were discussed in Section B of the Sampling Salt Creek and EVRAZ, Pueblo, Colorado QAPP, include reviewing for consistency in the way samples were analyzed in the field and laboratory, collection and evaluation of duplicate, replicate, and blank samples, and decontamination procedures.

The QA/QC process identified several September samples flagged due to laboratory or field-based exceptions. This review and the investigation into the cause of the exceptions are discussed below and include EPA's determination for retention or exclusion of associated analytical results. Field-based exceptions and laboratory flagged samples *with* a measured concentration are discussed. Instances when

the laboratory flagged a parameter that was below detection for a given sample are not included in the discussion.

5.1.1 Laboratory Qualified Data

Total Aluminum

The sample collected from SC-HARSCO-DWS on 9/6/2022 was flagged because a duplicate of this sample was run, and the analytical results were outside of the laboratory's duplicate acceptance criteria. The analytical results for the duplicate sample had a relative percent difference (RPD) of 26.9, whereas the duplicate acceptance criterion is RPD≤20.0.

It was determined that this value would be flagged and retained for two reasons: first, the reported value falls within the range of the measured aluminum concentrations at the other sites adjacent or downstream of the Facility; and second, the analytical results from a duplicate sample and a serial dilution are greater than results from the original sample, while the laboratory blank, blank spike, matrix spike, and matrix spike duplicate all were within their respective acceptance criteria. Since iron concentrations from the duplicate and serial dilution QA/QC tests are greater than the original concentration it is likely that the concentration reported in the original sample represents the low end of the aluminum concentration in the sample.

Ammonia as N

The duplicate ammonia as N sample collected at Site SC-DSP (identified as SC-DSP-DUP) collected on 9/1/2022 and the ammonia s N sample collected at Site SC-USE1 on 9/6/2022 were both flagged by the laboratory for not meeting the reporting limit acceptance criteria.

It was determined that these values will remain flagged but are retained for evaluation because the measured concentrations are within the range of the reported concentrations of ammonia as N for remaining samples collected in September. Additionally, results from other laboratory QA/QC measures, including the laboratory blank, blank spike, and duplicate samples, met their respective acceptance criteria.

Total Arsenic

A measured concentration of total arsenic was detected in the field blank collected on 9/1/2022. Field blank bottles are filled in the field with "nanopure" water obtained from the laboratory prior to sampling. Analysis of the field blank should report concentrations for all analytes below the detection limit. It is not clear how a measurable concentration of arsenic was introduced into the field blank. As a result, reported arsenic concentrations from 9/1/2022 at sites SC-USE1, SC-USP, SC-DSP, and SC-DSP-DUP will be flagged and excluded from the analysis.

Total Iron

The sample collected from SC-HARSCO-DWS on 9/6/2022 was flagged by the laboratory due to inconsistencies between the original sample and a QA/QC sample. The duplicate sample was run by the lab in accordance with their QA/QC process, and the analytical results of the duplicate sample were outside of the laboratory's acceptance criteria. The analytical results for the duplicate sample had a RPD of 20.1, whereas the acceptance criterion is RPD≤20.0.

It was determined that this value would remain flagged but are retained for evaluation for two reasons: first, the reported value falls within the range of the measured iron concentrations at the other sites adjacent or downstream of Evraz; and second, the analytical results from a duplicate sample and a serial dilution are greater than results from the original sample, while the laboratory blank, blank spike, matrix spike, and matrix spike duplicate all were within their respective acceptance criteria. Since iron concentrations from the duplicate and serial dilution QA/QC tests are greater than the original concentration it is likely that the iron concentration reported in the original sample represents the low end (i.e., conservative) of the iron concentration in the sample.

Molybdenum

The molybdenum concentration measured at Site SC-DSP on 9/1/2022 was flagged by the laboratory because the serial dilution criterion was not met. The analytical results for the serial dilution sample had a RPD of 18.8, whereas the acceptance criterion is RPD≤10.0.

It was determined that the laboratory flagged concentration will remain flagged but are retained for evaluation because the measured concentration is comparable to the other reported concentrations of molybdenum collected in September. Additionally, results from other laboratory QA/QC measures, including the laboratory blank, blank spike, duplicate, and matrix spike duplicate samples, met their respective acceptance criteria.

Nitrite as N

Each of the nitrite as N samples collected on 9/6/2022 were flagged by the laboratory for not meeting the reporting limit acceptance criteria.

It was determined that these values will remain flagged but are retained for evaluation because the measured concentrations are within the range of the reported concentrations of nitrite as N for remaining samples collected in September. Additionally, results from other laboratory QA/QC measures, including the laboratory blank, blank spike, and duplicate samples, met their respective acceptance criteria.

Orthophosphate as P

A measured concentration of dissolved orthophosphate as P was detected in the field blank from the 9/1/2022 sampling event. As mentioned previously, the field blank bottles are filled with "nanopure" water obtained from the laboratory prior to sampling and all analytes should be reported as below the detection limit.

After a review of the laboratory report and discussions with laboratory personnel, the decision was made to flag and retain the results from other orthophosphate as P samples collected on 9/1/2022. First, the reported concentration of orthophosphate as P was 5.4 µg/L, which is slightly above the detection limit of 5.0 µg/L. Additionally, the remaining samples collected on 9/1/2022 were considerably larger (i.e., 5x greater) than the concentration reported in the field blank. Lastly, there is little concern surrounding orthophosphate as P concentrations reported on 9/1/2022 because the reported values are below aquatic life and human health criteria.

5.1.2 Field Sample Duplicate Analysis

Duplicate samples were collected from Site SC-DSP during both September sampling events (9/1/2022 and 9/6/2022). Duplicate samples were identified as SC-DSP-DUP. Results from the duplicate samples were compared to original base samples and flagged for further investigation if duplicates were determined to be outside the acceptance criteria established in the QAPP (i.e., plus or minus 20 percent of the original sample).

In September, 120 duplicate analytes were analyzed over the two-day sampling. A total of 113 duplicates met the acceptance criteria, while 7 of the duplicates were outside the acceptance criteria. The samples outside the acceptance criteria had a relative percent difference ranging from 25 to 87, with an average of 47 percent difference from original samples. Duplicate samples for total chromium, nitrate as N, nitrite as N, and orthophosphate as P collected on 9/1/2022 and, dissolved arsenic, total arsenic, and nitrate as N collected on 9/6/2022 were outside the acceptance criteria.

The dissolved arsenic duplicate collected on 9/6/2022 was also greater than the original base sample, but both the base and duplicate samples were within the concentration range of samples collected sites adjacent or downstream of Evraz.

Each of the duplicate samples will be flagged as being outside the acceptance criteria, however, most of the duplicates are within the range of the respective analytes collected on the same day from sites adjacent to or downstream of Evraz. Additional research surrounding these samples was completed, including review of COCs, field books, and discussion with field staff, and there is no clear indication for the discrepancy. Therefore, the analytical results will be retained, but flagged as being outside the duplicate acceptance criteria.

Lastly, the total arsenic duplicate sample collected on 9/1/2022 was also outside of the duplicate acceptance criteria, but the total arsenic samples collected on 9/1/2022 have already been excluded from the dataset due to field blank contamination (see Section 5.1.1).

5.2 November Analytical Results

Based on EPA's data validation process of the November 2022 sampling, it was determined that the analytical results for nearly all samples met the field and laboratory QA/QC procedures established to minimize and identify potential errors stemming from field and laboratory activities.

The QA/QC process identified several samples flagged due to laboratory or field-based exceptions. This review and the investigation into the cause of the exceptions are discussed below and include EPA's determination for retention or exclusion of associated analytical results. Field-based exceptions and laboratory flagged samples *with* a measured concentration are discussed. Instances when the laboratory flagged a parameter that was below detection for a given sample are not included in the discussion.

5.2.1 Laboratory Qualified Data

Total Arsenic

The total arsenic concentration reported for the sample collected at SC-HARSCO-DWS on 11/2/2022 was

qualified by the laboratory because one of the control acceptance criteria were not met. However, because the percent recovery of 77.9 percent for total arsenic was slightly below the recovery threshold established by the laboratory of 80 percent and other quality control criteria (i.e., blank, spike, and duplicate, etc.) met their respective acceptance criteria, these values will remain flagged and are retained for evaluation.

Cadmium

The cadmium concentration measured at Site SC-USE1 on 11/2/2022 was flagged by the laboratory because the continuing calibration criterion was not met.

It was determined that the laboratory flagged concentration will remain flagged and are retained for evaluation because the measured concentrations are comparable to the other reported concentrations of cadmium. Additionally, results from other laboratory QA/QC measures, including the laboratory blank, blank spike, duplicate, and matrix spike duplicate samples, met their respective acceptance criteria.

Calcium

Measured concentrations of dissolved calcium were detected in the field blank collected on 11/2/2022. However, the reported concentration in the field blank is slightly above the detection limit of 100 µg/L, and approximately 40 orders of magnitude smaller than the concentrations reported at the remaining sites. Therefore, calcium concentrations reported in the remaining samples collected on 11/2/2022 will be flagged and are retained for evaluation.

Nickel

The reported dissolved nickel concentrations from each of the samples at each of the sites collected on 11/2/2022 were flagged by the laboratory because a calibration criterion was not met. However, because other quality control criteria (i.e., blank, spike, and duplicate, etc.) met their respective acceptance criteria and the reported concentrations are within the range of the other measured nickel concentrations, the values will remain flagged and are retained for evaluation.

Orthophosphate as P

The laboratory flagged the orthophosphate as P samples collected at each of the sites on 11/2/2022 because a measured concentration was detected in a laboratory blank. The laboratory blank was an internal blank, and not the field blank.

After a review of the laboratory report and discussions with laboratory personnel, the decision was made to flag and retain the November orthophosphate as P results for two reasons. The first reason the results will be retained is because the qualified values are comparable to the other reported concentrations for orthophosphate as P. The next reason to retain the orthophosphate as P results is because other laboratory QA/QC measures including the laboratory blank, blank spike, duplicate, and matrix spike duplicate samples met their respective acceptance criteria.

