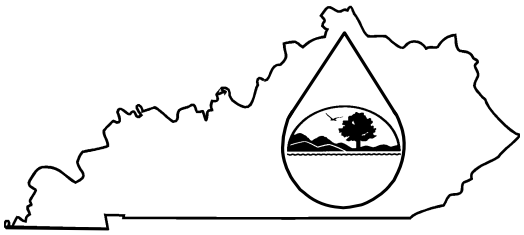
KPDES FORM SDAA



Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Project Information

Facility Name: Cambrian Coal Corporation (P.N. 898-0806)

Location: Adams Br., Little Br., Jackson Br. in Pike County	**County: Pike**

Receiving Waters Impacted: Adams Br., Little Br., Jackson Br.

II. Socioeconomic Demonstration

1. Define the boundaries of the affected community:
(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

This proposed project is located on the west side of Adams Branch near latitude 37-17-22 and longitude 82-25-22. The entire surface area of the project is approximately 792 acres, of which 354.7 acres are to be mined by contour method and 321.6 acres are to be mined by area method. The nearest community is Ashcamp, which is 4.1 miles to the southwest. Adams Branch (HUC 05070202-060-260), Little Branch (HUC 05070202-060-240), and Jackson Branch (HUC 05070202-060-220) are the receiving streams for the proposed discharges. The proposed project is expected to affect Pike County as a whole; including communities in Ashcamp and the surrounding area. Some nearby neighborhoods are Edgewater (which is approximately 5.1 miles to the west) and Elkhorn City (which is approximately 6.1 miles northeast of the project area).

2. The effect on employment in the affected community:
(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

See Attachment

II. Socioeconomic Demonstration- continued

3. The effect on median household income levels in the affected community:

(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

This mining operation would continue to provide employment for an estimated 20 employees. These mining positions prove to be higher paying jobs than other industries in Pike County, specifically near small communities in the Ashcamp area. This also positively affects as many as 40 employees in the support industries that will help to supply the material and equipment needed for mining, as well as other services, such as engineering and training. See the table below for a comparison of weekly income data for this county.

Wages	Pike
All Industries	$711.86
Mining	$1,178.17
2008, Kentucky Workforce Development Cabinet	

The average weekly wage in the mining industry is approximately 40% higher compared to the average weekly wage for all industries in Pike County. Loss of these higher-paying jobs would result in decreased revenue to local businesses that cater to the needs of the employees on a daily basis. The loss will also result in a decrease of the purchasing power of the county as a whole.

In general, Pike County as a whole would be impacted positively by the increase in revenues that this project would create. Employees would have a more secure place of employment and an income that is higher than average. The families of the employees would also be helped by this more secure income. The purchasing power of the effected employees and their families would help reverse the unemployment trend for other workers in the area of the proposed project.

4. The effect on tax revenues of the affected community:

(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

Mining of KDNR Permit No. 898-0806 will recover an additional 45 billion tons of coal over 5 years. This will generate approximately $1.5 billion of taxable profit, of which the surrounding counties will receive a total of over $219.4 million (15 percent). Additional revenue will be given to local businesses, generated through increased employment to handle support services catering to the mining operation directly and to the needs of the employees on a daily basis. Local income taxes, property taxes, and sales taxes will also add to revenue brought in by the mining facility.

Pike County permits local taxation on real estate finished goods and other tangible properties. The taxes are levied at the following rates per $100 valuation (2007 data per Kentucky Revenue Cabinet): $0.2240 for real estate, $0.2179 for motor vehicles, and $0.2499 for other tangible property. The proposed project will utilize the use of this selected class of properties and this tax will be additional money for government services to better serve the citizens. Schools will benefit because the increased property taxes would ensure better equipment, facilities, and better pay for teachers.

II. Socioeconomic Demonstration- continued

5. The effect on an existing environmental or public health in affected community:
(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

As part of the mining and reclamation phase of the proposed project, any pre-existing rubbish within the permit area will be eliminated. Following the conclusion of mining, the permit area will be reclaimed. Reclamation will provide an enhanced habitat and environment for local species. During reclamation, all permitted areas will be stabilized to prevent erosion. Indigenous species will be planted to establish adequate re-vegetation and runoff from all re-graded areas will be diverted into sediment ponds to prevent sedimentation to nearby streams. The permit area will be in better condition once reclamation is completed. This will provide a healthier habitat for local species leading to a more balanced ecosystem.

