United States Environmental Protection Agency
Office of Enforcement and Compliance Assurance
Office of Criminal Enforcement, Forensics and Training

National Enforcement Investigations Center

NEIC

NEICVP1510E02
Replacement Report

NEIC CIVIL INVESTIGATION REPORT

EVRAZ Rocky Mountain Steel
Pueblo, Colorado

Investigation Dates:
June 12-28, 2023

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A* Field Inspection Photographs (94 pages)
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C* NEIC Chain of Custody (2 pages)
D Region 8 Laboratory Results (18 pages)
E Colorado Analytical Laboratory Report (53 pages)
F CDPHE Permit CO0000621 (26 pages)
G EVRAZ Quick Corrective Action Photographs (12 pages)
H CDPHE 2022 Inspection Report (8 pages)
I EVRAZ Solid Waste Management Unit Flooding (6 pages)
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INTRODUCTION

This report (NEICVP1510E02) replaces the following U.S. Environmental Protection Agency (EPA) National Enforcement Investigations Center (NEIC) report in its entirety: NEICVP1510E01 (November 2023). This replacement was necessary to correct the following errors: grammatical errors, incorrect page numbers listed in the table of contents and other editorial corrections.

This report summarizes on-site field activities performed on June 12-16, 2023, and June 27-28, 2023, as well as the subsequent analysis of samples at the NEIC laboratory in Denver, Colorado.

INVESTIGATION OVERVIEW

PROJECT OBJECTIVE

U.S. Environmental Protection Agency (EPA) Region 8 requested EPA's National Enforcement Investigations Center (NEIC) to conduct a process-based inspection with sampling of the EVRAZ Rocky Mountain Steel (EVRAZ) facility located at 2100 South Freeway, Pueblo, Colorado. The purpose of the inspection was to identify waste streams generated by the facility's operations, gather information on pollutants being generated and discharged from the facility, and make observations related to EVRAZ's compliance with the Clean Water Act (CWA), 40 Code of Federal Regulations (CFR), including effluent limitations in the Iron and Steel Manufacturing Point Source Category found at 40 C.F.R. Part 420 and Colorado Discharge Permit System (CDPS) permit requirements.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	**Organization**	**Project Role**
Trent Rainey	NEIC	Project manager
Hannah Branning	NEIC	Field team member
Mike Solter	NEIC	Field team member
Tanner Cheney	NEIC	Analytical project manager
Allison Vaughan	NEIC	Laboratory team member
Richard Martinez	NEIC	Laboratory team member
Matt Moan	NEIC	Laboratory team member
Joe Lowry	NEIC	Laboratory team member
REGIONAL AND OTHER CONTACTS		
Stephanie Meyers	EPA Region 8	Regional field team member
Al Garcia	EPA Region 8	Regional field team member

FACILITY CONTACT INFORMATION

Table 2 lists the contact information of the primary facility contacts and facility representatives present at tours of the EVRAZ facilities.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	**Phone No.**	**Email Address**
James Rodacy, Environmental Manager	(b) (6)	james.rodacy@evrazna.com
Dimitry Belov, Senior Director of Operations	(b) (6)	dimitry.belov@evrazna.com
Alex Bechthold, Senior Environmental Engineer	(b) (6)	alex.bechthold@evrazna.com
Sean Kitchel, Vice President, Environmental Health and Safety	(b) (6)	sean.kitchel@evrazna.com
Nathan Hoffmeyer, Environmental Specialist	(b) (6)	nathan.hoffmeyer@evrazna.com
EVRAZ Facility	**Name**	**Title**
Electric Arc Furnace (EAF)/Steelmaking	Dave Rider	General Supervisor

Table 2. FACILITY CONTACT INFORMATION		
EAF/Steelmaking	Darry Braden	Operations Excellence Analyst
Harsco/Enviri – slag reclamation	Cody Bell	Production Supervisor – Slag
Harsco/Enviri – scrap reclamation	Simon Ayala	Production Supervisor – Scrap
Rod and Bar Mill	Dylan Millard	Supervisor
Seamless Tube Mill	Dave DiSalvo	Fill-in Foreman
Rail Mill	Chad Ones	Superintendent

FACILITY OVERVIEW

According to the EPA Enforcement and Compliance History Online (ECHO) database, the facility (EPA Registry Identification No. 110000467833) has the following Standard Industrial Classification code for the CWA (**Table 3**):

Table 3. APPLICABLE SIC/NAICS CODES	
NAICS Code	**Description**
3312 (SIC)	Blast Furnaces and Steel Mills

FACILITY OPERATIONS SUMMARY

EVRAZ is a steel production and forming plant. The original facility began operations in 1872 as a fully integrated steel mill including coking and blast furnaces for producing steel from raw ores. The facility last operated and decommissioned the blast furnace and coking operations in the early 1980's, which coincided with the mill operations idling due to the steel industry crash and subsequent bankruptcy proceedings. In 2005, operations recommenced with the installation of an electric arc furnace (EAF) in place of the blast furnaces of the original mill. EVRAZ produces up to 1.2 million tons of steel products annually, from raw material that is 97% recycled scrap. The facility employs approximately 1,000 individuals on site, and operates 24 hours a day, 7 days a week.

Process water for the facility is drawn from the Saint Charles Reservoir Number 2 through intake 003I and piped to the facility. The overall site is divided into the North Mill and South Mill areas. The boundary between the two mills is defined by the Bessemer Ditch, a privately owned open irrigation channel, owned, and operated by the Bessemer Ditch Company. The EAF, the scrap yard, and the current rail mill are located within the North Mill. The rod and bar mill, the seamless tube mill, and the future rail mill construction site are located within the South Mill. The Davis Wire Mill which made steel nails, spikes, and wire products is also located in the South Mill but closed operations in 2015. Three additional companies operate on the EVRAZ property. Enviri (formerly Harsco Metals and Minerals), a tenant company, manages the onsite scrap yard and slag processing. Acorn Petroleum manages fuel, used oil, and grease from the steel making processes. Colorado and Wyoming Railway, a subsidiary of EVRAZ, operates a 4.5 mile long switching line connecting the Union Pacific and Burlington Northern Santa Fe

Railroads. EVRAZ also owns and operates two offsite scrap yards located in Denver and Colorado Springs.

Solid Waste Management Units

EVRAZ is a Resource Conservation and Recovery Act (RCRA) permitted treatment, storage, and disposal facility (TSDF) that performs RCRA corrective action of solid waste management units (SWMUs). Across the EVRAZ facility are 82 SWMUs, defined as any discernible units at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid hazardous waste. Some of the larger SWMUs include the former location of the old coke plant, the final treatment lagoons, and the south dump site. The old coke plant location contains multiple SWMUs due to the extent of contamination on site from coke by-products and the distillation of coal. To manage SWMUs, EVRAZ conducts clean-up and groundwater monitoring efforts. If EVRAZ determines a SWMU has no further contamination, a determination of no further action (NFA) can be submitted for approval by the Colorado Department of Public Health and Environment (CDPHE). Currently, there are still active RCRA corrective actions of SWMUs at the facility. Photographs of the SWMUs and the facility operations described below can be found in **Appendix A**.

North Mill Operations

Scrap Yard

Scrap steel is sourced from offsite scrapping operations operated by EVRAZ as well as other scrap dealers. Up to 50% of scrap steel is sourced from operations operated by EVRAZ in Denver and Colorado Springs. Enviri manages the scrap yard. Scrap is brought in by rail or truck, separated according to type and grade, inspected to ensure no illicit material or hazardous waste is included, and checked for radiation. The scrap is then stored in piles outside on the ground according to type just east of the EAF building until it is charged into the EAF ladle. Stormwater runoff from the area collects to the northeastern end of the scrap yard where it flows via various conveyances to the North Mill Treatment System.

