



# STATE OF ALABAMA SURFACE MINING COMMISSION

Page 1 of 25

Permit Number:P- 3993

License Number:L- 857

## PERMIT TO ENGAGE IN SURFACE COAL MINING OPERATIONS

Pursuant to **The Alabama Surface Mining Control and Reclamation Act of 1981**, as amended, **ALA. Code Section 9-16-70 et. seq. (1975)** a permit to engage in Surface Coal Mining Operations in the State of Alabama is hereby granted to:

Lost Creek Clay & Mineral, LLC  
933 Mackey Boshell Road  
Jasper, AL 35502

Such operations are restricted to 36 acres as defined on the permit map and located in:

See Attachment

This permit is subject to suspension or revocation upon violation of any of the following conditions:

1. The permittee shall conduct Surface Coal Mining and Reclamation Operations in accordance with the plans, provisions and schedules in the permit application.
2. The permittee shall conduct operations in a manner to prevent damage or harm to the environment and public health and safety and shall notify ASMC and the public in accordance with ASMC Rule 880-X-8K-.16 of any condition which threatens the environment or public health and safety.

**LEGAL DESCRIPTION**  
**P-3993-64-23-S**

**SW/NE, NW/SE, NE/SW, OF SECTION 24 ALL IN TOWNSHIP 14  
SOUTH, RANGE 8 WEST WALKER COUNTY, ALABAMA**

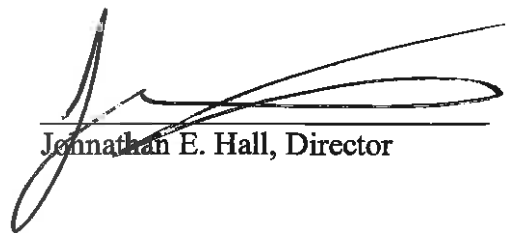
3. Surface coal mining operations are restricted to those areas for which sufficient bond has been posted with ASMC. On the date of issuance of this permit, bond was posted only for Increment 1 consisting of 29 acres as defined on the permit map.
4. No mining disturbance is to occur on any part of the permit on which legal "right of entry" has not been obtained. When such rights are "pending" the applicant shall submit acceptable evidence, to the Director, that such rights have been obtained according to ASMC Regulation 880-X-8D-.07.
5. No disturbance is to occur on any properties on which land use comments from legal owners of record are "pending" prior to the applicant providing acceptable comments.
6. No disturbance is to occur in the 300' setback area to any occupied dwelling prior to the applicant providing acceptable evidence to ASMC of its having secured a waiver of each subject area signed by the owner of the dwelling.
7. No mining disturbance shall occur within the 100' setback of any public road or the relocation of any public road prior to the applicant providing acceptable evidence, to the Director, of its having secured approval for a waiver from the appropriate jurisdictional authority and specific written waiver from ASMC.
8. The permittee shall notify the ASMC and seek consultation with the U.S. Fish and Wildlife Service if:
  - a. The permit is modified in any way that causes an effect on species or Critical Habitat listed under the Endangered Species Act of 1973.
  - b. New information reveals the operation may affect Federally protected species or designated Critical Habitat in a manner or extent not previously considered or
  - c. A new species is listed or Critical Habitat is designated under the Endangered Species Act that may be affected by the operation.
9. The permittee shall contact the ASMC and consult with the Alabama Historic Preservation Officer if the permit is modified or if previously unknown archaeological or historic resources are discovered on the permit area. Upon discovery of previously unknown artifacts or archaeological features the permittee shall cease operations until the Alabama Historic Preservation Officer approves resumption of operations.
10. Prior to conducting any mining activities the permittee must flag Increment 2 in a different color than the permit boundary flagging.
11. The permittee must submit to ASMC an approved USACE permit concurring with project activities prior to conducting mining activities in Increment 2.

12. The permittee must conduct all tree clearing activities prior to June 7, 2023 for McCollum Mine. If tree clearing cannot be completed by June 7, 2023 a new acoustic survey shall be conducted and submitted to the U.S. Fish and Wildlife Service for approval or limit tree removal to October 15 – March 31.

ISSUANCE DATE:           SEPTEMBER 27, 2018

EFFECTIVE DATE:         SEPTEMBER 27, 2018

EXPIRATION DATE:        SEPTEMBER 26, 2023



Jennathan E. Hall, Director

The ASMC, acting by and through its Director, hereby finds, on the basis of information set forth in the application or from information otherwise available, that --

1. The permit application is complete and accurate and the applicant has complied with all requirements of the Act and the regulatory program.
2. The applicant has demonstrated that reclamation as required by the Act and the regulatory program can be accomplished under the reclamation plan contained in the permit application.
3. The proposed permit area is:
  - (a) Not within an area under study or administrative proceedings under a petition, filed pursuant to Chapter 880-X-7 to have an area designated as unsuitable for surface coal mining operations;
  - (b) Not within an area designated as unsuitable for mining pursuant to Chapter 880-X-7 or subject to the prohibitions or limitations of Section 880-X-7B-.06 and Section 880-X-7B-.07 of this chapter; or
4. For mining operations where the private mineral estate to be mined has been severed from the private surface estate, the applicant has submitted to the Regulatory Authority the documentation required under Section 880-X-8D.07 and Section 880-X-8G-.07 of this chapter.
5. The Regulatory Authority has made an assessment of the probable cumulative impacts of all anticipated coal mining on the hydrologic balance in the cumulative impact area and has determined that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.
6. The applicant has demonstrated that any existing structure will comply with Section 880-X-2B-.01, and the applicable performance standards of Chapter 880-X-3 or 880-X-10.
7. The applicant has paid all reclamation fees from previous and existing operations as required by 30 C.F.R., Subchapter R.
8. The applicant has satisfied the applicable requirements of Subchapter 880-X-8J.
9. The applicant has, if applicable, satisfied the requirements for approval of a long-term, intensive agricultural, postmining land use, in accordance with the requirements of 880-X-10C-.58(4) and 880-X-10D-.52(4).
10. The operation will not affect the continued existence of endangered or threatened species, or result in destruction or adverse modification of their critical habitats, as determined under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.).
11. For a proposed remining operation where the applicant intends to reclaim in accordance with the requirements of Section 880-X-10C-.56 or 880-X-10D-.49, the site of the operation is a previously mined area as defined in Section 880-X-2A-.06.

