Antidegradation Statement Guidance

To Be Used When Administering Tennessee's Antidegradation Statement as Associated with Obtaining a National Pollutant Discharge Elimination System (NPDES) Permit

The Antidegradation Statement Guidance document is to be used in accordance with the *Tennessee's Antidegradation Statement Rule 0400-40-03-.06* as it pertains to completing the application requirements for a NPDES permit. This document may be used as equivalent information for the EPA Worksheets (A, G, O, R, V, W, X, Y, Z, and AB for the private sector and O, P, Q, S, T, U, and AA for the public sector).

Specifically the document is divided into five parts. Parts 1 - 2 are general information regarding the facility and receiving water. Part 3 characterizes the level of degradation and the alternatives analysis (including social, economic, and environmental considerations of each alternative). Parts 4 – 5 detail the social and economic justification required to demonstrate that the degradation associated with the proposed discharge to an Exceptional Tennessee water (ETW) is justified. All permit applicants must complete, at a minimum, Parts 1-3 of this document. If you propose to discharge to an ETW, you must complete the document in its entirety.

Part 1. Contact Information	
1. Company name:	Hurricane Creek Mining, LLC.
2. NPDES No.: TN00	TN007016
3. Facility or mine name:	Mine No. 2
4. County:	Claiborne

Part 2. Mine and Stream Information

1. Please select the type of mine.

   Noncoal

   ☐ Limestone
   ☐ Sand and gravel
   ☐ Ball Clay
   ☐ Industrial sand
   ☐ Zinc
   ☐ Marble
   ☐ Dimension stone
   ☐ Quartzite
   ☐ Other

Coal

- [x] Reclamation
- [x] Active mining
- [x] Post mining
- [ ] Prep plants / associated areas
- [ ] Tipple / load out

2. Please select the type of permit activity requested.

   - [ ] Renewal of permit based on currently approved plans
   - [ ] Renewal and modification of permit
   - [ ] Modification of permit
   - [x] New permit

3. Please list each outfall number, the name of receiving stream(s) and the corresponding stream designation (either Outstanding National Resource Water (ONRW), Exceptional Tennessee Water (ETW), or Non Exceptional Tennessee Water (Non ETW). Use separate paper if necessary.

Outfall(s)	Receiving Stream(s)	Stream Designation		
		ONRW	ETW	NON ETW
	See Attachment 2.3	☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

Part 3. Characterize the Level of Degradation in the Proposed Activity and Analysis of Alternatives.

Please select one of the following levels and support your conclusion in the space that follows. Finally, complete the Alternatives Analysis.

Part 3-A- Level of Degradation

☐ The proposed activity is to renew an existing permit.
No changes to the acreage size, the number or location of outfall(s), or the volume of the existing discharge are proposed at this time. Renewal of the permit does not cause degradation above what is already permitted. (If this applies, skip to Part 3-B.)

☐ The proposed activity will cause no measurable degradation.
Activities causing no measurable degradation are defined as those activities that do not cause a measurable increase in levels of a given parameter in the receiving water.

■ The proposed activity will cause de minimis degradation.
Activities causing de minimis degradation are defined as those activities that cause degradation of a small magnitude as described in *Rule 0400-40-03-.04 (4)(a).* De minimis activities are described as single discharges that use less than five percent of the available assimilative capacity of the substance being discharged.

*Note, this option is not applicable if the 7Q10 of the receiving water is zero or if the receiving water has unavailable parameters for the pollutant to be discharged.

☐ The proposed activity will cause **more** than de minimis degradation.
Applications for activities causing degradation above the level of de minimis must analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives. Analysis of each of these alternatives should also discuss the social and economic consequences of each alternative. Applicants must also demonstrate that the proposed degradation will not violate the water quality criteria for existing uses in the receiving waters and is necessary to accommodate important economic and social development in the area.

Attach additional pages as needed

Part 3-B - Alternatives Analysis

The following are examples of alternatives relative to natural resource extraction that are to be considered by applicants under Tennessee's *Antidegradation Statement 0400-40-03-.06*. Please check which treatment option(s) are currently used or will be used at the facility.

