

NPDES Permit No. IL0078921
Notice No. 6810c

Public Notice Beginning Date: **September 19, 2014**

Public Notice Ending Date: **October 20, 2014**

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
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-0610

Name and Address of Discharger:

White Oak Resources, LLC
121 South Jackson Street
McLeansboro, IL 62859

Name and Address of Facility:

White Oak Resources, LLC
White Oak Mine No. 1
6.6 miles northwest of McLeansboro, Illinois
(Hamilton County)

The Illinois Environmental Protection Agency (IEPA) 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 the Public Notice period ending date indicated above, unless a request for an extension to this 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. Commentors shall provide his or her name and address and the nature of the issues proposed to be raised and the evidence proposed to be presented with regards to those issues. Commentors 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 Section 309.115(a) of the Act, 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 Section 309.109 thru 309.112 of the Act 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 applicant operates an existing underground coal mine (SIC 1222). The Mine operations result in the discharge of alkaline mine drainage and sanitary wastewater discharge.

Public comments are invited on the following proposed modifications. Please limit comments to only the following modifications that are further discussed on Page 30 of this Permit and also Pages 7, 34 and 35 which contains effluent limitations and special condition relative to new Outfall 007:

An additional 32.3 acres are incorporated into the permit for the installation of a wastewater absorption field.

A new discharge designated as Outfall 007.

An additional 16.3 acres are incorporated into the permit for a corridor within which the discharge pipeline (Outfall 007) from Pond HC-01 to Big Creek will be constructed.

Approval to increase the slurry disposal elevation from 443 feet to 453 feet above msl.

This facility has seven (7) existing discharges which are located in Hamilton County, Illinois. The following information identifies the discharge points, receiving streams and outfall locations:

<u>Outfall</u>	<u>Receiving Stream</u>	<u>Latitude (North)</u>	<u>Longitude (West)</u>
001	Unnamed tributary to Big Creek	38° 09' 55.46"	88° 37' 32.37"
002	Unnamed tributary to Big Creek	38° 09' 58"	88° 37' 23"
003	Unnamed tributary to Big Creek	38° 09' 44.06"	88° 37' 5.56"
004	Unnamed tributary to Big Creek	38° 10' 9.21"	88° 36' 12.98"
005	Unnamed tributary to Big Creek	38° 09' 42.49"	88° 35' 47.59"
006	Unnamed tributary to Big Creek	38° 09' 42.93"	88° 35' 42.65"
A04	Pond 004	38° 10' 11.55"	88° 36' 13.21"

Application is made for one (1) new discharge which is located in Hamilton, Illinois. The following information identifies the discharge points, receiving streams and stream classifications:

<u>Outfall</u>	<u>Receiving Stream</u>	<u>Latitude (North)</u>	<u>Longitude (West)</u>
007	Big Creek	38° 09' 42.49"	88° 35' 47.59"

The stream segment CAGB of Big Creek receiving the flow from the unnamed tributary into which Outfalls 001, 002, 003, 004, 005, 006 and 007 discharges is on the 2012 303(d) and the 2014 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairment:

<u>Outfall</u>	<u>Pollutant</u>
001, 002, 003, 004, 005, 006, 007	Aquatic Algae, Cause Unknown

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

Outfall: 001, 002 (Alkaline Mine Drainage)

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)	Mercury	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	1527	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0 – 9.0	-	2100	1000	2.0	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0 – 9.0	-	2100	1000	2.0	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0 – 9.0	Alk.>Acid	2100	1000	2.0	Monitor only	Monitor only	Measure When Sampling	-

I Dry weather discharge (base flow or mine pumpage) from the outfall at times of “low flow” or “no flow” conditions in the receiving stream as defined in Special Condition No. 13.

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 or 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 4.62 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. At such time that receiving stream flow subsides to the degree that the mixing ratio specified in Special Condition No. 13 is not available, monitoring requirements and permit limitations shall revert to Discharge Condition I.

- (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 snow melt total. Settleable Solids effluent standards are contained in 35 Ill. Adm. Code 406.109 and 406.110.
- (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
- (4) Discharges from Outfall 001 and 002, being approved after July 27, 1987, 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: 003 (Alkaline Mine Drainage)

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)	Mercury	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	1170	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0 – 9.0	-	1170	500	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0 – 9.0	-	1170	500	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5 – 9.0	Alk.>Acid	1170	500	1.0	Monitor only	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 or 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 4.62 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.

- (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 snow melt total. Settleable Solids effluent standards are contained in 35 Ill. Adm. Code 406.109 and 406.110.
- (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
- (4) Discharges from Outfall 003, being approved after July 27, 1987, 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: 004 (Alkaline Mine Drainage)

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)	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	500	500	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0 – 9.0	-	500	500	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0 – 9.0	-	500	500	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5 – 9.0	Alk.>Acid	500	500	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 or 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 4.62 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.
 - (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 snow melt total. Settleable Solids effluent standards are contained in 35 Ill. Adm. Code 406.109 and 406.110.
 - (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
 - (4) Discharges from Outfall 004, being approved after July 27, 1987, 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: 005 (Alkaline Mine Drainage)

Discharge Condition	Parameters													
	Total Suspended Solids (mg/l) (3)		Iron (total) (mg/l) (3)(4)		pH** (S.U.) (3)	Alkalinity/ Acidity (3)	Sulfate (mg/l) (1)	Chloride (mg/l) (6)	Manganese (total) (mg/l.) (7)		Hardness (5)	Mercury	Flow (MGD)	Settleable Solids (ml/l) (2)
	30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum				
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1445	500	2.0	4.0	Monitor only	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1445	500	-	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1445	500	-	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1445	500	2.0	4.0	Monitor only	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 or 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 4.62 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 005, being approved after July 27, 1987, 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.

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

Outfall: 006 (Alkaline Mine Drainage)

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)	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	1445	500	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1445	500	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1445	500	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1445	500	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 or 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 4.62 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 006, being approved after July 27, 1987, 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.

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

Outfall: 007 (Underground Mine Pumpage Discharge – not comingled)

Total Suspended Solids (mg/l)		Iron (total) (mg/l)		pH (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/l)	Chloride (mg/l)	Mn (total) (mg/l)		Hardness	Mercury	Flow (MGD)
30 day average	daily maximum	30 day average	daily maximum					30 day Average	Daily maximum			
35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1,181	500	2.0	4.0	Monitor only	Monitor only	Monitor only

- (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 406.106.
- (3) Pursuant to 35 Ill. Adm. Code 406.106, pH shall not be less than 6.0 nor 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 limit.

