NPDES Permit No. IL0077666
Notice No. 7516c

Public Notice Beginning Date: April 24, 2025

Public Notice Ending Date: May 26, 2025

National Pollutant Discharge Elimination System (NPDES)
Permit Program

Draft Modified NPDES Permit to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois Environmental Protection Agency
Bureau of Water, Division of Water Pollution Control
Permit Section
2520 West Iles Avenue
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-3397

Name and Address of Discharger:

Williamson Energy, LLC
P.O. Box 300
Johnston City, Illinois 62951

Name and Address of Facility:

Williamson Energy, LLC
Pond Creek Mine
4 miles east of Johnston City, Illinois
(Williamson and Franklin Counties)

The Illinois Environmental Protection Agency (IEPA or Agency) has made a tentative determination to issue an NPDES permit to discharge into waters of the state and has prepared a draft permit and associated fact sheet for the above named discharger. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice/Fact Sheet. Comments will be accepted until midnight of the Public Notice period ending date indicated above, unless a request for an extension of the original comment period is granted by the Agency. Interested persons are invited to submit written comments on the draft permit to the IEPA at the above address. Commenters shall provide his or her name, address and the nature of the issues raised and the evidence supporting those issues. Commenters may include a request for public hearing. The NPDES permit and notice number(s) must appear on each comment page.

The application, engineer's review notes, Public Notice/Fact Sheet, draft permit, comments received, and other documents are available for inspection and may be copied at the IEPA between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

As provided in 35 Ill. Adm. Code 309.115(a) any person may submit a request for a public hearing and if such written comments or requests indicate a significant degree of public interest in the draft permit, the permitting authority may, at its discretion, hold a public hearing. The Agency shall issue public notice of such hearing no less than thirty (30) days prior to the date of such hearing in the manner described by 35 Ill. Adm. Code 309.109 through 309.112 for public notice. The Agency's responses to written and/or oral comments will be provided in the Responsiveness Summary provided when the final permit is issued.

The permittee operates surface facilities area to an existing underground coal mine (SIC 1222). Mine operations result in the discharge of alkaline and acid mine drainage. The Agency proposes certain modifications to this permit that are in connection with the settlement of an appeal of the Agency's renewed NPDES permit that was originally issued on April 15, 2022. Public Comments are invited on the modifications which include the following:

The addition of Outfall 011 and its discharge to the Big Muddy River, as initially approved on April 15, 2022, but subsequently appealed by petitioners to the Board, is again introduced into the proposed NPDES permit with the following:

Ammonia and phosphorus effluent limits are included for outfall 011.

A Chloride Optimization Plan, incorporated into the Supplemental Construction Authorization 3117-15-1 (Condition No. 1), to address chloride loadings to the Big Muddy River.

Revised Special Condition No. 15 now requires new methodology for conductivity-chloride correlation for stream and effluent monitoring in connection with outfall 011 and requires biannual Agency review and approval of correlation datasets and requires establishment of public website for publishing correlation data.

Revised Special Condition No. 16 now requires downstream monitoring of dissolved iron, establishes effluent limits for ammonia, phosphorus and new limit for dissolved iron. Establishes new limits for sulfate, chloride, copper, dissolved iron and nickel for the edge of the mixing zone and establishes new discharge cessation criteria for downstream chloride, sulfate, dissolved iron, dissolved copper, and dissolved nickel. Also establishes “Resumptive Conditions” and the requirement to post onto a public website the details of any instance of discharge cessation and subsequent resumption.

The permittee has finalized a public website required pursuant to Special Condition 15 and 16.

This facility has nine (9) existing discharges which are located in Williamson County, Illinois. The following information identifies the discharge points and receiving streams:

Outfall	Receiving Stream	Latitude (North)	Longitude (West)
001	Unnamed tributary of Pond Creek	37° 50' 59.2"	88° 49' 37.5"
002	Unnamed tributary of Pond Creek	37° 50' 26.0"	88° 49' 51.5"
003	Unnamed tributary of Pond Creek	37° 50' 26.0"	88° 49' 58.0"
004	Unnamed tributary of Pond Creek	37° 50' 25.0"	88° 49' 56.6"
005	Unnamed tributary of Pond Creek	37° 50' 9.1"	88° 50' 00.0"
006	Unnamed tributary of Pond Creek	37° 50' 28.4"	88° 50' 40.6"
007	Unnamed tributary of Pond Creek	37° 50' 29.5"	88° 49' 34.0"
008	Unnamed tributary of Pond Creek	37° 50' 31.4"	88° 49' 33.9"
011	Big Muddy River	37° 52' 37"	89° 01' 49"

The stream segment NG-02 of Pond Creek receiving the flow from the unnamed tributary into which Outfall 001, 002, 003, 004, 005, 006, 007 and 008 discharges is on the 2024 303(d) list of impaired waters.

Outfall	Pollutant
001, 002, 003, 004, 005, 006, 007, 008	Cause unknown

The stream segment N-11 of Big Muddy River receiving the discharge from Outfall 011 is on the 2024 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairment.

Outfall	Pollutant
011	Aldrin, Dieldrin, Endrin, Heptachlor, Mercury, Mirex, Polychlorinated biphenyls, Toxaphene

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfalls: 001, 002, 003, 004, 005

Discharge Condition	Parameters											
	Total Suspended Solids (3) (mg/l)		Iron (total) (3) (4) (mg/l)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/l)	Chloride (mg/l)	Cadmium (Cd) (mg/l) (6)	Hardness (5)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
(3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 001, 002, 003, 004 and 005 are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limit.
(6) The Cadmium water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).

The acid mine discharge from this facility shall be monitored and limited at all times as follows:

Outfalls: 006, 007

Discharge Condition	Parameters												
	Total Suspended Solids (3) (mg/L)		Iron (total) (3) (4) (mg/L)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/L)	Chloride (mg/L)	Cadmium (Cd) (mg/l) (6)	Mn (total) (mg/L)	Hardness (5)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hours precipitation event, but less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hours precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for acid mine drainage discharges are contained in 35 Ill. Adm. Code 406.110(b), (c), and (d).
(3) Effluent limitations for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 006 and 007 are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.
(6) The Cadmium water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).

The acid mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 008

Discharge Condition	Parameters											
	Total Suspended Solids (3) (mg/L)		Iron (total) (3) (4) (mg/L)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/L)	Chloride (mg/L)	Mn (total) (mg/L)	Hardness (5)	Flow (MGD)	Settleable Solids (2) (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	1.0	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	1.0	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hours precipitation event, but less than or equal to the 10-year, 24 hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hours precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

(1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for acid mine drainage discharges are contained in 35 Ill. Adm. Code 406.110(b), (c), and (d).
(3) Effluent limitations for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 008 are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
(5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 011

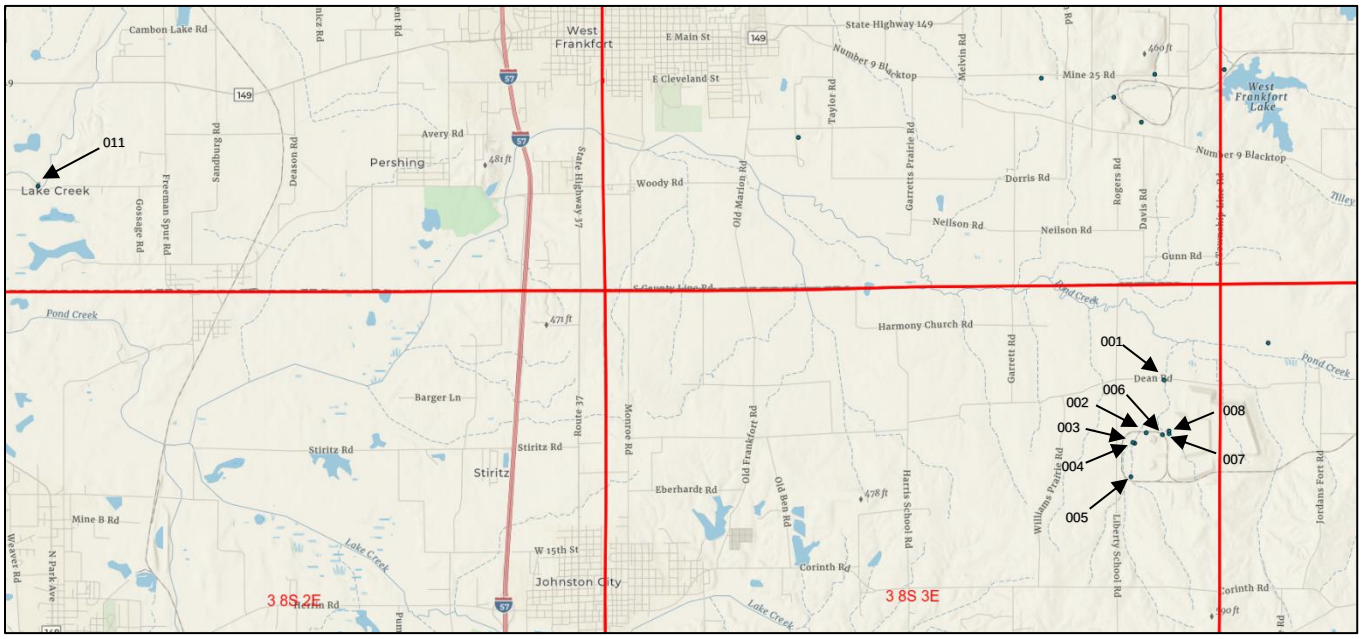
Parameters																
Total Suspended Solids (1) (mg/l)			Iron (total) (2) (mg/l)		pH (3) (S.U.)	Alkalinity/ Acidity (4)	Sulfate (5) (mg/l)	Chloride (mg/l)	Mn (total) (mg/l) (2)		Hardness (6)	Nickel (mg/L)	Copper (mg/L)	Flow (MGD)	Iron (Dissolved)	Phosphorus (mg/L)
30 day average	Yearly average	daily maximum	30 day average	daily maximum					30 day average	daily maximum						
35	32.2	70	3.0	6.0	6.0-9.0	Alk.>Acid	See Special Condition Nos. 15 & 16	See Special Condition Nos. 15 & 16	2.0	4.0	Monitor Only	See Special Condition No. 16	See Special Condition No. 16	Measure When Sampling	See Special Condition Nos. 15 & 16	See Special Condition No. 16

For any discharge not meeting the water quality standard for any of the above parameters, such discharge shall be subject to the limitations and monitoring requirements of Special Condition No. 16.

(1) Effluent standards for Total Suspended Solids in mine discharges are established pursuant to 35 Ill. Adm. Code 406.106.
(2) Effluent standards for Iron and Manganese are established pursuant to 35 Ill. Adm. Code 304.124.
(3) Pursuant to 35 Ill. Adm. Code 406.106, pH shall not be less than 6.0 or greater than 9.0 S.U.
(4) Pursuant to 35 Ill. Adm. Code 406.106, total acidity shall not exceed total alkalinity.
(5) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
(6) Hardness monitoring is required to determine the appropriateness of the sulfate permit limitation.