Steelmaking/Electric Arc Furnace

As mentioned previously, scrap is the primary input for the steel making process. Scrap is pulled from the piles in the scrap yard and loaded into rail cars based on the copper content and the type of steel being created. EVRAZ uses 15 to 18 different scrap recipes for making steel. Once the rail cars are full, they are moved to the scrap bay located on the east side of the EAF building. The rail cars are further sorted into six tracks of scrap based on the contents. A crane operator using a human-machine interface computer pulls the correct amounts of scrap from the rail cars and loads it into a large ladle. The ladle is then transferred, or charged, into the

EAF. The facility charges a ladle approximately every two hours. Each charge contains approximately 130 tons of scrap. An electric current, supplemented with natural gas, is used to melt the scrap (smelt) to approximately 2,900 degrees Fahrenheit (° F). Any metal impurities (slag) float to the top of the ladle. The slag is poured off the top of the ladle into a slag pit located under the EAF to cool before handling. Slag is processed onsite by Enviri for use as material for road and railbed construction. The smelt is then transferred to another ladle. Ferro alloys are added, and the ladle is then transferred to the ladle refining furnace, where argon is bubbled through the ladle to stir the contents and electrodes are introduced to maintain temperature during the chemical addition of powdered alloys to achieve the appropriate finished steel chemistry.

From the refining furnace, the smelt is transferred to an intermediate vessel called a tundish and can either go to the Demag caster or the vacuum tank degasser (VTD). Molten steel used to make rod, bar, and seamless tube are sent to the Demag caster to form round billets of various diameters through tundish molds. The tundish molds are cooled through a closed loop non-contact cooling water system using plate heat exchangers. After the billets are formed by the tundish molds, water is sprayed onto the billets to help form an outer shell. The 7.5-inch diameter billets are produced for use in the rod and bar mill, 8.0-inch diameter billets are produced for the seamless pipe mill, and 12.25-inch diameter billets are produced for the rail mills. The produced billets are fed into a sprayer vault where high pressure water arranged in three cooling zones and six strands of spray nozzles per cooling zone are used to remove scale and cool the billets. According to EVRAZ personnel, the facility uses approximately 110 gallons per minute of water per cooling zone. The scale and wastewater generated in this operation is collected and transported through a sluiceway into a scale pit, located on the east side of the facility. The scale pit is approximately 30-feet by 60-feet by 25-feet deep. The cooled billets enter three straighteners to ensure conformity; these straighteners are water cooled through 18 strands. The cooling water from the straighteners is also transported to the scale pit through the sluiceway. After the billets are straightened, a cutting torch is used to cut the billets into 20-foot lengths for the 12.75-inch diameter billets and 40-foot lengths for the 7 and 8-inch diameter billets. The cut billets, or blooms, are allowed to cool before transport to the mills.

Scale is removed from the scale pits weekly. The scale pit is cleaned annually according to facility representatives. Water in the scale pit is passed through a sand filter and recycled to the descaling operation. Scale is sent to the Enviri facility for metals recovery and processing.

For rail products, the ladle is transferred to the VTD. In the VTD, the ladle is set into a vessel and a hood is lowered. A vacuum is created to a pounds per square inch (psi) of 0 for about 7 to 12 minutes and argon gas is bubbled through the smelt to stir the steel and remove gaseous impurities such as hydrogen and nitrogen. The purified steel from the VTD operation is then

poured into the Demag caster to produce the 12.25-inch diameter round billets. The off gases from the VTD are captured by a vacuum created by steam. The steam is condensed and discharged into a 10,000-gallon seal tank. In the seal tank, the off gases are separated from the condensed water and passed to a natural gas burner for destruction, while the condensed water is sent to a cooling tower. Water collected in the cooling tower basin is pumped to a Dissolved Air Floatation (DAF) system. The DAF separates solids collected in the VTD water. Supernatant from the DAF is returned to the cooling tower basin. The solids are deposited in a Geobag to further dewater. The dewatering filtrate discharges to the process sewer and is sent to the North Mill's treatment system. The dewatered solids are disposed of at the Midway landfill.

Rail Mill

The 12.25-inch rail billets, called blooms, produce both standard train rails and special duty train rails used in coal train rail systems. The rail mill produces seven types of rails, depending on the bloom chemistries established in the EAF operations. The blooms are fed into a walking beam reheat furnace through a charged bed of rollers for 2.5 to 3 hours at 2,150 ° F. The reheat furnace is fueled by natural gas and has the capability of reheating up to 85 blooms at a time. After reheating, the blooms are descaled using a high-pressure water ring, consisting of eight spray nozzles at 1,800 psi. A large crop shear pit is constructed under the descaling operations to collect water and scale. The scale and water fall into a rail car in the crop shear pit and located under the descaler. The rail car transports the collected scale and water up to grade and is dumped into the west scale pit. The crop shear pit also collects bypass water generated from the breakdown mill. Excess scale and water in the crop shear pit are pumped out to the west scale pit.

The descaled blooms are fed into the break down mill where they make seven passes on 36-inch roller stands to reduce the diameter size while lengthening the billet. After the break down mill, the blooms are fed into the rolling mill where they make six passes in four roller stands (rougher/#1 intermediate/#2 intermediate/finisher) designed to shape the blooms into the rail head/web/base configuration and lengthen the blooms to 185 – 190 feet long. Mill water to cool and lubricate the rollers in the breakdown and rolling mills are collected and transported through a sluiceway into the east scale pit. A 52-inch hot saw crops off the front end of the rail, cuts the rail into two 85-foot sections, and then crops off the back end of the rail. The rails are ID stamped in three different locations along the rail and are then placed in the Line Stack Quench (LSQ) head hardening south and north units to heat treat the top of the rail. The standard rail grade product does not undergo hardening in the LSQ. Scale from the head hardening operation is collected and transported to the east scale pit. After heat treatment, the rails are inspected and then placed on a cooling bed for 10 to 15 minutes. The cooled rails are

sent down a roll line and picked up in stacks of 11 with a crane and put into cooling racks to cool to ambient temperature.

The cooled rails are sent to the finishing mill where the rails are put through a roller for horizontal and vertical straightening. The straightener roller uses a self-contained lubrication system that is not changed unless the roller needs to be rebuilt. According to facility representatives, the contaminated lubricant is shipped off site. The straightened rail is subjected to nondestructive testing (NDT) using a suite of NDT tools such as cameras, lasers, eddy current, and ultrasonic. The rails are then cropped to 80-foot sections, inspected, bar-coded, and prepared for shipping or sent to a separate company located onsite (Holland) for welding and then shipping.

The east and west scale pits provide collection and detention of wastewaters generated in the rail mill for solids to settle. The pits have an overflow weir which leads to the industrial sewer that transports process wastewater to the North Mill treatment system. The facility has installed an oil skimmer that consists of a boom on a roller that is continually rotated to collect residual oil in the wastewater. The oil is collected in a 500-gallon collection bin, which is serviced by Thermofluids, according to facility representatives. Scale in the pits is collected by Enviri.

North Mill Treatment System

The North Mill's wastewater treatment system consists of an open channel opening into a triangular shaped settling pond, approximately 200-feet by 200-feet by 250-feet in size. It collects process wastewater transported from the North Mill unit operations through the industrial sewer conveyance system, including the steelmaking facility operations (EAF, LRF, VTD, caster and straighteners) and rail mill operations. In addition, the treatment pond receives treated sanitary wastewater effluent from the domestic wastewater treatment plant, stormwater, and groundwater seepage. The treatment pond was designed to provide detention to allow solids to settle and oily substances to float. The treatment pond discharges through a box shaped standpipe and flows through an open channel approximately 500 feet leading to Salt Creek. The top of the standpipe is equipped with a baffle that forces water to pass under, retaining oil and other floatable debris on the surface. An oil skimmer collects additional floating oil along the surface and discharges it into a metal holding tank. The pipe was flowing continuously at the time of the inspection.

There is also a concrete stormwater conveyance channel that carries stormwater runoff from Harlem Road in the North Mill to a channel that then flows to the North Mill treatment system.