5.2.2 Field Sample Duplicate Analysis

In November 2022, the duplicate samples were collected from Site SC-SMILL, and were identified as SC-SMILL DUP. Each of the duplicate samples collected in November met the RPD acceptance criteria (±20 percent of original value).

5.3 February Analytical Results

Based on EPA's data validation process for the February 2023 sampling, it was determined that the analytical results for nearly all samples met the field and laboratory QA/QC procedures established to minimize and identify potential errors stemming from field and laboratory activities.

The QA/QC process identified several samples flagged due to laboratory or field-based exceptions. This review and the investigation into the cause of the exceptions are discussed below and include EPA's determination for retention or exclusion of associated analytical results. Field-based exceptions and laboratory flagged samples *with* a measured concentration are discussed. Instances when the laboratory flagged a parameter that was below detection for a given sample are not included in the discussion.

5.3.1 Laboratory Qualified Data

Volatile Organic Compounds and Diesel Range Organics

The sample preservative for multiple volatile organic compounds (VOCs) containers evaporated resulting in multiple samples being analyzed outside of holding times. VOC analytical results from sites SC-USE1, SC-W Mill B, SC-S Mill B, SC-S Mill B Dup, SC-HARSCO-UPS, SC-002, SC-USP, and SC-001A have been qualified as being analyzed outside of holding times. All other samples were analyzed within their respective holding time requirements. There is no action being taken on the VOC samples that were analyzed outside the holding time, because all the VOC parameters, with the exceptions of acetone (see below), were reported as below detection limits.

Acetone

A measured concentration of acetone was detected in the field blank collected on 2/1/2023. Field blank bottles are filled in the field with "nanopure" water obtained from the laboratory prior to sampling. Analysis of the field blank should report concentrations for all analytes below their respective detection limits. It is not clear how a measurable concentration of acetone was introduced into the field blank. As a result, reported concentrations for acetone from 2/1/2023 will be flagged and site data will be excluded from the analysis.

Ammonia as N

A measured concentration of dissolved ammonia as N was detected in the field blank collected on 2/1/2023. Field blank bottles are filled in the field with "nanopure" water obtained from the laboratory prior to sampling. Analysis of the field blank should report concentrations for all analytes below their respective detection limits. It is not clear how a measurable concentration of ammonia was introduced into the field blanks. As a result, the reported concentrations for ammonia from 2/1/2023 will be flagged and site data will be excluded from the analysis.

Calcium

Measured concentrations of dissolved calcium were detected in the field blanks (QC-1 with deionized water, and QC-2 with "nanopure" water) collected on 2/1/2023. However, the reported concentrations are slightly above the detection limit of 100 µg/L, and approximately 50 orders of magnitude smaller than concentrations reported at the remaining sites. Therefore, calcium concentrations will be flagged and are retained for evaluation.

The dissolved calcium concentration from the sample collected at SC-HARSCO-UPS on 2/1/2023 was qualified by the laboratory because the matrix spike and matrix spike duplicate criteria were not met. However, since the reported value is within the range of the calcium concentrations reported in the remaining samples, and because other quality control criteria (i.e., blank, duplicate, and serial dilution, etc.) met their respective acceptance criteria, the value will remain flagged and are retained for evaluation.

Diesel Range Organics

Diesel range organics (DROs) concentrations were qualified by the laboratory as not matching the pattern for diesel fuel. The laboratory chemist included the following notes in their analysis, "The DRO detects in these samples do not match the pattern for Diesel fuel. The detections appear to be a combination of humic acids, possible sulfur compounds, and a heavy oil product such as motor oil. Most of the pattern for the heavy oil product elutes outside/after the integration window for DRO." For this reason, the DRO samples will flagged and excluded from the final dataset.

In addition to the information provided by the laboratory chemist, the samples collected at sites SC-USE1, SC-USE, and SC-W Mill B, and SC-001A were flagged for not meeting the reporting limit standard acceptance criteria.

Magnesium

The reported dissolved magnesium concentration from the sample collected at SC-HARSCO-UPS on 2/1/2023 was qualified by the laboratory because the matrix spike duplicate criterion was not met. However, since the reported value is within the range of the magnesium concentrations reported in other samples, and because other quality control criteria (i.e., blank, duplicate, matrix spike, and serial dilution, etc.) met their respective acceptance criteria, the value will remain flagged and will be retained for evaluation.

Nitrate as N

The reported nitrate as N concentrations from each of the samples collected on 2/1/2023 at all sites were qualified by the laboratory because a calibration criterion was not met. However, because other quality control criteria (i.e., blank, spike, and duplicate, etc.) met their respective acceptance criteria and the values will remain flagged and will be retained for evaluation.

Orthophosphate as P

A measured concentration of dissolved orthophosphate as P was detected in the field blank from the 2/1/2023 sampling event. As mentioned previously, the field blank bottles are filled with "nanopure" water obtained from the laboratory prior to sampling and all analytes should be reported as below the detection limit.

Mirroring the steps taken to resolve the orthophosphate as P concentrations detected in the 9/1/2022 field blank (Section 5.2.1), a review of the laboratory report and discussions with laboratory personnel was conducted. The decision was, again, made to flag and retain the results from orthophosphate as P samples collected on 2/1/2023 for two reasons; first, the detection limit for orthophosphate as P is 5.0 µg/L and the sample had a reported concentration of 6.7 µg/L, and second, the remaining samples collected on 2/1/2023 were considerably larger (approximately 4x greater) than the concentration reported in the field

blank. There is little concern surrounding the concentrations of orthophosphate as P reported on 2/1/2023 because the reported values are below aquatic life and human health criteria.

o-Terphenyl

A measured concentration of o-terphenyl was detected in the field blank collected on 2/1/2023. Field blank bottles are filled in the field with "nanopure" water obtained from the laboratory prior to sampling. Analysis of the field blank should report concentrations for all analytes below the detection limit. It is not clear how a measurable concentration of o-terphenyl was introduced into the field blank. Since the reported concentration in the field blank is comparable to the reported concentrations in the individual sites, the reported concentrations for o-terphenyl from 2/1/2023 will be flagged and site data will be excluded from the analysis.

5.3.2 Field Sample Duplicate Analysis

In February 2023, the duplicate samples were collected from Site SC-SMILL B, and were identified as SC-SMILL B DUP. Each of the duplicate samples collected in February met the RPD acceptance criteria (±20 percent of original value), with the exception of ammonia as N and orthophosphate as P.

The ammonia as N duplicate sample collected on 2/1/2023 was outside of the duplicate acceptance criteria, but these samples have already been excluded from the dataset due to field blank contamination.

The orthophosphate as P collected on 2/1/2023 was also greater than the original base sample, but both the base and duplicate samples were within the concentration range of samples collected sites adjacent or downstream of Evraz. Additional research surrounding these samples was completed, including review of COCs, field books, and discussion with field staff, and there is no indication that the results are erroneous. Therefore, the analytical results will be retained, but flagged as being outside the duplicate acceptance criteria.

6 Analytical Results

Analytical results for each of the parameters with a measured concentration that were not excluded during the QA/QC procedure are discussed below. Results are comprehensive of each of the sampling events and general increasing or decreasing trends are identified when possible. Aquatic life and human health criteria are provided as context for reported concentrations and the most stringent criteria are used as a reference. In instances when Salt Creek does not have a criterion for a given parameter (i.e., aluminum, chloride, and sulfate), the statewide table value standard (TVS) was substituted.

6.1 Metals

Total aluminum

Total aluminum concentrations were measured during each of the sampling events. The highest concentrations were observed at the Site SC-USE1, which is above Evraz and then decreased in a downstream direction during each of the three sampling events. Aluminum concentrations were below detection limits at the furthest downstream site, Site SC-001A.

One sample collected on 9/1/2022 upstream of Evraz, at Site SC-USE1, exceeded the statewide hardness-based aluminum aquatic life chronic criterion of 882 µg/L (hardness = 154 mg/L). The remaining total aluminum samples were below the statewide aluminum criterion.

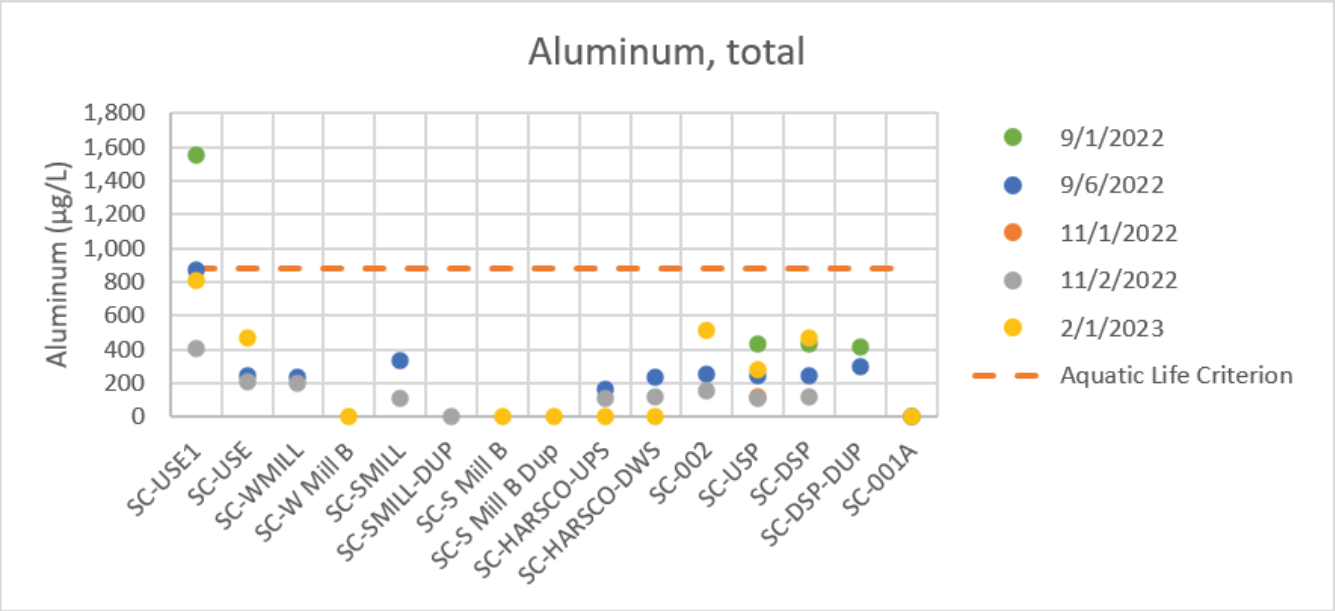

Figure 3 – Total aluminum concentrations compared to the hardness-based aquatic life criterion

Dissolved arsenic

Dissolved arsenic concentrations were measured in multiple samples and ranged from 1.0 to 1.9 µg/L (average 1.3 µg/L). Measured concentrations of dissolved arsenic generally increased in a downstream direction, with samples at or below the detection limit at the upstream Site SC-USE1 and then increasing at the three downstream sites SC-USP, SC-DSP, and SC-001A. While concentrations of dissolved arsenic show an increasing trend, the measured concentrations are below aquatic life (150 mg/L) criterion.