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

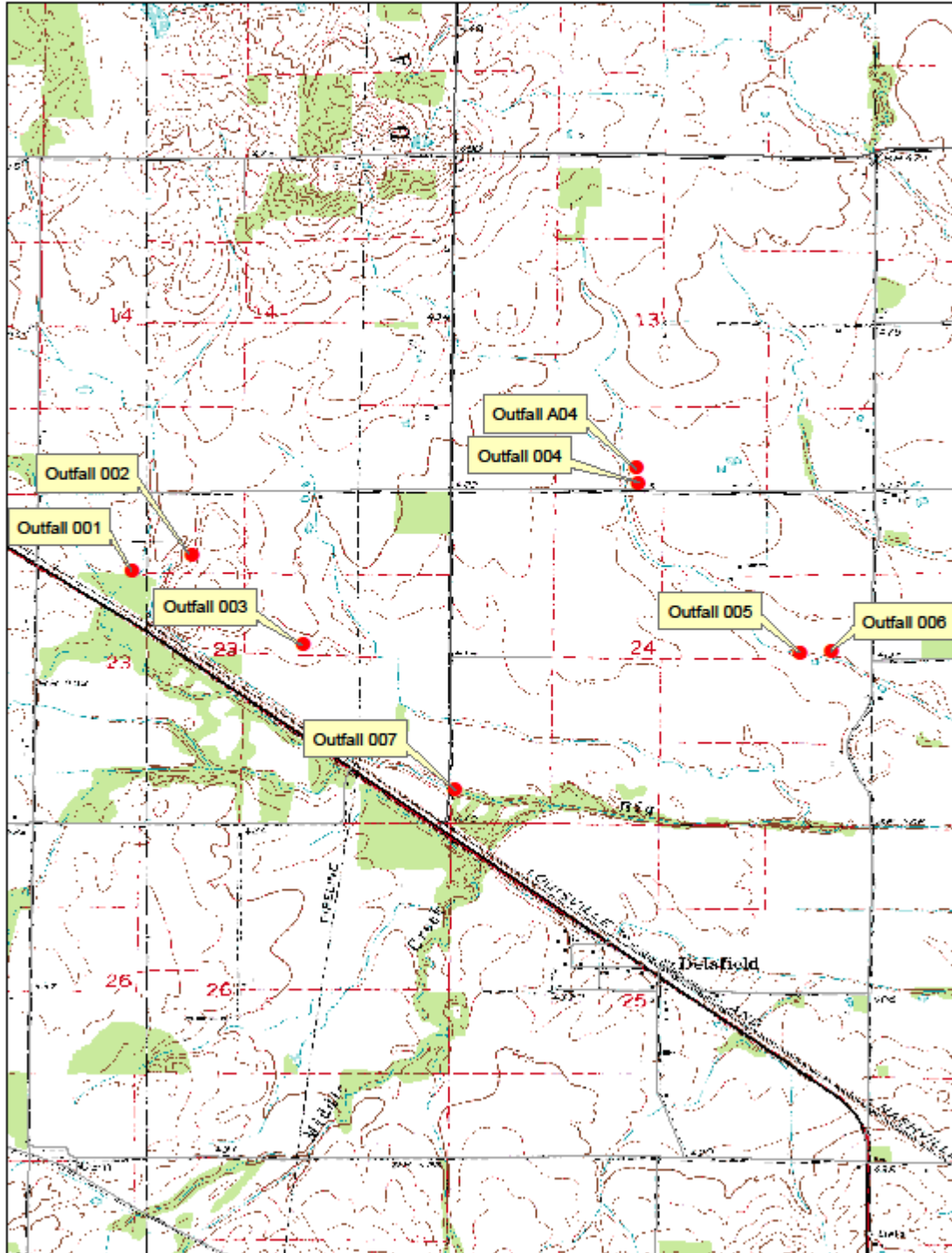
Outfall: A04

Parameters											
Total Suspended Solids				BOD ₅				pH (3) (S.U.)	Chlorine Residual (mg/l)	Fecal Coliform (May through October)	Flow (MGD)
Load Limits (1) (lbs/day)		Concentration Limits (2) (mg/l)		Load Limits (1) (lbs/day)		Concentration Limits (2) (mg/l)					
30 day average	daily maximum	30 day average	daily maximum	30 day average	daily maximum	30 day average	daily maximum				
0.75	1.50	12.0	24.0	0.63	1.25	10.0	20.0	6.0-9.0	0.05	Monitor Only	Measure When Sampling

- (1) Load limits are calculated as follows:
Average Flow (MGD) x Average or Maximum Concentration Limit (mg/l) X 8.34 = lbs/day
- (2) General effluent standards for deoxygenating wastes are contained in 35 Ill. Adm. Code 304.120.
- (3) pH shall not be less than 6.0 nor greater than 9.0 S.U. pursuant to 35 Ill. Adm. Code 304.125(a).

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 13, 14, 15, 22, 23 and 24, Township 4 South, Range 5 West, 3rd P.M., Hamilton County, Illinois.

White Oak Resources, L.L.C. - White Oak Mine No. 1
NPDES No. IL0078921
Hamilton County
Township 4 South, Range 5 West



**Antidegradation Assessment
White Oak Resources, LLC – White Oak Mine No. 1
NPDES Permit No. IL0078921
Hamilton County**

This facility is an existing underground coal mine. Upon commencement of mining, it was discovered that groundwater with a high chloride content (approximately 11,000 mg/L) was flowing into the mine resulting in the need for more underground mine pumpage to surface facilities than was originally anticipated. To this point the mine deals with the water by using it in internal processes (non-discharge) and storing it in a non-discharging mine pumpage holding pond (Pond HC-01) formerly known as non-discharging Pond 005. The high chloride mine pumpage has mixed with stormwater in Pond HC-01 and currently this pond has water with a chloride concentration of 1,700 mg/L. The mine is seeking an Underground Injection Control permit from IEPA BOL for safe disposal of the high chloride mine pumpage, either from Pond HC-01 or pumped from the mine directly, but the injection permit may not be issued before Pond HC-01 fills with wastewater. As an interim and emergency step in disposing of the high chloride wastewater, the applicant has devised a plan whereby water from Pond HC-01 will be piped to a location on Big Creek where it will be blended with Big Creek flows during and after storm events creating new Outfall 007. Information used in this review was obtained from the applicant in a document entitled Antidegradation Assessment for Discharges to Unnamed Tributaries to Big Creek White Oak Resources, LLC Mine, Hamilton County, Illinois dated August 6, 2014.

Identification and Characterization of the Affected Water Body.

New Outfall 007 will discharge to Big Creek (Segment Code CAGB) which has a 7Q10 flow of zero cfs. Big Creek is a General Use water and is listed as impaired in the draft 2014 Illinois Integrated Water Quality Report and Section 303(d) List for aquatic life use. The causes of impairment are given as aquatic algae (non-pollutant) and cause unknown. According to USGS Streams Stats, Big Creek has a watershed area of 18.12 square miles. Big Creek 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. Big Creek is not designated as an enhanced water pursuant to the dissolved oxygen water quality standard.

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

Chloride is the only pollutant identified as exceeding or approaching water quality standards in Pond HC-01 and the mine pumpage. Sulfate and manganese will also be regulated, as will all other usual mine wastewater constituents, in order to ensure that these parameters do not become a problem. The applicant has set up a stream gauge using HECRAS technology, which allows the continuous monitoring of stream flow. A mixing zone will be granted that includes 50% of the stream flow when stream flow is at least 5 cfs to be available to dilute chloride down to the water quality standard. Fifty percent of the stream flow will be unaffected and will serve as a zone of passage for aquatic life. The mine will dispense the high chloride wastewater through a metered pump such that the flow and concentration of the effluent will meet 500 mg/L chloride when it mixes with half the instantaneous flow in Big Creek. Given that Big Creek has an upstream chloride concentration of 32 mg/L, the completely mixed concentration of chloride, i.e., in the area downstream from the edge of the mixing zone, will be considerably less than the water quality standard of 500 mg/L. The applicant will use a dilution chart based on upstream flow from the gauge, upstream chloride concentration and effluent chloride concentration to determine the effluent volume that is allowed to be discharged. The applicant will monitor flow conditions at least every four hours to ensure that the proper amount of effluent is mixed. Effluent chloride concentration and upstream chloride concentration will be periodically measured and the dilution chart recalculated accordingly. No impact on aquatic life or other stream uses is anticipated from this new wastewater discharge.

Fate and Effect of Parameters Proposed for Increased Loading.

Suspended solids and manganese discharged will eventually be incorporated into bed sediments and will continue to move downstream. Sulfate and chloride will remain dissolved in the water and will move through the downstream continuum. Small amounts of these substances will be removed by organisms as these substances are necessary for life. No adverse impacts to the receiving waters will occur as all water quality standards will be met.

Purpose and Social & Economic Benefits of the Proposed Activity.

The existing mine represents a significant investment and the new outfall will allow the mine to continue to operate. The jobs and other economic activity that were created will continue to benefit the community. According to information submitted by the applicant, continuing to operate the mine will maintain jobs for 300 miners and other workers directly tied to the mine operation. The mine pays local and state taxes that amount to approximately \$13 million per year.

