

Peabody Gateway North Mining, L.L.C. Gateway North Mine

National Pollutant Discharge Elimination System (NPDES) Permit Responsiveness Summary

Regarding

June 20, 2012 Public Hearing

Illinois Environmental Protection Agency
Office of Community Relations
September 2012



Peabody Gateway North Mining, L.L.C.
Gateway North Mine

**National Pollutant Discharge Elimination System (NPDES) Permit
Responsiveness Summary**

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Final September 28, 2012

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Peabody Gateway North Mining, L.L.C.
Gateway North Mine
New Permit
Permit Number IL0079481

AGENCY PERMIT DECISION

On September 28, 2012, the Illinois Environmental Protection Agency approved a new NPDES permit for the Gateway North Mine.

PRE-HEARING PUBLIC OUTREACH

The notice of the NPDES permit public hearing was published in the *County Journal Percy* on April 26, May 3, and May 10, 2012.

The hearing notice was mailed or e-mailed to:

- a) adjacent land owners;
- b) Randolph County officials;
- c) municipal officials in: Sparta, IL as well as state and federal representatives;
- d) Corps of Engineers, the IDNR Office of Mines & Minerals, and the Illinois' Attorney General; and
- e) Illinois Chapter of the Sierra Club, Prairie Rivers Network and the Environmental Law and Policy Center (hearing requestors).

The hearing notice was posted on the Illinois EPA website:

<http://www.epa.state.il.us/public-notices/npdes-notices.html#peabody-gateway-north-mining>

Hearing notices were posted at the Illinois EPA headquarters in Springfield and in the Marion Regional Office.

June 20, 2012 PUBLIC HEARING

Hearing Officer Dean Studer opened the hearing June 20, 2012, at 5:00p.m. at the City of Sparta Council Chambers, 114 West Jackson, Sparta, Illinois.

Gateway North Mine Presentation:

Bryce West--opening statement

Illinois EPA Hearing Participants:

Stefanie Diers, Assistant Counsel, Bureau of Water
Bob Mosher, Standards Section, Bureau of Water
Larry D. Crislip, Permit Section Manager, Mine Program, Bureau of Water

Comments and questions were received from the audience.

Hearing Officer Dean Studer closed the hearing at 6:45p.m. on June 20, 2012.

Illinois EPA personnel were available before, during and after the hearing to meet with elected officials, news media and concerned citizens.

Approximately 46 persons representing neighbors, local government, businesses, miners, elected officials, environmental groups, interested citizens, and Gateway North Mine, participated at and/or attended the hearing. A court reporter prepared a transcript of the public hearing which was posted on the Illinois EPA website at:
<http://www.epa.state.il.us/public-notices/npdes-notices.html#peabody-gateway-north-mining>.

The hearing record remained open through July 20, 2012.

BACKGROUND OF Peabody Gateway North Mining, L.L.C. Gateway North Mine

The Illinois EPA Bureau of Water has prepared a draft new National Pollutant Discharge Elimination System (NPDES) permit for Peabody Gateway North Mining, L.L.C. for Gateway North Mine. The address of the discharger is Peabody Gateway North Mining, L.L.C., 7100 Eagle Crest Boulevard, Suite 100, Evansville, IN. 47715-8152. The facility is located in Randolph County, ½ mile west of Coulterville, Illinois.

Illinois EPA held this hearing for the purpose of taking comments on the draft permit prior to taking final action on the permit application. Issues relevant to this proceeding include the antidegradation analysis and the applicant's compliance with requirements of the federal Clean Water Act and Subtitles C and D, 35 Illinois Adm. Code. Because Illinois is mandated by state law to issue a permit if the applicant meets the requirements for obtaining a permit, those recommending denial of the permit application were instructed to state the regulation that is the basis of their recommendation for denying the permit.

