



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

National Enforcement Investigations Center

NEIC

NEICVP1583E01

NEIC CIVIL INVESTIGATION REPORT

Antioch Coal Mine
Montgomery, Indiana

Investigation Dates:

June 3-7, 2024

**MICHAEL
LUKOWICH**

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Mike Lukowich, P.E., Project Manager, NEIC

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Report Prepared for:

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CONTENTS

PROJECT OBJECTIVE 3

FACILITY CONTACT INFORMATION 3

FACILITY OVERVIEW 3

FACILITY OPERATIONS SUMMARY 6

FIELD ACTIVITIES SUMMARY 9

INVESTIGATION OBSERVATIONS..... 10

TABLES

Table 1. PROJECT TEAM MEMBERS 3

Table 2. FACILITY CONTACT INFORMATION 3

Table 3. APPLICABLE NAICS CODES..... 4

Table 4. NPDES GENERAL PERMIT NO. ING040207 - OUTFALLS 5

Table 5. ANTIOCH COAL MINE SEDIMENT BASINS AND DIVERSION DITCHES..... 7

APPENDICES (*NEIC-created)

A Responsible Energy Operations Organization Chart (1 page)

B 327 IAC Article 15 (46 pages)

C Notice of Intent (13 pages)

D Antioch Coal Mine Site Plan (1 page)

E Antioch Coal Mine Water Block Flow Diagram (1 page)

F* Antioch Coal Mine Photo Log (10 pages)

G Lube Oil Standard Operating Procedure (2 pages)

H SPCC Plan Antioch Coal Mine (23 pages)

I Antioch Chemical List (1 page)

J* Antioch Coal Mine Effluent Exceedances Jan 2021 to May 2024 (1 page)

**This Contents page shows all the sections contained in this report
and provides a clear indication of the end of this report.**

INVESTIGATION OVERVIEW

PROJECT OBJECTIVE

U.S. Environmental Protection Agency (EPA) Region 5 (Region) requested EPA's National Enforcement Investigations Center (NEIC) to conduct a Clean Water Act (CWA) compliance evaluation investigation (CEI) of the Antioch Coal Mine (facility) located at 2520 North County Road 350 East, in Montgomery, Indiana. The investigation assessed the facility's compliance with federal environmental statutes and permit requirements.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	Organization	Project Role
Mike Lukowich P.E.	NEIC	Project manager
Alex Flevarakis	NEIC	Field team member
REGIONAL AND OTHER CONTACTS		
Ray Cullen	EPA Region 5	Regional field team member
Eric Small	EPA Region 5	Regional field team member

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contact.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	Phone No.	Email Address
Josh Phillips, President/General Manager Responsible Energy	859-221-8903	jphillips@ResponsibleEnergy.com

Antioch Coal Mine is owned and operated by Responsible Energy Operations, LLC. A corporate organizational chart is in **(Appendix A)**.

FACILITY OVERVIEW

Antioch mine is engaged in coal mining, processing of coal, and reclamation activities. The facility is authorized to discharge into an unnamed tributary to Oberts Ditch, an unnamed tributary of Antioch Creek, and Antioch Creek under a National Pollutant Discharge Elimination System (NPDES) general permit No. ING040207. The current general permit coverage was effective April 1, 2020, modified on May 1, 2022, and expires on March 31, 2025. The general permit is established by rule under 327 Indiana Administrative Code (IAC) 15-7 **(Appendix B)**. The applicability of the general permit is to regulate wastewater discharges from surface mining, underground mining, and reclamation projects which utilize sedimentation treatment for pit dewatering and surface runoff and to require best management practices (BMPs) for storm water runoff to protect the public health, existing water uses, and aquatic biota. Antioch

is a surface coal mine with a coal processing plant. Discharges from coal mining is regulated under Title 40 Code of Federal Regulations (CFR) Chapter I, Subchapter N (Effluent Guidelines and Standards) Part 434 – Coal Mining Point Source Category BPT, BAT, BCT Limitations and New Source Performance Standards.

According to EPA’s Enforcement and Compliance History Online (ECHO) website, the facility was last inspected for CWA requirements on November 16, 2022, and is listed as a state inspection base program – reconnaissance without sampling. No formal enforcement actions have been taken in the last five years.