Slag Recovery

Enviri operates a slag recovery operation along the north side of the Bessemer Ditch at the east side of the EVRAZ property. The slag from the steelmaking heats is deposited in a slag pit which is collected by Enviri after each heat using loaders and transport trucks. The steelmaking facility produces about ten to twelve heats per 12-hour shift and approximately 30 tons of slag is produced from each heat. The slag from the steelmaking slag pit is transported to the Environmental Building in the slag recovery operation where it is deposited into four covered bays. Enviri uses one bay at a time to collect the production day's generation of slag and rotates bays. The slag is stockpiled in the bay, sprayed with water, and allowed to cool for 24 hours. Once cooled, the slag is moved into piles outside the Metal Recovery building. The slag is crushed, and any steel is recovered with magnetic separators and returned to the scrap yard area east of the EAF building. The remaining slag material is processed through a series of shakers to remove smaller sized metal objects and fines and graded according to size and usage such as road base, ballast, and mill scale.

Groundwater Ponds

Near the northeast corner of the facility just south of the North Mill treatment system, are what facility representatives refer to as two groundwater ponds. These two ponds collect groundwater flow via piping and channels.

Groundwater also seeps from the east side of SWMU #2 and flows towards Salt Creek via piping and channels.

Sanitary Wastewater Treatment Plant

The sanitary wastewater treatment plant is an activated sludge biological treatment system. It is designed for up to one million gallons per day (MGD) but averages approximately 0.25 MGD. Wastewater enters the plant through a Parshall flume and passes through a comminutor. Flow is split between two aerated and lined lagoons. Each lagoon is approximately 100 feet long and 42 feet wide. Effluent from the lagoons discharge to a circular clarifier, which has a diameter of approximately 55 feet. Waste solids from the clarifier are pumped down when the sludge blanket depth reaches 10 inches below the surface. The waste solids are dewatered on two sand drying beds and then disposed. Effluent from the clarifier passes through an out of service chlorine contact tank, then discharges to the North Mill treatment lagoon through outfall 002A.

South Mill Operations

Rod and Bar Mill

The 7.5-inch billets from the EAF are stored in a billet yard attached to the rod and bar mill. Billets are fed into a reheat furnace. Once at the desired temperature, the billets are fed through a series of mills to reduce diameter, shape the configuration, and lengthen the billet into the final product:

- The breakdown mill consists of four stands – two stands milling the horizontal axis and two stands milling the vertical axis of the billets. The billets are rotated after each pass. The facility has a 600-gallon hydraulic oil sump which continually feeds the stands through spray nozzles. According to facility representatives, the spent oil in the sumps along the series of mills are evacuated approximately every three years by pumping the contents into vats and new oil is added.
- The roughing mill has six stands. The roughing mill stands are lubricated with hydraulic oil through spray nozzles fed by a 2,200-gallon sump.
- The crop cobble shear has eight stands.
- At the intermediate finishing mill, the billets are sent to two parallel east and west mills. The intermediate finishing mill consists of 11 or 12 stands to mill the horizontal and vertical axis of the billet.
- The billets enter a prenode twist consisting of series of air stripping and water stripping to pull off scale. Every rolling process, except for the crop cobble shear, in the Rod and Bar mill generates scale. High pressure water is sprayed on the billets prior to entering the series of mills to remove scale. The wastewater generated from the water spray is collected in a sluiceway and transported to the scale pits.
- At the 18 crop and divide shear, the front and tail ends of the bar are sheared/cut off.
- At the side looper table, the hot metal rod is sprayed with water to cool and relieve tension in the rod, and to remove scale.

The cooled metal rod is fed into an entry trough leading to the no twist V-block mill. The guide rollers for the entry trough are sprayed with oil for lubrication. The V-block consists of 10 stands along roll modules for final sizing. The no twist V-block roll modules are also lubricated with oil. The facility has a 16,000-gallon oil container stored inside the building that feeds the entry trough and V-block rollers. The rods enter cooling zones consisting of up to five water boxes equipped with water sprayers. The rod is fed onto a Stelmor conveyor and then into a reform mandrel which forms the rolled coils. The rolled coils are loaded onto a coil cart, washed in one of two large spray water wash stations (40 spray nozzles at 35 psi) to remove residual oils, scale, and provide cooling, inspected, then compacted for transportation.

The wastewater from the rod and bar mill consisting of water sprays along the mills, shears, coiling and washing operations are collected and conveyed through a sluiceway to the scale pits located along the east side of the building. In addition, the facility has numerous floor drains throughout the building which lead to the scale pits. Scale is collected by Enviri, and the wastewater is discharged to the industrial sewer conveyance system leading to the South Mill treatment system.

Seamless Pipe Mill

The 8-inch billets from the EAF are stored in the billet yard attached to the seamless pipe mill. Billets are loaded onto a charger bed, may be cut to length as necessary using torches and reheated in a rotary furnace. Once the billet reaches temperature, the billets are fed onto a discharger conveyor, which carries the billets through the #1 piercer to begin the process of piercing a hole through the billet to the specified outer and inner diameters and form a tube. The billet then proceeds to the #2 piercer to expand and elongate the hole in the billet. The billet is then fed into a plug mill which adjusts the pipe to the proper length and diameter. Water sprays are used along the milling process to remove scale developed in the process. The final outside diameter is achieved in a 7-stand sizing mill. After the plug mill, the pipes are sent through two reelers where any excess scale is removed. After the reelers, the pipes are laid on a cooling bed which employs cooling air and a water quench spray. The pipes are then passed through a straightener and tested using non-destructive testing (NDT) methods. Any defects detected in the NDT process may be corrected using various methods such as manual grinding. The pipes tested are then stored outside for a specified time. The pipes are brought back inside the facility for heat treatment and annealing through natural gas furnaces, followed by a water quench to harden the metal. The pipes are then allowed to air cool.

After cooling, the pipe is moved to the finishing floor where it is inspected and painted with a band to indicate the size. Approximately 1-foot ends on each side are cut off and stencils applied. The pipes are hydrotested and tested for integrity related to field drilling applications, then sprayed with a water-based protective coating named z-shield. Threading the pipe ends is the last step before shipping. The thread line has coolant pits to store and collect coolant used in the threading cutting tools.

Three scale pits located inside the seamless pipe mill collect scale and wastewater during the process. According to facility representatives, approximately 90% of wastewater in this facility is generated from cooling water. Scale pit #1 collects scale and wastewater from the furnace, furnace discharger, and the #1 piercer. Scale pit #2 collects scale and wastewater from the #2 piercer, plug mill, and two reelers. Scale pit #3 collects scale and wastewater from the sizing mill and straightener. Scale is collected by Enviri, oil is collected, and the wastewater is

discharged to the industrial sewer conveyance system leading to the South Mill Treatment System.

Palmer Project

A new rail mill, referred to as the Palmer Project, is under construction in the South Mill area. It will replace the existing rail mill when completed. The project is expected to be completed and operational in 2025.

South Mill Treatment System

The South Mill treatment system collects contact and non-contact water generated from the rod and bar mill and from the seamless pipe mill. The wastewaters from these mills are collected in scale pits which discharge into the industrial sewer system, which convey wastewater to the South Mill treatment system. The wastewater from the two mills discharges into a 50-foot diameter circular clarifier. The solids in the clarifier are allowed to settle and the water is fed into nine mixed media (anthracite, sand, and garnet) filters that have a feed rate capacity of 3,000 gallons per minute. Filter backwash is controlled automatically. The South Mill treatment system has a total of four lagoons north of the clarifier. Three of the smaller lagoons are located on the west side and the larger lagoon is located on the east side of the treatment system. Settled solids from the clarifier and the filter backwash are sent into two lagoons. The lagoons allow for solids to continue to settle before the water flows into the larger west polishing pond. According to facility representatives, settled solids are periodically dredged from the ponds and landfilled. Treated effluent from the sand filters discharges to a polishing pond. The facility has installed oil booms in the larger polishing pond to collect floating oil along the surface of the polishing pond before the final effluent is discharged north about 50 feet through a culvert and into Salt Creek. An oil skimmer is installed at the discharge point from the polishing pond to collect oil from the water as it is discharged to Salt Creek.