☐ Connect to existing treatment system

☐ Use over-sized ponds to increase treatment ability and holding capacity beyond the 10yr/24hr design storm.

Design capacity of the pollution control system
Current capacity of the system (%)

☐ Divert drainage from non-disturbed areas away from treatment structures, separating storm water from mine wastewater – i.e. diversion berm, ditches, other BMPs.

☐ Use pit as primary treatment and/or storage to increase ability to hold water on site during storm events.

☐ Use ponds in series, forebays, and/or baffles to increase treatment and retention time.

☐ Use chemical treatment for pH adjustment or treatment of solids.

☐ Reuse/recycle treated process water to reduce discharge frequency. What percentage is already or will be recycled?

☐ Create no-discharge system.

☒ Use concurrent reclamation with mining activity.

☐ Land application of treated wastewater.

If treatment option used is not listed, please describe in space below.

2) Based on the alternatives indicated above, describe the level of degradation caused by each, as well as the social and economic consequences of each alternative. Examples of social and economic consequences may include but are not limited to, improved infrastructure such as road projects, housing development, as well as increasing local tax revenue and employment opportunities.

See Attachment 3.2

3) Can the level of treatment achievable at the facility ensure that water quality criteria will not be violated? Please explain.

See Attachment 3.3

4) Is there another discharge location that would have less impact on the watershed?

See Attachment 3.4

5) Evaluate the mining technique used at the site. Would another technique result in a reduction in quantity or improvement in quality of the discharge from the site?

See Attachment 3.5

6) Were other locations for the facility evaluated? Describe the reasons why other locations were selected or rejected.

See Attachment 3.6

7) If this is an existing site, how long has the company mined at this location? If the option to mine has been reserved through payments to the owner or lessor of the rights, how long has that option been reserved? What is the projected life of the mine?

See Attachment 3.7

Part 4. Economic Justification

If you are applying for a new or expanded permit that discharges to Exceptional Tennessee Waters (ETW), complete Parts 4 and 5.

The following section shows economic/financial information for the facility. This information is necessary to determine if the applicant can afford to implement appropriate pollution control measures to protect water quality in the receiving water. Attach additional pages as needed.

1. Annual cost of operation and maintenance of pollution control project (including but not limited to monitoring, inspection, permitting fees, waste disposal charges, repair, administration, and replacement).	60,000 $
2. Annual earnings without pollution control project costs	$ 300,729,300
3. Annual earnings with pollution control project costs	$ 300,669,300

Part 5. Social Justification

The following section shows social justification of the proposed degradation within the community where the facility is located. Attach additional pages as needed.

1. Define the affected community in this case; what areas are included?	Clairfield (Claiborne Co.) TN
2. What is the current unemployment rate in affected community (if available)?	4.9%
3. What is the current national unemployment rate?	3.8%

4. How many jobs will the facility provide in the affected community?	~25
5. What is the average salary of these jobs?	$60,000
6. What is the median household income in affected community?	$41,938
7. What is the total number of households in affected community?	13,410
8. What are the current total tax revenues in the affected community?	$15,228,910
9. What amount of tax revenues will be paid by the private entity to the affected community?	$4,317,179