According to the EPA ECHO website, Antioch Coal Mine (EPA FRS number 110022418454) has the following North American Industry Classification System (NAICS) and/or Standard Industrial Classification (SIC) codes (**Table 3**):

Table 3. APPLICABLE NAICS CODES	
NAICS Code	Description
1221 (SIC)	Bituminous Coal and Lignite - Surface
212111 (NAICS)	Bituminous Coal and Lignite Surface Mining

CWA REGULATORY SUMMARY

The general NPDES Permit (**Appendix B**) authorizes process wastewater discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source. The discharge can be categorized as one of the following:

- Undetermined – Influent sampling of pH and total iron required for 6 months to determine status.
- Alkaline mine drainage – pH equal to or greater than 6 and total iron less than 10 milligrams/liter
- Acid or ferruginous mine drainage - pH less than 6 or total iron equal to or greater than 10 milligrams/liter
- Post mining areas
 - A reclamation area or
 - The underground workings of an underground coal mine after the extraction, removal, or recovery of coal from its natural deposit has ceased and prior to bond release.

Facilities are required to determine dry weather base flow for the mining operation. Dry weather base flow is composed of:

- Ground water interference and

- A build-up of rainwater over a long period of time.

The dry weather base flow discharged through any outfall is subject to effluent limitations and monitoring as outlined in the general permit. The limitations applied are dependent on the discharge as characterized above.

The following outfalls for the Antioch Coal Mine are currently covered under the general permit as outlined in **Table 4**.

Table 4. NPDES GENERAL PERMIT NO. ING040207 - OUTFALLS				
Outfall	Dry Weather Base Flow	Mine Drainage	Active	Receiving Water
004	0.0	Alkaline	Yes	Unnamed tributary to Oberts Ditch
005	0.0	Alkaline	Yes	Unnamed tributary to Antioch Creek
006	0.0	Acid/Ferruginous	Yes	Unnamed tributary to Antioch Creek
011	0.0	Alkaline	Yes	Unnamed tributary to Oberts Ditch
013	0.0	Alkaline	No	Unnamed tributary to Oberts Ditch
014	0.0	Alkaline	No	Unnamed tributary to Egan Ditch
016	0.0	Alkaline	Yes	Antioch Creek

Outfall 006 was redesignated as acid/ferruginous from alkaline under a Notice of Intent modification that became effective May 1, 2022 (**Appendix C**).

Under the general permit, outfalls discharging mine drainage designated as undetermined, acid/ferruginous, or alkaline may choose to apply the following effluent limitations to a discharge when the discharge flow rate exceeds the dry weather base flow based on precipitation events identified as the follows:

1. If a precipitation event is less than or equal to the 10-year, 24-hour storm event, the following limitations apply:
 - a. pH is limited to the range of 6.0 to 9.0 pH units.
 - b. Settleable solids are limited to a maximum concentration of 0.5 milliliters/liter.
2. If a precipitation event is greater than the 10-year, 24-hour storm event, the following limitations apply:
 - a. pH is limited to the range of 6.0 to 9.0 pH units.

FACILITY OPERATIONS SUMMARY

Mining Operations

Antioch coal mine is a surface coal mine operation. Surface coal mining, also known as opencast or strip mining, involves removing layers of soil and rock to expose a coal seam, then breaking up and removing the coal. A site plan of the Antioch Coal mine is contained in **Appendix D**. The process Antioch typically follows includes the following steps:

1. Clear the land removing trees and vegetation.
2. Remove topsoil and store onsite for reclamation after mining operations have ceased.
3. Drill and blast using explosives to break up the hard strata above the coal seam.
4. Load and transport the fragmented overburden material, called spoil.
5. Expose the coal seam using heavy equipment like power shovels and draglines to remove the remaining layers of soil and rock.
6. Mine the coal seam and load onto trucks for processing onsite.
7. Backfill and grade the area with spoil material.
8. Reclaim the area by spreading topsoil over the graded area and establish vegetation to control erosion and restore the area to original use.
9. Release the area from bond.