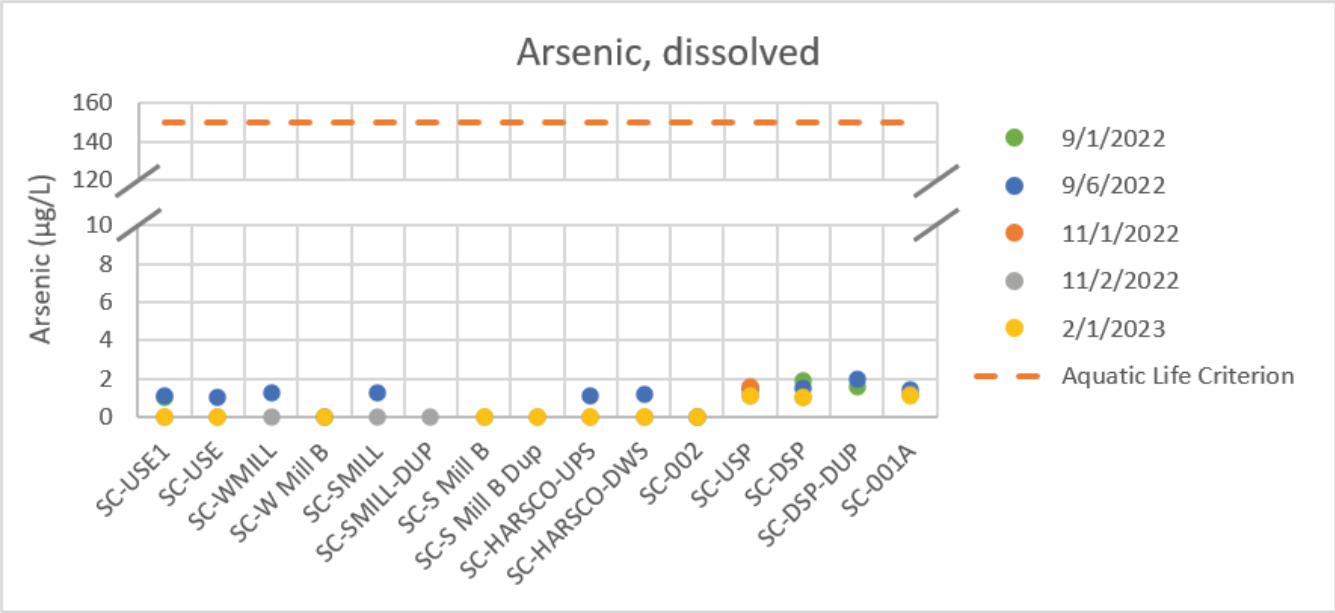

Figure 4 – Dissolved arsenic concentrations compared to chronic aquatic life criterion

Total arsenic

Total arsenic concentrations were also measured during each of the sampling events. Samples collected during the 9/1/2022 sampling event were excluded due to sample blank contamination (see Section 5.1.1). Concentrations of total arsenic measured during the 9/6/2022 sampling event increased in a downstream direction with upstream concentrations of 1.7 µg/L reported at Site SC-USE1 and increasing to 8.2 µg/L at the downstream Site SC-001A. Concentrations of total arsenic were below detection in each sample collected on 11/2/2022, and all but one sample collected on 2/1/2023. The sample collected on 2/1/2023 at Site SC-DSP with a measured concentration above the detection limit had a total arsenic concentration of 11.9 µg/L. .

The sample collected at Site SC-001A on 9/6/2022 and the sample collected at Site SC-DSP on 2/1 were both above the arsenic criterion of 7.6 µg/L, which is the human health-based fish ingestion criterion.

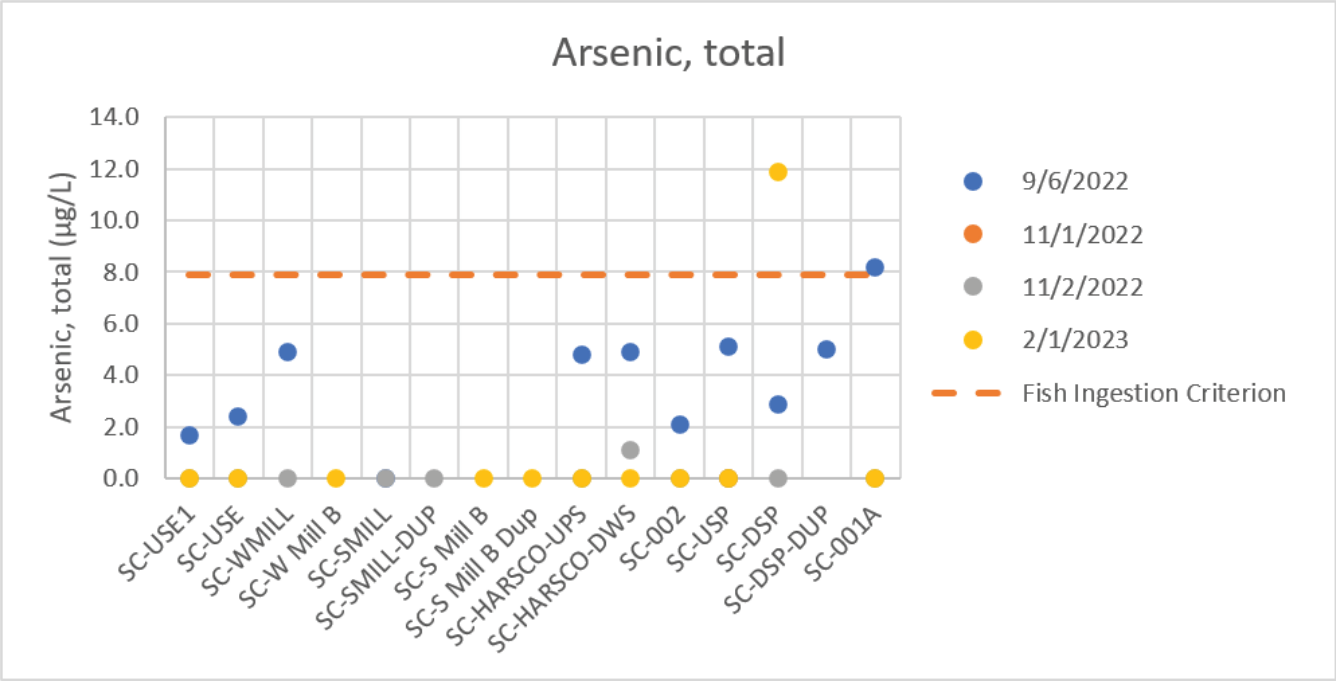

Figure 5 – Total arsenic concentrations compared to fish ingestion criterion

Dissolved cadmium

Dissolved cadmium was tested for during each sampling event. The concentrations for each sample were reported as being below the detection limit (0.02 µg/L), with the exception of two samples. The sample collected at Site SC-USE1 on 11/2/2023 had concentration of 0.02 µg/L and the sample collected at Site SC-002 on 2/1/2023 had a dissolved cadmium concentration of 0.04 µg/L. The concentrations reported for each of these samples are below the hardness-based chronic aquatic life criterion of 0.99 µg/L (hardness = 154 mg/L).

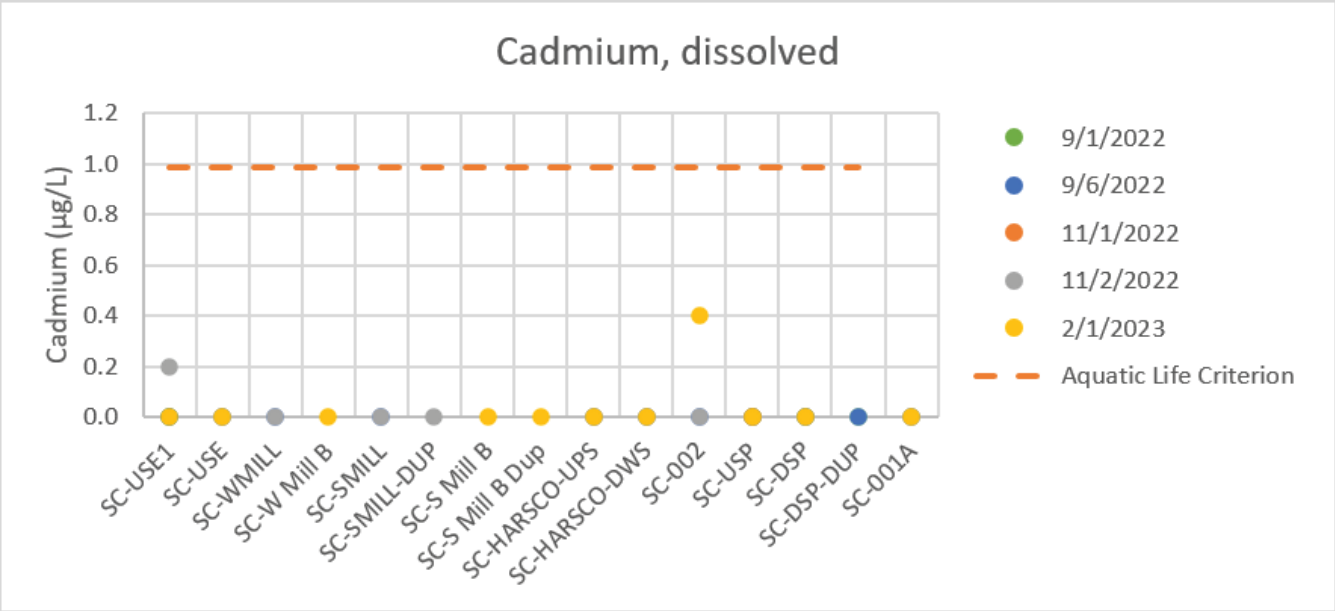

Figure 6 – Dissolved cadmium concentrations compared to the hardness-based chronic aquatic life criterion

Total hexavalent chromium total trivalent chromium

Total chromium and total hexavalent chromium were tested for during the September and February sampling events. Total trivalent chromium is not tested for, but instead calculated by subtracting hexavalent chromium from total chromium. Total chromium was measured at most sites during the September and February sampling events, including Site SC-USE1 upstream of the Facility. However, concentrations of total chromium were higher at sites adjacent to or downstream of the Facility than the concentrations measured at Site SC-USE1.