The applicant proposed a new underground coal mine (SIC 1222). Mining operations result in the discharge of water classified as alkaline mine drainage. Application was made for two (2) new discharges located in Randolph County. The stream segment IL_II-02 of Mary's River receiving the flow from the unnamed tributary into which Outfall 001 discharges is not on the draft 2010 303(d) list of impaired waters.

The unnamed tributary receiving the discharges from Outfall 002 is not on the draft 2010 303d list of impaired waters; however, this unnamed tributary is ultimately tributary to Coulterville Lake which is on the draft 2010 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairments of Coulterville Lake: atrazine and manganese for public water supply use; total suspended solids (TSS), phosphorus (total) and aquatic algae for aesthetic quality use.

Responses to Comments, Questions and Concerns

Comments, Questions and Concerns in regular text

Agency responses in bold text

NPDES Permit

1. As an adjacent landowner I'm concerned with the location of the proposed mining facility to my property, the City of Coulterville and the City's water supply. Along with the location I'm concerned on how this will affect the water quality of Coulterville Lake as the City's public water supply.

Outfall 002 is proposed to discharge to an unnamed tributary to Coulterville Lake. Due to Coulterville Lake being a public water supply, the Public and Food Processing Water Supply Standards of 35 Ill. Adm. Code 302.304 have been applied as permit limits to the discharges from Outfall 002. By applying the public water supply water quality standards to the discharges from Outfall 002, the applicable water quality standards will be maintained in Coulterville Lake (sulfate and chloride). In the case of total dissolved solids, a permit limit protective of the water quality standard has been established based on modeling results.

2. As an adjacent landowner I have a concern regarding the coal stockpile. Will the discharge from the coal stockpile, to the sedimentation basins and then to Mary's River have a rate increase and additional pollutant load?

Due to the change in land use and runoff characteristics from existing conditions, a runoff rate increase as well as elevated contaminant concentrations may result from the coal stockpile area. The potential runoff rate increase will be negated by the attenuating affects of the sedimentation basin and therefore no downstream increase in flow will be experienced. In addition, the location of the coal stockpile and potential runoff to Sedimentation Basin and Outfall 001 was evaluated for the Agency's Antidegradation Assessment included in the Public Notice/Fact Sheet published at the time the draft permit was public noticed. The additional pollutant load was evaluated and it was determined that discharges from Outfall 001 would be capable of meeting the applicable general use water quality standards, which were set as permit limits.

3. It does not appear from the draft fact sheet, antidegradation assessment and draft permit that a complete characterization of the proposed pollutant load to the receiving waterbodies has been conducted. For example:

- both Mary's River and Mud Creek watersheds are already adversely impacted by coal mining discharges

Outfall 001 is proposed to discharge into an unnamed tributary to Mary's River rather than to Mary's River directly. However, Stream Segment IL_II-02 of Mary's River which will receive the flow from the unnamed tributary into which Outfall 001 discharges is not listed on either the draft 2010 or the draft 2012 303(d) list of impaired waters. Therefore, this segment of Mary's River is not identified as being impacted by coal mining activities within the watershed.

Outfall 002 is proposed to discharge to an unnamed tributary to Coulterville Lake. Both the South Fork Mud Creek and Mud Creek itself are located downstream of the Coulterville Lake discharge. Neither Stream Segment IL_OEB of South Fork Mud Creek nor Stream Segment IL_OE-02 of Mud Creek are identified as being impacted by coal mining activities on either the draft 2010 or the draft 2012 303(d) list of impaired waters.

- the draft permit does not take into consideration the potential additional pollutant loading from the coal stockpiles to the underlying groundwater given that a high water table is present

Any groundwater resource located beneath this proposed facility will be protected from pollutant loading from the coal stockpiles by the compacted clay liner required and discussed on Page 7 of the Permit in Construction Authorization No. 6138-12. As discussed, compacted clay liners will be constructed beneath the coal stockpile, within Sedimentation Basin 001 and within the ditch that conveys runoff from the stockpile to the sedimentation basin. The two (2) foot thickness of compacted clay liner to be constructed beneath the referenced structures will be protective of the local groundwater resource. In addition, groundwater monitoring has been proposed to demonstrate that no adverse impact to the groundwater resource occurs.

