

BLACK WARRIOR MINERALS, INC.

MINE NO. 2

ALABAMA SURFACE MINING COMMISSION
SURFACE MINING PERMIT APPLICATION

P A R T I I

Prepared by:

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LANDUSE & VEGETATION:

McGehee Engineering Corp.
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FISH & WILDLIFE:

U. S. Department of Interior Fish and Wildlife Service
William J. Pearson, Field Survey
P. O. Box 1190
Daphne, Alabama 36526

SOILS:

U. S. Department of Agriculture
Jefferson County Soil Conservation Service
Jefferson County, Alabama

**GEOLOGY, WATER QUANTITY,
WATER QUALITY:**

McGehee Engineering Corp.
P. O. Box 3431
Jasper, Alabama 35502-3431

**ARCHAEOLOGICAL, CULTURAL,
AND HISTORICAL RESOURCES:**

University of Alabama Museums
Office of Archaeological Research
13075 Moundville Archaeological Park
Moundville, AL 35474

WETLAND DESIGNATION:

U. S. Department of Interior Army Corps of Engineers
P. O. Box 2288
Mobile, Alabama 36628-0001

**NATURAL RESOURCES,
AND CONSERVATION:**

Alabama Department of Conservation
and Natural Resources
John Hornsby
64 North Union Street
Montgomery, Alabama 36130

PART II - Environmental Resources Information

A. Fish, Wildlife and Environmental Values

- (1) Describe the measures to be taken, using the best technology currently available to minimize disturbances and adverse impacts to fish and wildlife and achieve enhancement of this resource where practicable within the proposed permit area. [780.18(b), 816.97(a)]

[SEE ATTACHED FISH AND WILDLIFE ENHANCEMENT AND PROTECTION PLAN](#)

- (2) Describe in detail the measures to be taken to restore or enhance, or steps to be taken to avoid disturbance of, habitats of unusually high value for fish and wildlife located within the proposed permit area.[780.18(b)(6), 816.97(d)(2)]

[SEE ATTACHED FISH AND WILDLIFE ENHANCEMENT AND PROTECTION PLAN](#)

- (3) Are there any wetland areas such as streams, lakes, marshes, etc. located in or adjacent to the proposed permit area which will be disturbed by the mining activities? [780.18(b)(6), 816.97(d)(3&4)] () Yes. (XX) No.

If yes, briefly describe the feature(s), it's location and the extent of the proposed disturbance. Describe in detail measures to be taken to restore the area.

[SEE ATTACHED FISH AND WILDLIFE ENHANCEMENT AND PROTECTION PLAN](#)

If a stream channel diversion is proposed, describe in detail (including maps, diagrams or cross sections, if necessary) how the provisions of 816.44(d) will be met. Include a copy of all other necessary State or Federal approvals.

Not Applicable - None Proposed

- (4) Is fish and wildlife habitat to be primary or secondary post-mining land use? [780.18(b)(5)]
() Yes (XX) No

If yes, describe in detail the post-mining measures to be taken to attain this land use including the target specie(s) of wildlife, plant species to be used and a map delineating the proposed arrangement of plant groupings and water sources on the permit area following reclamation.

- (5) If the pre-mining land use is fish and wildlife habitat and the proposed post-mining land use is cropland, describe the post-mining provisions to be made for wildlife. Attach a map showing the location of trees, hedges, or fence rows to be used to diversify habitat types if appropriate. [780.18(b)(5)]

Not Applicable.

- (6) If the post-mining land use is to be residential, commercial or industrial, describe the post-mining provisions to be made for wildlife such as greenbelts, trees, or hedgerows composed of plant species useful for wildlife. [780.18(b)(5)]

SEE ATTACHED FISH AND WILDLIFE ENHANCEMENT AND PROTECTION PLAN

- (7) If any exceptions to Section 816.117(c)(1-3) are proposed, describe in detail the proposed practice including target species of wildlife, plant species to be used, planting rate and/or stocking density, planting pattern with appropriate map and anticipated results of the proposed practice.

