NPDES Permit No. IL0056022
Notice No. 6662c

Public Notice Beginning Date: **December 3, 2013**

Public Notice Ending Date: **January 2, 2014**

National Pollutant Discharge Elimination System (NPDES)
Permit Program

Draft Renewed and 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:

Macoupin Energy, LLC
14300 Brushy Mound Road
Carlinville, Illinois 62626

Name and Address of Facility:

Macoupin Energy, LLC
Shay No. 1 Mine
7.0 miles south of Carlinville, Illinois
(Macoupin 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 of the original comment period is granted by the Agency. Interested persons are invited to submit written comments on the draft permit to the IEPA at the above address. 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 Sections 309.109 through 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). Mine operations result in the discharge of alkaline mine drainage, acid mine drainage discharges from preparation plant associated areas and coal refuse disposal piles, stormwater discharges, and sanitary wastewater.

Public comments are invited on the following proposed modifications incorporated into this Permit renewal:

Incorporation of various parcels of additional permit area totaling 42.5 acres for construction and installation of various facilities in support of the underground mining operation.

Reclassification of alkaline Outfall 003 and reclamation Outfall 004 to stormwater discharges.

Outfall 006 has been deleted as the basin has been reclaimed.

Modification of refuse (slurry) disposal plan to incorporate underground disposal of fine coal refuse (slurry).

Revised reclamation (abandonment) plan for Refuse Disposal Area Nos. 5 and 6 and modification of associated groundwater monitoring plan.

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

Outfall	Receiving Stream	Latitude (North)	Longitude (West)
001	Unnamed tributary to Macoupin Creek	39°15'26"	89°50'47"
002	Spanish Needle Creek	39°12'11"	89°52'08"
A02	Recirculation Pond (Outfall 002)	39°12'22"	89°51'52"
003	Spanish Needle Creek	39°12'30"	89°52'54"
004	Unnamed tributary to Spanish Needle Creek	39°12'45"	89°52'54"
005	Spanish Needle Creek	39°11'50"	89°51'44"
007	Unnamed tributary to Spanish Needle Creek	39°13'00"	89°52'50"

The stream segment (DA04) of Macoupin Creek receiving the flow from the unnamed tributary into which Outfall 001 discharges is on the 2012 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairment:

Outfall	Potential Causes
001	Fecal Coliform

The stream segment (DAZL) of Spanish Needle Creek receiving the discharge from Outfalls 002, 003 and 005 is not on the 2012 303(d) list of impaired waters.

The stream segment (DAZL) of Spanish Needle Creek receiving the flow from the unnamed tributary into which Outfalls 004 and 007 discharges is not on the 2012 303(d) list of impaired waters.

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

Outfall: 002

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	1730	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1730	1000	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1730	1000	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1730	1000	1.0	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(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hours precipitation event, but less than or equal to the 10-year, 24 hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.59 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hours precipitation event for this area is considered to be 4.65 inches.

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 snowmelt total. Settleable solids effluent limitations for acid mine drainage discharges are contained in 35 Ill. Adm. Code 406.110(b), (c), and (d).
(3) Effluent limitations for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 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 acid mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 005

Discharge Condition	Parameters												
	Total Suspended Solids (3) (mg/l)		Iron (total) (3) (4) (mg/l)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/l)	Chloride (mg/l)	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	1732	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1732	1000	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1732	1000	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1732	1000	1.0	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(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24 hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.59 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hours precipitation event for this area is considered to be 4.65 inches.

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 snowmelt total. Settleable solids effluent limitations for acid mine drainage discharges are contained in 35 Ill. Adm. Code 406.110(b), (c), and (d).
(3) Effluent limitations for mine discharges are contained in 35 Ill. Adm. Code 406.106.
(4) Discharges from Outfall 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 limitation.

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

Outfall: 007

Discharge Condition	Parameters												
	Total Suspended Solids (3) (mg/l)		Iron (total) (3) (4) (mg/l)		pH (3) (S.U.)	Alkalinity/ Acidity (3)	Sulfate (1) (mg/l)	Chloride (mg/l)	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	1629	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1629	1000	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1629	1000	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1629	1000	1.0	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 4.65 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. 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 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 007, 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 stormwater discharges from this facility shall be monitored and limited at all times as follows:

Outfalls[(1)]: 003, 004

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

(1) Stormwater effluent limitations for all Discharge Conditions are established pursuant to 40 CFR 122.26, and IEPA correspondence to the industry dated July 31, 1992, with sample frequency for stormwater discharges being once per year.

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

Outfall: 001

Parameters									
Total Suspended Solids				$CBOD_5$				pH (3) (S.U.)	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		
1.46	2.93	12	24	1.22	2.44	10	20	6.0-9.0	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).