The South Mill treatment system also has a contingency treatment pond named the Black Lake for use when the clarifier is down for maintenance. The Black Lake is located approximately 475 feet to the west of the clarifier. The facility will close the discharge valve to the clarifier that forces the wastewater in the industrial sewer system to backflow into a grate leading into the Black Lake. The Black Lake contingency pond is sized to provide an approximately 15-minute detention time and oil booms are used to collect oil. The wastewater in the Black Lake overflows out of the lake through a short effluent slope and into a collection basin. A drain located in this collection basin leads to the sluiceway to Salt Creek.

Final Treatment Lagoons and Outfalls

Water from the North Mill, South Mill, and sanitary treatment plant travels approximately four miles in Salt Creek before entering two treatment lagoons. Water enters the first lagoon known as SWMU 11 which was formerly called the old final treatment lagoon. SWMU 11 has a surface area of approximately 6 acres. After water flows through SWMU 11, it enters SWMU 10, formerly called the new final treatment lagoon. SWMU 10 has a surface area of approximately 52 acres. Both lagoons function as large settling ponds and form the final step of treatment before effluent water is discharged through Outfall 001A into the Arkansas River. Discharge from SWMU 10 passes through a 10-foot Parshall flume where flow depth is measured with an ultrasonic sensor. Oil booms are installed to collect any remaining oil prior to the outfall. Compliance samples are collected with a refrigerated ISCO automatic sampler.

FIELD ACTIVITIES SUMMARY

The inspection was conducted in two phases. NEIC conducted the field inspection from June 12-16, 2023. NEIC inspectors, along with the Region 8 inspectors, arrived at the facility at 8 a.m. on June 12, 2023, at which time credentials were presented to the facility contacts listed in **Table 2**. NEIC led an opening conference that explained the purpose and scope of the inspection. After the opening conference, facility representatives gave EPA inspectors a safety orientation and an overview of the facility. At the conclusion of the opening conference, EPA inspectors were shown around the facility grounds while EVRAZ representatives discussed the operations at each mill and the treatment plants.

During the field inspection, EPA inspectors conducted walkthroughs of each production facility, observed the wastewater treatment systems, reviewed records, and identified potential locations for collecting samples. Photographs taken during the field inspection can be found in **Appendix A**. After completing the field inspection, on June 16, 2023, NEIC and Region 8 inspectors held a closing conference with facility representatives and discussed initial observations and the inspection report timeline. The locations and timing to return and collect samples was also discussed and agreed on. EPA inspectors departed the closing conference at approximately 12:45 p.m. on June 16, 2023.

Measurement and Sampling Activities

On June 27, 2023, NEIC inspectors arrived at the facility at 8:00 a.m. to collect samples from the locations discussed with facility representatives during the closing conference on June 16, 2023. **Figure 1** is a map of the EVRAZ facility indicating the approximate sampling locations.

Figure 1. A satellite image of the EVRAZ facility indicating the approximate sampling locations on June 27-28, 2023.

Consent was obtained from the Bessemer Ditch Company to install two ISCO automatic samplers in the Bessemer Ditch. The first ISCO sampler (Station 13) was installed on a pedestrian bridge located approximately 525 feet downstream from where Bessemer Ditch first crosses the northwestern boundary of the EVRAZ property line. The sampler was programmed to collect a 90-milliliter (mL) sample every 15 minutes for 24 hours. Each aliquot collected was composited into a 9.6-liter glass container preserved with ice in the base of the sampler around the containers. After the sampler was installed, an equipment rinse blank was collected (Station 1) into a 1-liter HDPE bottle. The sampler was secured using a lock and wire cable threaded through the ISCO carrying handles and around the bridge handrail. The sampling program was initiated at 8:44 a.m. The second sampler (Station 14) was installed further downstream after

the Bessemer Ditch crosses Salt Creek on the southeastern border of the EVRAZ facility. The sampler was programmed to collect a 90 mL sample every 15 minutes for 24 hours. Each aliquot was composited into a 9.6-liter glass container preserved on ice in the base of the sampler around the containers. An equipment rinse blank was collected (Station 2), and the sampling program was initiated at 9:26 a.m. The sampler was secured to a metal sign using a steel cable and lock.

After installing and initiating the ISCO automatic samplers, NEIC inspectors began collecting grab samples from selected locations around the facility.

At 3:20 p.m. on June 27, 2023, NEIC inspectors checked the second ISCO sampler (Station 14) at the Bessemer Ditch and discovered the battery on the sampler had failed. The sampler had only collected one 90-mL sample. The decision was made to dispose of the partial composite and to collect grab samples at the same location the following day. At 3:35 p.m. on June 27, 2023, NEIC inspectors checked the first ISCO sampler (Station 13) installed along the Bessemer Ditch to ensure the sampler was still operational. The sampler display showed 28 samples had been collected. NEIC inspectors opened the sampler and added additional ice around the sample container. NEIC inspectors departed the facility at 3:55 p.m. on June 27, 2023.

On June 28, 2023, at 8 a.m., NEIC inspectors arrived at the facility to collect the remaining samples. At 8:10 a.m., NEIC inspectors checked the ISCO sampler (Station 13) and found the battery had also failed before collecting all 96 aliquots. The contents of the sampler jar were apportioned to the separate sample containers and preserved. Insufficient volume had been collected to allow a split with the facility.

The remaining grab samples were collected and preserved. Samples were preserved by placing on ice and stored in coolers at 6 degrees Celsius or below. Samples intended for PFAS analysis were preserved with nitric acid provided by the Region 8 lab and placed in a separate cooler with ice. NEIC inspectors departed the facility at 10:55 a.m. and delivered the samples to the respective analytical labs. Photographs taken during the sampling inspection can be found in **Appendix B**. A copy of the chain of custody record is provided in **Appendix C**.

All environmental measurement activities were performed in accordance with the NEIC quality system. All field sampling, field measurements, and laboratory measurements described in this report are within the scope of NEIC's ISO/IEC 17025 accreditation issued by the ANSI National Accreditation Board (certificate No. FT-0303), except for the analyses conducted by the Region 8 Laboratory and Colorado Analytical Laboratory.