Concentrations of hexavalent chromium were measured at sites SC-002 and SC-DSP, adjacent to the Facility, during the September sampling event and sites SC-USE, SC-002, SC-USP, and SC-DSP during the February sampling event. The remaining samples had hexavalent chromium below detection limits. Since most of the hexavalent chromium samples were below detection limits, this indicates that measured total chromium is likely in the trivalent form.

The measured hexavalent chromium and the calculated trivalent chromium concentrations are all below the water supply criterion (0.05 mg/L).

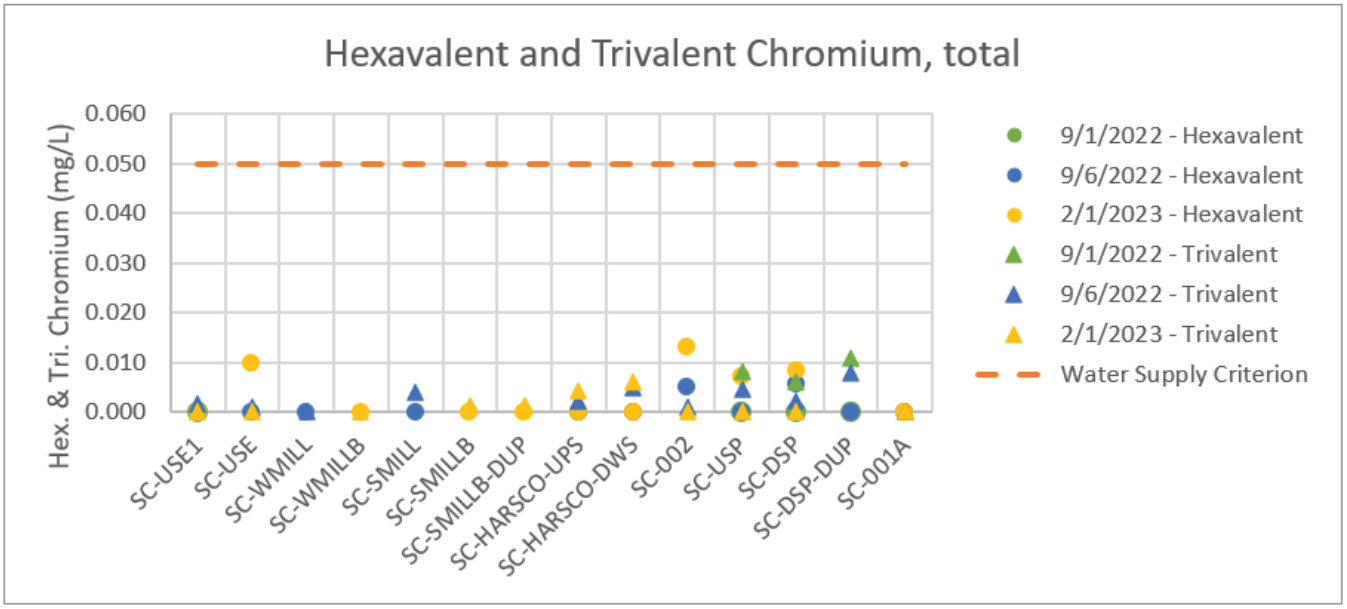

Figure 7 – Hexavalent and trivalent chromium concentrations compared to the water supply criterion

Total iron

Total iron was tested for during each sampling event and concentrations were reported in all but one sample. Measured total iron ranged from 197 to 4270 µg/L, with an average of 1250 µg/L. Concentrations of total iron were measured upstream of Evraz, at Site SC-USE1, but concentrations at sites adjacent to and downstream of Evraz were higher than the upstream site (Figure 8). Concentrations generally increased starting at Site SC-SMILL and remained elevated through Site SC-DSP, before decreasing at the furthest downstream site, Site SC-001A.

Twenty samples had concentrations of total iron that were above the chronic aquatic life criterion of 1,000 µg/L.

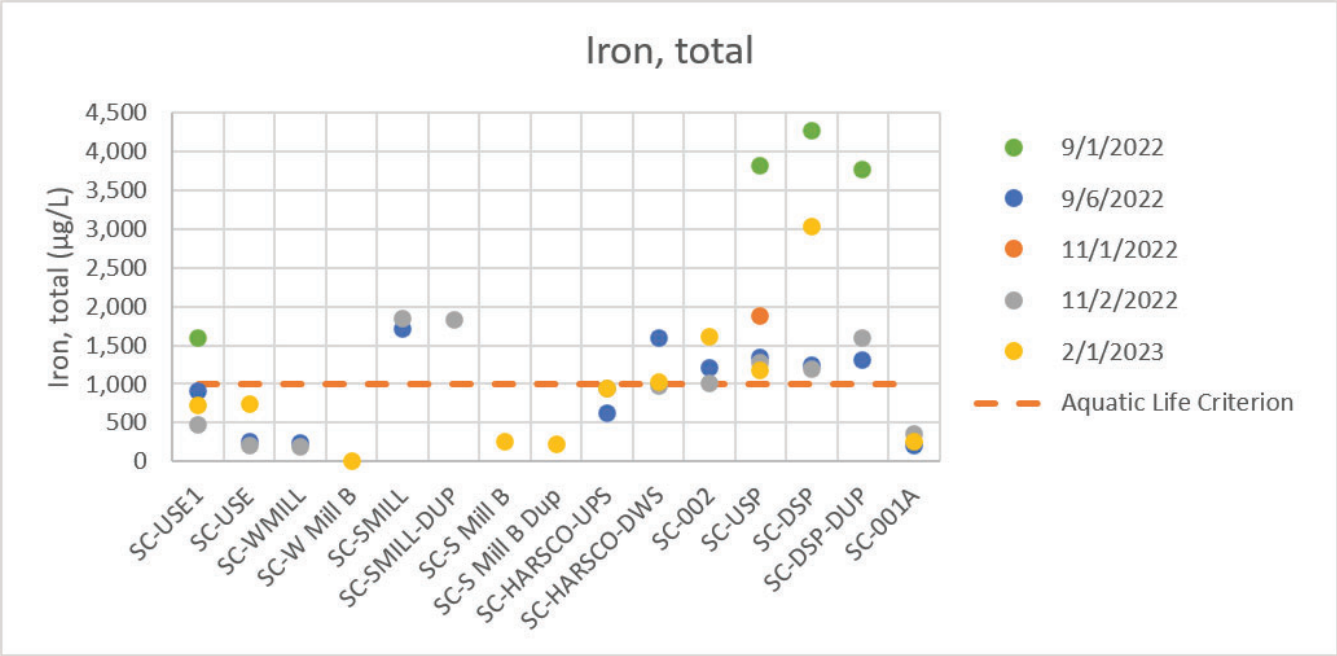

Figure 8 – Total iron concentrations compared to the chronic aquatic life criterion

Dissolved manganese

Dissolved manganese was tested for during each sampling event and concentrations were measured in all but four samples. Measured concentration of dissolved manganese ranged from 2.0 to 24.5 µg/L, with an average of 11.1 µg/L. Sites adjacent to or downstream of Evraz had concentrations of dissolved manganese higher than the concentrations measured at Site SC-USE1, upstream of Evraz. While dissolved manganese concentrations are higher at sites adjacent to Evraz, concentrations are below the water supply criterion (50 µg/L), which is more stringent than the hardness-based aquatic life criterion.