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

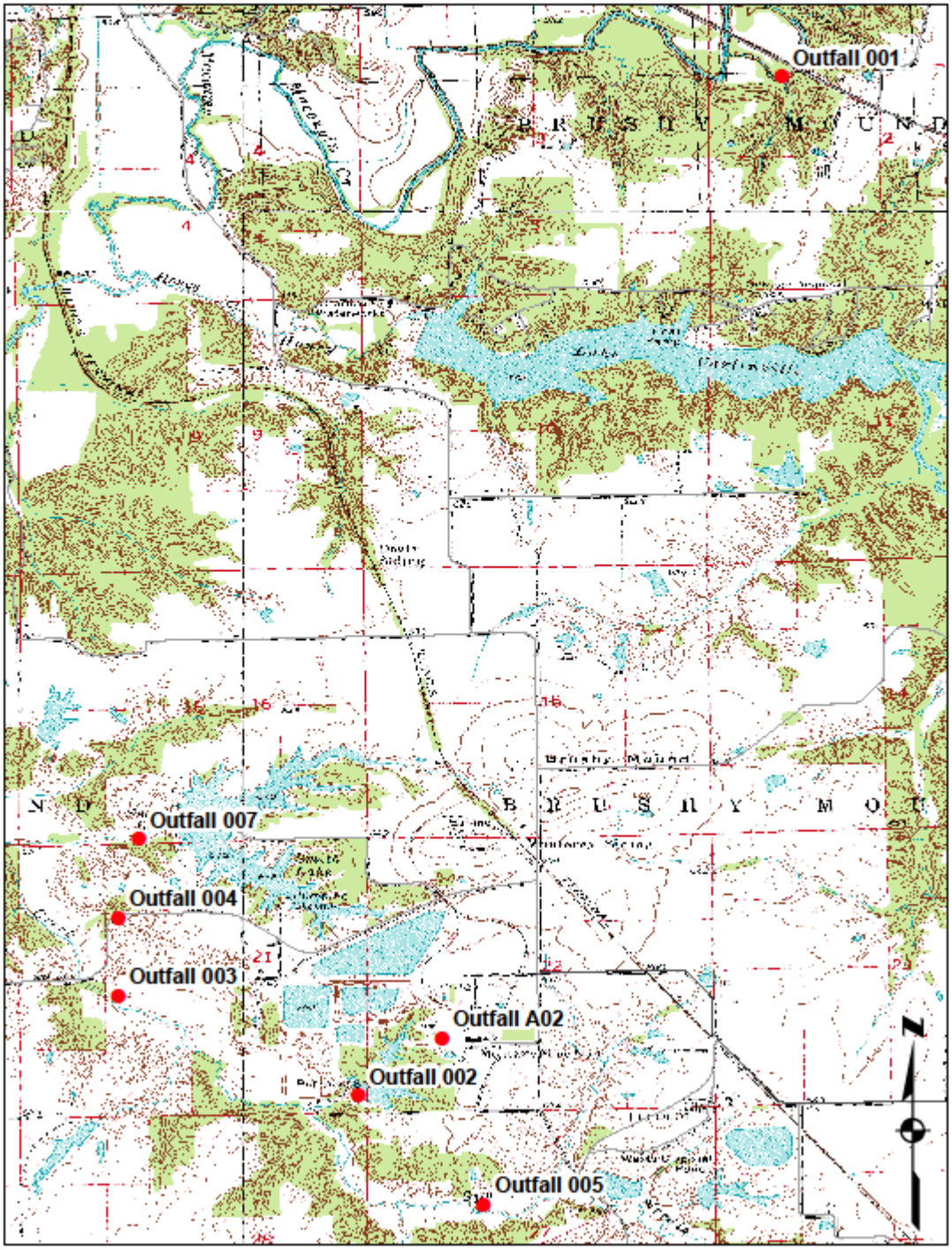
Outfall: A02

Parameters									
Total Suspended Solids				$CBOD_5$				pH (3) (S.U.)	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		
3.66	7.32	30	60	3.05	6.10	25	50	6.0-9.0	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 2, 3, 15, 16, 21, 22, 24, 27 and 28, Township 9 North, Range 7 West, and Sections 20 and 29, Township 9 North, Range 6 West, Macoupin County, Illinois.

Macoupin Energy, L.L.C. - Shay No. 1 Mine
NPDES No. IL0056022
Macoupin County
Township 9 North, Range 7 West
Township 9 North, Range 6 West



NPDES Permit No. IL0056022

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

Renewed and Modified NPDES Permit

Expiration Date:

Issue Date:
Effective Date:

Name and Address of Permittee:

Macoupin Energy, LLC
14300 Brushy Mound Road
Carlinville, Illinois 62626

Facility Name and Address:

Macoupin Energy, LLC
Shay No. 1 Mine
7 miles south of
Carlinville, Illinois
(Macoupin County)

Discharge Number and Classification:		Receiving waters
002	Acid Mine Drainage	Spanish Needle Creek
005	Acid Mine Drainage	Spanish Needle Creek
007	Alkaline Mine Drainage	Unnamed tributary to Spanish Needle Creek
003	Stormwater Mine Drainage	Spanish Needle Creek
004	Stormwater Mine Drainage	Unnamed tributary to Spanish Needle Creek
001	Sanitary Wastewater	Unnamed tributary to Macoupin Creek
A02	Sanitary Wastewater	Recirculation Pond (Outfall 002)

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, P.E., Permit Manager
Mine Pollution Control Program
Bureau of Water

LDC:IW:cs/6662c/11-20-13

NPDES Coal Mine Permit

NPDES Permit No. IL0056022

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*: 002[t] (Acid Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/l) ***		Iron (total) (mg/l) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/l) ***	Chloride (mg/l) ***	Mn (total) (mg/l) ***	Hardness ***	Mercury see Special Condition No. 19	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	1730	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1730	1000	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1730	1000	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1730	1000	1.0	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(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.59 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.65 inches.