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES					
Location Identifier	**Date and Time**	**Method, and/or Procedure[1], and Equipment**			**Analyst Name**
MEASUREMENTS					
Used to screen location for radiation	06/28/2023 11:35	**NEIC procedure:** *Safety and Sample Screening Instruments,* NEICPROC/17-002 **Instrument guide:** *RadEye B20-ER – Radiation Detection Equipment* **Equipment:** RadEye^{TM} S84633			Trent Rainey
SAMPLING					
Station No.	**Appendix B Photo Nos.**	**Dates and Time**	**Sampling Technique**	**Method, and/or Procedure, and Equipment**	**Sampler Name**
Station 1 (Equipment rinse bank)	100-0047	06/27/2023 08:32	Grab sample using automatic sampler	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **NEIC procedure:** *Monitoring and Sampling Water and/or Wastewater using Automatic Water Samplers,* NEICPROC/00-021 **Equipment:** ISCO automatic sampler, Serial No.: NE46651	Trent Rainey/Mike Solter
Station 2 (Equipment Rinse Blank)	100-0049	06/27/2023 09:13	Grab sample using automatic sampler	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **NEIC procedure:** *Monitoring and Sampling Water and/or Wastewater using Automatic Water Samplers,* NEICPROC/00-021 **Equipment:** ISCO automatic sampler, Serial No.: NE46652	Trent Rainey/Mike Solter
Station 3 Black Lake	100-0051	06/27/2023 10:44	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 4 Black Lake	100-0051	06/27/2023 10:45	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 5a South Mill Discharge	100-0052	06/27/2023 11:56	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 5b South Mill Discharge	100-0052	06/27/2023 11:58	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES					
Station 5c South Mill Discharge	100-0052	06/27/2023 11:59	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 6a South Mill Discharge	100-0052	06/27/2023 12:02	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 6b South Mill Discharge	100-0052	06/27/2023 12:03	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 6c South Mill Discharge	100-0052	06/27/2023 12:05	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 7 North Groundwater Pond	100-0053	06/27/2023 13:40	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 8 North Groundwater Pond	100-0053	06/27/2023 13:40	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051	Trent Rainey/Mike Solter
Station 9 North Mill Groundwater Seep	100-0055	06/27/2023 14:12	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051	Trent Rainey/Mike Solter
Station 10 North Mill Groundwater Seep	100-0055	06/27/2023 14:12	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051	Trent Rainey/Mike Solter
Station 11 North Mill Pipe	100-0056	06/27/2023 15:02	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 12 North Mill Pipe	100-0056	06/27/2023 15:03	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES					
Station 13 Bessemer Ditch Influent	100-0057	06/28/2023 08:21	Composite sample using automatic sampler.	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **NEIC procedure:** *Monitoring and Sampling Water and/or Wastewater using Automatic Water Samplers,* NEICPROC/00-021 **Equipment:** ISCO automatic sampler, Serial No.: NE46651	Trent Rainey/Mike Solter
Station 14 Bessemer Ditch Influent	100-0057	06/28/2023 08:22	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 15 Bessemer Ditch Discharge	100-0058	06/28/2023 09:29	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
Station 16 Bessemer Ditch Discharge	100-0058	06/28/2023 09:28	Direct fill into sample container	**NEIC procedure:** *Water and Wastewater Sampling*, NEICPROC/00-051 **Equipment:** Extendable pole with sample container attached with a chain clamp	Trent Rainey/Mike Solter
[1] The current version of each procedure, at the time of the investigation, was followed.					

Samples collected during the field activities were driven by Trent Rainey and Mike Solter to the NEIC and Region 8 laboratory in Denver, Colorado. Additionally, samples were also driven and delivered by Trent Rainey to the Colorado Analytical Laboratory in Commerce City, Colorado. The results for the Region 8 laboratory report can be found in **Appendix D**. The results from the Colorado Analytical Laboratory report can be found in **Appendix E**.

LABORATORY ACTIVITIES SUMMARY

Tanner Cheney of the laboratory team received the samples at NEIC in Lakewood, Colorado via direct handoff from Trent Rainey on June 29, 2023. The laboratory team analyzed the samples at the NEIC laboratory for cyanide, metals, alkalinity, and selected anions.

Table 5 summarizes the analytical methods followed, as well as the analysts and dates of the analyses. Data quality summaries for all laboratory measurements are maintained in the project file.

Table 5. ANALYTICAL METHOD; ANALYST; AND DATE PERFORMED			
Analytical Method	**NEIC Analyst**	**Samples Analyzed by Method (Station Nos.)**	**Date(s) Performed**
Mercury • Cold vapor atomic absorption by U.S. EPA. 1994. "Method 245.1: Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry." Revision 3.0. Cincinnati, OH, "Modified". • *Elemental Analyses – Hg Analysis by CVAA Instrument Guide,* NEICGUID/18-001	Allison Vaughan	Station 1 Station 2 Station 4 Station 5(a-c) Station 8 Station 9 Station 11 Station 13 Station 15	7/19/23 – 7/24/23
Total cyanide • Manual distillation and Colorimetry by ASTM Method D2036-09: Standard Test Methods for Cyanides in Water, *"Modified"*. *Cyanide Analysis*, NEICPROC/99-018. Lachat MICRO DIST Method Cyanide-1 (QuikChem 10-204-00-1-X)	Tanner Cheney	Station 3 Station 6(a-c) Station 7 Station 10 Station 12 Station 14 Station 16	7/7/23 – 7/11/23
Inorganic anions • U.S. EPA. 1997. "Method 300.1: Determination of Inorganic Anions in Drinking Water by Ion Chromatography," Revision 1.0. Cincinnati, OH, "Modified".	Allison Vaughan	Station 1 Station 2 Station 4 Station 5(a-c) Station 8 Station 9 Station 11 Station 13 Station 15	7/14/23 – 7/17/23
Alkalinity • 2320 Alkalinity B. 2011. Standard Methods For the Examination of Water and Wastewater, 22nd edition, "Modified".	Richard Martinez	Station 1 Station 2 Station 4 Station 5(a-c) Station 8 Station 9 Station 11 Station 13 Station 15	7/26/23 – 7/28/23

Table 5. ANALYTICAL METHOD; ANALYST; AND DATE PERFORMED			
Analytical Method	**NEIC Analyst**	**Samples Analyzed by Method (Station Nos.)**	**Date(s) Performed**
Metals • EPA/600/R-94/111, 'Method 200.2 Sample Preparation Procedure for Spectrochemical Determination of Total Recoverable Elements in Water and Wastes by Inductively Coupled Plasma/Atomic Emission Spectrometry', Revision 2.8, EMMC Version, in Methods for the Determination of Metals in Environmental Samples — Supplement I. USEPA Office of Research and Development, May 1994. *Elemental Analyses - ICP-OES Instrument Guide* or *ICP-MS Instrument Guide*, NEICGUID/18-001 • American Society for Testing and Materials. (2016). ASTM D 5673. Standard test method for elements in water by inductively coupled plasma – mass spectrometry. Annual book of ASTM standards (Vol. 11.02). West Conshohocken, PA: ASTM International, "Modified".	Matt Moan	Station 1 Station 2 Station 4 Station 5(a-c) Station 8 Station 9 Station 11 Station 13 Station 15	7/18/23 – 8/3/23

ANALYTICAL RESULTS

Table 6 summarizes the sample descriptions, alkalinity, and ion chromatography results**.**

Table 6. SAMPLE DESCRIPTION AND SUMMARY OF ALKALINITY AND ION CHROMATOGRAPHY RESULTS							
Station No.	**Station Location/ Description of Sample Location**	**Laboratory Sample Physical Description**	**Alkalinity[1] as $CaCO_3$ (mg/L)**	**Bromide[2] (mg /L)**	**Chloride[2] (mg/L)**	**Fluoride[2] (mg/L)**	**Sulfate[2] (mg/L)**
Station 4	Black Lake	Clear colorless, nonviscous liquid	150	<5	6.8	<5	71
Station 5a	South Mills Discharge	Clear colorless, nonviscous liquid	130	<5	6.8	<5	71
Station 5b	South Mills Discharge	Clear colorless, nonviscous liquid	130	<5	6.8	<5	72
Station 5c	South Mills Discharge	Clear colorless, nonviscous liquid	130	<5	6.8	<5	72

Table 6. SAMPLE DESCRIPTION AND SUMMARY OF ALKALINITY AND ION CHROMATOGRAPHY RESULTS							
Station No.	**Station Location/ Description of Sample Location**	**Laboratory Sample Physical Description**	**Alkalinity[1] as $CaCO_3$ (mg/L)**	**Bromide[2] (mg /L)**	**Chloride[2] (mg/L)**	**Fluoride[2] (mg/L)**	**Sulfate[2] (mg/L)**
Station 8	North Ground Water Pond	Clear colorless, nonviscous liquid	330	<5	30	<5	640
Station 9	North Ground Water Seep	Clear colorless, nonviscous liquid	430	<5	36	<5	330
Station 11	North Mills Pipe	Clear colorless, nonviscous liquid	140	<5	8.6	<5	82
Station 13	Bessemer Ditch Influent	Clear colorless, nonviscous liquid	130	<5	5.0	<5	57
Station 15	Bessemer Ditch Discharge	Clear colorless, nonviscous liquid	130	<5	5.0	<5	57
1. Results obtained after the 40 CFR 136.3 Table II 14 day hold time. 2. Reported values are the average of three separate analyses of the sample.							

Table 7 summarizes the concentration of metals found in the samples.