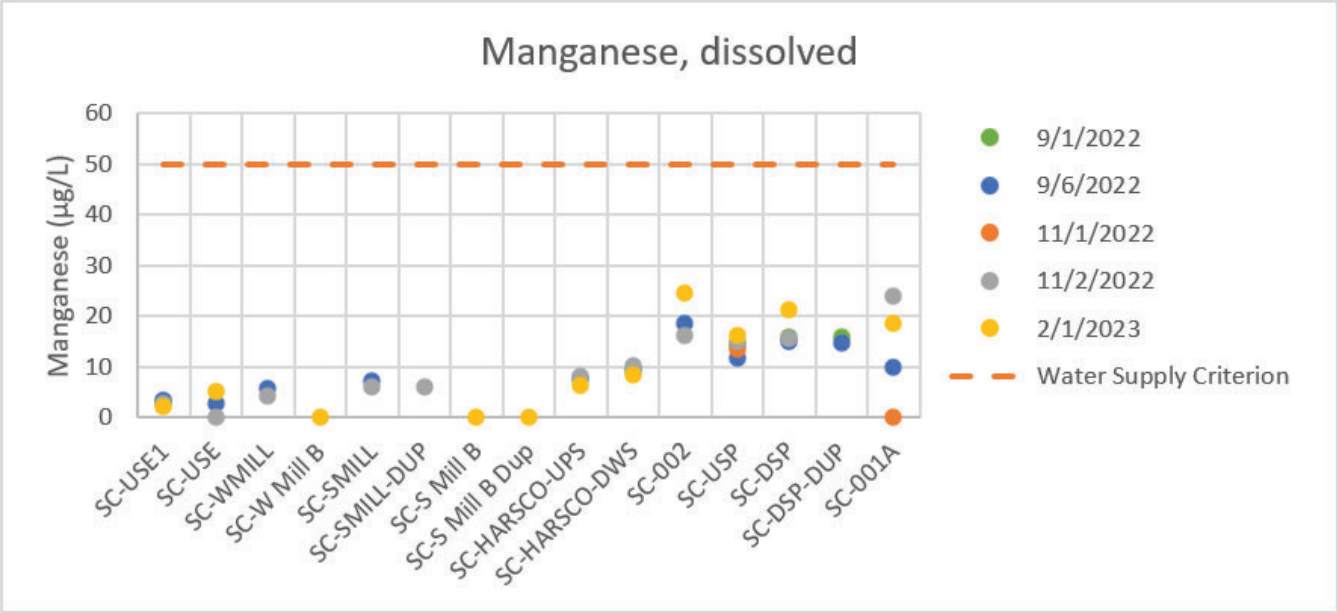

Figure 9 – Dissolved manganese concentrations compared to the water supply

Criterion

Mercury

Mercury was tested for during each of the sampling events. All the September mercury samples were reported as below detection limits (0.250 µg/L), and all but two of the November and February samples were reported as below detection limits. Sites SC-HARSCO-UPS and SC-USP had measurable concentrations of mercury in November of 0.441 and 0.396, respectively, and sites SC-USP and SC-DSP had measurable concentrations of mercury in February of 0.501 and 0.275, respectively (Figure 10).

The samples with measured concentrations of mercury collected from sites SC-HARSCO-UPS, SC-USP, and SC-DSP each exceeded the mercury chronic aquatic life criterion of 0.01 µg/L.

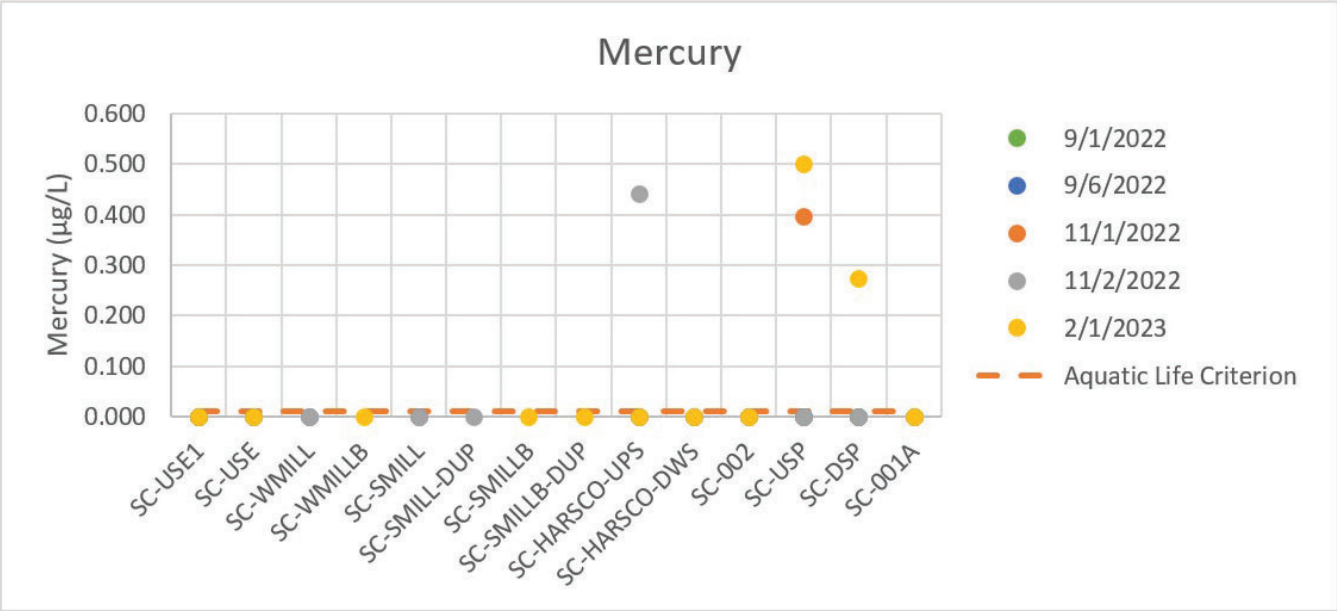

Figure 10 – Mercury concentrations compared to the chronic aquatic life criterion

Total molybdenum

Total molybdenum was tested for during each sampling event and measured concentrations were reported for each sample. Measured concentrations of total molybdenum ranged from 3.7 to 11.0 µg/L, with an average concentration of 7.9 µg/L. Sites adjacent to or downstream of Evraz had concentrations of total molybdenum higher than the concentrations measured at Site SC-USE1, upstream of Evraz. While total molybdenum concentrations are higher at sites adjacent to Evraz, concentrations are below the chronic molybdenum criterion (150 µg/L) for Salt Creek (Segment COARMA04b).

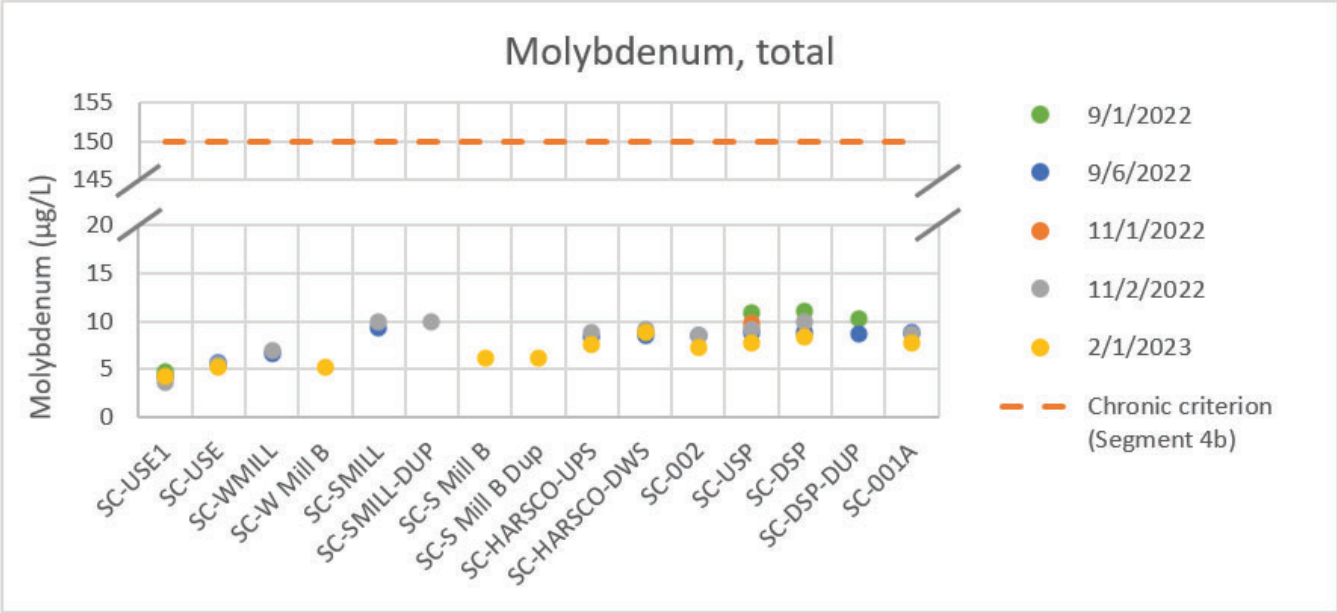

Figure 11 – Total molybdenum concentrations compared to the chronic criterion for Salt Creek

Dissolved uranium

Dissolved uranium was tested for during each sampling event and measured concentrations were reported for each sample. Measured concentrations of dissolved uranium ranged from 3.1 to 7.2 µg/L, with an average concentration of 5.0 µg/L. Sites adjacent to and downstream of Evraz had comparable concentrations of dissolved uranium to Site SC-USE1, upstream of Evraz. Each of the measured concentrations of the dissolved uranium are below the hardness-based chronic aquatic life criterion of 1,605 µg/L (hardness = 154 mg/L).

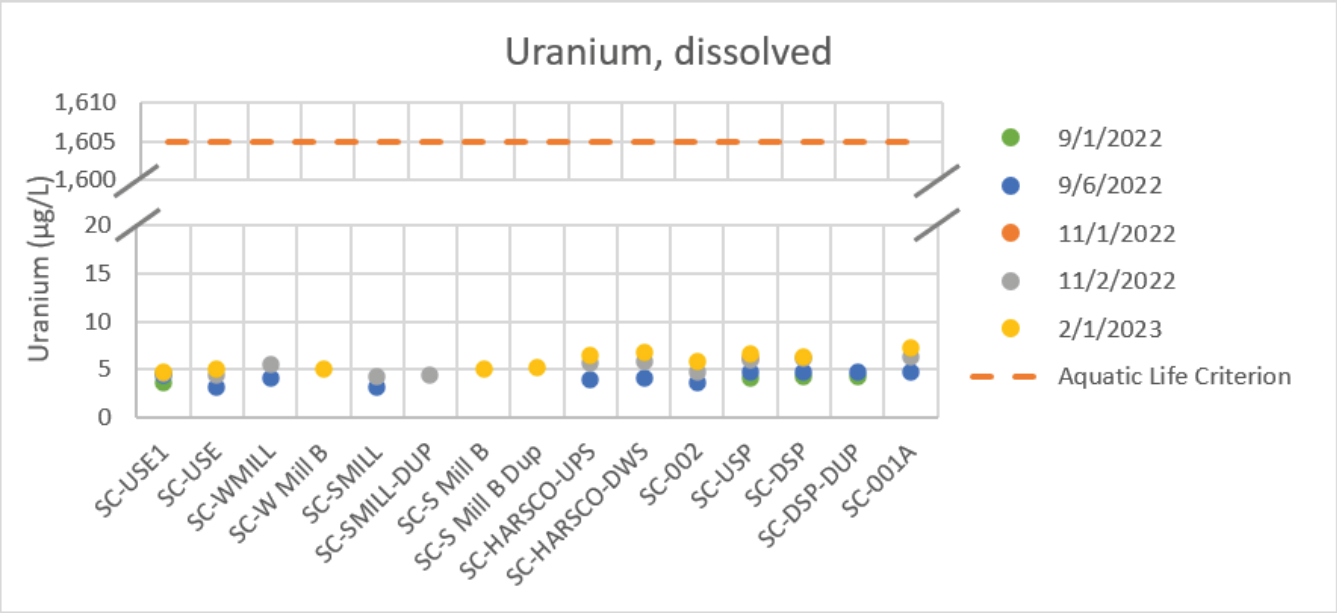

Figure 12 – Dissolved uranium concentrations compared to the hardness-based chronic aquatic life criterion