Not Applicable.

B. Cultural, Historical and Archaeological Resources

- (1) Describe and identify any cultural or historical resources located in or adjacent to the proposed permit area which are listed on the National Register of Historic Places. Delineate the location of the resources on the permit map. Describe in detail the measures to be taken to minimize or prevent adverse impacts on the resources(s). (779.12, 780.14, 780.31)

See attached Site Specific [Archaeological Survey](#) and [Alabama Historical Commission Comments](#).

- (2) Describe and identify any known significant archaeological sites located in or adjacent to the proposed permit area. The description shall be based on all available information including, but not limited to, data of State and local archaeological agencies. Delineate the site(s) on the permit map. (779.12, 780.14)

See attached Site Specific [Archaeological Survey](#) and [Alabama Historical Commission Comments](#).

C. Threatened and Endangered Species

Identify any threatened or endangered species of plants or animals or critical habitats of such species located in or adjacent to the proposed permit area. Delineate the location of the specie(s) or habitat(s) on the permit map. (780.14)

SEE ATTACHED FISH AND WILDLIFE ENHANCEMENT AND PROTECTION PLAN

See attached comments from the [U.S. Department of Interior Fish and Wildlife Service](#) and [Alabama Department of Conservation](#) are attached. See attached [Habitat Study](#).

D. Lands Unsuitable For Mining

- (1) Are there any areas located in or adjacent to the proposed permit area which have been designated unsuitable for mining or are under study for such designation in an administrative proceeding?

() Yes (XX) No (778.16)

If yes, give the name(s) of the area(s) if known. Delineate the area(s) on the permit map. (780.14)

- (2) Describe in detail the measures to be taken to minimize or prevent adverse impacts on any public park. (780.31)

Not Applicable - No Parks within or Adjacent to permit area.

- (3) Are requests for waiver included in this application? (761.12)

() Yes (XX) No

- (4) Do you claim exemption to this part based upon: () YES (XX) No

(a) Operations existing on the proposed permit area on August 3, 1977; or

(b) Operations subject to valid existing rights on August 3, 1977; or

(c) Substantial legal and financial commitments made prior to January 4, 1977? [762.13, 778.16(b)]

If yes, give reason(s) for claim with appropriate documentation.

E. Geology (880-X-8E-.06(2))

SEE ATTACHMENT II-E

1. Give a description of the geology within the proposed permit and adjacent areas including, but not limited to, the logs of drill holes, and highwall descriptions (if existing), with thicknesses of the overburden and coal down to and including the depth of either the stratum immediately below the coal seam to be mined or any aquifer which maybe adversely impacted by mining. Describe aerial and structural geology of the permit and adjacent areas. The description of the structural geology shall include structure contours on the bottom of the lowest coal seam to be mined and other parameters which may influence the required reclamation.
2. Chemical analyses conducted to identify acid forming or toxic forming zones shall be made on a representative number of samples of the overburden within the permit area. Sampling of the overburden may be collected at 5 ft. intervals from a lithologic unit or from the entire thickness if the unit is less than 5 ft. thick, when the lithology is below the oxidized zone; from the oxidized zone one composite sample shall be collected and analyzed. Samples may be taken from drill holes or from unweathered channel samples from a highwall. Analysis of each overburden sample shall be run for total sulfur. If the sulfur content is one percent or greater, it is recommended that additional analysis be run for pyritic sulfur. Each sample should be analyzed for neutralization potential. The acid-base account should be calculated. Results shall be included in the permit application, including the overall average acid-base account.
3. Total sulfur analysis of the coal seam(s) to be mined shall be run and reported with the permit application. The coal sample should be obtained from overburden sampling sites.
4. The name, depth, thickness, strike and dip of the coal seam(s) to be mined shall be included in the permit application.
5. Location of the coal crop line(s) within the proposed permit area are to be shown on an appropriate map.
6. All necessary maps and cross sections needed to support the geologic description shall conform with the requirements of 880-X-8F-.04.
7. When used to collect information for the permit application, elevations and location of test borings, core samples or other sample sites shall be provided (topographic accuracy is adequate).
8. Geochemistry: Give sampling and analytical data.
9. Note in areas where local concerns exist, additional overburden testing maybe required or testing for additional parameters may be required.
10. Include a certification signed by a professional qualified in geology who prepared or directed the geologic study. (See signed Attachment II-E)