Table 7. SUMMARY OF –METALS ANALYSIS RESULTS									
Station No.	**Station 4**	**Station 5a**	**Station 5b[1]**	**Station 5c**	**Station 8**	**Station 9**	**Station 11**	**Station 13**	**Station 15**
Station Location	**Black Lake**	**South Mill Discharge**	**South Mill Discharge**	**South Mill Discharge**	**N GW Pond**	**N GW Seep**	**N Mills Pipe**	**Bessemer Ditch Influent**	**Bessemer Ditch Discharge**
Aluminum (µg/L)	180	100	150	150	37	100	100	170	280
Antimony (µg/L)	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Arsenic (µg/L)	8.8	2.8	<2.5	3.5	34	<2.5	5.7	<2.5	<2.5
Barium (µg/L)	65	65	64	65	34	35	62	44	45
Beryllium (µg/L)	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Cadmium (µg/L)	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chromium (µg/L)	43	4.9	9.4	12	<2.5	<2.5	9.4	<2.5	<2.5
Cobalt (µg/L)	3.1	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

Table 7. SUMMARY OF –METALS ANALYSIS RESULTS									
Station No.	**Station 4**	**Station 5a**	**Station 5b[1]**	**Station 5c**	**Station 8**	**Station 9**	**Station 11**	**Station 13**	**Station 15**
Station Location	**Black Lake**	**South Mill Discharge**	**South Mill Discharge**	**South Mill Discharge**	**N GW Pond**	**N GW Seep**	**N Mills Pipe**	**Bessemer Ditch Influent**	**Bessemer Ditch Discharge**
Copper (µg/L)	150	32	37	41	7.5	6.7	64	2.9	2.5
Lead (µg/L)	<2.5	<2.5	<2.5	<2.5	<2.5	2.8	3.3	<2.5	<2.5
Manganese (µg/L)	340	60	92	120	110	87	130	14	20
Mercury (µg/L)	<5	<5	<5	<5	<5	<5	<5	<5	<5
Molybdenum (µg/L)	15	8.2	9.3	10	14	19	8.6	3.7	3.9
Nickel (µg/L)	54	13	15	17	<2.5	<2.5	16	<2.5	<2.5
Selenium (µg/L)	<2.5	<2.5	<2.5	<2.5	11	6.5	<2.5	<2.5	<2.5
Silver (µg/L)	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Thallium (µg/L)	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Uranium (µg/L)	3.8	3.8	<2.5	3.7	15	27	4.1	2.8	2.8
Vanadium (µg/L)	22	4.4	6.4	7.8	2.6	2.6	3.9	<2.5	2.8
Zinc (µg/L)	13	12	9.4	8.9	33	16	38	9.5	11
Calcium (mg/L)	39	39	39	40	230	180	48	38	37
Iron (mg/L)	24	2.5	5.3	6.8	1.4	1.5	4.1	0.43	0.52
Magnesium (mg/L)	9.7	10	10	10	53	45	12	9.1	9.0
Potassium (mg/L)	1.9	2.0	2.0	2.0	10	5.4	2.4	1.8	1.8
Sodium (mg/L)	13	14	13	14	84	62	17	14	12
Sodium Absorption Ratio (SAR)[2]	0.38	0.41	0.40	0.40	1.0	0.88	0.46	0.39	0.36

1. **Reported values are the average of three separate preparations and analyses of the sample.**
2. **SAR should be calculated from "dissolved" (i.e., filter) samples, but was calculated here from "total recoverable" metals results. The effect on the final value is unknown.**

Table 8 summarizes the cyanide analysis results.

Table 8. SUMMARY OF ANALYTICAL RESULTS - CYANIDE		
Station No.	**Station Location/ Description of Sample Location**	**Concentration ug/L**
Station 3	Black Lake	<5.0
Station 6a	South Mills Discharge	<5.0
Station 6b	South Mills Discharge	<5.0
Station 6c	South Mills Discharge	<5.0
Station 7	North Ground Water Pond	<5.0
Station 10	North Ground Water Seep	<5.0
Station 12	North Mills Pipe	<5.0
Station 14	Bessemer Ditch Influent	<5.0
Station 16	Bessemer Ditch Discharge	<5.0

Laboratory sample descriptions, photographs, observations, method modifications, and notes are documented in the project file.

INVESTIGATION OBSERVATIONS

NEIC made the following observations during the Clean Water Act compliance inspection. NEIC field team members discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description below.

These observations are not final compliance determinations. Region 8 will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

Observation 1
Observation Summary: NEIC inspectors observed industrial stormwater runoff discharging into the Bessemer Ditch.
Citation: CDPHE Permit CO0000621 Part I.A.1 Permitted Features *Beginning no later than the effective date of this permit, the permittee is authorized to discharge from and self-monitoring samples taken in accordance with the monitoring requirements shall be obtained from permitted feature(s):* *001A The combined discharge point for tall the waste streams from the North and South Mills to the Arkansas River….* *002A The internal discharge point following the domestic wastewater treatment facility in the North Mills area….* *300I The influent monitoring point, at inlet to the 60" raw water intake line located approximately 5 miles from the plant….* Part I.B.4 Stormwater Requirements *If there is not a discharge of stormwater (unmixed with process water) to surface waters of the State, then a stormwater discharge permit is not necessary. If conditions at the site change such that a stormwater discharge may occur, then coverage under a stormwater discharge permit must be obtained.*
Evidence: **Appendix A** – Field Inspection Photographs **Appendix B** – Sampling Photographs **Appendix D** – Region 8 Laboratory Results **Appendix E** – Colorado Analytical Laboratory Report **Appendix F** – CDPHE Permit CO0000621 **Appendix G** – EVRAZ Quick Corrective Action Photographs **Appendix H** – CDPHE 2022 Inspection Report
Description of Observation: On June 12, 2023, during a significant rainstorm, NEIC observed industrial stormwater actively discharging into the Bessemer Ditch north of the Davis Wire Mill (**Appendix A** – Photos 100-0001 and 100-0002), along the southern border of the Enviri slag site (**Appendix A** – Photos 100-0004 and 100-0005), and southwest of the rail mill (**Appendix A** – Photo 100-0006). At the time of the inspection, facility representatives stated the material that stormwater runoff had come into contact with at the three locations above was slag. Bessemer Ditch is an irrigation conveyance that draws water from the Pueblo Reservoir and is owned and operated by the Bessemer Ditch Company. It also serves as a primary drinking water source for the St. Charles Mesa Public Water District. EVRAZ is permitted to discharge all waste streams from the North and South Mills to the Arkansas

Observation 1

River through Outfall 001A (**Appendix F**). The permit does not authorize EVRAZ to discharge into Bessemer Ditch.

On June 28, 2023, NEIC collected samples at station 13 and station 15. Sample station 13 is where the Bessemer Ditch enters EVRAZ (**Appendix B** – Photo 100-0057) and sample station 15 is where the Bessemer Ditch flows off-site from EVRAZ (**Appendix B** – Photo 100-0058). The NEIC laboratory analyzed the samples for metals and found elevated concentrations of aluminum and manganese in the Bessemer Ditch at station 15 compared to station 13 where the Bessemer Ditch enters the site.

Table 9. SUMMARY OF ANALYTICAL RESULTS - METALS

	Station 13	Station 15
Aluminum (ug/L)	173	280
Manganese (ug/L)	14.3	20.2

NEIC also collected samples at stations 13 and station 15 for analysis by the Region 8 Laboratory and Colorado Analytical Laboratory. The Region 8 Laboratory analyzed the samples for various per- and polyfluoroalkyl substances (PFAS) and found elevated concentrations of Perfluorooctane sulfanate at station 15 (where the ditch leaves the site) compared to station 13 (where the ditch enters the site). The sampling results for Perfluorooctane sulfanate at station 13 sampling location were 12.9 nanograms per liter (ng/L) and at station 15 were 17.0 ng/L (**Appendix D** pages 9 and 10)[1]. Colorado Analytical Laboratory analyzed samples from the same stations for Total Suspended Solids (TSS) and reported TSS was not detected at station 13 and 7 milligrams per liter at station 15 (**Appendix E** pages 11 and 12)[1].