Dissolved zinc

Dissolved zinc was tested for during each of the sampling events. Measured concentrations of dissolved zinc were reported intermittently in the samples collected in September and February, and each of the samples collected in November had dissolved zinc concentrations below the detection limit (10 µg/L). Based on the limited number measured concentration, trends in the concentrations (i.e., increasing or decreasing throughout the study site) are not clear. When dissolved zinc was measured the concentrations ranged from 18.2 to 64.3 µg/L with an average of 28.6 µg/L. Each of the reported concentrations are below the hardness-based chronic aquatic life criterion of 179 µg/L (hardness = 154 mg/L).

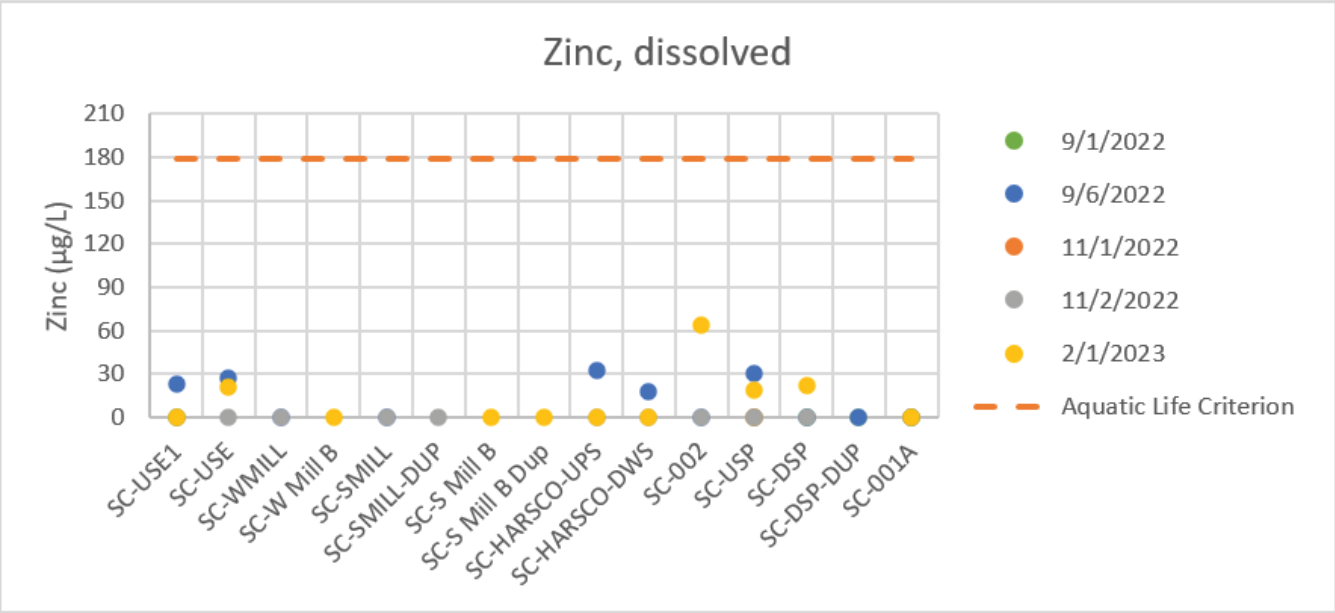

Figure 13 – Dissolved zinc concentrations compared to the hardness-based chronic criterion

In addition to the metals described above, dissolved copper, dissolved chromium, dissolved trivalent chromium, dissolved lead, dissolved selenium, and dissolved silver were also tested for. Concentrations for each of these parameters were reported below their respective detection limits at all sites.

6.2 Inorganics

Ammonia

Ammonia was tested for during each of the three sampling events (see Section 5.3.1 for a discussion on ammonia detections in field blanks). Ammonia concentrations were reported below detection limit of 0.05 mg/L for all but two samples. The two reported ammonia concentrations were from Site SC-USE1, upstream of Evraz, and the duplicate sample collected at Site SC-DSP. Both samples were collected during the September sampling event. Site SC-USE1 had a reported concentration of 0.053 mg/L and Site SC-DSP-DUP had a concentration of 0.09 mg/L. Each of these concentrations are below the pH- and temperature-based chronic aquatic life criterion of 0.5 µg/L.

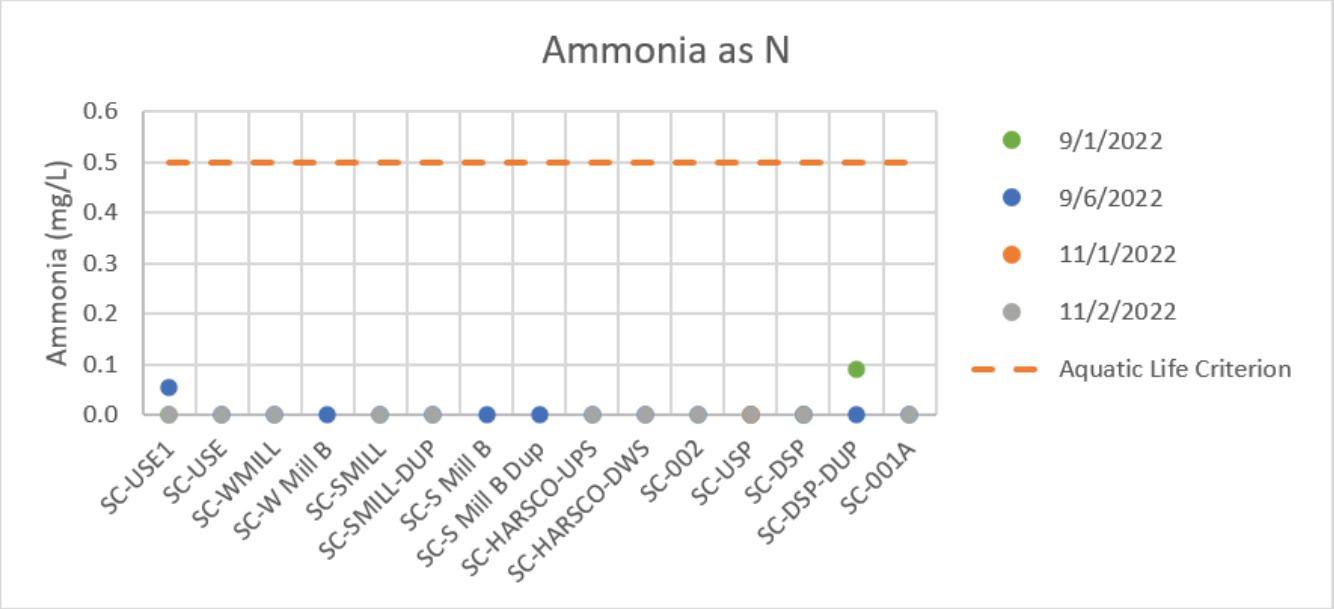

Figure 14 – Ammonia concentrations compared to the pH- and temperature-based chronic aquatic life criterion

Dissolved boron

Dissolved boron was tested for during each of the sampling events and concentrations were generally below the detection limit of 100 µg/L. When dissolved boron was measured, the concentrations ranged from 103 to 170 µg/L, with an average value of 128 µg/L. When dissolved boron was measured, those sites were adjacent to or downstream of Evraz. The reported dissolved boron concentrations were also below chronic criterion (750 µg/L) for Salt Creek (Segment COARMA04b).

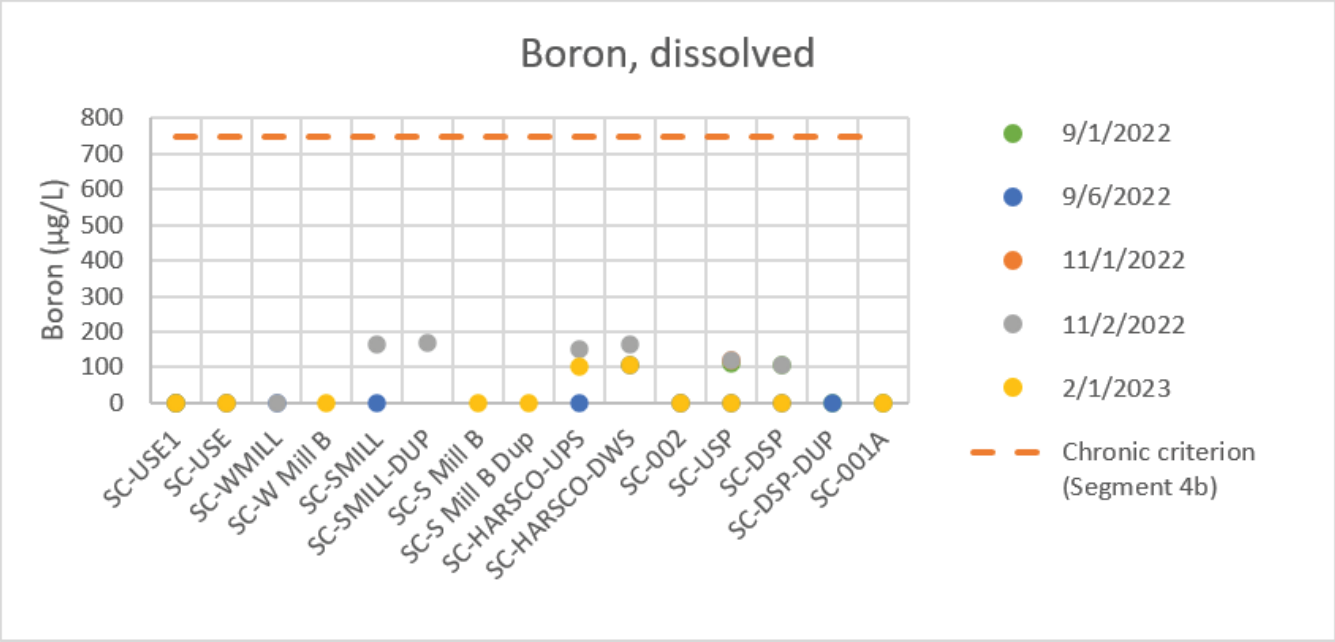

Figure 15 – Dissolved boron concentrations compared to the chronic criterion for Salt Creek