			Stream Designation		
Pond Name	**NPDES ID**	**Receiving Water**	**ONRW**	**ETW**	**NON ETW**
SS-20	SS20	Unnamed Trib. of Tackett Creek		X	
SS-21	SS21	Unnamed Trib. of Tackett Creek		X	
SS-2	S02	Unnamed Trib. of Tackett Creek		X	
SS-1	S01	Unnamed Trib. of Tackett Creek		X	
Pond 1	B01	Unnamed Trib. of Valley Creek			X
Pond 2	B02	Unnamed Trib. of Valley Creek			X
Pond 3	B03	Unnamed Trib. of Valley Creek			X
Pond 4	B04	Unnamed Trib. of Hurricane Creek		X	
Pond 5	B05	Unnamed Trib. of Hurricane Creek		X	
Pond 6	B06	Unnamed Trib. of Hurricane Creek		X	
Pond 7	B07	Unnamed Trib. of Hurricane Creek		X	
Pond 8	B08	Unnamed Trib. of Hurricane Creek		X	
Pond 9	B09	Unnamed Trib. of Hurricane Creek		X	
Pond 10	B10	Unnamed Trib. of Hurricane Creek		X	
Pond 11	B11	Unnamed Trib. of Hurricane Creek		X	
Pond 12	B12	Unnamed Trib. of Hurricane Creek		X	
Pond 13	B13	Unnamed Trib. of Hurricane Creek		X	
Pond 14	B14	Unnamed Trib. of Hurricane Creek		X	
Pond 15	B15	Unnamed Trib. of Hurricane Creek		X	
Pond 16	B16	Unnamed Trib. of Pigeon Roost Br.			X
Pond 17	B17	Unnamed Trib. of Pigeon Roost Br.			X
Pond 18	B18	Unnamed Trib. of Pigeon Roost Br.			X
Pond 19	B19	Unnamed Trib. of Pigeon Roost Br.			X
Pond 28	B28	Unnamed Trib. of Spruce Lick Br.		X	
Pond 29	B29	Unnamed Trib. of Spruce Lick Br.		X	
Pond 30	B30	Unnamed Trib. of Spruce Lick Br.		X	
Pond 31	B31	Unnamed Trib. of Tackett Creek		X	
Pond 32	B32	Unnamed Trib. of Tackett Creek		X	

3.1.A EXISTING TREATMENT SYSTEM

Existing treatment facilities, such as municipal systems, were considered. Pumping and/or trucking the effluent to a municipal treatment system were considered. The nearest WWTP is the City of Middlesboro. The nearest connection to this system is near Bennetts Fork, approximately 4.4 miles away. At an estimated cost of $225/ft. including pumping stations, the cost to pump the effluent to this WWTP system would be over $5,170,000. With a combined peak discharge during a 25 year/24 hour storm of over 2,486.75 cfs from the discharging dugout ponds, trucking the peak effluent from the dugout ponds to the nearest WWTP would take 140 trucks per minute hauling 8,000 gallons per load. With a cycle time estimated at 1 hour, the number of trucks required during peak discharge would exceed 8,400. The transportation infrastructure of KY 186 and TN 132 cannot sustain this volume of truck traffic. Additionally, this volume of truck traffic in this rural area with dwellings located near KY 186 and TN 132 would most likely result in a significant increase in traffic fatalities and pose a health and safety problem for local residents. Construction costs estimated for the 28 discharging ponds on this operation is anticipated to cost $420,000. Also, the Middlesboro WWTP is not designed to treat sediment laden effluent.

3.2.B CONSTRUCTION OF OVERSIZED POND

The construction of oversized ponds was considered for the proposed operation. The construction of a pond to collect surface runoff without discharging would require a vast area. Oversized ponds would also increase the likelihood of slides to occur, given the steep topography in the area. This alternative is not considered a feasible alternative.

3.2.C DIVERTING OFF-SITE FLOW AWAY FROM TREATMENT STRUCTURES

The possibility of diverting off-site flow away from treatment structures was considered for the proposed operation. 50,000 linear feet of diversion ditches would need to be constructed. At 100 feet per day and a cost of $25 per foot, it is estimated that the cost of construction would exceed $1,250,000. This alternative is not considered as a reasonable and practicable alternative. This alternative would also require a lot of maintenance to ensure the ditches are adequately working.

3.2.D PIT STORAGE AS PRIMARY TREATMENT

Pit storage is proposed to be utilized at this operation. Water will be pumped to sediment structures after being collected in pit storage at the mine site.

3.2.E CONSTRUTION OF ADDITIONAL TREATMENT

The construction of additional treatment facilities has been considered. This operation will utilize road sumps an additional measure of sediment control. Hay bales will also be used as necessary to control sediment runoff from haul roads and other mine related areas.