- the draft permit does not fully consider the additional loading of pollutants from pumping of the underground mine acres

As indicated in the Antidegradation Assessment on Page 6 of the Public Notice/Fact Sheet, the facility operation was evaluated considering pumpage associated with slope/shaft construction activities as well as pumpage from the underground mining operation being directed to

Basin and Outfall 001. Therefore, potential additional loading of pollutants from pumping sources was fully considered in establishing appropriate permit limits.

No pumpage is proposed to be directed to Basin and Outfall 002 which will discharge to an unnamed tributary to Coulterville Lake.

- the draft permit does not fully consider the additional loading of phosphorus, important because Lake Coulterville, downstream of Outfall 002 is considered impaired due to high levels of phosphorus

Phosphorus is not a contaminant typically associated with coal mining operations; therefore, no monitoring or permit limits have been established for phosphorus in the NPDES permit.

Also, please refer to the responses to Item Nos. 13 and 15 below.

4. In regards to the coal stockpile, it is indicated in the permit that there will be a two-foot compacted clay liner. Does the Illinois EPA have any standard to require a plastic liner at an even greater depth?

Title 35 Ill. Adm. Code 370.930 provides construction standards for waste stabilization lagoons at sewage treatment works. These impoundments are similar to the impoundments used at mines because the wastes contain similar inorganic contaminants (e.g. sulfate, chloride, TDS, metals). Part 370 requires that waste stabilization lagoons have a minimum of two feet of clay compacted to 1×10^{-7} centimeters per second or an equivalent synthetic liner. Since the Illinois Pollution Control Board has found that two feet of compacted clay is adequate to protect groundwater from inorganic contaminants in sewage, doubling that thickness provides an additional measure of protection.

5. On page 3 and 4 of the public notice fact sheet and then again on page 2 and 3 of the draft permit, it states that both Outfall 001 and 002 will have dry weather discharges and mine pumpage. Is it true that there will be mine pumpage to Outfall 002 to Coulterville Lake?

As noted in the Antidegradation Assessment on Page 6 of the Public Notice/Fact Sheet, only discharges from Outfall 001 will include pumpage associated with slope/shaft construction activities as well as from the underground mining operation. Outfall 002 will receive only runoff from access roads and surface support areas. No mine pumpage or runoff from coal or coal related materials will be directed to Basin and Outfall 002.

The text in parentheses on the referenced pages of the Public Notice/Fact Sheet and Permit that makes reference to “pumpage” is included to provide a definition of what may make up a dry weather discharge. This is not intended to indicate that the Outfall will necessarily receive mine pumpage.

6. This permit should not be issued as it does not adequately address cumulative impacts due to the permitted activities and associated operations. The applicant is seeking an NPDES permit for expansion of the Gateway North Mine, including the addition of a new portal, airshaft, conveyor belts, raw coal stockpiles, and sedimentation ponds along with two proposed outfalls. It has been unclear from the start why these two portals and the preparation plan have not been permitted together. The Gateway North Mine has the opportunity to develop a no-discharge system with stormwater runoff being collected and transferred for use at the coal processing plant; it only makes sense to combine these facilities under one NPDES permit. Can you explain why this is, or appears to be, separate permitting issuant?

There is no specific benefit to permitting this Gateway North Mine facility with the main Gateway Mine under a single NPDES permit. For example, in the event the Applicant elects to transfer stormwater runoff collecting at the Gateway North Mine site to the coal processing plant located at the Gateway Mine, this may be accomplished through a permit modification. This permitting process will maintain separation of any issues specific to the individual sites. However, all permits are required to comply with water quality standards, antidegradation regulations and all of the Illinois Pollution Control Board regulations.

