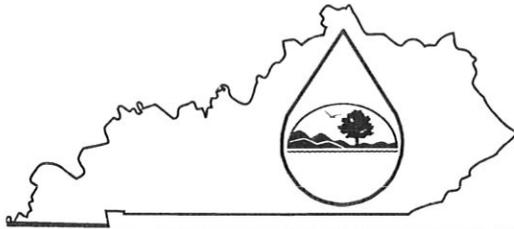


US EPA ARCHIVE DOCUMENT

# 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: FCDC Coal, Inc. - Spurlock Plant

Location: On Spurlock Creek, near Printer, Kentucky

County: Floyd

Receiving Waters Impacted: Spurlock Creek of the Left Fork of Beaver Creek.

#### 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.)

Reference Attached II. Socioeconomic Demonstration, Item 1.

**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.)

Reference Attached II. Socioeconomic Demonstration, Item 2.

## 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.)

Reference Attached II. Socioeconomic Demonstration, Item 3.

### 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.)

Reference Attached II. Socioeconomic Demonstration, Item 4.

**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.)

Reference Attached II. Socioeconomic Demonstration, Item 5.

**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.)

Reference Attached II. Socioeconomic Demonstration, Item 6.

### 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.)

Reference Attached III. Alternative Analysis, Item 1.

**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.)

Reference Attached III. Alternative Analysis, Item 2.

**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, of these opportunities are to be implemented)

Reference Attached III. Alternative Analysis, Item 3.

### **III. Alternative Analysis - continued**

#### **4. Application of water conservation 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)

**Reference Attached III. Alternative Analysis, Item 4.**

#### **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.)

**Reference Attached III. Alternative Analysis, Item 5.**

### III. Alternative Analysis - continued

**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.)

Reference Attached III. Alternative Analysis, Item 6.

**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.)

Reference Attached III. Alternative Analysis, Item 7.

**III. Alternative Analysis - continued**

**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.)

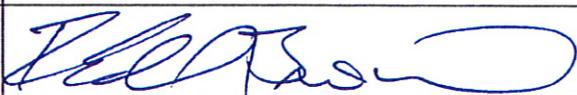
Reference Attached III. Alternative Analysis, Item 8.

**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.)

Reference Attached III. Alternative Analysis, Item 9.

**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.

Name and Title:	D. Edward Brown, Vice President	Telephone No.:	(859)543-0515
Signature:		Date:	4-11-2011

## II. Socioeconomic Demonstration

Item 1 This active project and proposed revision site are located 0.54 miles Southeast from State Rt. 2030's junction with State Rt. 122 and is situated in Floyd County, Kentucky. The nearest community to the proposed permit area is Printer. The receiving stream is Spurlock Creek of the Left Fork Beaver Creek.

Item 2 By creating 15 or more jobs this operation will definitely affect the employment rate in Floyd County. In 2008 the national unemployment rate was 5.8% and the unemployment rate for Kentucky was at 6.4%. The unemployment rate for Floyd County was 6.8%. The unemployment rate for Floyd County in December of 2009 was 12.3%. With a higher unemployment rate than the national and state percentages, Floyd County will definitely benefit from new jobs. This active Mining and Processing Plant Operation will also give out of work miners a chance to go back to work. This also creates more business for the businesses that provide valuable services to the mining industry and their families. More business will create the need for these companies to expand creating even more jobs. Indirect jobs will also be created due to the increase in demand for Engineering Services, Mining Supply Companies and Mining Equipment sales and Repair Companies. This will have a positive impact on Floyd County and help to lower the unemployment rate while providing jobs that pay higher than average wages.

Item 3 This surface/plant operation is in Floyd County, Kentucky where there are few job opportunities compared to other areas of the state. The proposed mining operation will employ at least 15 people. Mining is a major source of employment in Floyd County since jobs in the mining industry pay higher wages than most other employment opportunities.