On July 31, 2023, EVRAZ submitted photographs showing extension of a berm between the Enviri facility and Bessemer Ditch to contain runoff from entering the ditch from the slag piles (**Appendix G**).

CDPHE's March 17, 2022, inspection report stated, "The permittee is expected to ensure that adequate stormwater control measures are implemented to prevent stormwater from entering the Bessemer Ditch… Stormwater runoff into the Bessemer Ditch from the site would be considered an illicit discharge" (**Appendix H**).

[1] This conclusion is based on third-party sampling/measurement/analysis and is not within the scope of NEIC's ISO/IEC 17025 accreditation.

Observation 2

Observation Summary: NEIC inspectors observed EVRAZ personnel incorrectly collecting wastewater samples for oil and grease.

Citation: 40 CFR 136 Guidelines Establishing Test Procedures for the Analysis of Pollutants *136.3 Identification of test procedures*

Observation 2

(a) Parameters or pollutants, for which methods are approved, are listed together with test procedure descriptions and references in Tables IA, IB, IC, ID, IE, IF, IG, and IH of this section.

Table IB – List of Approved Inorganic Test Procedures

Parameter	Methodology[58]	EPA[52]	Standard methods[84]
41. Oil and grease—Total recoverable, mg/L	Hexane extractable material (HEM): *n*-Hexane extraction and gravimetry	1664 Rev. A; 1664 Rev. B[42]	5520 B–2011[38].

Standard Method 5520 Oil and Grease

5520 A.3. Sample Collection, Preservation, and Storage

Collect a representative grab sample in a wide-mouth glass bottle that has been washed with soap, rinsed with water, and finally rinsed with solvent to remove any residues that might interfere with the analysis.

Evidence:

NEIC inspector observations

Interview with EVRAZ personnel

Description of Observation: On June 27-28, 2023, NEIC inspectors and EVRAZ personnel collected wastewater samples at the same time and locations. NEIC inspectors observed EVRAZ personnel using a dipper cup to collect grab samples to fill the sample containers at several locations where collecting directly by hand was not possible. EVRAZ personnel indicated that there was no equipment available to collect the samples directly into the sample containers.

40 CFR 136 specifies the requirements for collecting, preserving, and analyzing parameters identified in NPDES permits. For certain parameters in the permit such as oil and grease and PFAS, sample collection is to be directly into the sample container. It should be noted that the samples being collected were not compliance samples.

Observation 3

Observation Summary: NEIC inspectors observed inadequate housekeeping that could contribute additional pollutant loading to the wastewater system.

Citation: CDPHE Permit CO0000621 Part I.B.1 Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit.

Evidence:

Appendix A – Field Inspection Photographs

Appendix G – EVRAZ Quick Corrective Action Photographs

Description of Observation: During the inspection, NEIC inspectors observed the following outdoor storage areas where materials were in contact with stormwater:

- Steel billet storage outside of the rail mill (**Appendix A** – Photo 100-0009).
- Acorn Petroleum used tote storage area outside of the rail mill (**Appendix A** – Photos 100-0011 and 100-0013). A drain with an unknown outlet location was observed in the tote storage area (**Appendix A** – Photo 100-0014). On July 26, 2023, EVRAZ notified NEIC inspectors that the drain was from a previous building demolition and the drain will be filled (**Appendix G** page 8).

Observation 3

- Acorn Petroleum used oil drum storage area outside of the rail mill (**Appendix A** – Photo 100-0012). On July 26, 2023, EVRAZ notified NEIC inspectors that the used totes and oil drums will be moved to a covered building east of the current location (**Appendix G** page 7).
- NEIC inspectors observed areas around vehicle fueling stations were heavily stained from previous spills (**Appendix A** – Photos 100-0018 and 100-0037). NEIC inspectors observed oil stains on the ground around the two totes near the west side of the crop/shear pit at the rail mill (**Appendix A** – Photo 100-0068) and an oil spill next to scale pit #3 at the seamless pipe mill (**Appendix A** – Photo 100-0057). On July 26, 2023, EVRAZ notified NEIC inspectors that the oil spill next to the scale pit #3 at the seamless pipe mill had been cleaned up (**Appendix G** page 3) and the two totes near the west side of the crop/shear pit at the rail mill had been removed (**Appendix G** page 4).
- NEIC inspectors observed numerous leaks and spills in the operations in the Rail Mill, Rod and Bar Mill, and Seamless Tube Mills that enter the drains and other conveyances leading to the scale pits at each facility.

Observation 4

Observation Summary: NEIC inspectors observed inadequate operation and maintenance of the North Mill and South Mill wastewater treatment systems and significant loading of oily substances that passes through the wastewater treatment system.

Citation: CDPHE Permit CO0000621 Part I.B.1 Facilities Operation and Maintenance

> *The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit.*

Evidence:
Appendix A – Field Inspection Photographs
Appendix G – EVRAZ Quick Corrective Action Photographs

Description of Observation: During the inspection, NEIC inspectors observed significant vegetation growth in the South Mill and North Mill wastewater treatment system ponds. In addition, the South Mill and North Mill treatment system ponds had a significant amount of oily substances as evidenced by oily sheens in the treatment ponds and evidence of inadequate treatment and pass through of the oily substances into Salt Creek.

At the North Mill treatment plant, NEIC inspectors observed a visible oil sheen on the surface of the pond (**Appendix A** – Photo 100-0074) and around the discharge structure (**Appendix A** – Photos 100-0077 and 100-0079). Oil stains were also observed around the oil skimmer collection tank leading back to the treatment pond (**Appendix A** – Photo 100-0080). On July 26, 2023, EVRAZ notified NEIC inspectors that the area around the oil skimmer collection tank was cleaned up and the oil skimmer boom was in the process of being repositioned to efficiently capture oil (**Appendix G** page 5).

At the South Mill treatment system, NEIC inspectors observed a visible oil sheen on the surface of the clarifier (**Appendix A** – Photo 100-0083).

Observation 4

At the South Mill treatment plant, NEIC inspectors observed a visible oil sheen on the surface of the water being discharged to Salt Creek (**Appendix A** – Photo 100-0089).

Totes containing diesel and Metapor XC were observed above or near the crop shear pit of the Rail Mill, with evidence of leaks and spills entering the pit. In addition, spills and leaks of oily substances were observed along the trench drain leading from the crop shear pit to the West scale pit. Spills in these areas can be collected into the process wastewater discharged to the South Mill treatment system (**Appendix A** – Photo 100-0068).

Observation 5

Observation Summary: NEIC inspectors observed inadequate erosion control measures around the Palmer Project construction site.

Citation: CDPHE Permit CO0000621 Part I.B.1 Facilities Operation and Maintenance
The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit.

Evidence:
Appendix A – Field Inspection Photographs
Appendix F – CDPHE Permit CO0000621
Appendix G – EVRAZ Quick Corrective Action Photographs

Description of Observation: A new rail mill, called the Palmer Project is under construction in the South Mill area. To contain sediment runoff, a silt fence attached to wooden stakes was erected around the perimeter of the construction site. On June 13, 2023, NEIC inspectors observed portions of the fence were not secured to the ground, allowing runoff carrying sediment to pass underneath the fence and enter storm water pipes and ditches leading to Salt Creek (**Appendix A** – Photos 100-0015 and 100-0016).

The permit considers stormwater runoff, that is eventually mixed with process water, to be process wastewater and as such it is covered under the process wastewater provisions (**Appendix F**). EVRAZ provided NEIC inspectors with a copy of a Storm Water Management Plan, which does not address construction stormwater activities or related Best Management Practices. Sediment carried off-site to Salt Creek could contribute to additional solids loading at the treatment lagoons.

On July 26, 2023, EVRAZ notified NEIC inspectors of the repair and correct emplacement of erosion control devices for the Palmer Project site (**Appendix G** pages 9 and 10).