To assist you in identifying the location of the discharges, please refer to the attached map. The permit area for this facility is located in Sections 2, 3, 4, 7, 8, 9, 10, 12, 14, 15, 16, 17, 18 and 29, Township 8 South, Range 4 East, and Sections 11, 12, 13, 35, 36, Township 8 South, Range 3 East, Williamson County, 3rd P.M., Illinois, and Sections 1, 2 and 12, Township 8 South, Range 2 East, and Sections 7, 8, 9, 11, 14, 15, 16, and 17, Township 8 South, Range 3 East, and Sections 27, 28, 29, 30, 31, 32, 34 and 35, Township 7 South, Range 2 East, Franklin County , 3rd P.M., Illinois.

Williamson Energy, LLC – Pond Creek Mine No. 1
NPDES Permit No. IL0077666
Williamson and Franklin County



Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Williamson Energy, LLC operates the Pond Creek No. 1 Mine which is located in Williamson County. The mining complex contains an estimated 383.3 million tons of clean, recoverable coal reserves. Williamson Energy commenced construction of the Mine in 2005. The Mine has a life expectancy of more than 20 years. The mine has one operating longwall system. The Preparation Plant facilities are capable of processing 2,000 tons of coal per hour. The productive capacity of the mine is 5-6 million tons per year. Coal is shipped by rail, truck and barge (via railroad).

Williamson currently operates the mine under the existing Permit 375 and Permit 417 from the Illinois Department of Natural Resources, Office of Mines and Minerals (IDNR-OMM). The Mine currently discharges under NPDES Permits IL0077666.

The Pond Creek Mine has submitted an antidegradation report as part of the following NPDES permit activities:

- To respond to the over capacity of water on-site, a new outfall to the Big Muddy River is proposed. The outfall structure will be a multi-port diffuser and a mixing zone is being requested for the discharge; and

The mine uses water in two areas of operation; dust suppression during coal extraction and wash water in the preparation plant. The water used in the coal extraction process is fresh, untreated water purchased from the City of Johnston City and it not recoverable. The water used to wash the coal in the preparation plant comes from the fresh water lake. Over time, the fine solid particles present in the thickener underflow that is pumped to the Slurry Impoundment/RDA No. 3 settle to the bottom of the impoundment leaving clarified water on the surface. There is some loss of water during the washing process. Additionally, since the fines do not all settle immediately in the slurry impoundment, the quality of the clarified water results in a need for additional water for the preparation plant. Therefore, preparation plant water is supplemented with mine infiltration water and/or stormwater.

An aquifer above the coal seam causes an influx in water into the Mine. The infiltrating groundwater is from a saline aquifer, with a chloride content of approximately 1,099 to 2,799 mg/L. The sulfate ranges between 1,720 and 2,120 mg/L. Presently, the mine is removing 2.7 MGD of this high-chloride groundwater from the active mine. During normal coal processing operations, the preparation plant requires approximately 2.3 MGD. It is necessary to remove the water from the mine to protect the health and safety of the workforce, as well as, the overall mining operation.

Water will be stored in the Water Staging Cell and will be pumped to the Big Muddy River diffuser for mixing. An evaluation of the mixing zone will be reported in a separate memo.

To address the impaired status of Pond Creek, the permittee was required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.

The information in this antidegradation assessment came from the December 2014 NPDES Renewal #2 for Permit #IL0077666 report by Alliance Consulting, Inc. titled “Pond Creek Mine No. 1 & Refuse Disposal Area No. 3”, the anti-degradation assessment provided on November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit IL0077666; and the April 15, 2022 Responsiveness Summary regarding the December 18, 2019 Public Hearing.

Identification and Characterization of the Affected Water Body.

The subject facility proposes to discharge to the Big Muddy River through Outfall 011 at a point where 37.0 cfs of flow exists upstream of the outfall during critical 7Q10 low-flow conditions. The Big Muddy River is classified as a General Use Water. The Big Muddy River is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources Publication *Integrating Multiple Taxa in a Biological Stream Rating System*, nor is it given an integrity rating in that document. The Big Muddy River, Waterbody Segment, N-11, is listed on the 2024 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as cause unknown, sedimentation/siltation (non-pollutant), and total suspended solids; fish consumption use with potential causes given as aldrin, dieldrin, endrin, heptachlor, mercury, mirex, polychlorinated biphenyls, and toxaphene. Aesthetic quality and primary contact uses are fully supported. This segment of the Big Muddy River is not subject to enhanced dissolved oxygen standards.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

The constituents of concern are chloride, sulfates, manganese, iron, and total suspended solids. The chloride loading will range from 19,141 to 1,197,698 lbs/day at a concentration ranging from 1,699 to 12,000 mg/L. The sulfate loading will range from 9,720 to 476,031 lbs/day at a concentration ranging from 820 to 2,120 mg/L. The manganese loading will range from 33 to 336 lbs/day at a concentration ranging from 0.125 to 0.419 mg/L. The Iron (total) loading will range from 34 to 348 lbs/day at a concentration ranging from 0.216 to 1.835 mg/L. Iron (dissolved) is only a fraction of the Iron (total) and will meet the water quality standard at the end-of-pipe or at the edge of the mixing zone. The Nickel loading will range from 1 to 8 lbs/day at a concentration ranging from 0.004 to 0.014 mg/L. The Copper loading will range from 1 to 8 lbs/day at a concentration ranging from 0.011 to 0.32 mg/L. The TSS loading will range from 2,337 to 118,332 lbs/day at a concentration ranging from 7 to 70 mg/L.

Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Fate and Effect of Parameters Proposed for Increased Loading.

Chloride and sulfates would remain dissolved in the water and would move through the downstream continuum. Manganese, iron, Nickel, Copper, and total suspended solids will most likely settle and become part of the bed sediment load in the river. A mixing zone in the Big Muddy River will be utilized to dissipate chloride and sulfate to water quality standard levels. A zone of initial dilution will be utilized to dissipate Copper to water quality standard levels. Small amounts of chloride and sulfates would be removed by organisms as these substances are necessary for life. Because of the near real-time continuous monitoring of upstream and downstream conditions in the receiving stream, and the ability of the permittee's diffuser to adjust to flow and background concentration conditions, discharges will always be into a waterbody that is below water quality standards and in concentrations and flow combinations that will not cause or contribute to an exceedance downstream of the mixing zone. No adverse impacts to streams would occur as all water quality standards are expected to be met in the receiving water.

Purpose and Social & Economic Benefits of the Proposed Activity.

The disposal of excess water, including the water infiltrating the mine, will allow the mine to continue to operate. The Pond Creek Mine is expected to generate 5 - 6 million tons of useable coal. According to information given in a document dated November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit IL0077666, continued operation of the existing mine will continue to provide jobs for 203 employees with an annual payroll of approximately $18 million. In addition to these 203 direct employees, it is estimated that another 100 persons are employed in daily work associated with the Mine's production. This includes truck drivers, supply and support personnel, train crews, and technical personnel. In addition, other local businesses would also benefit from the wealth created by the mine. The operation of the mine provides tax revenues through payroll, coal severance, and mineral resource taxes for the surrounding counties and the State of Illinois. The total local, state, and federal revenues generated by the continuation of this Mine are approximately $78 million annually. Current employment statistics indicate that the unemployment rate for Williamson County was 7.5%.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

Excess water is proposed to be discharged to the Big Muddy River. Alternatives to this system have been evaluated by the mine company in a document dated November 18, 2016 entitled Anti-degradation Assessment, Pond Creek No. 1 Mine, NPDES Permit and are summarized as follows:

Chloride and Sulfate

Membrane Processes. Standard reverse osmosis (RO) treatment results in a waste stream of water with a high concentration of contaminants that is typically 25% of the flow being sent to the RO treatment system. The reject stream must still be disposed of in a responsible manner. Due to the disposal issue, the Membrane Process is not viable.

Deep Well Injection of the Entire Groundwater Stream. The untreated groundwater infiltrate could be discharged directly to a deep well. Considering the cost and operational difficulties experienced to date for the two wells that have been installed at the nearby Sugar Camp Coal facility to accept 0.45 MGD each, deep well injection of the untreated groundwater infiltrate is not considered either applicable or feasible for the operation of the Mine.

Discharge to POTW or Other Sources. POTWs are not designed to treat wastewaters containing dissolved substances such as chloride or sulfate. This option is not feasible.

No discharge. Given the climate of Williamson County, the mine company concludes that evaporation is not a viable option for disposal of the stormwater runoff mine effluent.

Mechanical Evaporation. Mechanical evaporation uses high temperatures and pressure to remove the water. The equipment is expensive to construct/install, operate, and maintain. Also, there would be materials to dispose of either in a landfill or in the Injection Wells that have been found to be unreliable for nearby mines. Therefore, this option is not considered either applicable or feasible for the operation of the mine.

Crystallizaton. Crystallization equipment is expensive to construct/install, operate and maintain. The cost is estimated at $0.25/gallon, the mine company concludes that crystallization is not a viable option for disposal of the stormwater runoff mine effluent.

Cost Effective Sulfate Removal (CESR) process. This is a proprietary technology that uses hydrated lime and proprietary chemicals to precipitate gypsum, metals and ettringite. Sludge would be produced that would require landfill disposal. The proprietary technology is still being developed. Additionally, this method is not proven to remove chlorides. These drawbacks make the CESR process infeasible for use at the coal mine.

Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Chemical Precipitation. Alkaline chemicals may be added to acid mine effluent to precipitate metals. The sludge produced must be disposed of and in some cases will contain hazardous materials added to the wastewater to attain precipitation. The additives used require mining in their own right. The water discharged may contain these additives, such as aluminum, in elevated concentrations. Additionally, this method is not proven to remove chlorides. These drawbacks make chemical precipitation infeasible.

The company provided supplemental information on the alternatives for the antidegradation analysis on December 17, 2019. A summary of the additional information is provided below:

Reverse Osmosis

Reverse Osmosis (RO) is a water purification process that uses partially permeable membranes to remove dissolved salt and other unwanted particles in suspension from the water stream. The RO process includes a pre-treatment pond, ultra-filtration system, high-pressure pumps, membrane assembly, clean water discharge, and wastewater discharge. The concentrated brackish water must then be treated through an additional process for long-term management such as Deep Well Injection or Crystallization or solid waste landfill.

A single plant could be designed to meet the required capacity to treat the initial proposed discharge. After the RO process is completed a highly concentrated waste stream of brackish water is created and requires the development of additional technology to dispose of the highly concentrated brackish water utilizing Deep Well Injection or Crystallization.