F. Groundwater Hydrology (880-X-8E-.06(1))

[SEE ATTACHMENT II-F](#)

The permit application shall contain a description of the groundwater hydrology within the proposed permit and adjacent areas. In obtaining the necessary base line or premining information the applicant should be guided in conducting the studies by the availability and usage of groundwater in potentially impacted areas with particular emphasis being placed on those locations where present or potential future usage of the groundwater is of local importance. The description should include a comprehensive survey of existing water wells, springs, and other groundwater resources in the permit and adjacent areas. Information addressed in the survey shall include:

1. Baseline Quantity. Include approximate rates of discharge or usage and depth to the water in the coal, and each water bearing stratum above and potentially impacted stratum below the coal seam. Water levels should be taken at time of sampling and reported for each monitoring site.
2. Give lithologic descriptions and thickness of any water bearing zones.
3. Results of aquifer test(s), shall be reported identifying the transmissivity, draw down, recovery rates, and specific capacity, if required.
4. Well inventory. Location, ownership, description, usage of groundwater resources (light industrial, agricultural, domestic, etc.) estimating the approximate amount of water used per day must be included. Total depth of domestic wells should be included where available. Note if measured or reported.
5. Baseline Quality of the groundwater should be determined using sampling and laboratory techniques cited in 880-X-8E-.06(1)(a) to determine a minimum:
 - (i) pH;
 - (ii) Total iron, mg/l;
 - (iii) Total manganese, mg/l;
 - (iv) Total dissolved solids or specific conductance at 25°C.
 - (v) Sulfates if there are any groundwater users in the permit or adjacent areas (minimum one sample per monitoring site).
6. Describe any geological structures, including their orientation, such as:
 - (i) Joint systems;
 - (ii) Faults or fault zones;
 - (iii) Folds;
 - (iv) Bedding planes.
7. Give information on premine groundwater movement.
8. Appropriate maps and cross sections needed to supplement the description of the groundwater hydrology shall conform with the requirements of 880-X-8F-.04.
9. Use water sampling and analytical methods listed in the references cited in 880-X-8E-.06(1)(a). Describe the sampling and analytical methods used in obtaining water quality and quantity measurements of each site.
10. Give sampling and analytical information for each sample.

G. Surface Water Hydrology. (880-X-8E-.06(1))

[SEE ATTACHMENT II-G](#)

The permit application shall contain information and a description of the surface water that will flow into or from the proposed permit area in a form and to a degree that will describe seasonal variations in both quantity and quality of the surface water within the proposed permit area and adjacent areas. The premine or base-line study should be designed to a level that takes into consideration water availability and present and potential future usage of the surface water. The period of time for which such a survey should be conducted is six months, but should be adequate to properly evaluate low flow and high flow rates and quality based on either site specific studies, or where available, from existing data files which are reasonable and statistically representative of the proposed permit and potentially impacted adjacent areas. At a minimum the submitted information on the surface water hydrology shall include:

1. Names of the watershed(s) which will receive discharge from the proposed permit area. The watershed name should be presented as the name of primary stream in the watershed and as the USGS Hydrologic Unit Code and SCS sub-watershed number (e.g., 03150201-010). The SCS sub-watershed number is available from ASMC office. Show the location of any discharge into any surface-water body in the proposed permit and adjacent areas.
2. Give the name, location, ownership, use, and description of all surface-water bodies such as streams, lakes, and impoundments or springs in the proposed permit and adjacent areas.
3. Give known uses of the surface-water leaving the proposed permit area (or that will receive discharges from it), if any.
4. Water quality data shall be submitted to identify seasonal flow characteristics of, at a minimum:
 - (I) pH;
 - (ii) Total iron, mg/l;
 - (iii) Total manganese, mg/l;
 - (iv) Total suspended solids;
 - (v) TDS or SpC at 25°C;
 - (vi) Acidity and alkalinity.
5. Water quantity. Include measured flow rates in cfs for each sample analyzed under (4) above. Give the drainage area and describe each baseline monitoring station.
6. Use water sampling and analytical methods listed in the references sited in 880-X-8E-.06(1)(a). Describe the sampling and analytical methods used in obtaining water quality and quantity measurements of each site.
7. Precipitation data representative of site conditions shall be provided in the permit application if modeling or other simulation methods are employed in evaluating the effects of mining on the hydrologic regime.
8. The location of monitoring stations used to collect data for the permit application should be shown on a map which conforms to the standards of 880-X-8F-.04.
9. Give sampling and analytical data for each sample.

H. Probable Hydrologic Consequences Determination 880-X-8E-.06(1)(f)

SEE ATTACHMENT II-H

The permit application shall contain a determination of the probable hydrologic consequences (PHC) for the proposed permit area and adjacent areas. The PHC is the projected results of proposed surface coal mining and reclamation operations which may reasonably be expected to change the quality or quantity of the surface and ground water; the surface or ground water flow, timing and pattern; the stream channel conditions; and the aquatic habitat on and off the permit area. The PHC shall be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site.

The PHC should contain documentation of the PHC process. The PHC determination shall include findings on:

1. Whether adverse impacts may occur to the hydrologic balance.
2. Whether acid-forming or toxic-forming materials are present that could result in the contamination of surface or groundwater supplies.
3. Whether the proposed operation may proximately result in contamination, diminution or interruption of an underground or surface source of water within the proposed permit or adjacent areas which is used for domestic, agricultural, industrial, or other legitimate purpose.
4. What impact the operation will have on:
 - A. Sediment yield from the disturbed area.
 - B. Acidity, total suspended and dissolved solids and other important water quality parameters of local impact at seasonal flow rates.
 - C. Flooding or stream flow alterations.
 - D. Ground-water and surface-water availability, and
 - E. Other characteristics as required by the RA.

The PHC should contain a certification signed by a professional qualified in hydrology who prepared or directed the PHC determination and Part II F & G.

(See signed Attachment II-H)

Cumulative Impact Assessment (880-X-8E-.06(1)(g))

In general, provide any additional information or descriptions of hydrologic conditions which are pertinent or should be considered in the review of the geologic or hydrologic data for the preparation of the CHIA.

Specifically, this information should include:

1. Previous mining within the Cumulative Impact Area (CIA) the SCS subwatershed. This should include all Permanent Program Permits, permit numbers, acreages, dates mined, and all pre-Permanent Program mining acreages.
2. Overburden Geochemistry at other sites within the CIA from previous permits.
3. Seasonal Characteristics of the receiving stream above and below the mine site.
4. Groundwater information from previously mining areas adjacent to the permit area but effecting the same aquifer. This information should include groundwater levels and groundwater quality, existing conditions and estimates due to mining. Include an estimate of the impact previous mining has had on domestic groundwater use.

Alternative Water Source Information (880-X-8E-.06(1)(c)(3)(e))

If contamination, diminution or interruption of groundwater resources is anticipated, include information on the alternatives water sources. If replacement wells are to be drilled if material damage occurs, include information on the depth to water, chemical quality and specific yield of wells in this alternative water source.

I. Hydrologic Reclamation Plan (880-X-8E-.06(h))

[SEE ATTACHMENT II-I](#)

The application shall include a plan, with maps and descriptions, indicating how the relevant requirements of Subchapter 880-X-10C including 880-X-10C-.12 and 880-X-10C-.14 will be met. The plan shall be specific to the local hydrologic conditions. The plan should be bound and certified by the qualified professional who performed the work.