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, 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. 13 for the discharges from Outfall 002 and Spanish Needle Creek receiving such discharges. Also, discharges from Outfall 002 shall be subject to the limitations, and monitoring and reporting requirements of Special Condition No. 20.

** 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.

[t] Discharge from Outfall 002 is subject to the requirements and limitations of Special Condition No. 16.

NPDES Coal Mine Permit

NPDES Permit No. IL0056022

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[t] (Acid Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/l) ***		Iron (total) (mg/l) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/l) ***	Chloride (mg/l) ***	Mn (total) (mg/l) ***	Hardness ***	Mercury see Special Condition No. 19	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	1732	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1732	1000	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1732	1000	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1732	1000	1.0	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(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.59 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.65 inches.

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, 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. 13 for the discharges from Outfall 005 and Spanish Needle Creek receiving such discharges. Also, discharges from Outfall 005 shall be subject to the limitations, and monitoring and reporting requirements of Special Condition No. 20.

** 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.

[t] Discharge from Outfall 005 is subject to the requirements and limitations of Special Condition No. 16.

NPDES Coal Mine Permit

NPDES Permit No. IL0056022

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[t] (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. 19	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	1629	500	1.0	Monitor only	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1629	1000	-	Monitor only	-	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1629	1000	-	Monitor only	-	Measure When Sampling	-
IV	35	70	3.0	6.0	6.0-9.0	Alk.>Acid	1629	1000	1.0	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 4.65 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, 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 Outfall 007 and Spanish Needle Creek receiving such discharges. Also, discharges from Outfall 007 shall be subject to the limitations, and monitoring and reporting requirements of Special Condition No. 20.

** 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.

[t] Discharge from Outfall 007 is subject to the requirements and limitations of Special Condition Nos. 16 and 17.

NPDES Coal Mine Permit

NPDES Permit No. IL0056022

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 (Sanitary Wastewater)

Parameters									
Total Suspended Solids **				$CBOD_5$ **				pH (S.U.) **	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		
1.46	2.93	12	24	1.22	2.44	10	20	6.0-9.0	Measure When Sampling

* Discharge from Outfall 001 is subject to the requirements of Special Condition No. 18.

** 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 001. No more than one (1) sample shall be collected during any individual monitoring event.

NPDES Coal Mine Permit

NPDES Permit No. IL0056022

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*: A02 (Sanitary Wastewater)

Parameters									
Total Suspended Solids **				$CBOD_5$ **				pH (S.U.) **	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		
3.66	7.32	30	60	3.05	6.10	25	50	6.0-9.0	Measure When Sampling

* Sample only when Outfall 002 is discharging.

** 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 A02. No more than one (1) sample shall be collected during any individual monitoring event.

NPDES Coal Mine Permit

NPDES Permit No. IL0056022

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*: 002 (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	1730	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1730	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1730	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1730	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 4.65 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. 14 for the discharges from Outfall 002 and Spanish Needle 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. IL0056022

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*: 005 (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	1732	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1732	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1732	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1732	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 4.65 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. 14 for the discharges from Outfall 005 and Spanish Needle 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. IL0056022

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*: 007 (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	1629	500	Monitor only	Measure When Sampling	0.5
II	6.0-9.0	1629	500	Monitor only	Measure When Sampling	0.5
III	6.0-9.0	1629	500	Monitor only	Measure When Sampling	-
IV	6.5-9.0	1629	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 4.65 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. 14 for the discharges from Outfall 007 and the unnamed tributary to Spanish Needle 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. IL0056022

Effluent Limitations and Monitoring

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

Outfalls: 003, 004 (Stormwater Discharge)

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

Stormwater discharge monitoring is subject to the following reporting requirements:

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

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

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

---

* 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 Coal Mine Permit

NPDES Permit No. IL0056022

Effluent Limitations and Monitoring

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

Outfalls: 002, 005, 007 (Stormwater Discharge)

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

Stormwater discharge monitoring is subject to the following reporting requirements:

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

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

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

---

* 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. IL0056022

Construction Authorization No. 8107-10

C.A. Date: August 23, 2010

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

The surface facilities of an underground mine containing a total of1261.4 acres located in Sections 2, 3, 15, 16, 21, 22, 24, 27and 28, Township 9 North, Range 7 West, Macoupin County, and Sections 20 and 29, Township 9 North, Range 6 West, Macoupin County, Illinois. This total permit acreage includes all additional areas discussed below. These support facilities include refuse disposal areas (RDA) 1 through 6, preparation plant, office and maintenance buildings, fresh water lake (Smith Reservoir), recirculation pond, railroad loop, two sewage treatment plants and two noncontiguous minor underground facilities.