12. Surface coal mining and reclamation operations will not adversely affect a cemetery.
13. After application approval but prior to issue of permit, ASMC reconsidered its approval, based on the compliance review required by Section 880-X-8K-.10(2)(a) in light of any new information submitted under 880-X-8D-.05(8).
14. The applicant has submitted the performance bond or other equivalent guarantee required under Chapter 880-X-9 of the ASMC Rules prior to the issuance of the permit.
15. For mining operations where a waiver is granted from the 100' setback from a public road according to 880-X-7B-.07, the interests of the public and affected landowners have been protected.
16. The Regulatory Authority has taken into account the effect of the proposed permitting action on properties listed or eligible for listing on the National Register of Historic Places. This finding is supported in part by inclusion of appropriate permit conditions or changes in the operation plan protecting historic resources, or a documented decision that the Regulatory Authority has determined that no additional protection measures are necessary.
17. The Regulatory Authority has taken into account the effect of the proposed permitting action on properties listed or eligible for listing on the National Register of Historic Places (NRHP). MRS Consultants, LLC conducted a Phase I Cultural Resource Survey on January 26, 2018 for approximately 69 acres in Walker County, Alabama. As a result of the survey one historic residence, identified as Resource 1, and one archaeological site, Site 1Wa295, were found within the survey area boundaries. Site 1Wa295, a fieldstone chimney and historic house site was added to the Alabama State Site File. Neither Resource 1 nor Site 1Wa295 are considered eligible for NRHP. The survey area was mostly upland terrain with eroded ridge tops and gentle slopes. The overwhelming majority of the property has been disturbed from past timbering and mining activities. Based on these findings, the proposed mining project will have no effect upon any historic properties, therefore MRS Consultants, LLC recommends the project area be cleared in regards to cultural resources.

By a letter dated April 3, 2018 the Alabama Historic Commission (AHC), Re: AHC 2018-0635, upon review of the cultural resource assessment conducted by MRS Consultants, LLC for the above referenced project, AHC finds that the submission does not contain sufficient information to make a determination regarding the project's effect on cultural resources that may be eligible for the NRHP. AHC requested site plan for site 1Wa295, clarification of archaeological component of Resource 1 due to the presence of the well and better quality photos and thorough description of building condition. Upon review of additional information submitted, AHC determined that the project activities will have no effect on cultural resources listed on or eligible for the NRHP by letter dated July 12, 2018. Therefore AHC concurs with the project activities. This finding is supported in part by inclusion of appropriate permit conditions or changes in the operation plan protecting historic resources or a documented decision that the Regulatory Authority has determined that no additional protection measures are necessary. Concerns for unknown resources, which might be discovered during mining, have been made conditions of the permit.

18. In a habitat assessment performed by McGehee Engineering Corp (MEC) in December of 2017, it was determined that there may be areas of potential summer roosting habitat for the endangered Indiana bat (*Myotis sodalis*) and Northern Long-eared bat (*Myotis septentrionalis*) that may exist on the Lost Creek Clay & Minerals, LLC, McCollum Mine site. By letter dated July 6, 2018 the U.S. Fish and Wildlife Service (FWS) states aside from the spring/summer habitat for the Indiana and Northern Long-eared bats, no other federally listed species/critical habitat are known to occur in the project area. An Acoustic Presence/Absence Survey was performed on May 22<sup>nd</sup> through May 25<sup>th</sup> and June 4<sup>th</sup> through 7<sup>th</sup>, 2018 by MEC in accordance with the FWS approved plan. The findings from the Acoustic Presence/Absence Survey indicate that the presence of Indiana and Northern Long-eared bats are unlikely. By comments dated June 26, 2018 the US Fish and Wildlife Service concur with the findings and acknowledge the survey is valid for five years from the date of completion of the survey unless new information suggests otherwise.


In a letter dated December 28, 2017 the Alabama Department of Conservation and Natural Resources (ADCNR) states the closest sensitive species as occurring approximately 2.5 miles from the subject site.

US Army Corps of Engineers (USACE) permit is forthcoming. Based on information provided and a letter dated September 21, 2018 signed by C.W. McGehee and L. Stephen Blankenship no waters of the U.S. are located in the boundary of Increment No. 1 for the McCollum Mine. The Alabama Surface Mining Commission finds that the proposed operation will not jeopardize the continued existence of endangered or threatened species or critical habitat thereof.

19. The proposed permit area is:
- a. Not within an area under study or administrative proceedings under a petition, filed pursuant to Chapter 880-X-7 to have an area designated as unsuitable for surface coal mining operations.
  - b. Not within an area designated as unsuitable for mining pursuant to Chapter 880-X-7 or subject to the prohibitions or limitations of Section 880-X-7B-.06 and Section 880-X-7B-.07 of this chapter.

BASED ON THESE FINDINGS, I RECOMMEND THAT THIS PERMIT BE ISSUED.