7. Coulterville Lake is already impaired by Phosphorus. Can you explain why Outfall 002 has no phosphorus limit?

As phosphorus is not a contaminant typically associated with coal mining operations, no phosphorus permit limit was established in the NPDES permit.

Also, please refer to the responses to Item Nos. 13 and 15 below

8. Can you explain how the sanitary wastewater discharge and withdrawals will be handled at this mining facility?

Sanitary wastewater at the Gateway North Mine facility will be handled by the Coulterville municipal sewer system.

9. The permit should include monitoring requirements for PAHs at all the Outfalls.

Polycyclic aromatic hydrocarbons (PAHs) are lipophilic compounds which mean they have a greater affinity to bind to organic substances rather than water. Because of these properties, PAHs are bound to sediment and other organic materials and are not expected to be readily transported in groundwater or present in surface water discharges from the Gateway North Mine site.

Antidegradation Assessment

10. Are the 340 workers listed in the antidegradation comments for purpose and social and economic benefits working at Gateway North Mine or are they for the site including the processing plant.

According to mine management, there are 290 employees currently working at the adjoining Gateway Mine. Approximately 50 more workers would be hired when the Gateway North Mine opens. The current workers would be transferred to the new mine when the existing facility is mined out, thereby preserving those jobs.

11. The Illinois EPA has not identified and characterized the conditions and existing uses for the unnamed tributaries receiving new mine and stormwater discharges from Outfall 001 and 002 in violation of the 35 ILL. Adm. Code 302.105.

The unnamed tributaries receiving the effluents from Outfalls 001 and 002 are at the ultimate headwaters of the watershed. Given the lack of springs or other permanent sources of water, these streams are ephemeral in nature meaning that zero flow will occur in large proportions of the time and that the streams will go dry during extended periods of low precipitation. Illinois EPA is already familiar with the biota that inhabits streams of this type. The organisms that make their way to these headwater areas after each dry period ends are adapted to the periodic absence of water. The Agency has determined that it is not necessary to conduct biological surveys of waterbodies of this kind each time one is proposed as a receiving stream. The importance of these streams to the overall well-being of downstream aquatic ecosystems is acknowledged by the establishment of permit limits protective of water quality standards. Both these receiving streams must be protected for all the uses listed in 35 Ill. Adm. Code 302.202. The antidegradation assessment review conducted by Illinois EPA concluded that these uses would be protected by the established permit limits and conditions.

12. Does the Illinois EPA determine the feasibility of the treatment options presented in the Antidegradation Assessment?

The Applicant is responsible for the antidegradation assessment, including the alternatives analysis which includes treatment options. The Illinois EPA reviews the assessment and employs professional judgment to agree or disagree with the conclusions submitted by the Applicant. In this case, Illinois EPA agreed with the applicant that the sedimentation pond treatment proposed was the only reasonable treatment option available.

13. Illinois EPA has not demonstrated that the proposed discharge will not cause or contribute to the violation of water quality standards in Coulterville Lake and the tributaries to Coulterville Lake and Mary's River. The permit proposes storm related discharges of wastewater from a 172.1 acre mine site including pond overflow from runoff from: office buildings, parking lots, access roads, surface area associated with mine portal, temporary coal storage areas, soil and overburden stockpiles, mine pumpage associated with slope/shaft construction activities and pumpage from the underground mining operations to unnamed tributaries to Coulterville Lake and Mary's River. Because of the inadequate characterization of proposed pollutant load increases, it follows that the reasonable potential analyses for pollutants of concern were not completed. The Illinois EPA must include limitations in the permit necessary to achieve water quality standards. Such limitations must control all pollutants which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. 40 CFR 122.44 (d) (1).

Water quality based effluent limits have been established in the NPDES permit for chloride, sulfate and manganese for both Outfalls 001 and 002, and in addition, total dissolved solids for discharges from Outfall 002. These are the parameters that experience has shown occur in mine effluents in concentrations that approach or exceed the water quality standards. Illinois EPA has set permit limits protective of water quality standards that must be met in the immediate receiving stream or in Coulterville Lake.