The addition of 6.2 acres (OMM Permit No. 56, IBR No. 4) located in Section 21, Township 9 North, Range 7 West, Macoupin County. The area added herein shall be utilized to facilitate the construction of a drop inlet discharge structure and discharge channel to convey flows from Refuse Disposal Area 5 (RDA 5) to Smith Reservoir as described below.

An additional area of 17.1 acres (OMM Permit No. 56, IBR No. 5) located in Section 17 and 20, Township 9 North, Range 6 West, Macoupin County, shall be utilized for construction of a ventilation borehole and installation of fans as proposed in IEPA Log No. 9245-99. No pumpage from the underground mine workings shall be performed within this additional 17.1 acre area. This additional area shall be incorporated into the stormwater monitoring plan for this facility with runoff from the area monitored in accordance with stormwater monitoring requirements.

Additional 2.0 acres, as described in Log No. 7248-01 (OMM Permit No. 56, IBR No. 6), located in Section 18, Township 9 North, Range 6 West, Macoupin County. This additional area is to accommodate a cased borehole to deliver concrete to the underground workings of Mine No. 1. Drainage control will be accomplished with silt fencing and/or straw bales, silt traps.

Additional 1.2 acres, as described in IEPA Log No. 6340-02 (OMM Permit No. 56, IBR No. 7), located in Section 12, Township 9 North, Range 7 West in Macoupin County. This additional area is to construct rock dust tank and borehole, concrete/rock borehole and access road/parking area for trucks. Drainage will be controlled with silt fencing and/or straw bales.

As described in IEPA Log No. 6341-02 (OMM Permit No. 56, IBR No. 8), additional area of 3.7 acres, located in Section 16, Township 9 North, Range 6 West in Macoupin County, will be used for an exhaust airshaft. Drainage from the affected area will be controlled by silt fencing, ditch checks and/or straw bales.

Additional 7.5 acres, as described in IEPA Log No. 4269-04 (OMM Permit No. 56, IBR No. 9), located in Section 7, Township 9 North, Range 6 West in Macoupin County. This additional area will be used for air shaft, fan and ventilation buildings, power access hole, other small structures and associated road. Drainage will be controlled with silt fencing, ditches and/or straw bales.

Additional 4.8 acres, as described in Log No. 2396-06 (OMM Permit No. 56, IBR No. 10), located in Section 8, Township 9 North, Range 6 West, Macoupin County. This additional area is to for an air shaft, fan and ventilation building, power access hole and other small structures. Drainage from the affected area will be controlled by silt fencing and/or straw bales.

As described in IEPA Log No. 8363-10, a 1620 foot rail siding will be constructed inside and adjacent to a portion of the existing railroad loop.

Surface drainage for the described facilities is controlled by five (5) sedimentation basins with discharges designated as Outfalls 002, 003, 004, 005 and 007. These discharges are discussed in more detail as follows:

The discharge designated as Outfall 002 is from the recirculation pond which is the treatment pond for the preparation plant and associated areas including coal stockpiles. Outfall 002 is classified acid mine drainage and reports to Spanish Needle Creek.

Discharges from Outfalls 003 and 004 report to Spanish Needle Creek. These basins receive runoff from the reclaimed slopes of RDA No. 5 and are reclassified as stormwater discharges in accordance with IEPA Log Nos. 2381-06 and 3359-05.

As described and depicted in IEPA Log No. 2283-06, an emergency spillway will be constructed to discharge stormwater runoff from the interior of Refuse Disposal Area No. 5. As this is an internal structure there will be no impacts to any approved NPDES Outfall.

Discharge from Outfall 005 is classified acid mine drainage from a refuse disposal area RDA No. 6 and reports to Spanish Needle Creek.

Outfall 006 has been deleted from this Permit as the basin and discharge structure has been reclaimed in accordance with IEPA Log No. 5360-03.

Outfall 007 is the discharge from Smith Reservoir (fresh water lake) which collects runoff from reclaimed areas. Discharge 007 is classified alkaline mine drainage and reports to Spanish Needle Creek.

Discharge 001 is from a sanitary wastewater treatment system located at a North Portal. This system is inactive and shall not be utilized until the requirements of Condition No. 13 have been fulfilled. The system includes an extended aeration plant, rapid sand filter, and tablet chlorinator followed by two effluent pumps rated at 90 GMP at 5' TDH and 5000 feet of 4" PVC forcemain with discharge to unnamed tributary to Macoupin Creek.

The sanitary treatment plant for the Office and Processing Area consists of a comminutor (grinder), submerged bar screen activated sludge package plant and settling tank with discharge designated as Outfall A02 which is tributary to the recirculation lake with Discharge 002. The design P.E. for this plant is 170 (based on $CBOD_5$) with a design average flow of 14.625 GPD. As indicated in IEPA Log No. 2278-96, a disinfection exemption was granted for Outfall A02 by correspondence from the Agency dated October 28, 1996.