**Antidegradation Assessment
White Oak Resources, LLC – White Oak Mine No. 1
NPDES Permit No. IL0078921
Hamilton County**

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

When confronted with the unforeseen chloride problem, the mine investigated options for disposing of the high chloride wastewater. A pipeline to bring the wastewater to a large river for discharge with mixing was considered, but the costs and permitting delays for this option were prohibitive. Disposal through deep well underground injection was almost immediately seen as the option that provided safe disposal without increasing chloride loading to the surface water environment. Deep well injection puts the chloride back in underground strata. The process of obtaining a permit for Underground Injection Control proved to take longer than the applicant originally anticipated, creating the need for a temporary disposal solution. Discharging the high chloride wastewater to a local stream during flow periods when a mixing zone could be permitted is the only viable solution that allows the mine to stay open. This solution may be approved under the antidegradation standard but only as an alternative that will be used before the permit for the deep injection well is obtained or when the well is not available due to maintenance. Deep well injection must always be the first alternative for disposal of the wastewater.

Choosing the option of not discharging the high chloride wastewater is not viable because it would lead to the permanent closure of the mine. Once mine pumpage stops, the mine voids will fill with water, which will compromise the integrity of the underground infrastructure rendering the mine unsafe for future use.

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

The Illinois Department of Natural Resources was consulted on endangered species issues via the Eco-CAT system on July 18, 2014. No aquatic endangered or threatened species were identified. Consultation was terminated immediately.

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 would result in the attainment of water quality standards; that all existing uses of the receiving stream would 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 would benefit the community at large by preserving jobs. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.

NPDES Permit No. IL0078921
Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
Modified NPDES Permit

Expiration Date: September 30, 2015

Issue Date: October 19, 2010
Effective Date: October 19, 2010
Modification Date: July 29, 2011
Modification Date: April 25, 2012
Modification Date: April 17, 2013
Modification Date: February 27, 2014
Modification Date:

Name and Address of Permittee:

White Oak Resources, LLC
121 South Jackson Street
McLeansboro, IL 62859

Facility Name and Address:

White Oak Resources, LLC
White Oak Mine No. 1
6.6 miles northwest of McLeansboro, Illinois
(Hamilton County)

Discharge Number and Name:

001, 002, 003, 004, 005, 006 Alkaline Mine Drainage

007 Underground Mine Pumpage Discharge
(not comingled)

A04 Sanitary Discharge

Receiving waters

Unnamed tributary to Big Creek

Big Creek

Pond 004

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.

Larry D. Crislip, Permit Manager
Mine Pollution Control Program
Bureau of Water

LDC:DM:cs/6810c/9-16-14

NPDES Coal Mine Permit

NPDES Permit No.IL0078921

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*: 001, 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) ***	Mn (total) (mg/l) ***	Hardness ***	Mercury see Special Condition No.17	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	1527	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0 – 9.0	-	2100	1000	2.0	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0 – 9.0	-	2100	1000	2.0	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0 – 9.0	Alk.>Acid	2100	1000	2.0	Monitor only	Monitor only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall at times of "low flow" or "no flow" conditions in the receiving stream as defined in Special Condition No. 13.
- 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 or 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 4.62 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. At such time that receiving stream flow subsides to the degree that the mixing ratio specified in Special Condition No. 13 is not available, monitoring requirements and permit limitations shall revert to Discharge Condition I.

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, a 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.

Discharges from the above referenced outfall that are subject to the requirements of Discharge Conditions II, III and/or IV must meet the water quality standards for sulfate and chloride in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfalls 001 and 002 and the unnamed tributary to Big 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 Coal Mine Permit
 NPDES Permit No.IL0078921
 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*: 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) ***	Mn (total) (mg/l) ***	Hardness ***	Mercury see Special Condition No.17	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	1170	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0 – 9.0	-	1170	500	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0 – 9.0	-	1170	500	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5 – 9.0	Alk.>Acid	1170	500	1.0	Monitor only	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 or 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 4.62 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, a 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No.15 for the discharges from Outfall 003 and the unnamed tributary to Big 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 Coal Mine Permit
NPDES Permit No.IL0078921
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*: 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) ***	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	500	500	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0 – 9.0	-	500	500	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0 – 9.0	-	500	500	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5 – 9.0	Alk.>Acid	500	500	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 or 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 4.62 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, a 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No.15 for the discharges from Outfall 004 and the unnamed tributary to Big 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 Coal Mine Permit

NPDES Permit No. IL0078921

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*: 005 (Alkaline Mine Drainage)

Discharge Condition	Parameters											Mercury See Special Condition No. 17	Flow (MGD)	Settleable Solids (ml/l)
	Total Suspended Solids (mg/l) ***		Iron (total) (mg/l) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/l) ***	Chloride (mg/l) ***	Manganese (total) (mg/l.)		Hardness ***			
	30 day average	daily maximum	30 day average	daily maximum					30 day average	daily maximum				
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1445	500	2.0	4.0	Monitor only	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1445	500	-	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1445	500	-	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1445	500	2.0	4.0	Monitor only	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 or 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 4.62 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 15 for the discharges from Outfall 005 and the unnamed tributary to Big 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 Coal Mine Permit

NPDES Permit No. IL0078921

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*: 006 (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) ***	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	1445	500	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1445	500	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1445	500	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1445	500	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 or 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 4.62 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 15 for the discharges from Outfall 006 and the unnamed tributary to Big 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 Coal Mine Permit

NPDES Permit No. IL0078921

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*: 007* (Underground Mine Pumpage Discharge - not comingled)

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	Mercury Special Condition No. 17	Flow (MGD)
30 day average	daily maximum	30 day average	daily maximum					30 day Average	Daily maximum			
35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1,181	500	2.0	4.0	Monitor only	Monitor only	Monitor only

All sampling shall be performed utilizing grab sampling method.

* Operation and management of pumpage to Outfall 007 is subject to the requirements of Special Condition No. 19.

NPDES Coal Mine Permit

NPDES Permit No. IL0078921

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*: A04 (Sanitary Wastewater)

Parameters											
Total Suspended Solids **				BOD ₅ **				pH (S.U.) **	Chlorine Residual (mg/l) See Special Condition No. 18	Fecal Coliform (count/100 ml.) ***	Flow (MGD)
Load Limits (lbs/day)		Concentration Limits (mg/l)		Load Limits (lbs/day)		Concentration Limits (mg/l)					
30 day average	daily maximum	30 day average	daily maximum	30 day average	daily maximum	30 day average	daily maximum				
0.75	1.50	12.0	24.0	0.63	1.25	10.0	20.0	6.0-9.0	0.05	Monitor Only	Measure When Sampling

* Sample only when Outfall 004 is discharging. Sampling of Outfall A04 shall be at a point prior to the discharge entering the constructed wetland.

** A minimum of three (3) samples per month 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 Outfall 004. No more than one (1) sample shall be collected during any individual monitoring event.

*** Fecal coliform shall be monitored on a frequency of 1/month May through October with sample results reported as a daily maximum value on the Discharge Monitoring Report (DMR). This sampling and analysis is required only if and/or when a discharge occurs from Outfall 004.

NPDES Coal Mine Permit
NPDES Permit No. IL0078921
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 (Reclamation Area Drainage)

Discharge Condition	Parameters					
	pH**	Sulfate	Chloride	Hardness	Flow	Settleable Solids
	(S.U.)	(mg/l)	(mg/l)		(MGD)	(ml/l)
	***	***	***	***		***
I	6.5 – 9.0	1527	500	Monitor only	Measure When Sampling	0.5
II	6.0 – 9.0	1527	500	Monitor only	Measure When Sampling	0.5
III	6.0 – 9.0	1527	500	Monitor only	Measure When Sampling	-
IV	6.5 – 9.0	1527	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 or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.62 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 406.109(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation and 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.

*** 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 the 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 14 for the discharges from Outfalls 001 and 002 and the unnamed tributary to Big 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 Coal Mine Permit

NPDES Permit No. IL0047921

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:

Outfall*: 003 (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	1170	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1170	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1170	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1170	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 or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.62 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 15 for the discharges from Outfall 003 and the unnamed tributary to Big 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 Coal Mine Permit
NPDES Permit No. IL0078921
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:

Outfall*: 004 (Reclamation Area Drainage)

Discharge Condition	Parameters					
	pH**	Sulfate	Chloride	Hardness	Flow	Settleable Solids
	(S.U.)	(mg/l)	(mg/l)		(MGD)	(ml/l)
	***	***	***	***		***
I	6.5 – 9.0	500	500	Monitor only	Measure When Sampling	0.5
II	6.0 – 9.0	500	500	Monitor only	Measure When Sampling	0.5
III	6.0 – 9.0	500	500	Monitor only	Measure When Sampling	-
IV	6.5 – 9.0	500	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 or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.62 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 406.109(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation and 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.