RO technology creates a waste stream more hazardous than the water prior to treatment that creates another set of disposal problems. Managing the waste stream from 3.5 MGD RO unit could be problematic as can be seen in the discussions below. Therefore, RO is not considered applicable or feasible as a long-term solution for a mine with a flow of 3.5 million gallons per day.

However, to address the impaired status of Pond Creek, a portion of the flow will be treated by an RO system. A 1.0 MGD RO unit will be required by December 31, 2023, that will discharge the permeate from the RO unit (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water will be discharged to the Big Muddy River via Outfall 011.

Deep Well Injection of the Mine Infiltration Water

The mine infiltration water could be discharged directly to a UIC well (often referred to as a deep well). The injection wells must be installed at extreme depths to ensure they do not affect potential aquifers used for public consumption and into a geologic formation that is capable of receiving excess water.

The receiving underground formation at this mine site has a limited amount of volume it can receive instantaneously and long term. As the underground formation is filled with excess water, its acceptance can be diminished. Consequently, multiple wells cannot be installed in close proximity to one another or they will negatively influence one another and restrict flow. In order to completely utilize this technology at Pond Creek mine, it is estimated that nine deep injection wells spaced an adequate distance apart would be needed. Additionally, miles of pipeline conveying water to each individual well. An ultra-filtration system would also be needed to remove any suspended solids from the water prior to injection.

Because of reasons stated above, Deep Well Injection is not practicable for large flows. Deep Well Injection is an unreliable and impractical alternative to dispose of the amount of water infiltrating the Pond Creek mine. Considering the operational difficulties that can be experienced when attempting to discharge to a deep well, Deep Well Injection of the mine infiltration water is not considered either applicable or feasible for the operation of the Mine.

Evaporation

Evaporation works by constructing ponds with large surface area, filling the ponds with water and exposing water to the forces of nature. The groundwater would be evaporated, leaving a TDS residue in a constructed evaporation pond. In the conceptual design, it was assumed the evaporators would be placed on floating platforms along the outside of the water storage lake and operated 214 days per year.

Evaporation ponds require large land areas, and the area would not be expected to be productive once it is used for this purpose (salt accumulation). In order to evaporate 3.5 million gallons per calendar day during the estimated 214-day period, 1,621 evaporators would be required. During the non-evaporative season, a 1,600 acre-ft pond would have to be constructed to store the excess water during this time. This extremely large pond would have an enormous footprint (approximately 160 surface acres, 10-feet deep) because it would have to collect unevaporated water and salt that falls back to the surface.

Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

The climate at the Pond Creek mine is not conducive to evaporation techniques because it is not considered moisture deficient. After the evaporators have finished concentrating the salt water then some additional technology is required to dispose of the salt concentrates (Ex: Deep well injection or Crystallization and Solid Waste Land Fill). Given the inefficient system, operational difficulties to maintain a system of this magnitude, and additional alternatives to dispose of the salt mechanical evaporation is not a viable alternative. This option is not considered applicable or feasible to dispose of water at the Pond Creek mine.

Crystallization

Crystallization is the process that converts the concentrated brackish water generated in a mechanical evaporator or reverse osmosis process to create a disposable salt cake. This process offers an alternative to Deep Well Injection for the brackish reject stream from a reverse osmosis or mechanical evaporator system.

It is possible that the salt cake could be sold, but unlikely, due to the various salt compositions that are captured in a mine related RO process. This process usually culminates in the utilization of a large lined landfill to dispose of the waste that consumes large tracts of land that would otherwise not be impacted. Using crystallization equipment to reduce the RO reject water has a high energy demand.

Considering the above, crystallization is not a standalone treatment option and it is not considered either applicable or feasible as a treatment system for the operation of the mine as a long-term solution.

Sedimentation/Siltation

Sedimentation. The facility is proposing to pump the groundwater infiltration to a Water Staging Cell where the water will have an opportunity for solids to settle out. The water will then be discharged to the Big Muddy River though the diffuser.

Use alternate sediment control and treatment devices. Alternatives to the use of sediment control ponds exist for control of discharge of settleable solids. Such alternatives include chemical soil stabilizers, erosion control blankets, geotextile filter bags, fiber rolls, silt fencing, straw mulch, straw bale dikes, and temporary seeding. These measures are aimed at minimization of the generation of settable solids. Most of these measures have been used previously during the construction and operations and in accordance with the current permit, as supplemental treatment and prevention of generation of settable solids. The use of alternative sediment control measures is considered practical and cost effective for the treatment and control of surface runoff in conjunction with sediment control ponds. However, the use of these practices to eliminate the proposed sediment control ponds is not feasible. Instead, it is being proposed that these BMPs be incorporated into the proposed alternative as needed.

No discharge. Given the climate of Williamson County, the mine company concludes that evaporation is not a viable option for disposal of the stormwater runoff mine effluent.

Filtration. Filtration is a technology that is not feasible for the proposed facility because: filtration is much more expensive than sediment ponds, filtration processes require a steady stream of water for treatment which is not the case in treating stormwater runoff, a large area of land would be required for such a facility, and maintenance and supervision of the filtration and sludge disposal operation would be burdensome and would increase production costs.

Constructed Wetlands. Constructed wetlands have proven to be effective for treatment of suspended solids with several limitations. These limitations include; low and consistent rates of inflow, eventual sludge accumulation requiring dredging and wetland reconstruction, and release of hydrogen sulfide and other digestive gases into the atmosphere from sulfate digestion processes. Use of wetlands in mine stormwater runoff treatment would be limited by the enormous amount of land required to construct a wetland of sufficient size for the flow rates to be expected from such an operation.

Chemical Precipitation. Alkaline chemicals may be added to acid mine effluent to precipitate metals. The sludge produced must be disposed of and in some cases will contain hazardous materials added to the wastewater to attain precipitation. The additives used require mining in their own right. The water discharged may contain these additives, such as aluminum, in elevated concentrations. Concerns with the use of chemical precipitation at the proposed coal mine include; worker safety regarding the chemicals to be used, treatment costs, process operation and maintenance, disposal of precipitate sludge in a landfill, necessity of treatment considering that acid water is not considered a factor for the proposed operation, susceptibility to system malfunction due to high volume flows from storm events, and improbability of actual improvement in overall water quality when compared to the use of sediment ponds. These drawbacks make chemical precipitation infeasible.

Antidegradation Assessment for Big Muddy River Mixing
Williamson Energy, LLC
Pond Creek Mine
NPDES Permit No. IL0077666
Williamson County

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities.

On November 2, 2016, the IDNR EcoCAT web-based tool was used and indicated that there were no aquatic endangered/threatened species present in the vicinity of the discharge. While the IDNR EcoCAT web-based tool did not terminate the consultation because of the nearby presence of Chuck-Will's-Willow (*Caprimulgus carolinensis*), IDNR evaluated the information and terminated the consultation on September 26, 2019, which was reevaluated and terminated again on October 22, 2021. In their termination letters, IDNR reiterated that there were no records of threatened or endangered species present. However, the termination letters indicated that there were 11 Page 28 species designated in the Illinois Wildlife Action Plan as "Species in Greatest Need of Conservation" (SGNC). The SGNC that occur in the Big Muddy River include the Alligator Gar (Atractosteus spatula), Blacktail Shiner (Cyprinella venusta), Brown Bullhead (Ameiurus Nebulosus), Flier (Centrarchus macropterus), Mooneye (Hiodon tergisus), Paddlefish (Polyodon spathula), Pugnose Minnow (Opsopoeodus emiliae), Ribbon Shiner (Lythrurus fumeus), River Darter (Percina shumardi), Spottail Darter (Etheostoma squamiceps), and Stripetail Darter (Etheostoma kennicotti). IDNR also noted that the Pistolgrip (Tritogonia verrucose) has also been found in the Big Muddy River. In conclusion, IDNR indicated that "strict adherence to all effluent limits and all effluent monitoring requirements in accordance with NPDES Permit IL0077666 is requested.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time the draft permit was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; that all existing uses of the receiving stream will be maintained; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity will benefit community at large by allowing the continuation of coal mining with all of its economic benefits to the local economy. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.

NPDES Permit No. IL0077666

Illinois Environmental Protection Agency

Division of Water Pollution Control

2520 West Iles Avenue

P.O. Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Modified NPDES Permit

Expiration Date: April 30, 2027

Issue Date: April 15, 2022
Effective Date: May 1, 2022
Modification Date:

Name and Address of Permittee:

Williamson Energy, LLC
P.O. Box 300
Johnston City, Illinois 62951

Facility Name and Address:

Williamson Energy, LLC
Pond Creek Mine
4 miles east of Johnston City, Illinois
(Williamson and Franklin Counties)

Discharge Number and Classification:		Receiving waters
001, 002, 003, 004, 005	Alkaline Mine Drainage	Unnamed tributary to Pond Creek
006, 007, 008	Acid Mine Drainage	Unnamed tributary to Pond Creek
011	Alkaline Mine Drainage	Big Muddy River

In compliance with the provisions of the Illinois Environmental Protection Act, Subtitle C and/or Subtitle D Rules and Regulations of the Illinois Pollution Control Board, and the Clean Water Act, the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Darin E. LeCrone, P.E.
Manager, Permit Section
Division of Water Pollution Control

DEL:IKW/7516c/10-25-21

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 001 (Alkaline Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Mercury (ng/l) 12-month rolling average	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	12	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	12	Monitor Only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 001 and unnamed tributary of Pond Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 002 (Alkaline Mine Drainage)

Discharge Condition	Parameters													
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Nickel (mg/L)	Copper (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum										
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.1104	0.0245	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.1104	0.0245	Monitor Only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 002 and unnamed tributary of Pond Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 003 (Alkaline Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Iron (dissolved) (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor Only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 003 and unnamed tributary of Pond Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 004 (Alkaline Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Copper (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.0245	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.0245	Monitor Only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 004 and unnamed tributary of Pond Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 005 (Alkaline Mine Drainage)

Discharge Condition	Parameters											
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor Only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 005 and unnamed tributary of Pond Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 006 (Acid Mine Drainage)

Discharge Condition	Parameters													
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/l) ***	Nickel (mg/L)	Mn (total) (mg/L) ***	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum										
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.1104	1.0	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.1104	1.0	Monitor Only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 006 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfall 006 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 007 (Acid Mine Drainage)

Discharge Condition	Parameters															
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L) ***	Mn (total) (mg/L) ***	Iron (dissolved) (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum												
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	1.0	0.1104	0.1635	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	1.0	0.1104	0.1635	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 007 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfall 007 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 008 (Acid Mine Drainage)

Discharge Condition	Parameters															
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L) ***	Mn (total) (mg/L) ***	Copper (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum												
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	0.0245	0.1104	0.1635	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	0.0245	0.1104	0.1635	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 008 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfall 008 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 011* (Alkaline Mine Drainage)

Parameters																
Total Suspended Solids** (mg/l)			Iron** (total) (mg/l)		pH** (S.U.)	Alkalinity/ Acidity	Sulfate** (mg/l)	Chloride** (mg/l)	Mn** (total) (mg/l)		Hardness	Nickel (mg/L)	Copper (mg/L)	Flow (MGD)	Iron (Dissolved)	Phosphorus (mg/L)
30 day average	Yearly Average	daily maximum	30 day average	daily maximum					30 day average	daily maximum						
35	32.2	70	3.0	6.0	6.5-9.0	Alk.>Acid	See Special Condition Nos. 15 & 16	See Special Condition Nos. 15 & 16	2.0	4.0	Monitor only	See Special Condition No. 16	See Special Condition No. 16	Measure When Sampling	See Special Condition Nos. 15 & 16	See Special Condition No. 16

All sampling shall be performed utilizing the grab sampling method.