3.3 WATER TREATMENT ACHIVEABILITY

The bench ponds constructed at the facility will be maintained and operated to current standards to ensure the waters of Tennessee are protected at all times through the mining

process and until bond is released during reclamation. Water monitoring will be occurring at all constructed ponds and any water quality parameters out of compliance will be addressed promptly by the company. Any violations will be addressed in a timely manner and treated to ensure a return to compliance.

3.4 ALTERNATIVE DISCHARGE LOCATION

Other discharge locations were considered for this operation. Other discharge locations considered were pumping into the nearest adjacent watersheds of Steve Creek and/or Bear Creek. There is no measured benefit of discharging into Steve Creek, and to do so could cause further impairment. Previously there were outfalls built in the Bear Creek watershed from a previous permit, but the outfalls have since been removed through reclamation and would not be a viable option now. Pumping systems necessary to pump the effluent to these other watersheds for the given peak discharge volume of 1,116,053.4 gpm would involve constructing a pumping station for each 200 gpm of flow in addition to over 50,000 feet of forced main. Given this steep topography, it is estimated that each pumping station would cost $54,000 and force main would cost $60/foot. With the given peak discharge, the number of pumping stations, at 200 gpm each, would exceed 5,580 or $301,334,418. The forced main would cost over $3,000,000. Topography and soil conditions also limit the locations of pond construction.

3.5 ALTERNATE TYPE OF MINING

Alternatives were evaluated based upon their practicability. An alternative is practicable if it is available to the Applicant and capable of being done after taking into consideration, cost, existing technology, and logistics commensurate with the stated overall project purpose.

Alternative 1: Underground Mining

The Sterling and Strays coal seams within the proposed project area were analyzed for underground mining potential. Raw coal hauled from any potential portal area will require transportation to the raw coal stockpile at the Preparation Plant located just west of Middlesboro to the east of the project area and near the confluence of Bennetts Fork. Historical data from past mining operations and existing geologic data in the subject coal beds were used for mining recovery calculations. The logistical and economic probabilities, for underground mining to be practicable, these seams must meet all the following criteria:

- Total seam height no less than 36 inches
- No adverse geologic conditions
- No extensive adjacent underground works
- Individual, mineable seam reserves estimated to be greater than or equal to 250,000 clean recoverable tons
- No major rider seams within 20 feet of the top of the identified body of reserves
- A maximum in-seam parting of 18 inches
- Minimum of 100 foot of cover
- No overlying or underlying existing underground workings within a vertical interval (considering the competency of the strata) that would cause structural problems during mining
- Laterally continuous
- 50% areal recovery for continuous miner sections

- Minimum of 40 feet interburden between seams (30 feet if interval contains competent strata)
- Minimum wash recovery of 35% for raw coal

Since reserves in the project area in the Sterling and Strays coal seams bed did not meet all of the minimum criteria for this mining alternative, this alternative was eliminated as the preferred alternative. This alternative is not considered as a reasonable and practicable alternative since it did not meet all the minimum criteria for this alternative.

Alternative 2: Mountaintop Mining
This alternative was evaluated for the proposed project area using feasibility criteria of: horizontal coal beds at or near the top of a mountain, mineable reserves greater than or equal to 500,000 tons, pit recovery of 90% or greater, wash recovery of 35% or greater, cumulative ratio that is economically reasonable for current market conditions, and sufficient excess overburden disposal sites. This alternative was found not be a reasonable and practicable alternative since it does not meet the criterion of having horizontal coal beds at or near the top of a mountain, and therefore, does not meet all the minimum criteria for this alternative.

Alternative 3: Contour Mining
The Sterling and Strays coal seam beds within the proposed project area were analyzed for contour mining potential. The logistical and economic probabilities for contour mining were tested by the following site-specific criteria and were required to meet all criteria listed in order to be considered practicable:

Contour Surface Mining (Stand-Alone)

- Structurally horizontal outcropping coal beds
- Maximum cumulative mining ratio not greater than 16:1 for coal seams 6 inches or greater (bank cubic yards of overburden per clean recoverable ton of coal)
- Maximum original ground slope of 34 degrees
- Minimum of 500,000 clean recoverable tons per resource area
- Minimum 90% pit recovery
- Minimum wash recovery of 35% for coal that requires washing
- All highwalls created during mining must be eliminated and must provide for regarding of disturbed areas to an approximate original contour
- A minimum resource recovery of 60 percent of the total reserves proposed for development within the project area
- Avoid sterilization of marketable reserves identified within the project area.

