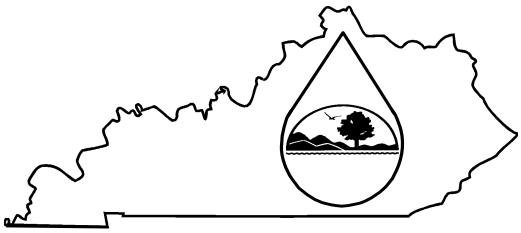
KPDES FORM SDAA



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: Silver Slate, LLC 898-0872 (Original)

Location: Ashcamp Branch of Elkhorn Creek	**County: Pike**

Receiving Waters Impacted: Unnamed Tributary of Ashcamp Branch and Unnamed Tributary of Marion Branch

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 Ashcamp Branch of Elkhorn Creek near latitude 37-16-30 and longitude 82-27-37. The project will have a surface disturbance of 72.3 acres. An Unnamed Tributary of Ashcamp Branch (on HUC # 05070202-060-200) and an Unnamed Tributary of Marion Branch (HUC # 05070202-060-170) will be the receiving stream for the proposed discharges. The nearest community is Ashcamp (which is approximately 1.437 miles to the SE). The proposed project is expected to affect Pike County as a whole; including communities in the Ashcamp 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 project would continue to provide employment for an estimated 10 employees. (These mining positions prove to be higher paying jobs than other industries in Pike County.) This expansion also positively affects as many as 20 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.

Industry	Annual Entry Level Wages
Mining	$27,248
Utilities	$27,845
Management of Companies & Enterprises	$23,857
Information	$17,598
Professional & Technical Services	$20,341
2010, Kentucky Workforce Development Cabinet (Data for Pike County)	

The annual entry level wage in the mining industry is among the top of the "high wage industry" in Pike County, second only to the Utilities industry. 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.)

KDNR Permit No. 898-0872 will recover 2.2 million tons of coal. This will generate an estimated $179 million of taxable profit, of which the surrounding counties will receive an estimated $27 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 (2009 data per Kentucky Revenue Cabinet): $0.2280 for real estate, $0.2179 for motor vehicles, and $0.2803 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 ($27 million), will provide the local government increased benefits for 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, 10 local jobs would be lost, the tax base would deminish ($179 million 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. However, this practice would most likely require the permitting and disturbance of additional surface acreage, thereby adding disturbed area runoff and ultimately working counter to the intended purpose.

c. Preventative Design - implementation intended

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 should 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 the addition to this project is approximately 72.3 acres, with a peak discharge of over 90 million gallons per day (24-hr/25-yr storm). Water used for dust suppression in a day would be about 20,000 gallons. This would be approximately 0.02% of the storm water for this addition. This leaves the remaining storm water for removal from or use on the project site. To recycle the ramianing storm water would require building a treatment facility ($281 million) or by trucking ($52 million) or pumping ($11 million) to the nearest treatment facility. None of these options would be economically feasibly compared to the $5,000-$10,000 for each sediment structure.

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 an estimated $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 water treatment facility (90 million gallons per day) on the project site would cost over $281 million, 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 pumping the waste water to a nearby plant would be approximately $11 million (this is comprised of the cost of the piping materials to gather the discharge, the pump station, and the piping for moving the discharge to the Marrowbone facility). 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.)

Consideration was given to chemical treatment of the sediment structures (designed to control a 24-hour/25-year storm event) on site. The nearest treatment plant is located at Mountain Water Works' intake approxmately 18.0 miles away from the proposed project. Transporatation of the discharge would require approximately 17,971 trucks with a capacity of 5,000 gallons each, working 24 hours a day, to haul to the Mountain Water Works. The trucks would cost approximately $27 million for rental and maintenance and fuel would cost over $27 million per day. Estimating labor for drivers of the trucks to be approximately $8 million and allowing for maintenance of the vehicles, the total cost for truck transportation would be over $78 million per day. The cost for pumping or hauling the discharge from the discharge site to the treatment plant would be excessive and non-feasible. However, analysis of discharges from the site indicate that this step is not necessary and that the designs of the sediment structures are sufficient for controlling runoff from the mine site.