*** 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 the 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 15 for the discharge from Outfall 004 and the unnamed tributary to Big Creek receiving such discharge.

** 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 Coal Mine Permit

NPDES Permit No. IL0078921

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*: 005, 006 (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	1445	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1445	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1445	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1445	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 or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.62 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.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 15 for the discharges from Outfall 005 and 006 and the unnamed tributary to Big 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 Coal Mine Permit
 NPDES Permit No. IL0078921
 Effluent Limitations and Monitoring

Upon completion of Special Condition 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 (Stormwater Discharge)

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

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

* 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. IL0078921

Construction Authorization No. 9134-09

C.A. Date: June 25, 2010

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

The surface facilities of an underground mine containing a total of 418.4 acres (OMM Permit No. 409), as described and depicted in IEPA Log No. 9134-09 and 9134-09-B located in Sections 13, 14 and 23, Township 4 South, Range 5 East, 3rd P.M., Hamilton County, Illinois.

The surface facilities at this underground mine contains the incline slope to reach the coal seam, vertical shafts, coal preparation plant, coal storage areas, coal feeders, reclaim tunnels, rail loading loop, rail loadout, parking lots, access roads, drainage control structures, office buildings, change rooms, assembly rooms, warehousing facilities, administration building, storage facilities, elevator facilities, ventilation facilities, refuse disposal areas, overland belt line, screens, crusher, power distribution facilities, power lines, water lines, topsoil and subsoil stockpile areas.

Surface drainage control is provided by four(4) sedimentation ponds with discharges designated as Outfalls 001, 002, 003 and 004 all classified as alkaline mine drainage.

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

Outfall Number	Latitude			Longitude			Receiving Waters
	DEG	MIN	SEC	DEG	MIN	SEC	
001	38°	09'	55.46"	88°	37'	32.37"	Unnamed tributary to Big Creek
002	38°	09'	56.26"	88°	37'	28.15"	Unnamed tributary to Big Creek
003	38°	09'	44.06"	88°	37'	5.56"	Unnamed tributary to Big Creek
004	38°	10'	9.21"	88°	36'	12.98"	Unnamed tributary to Big Creek

Coarse and fine coal refuse disposal is approved in the western portion of the permit area as depicted in IEPA Log No. 9134-09-B. Foundation preparation for this disposal area shall consist of the construction of a four (4) foot compacted clay liner subject to and in accordance with the specifications and testing requirements of Condition No.13.

Compacted clay liners as described above for the coarse and fine refuse disposal areas shall also be constructed for Sedimentation Basins 001, 002, and 003, which receive pumpage and/or runoff from coal stockpiles and/or coal refuse disposal activities. Construction of the four (4) foot compacted clay liners for the sedimentation basins shall also be subject to and in accordance with the specifications and testing requirements of Condition No. 13.

In the event that sediment removal from Basins 001, 002 and/or 003 becomes necessary, such sediment removal activity shall be subject to Condition 14.

Groundwater monitoring for this facility will consist of the following:

- a. Twelve (12) existing and/or proposed monitoring wells identified as Well Nos. GMW-1 through GMW-12 as depicted in IEPA Log No. 9134-09-B
- b. Monitoring Wells Nos. GMW-1, GMW-2, GMW-11 and GMW-12 will monitor the effects of the refuse disposal area. Monitoring Wells Nos. GMW-10, GMW-9 and GMW-8 will monitor groundwater down-gradient of sedimentation ponds 001, 002 and 003 respectively, which will receive runoff from refuse disposal or coal storage areas.
- c. Monitoring Wells Nos. GMW-3, GMW-4, GMW-5, GMW-6 and GMW-7 will monitor the effects of general mining related facilities.

Groundwater monitoring requirements are outlined in Condition No.12.

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109. as described and depicted in the log numbers referenced in Condition No. 3.

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

NPDES Permit No. IL0078921

Construction Authorization No. 9134-09

C.A. Date: June 25, 2010

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 person indicated on Page 1 as approved shall constitute part of this permit and are identified by Log Nos. 9134-09 and 9134-09-B in the records of the Illinois Environmental Protection 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 Illinois Environmental Protection Agency and a supplemental permit issued.
5. The permit holder shall notify the Environmental Protection 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, 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 reporting to the basin should be reclassified in a manner consistent with the applicable rule of 35 Ill. Adm. Code 406 as amended in R84-29 at 11 Ill. Reg. 12899. 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 ($\text{Al}_2(\text{SO}_4)_3$), hydrated lime ($\text{Ca}(\text{OH})_2$), 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.

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Construction Authorization No. 9134-09

C.A. Date: June 25, 2010

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. Utilize 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).
 - d. The Agency determines that the permittee is not utilizing Best Management Practices associated with coal refuse disposal activities in order to minimize the discharge of total dissolved solids, chloride, sulfate, iron and manganese. As stated in IEPA Log No. 9134-09-B, the Best Management Practices to be implemented are:
 - i. Maximize extent and distribution of un-oxidized, fresh refuse
 - ii. Maximize fresh refuse disposal and concurrent compaction
 - iii. Minimize long-term end-dump storages areas to prevent acidification
 - iv. Apply alkaline amendment to acidified refuse area to restore non-acid conditions
 - v. Neutralization of uncontrolled acid/sulfate runoff from refuse disposal area.

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Construction Authorization No. 9134-09

C.A. Date: June 25, 2010

12. Groundwater monitoring requirements for the OMM Permit No. 409 area as approved under IEPA Log Nos. 9134-09 and 9134-09-B are as follows:

- a. Groundwater monitoring shall consist of existing and/or proposed Well Nos. GMW-1 through GMW-12.
- b. Ambient background monitoring shall be performed for all wells identified in 12(a) above. 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 facility operation 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
Cadmium	Mercury	Acidity
Chloride	Molybdenum	Alkalinity
Chromium	Nickel	Hardness
Cobalt	Phenols	Water Elevation
Copper	Selenium	
Cyanide	Silver	

- c. Following the ambient monitoring as required under 12(b) above, routine monitoring shall continue on a quarterly basis as follows:
 - i. Monitoring Well Nos. GMW-1, GMW-2, GMW-8, GMW-9, GMW-10, GMW-11 and GMW-12, associated with refuse disposal and basins receiving runoff from such areas shall continue to be monitored quarterly for the contaminants identified in 12(b) above.
 - ii. Monitoring Well Nos. GMW-3, GMW-4, GMW-5, GMW-6 and GMW-7 shall be monitored quarterly as required by IDNR/OMM for the following list of constituents:

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

- d. Following completion of active mining and reclamation, post-mining monitoring of the 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 12(b) above. The method outlined in Condition No. 12(f) below shall again be utilized to determine the 95% confidence limit for each contaminant for each well with the results submitted to the Agency.
- e. Reporting of groundwater monitoring results shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 5.

Should electronic filing of groundwater monitoring data through IDNR/OMM be elected, electronic notification shall be provided to the Agency upon submittal of groundwater data to IDNR/OMM.

- f. A statistically valid representation of background and/or post-mining water quality required under Condition No. 12(b) and 12(d) 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 in Condition No. 12(b) 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.

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C.A. Date: June 25, 2010

This 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 (\bar{X}_b) 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.

$$\bar{X}_b = \frac{X_1 + X_2 + \dots + X_n}{n}$$

Where:

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

X_n = Values for each upgradient 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:

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

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

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

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

Where:

CL = upper confidence limit prediction

(upper and lower limits should be calculated for pH)

t = one-tailed t value at the required significance

level and at n-1 degrees of freedom from Table 1

(a two-tailed 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.

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Table 1
Standard t-Tables Level of Significance

Degrees of freedom	t-values (one-tail)		t-values (two-tail)*	
	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.