In addition, recovery of the coal will increase severance tax revenues, a portion of which will be returned to the community. This money can be used for environmental protection such as sewage disposal, sanitation, and solid waste disposal, which will have beneficial effects on the existing environment and public health.

6. Discuss any other economic or social benefit to the affected community:
(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

The increase in production levels is not only providing jobs for this operation at a higher-than-average weekly mining wage, but will require supporting jobs that will further benefit the local area. The increased employment that this job will provide, will help create additional revenue for the existing businesses in and around Pike County. The additional revenue for the local businesses and the severance tax dollars generated by this project (approximately $219.4 million), will provide the local government increased benefits in public safety (law enforcement, fire protection, ambulance services) and also aid industrial and economic development in the surrounding communities.

Once reclamation is completed, the land associated with this permit can be utilized for recreational purposes, wildlife habitat, or used otherwise to improve the local community.

III. Alternative Analysis

1. Pollution prevention measures:

(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

Several alternatives were evaluated for prevention of water pollution in this project area. Evaluated alternatives include:

a. Avoidance of the project (short-term)

Avoiding this project would mean that the advantages of economic development in the Pike County area would not be realized. At a minimum, 20 local jobs would be lost, the tax base would deminish (approximately $1.5 billion in taxable profit), and local businesses would not prosper to the same extent.

b. Additional Levels of Separation

Further prevention could include reducing the disturbed surface area or separating the storm runoff from undisturbed areas and active site runoff.

c. Preventative Design (to be implemented)

Preventative designs should include: creating only moderate gradients and inclines to slow runoff or diverting waterways and drainage. With these methods, the amount and frequency of flow through active mine sites can be reduced. The mine sites sediment ponds will store any runoff leaving the site and provide an adequate time to settle the sediment. As necessary and practicable, flocculants and chemicals could be added to treat the water if higher levels of certain chemicals and compounds are observed.

2. The use of best management practices to minimize impacts:

(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

Mine BMPs could include creating only moderate gradients and inclines to slow runoff or diverting waterways and drainage. With these methods, the amount and frequency of flow through active mine sites can be reduced. The water that does leave the site should pass through a system of sediment ponds. Each should retain any runoff leaving the site and allow adequate time to settle the sediment. As necessary and practicable, flocculants and chemicals could be added to treat water that present higher levels of certain chemicals and/or compounds.

Ponds should be sized to accommodate a 25-year, 24-hour rain event. The ponds should be placed in suitable locations, away from any steep topography or buffer zones.

Riparian zones should be left adjacent to streams to protect surface water from runoff and mining contaminates.

All structures should be inspected following significant rainfall events, and if necessary and practicable repairs will be made.

Additionally an undisturbed natural barrier could be maintained throughout mining, at the lowest disturbed elevation and extend from the out slope. This vegetative buffer could serve the function of improving water quality by the collection of sediment and the reduction of erosion.

With the conclusion of mining, the area will be reclaimed. Any affected streams should be stabilized and restored, and a riparian buffer will be established. These rehabilitated streams will curb sedimentation and provide a habitat for aquatic species and wildlife.

III. Alternative Analysis – continued

3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:
(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of these opportunities are to be implemented)

Water does play a key part in mining operations as a means of alleviating airborne coal dust by misting / spraying the area. However, dust suppression is generally used only in times of dry weather when the flow of the surface discharge is low or non-existent. In addition, the amount of water required for dust suppression is minimal compared to the discharge generated. The total watershed drainage area for this project is approximately 792 acres, with a peak discharge (during 24-hour / 25-year storm event) of approximately 984.2 million gallons per day. Water used for dust suppression in a day would be about 210,000 gallons. This would be approximately 0.02% of the storm water for this project. This leaves the remaining 984 million gallons of storm water for removal from or use on the project site.

The use of the on-site storm water for the watering of reclaimed areas was considered. However, because the slope of the area is greater than 6%, the absorption rate would not support land application.

4. Application of water conversation methods:
(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

Water collected by the project's sediment ponds, before being discharged, will be used for dust suppression as is necessary. While only 0.02% of the total discharge will be needed for dust suppression, reusing this water will prevent possible withdrawals from other sources, i.e. natural streams and wells.