** There shall be a minimum of three (3) samples per week collected from Outfall 011 when the pond is discharging. A “no flow“ situation is not considered to be a sample of the discharge.

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* Operation and management of pumpage to Outfall 011 is subject to the requirements of Special Condition No. 15. Also, discharges from Outfall 011 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18. Monitoring downstream of Outfall 011 is subject to the requirements is Special Condition No. 16.

Effluent Limitations and Monitoring

Upon completion of Special Condition 10 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls*: 001, 002, 003, 004, 005, 006, 007, 008 (Reclamation Area Drainage)

Discharge Condition	Parameters					
	pH** (S.U.) ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Hardness ***	Flow (MGD)	Settleable Solids (ml/l) ***
I	6.5-9.0	1250	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1250	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1250	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1250	500	Monitor only	Measure When Sampling	0.5

I Dry weather discharge (base flow, if present) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.109(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

III In accordance with 35 Ill. Adm. Code 406.109(c), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation area discharges, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method. A "no flow" situation is not considered to be a sample of the discharge.

*** One sample per month (1/month) shall be collected if and/or when a discharge occurs under either Discharge Condition I, II or IV and analyzed for the parameters identified in the table above. In addition, at least three (3) grab samples shall be taken each quarter from separate precipitation events under Discharge Condition III and analyzed for parameters indicated in the above table. For quarters in which there are less than 3 such precipitation events, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s).

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

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* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition Nos. 13 and 14 for the discharges from Outfalls 001, 002, 003, 004, 005, 006, 007 and 008 and unnamed tributary to Pond Creek.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

Effluent Limitations and Monitoring

Upon completion of Special Condition No. 11 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls: 001, 002, 003, 004, 005, 006, 007, 008 (Stormwater Discharge)

Parameters	
pH* (S.U.) **	Settleable Solids (ml/l) **
6.0-9.0	0.5

Stormwater discharge monitoring is subject to the following reporting requirements:

Analysis of samples must be submitted with second quarter Discharge Monitoring Reports.

If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or updated previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency, indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

Annual stormwater monitoring is required for all discharges until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

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* No discharge is allowed from any above referenced permitted outfalls during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

** One (1) sample per year shall be collected and analyzed for the indicated parameter; however, such sampling and analysis is required only if and/or when a discharge occurs from the individual Outfall(s) identified above.

NPDES Permit No. IL0077666

Construction Authorization No. 3117-15

Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area described as follows:

Surface facilities in support of an underground mine containing a total of 986.10 acres, also identified as IDNR/OMM Permit Nos. 375 417 and 456, and as described in IEPA Log Nos. 3117-15 and 3117-15-A, located in Sections 2, 3, 4, 7, 8, 9, 10, 12, 14, 15, 16, 17, 18 and 29, Township 8 South, Range 4 East, and Sections 11, 12, 13, 35, 36, Township 8 South, Range 3 East, Williamson County, 3rd P.M., Illinois, and Sections 1, 2 and 12, Township 8 South, Range 2 East, and Sections 7, 8, 9, 11, 14, 15, 16, and 17, Township 8 South, Range 3 East, and Sections 27, 28, 29, 30, 31, 32, 34 and 35, Township 7 South, Range 2 East, Franklin County , 3rd P.M., Illinois.

The surface facilities at this site contain drainage control structures (ditches) and nine (9) sediment basins, incline slope, coal preparation plant, coal stockpiles, refuse disposal areas, coal conveyors, railroad loop, ventilation shafts, parking areas, access roads, and office and maintenance buildings. The following additional areas are being added to the original facilities approved for this operation.

An additional area of 4.05 acres, identified as IBR No. 4 to OMM Permit No. 375, located in Section 12, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 2416-06 and 2416-06-A, installation of three (3) boreholes and associated pipeline to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 9.71 acres, identified as IBR No. 5 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 2380-06 and 2380-06-A, installation of the support facilities to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by two temporary catch basins, silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.20 acres, identified as IBR No. 10 to OMM Permit No. 375, located in Section 8, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 1396-07 and 1396-07-A, installation of two (2) boreholes and a vertical pump to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 12.50 acres, identified as IBR No. 11 to OMM Permit No. 375, located in Sections 4, 7 and 8, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 1525-07 and 1525-07-A, this area is incorporated for the installation of the water line from the Locust Grove Shaft area to Pond 006. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 0.36 acres, identified as IBR to OMM Permit No. 375, located in Sections 11 and 12, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 0190-08 and 0190-08-A, re-alignment of access road is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.57 acres, identified as IBR No. 14 to OMM Permit No. 375, located in Section 9, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 0369-08, two (2) boreholes will be drilled and a vertical pump will be installed to ensure mine ventilation. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 8.1 acres, identified as IBR No. 25 to OMM Permit No. 375, located in Sections 9 and 10, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 8091-10, two (2) concrete transport boreholes and access road will be constructed and a turbine pump, buried waterline and power line will be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 2.13 acres, identified as IBR No. 55 to OMM Permit No. 375, located in Section 9 and 16, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5530-13 a buried pump discharge pipeline and electrical power line will be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 4.18 acres, identified as IBR No. 52 to OMM Permit No. 375, located in Section 15, Township 8 South, Range 4 East, Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5168-13, this area is being incorporated for the construction of an underground mine support facility including a borehole and installation of an electric vertical turbine pump. The area will also include a buried pipeline and electric power line. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.3 acres, identified as IBR No. 57 to OMM Permit No. 375, located in Section 18, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 4088-14, two (2) boreholes will be constructed and a pump and waterline will be installed to pump underground mine pumpage to an existing waterline along Jordan Fort Road. Topsoil stockpiles will also be located with the IBR area. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.3 acres, identified as IBR No. 58 to OMM Permit No. 375, located in Sections 8 and 17, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5477-13, two (2) boreholes will be constructed and a pump and waterline will be installed to pump underground mine water and to ensure underground ventilation. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 9.89 acres, identified as IBR No. 60 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, Williamson County, Illinois. As proposed and depicted in IEPA Log No. 4237-14, this area is for the development of topsoil and subsoil storage areas and construction of associated drainage ditches. Two (2) drainage ditches, identified as Collection Ditch Nos. D-5E-1 and D-5D-1, directs runoff from this area to existing Ditch D-5c and Pond 005.

An additional area of 1.0 acres, identified as IBR No. 78 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, and Sections 7 and 18, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 9082-19, this area is incorporated into this permit for a buried four-inch waterline to be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 19.9 acres, identified as IBR No. 79 to OMM Permit No. 375, located in Sections 35 and 36, Township 7 South, Range 3 East, in Franklin County, Illinois. As proposed and depicted in IEPA Log No. 9083-19, this area is incorporated into this permit for installation of a supply shaft to transport supplies underground as required for the continued effective operation of approved mine plan, belt air shaft and fan to supply required ventilation along with six (6) steel cased boreholes with a diameter less ten 10 5/8 inches for power and other supplies, power substation, dry storage barn and equipment yard. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 17.01 acres, identified as IBR No. 83 to OMM Permit No. 375, located in Sections 2, 3, 9 and 10, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 9109-19, this area is incorporated into this permit for a access roadway, one 16.5 foot bleeder shaft, utility boreholes, concrete pad for transformer, a compressor station and a portable crib plant. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

As described in IEPA Log No. 7395-11 and previously approved under Subtitle D Permit No. 2012-MA-7395-1, a permit area consisting of 9.82 acres located in Section 10, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of compressor bore hole, installation of a buried power line and an access road. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6141-12 and previously approved under Subtitle D Permit No. 2012-MA-6141-1, a permit area consisting of 0.64 acres located in Section 13, Township 8 South, Range 3 East, Williamson County, is incorporated into this permit for the construction of borehole for the batch material supply of crushed stone and concrete to the underground mine. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6562-12 and previously approved under Subtitle D Permit No. 2013-MA-6562, a permit area consisting of 3.81 acres located in Section 16, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of a steel-liner drill hole and temporary installation of a pumpable cement product mixing plant used for underground mine. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6039-12 and previously approved under Subtitle D Permit No. 2015-MA-6039, a permit area consisting of 4.65 acres located in Section 14, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for installation of ventilation shaft site. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 2273-16 and previously approved under Subtitle D Permit No. 2016-MA-2273, a permit area consisting of 6.5 acres located in Section 29, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of a concrete lined South District Supply Shaft to provide supplies to underground workings, three (3) boreholes, a pole barn and an access road. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As previously approved under Subtitle D Permit No. 2014-MW-4275, a fine coal refuse (slurry) disposal area incorporating the use of geotextile tubes was developed at Pond Creek Mine site. As described and depicted in IEPA Log Nos. 4275-14, 4275-14-A, 4275-14-B, 1475-14-C development of this area included construction of a low permeability liner consisting of four (4) foot compacted clay with a hydraulic conductivity of 1 x 10^{-7} cm/sec, or less. Surface runoff and dewatering of the geotextile tubes is collected in a "no-discharge" perimeter containment basin and pumped to existing refuse disposal area or coal preparation plant. Hereby incorporated into this permit is a modification of the drainage control plan to allow stormwater runoff from the area to discharge through sediment ditches and spillway into existing Ditch D-5C and through Pond No. 005, as described and depicted in IEPA Log No. 3117-15. Reclamation of the geotextile tube refuse disposal area shell consists of construction of a low permeability cap consisting of four (4) foot compacted clay with hydraulic conductivity of 1x10^{-7}cm/sec, or less. Rooting medium and topsoil required for establishment of vegetative cover shall be in addition to the four (4) foot compacted clay low permeability cap. Four (4) monitoring wells identified as Well Nos. GW-29, GW-30, GW-31 and GW-32 shall be installed at each corner of the geotextile tube placement area. Groundwater monitoring shall be performed in accordance with Condition No. 13.