Commercial coagulants identified as Coagulite 200 and Coagulite 222 are approved for assisting in the reduction of Total Suspended Solids levels and minor pH adjustments. The utilization of these products shall be limited to the Recirculation Pond (Outfall 002) and South Holding Pond (Outfall 005) as described in IEPA Log No. 2196-96. While utilizing these commercial products, the water in the treatment basin shall be monitored and maintained such that the pH of the basin does not fall below 7.0.

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	39°	15'	26"	89°	50'	47"	Unnamed tributary to Macoupin Creek
002	39°	12'	11"	89°	52'	08"	Unnamed tributary to Spanish Needle Creek
002A	39°	12'	22"	89°	51'	52"	Recirculation Pond (Outfall 002)
003	39°	12'	30"	89°	52'	54"	Spanish Needle Creek
004	39°	12'	45"	89°	52'	54"	Unnamed tributary to Spanish Needle Creek
005	39°	11'	50"	89°	51'	44"	Spanish Needle Creek
007	39°	13'	00"	89°	52'	50"	Unnamed tributary to Spanish Needle Creek

Water management and transfer between the refuse disposal areas and impoundments located at this facility have been approved as follows:

Installation of a pumping station on Spanish Needle Creek as proposed in Log No. 5143-93 (IPR No. 45 to IDNR/OMM Permit No. 56).

Installation of pumping station in South Pond for water supply to Refuse Disposal Area No. 6 (RDA No. 6) as proposed in Log No. 4221-94 (IPR 9 to IDNR/OMM Permit No. 209).

As described in IEPA Log No. 2186-96, water transference from Refuse Disposal Area No. 6 (RDA 6) to the South Holding Pond (Outfall 005) is approved. Water may also be transferred from the Recirculation Pond and/or Refuse Disposal Area No. 5 (RDA 5) to RDA 6 and then to the South Holding Pond to provide adequate settling time to meet applicable effluent standards.

The transfer of water from Refuse Disposal Area 5 to Smith Lake by pumpage is hereby approved as proposed in Log No. 2402-96. This transfer (pumpage) of water is for maintaining a stable water level in Smith Lake. The volume of water transferred shall be limited to prevent a discharge from Smith Lake.

Log No. 1080-97 to add a 12-inch siphon line at Outfall 005 to drawdown the pond to maintain additional storage for precipitation events is approved. The inlet of the siphon will be positioned so as not to disturb sediment.

Log No. 1107-97(+A) to transfer water from RDA 5 to Smith Lake is approved as proposed subject to Condition 12.

Log No. 1116-97 to construct a water line from the Recirculation Pond to Refuse Disposal Area No. 6 is approved as proposed.

Log No. 1295-97 for the installation of a pump to remove sediment from the Recirculation Pond and transport to RDA No. 6 is approved.

Three (3) pairs of piezometers may be installed in the embankment of RDA 6 as proposed in IEPA Log No. 6634.02.

A temporary elevated flocculation station for RDA 6 and a system to transfer excess water from RDA 6 to RDA 5 may be constructed as proposed and described in IEPA Log Nos. 2048-06 and 2253-06.

As proposed IEPA Log No. 9489-09, the embankment of RDA 6 may be raised from 701 ft. msi to 705 ft. msi. Stormwater accumulating within RDA 6 may be transferred to the recirculation lake with discharge designated as Outfall 002.

Groundwater monitoring at this facility shall be performed in accordance with Condition No. 14.

This Permit is being transferred from Monterey Coal Company, Mine No. 1 to Macoupin Energy, LLC, Shay No. 1 Mine, in accordance with information provided in IEPA Log Nos. 2362-06 and 2362-06-A.

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.

This Construction Authorization supersedes and replaces Construction Authorization No. 7071-91 and Supplemental Construction Authorization Nos. 7071-91-1, 7071-91-2, 7071-91-3, 7071-91-4, 7071-91-5, 7071-91-6, 7071-91-7 and 7071-91-8 previously issued for the herein permitted facilities.

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

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

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

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

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

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

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

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

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

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

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

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

12. The transferring of water from RDA No. 5 to Smith Lake by pumpage is subject to the following:

    a. Before each transfer (pumpage operation) is undertaken, an analysis for Total Suspended Solids, Iron, pH, Alkalinity, Acidity, Sulfates and Chlorides shall be completed for the water in RDA No. 5 and Smith Lake. Transfer shall not be conducted if water quality in RDA No. 5 exceeds the effluent standards applicable to the Smith Lake discharge (Outfall 007).

    b. Notification of transfer and analysis results shall be provided to the Agency within 15 days of transfer.

c. No water shall be transferred from RDA No. 5 if the pH of this impoundment is less than 6.5.

13. De-chlorination or a disinfection exemption is required for Discharge 001 before the system is placed in service. Requirements for de-chlorination are contained in Special Condition No. 18 of this NPDES Permit. Information for requesting a disinfection exemption is also contained in the referenced Special Condition. Monitoring reports for this discharge are not required until the system is placed in service.

14. Groundwater monitoring at this facility shall be performed in accordance with the following:

a. Permanent groundwater monitoring wells identified as Well Nos. MW-5-96, MW-6C-96, MW-16-96, MW-17-97, MW-18-97, MW-20-97, MW-24-97, MW-26-00, MW-27-00, MW-31-00, MW-25R-06 and PW-16 at the Shay No. 1 Mine shall be monitored quarterly for a minimum of six (6) monitoring events for the following list of constituents to establish existing concentrations.