Other options are available to conserve waste water quality. They include using a system of thickeners and vaccuum cleaners, or using reverse osmosis filtration systems. The average cost for a reverse osmosis plant capable of handling 5,000 gallons is $2.9 million. These alternatives were deemed non-feasible due to the extra costs, power lines, additional site disturbance, and increase operating cost. This cost was deemed inappropriate for this proposed project.

Upon completion of the project, the water required for remediation, including hydro-seeding, may also be provided by on-site detained water. Again alleviating the possible withdrawal from other sources such as wells or streams.

III. Alternative Analysis – continued

5 Alternative or enhanced treatment technology:

(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

The discharge from the permit site will be the result of storm water run off, drainage of the watershed, as well as run off from the dugouts, which are used for sediment and drainage control.

As an alternative treatment option, a waste water treatment plant was evaluated.

The construction of a waste water plant was deemed not applicable for this permit due to the cost. The construction of a small water treatment facility on the project site could cost approximately $3 billion dollars, plus an additional cost of approximately $50,000 for a containment reservoir. In addition, the construction of such a facility would require more surface disturbance for the construction of the facility. If a plant were constructed and utilized for some of the storm water, there would be no future use for the facility post mining. Prior to bond release, the site would have to be dismantled and the site restored to pre-mining conditions. This would cost approximately $24,000; at a rate of $20.00 per hour for a total of 1,200 man hours.

The cost of gathering and pumping the waste water to a nearby plant would be approximately $8 million. A major obstical in the pumping of the discharge to a treatment facility, is the local topography of the area. In addition, the local plant would need to make improvements/upgrades in order to be able to handle the additional volume. Additionally, the nearest plant is not set up for reoccuring high volume sediment.

6. Improved operation and maintenance of existing treatment systems:

(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

The nearest treatment plant is located at Mountain Water District's Marrowbone intake approximately 13.7 miles away from the proposed project.

Transportation of the discharge to the nearest treatment plant via pipe or truck was investigated. It would cost approximately $4.8 million (169,000 feet of 24" diameter HDPE pipe at $67/ft) to run 24" diameter HDPE pipe to the nearest municipal water treatment plant, which is at Marrowbone. Trucking the discharge would require approximately 197,000 trucks with a capacity of 5,000 gallons each, working 24 hours a day, to haul the discharge to the treatment Marrowbone. The trucks would cost approximately $189 million for rental and maintenance and gas would cost over $295 million per day. Estimating labor for drivers of the trucks to be approximately $89 million and allowing for maintenance of the vehicles, the total cost for truck transport would be over $572 million per day. The costs for pumping or hauling the discharge from the discharge site to the treatment plant at Williamson would be excessive and non-feasible.

III. Alternative Analysis – continued

7. Seasonal or controlled discharge options:

(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

The construction of sediment ponds could be implemented to ensure the controlled release of waste water generated under optimal conditions. The ability of the local environment to assimilate run off is based on the features of the local streams (the stream, riparian zone, flood plain). Any compromise to the areas ability to assimilate run off, due to vegetative removal, should be mitigated by the construction of sediment ponds. The ponds should retard the velocity of the storm water, allowing more settling time for sediment and reducing the impact on the local environment. The ponds should be constructed to accommodate a 25-year, 24-hour rain or flood event and ponds should not be placed in areas with steep topography or in buffer areas.

8 Land application or infiltration or disposal via an Underground Injection Control Well

(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of .proposed treatment system.)

Sub-surface and onsite disposal options were deemed non-feasible for this project. The installation of a french drain / leach line or the use of spray irrigation were both deemed unsuitable due to the slope of the area being greater than 6%. The installation of a sanitary septic system, (i.e., septic tank) was evaluated but is not an applicable option.

The typical septic tank is designed to hold only 1,000 gallons. This job could produce up to 984.2 million gallons a day during a storm event (24-hour / 25-year). With this anticipation, it would require 984,000 septic systems with drain fields up to an acre each for each event. This site will not have adequate useable space that this number (984,000 systems per day storm) of systems could be placed.

Septic systems are designed to digest organic waste and biodegradeable material over time by anaerobic digestion. While the source water would most likely contribute some organic material and some needed bacteria, this would be inadequate to decompose the sediment and would work essentially the same as a sediment structure.

The possibilty of drilling injection wells (to inject the discharges underground) was also considered. Depending on the depth, an injection well could cost up to $50,000 per well. At a value of 984.2 million gallons a day during a storm event and assuming that 1,000 gallons a day could be injected into the wells, it would take at least 984,000 wells to dispose of the storm water. Injecting these discharges underground would also increase the potential of an outcrop blowout or blowout from an old adit. Injecting this water underground would also require a UIC permit.