DATE: September 27, 2018

  
Mark A. Woodley  
Permit Manger

/mw  
cc: I & E, Permit File

**Cumulative Hydrologic Impact Assessment  
Lost Creek Clay & Mineral, LLC  
McCollum Mine  
ASMC P-3993**

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# CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

**Permit Number P-3993  
Lost Creek Clay & Mineral, LLC  
McCollum Mine**

**HUC 031601090601  
NPDES AL0083682**

As required under Federal Public Law 95-87, Section 510(b)(3), the Alabama Surface Mining Commission (ASMC) must find in writing the following proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The applicant must submit a determination of probable hydrologic consequences of mining and reclamation operations in Part II.H of the permit application for areas both on and off the mine site. This determination will allow the ASMC to assess probable cumulative impacts of all anticipated mining activities on the surface and ground water hydrology of the permit and adjacent areas as stated in Federal Public Law 95-87, Section 507(b)(11) and ASMC Rule 880-X-8E-.06(1)(g). The following assessment and findings are intended to fulfill the above stated requirements.

## **I. GENERAL INFORMATION**

The Lost Creek Clay & Mineral, LLC (ASMC P-3993) McCollum Mine is for a surface coal mining operation encompassing 36 acres in Walker County, Alabama. The proposed mine site is located in parts of Section 24, Township 14 South, Range 8 West, Walker County, Alabama as seen from the 2014 Jasper USGS Quadrangle. Of the 36 acres to be permitted, approximately 35 acres are mining acres. The site is bound by the Burlington Northern Railroad to the south, Alabama Highway 69 to the west and McCollum Road to the east. See Figure 1 for location of this permit.

### **Geology of the Warrior Coal Basin**

The Pottsville Formation of Early and Middle Pennsylvanian age in Alabama is divided into four fields: the Warrior, Cahaba, Coosa and Plateau fields. All fields were once connected by an unbroken area of coal measures, however separation occurred as a result of folding, faulting and erosion of uplifted areas.

The Warrior coal field is a gently folded or flat-lying area classified as the Cumberland Plateau. It lies in a large, gentle monoclinial structure that extends west into central Mississippi. The regional dip is towards the southwest. This regional southwest dip is interrupted by two anticlines (the Blue Creek anticline and the Sequatchie anticline) and three synclines or basins (the Blue Creek basin, Coalburg syncline and Warrior syncline).

The Warrior field has numerous normal faults that trend north and northwest up to 4 miles in length with up to 200 feet of displacement (“Geology of Coal Resources of the Coal-Bearing Rocks of Alabama, Alabama Geological Survey Bulletin 1182-B”).

During the beginning of the Pennsylvanian age (approximately 320 million years ago), most of Alabama was still part of a shallow, warm ocean basin. The transgressions and regressions of the seas lead to the rhythmic cycle of sandstone, underclay, coal beds, and shale with zones of marine and brackish water fossils that rest on the basal resistant conglomerate orthoquartzite of the Boyles sandstone formation. This sequence immediately repeats itself with similar rocks (marine shale, sandstone or clay, coal seam, freshwater shale and sandstone). This appears to show the rise of sea level, depositing marine sediments, then the falling of sea level allowing the coal producing forests to grow. This was followed by an influx of river deposited sands and muds, which would rapidly accumulate plant material. Then, the sea would rise again repeating the process.

At the end of the Pennsylvanian, the uplift of the region left the coal bearing ecosystem behind. During this periods of uplift, no new sediments could be deposited for at least 200 million years. The gap in time between the Pennsylvanian deposition and the Cretaceous deposition resulted in an unconformity that allows for surface coal mining to exist in the Alabama coal fields.

## **II. CUMULATIVE IMPACT AREA**

The Cumulative Impact Area (CIA) is that area, including the permit area, within which impacts resulting from the proposed operation may interact with the hydrologic impacts of all other past, current and anticipated coal mining on the surface and groundwater systems.

The CIA for surface water for Permit P-3993 has been defined as the area that surrounds P-3993 in the Town Creek-Cane Creek 12-digit hydrologic unit code (HUC) watershed (031601090601). The CIA includes part of the Quality Coal Co., Inc. Dutton Hill Mine (ASMC P-3920). Both the P-3993 and P-3920 permits discharge into the same unnamed tributary to Cane Creek. Within this HUC 12 watershed are also the Drummond Company, Inc. Surface Mine #1 (ASMC P-3869), and the Cane Creek, LLC Cane Creek Mine (ASMC P-3910) which each are approximately 5 miles (upstream and downstream) from where the discharges from P-3993 and P-3920 will enter Cane Creek. See Figure 2 for the location of these permits for the surface water CIA. Additional informational for these permits is shown in Table 1.

The CIA for groundwater is limited to the permit area. The CIA has been selected based upon the Commission's assessment of the possible hydrologic impacts, which may occur as a result of mining operations. The subsurface hydrologic components considered in this assessment include all significant water-bearing units in, and within the vicinity of, the proposed permit. Other areas of proposed, future mining are not known at this time; however, no cumulative impacts to groundwater are expected due to the limited areal extent of the aquifer system as well as underground works and prelaw mining disturbance that exist within and adjacent to the P-3993 area.

### **Active and Proposed Mines**

Active mining in this watershed that would interact with activities of the proposed permit include part of the Drummond Company, Inc. Surface Mine #1 (P-3869), part of the Quality Coal Co., Inc. Dutton Hill Mine (P-3920) and the Cane Creek, LLC Cane Creek Mine (P-3910). At this time,

there is no coal removal at any of these permits. Surface Mine #1 (P-3869) is under temporary cessation of operations with no remaining coal stockpiled. Mining is complete with reclamation activities currently being conducted for Cane Creek Mine (P-3910). The Dutton Hill Mine (P-3920) is expired with all mining increments reclaimed.

At the time of this assessment, no other proposed mines are known within the vicinity.