The surface mine or pit can accumulate water which must be pumped out to maintain operations. The accumulated water inside the pit can be due to ground water seepage. Rainwater can also accumulate inside the pit after a precipitation event. The general permit defines mine drainage as any drainage, and any water pumped or siphoned, from an active mining area or a post mining area.

Mine drainage from the Antioch Coal Mine is pumped from the active pit to diversion ditches. The diversion ditches collect the mine drainage and transports the water by gravity to sedimentation basins for treatment prior to discharge through the permitted outfalls. A water block flow diagram for the Antioch Coal Mine outlines the diversion ditches, sediment basins, and associated NPDES outfalls for the facility (**Appendix E**).

Sediment basins are typically designed to store and provide ten hours of detention time for the calculated volume of runoff generated by a 10-year, 24-hour storm event which is 4.52 inches of rain locally. After being detained for a minimum of ten hours, impounded water exits the sediment basin through a constructed discharge structure. The discharge structure may consist of a trapezoidal spillway, a discharge pipe, or a combination of the two. **Table 5** below outlines some of the specifications for the onsite sediment basins and diversion ditches.

Table 5. Antioch Coal Mine Sediment Basins and Diversion Ditches				
Sediment Basin	Contributing Diversion Ditches	Mine Drainage Categorization	NPDES Outfall #	Surface Area (acres)/Depth (feet) Of the Sediment Basin
SB05TB-1	05TB-1A 05TB-1B	Alkaline	016	3.40 acres/7.50 feet
SB5	5A	Alkaline	005	1.8 acres/6.70 feet
SB6	6B	Acid/Ferruginous	006	3.50 acres/6.70 feet
SB11	11A 11C 11N	Alkaline	011	3.50 acres/6.70 feet
SB17SKB-1	17SKB-1A 17SKB-1B	Alkaline	004	1.90 acres/18.0 feet
SB17SS-1	17SS-1A 17SS-1B	Alkaline	005	3.90 acres/14.2 feet
Freshwater Basin 2	10A 10B 10C 1T-A	Alkaline	006 via SB6	5.66 acres/20.8 feet
Slurry Cell 6	N/A	Alkaline	Return Flows to Fresh Water Basin 2	26 acres/76.7 feet

Fresh Water Basin 2

Fresh water basin 2 collects surface runoff and storm water runoff via various diversion ditches. The majority of surface and storm water runoff collected is from the coal processing plant and coal processing plant associated areas. Freshwater Basin 2 is a source of makeup water for the coal preparation plant. Freshwater Basin 2 also receives return water from Slurry Cell 6.

Slurry Cell 6

Slurry Cell 6 receives slurry from the coal preparation plant via a 5-inch diameter SDR-11 plastic pipeline. The function of Slurry Cell 6 is to be a repository for separation and settlement of slurry solids, and to be the principal source of fresh water for the coal preparation plant. Water is pumped to the coal preparation plant via a 10-inch diameter, SDR plastic pipeline. Once the slurry cell is full and can no longer be used, it is dewatered and covered with spoil from the surface mining operation, subsoil and topsoil and the area will be returned to an approved post-mining land use.

Coal Processing Plant

Coal is brought from the pit in haul trucks and stockpiled in a designated location outside the processing plant. Coal is typically 12 to 18 inches in size. The coal can be dumped into one of two feed hoppers. The first feed hopper is for direct ship coal, which is coal that needs to be crushed to two inches and shipped directly to the customer. The direct ship coal passes through a rotary coal breaker. The rotary coal breaker breaks the coal from its original size to a consistent size of approximately two inches. It is then shipped to a customer and/or rail loading facility. The raw coal breaker operates at approximately 200 tons per hour.

Coal that is not of sufficient quality for direct ship, is fed by front end loaders into the preparation plant raw coal feed hopper for further cleaning to reduce ash and sulfur and improve heating value. From the raw coal feed hopper, the coal goes through a different rotary coal breaker for proper sizing prior to entering the preparation plant. The preparation plant is capable of handling up to three hundred tons per hour and uses a wet process where coal and rock are separated by specific gravity, making three product streams: clean coal, coarse refuse, and fine refuse, which is in a slurry form.