14. According to some recent literature on sulfate removal of mine waters it concluded that biological treatments, such as wetlands, can be used to treat discharges in these mine waters. My question is why didn't the Illinois EPA have the applicant investigate this treatment technique for Outfall 001?

Biological sulfate removal has been investigated for this and other coal mines in Illinois. The conclusion has always been that the intermittent discharge of coal mine wastewater in Illinois, which originates largely from

precipitation events, is not suited to this type of treatment. Biological systems must be constantly supplied with food and water. Long periods with little or no rainfall, such as those occurring this year, would make it impossible to maintain the treatment system. Conversely, periods of very heavy rainfall would overwhelm any system of reasonable size. Biological sulfate treatment systems may work sufficiently for very small waste streams with consistent flow and high sulfate concentrations, characteristics that may be typical for other kinds of mines in other states, but not for coal mines in Illinois. Utilization of biological sulfate treatment in the context of sulfate permit limits for this mine means that a very unreliable and expensive biological treatment system covering many acres of productive cropland would be constructed to treat mine effluents.

15. Special Condition #12 discusses monitoring requirements for tributaries to both Mary's River and Coulterville Lake. We would like to see manganese, total phosphorus and total suspended solids included in the list of parameters that are monitored because Coulterville Lake is already impaired for these pollutants.

1. The purpose of the monitoring required by Special Condition #12 is to generate a database of the water quality constituents necessary for future sulfate water quality standard calculation such that at the next permit renewal appropriate sulfate limits may be applied. Stream monitoring is not required for manganese, total suspended solids and phosphorus. In the case of total suspended solids and manganese, effluent monitoring is required which will show what the mine, via Outfall 002, is contributing to Coulterville Lake. Phosphorus is not regulated in this outfall because no contributions are anticipated. The mine will not be exacerbating problems in Coulterville Lake for any of these parameters.

16. The Antidegradation Assessment assessed that all public and food processing water supply water quality standards will be met in the effluent. Increases in lake concentration of chloride and sulfate will be in terms of a few milligrams per liter. The limits for Outfall 002 are set at the chloride and sulfate standards for public and food processing water supplies. Why isn't the TDS limit set at 500 mg per liter, which is the PWS standard?

The antidegradation assessment review was in error concerning the statement that all Public and Food Processing Water Supply water quality standards would be met in the effluent. While chloride and sulfate will both be regulated in the permit at the concentration equal to the Public and Food Water Processing Water Supply water quality standards (250 mg/L in each case) total dissolved solids (TDS), with a water quality standard of 500 mg/L will not. Estimates from the mine company based on similar effluents at other sites indicated that 750 mg/L TDS permit limit could be met, but not 500 mg/L. They provided a model of the Coulterville Lake watershed to demonstrate that meeting an effluent limit of 750 mg/L TDS would allow the

water quality standard to be met in the lake. Dilution within the unnamed tributary receiving the Outfall 002 effluent and within Coulterville Lake allows the 500 mg/L water quality standard to be met before the water is withdrawn from the lake by the public water supply treatment plant. Illinois EPA regrets this error and notes that in the July 8, 2012 water quality based effluent limit evaluation memo, issued on the same day as the antidegradation memo, the 750 mg/l TDS permit limit was correctly identified.

17. Of critical concern is the potential impact of the proposed mine on the quality of water in the Coulterville City Reservoir. Outfall 002 discharges to a tributary to Coulterville Lake. Why is there no effluent limit for manganese at Outfall 002, considering Coulterville Lake is already impaired for manganese?