## **A. Geologic/Hydrogeologic Information**

### **i. Geology**

The proposed P-3993 permit area is located in the Warrior Coal Basin. According to "Geology and Coal Resources of the coal-Bearing Rocks of Alabama" Geological Survey Bulletin 1182-G, the Pottsville Formation, which underlies and outcrops in this region, consists of a number of sedimentary cycles consisting of a basal massive sandstone, an underclay, a coal bed or beds, shale and interbedded shalt and siltstone. The coal beds split, or pinch out and locally new coal beds appear. The Pottsville Formation underlies and outcrops in this region, which is of Pennsylvanian Age.

Locally, the strata which outcrops in the immediate vicinity of the McCollum Mine site includes sandstones, shales, underclays and coal seams associated with the Mary Lee coal group. The target seam at this site is the Mary Lee coal seam.

The Mary Lee coal seam lays between approximately 372' and 400' mean sea level within the permit area. The Mary Lee seam has on average 30 feet of overburden and is approximately 3 feet thick. A portion of this permit has been previously mined by pre-law mining. There also exists extensive pre-law mining adjacent to the permit area as well as underground mining.

### **ii. Potentially Acid- and Toxic-Forming Materials**

Samples of drill cuttings from 1 overburden hole specific for this permit were collected by personnel of Lost Creek Clay & Mineral every 5 feet or change in lithology to at least 5 feet below the Mary Lee coal seam for analysis of potentially acid- and toxic- forming properties. For this sample, overburden analyses was conducted including paste pH, total sulfur, maximum potential acidity and neutralization potential in order to obtain the acid-base account of the overburden. Potentially acid- and toxic- forming materials are those that exhibit a pH of less than 4.0 standard units (s.u.) or a deficiency in calcium carbonate (CaCO<sub>3</sub>) equivalent of at least 0.0 tons per 1,000 tons of material (T/KT).

### **iii. Surface Water**

All water moves through the hydrologic cycle. In the area of the proposed McCollum Mine, precipitation averages 55 inches per year which either soaks into the ground or runs along the surface as runoff to streams and lakes (on average of 22 inches per year) and plants absorb some of the water which returns to the atmosphere as transpiration (on average of 33 inches/year). Seventeen major streams flow through Alabama and approximately 15 percent

of all surface water flowing through the lower 48 states flows through Alabama ([www.gsa.alabama.gov/gsa/water/water-information](http://www.gsa.alabama.gov/gsa/water/water-information)).

The permit area is located in the Warrior Basin and is drained by an unnamed tributary to Cane Creek. It is located in the Town Creek-Cane Creek HUC 12 watershed (031601090601). One sediment basin is proposed for this permit. There are two surface water monitoring sites for this permit. Surface water monitoring station SW-1 is located upstream of the permit area on an unnamed tributary to Cane Creek and drains approximately 499 acres (0.78 square miles). Surface water monitoring station S2414084 is located downstream on an unnamed tributary to Cane Creek and drains approximately 976 acres (1.53 square miles). The data collected from S2414084 was used for water quality projections.

The Alabama Department of Environmental Management (ADEM) has classified the unnamed tributary to Cane Creek as "Fish and Wildlife." According to ADEM Admin. Code r. 335-6-11-.01(2), "Use classifications apply water quality criteria adopted for particular uses based on existing utilizations, uses reasonably expected in the future, and those uses not now possible because of correctable pollution but which could be made if the effects of pollution were controlled or eliminated. Of necessity, the assignment of use classifications must take into consideration the physical capability of waters to meet certain uses."

ADEM Admin. Code r. 335-6-11-.01(5) states "...Those segments which are not included by name will be considered to be acceptable for a 'Fish and Wildlife' classification unless it can be demonstrated that such a generalizations is inappropriate in specific instances." The unnamed tributary to Cane Creek has a designated use classification of Fish and Wildlife. There are no Total Maximum Daily Load (TMDL) limits on Cane Creek.

To characterize the existing quality and quantity of water within the area, baseline data were obtained and submitted in the permit applications. These include two sites on an unnamed tributary to Cane Creek (upstream and downstream). At least six months of consecutive data was submitted, including two suites of metals analysis at each site. Table 2 presents the baseline data. Table 3 presents the metals baseline data.

#### **iv. Ground Water**

Groundwater in the Warrior Basin occurs in fractures and along bedding planes in the Pottsville Formation. The sandstone beds within 250 to 350 ft. of the surface generally contain the most productive water-bearing openings. Regionally, the primary source of recharge to groundwater is rainfall, which averages 55 inches per year. According to the U.S. Geological Survey Report: Geohydrology and Susceptibility of Major Aquifers to Surface Contamination in Alabama; Area 3 Water-Resources Investigations Report 88-4120, the Pottsville aquifer is tightly cemented and has small primary porosity and permeability, and the yields of public water for wells completed in this aquifer are less than 0.15 million gallons per day. This aquifer is also commonly high in iron.

### **Domestic Wells**

A well inventory conducted in June, 2018 showed 130 structures or residences within a ½ mile radius of the proposed mine site. Nine of the residences had wells, with one residence using ground water as their only water source. All other wells were for outdoor use or not currently used.

### **Company Installed Wells**

Groundwater sampling was not performed for this permit. Eight of the inventoried groundwater wells are north of the permit area, and according to the geology of the site, the lithology dips to the south/south east. The only primary groundwater user within the ½ mile radius of the permit is located approximately ½ mile south of the permit area. Between the permit boundary and the well is prelaw mining as well as geomorphic features (hills, valleys, streams/springs). The existence of prelaw disturbance south of the proposed McCollum Mine and the fracture system that exists in the local geologic setting lends to discontinuity of aquifers, making any hydrologic connection between the McCollum Mine site and the groundwater user very unlikely.