Once inside the preparation plant, the raw feed coal passes over a deslime screen where the fines are removed from the raw feed and sent to cyclones and spirals where the fine coal particles are separated from fine rock particles. This is done by passing the material over a vibratory screen and spraying with water. Material finer than 100 mesh is not cleaned and goes straight into the waste stream. Raw feed coal coarser than 25 mesh is fed into a series of heavy media and classifying cyclones where the coal is separated from the rock. Clean coal then goes across screens and/or through coal dryers to remove moisture that has been added through the cleaning process. Clean coal is gathered onto a conveyor belt where it is transported outside of the preparation plant building and stockpiled prior to sale.

Coarse refuse also exits the preparation plant building on a conveyor belt to a bin where it is gravity fed into haul trucks and transported back into the mining area. The coarse refuse is placed back into the open pit. At the conclusion of the cleaning process, the water passes over a magnet to retrieve all possible magnetite from the water. The magnetite helps control the specific gravity of the material. The wastewater then travels to a thickener/clarifier where solids are settled to the bottom of the tank and the clear water is recycled back into the plant. The fine refuse slurry that settles to the bottom of the tank is then pumped into slurry cell 6 where it ultimately settles out the fine solids. The water from slurry cell 6 is pumped back to the freshwater basin where it may be reused in the processing plant.

FIELD ACTIVITIES SUMMARY

NEIC conducted the field inspection from June 3-7, 2024. NEIC inspectors, along with two regional EPA inspectors and Indiana state inspectors, arrived at the facility at approximately 9 a.m. on June 3, 2024, at which time credentials were presented to the facility contact listed in **Table 2** of this report. NEIC conducted an opening conference that explained the purpose and scope of the inspection.

During the inspection, NEIC inspectors reviewed discharge monitoring reports (DMRs), laboratory data, process flow diagrams, and self-reported noncompliance notifications. Inspectors also interviewed personnel at the facility.

In addition, NEIC inspectors conducted a walk-through inspection of the facility and observed the treatment systems, along with the outfalls. NEIC took photographs of the mining operations, coal processing plant, and coal processing plant associated areas as well as the sedimentation basins with corresponding outfalls. A photo log is contained in **Appendix F**. After completing the inspection, on June 7, 2024, NEIC inspectors, the regional EPA inspectors, Indiana state inspectors and facility representatives had a closing conference and discussed initial observations. NEIC inspectors departed the closing conference at approximately 11 a.m. on June 7, 2024.

INVESTIGATION OBSERVATIONS

NEIC identified the following observations during the CWA compliance evaluation inspection. NEIC field team members discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. EPA Region 5 will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

Observation: 1

Observation Summary: Storm water associated with industrial activity discharges from the permitted outfalls which is not authorized under general permit No. ING040207 (unauthorized discharge) from the Antioch Coal Mine facility.

Citation: *Clean Water Act Section § 301(a): except as in compliance with this section and sections 302, 306, 307, 318, 402 and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.*

40 C.F.R. § 122.1(b)(1): The NPDES program requires permits for the discharge of “pollutants” from any “point source” into “waters of the United States.”

40 C.F.R. § 122.2: Pollutant: means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean: (a) Sewage from vessels; or (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

40 C.F.R. § 122.2: Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

40 C.F.R. § 120.2: Waters of the United States means: (1) Jurisdictional waters. For purposes of the Clean Water Act, 33 U.S.C. 1251 et seq. and its implementing regulations, subject to the exclusions in paragraph (2) of this section, the term “waters of the United States” means: (i) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the

Observation: 1

ebb and flow of the tide; (ii) Tributaries; (iii) Lakes and ponds, and impoundments of jurisdictional waters; and (iv) Adjacent wetlands.

Clean Water Act Section § 402(p): Municipal and Industrial Storm water Discharges. —

(1) General Rule. --Prior to October 1, 1994, the Administrator or the State (in the case of a permit program approved under section 402 of this Act) shall not require a permit under this section for discharges composed entirely of storm water.

(2) Exceptions. --Paragraph (1) shall not apply with respect to the following storm water discharges: (A) A discharge with respect to which a permit has been issued under this section before the date of the enactment of this subsection. (B) A discharge associated with industrial activity.