The source of manganese in coal mine related discharges is due to runoff from coal, coal refuse and/or other coal related materials. No such materials are proposed to be located within the watershed tributary to Basin and Outfall 002. Furthermore, since the current farmland use of the future mine site already contributes manganese to Coulterville Lake, no increase in loading of manganese is anticipated when mine activities begin given no new manganese source is being created. Coulterville Lake will not receive more loading of manganese due to the construction and operation of the mine. However, in order to verify that significant manganese is not present in the Outfall 002 effluent, a permit limit of 1.0 mg/L as a daily maximum has been included.

18. Mary's River has photo documentation that discharges within that river often run "red." Iron samples from that river have shown that due to mining activities, values run as high as 58 mg per liter in the stream bed. Both Outfall 001 and 002 have a total iron limit of 3-6 mg per liter. Considering the high levels shown downstream, how can the Illinois EPA permit additional releases of iron from these sources?

Illinois EPA biologists assessing the condition of the Mary's River have not listed the river as impaired due to any conditions relating to red precipitate on the river bottom. It is possible that the red precipitate was not present when the Illinois EPA made our assessments or that we did not sample the affected areas of the river. Agency staff has been informed of this report of iron issues in the river and field visits are planned to find out what is causing this problem. The permit limits for iron applied to the Gateway North Mine discharges will prevent excess iron from being discharged from the two permitted discharges. Iron is not visible at the concentrations required by the NPDES permit. Management practices required by the NPDES permit and by IDNR permits ensure that pollution from sources other than NPDES outfalls will not arise. Therefore, the Gateway North

Mine will not cause or contribute to the iron problems that may exist elsewhere in the Mary's River watershed.

19. According to the Antidegradation Assessment it states that the input to the tributary to Lake Coulterville was modeled to show what the long term overall effects would be on lake water quality for seven parameters, for several parameters. Was the modeling based on the proposed permit limits, or was the modeling based on the project discharge concentrations?

The modeling was based on the permit limit concentrations as these values are the highest concentrations allowed in the discharged effluent. The modeling therefore reflects worst-case conditions.

20. How does the Illinois EPA review the potential increases in water flow from the mining facility to the Coulterville Lake Watershed?

The watershed of Coulterville Lake is approximately 467 acres. The catchment area for Outfall 002 on the mine site is 23.5 acres. This means that five percent of the watershed for the lake is altered by the construction of a sedimentation pond on the mine site. The mine is not diverting drainage away from the lake or adding watershed to the lake through its activities. There are two possibilities regarding the volume of water that will flow off the mine property and into the unnamed tributary of Coulterville Lake regarding the alterations made by the mine: runoff may decrease due to evaporation from the pond and use of the water by the mine, or runoff will increase because permeability of surfaces on part of the 23.5 acres will be diminished.

If the mine uses all of the water that flows into the sedimentation pond, an unlikely event given that some water will flow out of the pond during heavy rainfall events before it could possibly be used, at the maximum, only roughly five percent of the water normally running into the lake would be lost. If water usage by the mine and evaporation is minimal and there is an increase in runoff going to the lake because of less permeable area, an estimate of this increase may be made. The mine company has determined that approximately 4.5 acres of the 23.5 acre catchment area will have zero or low permeability characteristics. Given that cropland in Illinois is generally considered to shed 6% of rainfall while allowing 94% to permeate, evaporate or be taken up by plants, it can be assumed that these 4.5 acres (approximately 1% of the lake's watershed) will generate runoff about 10 to 15 times higher than what is now occurring. At the extreme, 3.2 % more water will enter the lake under this scenario. In summary, it is more likely that neither extreme (5% less water to the lake or 3.2% more water to the lake) will occur. Water draining to the lake will probably increase or

decrease imperceptibly and given the variables involved, this small change from current conditions cannot be calculated precisely.

21. Has the Illinois EPA investigated an alternative treatment option where a catchment basin would have limited to no discharge or simply discharge into a closed loop slurry system, as opposed to discharging straight into Mary's River?