As described in IEPA Log Nos.1186-17, 1186-17-Band 1385-17, and previously approved under Subtitle D Permit No. 2017-MA-1186-1, a permit area consisting of 17.7 acres located in Section 12, Township 8 South, Range 3 East, Williamson County, is incorporated into this permit for construction of a Water Management Facility consisting of three (3) water holding cells. Construction and development of the water Management facility includes topsoil removal, grading, foundation preparation and installation of a low permeability liner consisting of four (4) foot compacted clay liner with a hydraulic conductivity of 1 x 10^{-7} cm/sec within the water holding cells. Compacted clay liner shall also be subject to and in accordance with the specifications and testing requirements of Condition No. 12. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above. Four (4) monitoring wells identified as Well Nos. GW-33, GW-34, GW-35 and GW-36 shall be installed as depicted in IEPA Log Nos. 1186-17, 1186-17-B and 1385-17 Groundwater monitoring shall be performed in accordance with Condition No.13.

The following mining operations plan changes are incorporated into this permit:

Log No. 2413-06	The Mining Operations Plan has been revised to include the construction of an access tunnel under the railroad loop and administration building.
Log No. 2414-06	The Mine Operations Map has been revised to depict the revised various structures within the support facility.
Log No. 0371-08	Installation of a concrete sump at the existing road tunnel and a pipeline which will discharge to Sediment Pond No. 003, identified as IPR No. 13 to OMM Permit No. 375.

Surface drainage control is provided by nine (9) sedimentation ponds with discharges designated as 001, 002, 003, 004, 005 and 011 classified as alkaline mine drainage, and Outfalls 006, 007, 008 classified as acid mine discharge. The sanitary wastewater water treatment system will be approved by the Illinois Department of Public Health.

The location and receiving stream of the Outfalls at this facility is as follows:

Outfall No.	Latitude			Longitude			Receiving Water
	DEG	MIN	SEC	DEG	MIN	SEC	
001	37°	50'	59.2"	88°	49'	37.5"	Unnamed tributary to Pond Creek
002	37°	50'	26.0"	88°	49'	51.5"	Unnamed tributary to Pond Creek
003	37°	50'	26.0"	88°	49'	58.0"	Unnamed tributary to Pond Creek
004	37°	50'	25.0"	88°	49'	56.6"	Unnamed tributary to Pond Creek
005	37°	50'	9.1"	88°	50'	00.0"	Unnamed tributary to Pond Creek
006	37°	50'	28.4"	88°	50'	40.6"	Unnamed tributary to Pond Creek
007	37°	50'	29.5"	88°	49'	34.0"	Unnamed tributary to Pond Creek
008	37°	50'	31.4"	88°	49'	33.9"	Unnamed tributary to Pond Creek
011	37°	52'	37"	89°	01'	49"	Big Muddy River

Original Sedimentation Ponds with discharges designated as Outfall Nos. 007 and 008 have been re-designed as described and depicted in IEPA Log No. 8554-10.

Refuse disposal
Refuse Disposal Area as previously approved in IEPA Log No. 3054-05, was constructed in phases as depicted and described in IEPA Log No. 2377-06 (RDA No. 1), Refuse Disposal Area No. 2 was constructed at Pond Creek Mine facilities as proposed and described in IEPA Log Nos. 1465-07, 1465-07-B, 1465-07-D, 1465-07-E, 1465-07-G, 1520-07, 0346-08, 9005-09, 9198-09, 9198-09-A, 8114-10, 8114-10-A, 7185-11, 7225-11, 6431-12, 6431-12-A and 5378-13.

As previously approved under Subtitle D Permit No. 2015-MA-3432, construction and development of Refuse Disposal Area No. 3 includes topsoil removal, grading, foundation preparation for refuse area, also construction of the water holding cell and installation of four (4) foot compacted clay liner was performed in accordance with the procedures discussed and outlined in IEPA Log No. 3432-15. As described in IEPA Log No. 3432-15, all stormwater runoff from the deposited coarse refuse within the RDA No. 3 is collected and maintained within the RDA No. 3 and/or is pumped into the slurry impounding structure of the existing RDA, which is an integral part of the Pond Creek Mine No. 1 coal preparation plant closed circuit wastewater handling system.

As described and depicted in IEPA Log Nos. 3001-15 and 3001-15-C Refuse Disposal Area No. 3 (RDA 3) is approved for construction. RDA 3 is located immediately east of the RDA 1 and RDA 2 areas, contains 229.78 acres, and is included in the above cited total Permit acreage. The area for RDA 3 is located in Section 12, Township 8 South, Range 3 East and Section 7, Township 8 South, Range 4 East, Williamson County, Illinois. To not increase chloride and sulfates due to construction of RDA 3, the mine is reclaiming the outslopes of the RDA 1 and RDA 2 that previously discharged through Outfalls 007 and 008. There will be no increase in loading due to the construction of RDA 3. Runoff from this area will be tributary to previously constructed water holding cell. Construction of four (4) foot compacted clay liners for the Refuse Disposal Area No. 3, shall be subject to and in accordance with the specifications and testing requirements of Condition No. 12. With prior approval as to thickness and installation procedures, an HDPE synthetic liner may be utilized in lieu of the compacted clay liners proposed.

Mixing Zone (Big Muddy River)
Excess water will be transported from the Pond Creek Mine to Outfall No. 011 on the Big Muddy River through a high-density polyethylene (HDPE) pipeline. Water will be pumped from the Water Holding Cell by pumps through approximately 12.5 miles of pipe to the diffuser located at the mixing zone location. The pipeline ROW will be approximately 50 feet in width with a total permitted area of approximately 70.7 acres. The amount of water that could be discharged through the Pipeline depends upon the chloride concentration in the discharge stream, the background chloride content and the flow in the Big Muddy River. The upper limit to the discharge will be based on the pumping capacity of the facility. Maximum pumping rate of 5,000 gallons per minute or 11.1 cfs. from the facility. The volume of water discharged to Big Muddy River will be dependent upon the flow in the Big Muddy River and the chloride concentration of the water in the Water Holding Cell and the chloride concentration coming downstream in the River.

During operations of the pipeline, continuous flow monitors will be installed to provide protection against leakage. Flow will be monitored near the pump discharge while the pipeline is within the sediment control structure of Pond Creek Mine. Flow will also be monitored at the mixing zone location. This instrumentation will be connected to an alarm monitoring system and flow data will be transmitted to a central location for tracking and assessing system operations. The flow monitoring system operation and maintenance is subject to the requirements of Special Condition No. 15.

Groundwater monitoring for the facility will consist of Monitoring Well Nos. MW-10, MW-11, MW-12, MW-13, MW-8R, MW-28, GW-1, GW-2, GW-4, GW-5, GW-9, GW-33, GW-34, GW-35 and GW-36. Groundwater monitoring requirements are outlined in Condition No. 13.

This Construction Authorization replaces Construction Authorization No. 3054-05.

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109.

All water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.202. For the constituents not covered by 35 Ill. Adm. Code Parts 302 or 303, all water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.106.

Construction Authorization No. 3117-15

This Authorization is issued subject to the following Condition(s). If such Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval to secure issuance of a Supplemental Authorization to Construct.

1. If any statement or representation is found to be incorrect, this permit may be revoked and the permittee thereupon waives all rights thereunder.

2. The issuance of this permit (a) shall not be considered as in any manner affecting the title of the premises upon which the mine or mine refuse area is to be located; (b) does not release the permittee from any liability for damage to person or property caused by or resulting from the installation, maintenance or operation of the proposed facilities; (c) does not take into consideration the structural stability of any units or parts of the project; and (d) does not release the permittee from compliance with other applicable statutes of the State of Illinois, or with applicable local laws, regulations or ordinances.

3. Final plans, specifications, application and supporting documents as submitted by the permittee and approved by the Agency shall constitute part of this permit in the records of the Agency.

4. There shall be no deviations from the approved plans and specifications unless revised plans, specifications and application shall first have been submitted to the Agency and a supplemental permit issued.

5. The permit holder shall notify the Agency (217/782-3637) immediately of an emergency at the mine or mine refuse area which causes or threatens to cause a sudden discharge of contaminants into the waters of Illinois and shall immediately undertake necessary corrective measures as required by 35 Ill. Adm. Code 405.111. (217/782-3637 for calls between the hours of 5:00 p.m. to 8:30 a.m. and on weekends.)

6. The termination of an NPDES discharge monitoring point or cessation of monitoring of an NPDES discharge is not authorized by this Agency until the permittee submits adequate justification to show what alternate treatment is provided or that untreated drainage will meet applicable effluent and water quality standards.

7. Initial construction activities in areas to be disturbed shall be for collection and treatment facilities only. Prior to the start of other activities, surface drainage controls shall be constructed and operated to avoid violations of the Act or Subtitle D. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed, for the parameters designated as 1M through 15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet the standards of 35 Ill. Adm. Code 406.106 or applicable water quality standards, a Supplemental Permit must be obtained. Discharge from ponds is not allowed unless applicable effluent and water quality standards are met in the basin discharge(s).

8. This Agency must be informed in writing and an application submitted if drainage, which was previously classified as alkaline (pH greater than 6.0), becomes acid (pH less than 6.0) or ferruginous (base flow with an iron concentration greater than 10 mg/L). The type of drainage discharging to the basin should be reclassified in a manner consistent with the applicable provisions of 35 Ill. Adm. Code Part 406. The application should discuss the treatment method and demonstrate how the discharge will meet the applicable standards.

9. A permittee has the obligation to add a settling aid if necessary to meet the suspended solids or settleable solids effluent standards. The selection of a settling aid and the application practice shall be in accordance with a. or b. below

    a. Alum ($Al_2(SO_4)_3$), hydrated lime ($Ca(OH)_2$), soda ash (Na_2CO_3), alkaline pit pumpage, acetylene production by-product (tested for impurities), and ground limestone are acceptable settling aids and are hereby permitted for alkaline mine drainage sedimentation ponds.

    b. Any other settling aids such as commercial flocculents and coagulants are permitted only on prior approval from the Agency. To obtain approval a permittee must demonstrate in writing to the Agency that such use will not cause a violation of the toxic substances standard of 35 Ill. Adm. Code 302.210 or of the appropriate effluent and water quality standards of 35 Ill. Adm. Code parts 302, 304, and 406.

10. A general plan for the nature and disposition of all liquids used to drill boreholes shall be filed with this Agency prior to any such operation. This plan should be filed at such time that the operator becomes aware of the need to drill unless the plan of operation was contained in a previously approved application.

11. Any of the following shall be a violation of the provisions required under 35 Ill. Adm. Code 406.202:

    a. It is demonstrated that an adverse effect on the environment in and around the receiving stream has occurred or is likely to occur.

b. It is demonstrated that the discharge has adversely affected or is likely to adversely affect any public water supply.

c. The Agency determines that the permittee is not utilizing Good Mining Practices in accordance with 35 Ill. Adm. Code 406.204 which are fully described in detail in Sections 406.205, 406.206, 406.207 and 406.208 in order to minimize the discharge of total dissolved solids, chloride, sulfate, iron and manganese. To the extent practical, such Good Mining Practices shall be implemented to:

i. Stop or minimize water from coming into contact with disturbed areas through the use of diversions and/or runoff controls (Section 406.205).

ii. Retention and control within the site of waters exposed to disturbed materials utilizing erosion controls, sedimentation controls, water reuse or recirculation, minimization of exposure to disturbed materials, etc. (Section 406.206).

iii. Control and treatment of waters discharged from the site by regulation of flow of discharges and/or routing of discharges to more suitable discharge locations (Section 406.207).

iv. Utilized unconventional practices to prevent the production or discharge of waters containing elevated contaminant concentrations such as diversion of groundwater prior to entry into a surface or underground mine, dewatering practices to remove clean water prior to contacting disturbed materials and/or any additional practices demonstrated to be effective in reducing contaminant levels in discharges (Section 406.208).