The storm water and drainage will accumulate over time so that on-site or subsurface disposal will not be adequate over the long-term.

III. Alternative Analysis – continued

9 Discharge to other treatment systems

(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

Alternative treatment works have been investigated, including piping and trucking the discharge to the nearest water treatment plant. The nearest water treatment facility is Mountain Water District's intake at Marrowbone which is approximately 13.7 miles downstream.

The cost of gathering the storm water and pumping to this facility would be approximately $8 million. This price is comprised of the cost of pipes (at a rate of $67 per foot) and $24,000.00 for the pump station. Furthermore, additional expenses would be incurred for the maintenance of the pumps. Maintenance entails a standard inspection involving draining the wet wells, cleaning the inside with high pressure water, and checking all apparatus for wear and damage. Ideally, this will need to be done every 4 months. Energy costs for the pumps also need to be considered. There would be the additional costs for right of way requirements. The treatment plant would need a sedimentation basin to remove the silt prior to allowing it to enter the plant. Ultimately, the pump stations and piping will be obsolete after bond release, thus making them non-cost efficient.

Another option for transport to the treatment facility would involve the use of self-contained disposal trucks. At a rate of $80/hr rental fee for a 5000 gallon water truck and driver and allowing 4 hours to load, travel, unload and return to site, one truck can transport a total of 3 loads of water per 12 hour work day at a cost of $2,910/day per truck. Considering that a single peak storm event may produce 984.2 million gallons of water, 197,000 trucks would be required to transport the peak storm run off. The rental for 197,000 trucks would be $189 million/day. With the addition of maintenance, labor for drivers, and gas cost added to the initial estimate, the final estimated cost would be $573 million/day for transporting a single peak storm event. This is assuming that 197,000 trucks could be loaded (3 times each) in a 12 hour shift.

Even if we consider the alternative of purchasing the trucks (initial purchase price of approximately $50,000 each, total purchase price of $9.8 billion for 197,000 trucks) rather than paying the rental fee, the cost per single storm event would be approximately $2,000. There would be the additional cost of insurance for the vehicles (a cost that would be included with the rental fee) as well as maintenance costs (which would normally be covered by the rental company).

For this reason, the transport of the run off to other treatment systems was deem non-cost effective.

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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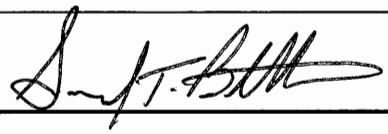
Signature:		**Date:**	2/10/10

Attachment KPDES FORM SDAA

II. Socioeconomic Demonstration

2. The effect on employment in the affected community:
(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

The economy in this portion of Pike County is dependent on the mining industry. Therefore, this operation will provide for the continuation of approximately 20 jobs directly in the area work force. See the table below for a comparison of weekly wage data for this county.

Wages	Pike
All Industries	$711.86
Mining	$1,178.17
2008, Kentucky Workforce Development Cabinet	

This also positively affects as many as 40 employees in the support industries that will help to supply the material and equipment needed for mining, as well as other services, such as engineering and training.

The August 2009 unemployment rate for Pike County is estimated at 11.4% (an increase of 5.7% from August 2008), slightly higher than the Kentucky average of 10.8% and almost a full percentage higher than the 9.6% average for the entire United States. See the table below for additional employment data for Pike County.

Pike County, KY Employment Data	
Labor Force	26,648
Percent Unemployment	11.4
Total Unemployed	3,032
August 2009, Kentucky Workforce Development Cabinet	

With the current unemployment rates in this country, if Cambrian Coal Corporation is not permitted to discharge water from this mine site, the local and state economy will be harmed due to the increased unemployment rate (loss of 20 direct jobs and 40 indirect jobs). Loss of these jobs would increase the unemployment rate in Pike County, adding to the already elevated unemployment rate.

The addition of mining acreage on KDNR Permit No. 898-0806 will recover an additional 45 million tons of coal over 5 years. This will generate approximately $1.5 billion of taxable profit, of which the surrounding counties will receive a total of over $219.4 million (15 percent). Additional revenue will be given to local businesses, generated through increased employment to handle support services catering to the mining operation directly and to the needs of the employees on a daily basis. Local income taxes, property taxes, and sales taxes will also add to revenue brought in by the mining facility.