- g. The results of this statistical representation of background and/or post-mining groundwater quality shall be submitted to the Agency addresses indicated in Special Condition No. 3 of this Permit.
13. The four (4) foot compacted clay liner to be constructed beneath the coarse refuse disposal area, fine coal refuse area, and Sedimentation Basins 001, 002 and 003 shall be subject to the following specifications and procedures and detailed in IEPA Log No. 9134-09-B.

Construction Specifications

- a. All soils to be used for compacted clay liner shall be free of grass, vines, vegetation, and rock or stones greater than 4 inches in diameter.
- b. Soil shall be delivered to the construction area utilizing trucks, wheel tractor scrapers or tractor and pull behind scraper combinations. The soil shall be spread to appropriate thickness using a bulldozer or soil compactor. Each processed lift will be compacted with a soil compactor or sheepsfoot roller. A minimum of three (3) passes of compaction equipment shall be applied to each lift.
- 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. 13(r) below, at a moisture content 0% to 5% above the optimum moisture content of the soil.

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C.A. Date: June 25, 2010

- e. Inter-lift surfaces shall be adequately scarified to ensure inter-lift bonding.
- f. Liner construction shall be performed to ensure consistent achievement of density, moisture content, and hydraulic conductivity for each successive lift.
- g. The placement of frozen material or the placement of material on frozen ground shall be prohibited.
- h. Contemporaneous placement or protective covering shall be provided to prevent drying, desiccation and/or freezing where necessary.
- i. Construction shall proceed only during favorable climatic conditions.
- j. Liner construction shall be completed in a manner which reduces void spaces within the soil and liner.
- k. All construction stakes shall be removed during construction, and all test holes (Shelby tube samples) are to be backfilled with bentonite.
- l. The compacted clay liner shall be constructed in a manner to achieve a uniform barrier with a hydraulic conductivity of 1×10^{-7} cm/sec.
- m. In the event that acceptable compaction results are not achieved, the soil lift shall be re-processed or removed and replaced. If moisture content is less than optimum, or greater than 5% above optimum, the failing 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.
- n. 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

- o. Prior to initiating soil liner construction, borrow soils shall be identified, qualified, and verified. At a 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.
- p. Samples collected from the borrow area shall be evaluated in accordance with ASTM D422, D4318 and D2487 to ensure classification criteria are met.
- q. Samples collected from the borrow area shall be tested in accordance with ASTM D698 to determine maximum dry density and optimum moisture content of the soil.
- r. Samples collected 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 1×10^{-7} cm/sec or less.
- s. 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.
- t. To insure 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.

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C.A. Date: June 25, 2010

- u. 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 a 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 constructed liner are tested. Testing locations shall be random, and shall not be known to the earthwork contractor prior to soil liner construction.
 - v. Survey checks shall be conducted at a maximum 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.
14. To protect the Basin liner from damage during sediment removal activity, the following precautions shall be taken:
- a. An accurate survey of the top of the compacted clay liner shall be performed upon completion of liner construction for reference and utilization during sediment cleanout activities.
 - b. Prior to the start of sediment removal activity, an accurate survey of the top of sediment to be removed shall be performed.
 - c. Equipment used for sediment removal shall be capable of utilizing survey data to assure a minimum of one (1) foot of sediment is left in place to protect the clay liner.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-1

S.C.A. Date: May 19, 2011

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area, which were previously approved under Authorization No. 9134-09 dated June 25, 2010. These facilities have been revised as follows:

The total permit area for this facility is increased from 418.4 acres to a current total of 453.4 acres as discussed and described below.

Information provided in IEPA Log No. 9134-09-C, identified as Responses to OMM Modification Letter regarding Permit No. 409 Application, is hereby incorporated into this permit to reflect minor revisions and updates to surface and groundwater monitoring data, and updated access road, diversion and drainage control structure design and drawings.

An additional area of 20.0 acres, identified as IBR No. 1 to OMM Permit No. 409 area, located in Section 14, Township 4 South, Range 5 East, in Hamilton County, Illinois. As proposed and depicted in IEPA Log Nos. 7129-11 and 7129-11-B, the soils storage, parking lot, maintenance shop, material storage, warehouse and slope portal will be relocated from the main permit area to this additional area. Runoff from this additional area will be tributary to sedimentation basin and Outfall 003. This additional area is included in the total permit area cited above.

An additional area of 15.0 acres, identified as IBR No. 2 to OMM Permit No. 409 area, located in Section 13, Township 4 South, Range 5 East, in Hamilton County, Illinois. As proposed and depicted in IEPA Log No. 7156-11, the construction of a temporary road to access borehole locations and the installation of said boreholes to deliver power and concrete for mine slope construction. Alternate drainage control will be provided by silt fence, straw bale dikes, graveled areas and vegetation. Runoff from this area will be monitored in accordance with stormwater monitoring requirements of this Permit. This additional area is included in the total permit area cited above.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-2

S.C.A. Date: March 9, 2012

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area, which was previously approved under Authorization No. 9134-09 and Supplemental Authorization No. 9134-09-1. These facilities have been revised as follows:

As proposed in IEPA Log No. 6001-12 and previously approved under Subtitle D Permit No. 2012-MO-6001, a settling aid identified as NALCO EN/ACT 7880 commercial flocculant may be utilized to assist and enhance removal of suspended solids in the sedimentation basins at this facility. The application rate of this settling aid shall not exceed approximately 100 ppm (parts per million). Utilization of this material is subject to the requirements of Condition No. 1.

Various revisions are proposed to the mining operations plan surface facilities as depicted in IEPA Log No. 6004-12 and described as follows:

Drainage Ditch 002A will be extended northward to more effectively control runoff from the site. The extension of this drainage ditch will not increase or otherwise affect the watershed tributary to Sedimentation Basin 002.

A soil borrow area will be developed within the currently approved rail loop. Upon completion soil removal, a compacted clay liner will be constructed within the borrow area consistent with the procedures and requirements of the liners proposed in other impoundments located at this facility which were approved under Authorization No. 9134-09. Upon completion of clay liner construction, this borrow area will serve as a future "no-discharge" mine water holding basin and will be referenced as Pond 5. Mine pumpage collected in this basin (Pond 5) will be utilized in the coal preparation process.

Sedimentation Basin 002 will be relocated approximately 600 feet northwest of the originally approved location. The watershed tributary to Basin and Outfall 002 will remain unchanged from that which was previously approved. When constructed at the relocated site, Basin 002 will also be enlarged from the approved volume of approximately 12.4 ac.-ft. to approximately 55.5 ac.-ft. which is beyond the volume required to treat runoff from the watershed area. This increase in volume is proposed in order to provide additional storage for water anticipated to be needed for the coal preparation process.

It is noted that the receiving stream for discharges from relocated Outfall 002 remains unchanged; however, the location and identification of such receiving stream is as follows:

Outfall Number	Latitude			Longitude			Receiving Waters
	DEG	MIN	SEC	DEG	MIN	SEC	
002	38°	09'	58"	88°	37'	23"	Unnamed tributary to Big Creek

As proposed in IEPA Log No. 6073-12, in conjunction with the relocation of Sedimentation Basin 002 discussed above, Groundwater Monitoring Well No. GMW-9 required to monitor potential effects from this basin will also be relocated. In addition, Well No. GMW-8, required to monitor potential groundwater effects from Sedimentation Basin 003 will also be relocated to provide better access for sampling and maintenance. The relocation of Well Nos. GMW-8 and GMW-9 was previously approved under Subtitle D Permit No. 2012-MO-6073. Installation of Well Nos. GMW-8 and GMW-9 shall be subject to the requirements of Condition No. 2.

As proposed and depicted in IEPA Log No. 6046-12 and previously approved under Subtitle D Permit No. 2012-MC-6046, ten (10) wells have been installed adjacent to the proposed underground mine slope location to assist in slope construction. Five (5) wells are located 31 feet north and five (5) wells are located 31 feet south of the mine slope centerline and are completed in the Mount Carmel Sandstone formation. The intent of these wells is to assist in de-watering the immediate area of slope construction, however, under the referenced Subtitle D Permit the wells were approved for installation only with no pumping of groundwater to the surface approved. Currently, as proposed in IEPA Log No. 6084-12, the ten (10) referenced wells are to be pumped to de-water the Mount Carmel Sandstone formation in the vicinity of the mine slope construction. Pumpage from all wells should total a maximum of 150 to 300 GPM with pumpage expected to last approximately 3 to 4 months. All pumpage will be directed to Drainage Ditch 004B which will convey such pumpage to Sedimentation Basin 004.