12. The four (4) foot compacted clay liner to be constructed course refuse disposal area, fine coal refuse area (RDA No. 3) shall be subject to the specifications and procedures presented in IEPA Log No. 3001-15-C.

Construction Specifications

a. All soils to be used for the compacted clay liner shall be free of grass, vines, vegetation and rock or stones greater than four (4) inches in diameter.

b. Samples collected from the borrow area shall be evaluated in accordance with ASTM D422, D4318 and D2487 to ensure classification criteria are met.

c. Each successive soil lift shall be placed to a 6 to 8 inch loose thickness; however, in no instance shall the loose lift thickness exceed the length of the pads or feet on the compactor or roller.

d. Each soil lift shall be compacted to the minimum Standard Proctor (ASTM D698) density identified in item no. 12(q) below, at a moisture content of 0% to 5% above the optimum moisture content of the soil.

e. Inter-lift surfaces shall be adequately scarified to ensure inter-lifting bonding.

f. Liner construction shall be performed to consistent achievement of density, moisture content, and hydraulic conductivity for each successive lift.

g. The placement of frozen material or the placement material on frozen ground is prohibited.

h. Contemporaneous placement or protective covering shall be provided to prevent drying, desiccation and/or freezing where necessary.

i. Liner construction shall be completed in a manner which reduces void spaces within the soil and liner.

j. All construction stakes shall be removed during construction, and all test holes (Shelby tube samples) are to be backfilled with bentonite.

k. The compacted clay liner shall be constructed in a manner to achieve a uniform barrier with a hydraulic conductivity of 1 x 10^{-7} cm/sec.

l. In the event that acceptable compaction results are not achieved, the soil lift shall be reprocessed or removed and replaced. If moisture content is less than optimum, or greater than 5% above optimum, the falling material shall be wetted or dried to a moisture content within specification and re-compacted. If the dry density is below specification, the failing material shall be re-compacted until a passing test is achieved.

m. In the event of a failing conductivity test, the soil may be removed or re-compacted and retested until a passing result is obtained; or the soil immediately above and below the test specimen from the same Shelby tube may be tested. If both tests pass, the original test shall be nullified. If either test fails, that portion of the liner shall be rejected and shall be reconstructed and retested until passing results are obtained. The limits of necessary reconstruction shall be determined by additional sampling and testing within the failed region, thereby isolating the failing area of work.

Testing Specifications

n. Prior to initiating soil liner construction, borrow soils shall be identified, qualified, and verified. At minimum, a representative sample of each soil type identified within the borrow area is to be collected and analyzed for gradation, compaction, and hydraulic conductivity characteristics.

o. Samples collected from borrow area shall be evaluated in accordance with ASTM D422, D4318 and D2487 to ensure classification criteria are met.

p. Samples collected from the borrow area shall be tested in accordance with ASTM D 698 to determine maximum dry density and optimum moisture content of the soil.

q. Samples collect from the borrow area shall be compacted to 90% and 95% standard Proctor density at or near optimum moisture content. The hydraulic conductivity of the re-compacted samples shall be determined in accordance with ASTM D5084 procedures. The results of this testing shall be used to establish the minimum dry density for soil liner compaction necessary to achieve a hydraulic conductivity of 1 x 10^{-7} cm/sec or less.

r. Moisture and density testing by nuclear methods (ASTM D2922 and D3017) shall be conducted at a rate of at least one test per 1,000 cubic yards placed. Testing locations shall be random and shall not be known to the earthwork contractor prior to lift placement.

s. To ensure the accuracy and reproducibility of the nuclear testing, all nuclear density gauges shall be certified to calibration. Soil compaction tests shall be double-checked with independent test methods. A drive cylinder test and laboratory moisture content determination shall be conducted and compared to gauge readings. These independent checks shall be made at the outset of construction and on a bi-weekly basis (e.g., every ten working days) thereafter.

t. Samples for hydraulic conductivity verification shall be retrieved from the compacted soil liner and tested in accordance with ASTM D5084 procedures. Samples shall be retrieved using three-inch Shelby tubes. Samples shall be completed at frequency of one sample/test per 20,000 cubic yards placed. The vertical location of the recovered samples shall be varied so that representative portions or lifts of the contractor prior to soil liner construction.

u. Survey checks shall be conducted at a minimum spacing of 100 ft. centers, and at 100 ft. intervals along each line where a break in slope occurs, to verify liner thickness. To verify liner thickness, the survey checks shall be taken before and after liner construction.

13.. Groundwater monitoring requirements for Well Nos. MW-10, MW-11, MW-12, MW-13, MW-8R, MW-28, GW-1, GW-2, GW-4, GW-5, GW-9, GW-33, GW-34, GW-35 and GW-36 are as follows:

a. Ambient background monitoring shall be performed for all referenced wells. Such ambient monitoring shall consist of six (6) samples collected during the first year (approximately bi-monthly) following well installation but no later than during the first year of operation or disturbance to determine ambient background concentrations. Background monitoring shall include the following list of constituents:

Aluminum	Fluoride	Sulfate
Antimony	Iron (dissolved)	Thallium
Arsenic	Iron (total)	Total Dissolved Solids
Barium	Lead	Vanadium
Beryllium	Manganese (dissolved)	Zinc
Boron	Manganese (total)	pH (field)
Cadmium	Mercury	Acidity
Chloride	Molybdenum	Alkalinity
Chromium	Nickel	Hardness
Cobalt	Phenols	Static Water Elevation
Copper	Selenium	
Cyanide	Silver	

b. Following the ambient monitoring as required under Condition No. 13(a) above, routine monitoring shall continue on a quarterly basis as follows:

i. Monitoring Well Nos. MW-10, MW-11, MW-12, MW-13, MW-8R, MW-28, GW-2, GW-5, GW-9, GW-33, GW-34, GW-35 and GW-36 shall continue to be monitored quarterly for the contaminants identified in Condition No. 13(a) above.

ii. Monitoring Well Nos. GW-1 and GW-4 shall be monitored quarterly as required by IDNR/OMM for the following list of constituents:

Chloride	Total Dissolved Solids
Iron (dissolved)	Hardness
Iron (total)	Acidity
Manganese (dissolved)	Alkalinity
Manganese (total)	pH
Sulfate	Static Water Elevation

c. Following completion of active mining and reclamation, post-mining monitoring of all above referenced wells shall consist of six (6) samples collected during a 12-month period (approximately bi-monthly) to determine post-mining concentrations. Post-mining monitoring shall include the list of constituents identified in Condition No. 13(a) above.

d. Groundwater monitoring reports shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 5 of this NPDES permit.

e. A statistically valid representation of background and/or post mining water quality required under Condition No. 13(b) above shall be submitted utilizing the following method. This method shall be used to determine the upper 95 percent confidence limit for each parameter listed above.

Should the Permittee determine that an alternate statistical method would be more appropriate based on the data being evaluated, the Permittee may request utilization of such alternate methodology. Upon approval from the Agency, the alternate methodology may be utilized to determine a statistically valid representation of background and/or post mining water quality.

The following method should be used to predict the confidence limit when single groundwater samples are taken from each monitoring (test) well.

i. Determine the arithmetic mean $\left(\overline{X}_b\right)$ of each indicator parameter for the sampling period. If more than one well is used, an equal number of samples must be taken from each well.

$$\overline{X}_b = \frac{X_1 + X_2 + \ldots X_n}{n}$$

Where:

$\overline{X}_b$ = Average value for a given chemical parameter

X_n = Values for each sample

n = the number of samples taken

ii. Calculate the background and/or post mining variance (S_b^2) and standard deviation (S_b) for each parameter using the values (X_n) from each sample of the well(s) as follows:

$$S_b^2 = \frac{(X_1 - \overline{X}_b)^2 + (X_2 - \overline{X}_b)^2 + \ldots + (X_n - \overline{X}_b)^2}{n-1}$$

$$S_b = \sqrt{S_b^2}$$

iii. Calculate the upper confidence limit using the following formula:

$$CL = \overline{X}_b \pm t\sqrt{1 + 1/n}\ (S_b)$$

Where:

CL = upper confidence limit prediction
(upper and lower limits should be calculated for pH)
t = onetailed t value at the required significance
level and at n1 degrees of freedom from Table 1
(a twotailed t value should be used for pH)

iv. If the values of any routine parameter for any monitoring well exceed the upper confidence limit for that parameter, the permittee shall conclude that a statistically significant change has occurred at that well.

v. When some of the background and/or post mining values are less than the Method Detection Limit (MDL), a value of one-half (1/2) the MDL shall be substituted for each value that is reported as less than the MDL. All other computations shall be calculated as given above.

If all the background and/or post mining values are less than the MDL for a given parameter, the Practical Quantitation Limit (PQL), as given in 35 Ill. Adm. Code Part 724 Appendix I shall be used to evaluate data from monitoring wells. If the analytical results from any monitoring well exceed two (2) times the PQL for any single parameter, or if they exceed the PQLs for two or more parameters, the permittee shall conclude that a statistically significant change has occurred.

Table 1
Standard tTables Level of Significance

Degrees of freedom	tvalues (onetail)		tvalues (twotail)*	
	99%	95%	99%	95%
4	3.747	2.132	4.604	2.776
5	3.365	2.015	4.032	2.571
6	3.143	1.943	3.707	2.447
7	2.998	1.895	3.499	2.365
8	2.896	1.860	3.355	2.306
9	2.821	1.833	3.250	2.262
10	2.764	1.812	3.169	2.228
11	2.718	1.796	3.106	2.201
12	2.681	1.782	3.055	2.179
13	2.650	1.771	3.012	2.160
14	2.624	1.761	2.977	2.145
15	2.602	1.753	2.947	2.131
16	2.583	1.746	2.921	2.120
17	2.567	1.740	2.898	2.110
18	2.552	1.734	2.878	2.101
19	2.539	1.729	2.861	2.093
20	2.528	1.725	2.845	2.086
21	2.518	1.721	2.831	2.080
22	2.508	1.717	2.819	2.074
23	2.500	1.714	2.807	2.069
24	2.492	1.711	2.797	2.064
25	2.485	1.708	2.787	2.060
30	2.457	1.697	2.750	2.042
40	2.423	1.684	2.704	2.021

Adopted from Table III of "Statistical Tables for Biological Agricultural and Medical Research" (1947, R.A. Fisher and F. Yates).