40 C.F.R. § 122.26(b)(14): Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this part 122. For the categories of industries identified in this section, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs (b)(14)(i) through (xi) of this section) include those facilities designated under the provisions of paragraph (a)(1)(v) of this section. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14):

40 C.F.R. § 122.26(b)(14)(iii): Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under [40 CFR 434.11\(1\)](#) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished

Observation: 1

products, byproducts or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim);

Evidence:

Appendix B - 327 IAC Article 15

Appendix G - Lube Oil Standard Operating Procedure

Appendix F - Antioch Coal Mine Photo Log

Appendix H - SPCC Plan Antioch Coal Mine

Appendix I - Antioch Chemical List

Interviews

Description of Observation:

Antioch mine is engaged in coal mining, processing of coal, and reclamation activities. The facility is authorized to discharge into an unnamed tributary to Oberts Ditch, an unnamed tributary of Antioch Creek, and Antioch Creek under a National Pollutant Discharge Elimination System (NPDES) general permit No. ING040207. The current general permit coverage was effective April 1, 2020, modified on May 1, 2022, and expires on March 31, 2025.

The general permit is established by rule under 327 Indiana Administrative Code (IAC) 15-7 (**Appendix B**). The applicability of the general permit is to regulate wastewater discharges from surface mining, underground mining, and reclamation projects which utilize sedimentation treatment for pit dewatering and surface runoff and to require best management practices (BMPs) for storm water runoff to protect the public health, existing water uses, and aquatic biota.

The storm water runoff that is addressed in the general permit is for:

327 IAC 15-7-7 General Conditions

(6)For discharges of storm water run-off composed entirely of flows from conveyances used for collecting and conveying precipitation run-off which are contaminated by contact with overburden, coal product, coal byproduct, or coal waste located on the site and do not otherwise report to a NPDES discharge point regulated under this rule, the permittee shall use best management practices including, but not limited to, secondary sedimentation control structures such as rip rap, straw dikes, check dams, mulch, dugouts, or other measures that reduce overload flow velocity, reduce run-off volume, or trap sediment to control run-off from such areas. Compliance with this subdivision obviates the need to comply with 327 IAC 15-6.

This condition addresses runoff from storm water that contacts “overburden, coal product, coal byproduct, or coal waste located on the site and do not otherwise report to a NPDES discharge point regulated under this rule”.

Observation: 1

Antioch Coal Mine does perform activities that meet the definition of industrial activity that comes into contact with storm water which is discharged through the outfalls permitted in general permit No. ING040207, such as:

- Outdoor maintenance of heavy equipment and machinery such as oil and fluid changes and welding activities. **Appendix G** contains the standard operating procedure for oil changes. **Appendix F Picture P6040005** displays heavy equipment that is undergoing maintenance onsite from a welding truck. There is no designated location for maintenance and/or repairs on heavy machinery and equipment.
- Fuel activities from various forms of fuel which is stored on site in above ground storage tanks. **Appendix H** is a copy of the facility's Spill Prevention and Control, and Countermeasures (SPCC) plan.
- Chemical storage – **Appendix F Pictures P6040021, 6040022** display chemicals that are stored outside onsite. **Appendix I** is a list of chemicals that are used and stored onsite for the processing plant.

Observation: 2

Observation Summary: Antioch Coal Mine does not monitor for all the parameters required by the general permit when applying the alternate effluent limitations.

Citation: NPDES General Permit No. ING040207, 327 IAC 15-7-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge through the outfalls identified in the NOI letter in accordance with this rule. Such discharges shall be limited and monitored as follows:

(1) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source undetermined mine drainage status shall be limited and monitored as follows:

Parameter	Daily Minimum	Daily Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	–	Report	Report	MGD	2XMonthly	Instantaneous
TSS	–	35	70	mg/l	2XMonthly	Grab
pH	6.0	–	9.0	s.u.	2XMonthly	Grab
Total iron	–	3.0	6.0	mg/l	2XMonthly	Grab
Influent pH	–	Report	Report	Std.	Monthly	Grab
Influent total iron	–	Report	Report	mg/l	Monthly	Grab

(2) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source alkaline mine drainage status shall be limited and monitored as follows:

Observation: 2

<i>Parameter</i>	<i>Daily Minimum</i>	<i>Daily Average</i>	<i>Daily Maximum</i>	<i>Units</i>	<i>Measurement Frequency</i>	<i>Sample Type</i>
<i>Flow</i>	–	<i>Report</i>	<i>Report</i>	<i>MGD</i>	<i>2XMonthly</i>	<i>Instantaneous</i>
<i>TSS</i>	–	<i>35</i>	<i>70</i>	<i>mg/l</i>	<i>2XMonthly</i>	<i>Grab</i>
<i>pH</i>	<i>6.0</i>	–	<i>9.0</i>	<i>s.u.</i>	<i>2XMonthly</i>	<i>Grab</i>
<i>Total iron</i>	–	<i>3.0</i>	<i>6.0</i>	<i>mg/l</i>	<i>2XMonthly</i>	<i>Grab</i>

(3) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source acid mine drainage status shall be limited and monitored as follows:

<i>Parameter</i>	<i>Daily Minimum</i>	<i>Daily Average</i>	<i>Daily Maximum</i>	<i>Units</i>	<i>Measurement Frequency</i>	<i>Sample Type</i>
<i>Flow</i>	–	<i>Report</i>	<i>Report</i>	<i>MGD</i>	<i>Weekly</i>	<i>Instantaneous</i>
<i>TSS</i>	–	<i>35</i>	<i>70</i>	<i>mg/l</i>	<i>Weekly</i>	<i>Grab</i>
<i>pH</i>	<i>6.0</i>	–	<i>9.0</i>	<i>s.u.</i>	<i>Weekly</i>	<i>Grab</i>
<i>Total iron</i>	–	<i>3.0</i>	<i>6.0</i>	<i>mg/l</i>	<i>Weekly</i>	<i>Grab</i>
<i>Total manganese</i>	–	<i>2.0</i>	<i>4.0</i>	<i>mg/l</i>	<i>Weekly</i>	<i>Grab</i>
<i>Total aluminum</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>
<i>Total copper</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>
<i>Total zinc</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>
<i>Total nickel</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>

(4) Discharges through outfalls identified as post mining areas shall be limited and monitored as follows:

<i>Parameter</i>	<i>Daily Minimum</i>	<i>Daily Average</i>	<i>Daily Maximum</i>	<i>Units</i>	<i>Measurement Frequency</i>	<i>Sample Type</i>
<i>Flow</i>	–	–	–	–	<i>4XYearly</i>	<i>Instantaneous</i>
<i>Settleable solids</i>	–	<i>Report</i>	<i>0.5</i>	<i>ml/l</i>	<i>4XYearly</i>	
<i>pH</i>	<i>6.0</i>	–	<i>9.0</i>	<i>s.u.</i>	<i>Once every reporting Period</i>	

Evidence:

Appendix B – 327 IAC Article 15
Interviews

Description of Observation:

Antioch mine is engaged in coal mining, processing of coal, and reclamation activities. The facility is authorized to discharge into an unnamed tributary to Oberts Ditch, an unnamed

Observation: 2

tributary of Antioch Creek, and Antioch Creek under a National Pollutant Discharge Elimination System (NPDES) general permit No. ING040207. The current general permit coverage was effective April 1, 2020, modified on May 1, 2022, and expires on March 31, 2025. The general permit is established by rule under 327 Indiana Administrative Code (IAC) 15-7 (**Appendix B**).

Antioch is subject to discharge limitations and monitoring under 327 IAC 15-7-7(a)(1-4) as outlined in the citation above.

327 IAC 15-7-7(c) states:

A person regulated under subsection (a)(1) through (a)(3) may choose to apply the following alternate effluent limitations to a discharge when the discharge flow rate exceeds the dry weather base flow based on the precipitation events identified as follows:

(1) If a precipitation event is less than or equal to the 10-year, 24-hour storm event, the following limitations may apply instead of the limitations listed in subsection (a):

(A) pH is limited to the range of six (6.0) to nine (9.0).

(B) Settleable solids are limited to a maximum concentration of five-tenths (0.5) ml/l.

(2) If a precipitation event is greater than the 10-year, 24-hour storm event, only pH is limited to the range of six (6.0) to nine (9.0) base flow based on the precipitation events identified as follows:

Although the rule allows for alternate discharge limitations it does not provide relief for monitoring as outlined in 327 IAC 15-7-7(a)(1-3).