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

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-2

S.C.A. Date: March 9, 2012

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

This Supplemental Authorization is issued subject to the following Conditions. If such Conditions required additional or revised facilities, appropriate engineering plan documents must be submitted to this Agency for review and approval to secure issuance of a Supplemental Authorization to Construct.

1. Quarterly notification of the dates of application and the quantity of NALCO EN/ACT 7880 commercial flocculant utilized shall be submitted to the Agency in duplicate in accordance with the schedule and reporting requirements of Special Condition Nos. 3 and 4 of this Permit.
2. Within 60 days of installation of Well Nos. GMW-8 and GMW-9, boring logs and detailed well construction diagrams depicting total well depth and screened interval shall be submitted to the Agency.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-3

S.C.A. Date: January 24, 2013

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area, previously approved under Authorization No. 9134-09 dated June 20, 2010 and Supplemental Authorization Nos. 9134-09-1 and 9134-09-2 dated May 19, 2011 and March 9, 2012, respectively. These facilities have been revised as follows:

A sanitary wastewater treatment facility with discharge designated as Outfall A04 will be constructed and installed immediately west of the mine office/bath house as described and depicted in IEPA Log No. 6304-12. This treatment facility will consist of a 20,000 gallon septic tank, recirculation tank and below grade recirculating sand filter. The system has a design flow capacity of 7,500 gallons per day (GPD). The discharge from Outfall A04 will be conveyed to an onsite constructed wetland with flow from this area being directed to Pond and Outfall 004 prior to discharge into an unnamed tributary to Big Creek.

The location of the outfall from the sanitary wastewater treatment system is as follows:

Outfall Number	Latitude			Longitude			Receiving Waters
	DEG	MIN	SEC	DEG	MIN	SEC	
A04	38°	10.0'	11.55"	88°	36.0'	13.21"	Pond 004

All conditions in the original and Supplemental Authorizations to Construct are incorporated into this Supplemental Authorization unless specifically deleted or revised herein.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-4

S.C.A. Date: January 6, 2014

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area, previously approved under Authorization No. 9134-09 dated June 20, 2010 and Supplemental Authorization Nos. 9134-09-1, 9134-09-02 and 9134-09-3 dated May 19, 2011, March 9, 2012 and January 24, 2013 respectively. These facilities have been revised as follows:

The total permit area for this facility is increased from 453.4 to a current total of 1076.93 acres as discussed and described below.

As proposed and depicted in IEPA Log No. 6467-12, the mining operations plan is updated to relocate the surface facilities including, but not limited to, the office and bath house building, preparation plant and associated structures and various beltlines.

As proposed and depicted in IEPA Log No. 5368-13, 5368-13-B and 5368-13-C, identified as Revision No. 3 of OMM Permit No. 409, the mine operation plan is modified to incorporate the construction and operation of an expansion of the existing coal refuse area impoundment (RDA No. 1, Cell No. 2). Foundation preparation for the expanded disposal area will include the construction of a four (4) foot compacted clay liner subject to and in accordance with the specifications and testing requirements of Condition No. 13 of C.A. No. 9134-09 dated June 25, 2010, and included in this Permit. There will be no discharge from the slurry basin located in the interior of RDA No. 1 as this slurry system will operate as a closed circuit. Runoff from the out slopes of the coarse refuse embankment which encompasses the slurry basin will be tributary to Sedimentation Basin 001 which surrounds the entire RDA No. 1 facility. Installation of two (2) additional groundwater monitoring wells, identified as Well Nos. RA-1-GMW and RA-2-GMW shall be installed for the refuse disposal expansion and subject to the monitoring requirements of Condition No.3.

An additional area of 593.1 acres, as proposed and depicted in IEPA Log Nos. 5369-13 and 5369-13-B and also identified as OMM Permit No. 431 and located in Section 14, 15, 22, 23 and 24 Township 4 South, Range 5 East, Hamilton County is incorporated into the permit area for this facility. This additional area consists of five (5) parcels, containing Refuse Disposal Area No. 2, topsoil and subsoil storage areas, two (2) future refuse disposal areas (not to be disturbed under this approval), and a stream diversion.

This RDA No. 2 area will be constructed with a four (4) foot thick compacted clay liner subject to and in accordance with the specifications and testing requirements of Condition No. 13 of C.A. No. 9134-09 dated June 25, 2010, and included in this Permit. Construction and operation of RDA No. 2 will be similar to existing refuse disposal at this facility in that coarse refuse will be used to construct an impounding structure which will encompass the fine coal refuse (slurry) on the interior. In accordance with the requirements of Condition No. 1, the Good Mining Practices and Best Management Practices (BMPs) applicable to refuse disposal shall be implemented for the development, operation and maintenance of RDA No. 2.

Groundwater monitoring for the RDA No. 2 will include Well Nos. AB-9-GMW, AB-10-GMW, AB-11-GMW, AB-12-GMW, AB-13-GMW, AB-14-GMW and AB-15-GMW with monitoring subject to the requirements of Condition No. 3.

Construction and development of RDA No. 2 will include a permanent stream relocation of the existing waterway along the north and east side of the proposed refuse disposal area.

Runoff from the out slopes of the coarse refuse will be tributary to Sedimentation Basin and Outfall 005. Runoff from topsoil and subsoil stockpiles developed in support of construction of RDA No. 2 will be tributary to Sedimentation Basin and Outfall 006.

The locations and receiving streams of the Outfall Nos. 005 and 006 at this facility are as follows:

Outfall No.	Latitude			Longitude			Receiving Water
	DEG	MIN	SEC	DEG	MIN	SEC	
005	38°	09'	42.49"	88°	35'	47.59"	Unnamed tributary to Big Creek
006	38°	09'	42.93"	88°	35'	42.65"	Unnamed tributary to Big Creek

As proposed and described in IEPA Log No. 6272-12 and 6272-12-A and previously approved under Subtitle D Permit No. 2012-MO-6272, runoff and/or pumpage collecting in Sedimentation Basins 002, 003 and 004, and non-discharging Basin 005 may be treated with sulfuric acid and/or gaseous carbon dioxide to lower or maintain the pH within applicable permit discharge limitations. Utilization of these materials for pH adjustment shall be in accordance with the MSDS and the manufacturer's recommended procedures. Mixing of water within the basins during treatment shall be performed as described in IEPA Log No. 6272-12.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-4

S.C.A. Date: January 6, 2014

As described and depicted in IEPA Log No. 6234-12, 6234-12-A, 6234-12-B and 6234-12-C and previously approved under Subtitle D Permit Nos. 2012-MO-6234 and 2012-MO-6234-1, the following operation plan revisions are incorporated into this permit.

Non-discharging Basin 005 may be enlarged as depicted in IEPA Log No. 6234-12-A. This basin expansion will include a four (4) foot compacted clay liner constructed in accordance with the requirements of Condition No. 13 of Construction Authorization No. 9134-09 contained within this permit. Pursuant to information contained in IEPA Log No. 6234-12-B and 6234-12-C, a minimum free board of two (2) feet shall be maintained at all times for dewatering of underground formation for mining operations. In the event that pumpage accumulating in non-discharging Basin 005 approaches or reaches the two (2) foot free board limit, water from the basin may be transported for disposal by deep well injection subject to Condition No. 2. No discharge is allowed or permitted from non-discharging Basin 005 under this permit.

Two (2) groundwater monitoring wells, identified as Well Nos. GMW-13 and GMW-14, shall be installed as depicted in IEPA Log No. 6234-12-A. These wells shall be constructed in the first water-bearing (saturated) zone beneath the bottom of non-discharging Basin 005. Monitoring of these wells shall be performed in accordance with Condition No. 3.