The average weekly wage in Floyd County is \$694. This compares to \$720 weekly for the state of Kentucky and \$876 weekly the entire United States. The average weekly wage for Mining jobs in Kentucky was \$1,179 and the National average weekly wage for Mining jobs was \$1,676. The average weekly wage for Mining jobs in Floyd County was \$1,153. The continued operation of this Surface Mine and Plant will not only increase the employment rate in Floyd County but will also provide jobs for the many out of work miners. By providing jobs that pay higher than average wages this will benefit all other businesses in Floyd County. By providing higher than average wages these jobs will increase the median income level of Floyd County. (Statistics came from the 2008 U.S. Bureau of Labor Statistics)

Item 4 The proposed operation will have many positive tax and revenue benefits on Floyd County. Over the lifetime of this permit, the proposed operation expects to remove approximately 3,252,119 tons of coal. (This does not even take into account all the coal from other permits which may be processed through the plant). With an average coal selling price of \$42 per ton, this will generate approximately \$136,588,998 dollars in revenue. That will equate to \$6,146,505 in coal severance taxes. Floyd County would receive 15% of the severance money which would amount to \$921,976. This coal severance money will be used to improve the schools and many other local projects. These operations would generate \$269,802 a year in Federal Income Taxes from the approximately 15 employees of this operation. This operation will clearly benefit Floyd County economically.

Without the proposed operation, Floyd County would lose the much needed tax dollars generated through Severances Taxes and Income Taxes. That would mean that \$921,976 of severance taxes would not be available to maintain public services. Also the loss of jobs would only contribute to raising the unemployment rate in Floyd County. By not having these operations, it would also reduce the amount of Federal Income Taxes.

Item 5 The proposed permit area has been previously mined and logged. With the mining proposed for this project and the areas that have been mined or logged, these watershed areas will now be provided with sediment control structures instead of the pre-permitted uncontrolled runoff into area streams. After mining is completed the area will be reclaimed to improve the habitat and enhance the environmental quality. The coal severance money generated by this operation will go toward improving the surrounding communities.

Item 6 The continuing operation of this facility will provide approximately 15 jobs to Floyd County. These jobs will pay higher than average wages will have a positive economic impact on Floyd County. This operation will also impact local businesses and businesses that serve the mining industry. The severance tax money generated will be used to improve local communities. This operation will positively impact the local economy of Floyd County in many ways. By creating new jobs, increasing revenues from local businesses and creating tax dollars this operation is highly needed in Floyd County.

### III. Alternative Analysis

Item 1 One method of pollution prevention that was evaluated was to pipe the water to the nearest water treatment facility located in Prestonsburg, KY approximately 19 miles downstream. This would require the water to be piped to the facility or hauled using trucks. The facility would have to be upgraded to handle the discharge, as well as a sediment collection pond would need to be constructed at the facility. At 40 dollars a foot it would cost approximately \$ 4,012,800 to pipe the water 19 miles to the treatment facility. It would also cost 40,000 dollars to construct a sediment collection pond and possibly several hundred thousand dollars to upgrade the facility to handle to discharge.

Another option is to avoid the project altogether but this would have a negative impact on the local economy of Floyd County. There would be no new jobs created and businesses that service the mining industry would miss out on the increased business.

Item 2 Sediment Ponds have been constructed, and will be maintained, to collect the drainage on the site from storm water runoff. Sediment will settle out in the ponds so the water discharging into the ponds will have less impact on the downstream water quality. Best management practices will be used to maintain sediment control on the project site. Some of the BMPS's that will be used include placement of straw bales and silt fences, diversion ditches to direct runoff into the sediment ponds, temporary berms, re-vegetation and minimizing disturbances.

Item 3 A small portion of the wastewater can be reused for Dust Suppression and Hydro Seeding once reclamation work begins. Unfortunately the amount of water that can be reused is very small and would not make much of an impact. Also water can be dispersed over the project area, but only on areas where the slope is less than 6% grade. Anything over 6% will not allow the water to absorb into the ground. Also the amount of water that can be dispersed is limited because of erosion.