There are no known wellhead protection zones or public water supply wells in or within 1,000 feet of the proposed permit area.

### **B. Coal Processing Waste**

Coal processing waste (gob and slurry) will not be generated or disposed of at the site.

### **C. Material Damages**

With respect to the cumulative hydrologic impact assessment (CHIA), material damage to the hydrologic balance means quantifiable changes to the hydrologic balance caused by surface mining and reclamation operations to the extent that these changes would significantly affect present or potential uses as designated by the regulatory authority and that cannot be mitigated by reclamation or provision of alternate water supplies. This includes the hydrologic impact that results from the cumulation of flows from all coal mining sites in a cumulative impact area. Examples of material damage are: permanent destruction of a major regional aquifer; temporary contamination of an aquifer in use that cannot be mitigated; and solute contributions to streams above receiving stream standards.

A CHIA is based on the best currently available data and is a prediction of mining-related impacts to the hydrologic balance. Permittees (and permit applicants) are required to monitor water quality and quantity. Exceeding material damage thresholds might also cause significant reduction of the capability of an area to support aquatic life, livestock and wildlife communities.

### **III. FINDINGS**

Based on the information presented above, the following findings have been made relative to the proposed permit area.

#### **A. Potentially Acid- and Toxic-Forming Materials**

Laboratory analyses of the bedrock overlying, and immediately below the Mary Lee coal seam reveals favorable overburden with an average of +212 tons/acre excess  $\text{CaCO}_3$  and an acid base account of +4.93 (tons  $\text{CaCO}_3$ /1000 tons overburden). Because of the excess neutralization potential, adverse effects to the hydrologic balance of the area are not anticipated if the overburden is mixed thoroughly prior to reclamation.

Information from the other permits within the CIA was also considered in evaluating the potential for neutralization. This includes the overburden analysis from the Quality Coal Co., Inc. Dutton Hill Mine (P-3920) which is closest in proximity and of similar geology to P-3993. Along with overburden analysis information, water quality history of the above referenced permit was taken into consideration. P-3920 mined the New Castle, Mary Lee and Blue Creek seams and is in the reclamation stage. Such adjacent permits can be essential in indicating the potential impacts from the McCollum Mine permit.

The materials handling plan included in the permit application will require any potentially acid- and toxic-forming strata encountered (such as spoiled coal) to be covered with a minimum of four feet of non-toxic, non-combustible earthen material. Also, this material may not be placed within the root zone. The material will undergo relatively quick burial that will restrict the development of acid-forming conditions.

#### **B. Surface Water**

Laboratory analyses of the samples collected from the surface waters reveal relatively low conductivity levels and sulfate values considering previous coal related disturbance in this watershed. According to the Alabama Department of Environmental Management the receiving streams' use classification is 'Fish and Wildlife'. Current surface mining regulations include Best Management Practices and mining techniques that have greatly improved environmental protection since pre-law mining days.

Changes in the quantity and quality of the waters in the streams draining the site are expected to be minimal due to the proposed mining activities. During mining, runoff from the disturbed areas will be diverted into a sediment basin that has been designed to retain the runoff to allow sediment to settle out prior to discharging. Effluent from the sediment basin will be monitored by the permittee in accordance with their National Pollutant Discharge Elimination System (NPDES) permit requirements issued by the ADEM. The effluent will be chemically treated, if necessary, in accordance with the NPDES permit. The basin will be monitored through final bond release in order to characterize and document any effects mining may have on the surface-water hydrologic balance.

Water quality within the unnamed tributary to Cane Creek shows near neutral pH, low iron, low manganese and low suspended solids, varying on the stream flow at the time of sample. Based on data since 2017 for the other two permits in the CIA (P-3869 and P-3910), the water quality in Cane Creek shows similar characteristics of near neutral pH, low iron and low suspended solids. This data is shown in Table 4.

Post-Mining water quality and quantity estimates are based on several factors:

- Baseline surface water quality
- Estimated impact during mining
- Size of the permit area compared to the impacted watershed
- Amount of previous mining within the watershed

According to the permit application, this mine site is expected to have a negligible increase in base flow, average flow, and peak flow rates relative to the baseline conditions. The NPDES maximum and average limitations set forth by the ADEM for this mine site can be seen on their NPDES permit. The NPDES permit can be viewed at the ADEM website under the eFile system using permit number AL0083682.

Sediment basins, vegetation of the disturbed areas and erosion control practices should serve to lessen impacts to the streams and surface water bodies. Should any increase in mineralization occur in the surface waters as a result of the mining operations, it is anticipated the levels will diminish and return to pre-mining concentrations once mining and reclamation activities are complete. Table 5 shows the post-mining water quality projections at surface water monitoring site S2414084.

Once mining has begun, the applicant will continue to sample and monitor the unnamed tributary to Cane Creek at two locations. Surface Water monitoring site SW-1 is located upstream on the unnamed tributary to Cane Creek, with corresponding site S2414084 downstream on the unnamed tributary to Cane Creek. These surface water monitoring sites will be used to characterize and document any effects the mining may have on the surface-water hydrologic balance. Parameters and frequency of monitoring can be obtained from the approved Hydrologic Monitoring Plan.

### **C. Ground Water**

The proposed operation is not expected to have a permanent adverse impact on the overall quality of the ground water at the site or surroundings. The main aquifer in this area is a Pottsville sandstone unit located below the Mary Lee coal group. The underground mining and prelaw disturbance in the area has most likely affected shallow groundwater movement. The groundwater CIA is limited to the permit area and pre-law disturbance to the south of the permit where groundwater may be able to migrate.