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	

A statistical representation of existing concentrations in the above referenced permanent groundwater monitoring wells shall be determined in accordance with Condition No. 14(g) below with the results of such analysis submitted to the Agency in accordance with Special Condition No. 3 of this NPDES permit. This existing concentration determination shall be submitted to the Agency within 90 days following completion of six (6) existing concentration monitoring events.

Following the minimum of six (6) quarterly existing concentration monitoring events, the Permittee may request a reduction in the list of required contaminants identified above for the routine monitoring which shall continue on a quarterly basis. Contaminants may be eliminated from the monitoring requirements if such contaminant is not detected during the six (6) monitoring events required to establish existing concentrations.

In the event that the list of contaminants required to be monitored for the permanent wells is reduced following the six (6) existing concentration monitoring events, a minimum of one (1) sampling event at the time of the NPDES permit renewal is required and shall include all contaminants identified above for all above referenced permanent wells.

b. All remaining permanent groundwater monitoring wells not referenced in Condition No. 14(a) above shall be monitored quarterly for the following list of constituents:

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

c. Permanent groundwater monitoring well reports shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 5 of this NPDES permit.

d. Permanent groundwater monitoring well results shall also be reported as required by any assessment approved by the Illinois EPA.

e. Temporary groundwater well monitoring shall include the list of contaminants and be reported at the frequency required by the assessment for which the wells were installed.

f. Following completion of active mining and reclamation, post-mining monitoring of permanent wells referenced in Condition No. 14(a) above shall consist of six (6) samples collected during a 12-month period (approximately bi-monthly) to determine post-
mining concentrations. Post-mining concentrations shall be determined in accordance with Condition No. 14(g) below and shall include the complete list of contaminants identified in Condition No. 14(a) above.

The post-mining concentration determination shall be submitted to the Agency in accordance with Special Condition No. 3 of this NPDES permit within 90 days following completion of the post-mining monitoring.

g. A statistically valid representation of existing and post-mining water quality required under Condition Nos. 14(a) and 14(f) above shall be submitted utilizing the following method. This method shall be used to determine the upper 95 percent confidence limit for each parameter listed above.

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

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

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

Where:

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

X_n = Values for each upgradient sample

n = the number of samples taken

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

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

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

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

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

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

Table 1
Standard 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.

NPDES Permit No. IL0056022

Supplemental Construction Authorization No. 8107-10-1

S.C.A. Date: November 19, 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. 8107-10 dated August 23, 2010. These facilities have been revised as follows:

As described and depicted in IEPA Log No. 7233-11 and 7233-11-B, the addition of 25.3 acres (OMM Permit No. 419 area) located in Sections 27, 28, 33 and 34, Township 9 North, Range 7 West, Macoupin County, Illinois, bringing the total area under this Permit to 1,286.7 acres. This additional area will be utilized for the development of an underground fine coal refuse (slurry) disposal system.

Development and installation of the surface facilities associated with the underground slurry disposal system was previously approved under Subtitle D Permit No. 2013-MA-7233. This permit allowed for the installation of the surface facilities of the underground disposal facilities described as follows.

This underground refuse disposal system will include slurry disposal wells, decant water recovery wells, monitoring/ventilation wells and associated piping. Surface runoff from the well locations sites and the pipeline corridors will be controlled by alternate drainage control methods which may include mulching, seeding and re-vegetation of disturbed areas, silt fence, rock check dams and straw bale dikes.

Slurry pipeline installation will be at or on the ground surface with the exception of roadway crossings, productive cropland areas and natural drainageways where the piping would generally be buried below grade. The exception to this would be an aerial crossing of Spanish Needle Creek which will utilize a small suspended bridge type structure and will incorporate double walled piping for added protection of the stream.

Fine coal refuse (slurry) will be pumped from the preparation plant to the disposal wells located in upgradient sections of the abandoned underground mine workings. The recovery wells located in downgradient sections of the mine workings will pump decant water from the disposed slurry to existing Refuse Disposal Area (RDA) No. 6 where additional clarification will be provided prior to re-introduction of this water back into the coal processing circuit. Additional details of the underground slurry disposal operation are contained in IEPA Log Nos. 7233-11 and 7233-11-B.

Refuse Disposal Area (RDA) Nos. 5 and 6 closure (abandonment) plan, drainage control and groundwater protection plans have been revised as described and depicted in IEPA Log Nos. 5206-13 and 5206-13-B. The revised abandonment plan for RDA Nos. 5 and 6 incorporates an initial coarse refuse/coal combustion by-product working surface to be constructed over the existing disposed slurry material. A system of wick drains will be installed through the working surface into the disposed slurry to the approximate bottom elevation of the disposal areas. Following installation of the wick drains, a drainage layer will be constructed over the working surface which will in turn be covered with a coarse refuse/coal combustion by-product mixture. At such time that the disposal area achieves the design elevation, final reclamation will consist of placement of a low permeability cover consisting of either 2 feet of compacted clay or a synthetic liner which will then be covered by topsoil for revegetation. The final maximum design elevation of the disposal areas is approximately 812 ft. msl. Additional details regarding the RDA Nos. 5 and 6 closure plans are contained in IEPA Log Nos. 5206-13 and 5206-13-B.