(See signed Attachment II-I)

I. Land Use Information

(1) Describe in detail the land use(s) existing at the time of the application. Give the number of acres and describe sufficiently so that areas can be identified on a map. If necessary, include a map showing land use units. (779.22)

<u>Increment</u>	<u>Area</u>	<u>Land Use</u>
1	118.0 Acres	Undeveloped/No Current Use
2	280.0 Acres	Undeveloped/No Current Use
3	120.0 Acres	Undeveloped/No Current Use
4	442.0 Acres	Undeveloped/No Current Use
5	388.0 Acres	Undeveloped/No Current Use

(2) Give the applicable land use classification under local law, if any. (779.22)

Not Applicable

(3) Is any of the area prime farmland? (779.27, 785.17)

() Yes (XX) No

If yes, submit the information required in Section 785.17.

If no, show or state how the determination was made.

See Attachment II-I-(3), [Soils Map](#)

None of the area within the proposed permit is prime farmland. The Nauvoo Fine Sandy Loam, 2-8% soil type is considered prime soil; however, the area has not been cultivated 5 of the last 10 years. The area is in undeveloped no current use.

(4) Has the land use of any area on the proposed permit changed within the last 5 years? (779.22) () Yes. (XX) No.

If yes, identify those areas and describe their historic use.

- (5) Has any area within the proposed permit been previously mined? (779.22)
 Yes No

If yes, complete the following:

- (a) Describe the area or show on a map.

See [Permit Map](#)

- (b) Was the area reclaimed? Yes No

If yes, under what law? 1969, () 1975, () Interim Law.

- (c) Describe the land use of the area prior to any mining, or if this cannot be determined describe the land use(s) of surrounding unmined land. (779.22)

The previously mined area (as well as can be determined) with the permitted area is made up of undeveloped/no current use.

- (6) Describe in detail, land uses of areas adjacent to the proposed permit area. (779.22)

The area adjacent to the proposed permit area is made of previously mined are and undeveloped/no current use.

(7) Discuss the capability of the lands within the permit area to support a variety of land uses other than the current use. (779.22)

Soil Type	Corn Bu	Soybeans Bu	Tall Fescue AUM	Grass Hay TN
29	--	--	5.5	3.5
30	75	30	7.0	4.5
31	70	25	6.5	4.0
35	--	--	--	--
39	116	39	9.5	5.5

--: Not Rated
AUM: Cow - Acre - Days
BU: Bushels
TN: Tons

Data obtained from the Jefferson County Soil Conservation Service.

(8) Give the premining productivity of the proposed permit area based on actual yield data or estimates based on data from similar sites. (If estimates, give sources of data used.) (779.22)

See Attachment II-I-(3), [Soils Map](#)

SOIL TYPE	MAP SYMBOL	SITE INDEX	SPECIES
Montevallo-Nauvoo Association Steep	29	80	Loblolly
** Nauvoo Fine Sandy Loam 2 to 8% slopes	30	89	Loblolly
Nauvoo Fine Sandy Loam 8 to 15% slopes	31	89	Loblolly
Palmerdale Complex Steep	35	80	Loblolly
Sullivan-State Complex 0 to 2% slopes	39	70	Loblolly

** Prime Soils

Data obtained from the Jefferson County Soil Conservation Service.

J. Vegetation Information

Delineate on a map, or describe in detail, the existing plant communities within the proposed permit area (and adjacent areas if required). List the predominant overstory, understory, and ground cover species (use common name only). Give approximate acreage covered by each plant community and approximate age of timber stands. (779.19)

The proposed permit area consist of unmanaged timberland and previously mined land. The majority of the permit area has been clearcut, removing all the merchantable pine and hardwood timber. This eliminated the overstory and understory leaving only small, non-merchantable pine and hardwood trees. Pine species are virginia and loblolly. Hardwood species are oaks, sweetgums, yellow poplar, birch and hickories. Due to the removal of the overstory and understory, a dense ground cover has developed consisting of sage and various grasses, weeds, vines, briars, and pine and hardwood seedlings.