Consideration was also given to an enhanced maintenance schedule for the sediment structures (each having an estimated construction/removal cost of $15,000/structure). However, normal operation and maintenance of these structures plan for accumulated sediment to be removed when the design sediment storage volume has been filled to capacity (approximately 60% of total volume). In addition, operation and maintenance call for the dugouts to be inspected on a semi-monthly basis as they are monitored through KPDES. If found to be in need of maintenance, adequate equipment will be available for structure maintenance or additional measures (including the use of straw bales) as needed.

The planned operation and maintenance was deemed sufficient for controlling site runoff for the proposed project.

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 will retard the velocity of the storm water, allowing more settling time for sediment and reducing the impact on the local environment. The ponds could 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.

The usage of chemical treatment would require building a treatment facility ($281 million) or transportation to the nearest facility by truck ($52 million) or pumping ($11 million). These alternatives would not be cost effective.

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 are not 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 90 million gallons a day during a storm event (24-hr/25-yr). With this anticipation, it would require 89,855 septic systems costing $125 million and with drain fields up to an acre each for each event. This site will not have adequate useable space that this number (89,855 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 90 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 89,855 wells to dispose of the storm water at a cost of $4.5 billion. 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. There hasn't been found a suitable place to inject within a reasonable distance of this site.

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 the Mountain Water District at Marrowbone, Kentucky which is approximately 18 miles downstream.

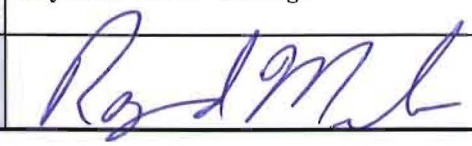
The cost of gathering the storm water for pumping to this facility would be $4.3 million. This price is comprised of the cost of pipes (at a rate of $67 per foot) and $24,000.00 for the pump station. Furthermore, additional expenses would be incurred for the maintenance of the pumps. Maintenance entails 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, it is estimated that one truck can transport a total of 3 loads of water per 12 hour work day at a cost of $2,900/day per truck. Considering that a single peak storm event may produce 90 million gallons of water, 17,971 trucks would be required to transport the peak storm run off. The rental for 17,971 trucks would be $27 million/day. With the addition of maintenance, labor for drivers, and gas cost added to the initial estimate, the final estimated cost would be $52 million/day for transporting a single peak storm event. This is assuming that 17,971 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) rather than paying the rental fee, the cost per single storm event would be approximately $899 million for the trucks alone. There would be the additional cost of insurance for the vehicles (a cost that would be included with the rental fee), as well as fuel costs and the labor for the drivers.

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.

Name and Title:	**Raymond Merlo – Manager**	**Telephone No.:**	(248) 866-1142
Signature:		**Date:**	11/17/11

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 10 jobs directly in the area work force. See the table below for a comparison of annual weekly wage data for "high wage industries" in Pike County.

Industry	Annual Entry Level Wages
Mining	$27,248
Utilities	$27,845
Management of Companies & Enterprises	$23,857
Information	$17,598
Professional & Technical Services	$20,341
2010, Kentucky Workforce Development Cabinet (Data for Pike County)	

This also positively affects as many as 20 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 July 2011unemployment rate for Pike County is estimated at 8.7%, slightly lower than the Kentucky average of 9.5% and the U. S. average of 9.1%.

Pike County, KY Employment Data	
Labor Force	26,582
Percent Unemployment	8.7
Total Unemployed	2,312
July 2011, Kentucky Workforce Development Cabinet	

With the current unemployment rates in this country, if Silver Slate, LLC is not allowed to discharge water from the additional mine acreage, the local and state economy will be harmed, due to the reduction in employment (loss of 10 direct jobs and 20 indirect jobs). Loss of these jobs would increase the unemployment rate in Pike County and subsequently decrease the ability to maintain an average unemployment rate lower than the state or national average.

The mining acreage on KDNR Permit No. 898-0872 will recover 2.2 million tons of coal. This will generate approximately $ 179 million of taxable profit, of which the surrounding counties will receive an estimated $27 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.