Due to the revised abandonment plans proposed for RDA Nos. 5 and 6 as described above, the groundwater monitoring plan has been revised to include the following list of monitoring wells as depicted in the document entitled “Corrective Action Plan” included in IEPA Log No. 5206-13:

Sector No. 1:

MW-08-96	TW-408
MW-09-96	TW-407
MW-12-96	TW-408
MW-13-96	TW-409
MW-21-97	

* Three (3) additional new wells that remain unidentified at this time are proposed as depicted in IEPA Log No. 5206-13 to monitor groundwater trench function within the Sector No. 1 area. Installation of these additional wells is subject to the requirements of Condition No. 1.

Sector No. 2:

MW-24-97	MW-27-00
MW-05-96	PW-16
MW-20-97	TW-436
MW-26-00	

* Six (6) additional new wells that remain unidentified at this time are proposed as depicted in IEPA Log No. 5206-13 to monitor groundwater trench function within the Sector No. 2 area. Installation of these additional wells is subject to the requirements of Condition No. 1.

Sector No. 3:

MW-07-96	TW-417
MW-16-96	TW-419
MW-28-00	TW-422
MW-305	TW-425
TW-411	TW-427
TW-414	TW-429
TW-416	

Sector No. 4:

MW-02-96	MW-04-96
MW-03-96	TW-440

Sector No. 5:

MW-10-96	TW-404
TW-403	TW-406

Background Monitoring Wells:

MW-17-97	TW-405
MW-18-97	TW-444
MW-19-97	

This Supplemental Construction Authorization supersedes and replaces Subtitle D Permit No. 2013-MA-7233 previously issued for development and installation of the surface facilities associated with the underground slurry disposal system as described and discussed above.

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 are incorporated in this Supplemental Authorization unless specifically deleted or revised herein.

This Supplemental Authorization is issued subject to the following Condition(s). If such Condition(s) require(s) 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. Within 60 days following installation of the additional wells proposed for Sectors 1 and/or 2, the following information shall be submitted in duplicate to the Agency.

    a. Appropriate well designation,

    b. A map depicting the precise well location,

    c. Well boring logs, and

    d. Well construction diagram.

2. The groundwater monitoring plan for this facility is modified to include all wells identified and/or otherwise referenced above. These referenced wells are subject to the following monitoring requirements:

   a. All referenced wells, including the wells to be identified in accordance with Condition No. 1 of this Supplemental Construction Authorization, shall be monitored a minimum of six (6) times during the first year (approximately bi-monthly) following installation for the following list of constituents to establish existing concentrations.

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	

   b. Following the existing concentration monitoring required under Condition No. 2(a) above, routine monitoring for all referenced wells shall continue on a quarterly basis for the following list of constituents.

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

   In addition to the above list of constituents, any contaminant found to exceed the applicable groundwater standard during existing concentration monitoring required under Condition No. 2(a) above shall also be included in the routine quarterly monitoring.

   c. At the end of each 5-year permit cycle, a minimum of one (1) sampling event shall be performed for all referenced wells and shall include all constituents identified in Condition No. 2(a) above. The results of such sampling shall be submitted with the NDPES permit renewal application.

   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 Condition No. 2(a) above.

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

   f. A statistically valid representation of background and/or post mining water quality required under Condition No. 2(a) above shall be submitted utilizing the following method. This method shall be used to determine the upper 95 percent confidence limit for each parameter listed above.

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

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

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

Where:

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

X_n = Values for each sample

n = the number of samples taken

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

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

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

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

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

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.

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.

NPDES Permit No. IL0056022

Special Conditions

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

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

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

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

Attn: Compliance Assurance Section

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

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. 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 (DMR's) using one such form for each applicable Discharge Condition each month.

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

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

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

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

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

Special Conditions

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 45 days prior to the month that the permittee wishes 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 45 days prior to the month that the permittee proposes 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 002, 005 and 007):

a. No discharge is allowed from Outfall Nos. 002, 005 and 007 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 Special Condition "low flow" shall be defined as any condition wherein the upstream flow available for mixing is less than the ratio times the flow rate being discharged from the respective outfall. These ratios are as follows:

Outfall No.	Flow Ratio of Receiving Stream to Outfall Discharge
002	53:1
005	16.5:1
007	10.9:1

Pursuant to 35 Ill. Adm. Code 302.120, 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 discharges from the basin, and only at such times that sufficient flow exists in the receiving stream to ensure that water quality standards in the receiving stream beyond the area of allowed mixing will not be exceeded. 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. Should the Permittee elect to pump impounded water from the basin in accordance with this Special Condition, the pump intake shall be "floated" near the impounded water surface or otherwise managed to prevent re-suspension and subsequent discharge of previously accumulated sediments. At times of stormwater discharge, in addition to the alternate effluent (Discharge Condition Nos. II and III) monitoring requirements, as indicated on the applicable effluent pages of this Permit, discharges from Outfall Nos. 002, 005 and 007 shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.

b. The following sampling and monitoring requirements are applicable to flow in Spanish Needle Creek and the unnamed tributaries to Spanish Needle Creek which receives the discharges from Outfalls 002, 005 and 007.