Item 4 Water Conservation Practices will be used to reuse a portion of the waste water at the project site. Water will be pumped from sediment ponds into 3,000 gallon trucks and then used to water haul roads. These roads will generally be watered twice a day during dry periods. This will only use a fraction of the total wastewater. Once reclamation has begun small amounts of wastewater will be used for hydro seeding the reclaimed areas. Water may also be used for other purposes during reclaiming but once again only a small portion of the total waste water will be used.

Item 5 One alternative method would be purchasing and installing a small package plant at the site. This would cost approximately \$50,000 plus the cost of routing the discharge to the plant. The cost to operate and maintain this facility 24 hours a day, 7 days a week would be approximately \$11,500/month. The plant site could be limited to an acre, but the holding facility could be as large as 10% of the drainage area or larger, since the runoff has to be treated in its entirety. The cost of constructing such a facility would run in the hundreds of thousands of dollars, since it would be required to meet all MSHA standards. The removal cost of the plant might well be at its salvage price, however the cost of eliminating the embankment and void of the holding facility would again run in the hundred thousand dollar range.

Another method would be to store the discharge on site with a pond. To maintain the water on site without a discharge would require six very large ponds. These ponds would have to be built in the stream thus impacting a vast portion of the stream and causing a more detrimental environmental impact that is not needed. It is nearly impossible to construct a facility that would never discharge. The cost of these structures would cost \$6,000,000 for construction and stream mitigation.

Another option is to avoid the project altogether but this would have a negative impact on the local economy of Floyd County. There would be no new jobs created and businesses that service the mining industry would miss out on the increased business.

Item 6 If water was piped or hauled by trucks to the nearest water treatment facility in Prestonsburg, major upgrades to the facility would be needed. The amount of water that would be pumped into the facility would be more than the facilities capacity could handle. A large Sediment Control Basin would have to be constructed at the facility to settle the sediment out of the water before it entered the facility at a cost of \$40,000. The necessary improvements needed would cost in excess of \$100,000 added to the 4.0 million to pipe the water 19 miles to the treatment facility therefore making this option not feasible.

On-site Ponds will be used to control and treat the discharge for this operation. Utilizing sediment ponds on the proposed site to collect the water and catch sediment the water quality of the discharge will be improved. Also these ponds will collect any runoff coming from previous disturbance or existing works. Constructing these sediment ponds on site will also be the most feasible and cost effective method for treating the discharge.

Improved maintenance methods were considered for the sediment ponds. Chemical Treatment methods such as Limestone Dousing and Soda Ash Treatment would cost \$200,000 per sediment pond. This would not be feasible as the cost to treat every sediment pond would be \$2,600,000.

The other method would be to cleanout the sediment structures once they reach 60% capacity. This ensures that the sediment ponds will be able to collect the sediment from runoff instead of discharging into the stream. This method will not add any additional costs over normal maintenance and therefore would be the most feasible method.

Item 7 Utilizing Hydrologic Control Releases would require a large pond or several ponds to contain the storm water. These ponds would need a method to pump water to other ponds as needed. Sediment would have to be removed from the ponds regularly to ensure that they are kept at capacity. This would cost several hundred thousand dollars to implement and maintain.

Another method would be to store the water in tanks. Pumps and piping would be needed to send water to and from the storage tanks. The cost to implement and maintain this method would run into several million dollars.

Item 8 Disposal using an Underground Injection Control Well to inject storm water into abandoned underground works would not be feasible. This can pose a risk to any active underground mines in the area as well as cause blow outs from old works. The costs associated with installing a lifting station, drilling wells, engineering cost, piping and permits would cost several hundred thousand dollars to implement.

Item 9 The storm water could be sent to the nearest water treatment facility in Prestonsburg which is 19 miles away. This would involve piping the water to the facility which would cost \$4.0 million to implement and maintain. A large basin would have to be constructed at the treatment facility to collect the sediment from the water at a cost of around \$40,000 to build. The facility would also need to be upgraded so that it could handle the large increase in water intake which would cost in excess of \$100,000. This would pose a significant cost to the county and would not be feasible.