* For pH only when required.

NPDES Permit No. IL0077666

Supplemental Construction Authorization No. 3117-15-1

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area previously approved under Authorization No. 3117-15. These facilities have been revised as follows:

Mixing Zone (Big Muddy River)
Excess water will be transported from the Pond Creek Mine to Outfall No. 011 on the Big Muddy River through a high-density polyethylene (HDPE) pipeline. Water will be pumped from the Water Holding Cell by pumps through approximately 12.5 miles of pipe to the diffuser located at the mixing zone location. The pipeline ROW will be approximately 50 feet in width with a total permitted area of approximately 70.7 acres. The amount of water that could be discharged through the Pipeline depends upon the chloride concentration in the discharge stream, the background chloride content and the flow in the Big Muddy River. The upper limit to the discharge will be based on the pumping capacity of the facility. Maximum pumping rate of 5,000 gallons per minute or 11.1 cfs. from the facility. The volume of water discharged to Big Muddy River will be dependent upon the flow in the Big Muddy River and the chloride concentration of the water in the Water Holding Cell and the chloride concentration coming downstream in the River. Additional measures aimed at addressing chloride levels in discharges to the Big Muddy River are hereby authorized provided they are consistent with the terms and condition of this permit and are implemented in accordance with the Chloride Optimization Plan required under Condition No. 1 of this Supplemental Construction Authorization.

As proposed and depicted in IEPA Log No. 4244-24, modifications to Special Condition Nos. 15 and 16 are included herein, along with an established methodology for developing calibration curves to correlate sampled and monitored conductivity with chloride concentration.

Collected data required by this permit can be found at the website that will be updated with the current analysis reports:
https://www.foresight.com/operations/

Also, data can be found on the direct hyperlink provided below:
https://tcp.foresight.com/f/7d29be2a1f7cc822/Mach%20BMMZ%20Water%20Reports

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109.

All water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.202. For the constituents not covered by 35 Ill. Adm. Code Parts 302 or 303, all water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.106.

All Conditions in the original Authorization to Construct are incorporated in this Supplemental Authorization unless specifically deleted or revised herein.

1. Chloride Optimization Plan shall be developed and submitted to the Illinois EPA within twenty-four (24) months of the effective date of the issuance of the Remanded Permit. Evaluation of a range of measures for reducing chloride loadings to the Big Muddy, including possible source reduction measures. operational improvements, and minor facility modifications that will optimize reductions in chloride loadings to the Big Muddy shall be submitted to the Illinois EPA. The Chloride Optimization Plan shall include a schedule for the implementation of the optimization measures included in the Chloride Optimization Plan. Annual progress reports on the optimization of the existing treatment facilities shall be submitted to Illinois EPA by March 31 of each year beginning 12 months from the effective date of the issuance of the Remanded Permit.

Special Conditions

Special Condition No. 1: No effluent from any mine related facility area under this permit shall, alone or in combination with other sources, cause a violation of any applicable water quality standard as set out in the Illinois Pollution Control Board Rules and Regulations, Subtitle C: Water Pollution.

Special Condition No. 2: Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.

Special Condition No. 3: All periodic monitoring and reporting forms, including Discharge Monitoring Report (DMR) forms, shall be submitted to the Agency according to the schedule outlined in Special Condition No. 4 or 5 below with one (1) copy forwarded to each of the following addresses:

Illinois Environmental Protection Agency
Division of Water Pollution Control
2520 West Iles Ave.
P.O. Box 19276
Springfield, IL 62794-9276

Attn: Compliance Assurance Section

Illinois Environmental Protection Agency
Mine Pollution Control Program
2309 West Main Street, Suite 116
Marion, Illinois 62959

The Permittee will be required to submit electronic DMRs (NetDMR) instead of mailing paper DMRs to the IEPA, unless a waiver is approved by the Agency. More information, including registration information for the NetDMR program, can be obtained on the IEPA website, https://www2.illinois.gov/epa/topics/water-quality/surface-water/netdmr/Pages/quick-answer-guide.aspx.

Special Condition No. 4: Completed Discharge Monitoring Report (DMR) forms and as well as upstream and downstream monitoring results, shall be retained by the Permittee for a period of three (3) months and shall be submitted electronically (or mailed if waiver is approved by the Agency) and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

Period	Received by IEPA
January, February, March	April 15
April, May, June	July 15
July, August, September	October 15
October, November, December	January 15

The Permittee shall record discharge monitoring results on Discharge Monitoring Report (DMR) forms using one such form for each Outfall and Discharge Condition each month. In the event that an Outfall does not discharge during a monthly reporting period or under a given Discharge Condition, the DMR form shall be submitted with "No Discharge" indicated.

Any and all monitoring results, other than NPDES outfall discharge results reported through NetDMR, shall be submitted to the Agency at the addresses indicated in Special Condition No. 3 above.

Special Condition No. 5: Completed periodic monitoring and reporting, other than DMR's and stream monitoring (i.e., groundwater monitoring, coal combustion waste analysis reports, etc.), shall be retained by the Permittee for a period of three (3) months and shall be mailed and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

Period	Received by IEPA
January, February, March	May 1
April, May, June	August 1
July, August, September	November 1
October, November, December	February 1

Special Condition No. 6: The Agency may revise or modify the permit consistent with applicable laws, regulations or judicial orders.

Special Condition No. 7: If an applicable effluent standard or limitation is promulgated under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the NPDES Permit, the Agency shall revise or modify the permit in accordance with the more stringent standard or prohibition and shall so notify the permittee.

Special Condition No. 8: The permittee shall notify the Agency in writing by certified mail within thirty days of abandonment, cessation, or suspension of active mining for thirty days or more unless caused by a labor dispute. During cessation or suspension of active mining, whether caused by a labor dispute or not, the permittee shall provide whatever interim impoundment, drainage diversion, and wastewater treatment is necessary to avoid violations of the Act or Subtitle D Regulations.

Special Conditions

Special Condition No. 9: Plans must be submitted to and approved by this Agency prior to construction of any future sedimentation ponds. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed for the parameters designated as 1M-15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet these standards, a Supplemental Permit must also be obtained. Discharge from a pond is not allowed unless applicable effluent and water quality standards are met.

Special Condition No. 10: The special reclamation area effluent standards of 35 Ill. Adm. Code 406.109 apply only on approval from the Agency. To obtain approval, a request form and supporting documentation shall be submitted to request the discharge be classified as a reclamation area discharge. The Agency will notify the permittee upon approval of the change.

Special Condition No. 11: The special stormwater effluent standards apply only on approval from the Agency. To obtain approval, a request with supporting documentation shall be submitted to request the discharge to be classified as a stormwater discharge. The documentation supporting the request shall include analysis results indicating the discharge will consistently comply with reclamation area discharge effluent standards. The Agency will notify the permittee upon approval of the change.

Special Condition No. 12: Annual stormwater monitoring is required for all discharges not tributary to a sediment basin until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

a. Each discharge must be monitored for pH and settleable solids annually.

b. Analysis of samples must be submitted with second quarter Discharge Monitoring Reports. A map with discharge locations must be included in this submittal.

c. If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or update previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

Special Condition No. 13: Sediment Pond Operation and Maintenance (Outfalls 001, 002, 003, 004, 005, 006, 007 and 008):

a. For discharges resulting from precipitation events, in addition to the alternate effluent (Discharge Condition Nos. II and III) monitoring requirements, as indicated on the applicable effluent pages of this Permit, discharges from Outfalls 001, 002, 003, 004, 005, 006, 007, 008 shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.

b. The following sampling and monitoring requirements are applicable to flow in the unnamed tributary to Pond Creek which receive discharges from Outfalls 001, 002, 003, 004, 005, 006, 007, 008.

    i. All sampling and monitoring required under 13(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.

    ii. Unnamed tributary to Pond Creek shall be monitored and reported quarterly for Discharge Rate, Chloride, Sulfate and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding receiving stream flow characteristics and in-stream contaminant concentrations the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

        In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

    iii. Unnamed tributary to Pond Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of the associated outfall.

Special Condition No. 14: The Permittee shall install and operate a 1.0 MGD (million gallon per day) reverse osmosis (RO) unit with operation to begin no later than April 4, 2023.

a. The RO permeate (treated water) will discharge though Outfalls 001 thru 008. Discharge may be through any single or combination of multiple outfalls at any given time.

b. The RO reject will discharge to the Big Muddy River through Outfall 011.

Special Condition No. 15: Sediment Pond Operation and Maintenance (Outfall 011):

a. Pursuant to 35 Ill. Adm. Code Part 302.102, discharges from the referenced outfalls that otherwise would not meet the water quality standards of 35 Ill. Adm. Code Part 302 may be permitted if sufficient flow exists in the receiving stream to ensure that applicable water quality standards are met. That is, discharges not meeting the water quality standards of 35 Ill. Adm. Code Part 302 may only be discharged at such limes that sufficient flow exists in the receiving stream to ensure that water quality standards in the receiving stream beyond the area of allowed mixing will not be exceeded. The permittee shall determine the effluent limitation for chloride and/or the maximum effluent flow rate allowable to maintain water quality in the receiving stream. The following equations shall be used to make such determinations:

$$C_{DSC} = \frac{(C_E Q_E + 0.25 C_{US} Q_{US})}{(Q_E + 0.25 Q_{US})}$$

Where:

C_E = Effluent chloride concentration (mg/L) for Outfall 011
Q_E = Effluent flow rate (cfs) for Outfall 011
C_{US} = Upstream chloride concentration (mg/L)
Q_{US} = Upstream flow rate (cfs)
C_{DSC} = Calculated Downstream Concentration (mg/L)

The daily maximum of CDSC shall be less than 500 mg/L and reported on the discharge monitoring reports (DMRs) along with the C_E, Q_E, C_{US}, Q_{US}, and conductivity at the time of the maximum.
Permittee will continuously monitor C_E, Q_E, C_{US}, and Q_{US} and continuously calculate C_{DSC} so that at no time will C_{DSC} exceed 500 mg/L. For each day, Permittee shall record the data point (ie. C_E, Q_E, C_{US}, Q_{US}) and its calculation for C_{DSC} that occurs at each of (1) the highest C_E concentration, (2) the highest Q_E flow, (3) the highest C_{US} concentration, and (4) the lowest Q_{US} flow. The daily data described in the preceding sentence will be posted once per month pursuant to the terms of a settlement agreement between Permittee and Petitioners in Docket No. PCB 22-69.

C_E is measured by the permittee using real-time measurements of conductivity and the approved effluent correlation. The daily maximum CE shall be less than 5000 mg/L and reported on the discharge monitoring reports (DMRs).