   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. Spanish Needle Creek and the unnamed tributaries to Spanish Needle Creek shall be monitored and reported quarterly for Discharge Rate, Sulfate, Chloride and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. 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. Spanish Needle Creek and the unnamed tributaries to Spanish Needle Creek shall be monitored and reported annually for Discharge Rate, Sulfate, Chloride and Hardness upstream of the associated outfall.

Special Condition No. 14: Sediment Pond Operation and Maintenance (Outfalls 002, 005 and 007 – Reclamation Area Discharge Classification):

a. For discharges resulting from precipitation events, in addition to the alternate effluent (Discharge Condition Nos. II and III) monitoring requirements, as indicated on the applicable effluent pages of this Permit, discharges from Outfalls 002, 005 and 007 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 Spanish Needle Creek and the unnamed tributary to Spanish Needle Creek which receive discharges from Outfalls 002, 005 and 007.

   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 outfall.

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

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

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

Special Condition No. 15: Data collected in accordance with Special Condition No. 13 and 14 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. 16: Concentrations of chloride in the discharges from Outfalls 002, 005 and 007shall not exceed 1,000 mg/l on a daily maximum basis. Discharges from these outfalls are permitted only during precipitation runoff events. Mixing calculations have demonstrated that Spanish Needle Creek will have flows adequate to dilute all three (3) effluents to below the chloride water quality standard using 25% of the stream flow predicted to be present during outfall discharge events. A mixing zone for chloride is granted under these conditions for each outfall.

Special Conditions

Special Condition No. 17: Compliance with Chloride Water Quality Standard:

Twenty-four (24) months after the effective date of this permit, discharges from Outfall 007 shall meet a daily maximum limit of 500 mg/l unless an effluent pipeline is constructed to convey the discharge from the existing Outfall 007 location to Spanish Needle Creek.

The Permittee shall complete the project described above in accordance with the following schedule:

a.	Interim report on chloride reductions to date, or plans and specifications for the effluent pipeline	Six (6) months from effective date of this permit
b.	Commence pipeline construction	Twelve (12) months from effective date of this permit
c.	Preliminary report on progress of pipeline construction, or report on chloride reductions to date	Eighteen (18) months from effective date of this permit
d.	Permittee achieves compliance with the chloride limits of 500 mg/l or pipeline is completed.	Twenty-four (24) months from effective date of this permit.

Special Condition No. 18: A total residual chlorine limit of .05 mg/l (Daily Maximum) shall become effective two years from the effective date of this permit.

The permittee shall construct either de-chlorination equipment or develop an alternate means of disinfection in accordance with the following schedule:

a.	Provide the Agency with a proposal for compliance. If treatment is required, a State Permit application shall be submitted.	within 6 months from the effective date of this permit
b.	Commence construction or submit a progress report if method other than treatment has been chosen.	within 12 months from the effective date of this permit
c.	Complete construction and/or attain operational level	within 18 months from the effective date of this permit

Compliance dates set out in this Permit may be superseded or supplemented by compliance dates in judicial orders, Pollution Control Board orders. This permit may be modified with Public Notice, to include such revised compliance dates.

The permittee shall operate the de-chlorination facilities in a manner to ensure continuous compliance with the total residual chlorine limit, and not to the extent that will result in violations of other permitted effluent characteristics, or water quality standards.

Any use of chlorine to control slime growths or odors as an operational and maintenance control is also subject to a .05 mg/l (daily maximum) total residual chlorine limit in the effluent. Sampling is required on a daily grab basis during the chlorination process. Reporting shall be submitted with the (DMR's) on a monthly basis. This total residual chlorine limit shall also be effective two years from the effective or modification date of this permit.

REPORTING

The permittee shall submit a report no later than fourteen (14) days following the completion dates indicated for each numbered item in the compliance schedule, indicating, a) the date the items were completed, or b) that the item was not completed, the reasons for non completion and the anticipated completion date.

The permittee has the option to apply for an exemption from the effluent disinfection requirements of 35 Ill. Adm. Code 304.121. Application forms may be obtained from the IEPA, Division of Water Pollution Control, Planning Section.

Special Condition No. 19: 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 0.001 ug/l. The results of such testing must be submitted with the quarterly Discharge Monitoring Reports (DMRs). 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 Conditions

Special Condition No. 20: Discharges from Outfall Nos. 002, 005 and 007 shall be monitored twice annually with such monitoring spaced at approximately 6-month intervals during the entire 5-year term of this NPDES Permit. Sampling of the discharges shall be performed utilizing the grab sampling method. The results of the sampling required under this Special Condition shall be reported on Discharge Monitoring Report (DMR) forms and submitted to the Agency in January and July of each calendar year. The parameters to be sampled and the detection limits (minimum reported limits) to be achieved are as follows:

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

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