Observation 6

Observation Summary: NEIC inspectors observed algae accumulating on the clarifier at the sanitary treatment plant effluent discharge weir.

Citation: CDPHE Permit CO0000621 Part I.B.1 Proper Operations and Maintenance

> *"The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of the permit."*

Observation 6

Evidence:
Appendix A – Field Inspection Photographs
Appendix G – EVRAZ Quick Corrective Action Photographs

Description of Observation: The sanitary wastewater plant has a circular clarifier for separation of solids from the treated wastewater. Effluent from the clarifier passes over a weir. NEIC inspectors observed the weir to have heavy algae growth attached (**Appendix A** – Photo 100-0091). Excessive algal growth may detach and carry over into the effluent, increasing the solids and biochemical oxygen concentration in the final effluent.

On June 26, 2023, EVRAZ notified NEIC inspectors that the algae on the clarifier weirs had been removed (**Appendix G** page 6).

Observation 7

Observation Summary: NEIC inspectors could not access the effluent outfall on June 13, 2023, due to flooding from recent heavy rain.

Citation: CDPHE Permit CO0000621 Part I.B.1 Proper Operations and Maintenance

> *"The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of the permit."*

Evidence:
Appendix I – EVRAZ Solid Waste Management Unit Flooding
Appendix H – CDPHE 2022 Inspection Report
Interview with EVRAZ personnel

Description of Observation: The final stage of the wastewater treatment system prior to discharge to the Arkansas River, are two settling ponds, SWMU 11 and SWMU 10. These are located northeast of the industrial area of the mill and adjacent to the Arkansas River. During the inspection, Pueblo experienced significant rainfall, causing the Arkansas River to overflow its banks and flood into the ponds and Salt Creek. The floodwater carried river sediment into the ponds, increasing the hydraulic and solids loading into the treatment system. NEIC inspectors had planned to inspect the ponds and the effluent outfall on June 13, 2023, but were unable to after EVRAZ personnel reported heavy flooding and inaccessible roads to reach the outfall. Photographs of the flooding were taken by EVRAZ were shown to NEIC inspectors during the inspection and provided afterward (**Appendix I**). EVRAZ personnel stated that they had considered options to protect the lagoon system from flooding such as increasing the elevation of the embankment between the lagoons and the Arkansas River, but a specific remedy had not been identified and implemented.

CDPHE's inspection report, dated March 17, 2022, observed that during flooding conditions, the Arkansas River had overflowed the berm wall and flooded the facility's settling ponds (**Appendix H**).

Observation 8

Observation Summary: EVRAZ uses slag from the steelmaking process for much of the ground cover on the facility.

Citation: *None*

Observation 8

Evidence:
Interview with EVRAZ personnel
Appendix A – Field Inspection Photographs

Description of Observation: During the inspection, EVRAZ personnel gave an overview of the facility's history. Facility representatives stated that much of the ground cover and fill material used for grading the facility is composed of slag produced during the steel making process. While touring the facility, inspectors observed how slag was used for roadbed (**Appendix A** – Photo 100-0004) and berms (**Appendix A** – Photo 100-0035). Slag is also used as a top cap on the SWMUs on the site (**Appendix A** – Photo 100-0041). These areas are exposed to stormwater and drain towards or directly into Salt Creek, contributing to pollutant loadings in Salt Creek.

Observation 9

Observation Summary: EVRAZ reported 12 permit effluent exceedances in the past five years.

Citation: Appendix F – CDPHE Permit CO0000621 Part I.A.2 Limitations, Monitoring Frequencies and Sample Types

> *"In order to obtain an indication of the probable compliance or non-compliance with the effluent limitations specified in Part I.A, the permittee shall monitor all effluent parameters at the frequency and sample types listed below."*

Evidence:
Appendix J – EVRAZ DMR Data Report

Description of Observation: According to the discharge monitoring report data reported by EVRAZ (**Appendix J**), the following effluent exceedances occurred at Outfall 001A:

- During monitoring period ending on December 31, 2018, there was a 45% exceedance of zinc.
- During monitoring period ending on September 30, 2019, there was a 115% exceedance of oil and grease.
- During monitoring period ending on January 31, 2020, there was an 18% exceedance of zinc.
- During monitoring period ending on April 30, 2020, there was a 180% exceedance of oil and grease.
- During monitoring period ending on November 30, 2020, there was a 351% exceedance of total suspended solids.
- During monitoring period ending on February 28, 2021, there was a 756% exceedance of oil and grease.
- During monitoring period ending on March 31, 2021, there was a 10% exceedance of zinc.
- During monitoring period ending on September 20, 2021, there was a 180% exceedance of total suspended solids.
- During monitoring period ending on March 31, 2022, there was a 16% exceedance of total suspended solids.
- During monitoring period ending on September 30, 2022, there was a 398% exceedance of total suspended solids.
- During monitoring period ending on April 30, 2023, there was a 15% exceedance of total suspended solids.

Observation 9
• During monitoring period ending on December 31, 2022, there was a Whole Effluent Toxicity test failure at Outfall 001X.

Observation 10
Observation Summary: NEIC inspectors observed two discharge points from the groundwater ponds to Salt Creek.
Citation: *None.*
Evidence: **Appendix A** – Field Inspection Photographs
Description of Observation: While touring the facility, inspectors observed 3 ponds located to the east of the EAF and scrap yard. Two of the ponds were described as groundwater ponds and were connected to each other by a channel. A third pond was observed directly to the east of the northernmost groundwater pond. An open channel and an iron pipe discharged water from the northern pond to the third pond (**Appendix A** – Photos 100-0059, 100-0060, and 100-0061). The third pond discharged into Salt Creek through an open channel (**Appendix A** – Photo 100-0062).

Observation 11
Observation Summary: NEIC inspectors observed stormwater coming into contact with the scrap yard and flows via channels and a concrete conveyance to the North Mill treatment system.
Citation: *None.*
Evidence: **Appendix A** – Field Inspection Photographs
Description of Observation: The scrap yard is located east of the EAF. Scrap metal is sorted and stored in piles on the ground or in railcars (**Appendix A** – Photo 100-0040). None of the scrap storage is under cover, except when the railcars are moved adjacent to the EAF building. Stormwater falling into the scrapyard area flows to the northeast corner of the yard, where it is collected into a 12-inch stormwater line (**Appendix A** – Photos 100-044 and 100-046). The stormwater line discharges into an open channel that runs north parallel to Harlem Road (**Appendix A** – Photo 100-0045), then diverts into a concrete channel which discharges into the North Mill treatment system (**Appendix A** – Photo 100-0092).

Observation 12
Observation Summary: NEIC inspectors observed a continuous flow of groundwater via a pipe into the North Mill treatment system.
Citation: *None.*
Evidence: **Appendix A** –Field Inspection Photographs
Description of Observation: Groundwater emerges from various locations on the east side of the North Mill area, as the ground slopes down towards Salt Creek. A portion of the groundwater is collected into an open channel which discharges through a pipe into the North Mill Treatment System (**Appendix A** – Photo 100-0078).

Observation 13
Observation Summary: NEIC inspectors observed significant erosion below a stormwater pipe that discharges into Salt Creek from a hill west of the South Mill treatment system.
Citation: *None.*
Evidence: **Appendix A** – Field Inspection Photographs **Appendix H** – CDPHE 2022 Inspection Report
Description of Observation: Inspectors observed a stormwater pipe projecting from an embankment above Salt Creek adjacent to the South Mill treatment system (**Appendix A** – Photo 100-0088). There was no observable discharge from the pipe at the time of the inspection, but there was evidence of erosion of the embankment below the pipe into Salt Creek. Erosion of the embankment could contribute to increased solids loadings in Salt Creek and in the final treatment lagoons. CDPHE's March 17, 2022, inspection report (**Appendix H**) stated, "during the site visit the department inspectors recommended that the permittee modify a stormwater pipe outfall that discharges into Salt Creek just west of the South Mills ponds to eliminate or reduce erosion and sediment that transport into Salt Creek."