"No discharge" scenarios are considered by the mine company when preparing the antidegradation assessment. The companies understand that if no discharges occur, no NPDES permit would be necessary, thereby saving permit fees, the expense of filing a permit application and monthly monitoring and reporting expenses. Given these benefits to the mine for no discharge alternatives, it benefits the mine to consider these options if at all possible. In the case of Gateway North Mine, surface runoff collected in the sedimentation pond would have to be pumped to another watershed to avoid discharge. Pumping expenses would be excessive. Another consideration is that if no discharge was allowed, a consumptive use for the water must be made. It is possible that too much water would have to be consumed in the slurry pond under this scenario.

Enforcement/Compliance Issues

22. According to the Environmental Compliance History Online (ECHO) database, Peabody Mining's current operations and three year compliance status by quarter, shows that Peabody has been out of compliance the last 11 of 12 quarters. How has the Illinois EPA allowed them to keep their current operations and or expand their current mining operations if this is a true representation of their compliance record?

Integrated Compliance Information System ("ICIS") is the internal database for the states that is updated daily. Enforcement and Compliance History Online "ECHO" is the public side of ICIS and is only updated on a monthly basis, essentially meaning ECHO is always a month behind any data ICIS has currently. Therefore, one must exercise caution relying only on information found on ECHO without also doing a comparison with the ICES database.

The commenter did not provide the information reviewed on ECHO. Agency staffed reviewed the DMR's for the Gateway Mine (NPDES permit number IL0062189) from January 2009–June 2012 and there were some excursions for iron and total suspended solids and settleable solids. However, the excursions did not result in a violation notice under the definition of significant non-compliance pursuant to 40 C.F.R. 123.45.

Other Issues

23. There is currently the Mary's River/North Fork Cox Creek Watershed TMDL Stage 3 Report, which recommends best management practices for mine operations in order to reduce sulfate and TDS, the main pollutants discharged from mining activities. We would like to see this NPDES permit incorporate some of these recommended best management practices at Outfall 001.

Condition No. 11(c) of Construction Authorization No. 6138-12 located on Pages 8 and 9 of the Permit references Good Mining Practices to be implemented in accordance with 35 Ill. Adm. Code 406.204, 406.205, 406.206, 406.207 and 406.208. The referenced Good Mining Practices are to be implemented to assist in minimizing the discharge of total dissolved solids, chloride, sulfate, iron, and manganese concentrations in discharges from the operation.

Table 6-4, BMP's for Mine Operations, contained in the Mary's River/North Fork Cox Creek Watershed TMDL Report includes four (4) possible BMP's to be implemented for mining operations to reduce concentrations of TDS and Sulfate. Of the four (4) BMP's listed, two (2) are listed as having an effectiveness of "na" (not applicable), "unknown" (no known studies quantifying reduction) or "not reported". The BMP's with quantifiable effectiveness are "Open Limestone Channels" and "Anaerobic Wetlands". Open limestone channels are indicated as being capable of reducing sulfate concentrations by 28%. The effectiveness on reducing TDS concentrations is "unknown". Anaerobic wetlands are indicated as being 69% effective in reducing sulfate concentrations and for which the effectiveness of reducing TDS concentrations is "unknown".

The TMDL report indicates that some studies of these BMP's are not yet complete.

Other sections of the TMDL report discuss required reductions for specific segments in the Mary's River/North Fork Cox Creek watersheds that will likely meet the water quality goals. However, no outfall from the Gateway North Mine is proposed to discharge to any of the discussed waterbody segments.

At this time, based on the information available in the Mary's River/North Fork Cox Creek Watershed TMDL report, the Agency does not believe it prudent to require implementation of the cited BMP's which may have unproven effectiveness.

24. According to the Illinois EPA's on-line Source Water Assessment Program Tool, Coulterville Lake and its surrounding watershed is considered a public water supply watershed. What is the Illinois EPA's policy for dealing with proposed new sources of pollution within the watershed of a public water supply?