A maximum of sixteen (16) wells may be installed at the mine slope site and four (4) dewatering wells installed at the mine shaft site with all wells completed in the Trivoli Sandstone formation as proposed in IEPA Log Nos. 6234-12 and 6234-12-A, these wells are to be used to dewater the sandstone formation to assist in development and construction of the mine slope for access to the proposed underground mining operation. Pumpage from dewatering wells shall be directed to non-discharging Basin 005.

As described and depicted in IEPA Log No. 6427-12 and previously approved under Subtitle D Permit No. 2012-MA-6427, an area consisting of two (2) parcels totaling 20 acres (OMM Permit No. 409, IBR) is incorporated into this NPDES Permit and is included in the total permit acreage cited above. This area located in Sections 23 and 24, Township 4 South, Range 5 East, Hamilton County, will be utilized for the construction of the railway loop. Runoff from this area will be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this permit.

As described and depicted in IEPA Log Nos. 5097-13, 5116-13 and 5116-13-A and previously approved under Subtitle D Permit No. 2013-MO-5097, the following operation plan revisions are incorporated into this permit.

Sedimentation Basin 001 will be modified from the rectangular configuration previously approved to a system of sediment controlling cells around the currently approved Refuse Disposal Area (RDA) No. 1 and the future RDA No. 1, Cell No. 2, expansion area, as proposed and depicted in IEPA Log Nos. 5116-13 and 5116-13-A.

An Underground Injection Control (UIC) deep well may be located as depicted in IEPA Log No. 5097-13. Utilization and operation of this well shall be subject to the permitting and operation requirements of the Agency's approval from the Bureau of Land for the UIC well. A non-discharging re-circulation pond, incorporating a four (4) foot compacted clay liner, with associated piping and flow control pumps will be constructed as proposed in IEPA Log No. 5097-13 to facilitate the proposed UIC well.

As described and depicted in IEPA Log No. 5201-13 and previously approved under Subtitle D Permit No. 2013-MO-5201, an additional area consisting of 10.43 acres is incorporated into this NPDES Permit and is included in the total permit acreage cited above. This area located in Section 15, Township 4 South, Range 5 East, Hamilton County, will be utilized to develop a soil storage area and construct surface runoff collection ditches.

This Supplemental Construction Authorization supersedes and replaces Subtitle D Permit Nos. 2012-MO-6272, 2012-MO-6234, 2012-MO-6234-1, 2012-MA-6427, 2013-MO-5097 and 2013-MO-5201 previously issued for the herein permitted facilities and operations.

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 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 and subsequent Supplemental Authorizations to Construct are incorporated into this Supplemental Authorization unless specifically deleted or revised herein.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-4

S.C.A. Date: January 6, 2014

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

1. 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).
 - d. The Agency determines that the permittee is not utilizing Best Management Practices associated with coal refuse disposal activities in order to minimize the discharge of total dissolved solids, chloride, sulfate, iron and manganese. The Best Management Practices to be implemented are:
 - i. Maximize extent and distribution of un-oxidized, fresh refuse
 - ii. Maximize fresh refuse disposal and concurrent compaction
 - iii. Minimize long-term end-dump storage areas to prevent acidification
 - iv. Apply alkaline amendment to acidified refuse area to restore non-acid conditions
 - v. Neutralization of uncontrolled acid/sulfate runoff from refuse disposal area.
2. Operation and Maintenance of non-discharging Basin 005 shall be subject to the follow:
 - a. Water from non-discharging Basin 005 may be transported by over-the-road trucks for disposal by deep well injection to Cathay Deep Well Disposal, LLC, located in Valparaiso, IN. Hauling shall be performed by an Illinois permitted special waste hauler and shall be properly manifested.
 - b. Should water in non-discharging Basin 005 accumulate to an elevation which reduces the available free board to the limit of two (2) feet, all pumpage to the basin shall cease until such time that water from the basin may be transported for disposal in accordance with Condition No. 2(a) above. Pumpage to non-discharging Basin 005 shall not resume until such time that adequate free board is available to accommodate additional water without reducing the free board to an unacceptable level.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-4

S.C.A. Date: January 6, 2014

- c. In the event that transport by rail is elected in lieu of over-the-road trucks pursuant to Condition No. 2 (a) above, supplemental approval shall be obtained from the Agency. To obtain such supplemental approval for rail transport, information shall be provided that includes but shall not necessarily be limited to a description of loading procedures, demonstration that the rail company can perform such transport, statement from receiving facility that unloading can be safely performed, copies of applicable approvals, etc.
3. Groundwater monitoring requirements for Well Nos. RA-1-GMW, RA-2-GMW, GMW-13, GMW-14, AB-9-GMW, AB-10-GMW, AB-11-GMW, AB-12-GMW, AB-13-GMW, AB-14-GMW and AB-15-GMW 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
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. 2(a) above, routine monitoring shall continue on a quarterly basis as follows:
- i. Monitoring Well Nos. RA-1-GMW, RA-2-GMW, GMW-13, GMW-14, AB-9-GMW, AB-10-GMW, AB-11-GMW, AB-12-GMW, AB-13-GMW, AB-14-GMW and AB-15-GMW shall continue to be monitored quarterly for the contaminants identified in Condition No. 2(a) above.
- c. Following completion of active mining and reclamation, post-mining monitoring of the 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. 2(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 Nos. 3(a) and 3(c) above shall be submitted to the Agency utilizing the method presented in Condition No. 12(f) of Construction Authorization No. 9134-09 contained within this Permit. This method shall be used to determine the upper 95 percent confidence limit for each parameter listed in Condition No. 3(a) 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 groundwater quality.

NPDES Permit No. IL0078921

Supplemental Construction Authorization No. 9134-09-5

S.C.A. Date: September 17, 2014

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area, previously approved under Authorization No. 9134-09 dated June 20, 2010 and Supplemental Authorization Nos. 9134-09-1, 9134-09-2, 9134-09-3 and 9134-09-4 dated May 19, 2011, March 9, 2012, January 24, 2013 and January 6, 2014 respectively. These facilities have been revised as follows:

The total permit area for this facility is increased from 1076.93 to a current total of 1125.53 acres as discussed and described below.

An additional 19.3 acres, as proposed and depicted in IEPA Log No. 6608-12 and 6608-12-B located in Sections 13, 14, 23 and 24, Township 4 South, Range 5 East, Hamilton County is incorporated into this permit. This area will be utilized for installation of a below grade (buried) wastewater absorption field. This wastewater system will have no surface discharge and will be permitted by the Department of Public Health. This additional 19.3 acre area is included in the total permit area cited above.

An additional 13.0 acres, as proposed and depicted in IEPA Log No. 4019-14, located in Section 23, Township 4 South, Range 5 East, Hamilton County is incorporated into this permit. This area will serve as a buffer surrounding the below grade wastewater absorption field discussed above. This additional 13.0 acres is included in the total permit area cited above.

An additional area of 16.3 acres, as proposed and depicted IEPA Log No. 4230-14-A located in Section 24, Township 4 South, Range 5 East, Hamilton County is incorporated into the permit area for this facility. This additional area will allow for installation of a buried HDPE line to blend underground mine pumpage contained in Pond HC-1, formerly identified as "Non-discharging Pond 005" with flow in Big Creek. The discharge from the buried HDPE line from HC-01 into Big Creek is identified as Outfall 007. A mixing zone for chloride is recognized within Big Creek with 50% of stream flow comprising a zone of passage and the remaining 50% of stream flow available for mixing with discharges from Outfall 007. Discharge from Outfall 007 is permitted only at times when the flow in Big Creek exceeds 5 cfs. Discharge rates from Outfall 007 may vary based on receiving stream flow and chloride concentration in both the receiving stream and the Outfall 007 discharge.

The locations and receiving streams of the Outfall No. 007 at this facility is as follows:

Outfall No.	Latitude			Longitude			Receiving Water
	DEG	MIN	SEC	DEG	MIN	SEC	
007	38°	09'	21.12"	88°	36'	41.69"	Big Creek

As described and depicted in IEPA Log Nos. 4224-14 and 4224-14-A (OMM Permit No. 409, IPR), the slurry elevation within Refuse Disposal Area No. 1 will be increased from the currently approved 443 feet to 453 feet msl.