Q_E is measured by the permittee using real-time measurements of effluent flow rate. The daily maximum Q_E shall be less than 11.1 cfs and reported on the discharge monitoring reports (DMRs).

C_{US} is measured by the permittee using real-time upstream measurements of conductivity and the approved river correlation. The permittee shall install a continuous conductivity monitor upstream of the discharge. The continuous conductivity monitoring locations need to be approved by the Agency.

Q_{US} is the real-time river flow data taken from the Plumfield USGS gage. The permit allows discharge from Outfall 011 when the Big Muddy River (Q_{US}) is between 30 to 2350 cfs, except after a 1-year,
24- hour precipitation event, Outfall 011 can discharge for 6 consecutive days. The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches. The daily maximum and daily minimum shall Q_{US} be reported on the discharge monitoring reports (DMRs).

For this permit, 'conductivity' shall mean specific conductance at 25º C.

Sulfate, chloride and Iron (dissolved) shall be monitored from the effluent three (3) times per week when discharging and reported in the DMR's

Special Conditions

The maximum dispersion required for all water quality parameters is 13.3:1.
The zone of initial dilution for Ports 1 and 2 has a length of 4.5 feet by a width of 1.12 feet each. The zone of initial dilution for Port 3 has a length of 5.68 feet by a width of 1.38 feet. The zone of initial dilution for Port 4 has a length of 7.64 feet by a width of 1.97 feet. The zone of initial dilution for Port 5 has a length of 9.18 feet by a width of 2.23 feet. The mixing zone has a length of 46 feet by a width of 25 feet.

Flow & chloride concentrations (Q_{US}, C_{US}, Q_E, C_E) shall be available for the inspector during inspections.

Measured downstream concentration (C_{DSM}). In addition to the calculated downstream concentration, the permittee shall install a continuous conductivity monitor located within ten (10) feet of the edge of the mixing zone downstream of Outfall 011. The location of the downstream monitor will be approved by the Agency. The measured downstream chloride concentration, calculated from measured conductivity using the approved river correlation, shall not exceed 500 mg/L. The daily maximum measured downstream chloride concentration (C_{DSM}) and the measured conductivity shall be reported on the DMR's. For this permit, 'conductivity' shall mean specific conductance at 25º C.

Correlations. The permittee shall develop correlations to determine chloride from conductivity for the river and the effluent as described below. Initial datasets for the correlation are identified in "InitialDatasets_NPDESPermitIL0077666.xlsx".

The river correlation is developed from the initial "full dataset" for the river (sheet *FullDataset_BMR*), made up of data points of paired conductivity and chloride measurements. A protective subset of the full dataset is created (sheet *ProtectedSubset_BMR*). The protective subset is a strictly increasing subset of the full dataset (i.e. it is created by taking only the data points for which the chloride is greater than all data points with a smaller conductivity). The river correlation is the line of best fit for the protective subset created from the regression, either linear, exponential, polynomial (order 2 or 3), logarithmic, or natural logarithmic, that produces the highest r^2 value.

The effluent correlation is developed from the full dataset for the effluent (sheet *FullDataset_Facility*), made up of data points of paired conductivity and chloride measurements. A protective subset is created (sheet *ProtectedSubset_Facility*) from this dataset (distinct from the river full dataset and river protective subset) using the same methodology described above (again, a strictly increasing subset made up of data points for which the chloride is greater than all data points with a smaller conductivity). The effluent correlation is the line of best fit for the protective subset created from a regression with the highest r^2 value, as described above.

New data is collected and added to the full datasets monthly. Monthly paired chloride samples and conductivity measurements in the Big Muddy River (upstream and downstream) and in the effluent are required to ensure that the correlations remain protective. Both the upstream and downstream measurements are added to the full dataset for the river, and the effluent measurement is added to the full data set of the effluent. The monthly measurements shall be reported on the discharge monitoring reports (DMRs) as conductivity (correlation, upstream), conductivity (correlation, downstream), conductivity (correlation, effluent), chloride (correlation, upstream), chloride (correlation, downstream) and chloride (correlation, effluent). The full dataset, protective subset, and updated correlations are reviewed and approved by the Illinois EPA every 6 months, after which the permittee switches to the new correlations. The full datasets, the protective subsets, and any outlier report (see below) shall be posted on the publicly available website monthly. The new approved correlations will be posted on the publicly available website, with the document Illinois EPA approval, when approved.

The correlations are expected to change. Should the permittee decide that a data point is incorrect due to a sampling or laboratory error, the permittee will immediately schedule a re-sample and prepare an outlier report. The outlier report shall include the details of the measurement and the reasoning for excluding the data point. The outlier report will be submitted to Illinois EPA during the 6 month review and approval process, along with the re-sample. The Agency can reject the request to exclude the data. The outlier report will also be posted to the website, as noted above.

The approved river and effluent correlations in effect at the time of discharge shall govern the mine's compliance under the permit. To the extent new data points adjust the correlation between chlorides and conductivity, such adjusted correlation shall be applied prospectively only, not retroactively, in determining the mine's compliance under the permit.

Outfall 011 shall include signage on the bank of the Big Muddy River to inform people on the Big Muddy River that the outfall is present.

A mussel survey and a macroinvertebrate survey is required 1 year after commencement of the discharge from Outfall 011, during the next sampling period.

The pipeline should be constructed with new material and pressure control sensors (or other type of equipment) to stop the pumps when there is a loss of pressure in the pipeline.
Inspection reports of the pipeline should be available to the Agency's inspector when requested.

b. The following sampling and monitoring requirements are applicable to flow in Big Muddy River, which receives the discharges from Outfall 011

i. All sampling and monitoring required under 15(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.

ii. The Big Muddy River shall be monitored and reported quarterly for Discharge Rate, Sulfate, Chloride, and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred.

iii. The Big Muddy River shall be monitored and reported annually for Discharge Rate, Sulfate, Chloride and Hardness upstream of the associated outfall.

Special Condition No. 16: Outfall 011 additional limit and downstream monitoring and reporting:

a. The permittee shall collect three samples per week from the receiving stream of Sulfate, Nickel (dissolved), and Copper (dissolved) within 10 feet of the edge of the mixing zone.

b. Effluent discharges shall not exceed a concentration of 0.1 mg/L for total phosphorus or a concentration of iron (dissolved) of 1.0 mg/L or an ammonia-nitrogen concentration above the concentrations in the table below:

Ammonia Nitrogen	Monthly Average	Weekly Average	Daily Maximum
March - May, Sept. – Oct.	3.3	8.2	15.0
June – August	1.7	4.1	15.0
Nov. – Feb.	4.5	-	10.1

If the permittee's effluent sample are in compliance with the effluent limits for total phosphorus and/or ammonia-nitrogen for a period of one year, permittee may apply to terminate the limits set in this Special Condition No. 16(b) for phosphorus and/or ammonia-nitrogen.

c. Concentrations at the edge of the mixing zone shall not exceed:

Chloride = 500 mg/L
Sulfate = 500 mg/L
Concentrations of copper (dissolved) and nickel (dissolved) shall not exceed a monthly average of
Copper (dissolved) = 0.0105 mg/L
Nickel (dissolved) = 0.0046 mg/L

d. Subject to d) below, the discharge from Outfall 011 shall cease

i. if the concentration of chloride at the downstream monitoring location exceeds 700 mg/L more than 20% of the time in any month,
ii. if the concentration of sulfate is greater than 700 mg/L,
iii. if the concentration of iron (dissolved) in effluent discharges at Outfall 011 is greater than 1.4 mg/L, or
iv. if the concentration of copper (dissolved) or nickel (dissolved) exceed a monthly average of 0.0126 mg/L for copper (dissolved) or 0.0055 mg/L for nickel (dissolved)

e. Once a requirement to cease is triggered pursuant to this Special Condition, Permittee shall only resume discharge upon collecting data, post-dating the cease-and-desist establishing "Resumption Conditions" as defined herein. Resumption Conditions exist when a water sample taken from the water holding cell shows that concentrations of all parameters in the permit will meet water quality standards at the edge of the Mixing Zone, given then-existing instream conditions. The Permittee shall notify the Agency by letter, and post to the publicly available website, of the triggering of the requirement to cease discharging and of the steps taken to resume the discharge of Outfall 011, including the data demonstrating the cease trigger and data demonstrating that "Resumptive Conditions" are met.

f. The averaging rules of 304.104 are not applicable to the limits set in this Special Condition. Limits imposed by this Special Condition regarding violations of water quality standards are not subject to any exception for bypass under 40 CFR 122.41 and must be met at all times.

g. The permittee shall install a continuous Dissolved Oxygen (DO) monitor located within ten (10) feet of the edge of the mixing zone downstream of Outfall 011. The location of the downstream monitor will be approved by the Agency. The daily max and daily minimum DO shall be recorded. The highest daily maximum and lowest daily minimum DO shall be reported on the DMR

h. If the monitoring of Dissolved Oxygen (DO) at the edge of the mixing zone shows violations of the DO standard of 302.206 (b), the permittee shall undertake a study to determine the cause of the DO violations and report on its conclusions within 3 months of the occurrence.

i. The permittee shall report on its DMRs, the data required to be reported by Special Condition 16 and shall make such data available to the public through the publicly-accessible website identified in the Supplemental Construction Authorization 3117-15-1.

Special Condition No. 17: Data collected in accordance with Special Condition Nos. 13 and 15 above will be utilized to evaluate the appropriateness of the effluent limits established in this Permit. Should the Agency's evaluation of this data indicate revised effluent limits are warranted; this permit may be reopened and modified to incorporate more appropriate effluent limitations. This data will also be used for determination of effluent limitations at the time of permit renewal.

Special Condition No. 18: Discharges from Outfalls 006, 007, 008 and 011 shall be monitored once per month for the first year and then twice annually spaced at approximately every 6-month apart for the remaining 5-year term of this NPDES Permit. Sampling of the discharges shall be performed utilizing the grab sampling method and analyzed for total (unfiltered) concentrations. The results of the sampling required under this Special Condition shall be submitted twice annually to the Agency in January and July of each calendar year to the addresses indicated in the Special Condition No. 3 above. The parameters to be sampled and the detection limits (minimum reported limits) are as follows:

Parameter	Detection Limit
Arsenic	0.05 mg/L
Barium	0.50 mg/L
Cadmium	0.001 mg/L
Chromium (hexavalent)	0.01 mg/L
Chromium	0.05 mg/L
Copper	0.005 mg/L
Lead	0.05 mg/L
Manganese	0.50 mg/L
Mercury*	1.00 ng/l**
Nickel	0.005 mg/L
Phenols	0.005 mg/L
Selenium	2.000 µg/l***
Silver	0.003 mg/L
Zinc	0.025 mg/L

* Utilize USEPA Method 1631E and the digestion procedure described in Section 11.1.1.2 of 1631E.
** 1.00 ng/l (nanogram/liter) = 1 part per trillion.
*** µg/l = micrograms/liter

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