Contour mining within the project area is not feasible due to recovery rate of the reserve base being less than 35%. This alternative was eliminated from further consideration as a reasonable and practicable alternative due to not meeting all the minimum criteria for this alternative.

Alternative 4: Contour/Highwall/Auger
To be considered as a practicable alternative for contour/auger/highwall mining, the potential reserve base must satisfy all the following criteria:

Contour Surface Mining (Combined with Auger/Highwall)

- The area must first satisfy the stability requirement for contour mining and then meet all the following criteria:
  - The minimum seam height for auger mining is 18 inches
  - The maximum in-seam parting for auger mining cannot exceed 6 inches
  - The minimum seam height for highwall mining must be at least 28 inches
  - The maximum in-seam parting for highwall mining in seam heights under 36 inches will not exceed 6 inches
  - The maximum in-seam parting for highwall mining in seam heights over 36 inches will not exceed 18 inches
  - Recovery of a minimum of 60 percent of the total reserves in the project area in conjunction with contour mining
  - Avoid sterilization of marketable reserves identified within the project area.

This alternative is dependent upon the creation of highwalls and seam access from contour mining to create a suitable highwall and bench width. This alternative was determined to be practicable due to meeting all of the minimum. This alternative was selected as the preferred alternative due to meeting **all** the minimum criteria for all seams in the reserve area for this alternative.

3.6 OFF-SITE PROJECT LOCATION ALTERNATIVE

Extractive industries including coal mining must locate projects where the target geologic deposits are found. This is unlike residential or industrial development as the presence of coal bearing strata determines the project's physical location. This project is located in a region where coal is historically known to exist. Reserve bodies have been identified in the Sterling and Strays coal seams through the collection of geologic data. The coal bed identified above is not the only coal bed identified in the project area. The Buckeye Springs, Poplar Lick, and Hignite are also in the general area, but not included in this alternatives analysis due to logistics of the applicant. Geologic exploration of the reserve body within the project area indicates that the area under consideration for the proposed operation is a practicable location based on the mineral reserve base, the Applicant's current mineral rights, workforce, equipment, infrastructure location, and long-term planning. Planning generally is based on a five-year schedule that takes into consideration market conditions, in-house fiscal parameters, and geological studies. This alternative was found to not practicably address the project's stated overall purpose and was eliminated from further study as a practicable or reasonable alternative for the proposed project.

3.7 EVALUATION OF NATURAL RESOURSE EXTRACTION LOCATIONS

Coal reserve extraction is a geographically and geologically dependent process. Alternative locations for coal resource extraction were evaluated as part of this project. Factors used in making this evaluation included, mineable reserves, mining methods, coal quality, mining economics, previous mining activities, transportation costs, geologic, hydrologic, and biologic impacts. Given these factors, the currently proposed mine plan and method of extraction are the most suitable for the given reserve base. Previous permittee Double Mountain Mining, LLC. held a lease with the current mineral/surface owner, or predecessors, since 1974. Due to the downturn of the coal industry in and around 2020, DMM paused operations and was unable to

continue mining the coal reserves. The state therefore took over their permits that were still bonded and started reclamation. Hurricane Creek Mining has now signed a new lease agreement with WPP, LLC who control the mineral rights and Corrigan TLP, LLC who control the surface rights. Hurricane Creek has made substantial financial investments through lease payments, minimum royalties, exploration, engineering evaluation, tax payments and infrastructure development in excess of $10 million to facilitate coal resource extraction including the reserves for this project. Hurricane Creek plans to operate this proposed surface mine for approximately 5 years.