#### **D. Historical and Active Coal Mines**

The presence of the active permits within and adjacent to the Lost Creek Clay & Mineral, LLC McCollum Mine are not expected to have impacts to the hydrologic balance in this area. The baseline water quality analysis shows little impact to receiving streams in this area with mining having already occurred, and ongoing. Additional water quality parameters will be monitored during active mining and post-mining.

#### **IV. CONCLUSION**

The assessment of probable cumulative impacts of the Lost Creek Clay & Mineral, LLC McCollum Mine (P-3993) finds the proposed operations have been designed to prevent material damage to the hydrologic balance outside the proposed permit area.



## **V. TABLES AND FIGURES**

Table 1	Mining Operations in the Cumulative Impact Area
Table 2	Ranges/Averages of Surface-Water Quality/Quantity Stream Points
Table 3	Additional Surface Water Baseline Data – Low Flow Metals Data
Table 3a.	Additional Surface Water Baseline Data – High Flow Metals Data
Table 4	Cane Creek Water Quality
Table 5	Estimate of Post-Mining, Average Event Surface Water Quality at S2414084
Figure 1	P-3993 Permit Area with Adjacent and Nearby Permits
Figure 2	P-3993 Cumulative Impact Area

**Table 1**  
**Mining Operations in the Cumulative Impact Area**  
**P-3993**

<b>Permit No.</b>	<b>Permittee</b>	<b>Permit Name</b>	<b>Date Issued</b>	<b>Acres*</b>	<b>Description</b>	<b>Coal Seam(s)</b>
P-3869	Drummond Company Inc.	Surface Mine #1	10/03/2005	566	Surface Mine, Temporary Cessation	New Castle Mary Lee Blue Creek
P-3910	Cane Creek LLC	Cane Creek	12/24/2008	274	Surface Mine, Reclamation activities	New Castle Mary Lee
P-3920	Quality Coal Co., Inc.	Dutton Hill	1/21/2010	188	Expired Surface Mine Reclamation activities	New Castle Mary Lee Blue Creek

\*Acres at Issuance of P-3993

**Table 2**  
**Ranges/Averages of Surface-Water Quality/Quantity Stream Points**  
**P-3993**

Parameter	S2414084 US UT to Cane Creek	SW-1 DS UT to Cane Creek
Discharge Rate (cfs)	0.1400 – 15.30 (2.26)	1.530 – 6.801 (3.46)
Field pH (S. U.)	6.20 – 8.19	6.53 – 7.56
Total Suspended Solids (mg/L)	1 - 42 (4.6)	2 - 15 (6.2)
Total Iron (mg/L)	0.04 – 0.35 (0.13)	0.19 – 0.65 (0.34)
Total Manganese (mg/L)	*BML – 2.07 (0.30)	0.31 – 1.1 (0.68)
Specific Conductivity @ 25 °C (µmhos/cm)	207 - 1357 (982.2)	746 - 1643 (1333)
Acidity (mg/L)	NA	12 – 51 (31.7)
Alkalinity (mg/L)	NA	148 – 364 (198)
Sulfate (mg/L)	NA	345 – 657 (478)

Average values are shown in parentheses

Averaged via all data, not seasonally

UT = Unnamed tributary

DS = Downstream

US = Upstream

BML = Below Measurable Limits

\*For manganese average, BML was represented as 0.01 mg/l

NA = Not analyzed (quarterly performance monitoring data)

**Table 3**  
**Additional Surface Water Baseline Data - Low Flow Metals Data**  
**P-3993**

Parameter	S2414084 US UT to Cane Creek Low Flow (0.1588 cfs) Date: 07/12/2016	SW-2 US UT to Cane Creek Low Flow (1.5300 cfs) Date: 08/07/2018
Antimony (µg/L)	1.94	2.08
Arsenic (µg/L)	BML	BML
Beryllium (µg/L)	BML	BML
Cadmium (µg/L)	BML	BML
Chromium (µg/L)	BML	BML
Copper (µg/L)	BML	BML
Lead (µg/L)	1.34	0.34
Nickel (µg/L)	BML	BML
Selenium (µg/L)	1.44	BML
Silver (µg/L)	BML	BML
Thallium (µg/L)	BML	BML
Zinc (µg/L)	BML	BML

UT = Unnamed tributary

US = Upstream

DS = Downstream

BML = Below Measurable Limits

**Table 3a.**  
**Additional Surface Water Baseline Data - High Flow Metals Data**  
**P-3993**

Parameter	S2414084 DS UT to Cane Creek High Flow (15.3001cfs) Date: 01/06/2016	SW-1 DS UT to Cane Creek High Flow (6.8005 cfs) Date: 04/27/2018
Antimony (µg/L)	BML	BML
Arsenic (µg/L)	0.35	0.32
Beryllium (µg/L)	BML	BML
Cadmium (µg/L)	BML	BML
Chromium (µg/L)	BML	BML
Copper (µg/L)	BML	BML
Lead (µg/L)	BML	0.36
Nickel (µg/L)	BML	BML
Selenium (µg/L)	BML	BML
Silver (µg/L)	0.36	BML
Thallium (µg/L)	BML	BML
Zinc (µg/L)	BML	BML

UT = Unnamed tributary

US = Upstream

DS = Downstream

BML = Below Measurable Limits

**Table 4  
Cane Creek Water Quality**

**Drummond Company, Inc.  
P-3869 SW site 444-037  
US Cane Creek of Permit P-3993**

Date	Flow cfs	pH s.u.	Fe mg/L	Mn mg/L	Conductivity ( $\mu$ mhos/cm) @ 25°C	TSS mg/L
2-27-2017	7.37	7.47	0.29	0.01	377	5.6
5-23-2017	7.86	7.4	0.41	0.04	301	9.2
8-30-2017	0.77	7.8	0.2	0.02	656	2
11-28-2017	0.47	8	0.12	0.03	950	2.4
1-5-2018	0.31	7.7	0.15	0.02	598	4
5-9-2018	0.54	6.9	0.21	0.03	838	1
Average	2.89	7.39	0.23	0.03	620	4.0