In addition, 327 IAC 15-7-7(e) requires:

(e) A person regulated under this rule shall comply with the following reporting requirements:

(1) Under subsection (c), for reporting purposes, a person regulated under this rule shall report on the monthly discharge monitoring report all analytical results and identify on an attachment to this report the analytical results that were reported under subsection (c) and state the duration and volume of the precipitation event. Failure to submit the necessary information with the monthly discharge monitoring report will disqualify the discharge from the alternate effluent limitations and may lead to a violation of this rule.

Antioch Coal Mine does not monitor for all the parameters required by the general permit specified in 327 IAC Article 15-7-7(a)(1-3) as cited above when applying the alternate effluent limitations. The alternate effluent limits, depending on the rain event, are for pH and settleable solids only. The facility monitors for only settleable solids and pH, but not for the parameters listed in 327 IAC Article 15-7-7(a)(1-3), which includes TSS, total iron, total manganese, total aluminum, total copper, total zinc, and total nickel.

Observation: 3

Observation Summary: The perimeter diversion ditch southwest of the south pit has not been sufficiently vegetated and is experiencing rilling and erosion.

Citation: NPDES General Permit No. ING040207, 327 IAC 15-7-7

327 IAC 15-7-8 Standard conditions

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule.

327 IAC 15-4-2 Management requirements

Sec. 2. (a) A person regulated by an applicable general permit and this article shall, at all times:

(1) maintain in good working order; and

(2) efficiently operate; facilities and systems (and related appurtenances) for collection and treatment that are installed or used by the person and that are necessary for achieving compliance with the terms and conditions of the applicable general permit and this article.

Evidence:

Appendix B – 327 IAC Article 15

Appendix F - Antioch Coal Mine Photo Log

Description of Observation:

Antioch mine is engaged in coal mining, processing of coal, and reclamation activities. The facility is authorized to discharge into an unnamed tributary to Oberts Ditch, an unnamed tributary of Antioch Creek, and Antioch Creek under a National Pollutant Discharge Elimination System (NPDES) general permit No. ING040207. The current general permit coverage was effective April 1, 2020, modified on May 1, 2022, and expires on March 31, 2025. The general permit is established by rule under 327 Indiana Administrative Code (IAC) 15-7 (**Appendix B**).

Antioch Coal Mine uses diversion ditches to capture process wastewater (i.e., mine drainage) to convey to the sediment ponds for treatment prior to discharge. The diversion ditches should be vegetated to prevent rilling and erosion. The perimeter diversion ditch southwest of the south pit has not been sufficiently vegetated and is experiencing rilling and erosion as seen in **Picture P604009 (Appendix F)**.

Observation: 4

Observation Summary: Antioch Coal Mine experienced effluent exceedances for the period between January 2021 and May 2024.

Citation: NPDES General Permit No. ING040207, 327 IAC 15-7-7

Sec. 7. (a) *A person regulated under this rule is authorized to discharge through the outfalls identified in the NOI letter in accordance with this rule. Such discharges shall be limited and monitored as follows:*

Observation: 4

(1) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source undetermined mine drainage status shall be limited and monitored as follows:

<i>Parameter</i>	<i>Daily Minimum</i>	<i>Daily Average</i>	<i>Daily Maximum</i>	<i>Units</i>	<i>Measurement Frequency</i>	<i>Sample Type</i>
<i>Flow</i>	–	<i>Report</i>	<i>Report</i>	<i>MGD</i>	<i>2XMonthly</i>	<i>Instantaneous</i>
<i>TSS</i>	–	<i>35</i>	<i>70</i>	<i>mg/l</i>	<i>2XMonthly</i>	<i>Grab</i>
<i>pH</i>	<i>6.0</i>	–	<i>9.0</i>	<i>s.u.</i>	<i>2XMonthly</i>	<i>Grab</i>
<i>Total iron</i>	–	<i>3.0</i>	<i>6.0</i>	<i>mg/l</i>	<i>2XMonthly</i>	<i>Grab</i>
<i>Influent pH</i>	–	<i>Report</i>	<i>Report</i>	<i>Std.</i>	<i>Monthly</i>	<i>Grab</i>
<i>Influent total iron</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>