Chloride

Chloride was tested for and measured during each of the sampling events and measurable concentrations were reported for each sample. Concentrations of chloride ranged from 4.9 to 12.8 mg/L, with an average concentration of 7.9 mg/L. Sites adjacent to and downstream of the facility had comparable concentrations of chloride to Site SC-USE1, upstream of the EVRAZ facility. Each of the measured concentrations of the chloride are below the water supply criterion of 250 mg/L.

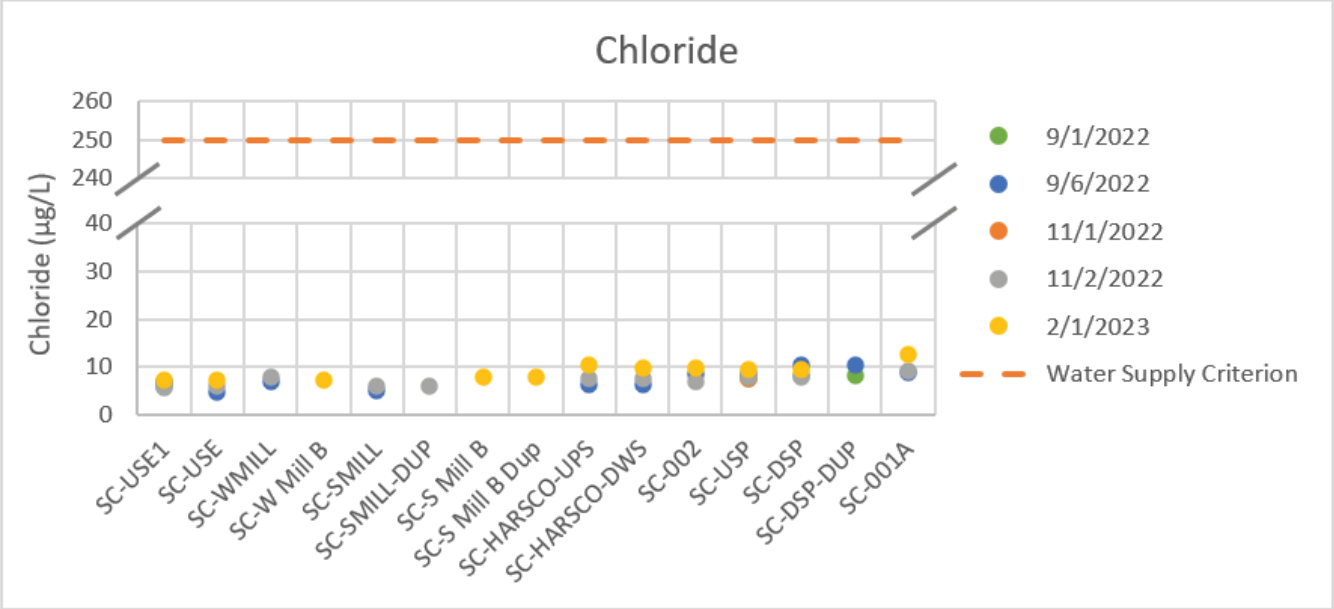

Figure 16 – Chloride concentrations compared to the water supply criterion

Nitrate and nitrite

Nitrate and nitrite were both tested for during each of the sampling events. Measured concentrations of nitrate ranged from 5.5 to 13.6 µg/L, while measured concentrations of nitrite ranged from 64.1 to 254 µg/L. Concentrations reported for both nitrate and nitrite were generally higher at sites SC-002, SC-USP, and SC-DSP, compared to the concentrations at Site SC-USE1, upstream of Evraz. However, all the reported concentrations were below the nitrate water supply criterion of 10,000 and the nitrite chronic criterion of 50 µg/L for Salt Creek (Segment COARMA04b).

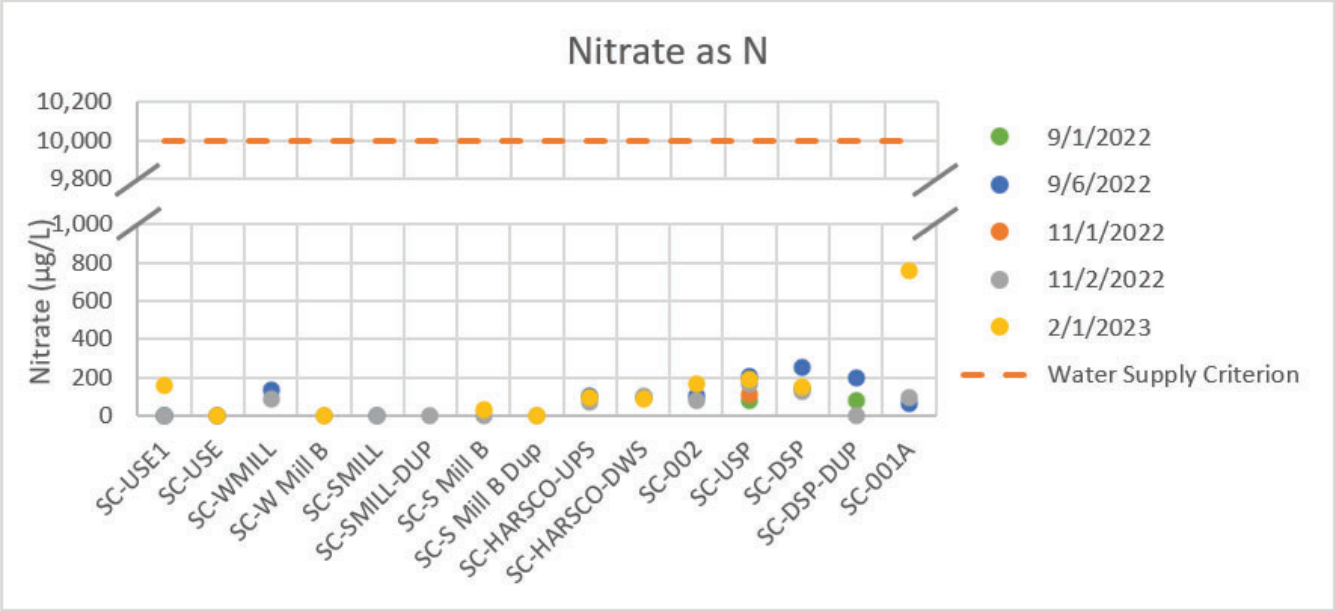

Figure 17 – Nitrate concentrations compared to the water supply criterion

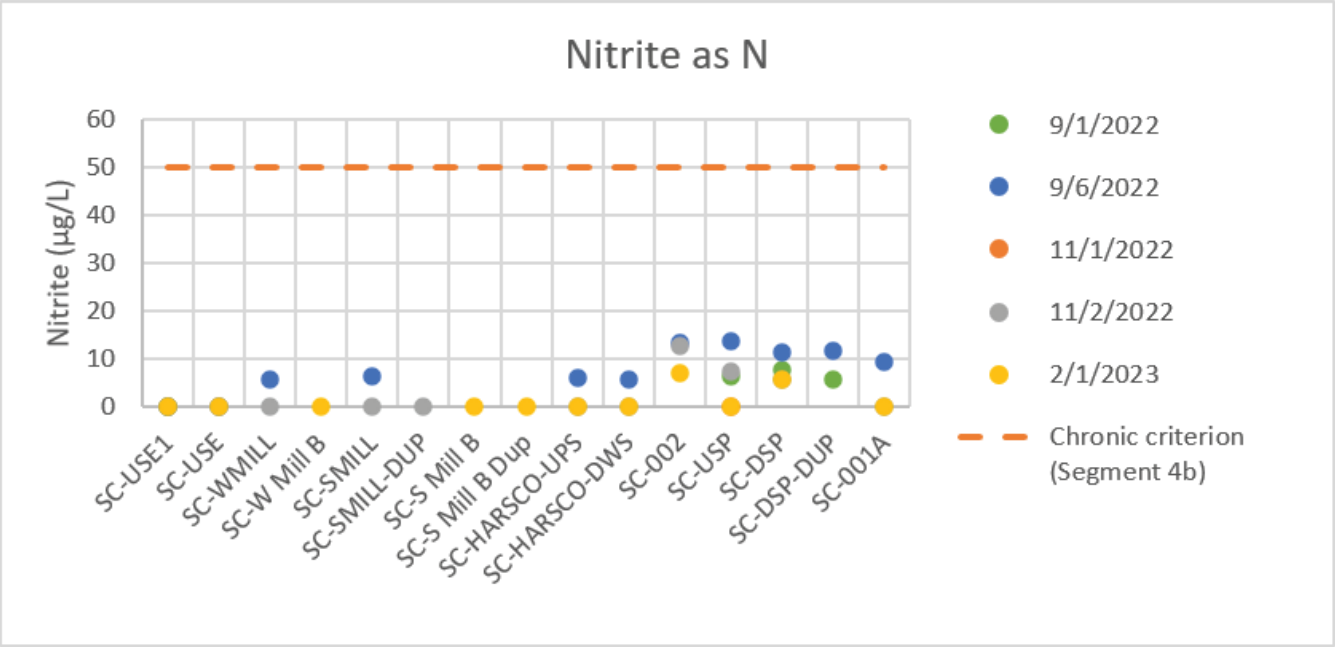

Figure 18 – Nitrite concentrations compared to the chronic criterion for Salt Creek

Orthophosphate

Orthophosphate was tested for and measured during each of the three sampling events (see Sections 5.2.1 and 5.3.1 for a discussion on orthophosphate detections in field blanks). Concentrations of orthophosphate ranged from 20 to 57 µg/L, with an average concentration of 38.6 µg/L. Sites adjacent to and downstream of Evraz had comparable concentrations of orthophosphate to Site SC-USE1, upstream of Evraz. Each of the measured concentrations of orthophosphate are below both the aquatic life-based criterion of 170 µg/L.