**Quality Coal Co., Inc.  
P-3920 SW site 2414084  
DS on UT to Cane Creek**

Date	Flow cfs	pH s.u.	Fe mg/L	Mn mg/L	Conductivity ( $\mu$ mhos/cm) @ 25°C	TSS mg/L
1-27-2017	4.08	7.83	0.23	0.2	860	1
5-8-2017	0.9563	6.2	0.05	0.01	1479	3
9-15-2017	0.7650	6.85	0.08	0.03	1433	1
10-27-2017	1.275	6.59	0.1	0.16	1446	1
2-5-2018	5.095	6.74	0.35	0.21	725	3
4-25-2018	4.08	7.01	0.36	0.17	551	7
Average	2.709	6.66	0.195	0.13	1082	2.7

**Cane Creek, LLC  
P-3910 SW site WMCCSW-2  
DS Cane Creek of Permit P-3993**

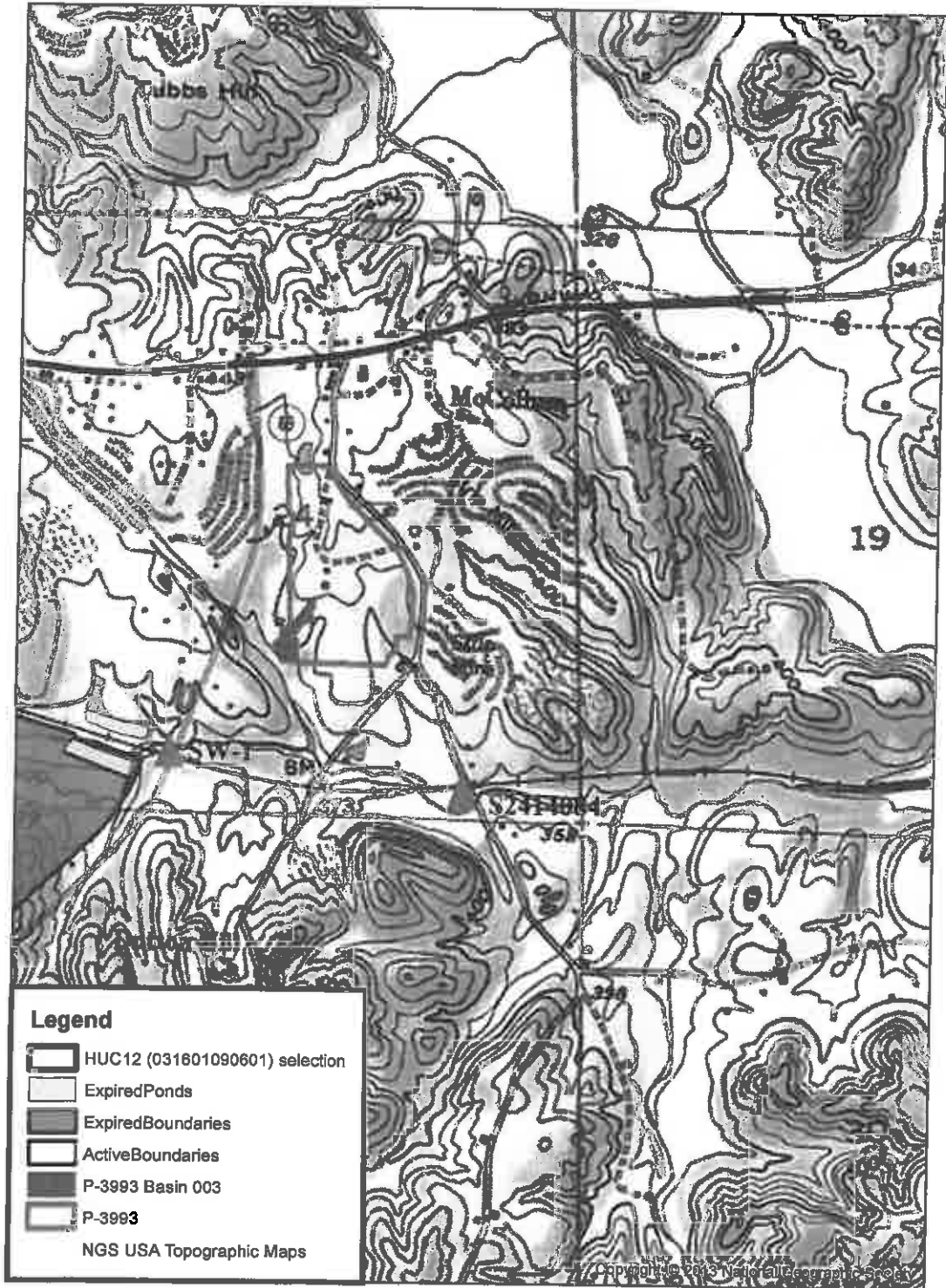
Date	Flow cfs	pH s.u.	Fe mg/L	Mn mg/L	Conductivity ( $\mu$ mhos/cm) @ 25°C	TSS mg/L
1-7-2017	17.17	7.37	0.4	0.05	611	6
5-6-2017	52.45	7.67	1.3	0.17	587	21
9-21-2017	10.2	7.15	0.27	0.16	737	1
11-2-2017	23.26	7.69	0.31	0.06	528	1
2-14-2018	63.98	7.37	0.49	0.06	320	7
5-16-2018	18.71	7.6	1.09	0.11	801	10
Average	31.13	7.43	0.64	0.10	597	7.7