(2) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source alkaline mine drainage status shall be limited and monitored as follows:

<i>Parameter</i>	<i>Daily Minimum</i>	<i>Daily Average</i>	<i>Daily Maximum</i>	<i>Units</i>	<i>Measurement Frequency</i>	<i>Sample Type</i>
<i>Flow</i>	–	<i>Report</i>	<i>Report</i>	<i>MGD</i>	<i>2XMonthly</i>	<i>Instantaneous</i>
<i>TSS</i>	–	<i>35</i>	<i>70</i>	<i>mg/l</i>	<i>2XMonthly</i>	<i>Grab</i>
<i>pH</i>	<i>6.0</i>	–	<i>9.0</i>	<i>s.u.</i>	<i>2XMonthly</i>	<i>Grab</i>
<i>Total iron</i>	–	<i>3.0</i>	<i>6.0</i>	<i>mg/l</i>	<i>2XMonthly</i>	<i>Grab</i>

(3) Discharges through outfalls identified as active mining areas, coal preparation plants, and/or coal preparation plant associated areas designated as new source acid mine drainage status shall be limited and monitored as follows:

<i>Parameter</i>	<i>Daily Minimum</i>	<i>Daily Average</i>	<i>Daily Maximum</i>	<i>Units</i>	<i>Measurement Frequency</i>	<i>Sample Type</i>
<i>Flow</i>	–	<i>Report</i>	<i>Report</i>	<i>MGD</i>	<i>Weekly</i>	<i>Instantaneous</i>
<i>TSS</i>	–	<i>35</i>	<i>70</i>	<i>mg/l</i>	<i>Weekly</i>	<i>Grab</i>
<i>pH</i>	<i>6.0</i>	–	<i>9.0</i>	<i>s.u.</i>	<i>Weekly</i>	<i>Grab</i>
<i>Total iron</i>	–	<i>3.0</i>	<i>6.0</i>	<i>mg/l</i>	<i>Weekly</i>	<i>Grab</i>
<i>Total manganese</i>	–	<i>2.0</i>	<i>4.0</i>	<i>mg/l</i>	<i>Weekly</i>	<i>Grab</i>
<i>Total aluminum</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>
<i>Total copper</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>
<i>Total zinc</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>
<i>Total nickel</i>	–	<i>Report</i>	<i>Report</i>	<i>mg/l</i>	<i>Monthly</i>	<i>Grab</i>

Observation: 4

(4) Discharges through outfalls identified as post mining areas shall be limited and monitored as follows:

<i>Parameter</i>	<i>Daily Minimum</i>	<i>Daily Average</i>	<i>Daily Maximum</i>	<i>Units</i>	<i>Measurement Frequency</i>	<i>Sample Type</i>
<i>Flow</i>	–	–	–	–	<i>4XYearly</i>	<i>Instantaneous</i>
<i>Settleable solids</i>	–	<i>Report</i>	<i>0.5</i>	<i>ml/l</i>	<i>4XYearly</i>	
<i>pH</i>	<i>6.0</i>	–	<i>9.0</i>	<i>s.u.</i>	<i>Once every reporting Period</i>	

Evidence:

Appendix B – 327 IAC Article 15

Appendix J – Antioch Coal Mine Effluent Exceedances Jan 2021 to May 2024

Description of Observation:

Antioch mine is engaged in coal mining, processing of coal, and reclamation activities. The facility is authorized to discharge into an unnamed tributary to Oberts Ditch, an unnamed tributary of Antioch Creek, and Antioch Creek under a National Pollutant Discharge Elimination System (NPDES) general permit No. ING040207. The current general permit coverage was effective April 1, 2020, modified on May 1, 2022, and expires on March 31, 2025. The general permit is established by rule under 327 Indiana Administrative Code (IAC) 15-7 (**Appendix B**).

An effluent exceedances report, obtained from ECHO, for the January 2021 to May 2024 time frame is attached to this report (**Appendix J**). The report shows the facility had exceedances for total suspended solids, settleable solids, pH, or total iron either as a daily maximum, daily minimum or a daily monthly average for the time period specified.