Water quality standards exist for the protection of public and food processing water supply intakes (35 Ill. Adm. Code Part 302 Subpart C). Illinois EPA must assure that these water quality standards will not be exceeded at the point where the surface water is withdrawn from the lake and taken into the water treatment plant. In this case, Illinois EPA is regulating two parameters (sulfate and chloride) at the public water supply water quality standard in the Gateway North Mine Outfall 002 effluent. A third parameter, total dissolved solids, is being regulated in the mine effluent at a concentration (750 mg/L) that has been shown through watershed modeling to be protective of the applicable Public and Food Processing Water Supply water quality standard of 500 mg/L that must be met in the water withdrawn from the lake at the water treatment plant.

25. As a landowner who lives less than a quarter of a mile away from where this new mine is proposed, I am against the Illinois EPA granting this NPDES permit. My family receives our water from wells and I'm concerned about our drinking water and the town of Coulterville's drinking water now and in the future. How can I be assured that our drinking water will be protected?

Please refer to the response to Item No. 1 regarding the protection of the Coulterville Lake as a public water supply.

Protection of private and/or residential water wells is an IDNR/OMM issue under the SMCRA regulations. Please contact the IDNR Office of Mines and Minerals for information regarding residential water well protection.

26. According to the NPDES permit fact sheet, the mine will not be replacing over a thousand feet of streams that will be destroyed. Can you discuss the mitigation plan for the stream loss?

Mitigation for the proposed stream impacts was determined in coordination with the U.S. Army Corps of Engineers through their Section 404 permit using the Illinois Stream Mitigation Method. Intermittent streams will be mitigated at a 1:1 ratio. Ephemeral streams will be mitigated at a 0.5:1 ratio. The mitigation plan for the proposed stream impacts would create 50 foot riparian corridors on each side for both ephemeral and intermittent streams. Streams to receive mitigation are existing streams in cropland that currently have little or no riparian buffer and often have modified

channels. Mast producing species of trees will be planted to create the buffers. Stream channels will be improved through use of reshaping techniques which will include engineered structures, improving riffle/run/pool structure and terraces, all designed to improve habitat quality.

27. Why is the applicant allowed to destroy approximately a quarter mile or so of stream?

Please see response 26 above.

Acronyms and Initials

CFR	Code of Federal Regulations
CWA	Clean Water Act
DMR	Discharge Monitoring Report
HUC	Hydrologic unit code
IDNR	Illinois Department of Natural Resources
IDPH	Illinois Department of Public Health
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency
ILCS	Illinois Compiled Statutes
Ill. Adm. Code	Illinois Administrative Code
mg/L	Milligrams Per Liter
NPDES	National Pollutant Discharge Elimination System
OMM	Office of Mines and Minerals
PAHs	Polycyclic Aromatic Hydrocarbons
pH	A Measure of Acidity or Alkalinity of a Solution
SMCRA	Surface Mining Control and Reclamation Act of 1977 (federal)
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
USGS	United States Geological Service

DISTRIBUTION OF RESPONSIVENESS SUMMARY

An announcement, that the NPDES permit decision and accompanying responsiveness summary is available on the Agency website, was mailed to all who registered at the hearing and to all who sent in written comments. Printed copies of this responsiveness summary are available from Larry Crislip, Illinois EPA Marion Office, 618-993-7200, e-mail: Larry.Crislip@illinois.gov.

WHO CAN ANSWER YOUR QUESTIONS

Illinois EPA NPDES Permit:

Illinois EPA NPDES technical decisions:	Larry Crislip	618-993-7200
.....	or Iwona Ward.....	618-993-7200
Legal questions	Stefanie Diers.....	217-782-5544
Water quality issues	Bob Mosher.....	217-782-3362
Public hearing of June 20, 2012	Dean Studer.....	217-558-8280

The public hearing notice, the hearing transcript, the NPDES permit and the responsiveness summary are available on the Illinois EPA website:

<http://www.epa.state.il.us/public-notice/npdes-notice.html#peabody-gateway-north-mining>