**Table 5**  
**Estimate of Post-Mining, Average Event Surface-Water Quality at S2414084**  
**P-3993**

<b>Parameter</b>	<b>Estimated Value</b>
Flow (cfsm)	1.57
pH (s.u.)	7.00
Iron (mg/L)	0.46
Manganese (mg/L)	0.27
Specific Conductivity 25 °C ( $\mu$ mhos/cm)	1079

Data from P-3993 PHC Surface Water Projections Worksheet

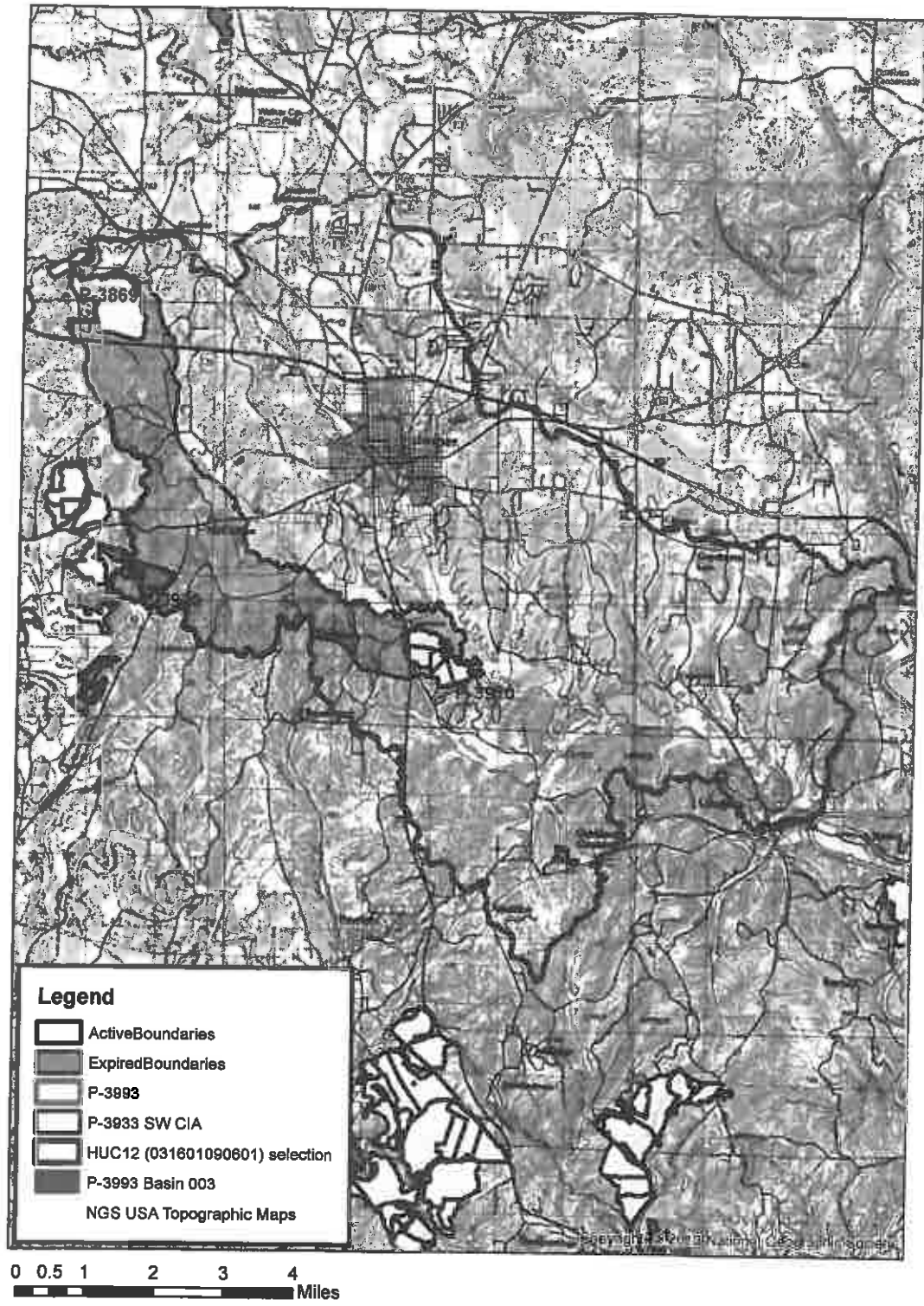
Figure No. 1  
P-3993



0 0.05 0.1 0.2 0.3 0.4  
Miles



**Figure No. 2**  
**P-3993 Cumulative Impact Areas**





STATE OF ALABAMA  
SURFACE MINING COMMISSION

P.O. BOX 2390 - JASPER, ALABAMA 35502-2390  
(205) 221-4130 • FAX: (205) 221-5077

MEMORANDUM

TO: Office of Surface Mining Reclamation and Enforcement

Alabama Department of Environmental Management

Alabama Historic Preservation Officer

The District Engineer  
U.S. Corps of Engineers

Alabama Department of Industrial Relations  
Division of Safety & Inspection

BLM - District Office

State of Alabama  
Abandoned Mine Land Reclamation

Walker County Commission

U.S. Fish & Wildlife Service

Mr. Keith Guyse, Fish & Game Division

FROM: JOHNATHAN E. HALL, DIRECTOR

RE: **PERMANENT PROGRAM PERMIT FOR:**

**Permit P-3993-64-23-S (McCollum Mine) Lost Creek Clay & Mineral, LLC**

Pursuant to the Alabama Surface Mining Commission Regulation 880-X-8K-.12(2), we are hereby notifying you of the issuance of the above permit.

You may also view a copy of this permit at our web address of:

<http://surface-mining.alabama.gov/PermitDecisions.html>

Enclosed for your information and file is a copy of the permit which shows the legal description of the mine site.

/mw