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 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 and subsequent Supplemental Authorizations to Construct are incorporated into this Supplemental Authorization unless specifically deleted or revised herein.

NPDES Permit No. IL0078921

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 Nos. 4 or 5 below with one (1) copy forwarded to each of the following addresses:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Ave., East
P.O. Box 19276
Springfield, IL 62794-9276

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

Attn: Compliance Assurance Section

Should electronic filing be available and elected for any periodic monitoring and reporting requirements, written notification shall be provided to the Agency that such electronic filing has been elected and the date on which this filing will be initiated.

Special Condition No. 4: Completed Discharge Monitoring Report (DMR) forms and stream monitoring results, 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	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 Forms (DMRs) using one such form for each applicable Discharge Condition each month.

Special Condition No. 5: Completed periodic monitoring and reporting forms, other than DMR's and stream monitoring (i.e., groundwater monitoring, coal combustion waste 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

Should electronic filing be available and elected for any periodic monitoring and reporting requirements, the Agency shall be notified via correspondence or e-mail at such time that the electronic filing has been completed.

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.

NPDES Permit No. IL0078921

Special Conditions

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.

Special Condition No. 9: Plans must be submitted to and approved by this Agency prior to construction of a sedimentation pond. 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 reporting 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):

- a. No discharge is allowed from Outfall Nos. 001 and 002 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. For purposes of this Condition "low flow" shall be defined as any condition wherein the upstream flow available for mixing is less than the ratios times the flowrate being discharged from the respective outfalls. These ratios are as follows:

<u>Outfall No.</u>	<u>Flow Ratio of Receiving Stream to Outfall Discharge</u>
001	2:1
002	2:1

Pursuant to 35 Ill. Adm. Code 302.102, discharges from the referenced outfalls that otherwise would not meet the water quality standards of 35 Ill. Adm. Code 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 302 may only be discharged in combination with stormwater discharge from the basin, and only at such times that sufficient flows exist in the receiving stream to ensure that water quality standards in the receiving stream beyond the area of allowed mixing will not be exceeded. Following any such stormwater discharge, but prior to the flow in the receiving stream subsiding, the impounded water in the basin may be pumped or otherwise evacuated sufficiently below the discharge elevation to provide capacity for holding a sufficient volume of mine pumpage and/or surface runoff to preclude the possibility of discharge until such time that a subsequent precipitation event results in discharge from the basin. At times of stormwater discharge, in addition to the alternate effluent monitoring requirements, Outfall Nos. 001 and 002 discharges shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.

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- b. The following sampling and monitoring requirements are applicable to flow in the unnamed tributary to Big Creek which receives the discharges from Outfalls 001 and 002.
- 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. The unnamed tributary to Big 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 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 streams, "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. The unnamed tributary to Big Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of each associated outfall.
- c. All results of sampling and monitoring performed in accordance with Special Condition No. 13(a) and (b) above shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 4 above.

Special Condition No. 14: Sediment Pond Operation and Maintenance (Outfalls 001 and 002 – Reclamation Area Discharge Classification):

- a. For discharges resulting from precipitation events, in addition to the alternate effluent monitoring requirements, discharges from Outfalls 001 and 002 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 Big Creek which receives the discharges from Outfalls 001 and 002:
 - i. All sampling and monitoring required under 14(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfalls.
 - ii. The unnamed tributary to Big 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 each Outfall to insure that complete mixing has occurred. At such time that sufficient information has been collected regarding 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. The unnamed tributary to Big Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of each associated outfall.
- c. All results of sampling and monitoring performed in accordance with Special Condition No. 14(a) and (b) above shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 4 above.

Special Condition No. 15: Sediment Pond Operation and Maintenance (Outfalls 003, 004, 005 and 006):

- a. For discharges resulting from precipitation events, in addition to the alternate effluent monitoring requirements, discharges from Outfalls 003, 004, 005 and 006 shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.

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- b. The following sampling and monitoring requirements are applicable to flow in the unnamed tributary to Big Creek which receives the discharges from Outfalls 003, 004, 005 and 006:
- 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 outfalls.
 - ii. The unnamed tributary to Big 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 each Outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding 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 streams, "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. The unnamed tributary to Big Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness.
- c. All results of sampling and monitoring performed in accordance with Special Condition No. 15(a) and (b) above shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 4 above.

Special Condition No. 16: Data collected in accordance with Special Conditions Nos. 13, 14 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. 17: Mercury shall be monitored quarterly until a minimum of ten (10) samples have been collected. Samples shall be collected and tested in accordance with USEPA 1631E using the option at Section 11.1.1.2 requiring the heating of samples at 50°C for 6 hours in a BrCl solution in closed vessels. This test method has a Method Detection Limit (MDL) of 0.5 ng/l. (nanograms/liter). The results of such testing must be reported in "ng/l" (nanograms/liter) and submitted with the quarterly Discharge Monitoring Reports (DMR's). The Permittee may submit a written request to the Agency to discontinue quarterly Mercury monitoring if the sampling results show no reasonable potential to exceed the Mercury water quality standard.

Special Condition No. 18: For discharges from Outfall A04, any use of chlorine to control slime growth, odor, or as an operational control, etc., shall not exceed the limit of 0.05 mg./l. (daily maximum) Total Residual Chlorine in the effluent. Sampling is required on a daily grab basis during the chlorination process. Reporting shall be submitted on the Discharge Monitoring Reports (DMRs) in accordance with the reporting schedule.

Special Condition No. 19: There shall be no pumpage or evacuation of water from Basin HC-01 which will result in a discharge from Outfall 007 when flow in Big Creek is less than 5 cfs (cubic feet per second) as measured at the gauge at the crossing of County Road 500 E. At such times that flow in Big Creek exceeds 5 cfs, effluent may be discharged from Outfall 007 at a rate that will ensure chloride concentrations will be diluted to 500 mg/l or less, when the effluent fully mixes with one-half (50%) the instantaneous stream flow. A mixing zone for chloride is recognized with 50% of the stream flow available for mixing with discharges from Outfall 007 while the remaining 50% of the stream flow comprises a zone of passage.

An effluent discharge rate chart shall be prepared for Outfall 007 providing information regarding discharge rates from Outfall 007 that are allowable such that a chloride concentration of 500 mg/l would be achieved in Big Creek at the edge of the mixing zone. This effluent discharge rate chart shall provide allowable discharge rates from Outfall 007 based on upstream chloride concentrations in Big Creek, flow rate in Big Creek and chloride concentration within Basin HC-01. The effluent discharge rate chart shall be posted at the Outfall 007 discharge point as well as maintained in the mine office for Illinois EPA review during site inspections.

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At times of discharge from Outfall 007, monitoring and recording of data shall be performed at least once every four (4) hours. Monitoring and recording shall include each of the following being collected during each four (4) hour sampling event.

- a. Date and time of each four (4) hour incremental reading or monitoring event.
- b. Stream gauge flow rate at crossing of County Road 500 E (stream flow in Big Creek will be continuously monitored using HECRAS technology).
- c. Chloride concentration in Big Creek upstream of confluence with Outfall 007 discharge.
- d. Chloride concentration in Outfall 007 discharge.
- e. Effluent discharge or flow rate from Outfall 007 (Outfall 007 discharges shall be through metered pump).
- f. Chloride concentration in Big Creek approximately 1,000 feet downstream of confluence with Outfall 007 discharge. Chloride concentrations at this location shall meet the applicable 500 mg/l chloride water quality standard.

The information above shall be collected in order that effluent flow rate from Outfall 007 may be adjusted as necessary to ensure the water quality standard of 500 mg/l chloride is met at the boundary of the mixing zone. A record of the information required above shall be maintained for review by Agency personnel during site inspections. This information shall also be submitted to the Agency on an annual basis by January 15th for discharges occurring the preceding calendar year.

Waters within Basin HC-01, as well as upstream in Big Creek, shall be monitored once per month and analyzed for chloride concentrations to re-calculate the dilution formula for updating of the effluent discharge rate chart. Big Creek and Basin HC-01 shall be sampled and the effluent discharge rate chart updated regardless of whether there has been a discharge from Outfall 007 during the month in question.