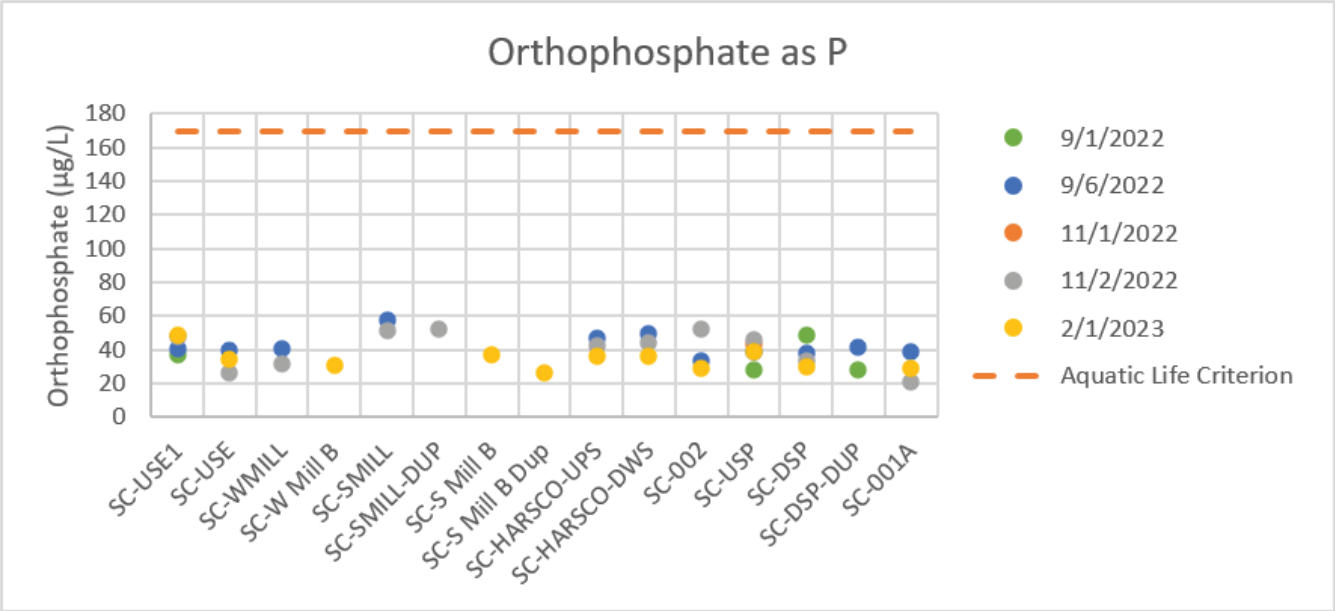

Figure 19 – Orthophosphate concentrations comparted to the aquatic life criterion

Sulfate

Sulfate was tested for and measured during each of the sampling events. Sulfate concentrations ranged from 53 to 165 mg/L, with an average concentration of 101 mg/L. Sites adjacent to or downstream of Evraz had concentrations of sulfate higher than the concentrations measured at Site SC-USE1, upstream of Evraz. While sulfate concentrations are higher at sites adjacent to Evraz, concentrations are below the statewide water supply criterion of 250 mg/L.

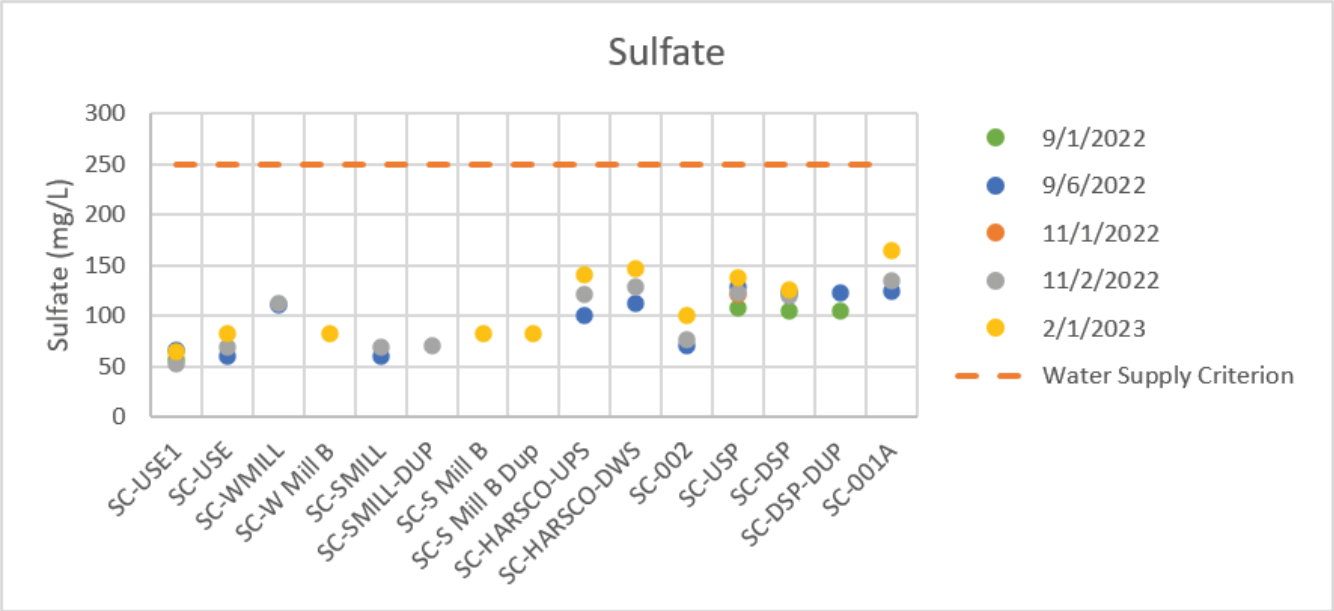

Figure 20 – Sulfate concentrations compared to the water supply criterion

6.3 Per- and Polyfluorinated Substances

A total of 31 per- and polyfluorinated Substances (PFAS) were tested for during each of the three sampling events (Table 3). Measured concentrations of two PFAS were detected in five samples. The PFAS compounds that were detected in the analysis include, 1H,1H,2H,2H-perfluorooctane sulfonate (6:2 FTS), which was detected in three samples, and heptafluoropropoxy-propanoic acid (HFPO-DA), which was detected in two samples. The remaining PFAS compounds were reported below their respective detection limits.

1H,1H,2H,2H-Perfluorooctane sulfonate (6:2 FTS) was measured at sites SC-SMILL and SC-HARSCO-UPS during the 9/6/2022 sampling event, and at Site SC-USE during the 11/2/2022 sampling event. Measured concentrations ranged from 20.5 to 66.1 ng/L, with an average concentration of 40.0 ng/L. There are insufficient measured concentrations to determine whether concentrations are increasing or decreasing at sites adjacent to and downstream of Evraz. There are no established toxicological thresholds for 1H,1H,2H,2H-Perfluorooctane sulfonate (6:2 FTS) at this time.

Heptafluoropropoxy-propanoic acid (HFPO-DA) was measured at sites SC-HARSO-UPS and SC-USP during the 9/6/2022 sampling event at concentrations of 54.6 and 58.1 ng/L, respectively. There are insufficient measured concentrations to determine whether concentrations are increasing or decreasing at sites adjacent to and downstream of Evraz. The measured concentrations of heptafluoropropoxy-propanoic acid (HFPO-DA) reported at sites SC-HARSO-UPS and SC-USP exceed the EPA's health advisory value of 10 ng/L established for the PFAS GenX chemicals, which heptafluoropropoxy-propanoic acid (HFPO-DA) belongs to.

6.4 Volatile Organic Compounds and Diesel Range Organics

Prior to the February 2023 sampling 77 additional parameters were added to the suite of analytes. The suite of additional 77 parameters are broadly categorized as VOCs and DROs (Table 4). Each of the VOC and DRO parameters that were not flagged (Section 5.3.1) were reported below their respective detection limits.

7 Attachments:

- EVRAZ_SaltCreek_QAPPv0__08102022
  - Addendum 1_to EVRAZ_SaltCreek_QAPP_Table 4 and Figure 2 Update
  - Addendum 2_to EVRAZ_SaltCreek_QAPP_Mercury shipping
- LSASD_EVRAZ_SaltCreek_QAPP_R01_QAB_F_20230130
- Addendum 1_to EVRAZ_SaltCreek_QAPP_Rev1_Table 4 and Figure 2 Update
- EPA Analytical Reports
  - EPA Region 8
    - September 1, 2022
    - September 6, 2022
    - November 1, 2022
    - November 2, 2022
    - February 1, 2023
  - EPA Region 7
    - September 1, 2022
    - September 6, 2022
    - November 1, 2022
    - November 2, 2022
    - February 1, 2023
  - CDPHE
    - September 1, 2022
    - September 6, 2022
    - February 1, 2023
- Evraz/Salt Creek Sampling Photologs
  - September 1, 2022
  - September 6, 2022
  - November 1, 2022
  - November 2, 2022
  - February 1, 2023